

- FINAL -

COMMUNITY AND SETTLEMENT SUSTAINABILITY STRATEGY

Hay LGA



**Planning &
Infrastructure**



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Environmental Solutions**

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COMMUNITY AND SETTLEMENT SUSTAINABILITY STRATEGY

Hay LGA

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ACRONYMS

ABARE	Australian Bureau of Agricultural and Resource Economics
ABS	Australian Bureau of Statistics
ASC	Ambulatory Care Sensitive
ACAT	Aged Care Assessment Team
AEP	Annual Exceedance Probability
AHD	Australian Height Datum
AHIMS	Aboriginal Heritage Information Management System
ANEF	Australian Noise Exposure Forecast
ASGE	Achieving Sustainable Groundwater Entitlements Program
APZ	Asset Protection Zone
ARI	Average Recurrent Interval
ARTC	Australian Rail Track Corporation
AWR	Australian Water Resources
BCA	Building Code of Australia
BPM	Bushfire Protection Measure
CBD	Central Business District
CLM	Contaminated Land Act
CMA	Catchment Management Authority
CPI	Consumer Price Index
CSIRO	Australian Commonwealth Scientific and Research Organisation
DCP	Development Control Plan
DEC	Department of Environment and Conservation
DECCW	Department of Environment and Climate Change
DEWHA	Department of Environment, Water, Heritage and the Arts
DII	Department of Industry and Investment
DIPNR	Department of Infrastructure, Planning and Natural Resources
DLWC	Department of Land and Water Conservation
DOHRS	Department of Health Reporting System
DoP	Department of Planning

DPI	Department of Primary Industries
DSE	Dry Sheep Equivalent
EBIT	Earnings Before Interest & Tax
EDUOCC	Index of Education & Occupation
EHC Act	Environmentally Sensitive Chemicals Act, 1985
EOI	Expression of Interest
EOMA	Environment Outcome Assessment Methodology
EPA Act	Environment Planning & Assessment Act
EPBC Act	Environment Protection & Biodiversity Conservation Act, 1999
ERP	Estimated Resident Population
FPL	Flood Planning Level
GDE	Groundwater Dependent Ecosystem
GIS	Geographic Information System
GM	Gross Margin
GMA	Groundwater Management Area
GSAHS	Great Southern Area Health Service
HSC	Hay Shire Council
ILC	Indigenous Land Corporation
Ka	Kiloannum
L & MPA	Land and Property Management Association
LALC	Local Aboriginal Land Council
LCMA	Lachlan Catchment Management Authority
LEP	Local Environmental Plan
LGA	Local Government Area
LLGMA	Lower Lachlan Groundwater Management Area
LMGMA	Lower Murrumbidgee Groundwater Management Area
LTA	Long Term Average
Ma	Megannum
MCMA	Murrumbidgee Catchment Management Authority
MDB	Murray Darling Basin

MDBA	Murray Darling Basin Authority
MHSC	Murrumbidgee Health Service Cluster
MHS	Murrumbidgee Health Service
MPS	Multi Purpose Service
NETS	Newborn and Paediatric Emergency Transport System
NLWR	National Land and Water Resources
NPWS	National Parks & Wildlife Services
NVAT	Native Vegetation Assessment Tool
NWI	National Water Initiative
OH&S	Occupational Health & Safety
PBF	Planning for bushfire protection 2006
PCD	Psittacine Circoviral Disease
PID	Private Irrigation District
PMF	Probable Maximum Flood
PVP	Property Vegetation Plan
REPP	Regional Environmental Planning Policy
REP	Regional Environmental Plan
RLD	Rural Lifestyle Development
RLPB	Rural Lands and Protection Board
RNE	Register of the National Estate
RPT	Regular Public Transport
RTA	Roads and Traffic Authority
SE	Socio Economic
SEIFA	Socio Economic Indexes for Areas
SEPP	State Environmental Planning Policy
SES	State Emergency Service
STP	Sewage Treatment Plant
WCIC	Water Conservation and Irrigation Commission
WSP	Water Sharing Plan

GLOSSARY OF TERMS

Alluvial	Sediments deposited by a river or other running water.
Ambulatory Care Sensitive (ASC)	Ambulatory Care Sensitive conditions are those for which hospitalisation is considered potentially avoidable through preventative care and early disease management usually delivered in an ambulatory setting such as primary health care.
Anabranh	Section of a river or stream that diverts from the main watercourse channel (or main stem) and rejoins the main stem downstream.
Community	Residents of a place and the various biophysical, social, cultural, economic and political systems by which they are supported.
Donga	A transportable building with single rooms, often used on rural work sites or as tourist accommodation.
Dry Sheep Equivalent	Industry standard measure of agricultural land livestock carrying capacity. NSW DPI defines a DSE as a standardised 50kg wether (dry adult sheep) maintaining a constant weight.
Hyporheic zone	The wetted interstitial zone among sediments below and alongside rivers; inhabited by many animals specialised for a hypogean existence.
Intercensal	Between census periods.
Lentic	Referring to standing water
Kiloannum	A unit of time equal to one thousand (10^3) years.
Lotic	Referring to running waters.
Megaanum	A unit of time equal to one million (10^6) years.
Quaternary Period	The quaternary period is the youngest of three periods of the Cainozoic era in the geologic time scale.
Riparian zone	Any land that adjoins directly influences or influenced by a body of water.



1.0 EXECUTIVE SUMMARY

The main planning recommendations of this report are provided in Section 1.1 and the context described within this report is summarised in Section 1.2.

1.1 Recommendations

Rural Lifestyle Development

In the Hay LGA there is an identified demand for rural lifestyle development of high amenity close to the riparian environment. This report recommends that a minimum area of 100ha be rezoned to cater for this type of development. The most suitable area for this type of development is within 15 km east of the Hay Township. This is because this locality is less constrained, is better positioned within the floodplain and is located on a primary destination route. Four sites have been identified through multi-criteria analysis and constraints mapping as being potentially suitable for rural lifestyle development and all are worthy of consideration. Council has also identified an additional four or five sites which can also be considered. The most suitable site recommended for rezoning is located on the Mid Western Highway approximately 11km east of the Hay urban area. The easterly adjacent allotment to it, under the same ownership, has also been identified as a potential rural lifestyle development area should further rezoning be required in the future. It should be noted that all sites have merit for consideration as potential rural lifestyle development areas and the recommended development site may need to be confirmed after Council liaison with landowners and further assessment (for example flooding).

Rural Development

Most of the Hay LGA comprises productive agricultural land. There is no holding pattern associated with irrigated agriculture which is fragmented and located where soil and water resources are available.

Horticultural development occurs generally within 15km of the Hay Township and broad acre and pastoral development elsewhere throughout the LGA.

The current minimum lots size of 1500ha in Hay LGA has been found to have little relevance for agriculture.

This report recommends two future minimum lot sizes for subdivision with a dwelling entitlement in Hay LGA. For productive agricultural land within 15km of the Hay urban centre, 90ha is the recommended minimum area for subdivision with a dwelling right and 600ha is the recommended minimum area outside these areas, being the majority of the LGA. (This minimum lot size should be reviewed in 5-10 years after implementation to ensure the objectives for the protection and management of rural land are being achieved).

Currently small lot primary production is carried out in the Hay PID area and no change to the minimum lot size of 2.0ha is recommended in this area. This minimum lot size should also be applied to the area recommended for similar rezoning east of urban Hay bounded by the Murrumbidgee River.

Residential Development

20ha of land for residential expansion is recommended to be immediately rezoned east of Bourke Street to satisfy a 10 to 15 year supply. As well land situated to the east of this area (23ha) has been identified as potentially suitable for further residential development should this be required in the future. This land could also potentially accommodate large lot residential development. Both sites require an environmental audit as per the requirements of SEPP 55 prior to any rezoning occurring.



Medium density development is currently interspersed throughout both North and South Hay. It is recommended that higher residential densities be facilitated adjacent to the Hay Township commercial core. Potentially suitable areas are located on the eastern side of Lachlan Street on land between existing commercial development and the Murrumbidgee River and on the western side of Lachlan Street between existing commercial development and Pine Street.

The area east of the Hay Hospital currently contained within the Hay Village Zone and comprising 17.8ha is recommended for residential expansion subject to a cultural heritage assessment and environmental audit. This site is considered appropriate for senior's housing development.

Commercial development

There is a need to protect, enhance and promote the commercial core of the Hay Township to prevent leakage and to facilitate centre growth and development. The commercial core has been assessed as including that land with frontages both east and west of Lachlan Street. The area extends on the east from Leonard Street in the north to Randall Street in the south. On the west, the area extends to just north of Leonard Street southwards to Brunner Street. Although the commercial core does not and is not currently proposed to extend west to Pine Street, this is potentially the recommended direction should additional commercial zoned land be required in the future.

Industrial Development

This report recommends the rezoning of two dedicated industrial areas one for both South and North Hay.

In North Hay, the recommended area of over 6ha comprises predominately surplus railway land owned by ARTC. Currently some industrial development exists in this vicinity. The area commences at the eastern corner of Dunera Way, Thelangerin Road and Macauley Street and extends eastwards along Dunera Way, generally north of the railway line to the Cobb Highway.

In South Hay the recommended area comprises 8ha of land situated between Witcombe and Archer Street and north of Moama Street. This land is spatially connected to the village of South Hay and is capable of being easily serviced. Although the land has significant constraints because it is impacted by groundwater vulnerability and is adjacent to an existing wetland and high value conservation area. The ecological condition of the wetland had been assessed as poor because it has been adversely impacted by anthropogenic impact. Despite this, it is considered that this area represents the most logical industrial infill site in view of existing spatial development.

Heritage Conservation

Local, State and Commonwealth heritage items exist in the Hay LGA and the region contains significant European and Aboriginal cultural heritage values and Department of Environment, Climate Change and Water (DECCW) Aboriginal Decision Support Tool (ADST) modelled sensitive landscapes. It is recommended that a shire-wide heritage study be undertaken to guide cultural heritage conservation in the future.

An interim measure and to protect current listed sites, potential sites and cultural heritage values it is recommended that a Heritage Conservation precinct be created through planning. The recommended conservation area should include land bounded by Pine, Brunner, Lachlan and Leonard Streets, plus properties abutting Lachlan Street to the east between Leonard and Randall Streets.

Tourism

It is recommended that four primary tourist facilities in Hay be protected and promoted through appropriate tourist zoning. These facilities include Shear Outback, the Dunera Museum, Bishops Lodge and Hay Gaol. Shear Outback in particular has been identified as a potential tourism cluster site which could be further developed and supported. This site or the adjacent corner site is potentially appropriate for the development of visitor accommodation facilities.



Open Space and Place Connectivity

Significant areas of open space exist within the Hay Township including public recreation reserves. Two significant areas of open space include Hay Park and Sandy Point.

Hay Park is the main area of open space used by locals and visitors. While it contains a range of social and recreational opportunities Hay Park's development could be improved by master planning to ensure that opportunities for all age groups are accommodated and tourism and visitor values enhanced.

Sandy Point is situated on the Murrumbidgee River near the original Langs Crossing Place. It has significant social, recreational, cultural and natural values. Similarly, it is recommended that a recreational master plan be prepared to guide the appropriate development of this site.

This report finds that there are significant opportunities to promote place and space connectivity through a focus on urban planning and civic design and the support and promotion of tourism values.

The Hay town centre is important locally in terms of civic infrastructure. It also contains significant cultural heritage values. The optimisation and development of civic, natural and cultural values and place connectivity is recommended through open space and civic master planning.

This should be extended to incorporate South Hay, as the major gateway into North Hay. South Hay should be developed to entice and attract visitors from the Highway into the town centre.

Environmental Protection

Significant high value conservation areas exist within the Hay LGA which comprises forests, woodlands and grasslands. A cleared and modified urban and rural environment means that these existing remnant landscapes are significant areas of biodiversity value and comprise habitat for threatened species.

The Murrumbidgee and Lachlan Rivers are the significant waterways which transect the Hay LGA. These rivers are important for beneficial and consumptive use. Particularly within the Hay urban area, the Murrumbidgee River has significant recreational values.

The conservation and improvement of biotic and abiotic resources should be an objective for future development.

Constraints

Significant constraints impact the Hay LGA including the Hay Township. The primary constraints include significant areas of moderate to high groundwater vulnerability and moderate groundwater vulnerability close to riparian areas. Similarly riparian areas and woodland environments are impacted by bushfire prone land. The ADST modelled by DECCW has identified that significant areas of sensitive landscapes exist throughout the Hay LGA which need to be appropriately managed.

Flooding

A significant limitation in Project scope is the lack of definitive flooding information. As a priority it is recommended that flood modelling be conducted and upgrading works to the existing levee be incorporated to ensure that the proposed areas recommended for rezoning be appropriately protected against the 1 in 100 year flood event. Further that where possible sensitive land uses and critical infrastructure as identified in this report (for example the Hay Hospital and any future Seniors Living development east thereof) be protected against the probable maximum flood (PMF) event.

The floodway, flood storage areas and flood fringe areas are required to be appropriately modelled and mapped for the Hay LGA.



1.2 Context and Future Direction

Situated in south western NSW, the Hay Local Government Area (LGA) is located on the vast Riverine Plain. Deeply incised within the landscape, the Murrumbidgee River flows east-west through the LGA and the stressed Lachlan River flows from the north-east of the LGA towards the Murrumbidgee River. Only in extreme floods does the Lachlan flow into the Murrumbidgee, which otherwise terminates in the Great Cumbung Swamp on the western side of the LGA.

Away from riparian zones, the landscape encompasses flat almost treeless saltbush plains and scalds associated with prior stream development. Significant biodiversity exists in the grasslands, shrublands, woodlands and riparian forests which are habitats for threatened species, populations and ecological communities.

- Along with the villages of Maude and Booligal, the urban population live within or close to the Township of Hay. Rural residents comprise landholders and occupiers of mostly large broadacre grazing properties. To the North of the Lachlan, properties are located within the arid Western Division. There is no regular pattern associated with agricultural holdings and diversification through irrigation occurs where surface and groundwater sources are available.
- The current population of Hay is similar to that of 1860 and the town's proud built environment including Bishops Lodge and the Railway Station represent a legacy when the 19th century vision for Hay was associated with prosperity and development from wool production and civic expansion schemes.
- Hay's geomorphology, biophysical environment and position within the landscape are significant and strongly influence community assets, values and constraints to development. Community assets include natural, cultural and civic assets including soil and water resources, riparian zones, floodplains and associated biodiversity as well as cultural heritage objects and places.
- Aboriginal heritage is largely hidden within the landscape and is associated with different stages and various tribes of Aboriginal occupation. These sensitive landscapes represent assets which should be valued and protected from development.

European heritage is also significant and associated with the development of Hay as a river crossing. There is a need for a Shire-wide heritage study to better identify, manage and celebrate Aboriginal and European cultural heritage.

Most available water sources are currently being used for consumptive and beneficial uses beyond their sustainable capacity and programs are in place to manage this. Despite this, growth in agricultural production systems is predicted. Catchment condition including riparian zones can be affected by anthropogenic impacts. Where opportunities permit, resources should be conserved and impacted systems rehabilitated.

- Because of its relative isolation the Hay LGA community has a history of collaborative issues resolution (for example, transport and healthcare) where the Hay Shire Council (the Council) has taken a lead role.
- Emerging issues are a projected decline in population to 2040, limited employment opportunities and the availability of residential and industrial land.

Constraints to development include productive agricultural land, vulnerable riparian (and wetland) environments, significant areas of groundwater vulnerability, Aboriginal sensitive landscapes, bushfire prone land (which occurs primarily in riparian zones) and river and localised flooding.



This study has found that it is necessary for balanced investment and strategic corporate governance to promote economic prosperity, community capacity and ecological integrity for a sustainable community into the future.

Agriculture and tourism are the key drivers of economic development and provide opportunities for future investment.

The planning strategy recommended has been developed in conjunction with the community and stakeholders and is a measured response to the identified issues. It recognises community values and assets and addresses community needs and expectations that have manifested during the course of the project.

Despite a prolonged period of drought and significant associated impacts to shire economic development there is an optimistic forecast based on the return of more seasonal conditions, revived agricultural investment and a buoyant agricultural economy. This optimistic forecast is predicated on an analysis of trends associated with climate change predictions and agricultural production levels.

The major study recommendations include strengthening the ecological, social and economic base of the community through investment in asset optimisation, enhancement of natural and cultural features and promotion of agriculture and tourism. Urban design, place management and collaborative master planning are critical components to achieve this.

Despite identified constraints, suitable areas are potentially available for future development. While there remain infill residential opportunities, there is a need to provide housing opportunities through investment in villages and the allocation of urban release areas. Industrial development should consider the strategic advantage afforded by the convergence of highways to the south. There is a demand for rural lifestyle opportunities which is not catered for within the existing land use zones. In strategic planning there is an opportunity to optimise biodiversity outcomes through market based incentives. The selection of preferred rural lifestyle sites should be based on the greatest social, economic and environmental returns to the community.

Adoption of these measures is expected to significantly impact on economic prosperity, community capacity and ecological integrity and promote the future sustainability of the Hay LGA.





PART A BACKGROUND AND SETTING

2.0 INTRODUCTION

2.1 Project Background

Booth Associates have been engaged by the Council and the Department of Planning (DoP) to prepare Urban and Rural Land Use Studies and a rural settlement strategy for the Hay LGA.

This Community and Settlement Sustainability Strategy represents the Project Team's first stage response to the Brief.

The Stage 2 response will be the formulation of a standard instrument Local Environmental Plan (LEP) and associated maps based on this report and further consultation, including in relation to proposed rural lifestyle areas.

2.1.1 Authorisation

The project was formally commissioned at a project inception meeting with representatives of the Project Team and the Steering Committee, held at the Council on 29 July 2009.

2.1.2 Sources of Information

Project information sources include:

- The Brief;
- Council reports provided after the inception meeting;
- Stakeholder and community communications;
- Project surveys including community survey, land use surveys and desktop analysis;
- Resources as identified in the report References and Bibliography in this report.

2.2 Project Aims and Objectives

The aim of this project is to respond to the Brief, specifically to communicate the context for planning and develop a Hay LGA sustainability strategy which encompasses urban and rural land use planning and a rural settlement strategy.





Objectives include:

- To communicate the social, economic, and environmental contexts for planning relevant to the Hay LGA and provide a comprehensive rural and urban land use strategy to guide the preparation of Hay Standard Instrument LEP;
- Identify and justify appropriately located land suitable for recommended land uses through detailed analysis;
- Identify information gaps and options to address these prior to land use change occurring;
- Provide for a 30 year planning horizon;
- Ensure community and stakeholder engagement, consultation and input into the development of the sustainability strategy.

2.3 Methodology, Assumptions and Limitations

Project **methodology** included:

- Identifying the context for planning through engagement with stakeholders and through socio-economic profiling and land use analysis;
- Understanding issues impacting the community through community and stakeholder engagement and consultation, survey and analysis;
- Understanding the biophysical condition of the Hay LGA through research and investigation including the identification of shire assets, constraints and opportunities;
- Identifying community sustainability indicators and measures for future investment to best manage and drive Hay community and settlement sustainability over the planning horizon; and
- Recommending an integrated suite of measures to facilitate future corporate decision-making and investment through planning and providing a basis for the development of a standard instrument local environmental plan.

Project **limitations** included:

- Limited funding impacting on project scope particularly in cultural heritage assessment, flood modelling and site specific environmental investigation and site specific biodiversity conservation assessment;
- Limited availability of data. When data was available it often lacked detail and was generally coarse, for example soil maps;
- Through the course of this project it has become apparent that limitations exist with the original digitising of the cadastre provided to the Project Team. This has meant that lots near boundaries are to some extent duplicated and associated data can be captured in Geographical Information System (GIS) retrieval. As far as practicable, extraneous data has been manually retrieved. This may impact on results obtained through spatial analysis represented through mapping and may also impact on data export, extraction and utilisation. However this impact is considered to be marginal with no significant impact on report conclusions.



2.4 Report Structure

This report has been structured as follows:

- Part A Background and Setting
- Part B Context for Planning
- Part C Infrastructure and Constraints
- Part D Community Engagement and Issues Identification
- Part E Opportunities and Risk Management
- Part F Strategic Direction and Settlement Strategy





3.0 EXISTING SETTLEMENT

3.1 Regional Setting

Hay LGA has an area of 11,325.89km² and is located in the western Riverina region of south western New South Wales (Western Research Institute, 2004).

Hay's urban centre is located on the junction of the Cobb, Sturt and mid-Western Highway approximately 730km south west of Sydney and 665km north east of Adelaide.

The Hay LGA includes two rural villages, Maude, 51km west of Hay and Booligal located 113km north.

Hay is situated on the Murrumbidgee River which flows westwards from the eastern highlands across the Riverine Plain. The Riverine Plain is an ancient landscape; a flat, alluvial, almost treeless plain formed from deposition associated with extensive ancestral streams of the Quaternary Period.

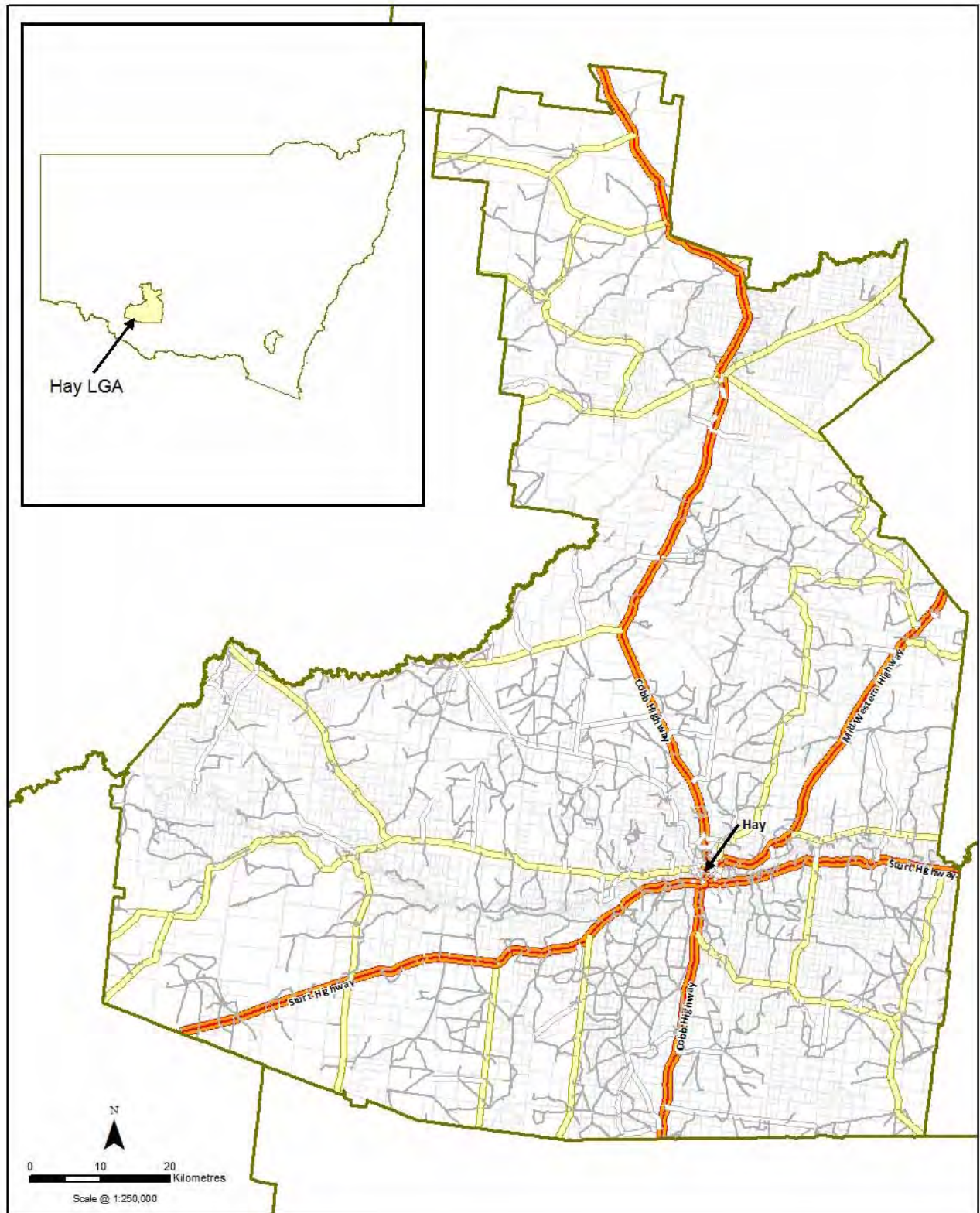
To the north of the Murrumbidgee River is its main tributary, the Lachlan River, which eventually meets the Murrumbidgee River between Hay and Balranald flowing through significant wetland areas. South of the Murrumbidgee River, Billabong Creek is fed through various streams and eventually flows into the Edward River an anabranch of the Murray River.

The location of Hay is shown in Figure 1.





Figure 1: Hay Location





3.2 Settlement History

Charles Sturt explored the Murray and Murrumbidgee Rivers in 1829 to 1830 passing by the future Hay town site in his whaleboat. Squatters followed in Sturt's wake.

The Riverina was considered as prime fattening country for Merino sheep and by the mid-1850s pastoral runs on the western Riverina were established and prosperous.

The "Illiliwa" pastoral run was established in the 1840's as well as other significant runs including Eli-Elwah and Mungadingal.

Originally called Lang's Crossing Place, Hay was established as a river crossing for Merino sheep flocks en-route via the Great North Road to the lucrative markets of the Victorian goldfields. This crossing, where stock forded the river was located on the Lang Brothers' pastoral lease of Mungadingal and Eli-Elwah where South Hay would develop.

The Illiliwa run contained the land on which northern Hay would later be built.

At the time of its settlement, Hay was the main route for travelling stock, being the shortest route from the Lachlan River, Darling River and Gulf of Carpentaria to Melbourne and was considered to be the centre of the largest sheep district in Australia with four million sheep ("The Raven", 1841).

During 1856 to 1857 Captain Francis Cadell, pioneer of steam navigation on the Murray River, placed a manager at Lang's Crossing Place and established a store. Thomas Simpson followed soon after and established a blacksmith shop and residence, and Henry Leonard who built a hotel and dwelling and launched a punt on the river. Leonard's ferry punt was located at the reserve currently known as Bushy Bend and provided access from South Hay to North Hay. The turntable of the impressive swinging bridge which was constructed in 1872 can still be seen on this site.

Steamers travelled up the Murrumbidgee River as far as Lang's Crossing Place and occasionally onwards to Gundagai.

Despite some opposition to the hotel and punt operation of Leonard, by the lessee of "Illiliwa" Station, there were those keen to pursue settlement options and the NSW Government organised the town to be surveyed and the town was gazetted in 1858. The original name of "Waradgery" was abandoned and the town was named after local parliamentarian, John Hay.

The first sale of land in Hay was in 1859 when a Township was surveyed out on the Plain, about half a mile from the present site. Eighty two half-acre town lots and 11 suburban lots were put up to auction.

Expansion continued until 1867, when the stocking of the back blocks of the Lachlan River led to renewed interest in Hay, however the drought of 1868/69 caused a severe depression.

In 1872 after a few prosperous years Hay was proclaimed a Municipality and its swing bridge was officially opened in 1874 by Sir Henry Parkes.

A few private streets, most of them dedicated to the Council, ran through the suburban blocks between the surveyed Township and its bridge. In 1873 there was a large subdivision of land fronting Lachlan Street (the main street) and land was gradually sold at rising prices.





In 1875 there were several sales of large suburban sites for local industries and villas. 1875 was a time of great activity in Hay with wool export reaching nearly 25,000 bales while cargo from the upper river, passing through the town, were about 20,000 bales more and with 10,000 tons of goods during the year. At the time 30 steamboats and barges were loading and unloading cargo within 10 miles of the town. The drought of 1876/77 resulted in a loss of 1.0M sheep and impacted adversely on the economic climate of the town.

In 1881 most of the original land auctioned in 1859 had not been built upon as the suburban portion, nearer the crossing place, was preferred in spite of the liability to floods.

“The Raven” in a Town and Country Journal article, 30 April 1881, p.848 identified some of the main features of the Hay Township in 1878 as including:

- Waterworks where the municipality pumped water from the river to an elevated tank and distributed it throughout the town via pipes;
- Post office;
- Gaol (without the hanging apparatus);
- Four churches;
- Public school;
- Library;
- Masonic hall;
- Courthouse;
- Many large stores;
- Chinese camp;
- Hospital;
- Banks;
- Hotels;
- Two breweries;
- Carriage factory;
- Steam soapery;
- Wool scouring industry; and
- Proposed Government wharf.

Lachlan Street was identified in the article as the main street and the aesthetic tree plantings lining the street was commented upon.

At the time, the population was estimated to be between 1,500 and 2,000 persons and the town was expanding towards the railway terminus which was 3 miles from the “town”. There was concern to get the railway station built on the east and not the west end of the town to negate the need for an additional crossing and general inconvenience.



The importance of Hay was shown when it was chosen as the site of the procathedral and base of operations for the bishop when the Goulburn Diocese was divided in 1884 to form the Riverina Diocese.

The 1891 Parish Map shows that the town, as designed and set out, has not substantially changed from that today, despite some alterations from the original design in 1913.

The settlement included a temporary town common north and south of the railway terminus which was dedicated in 1896.

The major public buildings/spaces were set out in reservations extending north from water access the river crossing at the corner of Leonard Street and Piper Street to the south west railway and provided for a market (1890), gaol (1890), hospital (1892), showground and public reservation for a main town park.

Other public facilities were also reserved including a cemetery in 1897.

A review of the 1891 Parish Map shows that town lots ranged from a typical quarter acre lot to 1 acre (such as within the town centre at the corner of Leonard Street and Piper Street) to around 5 acre to 20 acre lots to the west.

South of the main oval and west of the town centre, lots were generally 1 acre to 3 acres. The western boundary of the town included 30 acres to 50 acres surveyed lots, many in the one holding.

South Hay included generally 1,000m² to 4,000 m² lots as well as a police reservation west of Bungah Creek adjacent to the stock crossing.

Probably due to flooding, most of the land in Central Hay, north and south of the Murrumbidgee River, was dedicated for various public recreational purposes.

Land for the South Hay bridge crossing was notified between 1890 and 1898.

The first subdivision of the Hay Irrigation District was not until later when the district was proclaimed and the Hay town boundary amended in 1919.

Since 1859 Hay gradually increased in size and in 1862 Cobb & Co moved the head quarters of their southern operations the Victoria and Riverina network to Hay.

It was about this time in 1861 that the village of Maude was named and surveyed on Thomas Darkies Budgie Budgie Run.

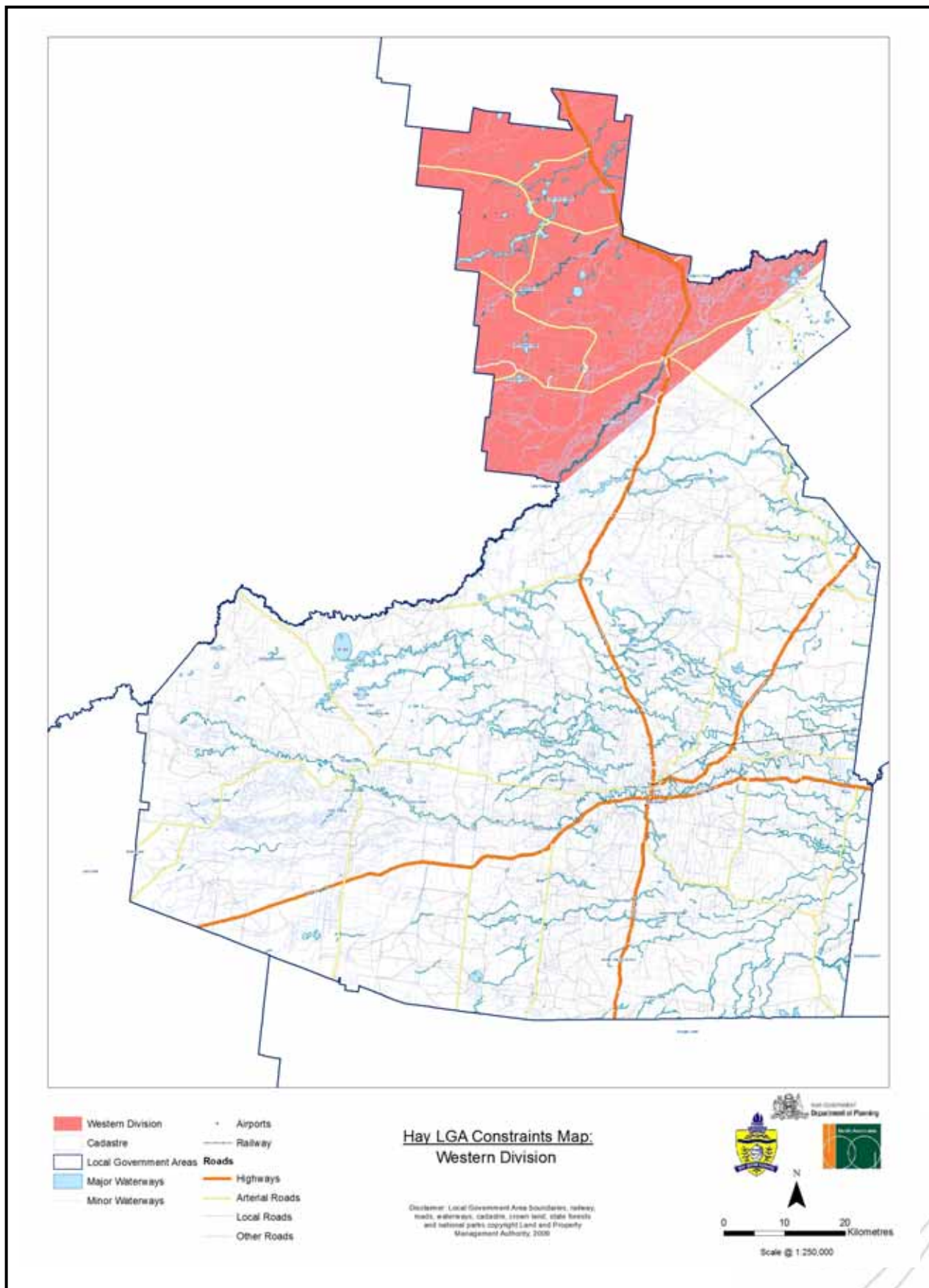
The Township of Booligal was laid out and gazetted as a Township in July 1860. Initially the Township included a store and two public houses which were sited at the crossing place on the Lachlan River on the Booligal Pastoral Run.

The Western Division makes up 42% of the area of NSW and encompasses 18% of the Hay LGA. The majority comprises Crown Land, administered under various Crown Lands Acts, including the Western Lands Act 1901 and most is perpetual leasehold from the Crown. It lies west of a line from the Queensland border at Mungindi to Balranald. Severe dry periods are a feature of the climate and occur approximately every eight years. The area in the western division within Hay LGA is shown in Figure 2 below.





Figure 2: Incorporated Western Division within Hay LGA





3.3 Current Settlement Pattern

3.3.1 Hay

Hay Township today does not substantially differ to the original design and the alterations shown on the 1891 Parish Map.

The following comments are relevant:

- North Hay has developed as the primary site for urban development and includes most of the residential land and other associated land uses;
- South Hay located on the Sturt Highway is the primary feeder route attracting visitors into the town;
- Significant public reserve and recreation areas are located both north and south of the Murrumbidgee River;
- The lack of well defined land use separation manifests in a somewhat patchy effect. Commercial industrial and residential land uses are interspersed throughout the Township; and
- Hay is distinguished as a centre of convergence of major transport corridors being the Sturt, Mid Western and Cobb Highways.

Table 1: Existing Spatial Characteristics by Land Use and by DCP

Precinct	DCP Precinct Areas (ha)	Actual Developed Area (ha)	Vacant Area (ha)
LAND USE			
Commercial	36.84	31.91	4.93
Industrial	28.96	28.96	0.00
Public Open Space	111.90	111.90	0.00
Residential	194.53	162.72	31.82
Special Use	36.41	36.41	0.00
DCP			
Commercial	39.19	36.93	2.26
Environmental Protection	76.58	76.58	0.00
Industrial	34.07	21.92	12.15
Public Open Space	30.81	30.64	0.17
Residential 2(a)	24.43	19.92	4.51
Residential 2(b)	129.38	114.31	15.07
Special Use	32.14	29.10	3.04



While Table 1 is indicative only, the spatial analysis conducted, reveals significant information relevant to future land supply and demand analysis. This is discussed in Section 14.1.1.

3.3.2 Maude

Maude is situated on the north bank of the Murrumbidgee River, approximately 51km downstream from Hay and 95km upstream of Balranald. Maude was established in 1861 and located on Budgie Budgie Run. In the late 1800's it included a woolstore, and scour and wool products were transported by paddle steamer. Land sales first occurred in Maude in 1865 and the original town plan has not substantially changed. The War Memorial Hall was established in 1926. The town also originally had a police station, gaol and school building. The village has an anecdotal history of poor drainage. All of the village roads are gravel. The village of Maude has an estimated resident population of 35 persons (Pers. Comm. 21 October 2009). The village now includes a combined general store/post office, a local hotel, a war memorial community hall, cricket oval, BMX track and reservoir camp site. A cemetery is located approximately 7km west of the town.

3.3.3 Booligal

Booligal was established originally as a crossing place on the Lachlan River on Boolegal Pastoral Run. It was gazetted as a Township in July 1860 and by December a store and two public houses were established. In 1871 Edward Rosett build a bridge over the Lachlan River at Booligal and in 1877 it was reported that Booligal consisted of 19 buildings including a court house, 2 hotels, 2 stores, a blacksmiths shop, 2 butchers shops as well as school house and a parsonage. The population of Booligal was over 100 persons. In 1878 the telegraph line was extended to Booligal.

Its significance was due to its location and a transport route linking the Murrumbidgee and Darling Rivers. Booligal was a major stopping place for mail and passenger coaches travelling between Hay and Wilcannia. In 1890 the population had increased to 500 persons. Currently Booligal has a permanent population of approximately 25 persons (Pers. Comm. 22 October 2009) and the population has not substantially varied since 1970. Despite the rural area being impacted by population loss there has not been significant change to the existing rural structure (holding sizes in the locality).

Important local assets include; the local public school, currently 10 students which includes a covered recreation area, playground and tennis court, Catholic Church which offers a monthly service, St Albans Anglican Church established 1898 which offers a three monthly and irregular service and existing rural fire shed, the Duke of Edinburgh Hotel, local shop/post office which closed in 2008, the existing community hall, the local rubbish tip and the pistol shooting range.

Council's Contaminated Land Register includes two sites as being potentially contaminated. Significant local events include the Booligal Sheep Races, a yearly cricket day, weekly tennis and the Lachlan CMA Cup. Existing settlement infrastructure appears for the most part to be rundown.

3.3.4 One Tree

One Tree is a locality north of Hay towards Booligal. Situated south of the Lachlan River One Tree consists of a single hotel situated on generally a treeless plain, hence its name.



3.4 Issues, Pressures and Drivers

Over the last 10 years the Hay LGA has been significantly impacted by extreme weather events. Rainfall in 1999 was almost twice the long term average. The last 10 years have seen dry conditions prevail which have not facilitated primary production. This has largely been caused by reduced rainfall in autumn and less than optimal follow-up rains in spring prior to harvest.

This has impacted significantly on the local community and socio-economic condition.

Related adverse trends include:

- Population loss;
- High vacancy rate, particularly in the rural areas;
- Increase in the median age and an ageing population;
- Reduced enrolments and loss of support facilities such as Claughton House; and
- Reduced rural employment opportunities.

The Council has identified a range of factors that they consider critical to ensure the future community sustainability.

These include:

- The provision of high amenity lifestyle lots to better attract and retain population; and
- Provision of employment generating industries to add value to rural productivity but to also provide buffering capacity during agricultural troughs and peaks.





PART B CONTEXT FOR PLANNING

4.0 SOCIO-ECONOMIC CONTEXT

4.1 Population and Housing

4.1.1 Population

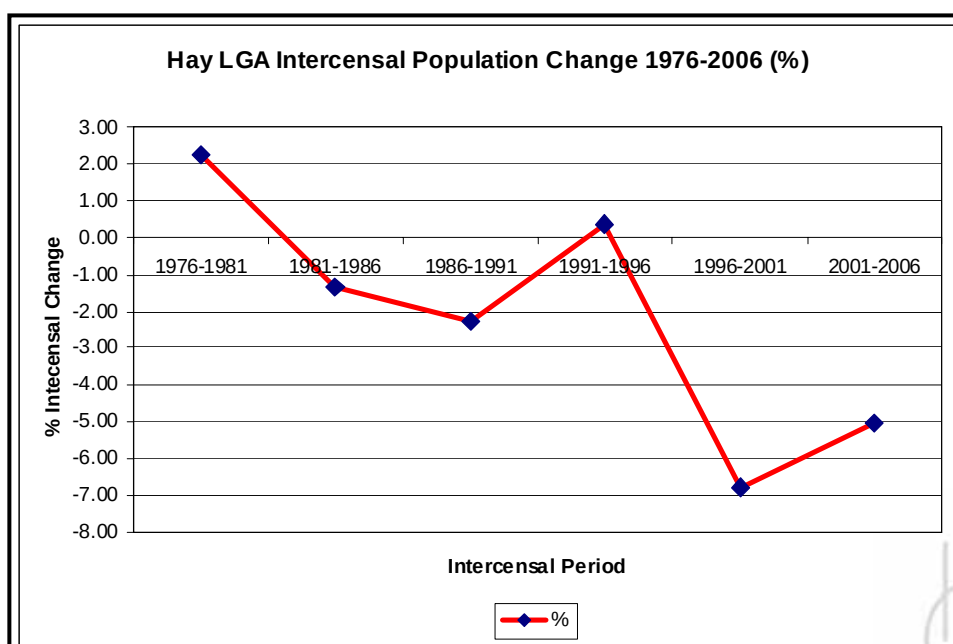
Table 2 shows population change for the Hay LGA from 1976 to 2006.

The total population of the Hay LGA as at the 2006 census was 3,383 persons. Table 2 shows that apart from the period 1976 to 1981 and 1991 to 1996 when there was an intercensal increase of 14 persons, there has been a downward trend in population since at least 1981, with the most significant change occurring since 1996.

Table 2: Population Change Hay LGA from 1976 to 2006

	1976	1981	1986	1991	1996	2001	2006
Males		2,022	2,003	1,896	1,923	1,827	1,705
Females		1,927	1,893	1,912	1,899	1,735	1,678
Total Persons	3,862	3,949	3,896	3,808	3,822	3,562	3,383
% Change	-	2.25%	-1.34%	-2.26%	0.37%	-6.80%	-5.03%

Figure 3 Intercensal Population Change Hay LGA – 1976 to 2006



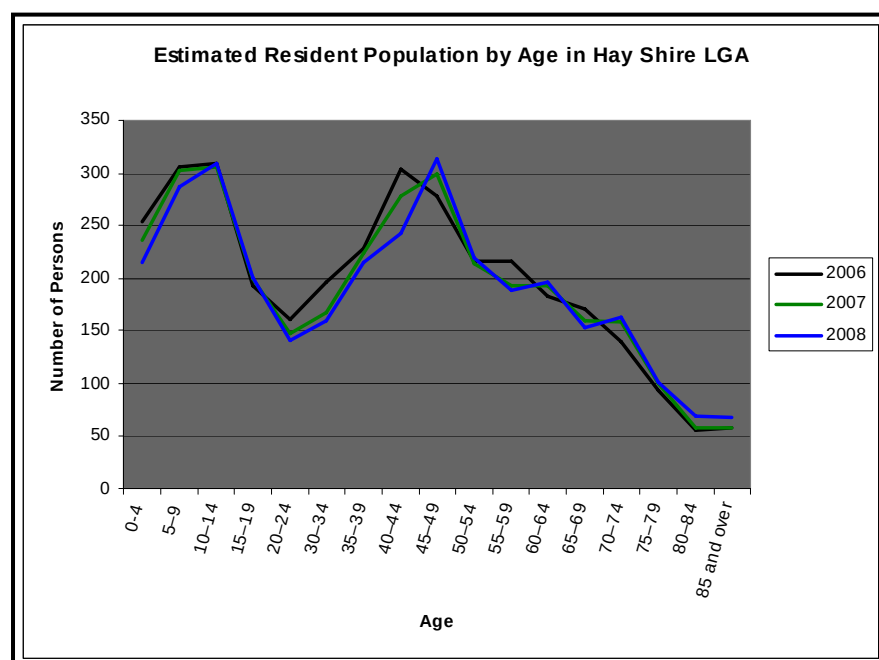


4.1.2 Age Structure

In the Hay LGA the median age of the population has increased from 33.5 years in 1996 and 36.6 years in 2001 to 39 years in 2006. Family structure is similar to national averages; however the actual population age distribution curve in Figure 4 shows that there is a strong representation of dependent children and those within the 40 to 50 age cohorts compared to other age cohorts of the population. There is also a significant decrease in the number of 20 to 24 year olds within the Hay LGA which may be as a result of a lack of tertiary education and employment opportunities within the Hay LGA. NSW DoP (DIPNR, 2004) identified that by 2031 one quarter of the population of the Murrumbidgee statistical division would comprise persons aged 65 years and over and Greater Southern Area Health Service (GSAHS) (2007) predicted that persons aged 70 years and older in Hay LGA will almost double from 340 in 2001 to 640 in 2031. As well there would be a decline in young people aged less than 15 years. NSW DoP (2006) also predicted that the median age in the Hay LGA in 2031 would be 49 years.

The ageing of the population has implications for the required support services. There is likely to be a need for further facilities and housing for the aged (particularly self care units).

Figure 4: Estimated Resident Population by Age Hay LGA 2006

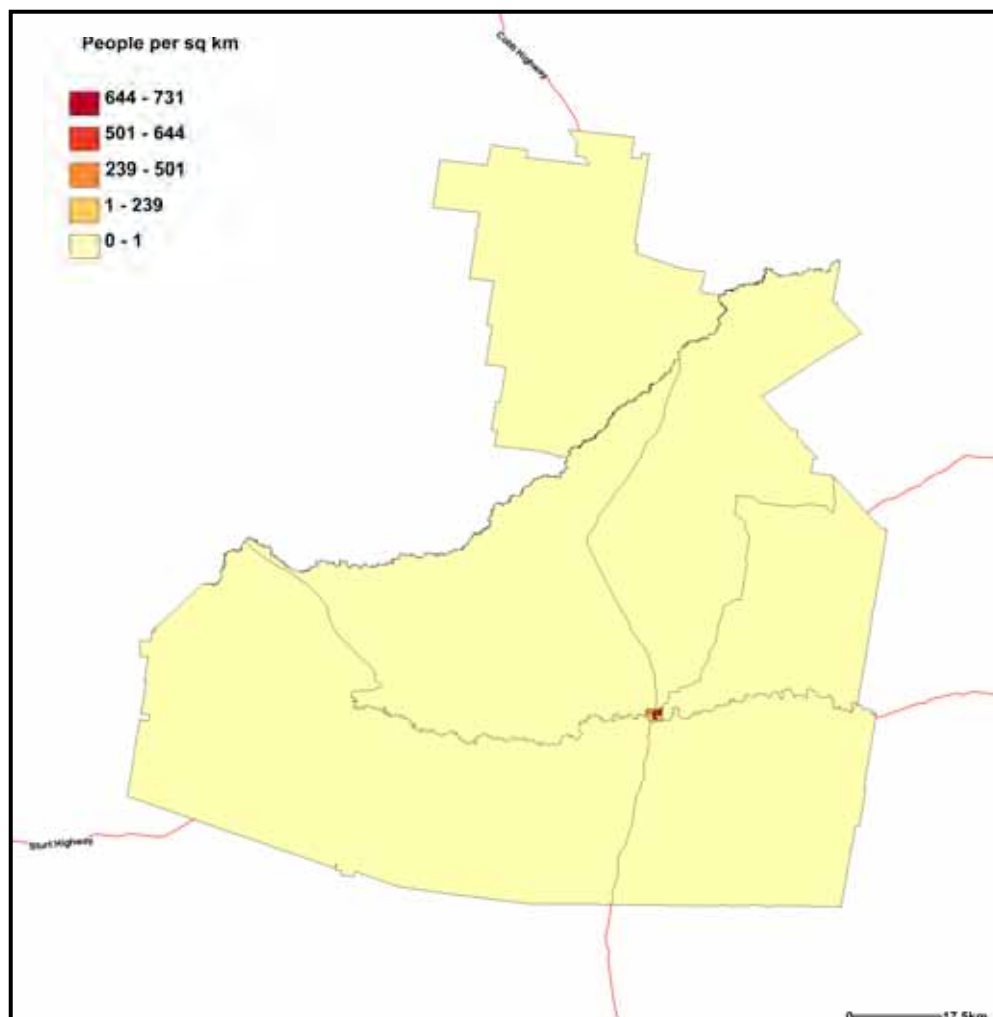


4.1.3 Population Density

The population of the Hay LGA as depicted in Figure 5 is concentrated within the Hay Township with the outlying rural areas having a very low population density of zero to 1 persons per square kilometre. This contrasts with the more closely settled regional service area of Griffith for example, which has a rural density of up to 240 persons per square kilometre.

The small number of people present within the rural area of Hay LGA illustrates the importance of the Hay Township for the survival of the Hay LGA as a whole.

Figure 5: Population Density Hay LGA 2006



4.1.4 Housing and Occupancy Rate

The 2006 census identified the total number of dwellings within the Hay LGA as 1,603 with 1,346 being the total number of occupied private dwellings.

Occupancy rate is the average number of persons per dwelling which equates to the ratio of the number of occupied dwellings in an area to the population of the area. Table 3 shows that the occupancy rate of total occupied dwellings for the Hay LGA has been decreasing from 3.34 persons in 1976 to 2.51 persons in 2006. This reduction is commensurate with national and state trends with the NSW occupancy rate being 2.53 in 2006 and expected to fall to 2.38 by 2036 (DoP, 2008).

The on-going reduction in occupancy rates indicates the population will continue to need more dwellings if the population remained static. The decline in population depicted in Table 2 will be offset to some extent by the declining occupancy rate.

Irrespective of other considerations, a trend of a reducing occupancy rate generates demand for more dwellings in a community with a static population. Given that the population is predicted to decline (Table 2) this demand could potentially be offset.

**Table 3: Change in Occupancy Rate for Total Occupied Dwellings – Hay LGA 1976 – 2006**

	1976	1981	1986	1991	1996	2001	2006
Hay LGA population	3,862	3,949	3,896	3,808	3,822	3,562	3,383
Total number of occupied dwellings	1,156	1,225	1,323	1,379	1,420	1,346	1,346
Total number of dwellings	1,287	1,311	1,466	1,542	1,581	1,607	1,603
Occupancy rate	3.34	3.22	2.94	2.76	2.69	2.65	2.51
NSW or National average occupancy rate				2.8	2.7	2.6	2.6

The following table shows dwelling characteristics for Hay LGA of which urban Hay is a significant component (urban centre).

Table 4: Dwelling Characteristics

Shire			Urban Centre		Rural	
	No.	%	No.	%	No.	%
Total Private Dwellings	1,603	-	1,221	-	382	-
Occupied	1,346	84	1,055	86	219	76
Unoccupied	257	16	166	14	91	24
	No.	% of Occupied Dwellings	No.	% of Occupied Dwellings	No.	% of Occupied Dwellings
Separate house	1,174	87	897	81	-	-
Flats, semi-detached etc	-	9	-	11	-	-

4.2 Employment and Industry

In the 2006 Census, the most common industries of employment for persons aged 15 years and over usually resident in Hay LGA were:

- Sheep, beef cattle and grain farming - 17.8%
- School education - 6.2%
- State Government administration - 4.4%
- Mushroom and vegetable growing - 4.3%
- Local Government administration - 3.9%

Figure 5 shows that agriculture has remained the largest employer since 1996. The largest increase in employment over the period 2001 to 2006 was in health care/social assistance services and the public administration and safety sectors.

**Table 5: Industry of Employment – Hay LGA 1996 – 2006**

Industry of Employment	1996 (%)	2001 (%)	2006 (%)
Agriculture, Forest and Fishing	32	29	27
Mining	0	0	0
Manufacturing	3	4	3
Electricity, gas, water and waste services	1	1	1
Construction	5	5	4
Wholesale trade	3	4	3
Retail trade	9	12	10
Accommodation and food services	9	8	9
Transport, postal and warehousing	3	3	4
Information media and telecommunications	1	1	1
Financial and insurance services	2	1	1
Rental, hiring and real estate services	1	1	1
Professional, scientific and technical services	2	3	2
Administrative and support services	1	2	2
Public administration and safety	9	8	10
Education and training	7	6	7
Health care and social assistance	6	6	8
Arts and recreation services	0	0	1
Other services	2	3	3
Inadequately described/not stated	4	4	4

4.2.1 Employment Trends

The 2006 census identified the Hay unemployment rate to be 4.4% with over 27% of the labour force employed in part-time work. This reliance on part-time work is consistent with national trends

4.2.2 Income Levels

Median income levels for the Hay community appear to be below national levels with individual median income identified in the 2006 census as \$404/week compared to \$486/week nationally. The Hay LGA median weekly household income of \$741/week is just 70% of the national median household income of \$1,027/week.



4.3 Education and Health

4.3.1 Education

In 2006 the majority (38%) of persons attending an educational institution in Hay LGA were infants or in primary school.

There were 26% of persons attending secondary school, with 6% attending technical or further education institutions such as TAFE.

Only 2% of persons within Hay LGA were attending university or other tertiary institutions.

The following education facilities are available within the Hay LGA:

- St Mary's Primary School;
- Hay Public School;
- Booligal Primary School;
- Hay War Memorial High School; and
- Hay School of the Air.

St Mary's Primary School was established in 1883 as a co-educational primary school from Kindergarten to Year 6. The school is part of the Diocese of Wilcannia-Forbes. In 2004 the school had an enrolment of 102 students.

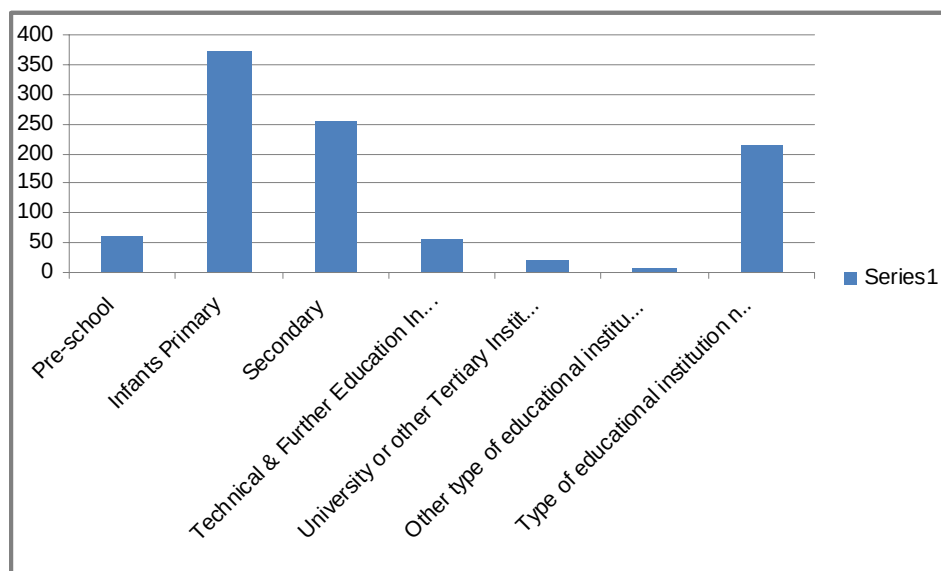
Hay Public School currently has enrolment of 293 students from Kindergarten to Year 6.

Hay War Memorial High School was established in 1923 as a co-educational comprehensive high school. The number of students currently enrolled is 254.

Hay School of the air offers satellite learning for remote students via their computer provided by the Department of Education and Training. A number of field services are provided to supplement a written correspondence course.

Claughton House Student Hostel has enabled weekly boarding for rural and remote students in Hay. The closure of Claughton House in 2008 has adversely impacted education accessibility to rural and remote students, including those from north of the Hay LGA near Booligal.



**Figure 6: Education Institutions Attended by Residents of Hay LGA**

4.3.2 Health

The Greater Southern Area Health Service (GSAHS) was constituted on 1 January, 2005 and covers 166,000 km² and has a population catchment of 468,000 persons, including 38 LGAs. The area is divided into 3 health sectors. These are Central, Eastern and Western sectors. The GSAHS provides an extensive range of primary and secondary specialist services. In addition to direct clinical services the GSAHS provides a broad range of home and community based services as well as public health, illness prevention and health promotion services.

The Murrumbidgee Health Service Cluster (MHSC) is one of ten clusters that form the GSAHS. The MHSC includes the local government area of Griffith, Hay, Carrathool and Murrumbidgee. The MHSC covers an area of 35,400km².

Hay LGA is centrally located in the geographic western sector cluster. Hay, together with Hillston appears to be most geographically isolated of the western cluster population centres.

Hay Hospital has been designated as a "Community Non Acute" Level 1 facility.

There is a Community Health Centre within the town and Public Dental Health Services are provided.

Hay Hospital has 12 medical beds and 16 State funded "other" beds 28 Department of Health Reporting System (DOHRS) beds). As well, three other (non-DOHRS) beds are provided with the Emergency Department, giving a total 31 beds.

Other health services indicated In Council's 2004-2009 social and Community Plan include:

- Two doctors;
- A dentist - visits occasionally;



- HayDays Retirement Hostel for the Elderly (24 beds);
- A chiropractor who visits once a month;
- A naturopath;
- Three masseurs;
- A private physiotherapist;
- An optometrist, visiting on a fortnightly basis; and
- A psychologist by referral.

The local Community Health Services include:

Staff:

- Child and Family Nurse/Registered Nurse Immuniser/Asthma Educator;
- District Nurse/Centre Manager; and
- Health Education Officer.

Visiting Services:

- Women's Health Clinic;
- Diabetic Educator once a month;
- Dietician 3 Wednesdays of the month;
- Audiometrist 1 day a month;
- Speech Pathologist every 3 months;
- Mental Health Service;
- ACAT (Aged Care Assessment Team);
- Occupational Therapist;
- Dental Clinic (for under 18 yr olds);
- Sexual Assault worker;
- Sexual Health;
- Drug and Alcohol worker; and
- Aboriginal Health Education.

Support Services:

- Home Care;
- Meals on Wheels;
- Respite Care;





- Home Maintenance;
- Shopmates;
- Cancer Patients Assist Society; and
- Australian Breast Feeding Association.

Services are operated as follows:

- Child and Family Health – 5 days/week;
- Community/domiciliary nursing – 5 days/week;
- Day Care Services – 2 to 5 days/week;
- General Community Health – 5 days/week; and
- Health Promotion – 5 days/week.

The Griffith Base Hospital Dental Clinic offers both child and adult dental services and caters for eligible clients across Murrumbidgee Health Service (MHS).

All children under 18 years of age undertaking fulltime education with a Medicare card can access the Child Dental Service.

Evidence is available linking the health and well-being of individuals and communities with socio-economic factors. Communities such as Hay indicated poorer health outcomes when compared to NSW state averages (see Section 4.4.1).

Table 6: Western Sector LGA Demographic and Health Indicators

LGA	ERP June 2007	Index Socio Economic disadvantage	Cancer incidence	Hospitalisations for ACS	Illness attributable to smoking
Wakool	4416	997	17.0	N/A	120
Berrigan	8446	980	22.7	195	170
Corowa	11,434	977	30.3	110	130
Deniliquin	7,673	950	32.2	170	155
Griffith	24,937	983	17.2	155	110
Hay	3,476	944	22.8	180	220
Carrathool	2,915	986	16.0	210	175
Jerilderie	1,677	997	19.4	155	120
Leeton	11,683	969	19.5	120	135
Murrumbidgee	2,571	952	19.5	155	190
Narrandera	6,166	932	31.1	205	255
Urana	1,286	945	28.2	N/A	180
Murray	6,841	990	19.5	110	90
Conargo	1,736	1,062	6.8	55	70
Total pop	95,357	NSW = 1,000			

(Source: GSAHS Western Sector Information (Staffnet))



Health Transport

Patient transport vehicles are located in Griffith, Hay and Hillston and provide transport between these centres. These centres also have access to helipad and airport facilities for emergency transport services.

The Child Flight Newborn and paediatric Emergency Transport System (NETS) and the NSW Air Ambulance provide air services as required to the region.

Community Health provides transport for people to attend clinics, medical and health related appointment.

The Murrumbidgee Division of General Practice operates the Hay GP Clinic. Public medical imaging services are also provided at Hay.

GSAHS (2007) indicates that by 2011 Hay will require eight community aged care places, 20 low care and 16 high care places. Unfortunately no projections have been prepared past 2011. However, because the over 70 age group in the Hay LGA is expected to double from 340 in 2001 to 640 in 2031 these places are expected to substantially increase.

GSAHS (2007) have proposed a strategy to promote the further evolution of the Hay Hospital and Health Services to a Hay Multipurpose Service (MPS) by integrating services from the Haydays Hostel.

4.4 Key Indicators and Trends

A number of indicators exist which can be used to assess how well the Hay community might respond to future change. The Australian Bureau of Statistics (ABS) has constructed four Socio Economic Indexes for Areas (SEIFA) from the Census of Population and Housing.

Each index summarises a different aspect of the socio-economic conditions of the Australian population using a combination of variables from the Census. These indexes can be analysed to determine relative advantage and disadvantage of LGAs across Australia which is discussed below

4.4.1 SEIFA

The Index of Relative Socio-Economic Advantage and Disadvantage contains 21 measures including low and high income, internet connection, occupation and education.

The Index of Relative Socio-Economic Disadvantage (2006) includes variables that reflect or measure relative disadvantage. The variables include low income, low education attainment, high unemployment and people with low skilled occupations – all factors likely to influence how a community copes with changing circumstances (ABS2001b).

The Australian benchmark is set at 1,000, where lower values indicate lower socio-economic status (NSW Department of Health 2006) and potentially indicating less relative capacity for community resilience in adverse socio-economic situations.

Across Australia 18% of NSW LGA's are represented in Decile 1 (the most advantaged) with most being in the Sydney area with Mosman and Ku-ring-ai scoring highest.



Across the region, Wagga Wagga and Albury scored well in Decile 7 and Griffith in Decile 6 indicating strong community capacity.

Hay at 943.51, scored in Decile 3 along with Narrandera, below Leeton (Decile 5) and Murrumbidgee (Decile 4).

The lowest score within NSW was Brewarrina on 764.57.

The scoring indicates that Hay is relatively disadvantaged in respect to 70% of other NSW LGAs which may impact on community capacity and resilience.

The Index of Education and Occupation (EDUOCC) Score by Local Government Area, NSW, 2006 for Hay was 937.93 EDUOCC scores ranged from 877.98 in the Cessnock LGA to 1,216.76 in North Sydney LGA (Hoist, 2006).

Socio-economic disadvantage is associated with a higher prevalence of health risk factors and higher rates of hospitalisations, deaths and other adverse health outcomes. The scoring for Hay is slightly above that of Griffith and although below the accepted national benchmark is not too bad relative to other inland LGAs.

4.5 Tourism

This profile has been sourced from Tourism NSW website, LGA profile and based on a three or four year average to June 2007.

The average visitor (domestic overnight) stays per night in Hay is 1.7 with a total spend averaging \$166. This figure is less than one third of the state and national average. However the number of tourism businesses within Hay is similar to the national and state average (51) as well the number of small businesses. Hay is unique as the number of micro businesses with one to four employees which at 45 is significantly above the national (22) and state (29) averages.

Typically, 62% of visitors to Hay come from interstate, with significantly less number of visitors from intrastate. Adelaide is a significant market for visitors, in view of Hay's location on the junction of the Sturt, Cobb and mid-Western Highways,

The purpose of visits is similar to state averages in respect to holidays/leisure, but significantly less in terms of family/friend visits (nexus with activities) with a significant "other" contribution possibly business related in view of Hay's strategic location between Sydney and Adelaide.

Motel occupation rates are similar to state averages but caravan park, caravan and camping accommodation demand is almost three times the national and state averages. Visitors have a significant reliance on the motor car. A review of the "Riverina" visitor profile indicates that it is likely most visitors comprise a typical "wanderer" mindset with no major time constraints. This presents an opportunity to capture these visitors for longer stays.

The primary desired activity involved eating out, which was similar to the State average however 40% of visitors enjoyed just walking and driving around which is significantly higher than State (27) and national (28) averages.

Most visits involved one to two nights only and were part of multiple stopovers.





4.6 Population Projections

Table 7 shows the population change of the Hay LGA from 1976 to 2006

A growth rate over a period can be calculated using a depreciation formula as follows, which substitutes fp for future value and pp for present value where:

$$\begin{aligned} fp &= pp(1-r)^n & fp &= \text{future population} \\ fp/pp &= (1-r)^n & pp &= \text{present population} \\ (fp/pp)^{1/n} &= 1-r & r &= \text{negative population growth rate expressed as a decimal} \\ r &= (fp/pp)^{1/n}-1 & N &= \text{number of years} \end{aligned}$$

Over the 30 year period from 1976, the rate of growth was –479 persons or -12.4% and the average annual rate of population change for the Hay LGA was -15.97 persons or -0.44%.

Table 7: Population Change – 1976 – 2006

	Year						
	1976	1981	1986	1991	1996	2001	2006
Population	3,862	3,949	3,896	3,808	3,822	3,562	3,383
Intercensal Change		87	-53	-88	14	-260	-179
1976-2006 Growth rate (%)							-12.41
Annual Average Percentage Change	-0.4						

Using the known recorded population from 1976 to 2006 and the annual percentage change as a benchmark, the predicted population of Hay LGA to 2041 can be calculated as shown in Table 8.

Table 8: Predicted Population Hay LGA 2006-2041¹

Year	Projected Population	Annual Percentage Growth Rate
1976	3,862	-0.4%
2006	3,383	
2011	3,309	
2016	3,237	
2021	3,166	
2026	3,097	
2031	3,030	
2036	2,963	
2041	2,899	

¹ Based on actual Growth Rate 1976-2006.



These projections are more optimistic than other projections prepared over recent times. For instance, in 2004 NSW DoP (DIPNR 2004) predicted that Hay would have the third highest population decline of all the 15 LGA's within the Murrumbidgee Statistical Division by 2031 with a predicted average annual population loss of 0.9%. One year later, in their 2005 population projections NSW DoP (2006) estimated the Hay LGA population to 2031 as declining to 2930 persons at an average annual population loss of between -0.8 to 0.6%.

These population projections are shown in Table 9 and compared to the projections using the recorded 2006 population and actual rate of change from 1976 to 2006.

Table 9: Estimated Resident Population Hay LGA – 2006 to 2041

	2001	2006	2011	2016	2021	2026	2031	2036	2041
Projected population (1)		3,383	3,309	3,237	3,166	3,097	3,030	2,963	2,899
Projected population (2)	3,600	3,441	3,289	3,143	3,005	2,872	2,745	2,623 (4)	2,508 (4)
Projected population (3)		3,460	3,340	3,230	3,130	3,030	2,930	2,830 (4)	2,730 (4)

Notes

- (1) Based on actual growth between 1976-2006 and recorded 2006 census population.
- (2) Based on Table 11.1 NSW Statistical Local Area Population projections 2001-2031, 2004 release average annual growth – 0.9%.
- (3) Based on Table 11.1 NSW Statistical Local Area Population projections 2001-2031, 2004 release average annual growth -0.9%.
- (4) Projections extended by author for report comparison purposes.

These projections suggest that the population of the Hay LGA is predicted to decline over the planning horizon of this study from a recorded population of 3,383 persons in 2006 to between 2,900 to 2,500 persons in year 2041.

When predicting the 2040 population for Hay LGA it is considered appropriate to use a mid range forecast of 2700 persons. This takes into account the actual annual percentage change since 1976 as well as the recent conservative projections identified in Table 9.

It is also useful to consider the characteristics of the Hay Urban Centre to the Hay LGA as a whole as shown in Table 10.

This shows that most of the significant change in population loss and housing occupation of private dwellings has occurred in the rural part of the Hay LGA with modest change in the main urban centre of the Hay Township. Despite a small negative population growth in the Hay Township there has been almost a 1% increase in the occupation of private dwellings. While 15% is the average vacancy rate (proportion of unoccupied dwellings of total private dwellings) the vacancy rate in the rural area is significant at 24%.

There has been a significant increase in the use of formalised rental accommodation in the urban centre with almost a 38% increase there and across the Hay LGA as a whole.



Table 10: Population and Dwelling Change Hay LGA

	Total Hay LGA				Hay Urban Area				Rural			
	2001	2006	Difference	% Change	2001	2006	Difference	% Change	2001	2006	Difference	% Change
Population	3,562	3383	-179	-5.03	2,692	2,636	-56	-2.08	870	747	-123	-14.14
Total Private Dwellings	1,607	1603	-4	-5.03	2,692	2,636	-56	1.83	408	382	-26	-6.37
Occupied Dwellings	1,346	1346	0	-1.53	163	166	3	1.83	310	291	-19	-6.13
Unoccupied Dwellings	261	257	-4	-1.53	163	166	3	1.84	98	91	-7	-7.14
Vacancy Rate	1,6.24	16.08			13.59	13.60			24.02	23.82		
Separate House	1,178	1,174	-4	-0.34	889	897	8	0.90	289	277	-12	-4.15
Real Estate Agent %	21.5	26.3	4.8	22.33	23.8	32.8	9					
Housing Authority %	15.5	14.7	-0.8	-5.16	17.6	17.6	0	0.00				

4.7 Development Trends

Development trends can be analysed to determine the level of development that has occurred in the Hay LGA in the past and identify likely future trends.

Figure 8 shows that 2001 had the highest number of development applications lodged with The Council over the period, whereby 2001 comprised 22% of the total value for all applications lodged over the 10 year period from 1990 to 2010.

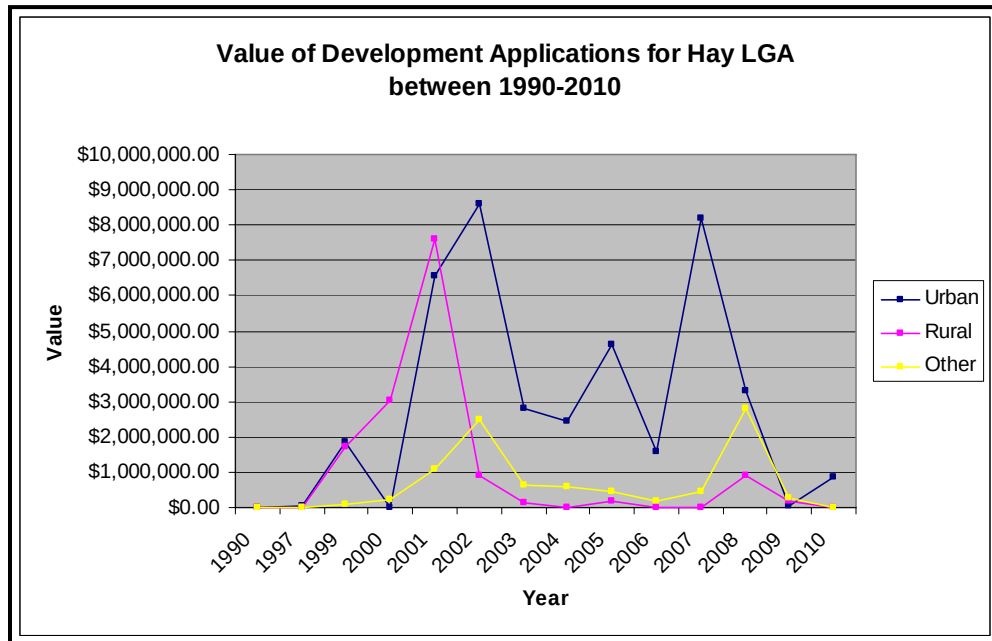
Figure 7 shows considerable yearly fluctuations in the value of development applications lodged with 2002 and 2007 being significant years.

Despite these yearly fluctuations, the 1990 to 2009 trend line shows that the value of development applications lodged within the Hay LGA is slightly increasing.

Figure 8 shows that the average annual number of development applications lodged with Council over the 20 year period is 74 and the main type of application lodged was for minor development such as the construction of carports, garages and sheds.



Figure 7: Value of Development Applications Lodged - Hay Shire Council - 1990 to 2010



The two major changes which had the potential to impact upon development applications are the introduction of exempt and complying development in 1998 and the GST which came into effect in July 2000. A review of the data suggests these two changes have had minimal impact on development application trends.

Figure 8: Number of Development Application - Hay Shire Council - 1990 to 2010

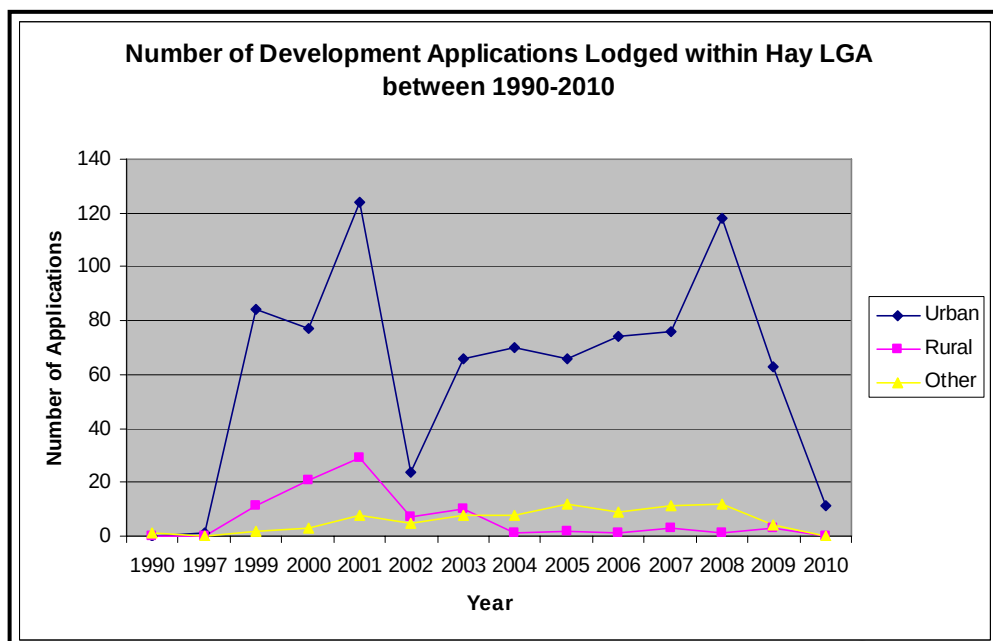
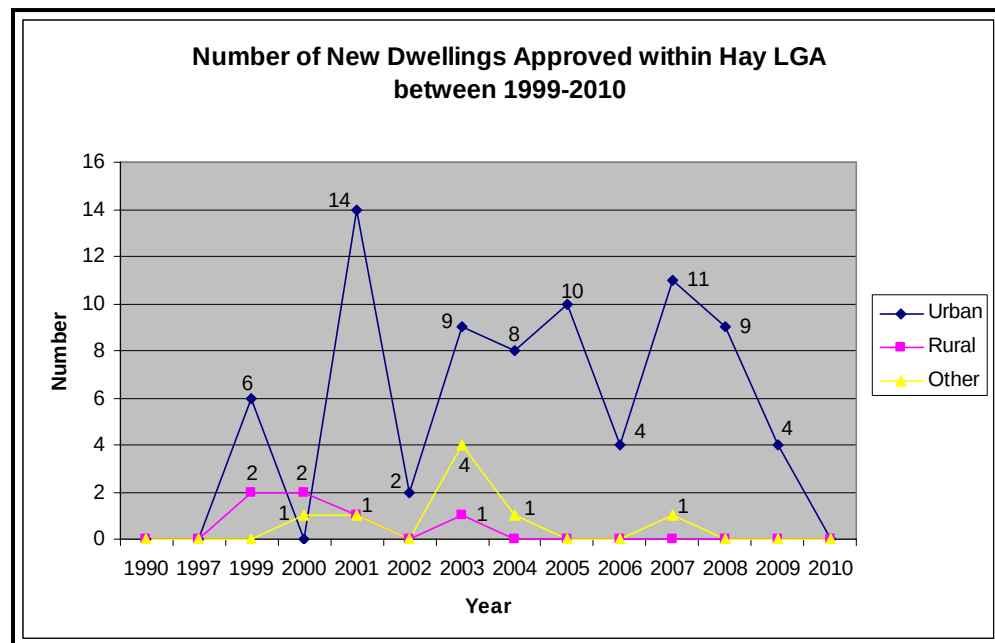




Figure 8 shows similar yearly fluctuations with 2001 and 2003 indicating the most new dwellings approved within Hay LGA over the period. However, the trend line shows this activity reducing over the period. The average number of development applications approved for new dwellings over the 10 year period was 8.3.

The rural villages of Maude and Booligal had a total of four development applications that were approved between 1999 and 2010.

Figure 9: Number of New Dwellings Approved Hay Township 1999 to 2009



Note: The above graph depicts the number of development approvals for new dwellings approved between 1999 and 2010. "New dwellings" include residential houses, units, villas, granny flats and transportable homes

Table 11: Number of Lots Created in Hay LGA By Land Use Category - 1999 to 2009

Subdivision Land use Category	Number of Lots Created													
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Average	Highest	Lowest
Residential	6	5	10	2	4	26		7	4	7	4	7.5	26	2
Commercial		3			2	2	2	2	10	12		4.4	12	2
Industrial									7			N/A	N/A	N/A
Rural	4	5			6	2	10	2	6		2	4.6	10	2
Miscellaneous					7	2				2	4	3.7	7	2

In Table 11 most of the residential subdivision occurred within the Hay Township. In the last ten years there has been one major subdivision of 26 lots which occurred in the north eastern area of the town.

The majority of all new lots created over the last 10 years have been residential lots located in the northern sector of the Hay Township.



Commercial subdivision has been skewed throughout the Hay Township over the past 10 years. In 2007, 10 new lots were created, the majority being in the north western sector. In 2008 12 new commercial lots were created, these were located on the Cobb Highway and included a motel.

There has been little industrial subdivision occurring within Hay over the last 10 years with the exception of 2007 where seven new lots were created in the north western sector.

The majority of rural subdivisions since 1999 have occurred to the west of Hay Township with 2005 a significant year for rural subdivision, comparatively.

Table 12 shows the number of sales by Development Control Plan (DCP) precinct in the Hay Township from 2000 to 2009.

Although the data contains some limitations due to GIS boundary definitions the information is reliable and provides a good indication of sales activity in the various areas over the period.

Table 12: Number of Sales by DCP Precinct Hay Township 2006 to 2009

Number of Sales by DCP Precinct Hay Township 2000 to 2009										
DCP Precinct	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Residential 2a	3	4	5	4	6	2	2	4	3	3
Residential 2b	23	27	24	33	48	44	51	44	23	28
Commercial	3	5	15	9	9	17	12	16	10	8
Industrial		1		1			2	1		
Public Open Space			1		1	1	1	1		
Environmental Protection		1		1		1				
Special Use		1			3		1	1	1	
Total	29	39	45	48	67	65	69	67	37	39

The DCP has the objective of encouraging medium density development in “Zone 2b” which comprises the predominant residential precinct in Hay and where most sales activity has occurred from 2000 to 2009.

Table 12 indicates that the 2(a) precinct has been subject to a steady lower number of sales in the period 2000-2009.

- In the 2(b) precinct average yearly sales appear where approximately 27 lots (years 2000 to 2002; 2008 to 2009). However there has been a significant increase in sales activity between 2003 to 2007;
- Commercial sales activity is characterised by early rises and falls, with an average of approximately 8 lots sold annually;
- At possibly one or two sales per year industrial sales activity is minimal.



The data shows that the period 2004 to 2007 has seen an escalation in sales activity across most land use sectors.

During 2003 to 2007, and despite prevailing drought conditions, there was still confidence in irrigated agricultural production due to fair to reasonable water allocations. However zero and reduced water allocations since 2007 has adversely impacted on optimism. This means that an escalation in sales activity can be related to water allocations and potentially agricultural production levels.

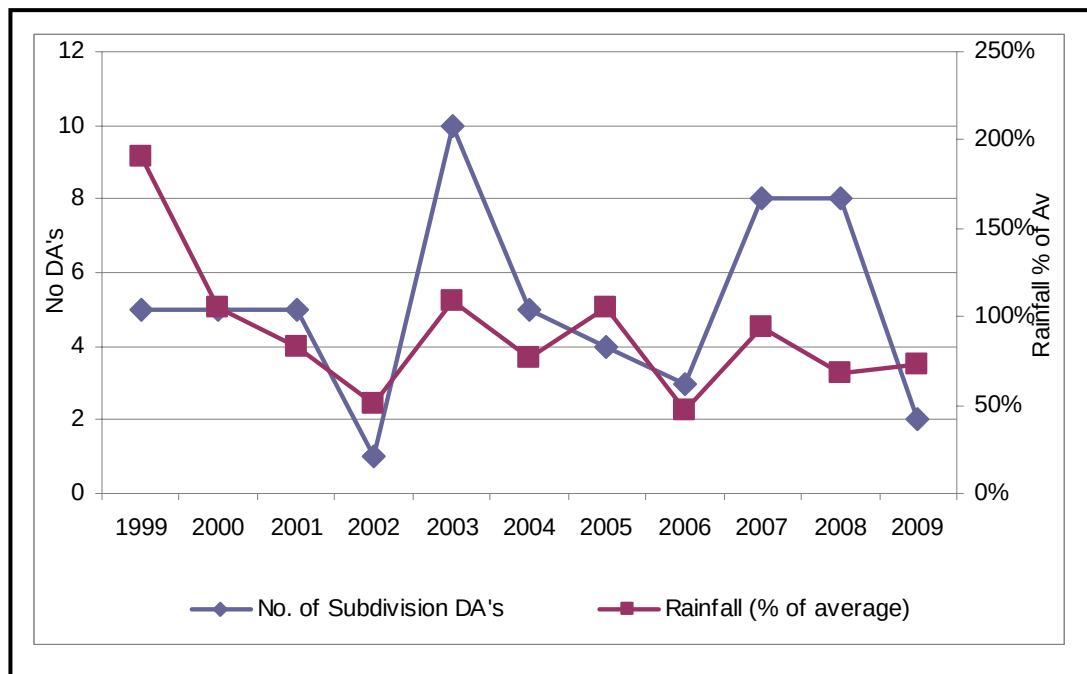
4.8 Other Drivers

4.8.1 Climate

Climate has been demonstrated to be a significant driver impacting on shire development trends. Section 8.0 of this report discusses agricultural drivers and trends. Agricultural production in the Hay LGA has historically been dependent on rainfall.

Figure 10 presents the number of development approvals for Hay LGA and annual rainfall as a proportion of the long-term average for 1999 to 2009. The similar shape of both lines in Figure 10 demonstrates that development rates follow a pattern which can be related to agricultural production levels.

Figure 10: Number of Development Approvals for Subdivision - Hay Shire Council - 1990 to 2009





4.9 Key Findings

The key findings presented in the socio-economic context are:

- Hay LGA has socio-economic characteristics which suggest that on average the community is not as well placed as other NSW LGA communities to remain resilient when adversely impacted;
- The Hay LGA population is expected to decline to a midrange forecast of 2,700 persons over the thirty year planning horizon of this study to 2041;
- Occupancy rate of Hay LGA is expected to further reduce from 2.51 (2006) to 2.38 by 2038 commensurate with State trends;
- The estimated vacancy rate (unoccupied dwellings) based on 2006 Census is 15%;
- The proportion of dwellings comprising medium density development is approximately 10%;
- The median age of residents within the Hay LGA is expected to be around 49 years of age by 2031 and older by 2041;
- A quarter of the regional population will be over 65 years of age, with the Hay LGA almost doubling the over 70 2001 population by 2031;
- Development rates in Hay LGA are strongly influenced by rainfall patterns, irrigation allocations and agricultural production levels with significant fluctuation potential between 'good and bad' years;
- In Hay LGA the agricultural and tourism sectors are key drivers of economic development; and
- There is potential to capture "wanderers" and increase the average number of overnight stays through strategic development of tourist facilities including improved signage and urban design as well as entrance gateway development.





5.0 LEGISLATIVE AND POLICY CONTEXT

This section examines the primary legislation and government policies impacting local planning decisions. These include

- International treaties, conventions and strategies;
- Commonwealth and State legislation;
- Inter-governmental agreements, national and State strategies, policies and guidelines; and
- Regional and local planning policies and Ministerial directions.

5.1 International Treaties, Conventions and Strategies

A range of international treaties, conventions and strategies influence Australian public planning policy and best practice. These are identified in Annexure 1 (Table 1).

They include the Rio Summit or Agenda 21 which introduced the concept of ecological sustainable development and resulted in various conventions including; the convention for biological diversity, the convention for wetlands, and the convention for the combat of desertification.

Annexure 1 (Table 1) identifies the primary treaties conventions and strategies which are relevant for this project. The table summarises the intent or purpose of the arrangements and identifies the relevance to this project.

5.2 Commonwealth and State Legislation

The primary legislation governing land use planning in NSW is the *Environmental Planning and Assessment Act 1979* (The Act) and the *Environmental Planning and Assessment Regulation 2000* (The Regulation).

The objects of the Act are:

- (a) To encourage:
 - (i) The proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment,
 - (ii) The promotion and co-ordination of the orderly and economic use and development of land,
 - (iii) The protection, provision and co-ordination of communication and utility services,
 - (iv) The provision of land for public purposes,
 - (v) The provision and co-ordination of community services and facilities, and
 - (vi) The protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats, and



- (vii) Ecologically sustainable development,
 - (viii) The provision and maintenance of affordable housing,
- (b) To promote the sharing of the responsibility for environmental planning between the different levels of government in the State, and
 - (c) To provide increased opportunity for public involvement and participation in environmental planning and assessment.

Part 2 of the Regulation provides for the establishment of regional planning panels as the planning authority for proposed local environmental plans.

Part 3 of the Act sets out the plan making requirements and provides for the contents of an environmental planning instrument and a process for review of existing instruments and staged implementation of the standard instrument. Division 2 of the Act provides for State environmental planning policies and Division 4, local environmental plans.

5.2.1 Planning Reforms

There has been substantial reform to the plan making system in NSW over recent years.

The Planning Reform Bills Guide (2008) produced by the Department of Planning highlighted the need for change with the following comments

The current NSW planning system was created nearly 30 years ago and key aspects are due for reform. After examining the system, the NSW Government has found problems, including:

- *Residents in some areas of Sydney waiting upwards of seven months to get approval for their new homes, or even minor renovations.*
- *Applicants routinely spending up to \$20,000 on lawyers and experts taking their often minor matters to the Land and Environment Court.*
- *Perceptions that some developments are being decided for political rather than planning reasons.*
- *Infrastructure contributions being used as a backdoor and uncapped tax on the family home.*
- *Concerns about potential conflicts of interest in regard to accredited certifiers.*
- *Most local environmental plans take over two years to complete, often longer."*

The Department identified major reforms being required in the areas of development assessment, review procedures, infrastructure contributions, plan-making, accredited certifiers and small scale development.

Significant reforms to date include the establishment of the NSW Planning Assessment Commission and six Regional Planning Panels, the preparation of the *SEPP (Exempt and Complying Development Codes) 2009* and the *NSW Housing Code and Commercial Building Code* as well as the *Standard Instrument (Local Environmental Plans) Order 2006*.



Much of this has occurred since the *Environmental Planning and Assessment Amendment Bill* was assented to in mid-2008.

The NSW government has committed to reduce the number of local environmental plans in NSW from 5,500 to 152, one for each local government area and this is gradually being implemented through the standard instrument process assisted through the Planning Reform Fund. The Planning Reform Fund supports initiatives to improve and streamline the planning process while enhancing community involvement. The Planning Reform Fund has been established to support local councils to strategically review and implement local plans according to the standard instrument.

This Hay LEP review project has benefited from funding provided through this program.

The *Environmental Planning and Assessment Amendment (Plan Making) Regulation 2009* commenced on 1 July 2009 and incorporates reform provisions including allowing the Minister to direct a Joint Regional Planning Panel to be the relevant planning authority under s54 of the Act for a proposed LEP.

Other relevant Commonwealth and State legislation relevant to NSW planning is identified in Annexure 1 (Table 2). Table 2 includes a description of the key aspects of the legislation as well as its relevance to the Hay LEP review project.

One of the most significant statutes impacting the Hay Local Government area is the Water Management Act 2000 which has been introduced and provides for water management plans and water sharing plans and which provide various objectives and principles for water management within this semiarid environment. Water, being one of the most significant aspects impacting development in terms of mandating and appropriate supply so as to avoid adverse environmental impacts to the water source and volumes.

5.2.2 National, State and Regional Guidelines, Strategies, Plans and Policies

There is a plethora of guidelines, strategies, plans and policies that impact on the Hay LEP project. A significant number of strategies and policies have been affected since the Rio Summit and the National Water Initiative (NWI 2001). The National Water Initiative and Councils of COAG Water Reform agenda has been responsible for the development of some of these policies. There is a significant focus on biodiversity and water conservation particularly in view of the predicted impacts associated with climate change and the need to plan for the sustainability of national resources. As well, a range of government programs have been affected to drive policy and implement changes towards sustainability. At the same time there has been a concerted effort by government to identify the condition and health of various public resources including natural resources through various audits such as National Land and Water Resources Audit (NLWRA) with a view to monitoring impacts in condition over time and monitoring the effectiveness of public policy. These guidelines and policies are relevant because in the Hay LGA there are significant constraints to development because of a range of factors, this includes the existence of significant wetland areas, the significance of water and soil resources and the condition and location of water, soil and biological resources. Pivotal to the various state programs and policies is the overarching NSW State Plan which identifies the direction of the government and which local planning policy should be consistent with.





5.2.3 Environmental Planning Instruments

A range of environmental planning instruments impact local planning policy including the existence of State Environmental Planning Policies (SEPPs), including deemed SEPPs, Local Environmental Plans (LEP's) and DCP's.

The Hay LEP Review project aims to ultimately produce a local environmental plan in accordance with the standard template. It is useful to examine the various local provisions that apply to the Hay LGA to determine their relevance for consideration in future planning as well as have regard to the State policies impacting local planning.

The NSW government is committed to ensuring that government regulations achieve their objectives and do not impose unnecessary restrictions or burdens on the community. One focus of the State Plan is to reduce red tape. The government has produced Guidelines for Better Regulation so that that all new legislation is provided with a *Better Regulation Statement* to demonstrate compliance with these objectives.

5.3 Rural Planning Policies

Planning policies that relate specifically to rural lands fall within the categories mentioned above but deserve separate consideration in this report given the importance of agriculture to the Hay LGA.

The NSW Government Agricultural Policy of direct relevance as advised by the DII to this project was stated in their section 62 Consultation letter dated 26 August, 2009:

- Policy for Sustainable Agriculture in NSW 1998 (NSW Government, 1998);
- Policy for the Protection of Agricultural Land (NSW DPI, 2004); and
- State Environmental Planning Policy (Rural Lands) 2008.

A summary of the relevant sections within these policies is provided as follows.

5.3.1 Policy for Sustainable Agriculture in New South Wales 1998 (NSW Government 1998)

This document was produced by the then NSW Agriculture in 1998. Within the forwarded of this document signed by Bob Carr MP, Premier of NSW is the following quote:

Over the past two decades, farming and associated industries have suffered declining terms of trade to an extent where many agricultural businesses are no longer viable. This situation has often led to short term decision making for survival rather than strategic decision making for long term sustainability, despite widespread recognition of the need to address the causes of natural resource degradation in agricultural environments. A sustainable rural economy and healthy environment go hand in hand.



Despite this quote is now 12 years old, the comments are still relevant to agriculture in the Hay LGA. In particular the key point from the above quote with broad application is:

“Short term decision making for survival rather than strategic decision making for long term sustainability.”

Survival based decision making has for many years been forced upon many agricultural businesses by declining terms of trade. The on-going drought has compounded the issue of survival, stretching business resources and preventing strategic decision-making and implementation.

The following objective is listed within Section 7.6 (Integrated Management) of the policy.

“Agricultural industries, communities and governments working together to achieve positive economic, environmental and social outcomes.”

Some of the strategies that are listed to achieve this objective that are relevant to the Hay LGA include:

“Ensure the equitable and efficient allocation of land and other natural resources between agriculture and other sectors of the community.

Ensure land use planning is undertaken, where appropriate, in association with agriculture to avoid conflict that may jeopardise agriculture’s sustainability.

Develop and adopt appropriate planning mechanisms to avoid future conflict over land use (eg. competing demands for land for agricultural, residential and recreational uses).”

These strategies highlight particular challenges for the Council in best servicing the needs of the community and local industry, including agriculture. The recommendations in relation to rural land planning provided in this report consider the need to minimise conflict.

5.3.2 Policy for the Protection of Agricultural Land (NSW DPI, 2004)

The policy for the *Protection of Agricultural Land* (DPI, 2004) states:

The planning system should provide certainty and security for agricultural enterprises and enable agricultural enterprises to maintain efficiency by responding to future market, policy, technology and environmental changes.

The ability of agricultural businesses to grow, adapt and respond to trends is a key business driver.



Section 2 of the policy is titled “Conservation of Land” and includes the following quote:

“Evaluation of the economic returns from an area of land should be based on good agricultural practice, not on potentially sub-optimal practices that may currently be utilised.”

The on-going drought has potentially blurred the lines between best business practice and sub-optimal practises.

Section 3 of the policy titled “Minimum size of holdings for dwelling entitlement” states:

“Criteria in environmental planning instruments to determine the minimum size of holdings necessary for a dwelling entitlement should be developed to suit local needs and conditions.

Explanation: Setting the minimum area necessary for a building entitlement is a commonly used tool to influence residential land uses in agricultural zones. The objective is to reduce opportunities for conflict with commercial agricultural enterprises by minimising residential uses that are not directly associated with commercial farms. Setting a large minimum is a disincentive to life style purchasers but the size also needs to allow for entry by young farmers and the criteria should also allow for more intensive forms of agriculture where appropriate.

While specifying a minimum area for a dwelling entitlement has been an effective strategy that is easily understood and is efficiently implemented, Councils should also consider other approaches to achieving the goal of minimising conflict in agricultural production zones so that farms can operate without unnecessary restrictions.

The minimum area for a dwelling entitlement and other provisions in Environmental Planning Instruments to regulate subdivisions should take account of:

- *The agricultural productivity and suitability of the land in question;*
- *The nature and requirements of agricultural industries in the area being considered;*
- *The risk of creating land use conflict;*
- *The current distribution of property sizes; and*
- *Cumulative impacts.”*

The above points have been considered in recommendation for minimum lot size provided in Section 14.4 of this report. Minimum lot size needs to not only consider what constitutes a commercial business but also allow for entry of young farmers and more intensive forms of agriculture with the ultimate goal of minimising conflict in agricultural production zones.





5.3.3 State Environmental Planning Policy (Rural Lands) 2008

The *State Environmental Planning Policy (Rural Lands) 2008* (Rural Lands SEPP) contains the following aims:

“Aims of Policy

The aims of this Policy are as follows:

- (a) *To facilitate the orderly and economic use and development of rural lands for rural and related purposes;*
- (b) *To identify the Rural Planning Principles and the Rural Subdivision Principles so as to assist in the proper management development and protection of rural lands for the purpose of promoting the social, economic and environmental welfare of the State;*
- (c) *To implement measures designed to reduce land use conflicts;*
- (d) *To identify State significant agricultural land for the purpose of ensuring the ongoing viability of agriculture on that land, having regard to social, economic and environmental considerations;*
- (e) *To amend provisions of other environmental planning instruments relating to concessional lots in rural subdivisions.”*

Some comments in relation to these aims are:

- Aims (a), (b) and (c) encapsulate the policies detailed Section 5.3.1 and 5.3.2 of this report;
- State significant agricultural land stated in (d) is yet to be identified in NSW, and unlikely to occur in the Hay LGA; and
- All concessional allotments provisions have been removed by this as a result of (e).

Part 2 of the Rural Land SEPP is titled “Rural Planning Principles” and states:

“Rural Planning Principles

The Rural Planning Principles are as follows:

- (a) *The promotion and protection of opportunities for current and potential productive and sustainable economic activities in rural areas;*
- (b) *Recognition of the importance of rural lands and agriculture and the changing nature of agriculture and of trends, demands and issues in agriculture in the area, region or State;*
- (c) *Recognition of the significance of rural land uses to the State and rural communities, including the social and economic benefits or rural land use and development;*



- (d) *In planning for rural lands, to balance the social, economic and environmental interest of the community;*
- (e) *The identification and protection of natural resources, having regard to maintaining biodiversity, the protection of native vegetation, the importance of water resources and avoiding constrained land;*
- (f) *The provision of opportunities for rural lifestyle, settlement and housing that contribute to the social and economic welfare of rural communities;*
- (g) *The consideration of impacts on services and infrastructure and appropriate location when providing for rural housing;*
- (h) *Ensuring consistency with any applicable regional strategy of the Department of Planning or any applicable local strategy endorsed by the Director-General."*

Note: Under section 117 of the Act, the Minister has directed that councils exercise their functions relating to local environmental plans in accordance with the Rural Planning Principles. Under Section 55 of the Act, the Minister may also direct a council to prepare a local environmental plan.

The recommendations in Part F of this report have given due consideration to these principles.

Part 3 of the Rural Lands SEPP is titled "Rural subdivision and dwellings". Clause 8 states:

"Rural Subdivision Principles

The Rural Subdivision Principles are as follows:

- (a) *The minimisation of rural land fragmentation;*
- (b) *The minimisation of rural land use conflicts, particularly between residential land uses and other rural land uses;*
- (c) *The consideration of the nature of existing agricultural holdings and the existing and planned future supply of rural lifestyle land when considering lot sizes for rural lands;*
- (d) *The consideration of the natural and physical constraints and opportunities of land;*
- (e) *Ensuring that planning for dwelling opportunities takes account of these constraints.*

Note: Under Section 177 of the Act, the Minister has directed that councils exercise their functions relating to local environmental plans in accordance with the Rural Planning Principles. Under Section 55 of the Act, the Minister may also direct a council to prepare a local environmental plan."



The Rural Lands SEPP does not require Council to review or change their current LEP's minimum lot sizes, but does provide voluntary options to review the same. This report has assessed land use in the Hay LGA and reviewed minimum lot sizes. Council's LEP has only one minimum lot size of 1,500ha which is not reflective of current agricultural practices in the Hay LGA.

The SEPP includes allowance for a subdivision of any size for the purpose of primary production where no dwellings are located or proposed.

The SEPP was accompanied by Planning Circular PS08-002 State Environmental Planning Policy (Rural Lands) 2008 and a new Section 117 Direction.1.5 Rural Lands.

"Section 117 Direction 1.5 – rural lands requires that where a Council seeks to review its minimum lot size it does so in accordance with the rural subdivision principles."

These rural subdivision principles have been considered in the process of deriving recommended minimum lot sizes as detailed in Section 14.4 of this report.

The Rural Planning and Rural Subdivision Principles mentioned above have been considered throughout the course of this project. Project recommendations are in accordance with these principles and have considered the objectives and provisions of the Rural Lands SEPP. The following discussion identifies each of the principles and discusses their relevance for Strategy recommendations in respect to rural planning and minimum lot size.

(a) The promotion of protection of opportunities for current and potential productive and sustainable economic activities in rural areas.

Current rural land use activities in the Hay LGA have been identified through a number of mechanisms including stakeholder consultation and desktop assessment. Consultation has occurred with key stakeholder groups including agencies such as DI & I, services providers and landholder representatives.

Rural resources have been identified through stakeholder consultation, desktop assessment, and constraints analysis. This includes irrigated and non-irrigated agricultural land uses, forestry and extractive industries, all of which contribute to the local, regional and state economy. Because planning controls need to be flexible to provide opportunities for changes in agriculture, existing industries and potential economic activities, the project assessment has included an analysis of agriculture and the changes and trends impacting agriculture including those likely to impact in the future.

Holdings analysis has provided further information on land sizing requirements to sustain viable economic activities. Lot sizes recommended considered current and potential productive and sustainable economic activity. A number of minimum lot sizes have been recommended to facilitate key agricultural industries and to protect productive agricultural resources.

(b) Recognition of the importance of rural lands and agriculture and the changing nature of agriculture and of trends, demands and issues in agriculture in the area, region or state.

Agricultural economic activities in rural areas contribute significantly to the local, regional and state economy. In 2006/07 it was estimated that agriculture contributed \$7.3B to the economy of NSW and without the impact of drought the value of agricultural commodities that would have been produced in Hay has been predicted at \$99M. This Strategy has identified agriculture as one of the most significant contributing factors to the local economy and one of the key drivers of economic prosperity to the community.



In Hay, trends impacting agriculture include:

- Irrigated cropping systems;
- Intensification of cropping systems;
- Water use efficiencies;
- Pastoral production trending away from wool to meat production;
- Growth in off-farm income with average off-farm income in the Riverina being estimated by ABARE at \$20,000 per annum; and
- Drought impacting trends.

Planning for rural areas should recognise these trends and changes to agriculture and their impact on farm sizes, sector restructuring, changing farm practices and productivity and provide appropriate controls through planning to facilitate future agricultural development.

The Hay Strategy has considered the changing nature of agriculture and the trends, demands and issues impacting it. The Strategy recognises social, economic and environmental aspects which impact on how agricultural operations are currently conducted and land use activities managed. While some of the aspects impacting agriculture in the Hay LGA are unique, many aspects are similar to those impacting agriculture in other areas. This includes greater reliance on off-farm income, greater accessibility and mobility, diversity and best farm management practices including land stewardship. This Strategy recognises planning for rural land use activity, needs to be flexible and farm adjustment facilitated to enable rural producers to cope in changing cyclic conditions including different seasonal and global conditions.

(c) Recognition of the significance of rural land uses to the state and rural communities including the social and economic benefits of rural land use development.

The proper management and development of rural areas has social and economic benefits to the local and wider community. The Strategy recognises the significance of rural land uses to the Hay LGA and recommends the protection of agricultural resources through land use zoning. The Strategy identifies the need for planned housing opportunities that do not conflict or undermine rural land use activities. Land use planning should facilitate and assist those engaged in agriculture to adapt their farming practices to cope with changing conditions, including facilitating irrigation and intensification of systems. The Strategy recognises that for agricultural industries to grow and prosper into the future there needs to be economies of scale and opportunities to diversify. The Strategy recommendations in respect to rural planning, minimum lot size and rural dwellings attempt to facilitate and provide opportunities for the development of agriculture. Without any development the agricultural sector will not be able to grow and expansion and investment opportunities are curtailed.

(d) In planning for rural lands to balance the social, economic and environmental interests of the community.

Rural lands have a range of social, economic and environmental values, including agriculture, extractive resources, water resources, environmental services, tourism, housing, conservation, landscape values and sustaining rural communities. The Strategy identifies the key assets and resources of the community and puts forward a strategic planning framework based on a balanced approach for the optimisation of community values to facilitate community sustainability in the future.



(e) *The identification and protection of natural resources, having regard to maintaining biodiversity, the protection of native vegetation, the importance of water resources and avoiding constrained land.*

The Strategy has identified key biodiversity resources, including natural assets to the Hay LGA. Constraints mapping has identified significant environmental values including surface water resources, (including wetlands), groundwater sources, vegetation systems and habitats, and soil resources. Through the identification of these resources, the Strategy recommends the protection of the key and significant resources (soil, water and biological) through sensitive land use planning, including consideration of land capability and suitability for development.

(f) *The provision of opportunities for rural lifestyles, settlement and housing that contribute to the social and economic welfare of rural communities.*

One of the key issues identified through this project has been the desire for rural lifestyle opportunities close to the river. This demand for rural housing has both social and economic advantages and disadvantages for rural communities such as Hay. Through a range of methods including multi-criteria analysis, potentially suitable sites have been identified. The option recommended includes the need to protect and conserve key natural resource systems, yet promote social and economic development opportunities including bolstering community resilience, through provision of rural housing options. If the report recommendations are adopted the community will benefit from well planned rural lifestyle development which will contribute to economic prosperity and community capacity as well as the protections, conservation and enhancement of natural systems.

(g) *The consideration of impacts of services and infrastructure and appropriate location when providing for rural housing.*

In planning for housing in rural areas, the cost and impacts to the community, councils and state government of providing access to services and infrastructure is required to be considered. The cost to local councils for basic services, such as roads, (including maintenance), water, garbage collection etc, should be a significant factor in considering rural housing opportunities in remote locations. Of relevance to the Strategy is the typical standard of infrastructure required by council to the community in rural lifestyle areas. The Strategy recommends a range of options to provide rural housing opportunities. These options include permitting dwellings on viable holdings, facilitation of dwellings for rural workers, planned residential areas in urban locations, a range of rural lifestyle hobby farms and lifestyle development areas. Development and location criteria are subject to land use demand, should avoid constrained land, not result in land use conflict and optimise social, economic and environmental outcomes.

5.4 Standard Instrument (Local Environmental Plans) Order 2006

The NSW planning system is currently under review. State Environmental Planning Policies are being revised and regional environmental plans are being rebranded as deemed SEPPs. In March 2006 the Standard Instrument (Local Environmental Plans) Order 2006 was made and was substantially amended in December 2007. This order sets out a template for new LEP's with which every local government authority must comply. Many provisions of SEPPs and REPs are to be included in these new LEP's. A new set of ministerial directions, under section 117 of the *Environmental Planning and Assessment Act 1999* (EP&A Act), has also been issued to give guidance for the specific provisions of LEP's.

The Standard Instrument contains 34 land use zones as well as a set of compulsory and optional provisions covering such matters as heritage conservation, exempt and complying development, and development standards. The intention is to create a standard LEP framework across NSW using the same zones, definitions and clauses. A list of the standard land use zones contained within the Standard Instrument is shown in Table 13.

**Table 13: Standard Land Use Zones in the Standard Instrument (LEP) Order 2006**

RU1	Primary Production	IN1	General Industrial
RU2	Rural Landscape	IN2	Light Industrial
RU3	Forestry	IN3	Heavy Industrial
RU4	Rural Small Holdings	IN4	Working Waterfront
RU5	Village	SP1	Special Activities
R1	General Residential	SP2	Infrastructure
R2	Low Density Residential	SP3	Tourist
R3	Medium Density Residential	RE1	Public Recreation
R4	High Density Residential	RE2	Private Recreation
R5	Large Lot Residential	E1	National Parks and Nature Reserves
B1	Neighbourhood Centre	E2	Environmental Conservation
B2	Local Centre	E3	Environmental Management
B3	Commercial Core	E4	Environmental Living
B4	Mixed	W1	Natural Waterways
B5	Business Development	W2	Recreational Waterways
B6	Enterprise Corridor	W3	Working Waterways
B7	Business Park		

From 1 July 2009, relevant planning authorities are to exercise their plan-making functions (under Divisions 4 and 5 of Part 3 of the EP&A Act) in accordance with the s117 Ministerial directions. These directions apply to both planning proposals and pending LEP's. As the Council had resolved to prepare a draft LEP under section 54 of the Act in accordance with the standard instrument prior to 1 July 2009, the most recent directions in respect to planning proposals do not apply.

The directions are identified in Table 14:



Table 14: Section 117 Directions under the Environmental Planning and Assessment Act 1979

No	s117 Ministerial Directions	Intention	Relevance for Hay LGA LEP
1. Employment and Resources			
1.1	Business and Industrial Zones	The objectives of the direction are to encourage employment growth in suitable locations and protect employment land in business and industrial zones as well as to support the viability of identified strategic centres.	A Draft LEP shall retain the areas and locations of existing business and industrial zones and not reduce the total potential floor space area for employment uses and related public services in business zones as well as not reduce the total potential floor space area for industrial uses in industrial zones. Any new proposed employment areas must be in accordance with the Urban Land use Strategy that has been endorsed by the Department of Planning. Although Hay Township is characterised by mixed land uses there does exist a concentrated retail core which should be protected. The existence of major infrastructure including primary transport corridors is a strategic consideration for the location of any industrial zone.
1.2	Rural Zones	To protect the agricultural production value of rural land. Clause 4a of the Direction applies to all councils and Clause 4b of the Direction is only applicable to prescribed councils.	A Draft LEP shall not rezone land from a rural zone to a residential, business, industrial, and village or tourist zone. However, Hay Draft LEP can be inconsistent with this direction providing that it is justified by a Rural and Urban Land Use Strategy that has been endorsed by the Department of Planning. Strategic analysis has identified that productive agricultural land exists throughout the LGA and adjacent to the existing urban boundary. Should development of rural land be considered it would require to be justified by a strategic assessment including a land matrix?
1.3	Mining, Petroleum Production and Extractive Industries	To ensure that inappropriate development does not compromise the existing or future extraction of State or regional significant reserves of coal, other minerals, petroleum and extractive materials. The direction applies to all councils.	Should the Draft LEP propose to prohibit the mining, production or winning of certain materials or restricting the potential development of extractive materials then the Council must consult with the Director-General of the Department of Primary Industries to ensure that resources of coal, other minerals, petroleum or extractive material of State or regional significance are identified as well as to identify an existing mines, petroleum production operations or extractive industries occurring within the Hay LGA. That advice should extent to the development potential of those resources and take into account the issues associated with land use conflict.
1.4	Oyster Aquaculture	To ensure that Draft LEP's adequately consider oyster or priority oyster aquaculture areas and to protect priority oyster aquaculture areas from other land uses that may adversely impact them.	Not applicable



No	S117 Ministerial Directions	Intention	Relevance for Hay LGA LEP
1.5	Rural Lands	To protect the agriculture production value of rural land and facilitate its orderly and economic development for rural and related purposes. The direction applies to all councils impacted by <i>State Environmental Planning Policy (Rural Lands) 2008</i> which includes Hay LGA.	Hay LGA Draft LEP must be consistent with the Rural Planning Principles listed in <i>State and Environmental Planning Policy (Rural Lands) 2008</i> . This is required when the Draft LEP affects land within an existing or proposed rural or environment protection zone and where a change to the minimum lot size on land within a rural or environment protection zone is proposed. Any inconsistency with the direction must be justified by the Rural and Urban Land use Strategy Document. It should be recognised that the Rural Planning Principles do provide for rural lifestyle opportunities as a means to promote community sustainability and foster positive social, economic and environmental outcomes.
2. Environment and Heritage			
2.1	Environment Protection Zones	The objective of the direction is to protect and conserve environmentally sensitive areas across the State.	Hay Draft LEP should include provisions for the protection and conservation of environmentally sensitive areas. As well, the Draft LEP must not contain provisions that reduce or detract from the environmental protection standards that apply to the land. Any inconsistency with the direction must be justified by the Urban and Rural Land use Strategy. Strategic and biophysical analysis of Hay LGA has identified significant constraints, assets and values exist across the LGA. Environmentally sensitive land overlays appear to be the appropriate mechanism to promote land use and biodiversity conservation decision making.
2.2	Coastal Protection	To implement the principles in the NSW Coastal Policy.	Not applicable
2.3	Heritage Conservation	To conserve items, areas, objects and places of environmental heritage significance and aboriginal heritage significance across the State.	The Draft LEP must contain provisions to facilitate the conservation of items, places, buildings, works, relics, moveable objects or precincts of environmental heritage significance to the Hay LGA as well as Aboriginal objects or places that are protected under the <i>National Parks and Wildlife Act 1974</i> or any Aboriginal areas, objects, places or landscapes impacted or identified by an Aboriginal Heritage Survey prepared by and on behalf of the Aboriginal Land Council. For Hay LGA there has been a Heritage Assessment for the Murrumbidgee Province entitled <i>Murrumbidgee Province Aboriginal Cultural Heritage Study (2001)</i> . Any inconsistency with the direction must be justified by the Council and satisfy the Director-General of the Department of Planning that that inconsistency and the Draft LEP complies with Part 5 of the <i>Heritage Act 1977</i> . Hay LGA requires a shire-wide heritage assessment to guide future decision-making as a range of conservation opportunities exist.



No	s117 Ministerial Directions	Intention	Relevance for Hay LGA LEP
2.4	Recreation Vehicle Areas	The objective is to protect sensitive land or land with significant conservation values from adverse impacts associated with recreation vehicles across the State.	A Draft LEP shall not enable land to be developed for the purpose of a recreation vehicle area if that land is within an environmental protection zone unless the Council has considered the provisions of guidelines for selection establishment and maintenance of recreation vehicle areas in accordance with <i>Soil Conservation Services NSW September 1985</i> and the <i>Guideline Recreation Vehicles Act 1983 Guidelines for Selection Design and Operation of Recreation Vehicle Areas State Pollution Control Commission September 1985</i> . Any inconsistency must be justified by the Urban and Rural Land use Strategy endorsed by the Department of Planning.
3. Housing, Infrastructure and Urban Development			
3.1	Residential Zones	To facilitate variety and choice in housing to optimise the use of existing infrastructure and services and ensure that any new housing has appropriate access to that as well as to minimise the impact of residential development on the environment and productive land across the State.	Where dwellings or residential development is permitted or proposed to be permitted then the LEP must contain provisions to facilitate and diversify building types and locations, optimise the use of existing infrastructure, reduce the consumption of land on the urban fringe for urban development and promote good design. As well the Draft LEP must contain a requirement that residential development is not permitted until land is adequately serviced or satisfactory arrangements have been made, and not contain provisions to reduce permissible residential density of land. Any inconsistency must be justified by the Urban Land use Strategy. Where any residential release areas are proposed they will be justified through strategic analysis and a land suitability matrix.
3.2	Caravan Parks and Manufactured Home Estates	To provide for a variety of housing types and provide opportunities for caravan parks and manufactured homes estates across the state.	The Draft LEP must retain existing provisions that permit development for the purposes of a caravan park to be carried out to ensure existing caravan parks are appropriately zoned as per the Standard Instrument. As well Council must consider various categories of land identified in Schedule 2 of State Environmental Planning Policy 36 as to where Manufactured Home States should not be located and take into account the various provisions and principles listed in State Environmental Planning Policy 36. Any inconsistency must be justified by the Urban and Rural Land use Study.



No	S117 Ministerial Directions	Intention	Relevance for Hay LGA LEP
3.3	Home Occupations	The objective is to encourage the carrying out of low-impact small businesses in dwelling houses across the State.	The Draft LEP must permit home occupation to be carried out in dwelling houses without the need for development consent.
3.4	Integrating Land Use and Transport	To ensure urban structures, building forms, land use locations, development designs, subdivision and street layouts achieve certain planning objectives to facilitate access to housing and employment, to reduce the dependence on vehicles, to reduce travel demand and numbers of trips, to support transport services and provide for the efficient movement of freight across the State.	The Draft LEP must be consistent with the aims, objectives and principles of <i>Improving Transport Choice, Guidelines for Planning and Development (DUAP 2001)</i> and the <i>Right Place for Business and Services – Planning Policy (DUAP 2001)</i> . Any inconsistency must be justified by the Urban Land use Study.
3.5	Development Near Licensed Aerodromes	To facilitate effective and safe operation of aerodromes and ensure that their operation is not compromised by other development as well as to ensure development for residential purposes if sited within Australian Noise Exposure Forecast (ANEF) Contours between 20 and 25 incorporate appropriate noise mitigation measures.	Hay LGA does contain a licensed airport therefore the Draft LEP should ensure that appropriate contours are identified and preferably urban development located outside or beyond the 20 – 25 contour levels, or alternatively require a container provision requiring appropriate noise mitigation measures to be provided. Any inconsistency must be justified by the Urban and Rural Land use Study.
4. Hazard and Risk			
4.1	Acid Sulfate Soils	To avoid adverse environmental impacts from land use where land has a probability of containing acid sulfate soils. This direction applies only to those areas that have been identified as having a probability of land containing acid sulphate soils as shown on the Acid Sulfate Planning maps held by the Department of Planning.	Acid Sulphate soils are not known to occur within the Hay LGA. However, because of the ongoing drought and reduced environmental flows there is a risk that wetlands may develop acid Sulphate soils.
4.2	Mine Subsidence and Unstable Land	To protect life and prevent damage to property or the environment on unstable lands. This direction applies to areas included within a mine subsidence district for areas which have been identified as unstable land.	If the Urban and Rural Land use Strategy or constraint map identify areas as having unstable land then councils must consult with the Mine Substance Board in relation to the development which are proposed in those areas and ensure that the Draft LEP contains appropriate provisions in line with the objectives of the direction.
4.3	Flood Prone Land	To ensure that development of Flood Prone Land is consistent with the <i>Floodplain Development Manual 2005</i> , and to ensure that flood hazard and flood impacts are considered appropriately within an LEP.	Recent flood studies have been completed for the Hay urban area and the (as yet unreleased) rural area of the LGA. The urban flood study identifies the land subject to localised flooding and river flooding. Modelling has been based on the 1956 flood being the flood of record which was identified as a 1 in 90 ARI (Average Recurrent Interval). The floodplain development manual requires the Council to be satisfied that the risk level and adopted FPL's for the management of flooding is appropriate for the community.



No	S117 Ministerial Directions	Intention	Relevance for Hay LGA LEP
4.4	Planning for Bushfire Protection	To protect life, property and the environment for bushfire hazards and to facilitate appropriate development and management of bushfire prone areas.	The implications for the Council are that the constraints map should identify bushfire prone areas and the Draft LEP contains appropriate requirements of the Commissioner of the NSW Rural Fire Service under Section 62 of the Rural Fires Act 1997. The Draft LEP must have regard to <i>Planning for Bushfire Protection 2006</i> and introduce controls that avoid placing in appropriate development and hazardous areas as well as ensure bushfire hazard reduction is not prohibited within an APZ (Asset Protection Zone). A Draft LEP must contain appropriate provisions in respect to APZ sand the like.
5. Regional Planning			
5.1	Implementation of Regional strategies	To ensure that regional strategies are taken into account in local planning in respect to vision, strategies and actions.	Not applicable
5.2	Sydney Drinking Water Catchments	To protect water quality in the Sydney water catchment.	Not applicable
5.3	Farmland of State and Regional Significance on the NSW Far North Coast	To protect the best quality agricultural land and to reduce land use conflict and promote certainty into the future.	Not applicable
5.4	Commercial and Retail Development along the Pacific Highway, North Coast	This protects and promotes the Pacific Highway function as a traffic route and controls development along that route.	Not applicable.
5.5	Development in the vicinity of Ellalong, Paxton and Millfield (Cessnock LGA)	To ensure that development in those villages are consistent with the Cessnock Settlement Strategy and Lower Hunter Regional Strategy.	Not applicable.
5.6	Sydney to Canberra Corridor (Revoked 10 July 2008. See amended Direction 5.1)	Revoked	Not applicable.
5.7	Central Coast (Revoked 10 July 2008. See amended Direction 5.1)	Revoked	Not applicable.
5.8	Second Sydney Airport: Badgerys Creek	To ensure that the future development of any second Sydney Airport Badgerys Creek is not compromised by incompatible development.	Not applicable.
6. Local Plan Making			
6.1	Approval and Referral requirements	To ensure LEP provisions encourage efficient and appropriate assessment of development.	The Draft LEP shall not require concurrent consultation or referral requirements unless specifically required by appropriate authorities and not identify development as a “designated development” unless the Department of Planning is satisfied that that class of development is likely to have a significant impact on the environment and has obtained the approval of the Department prior to section 65, certification.



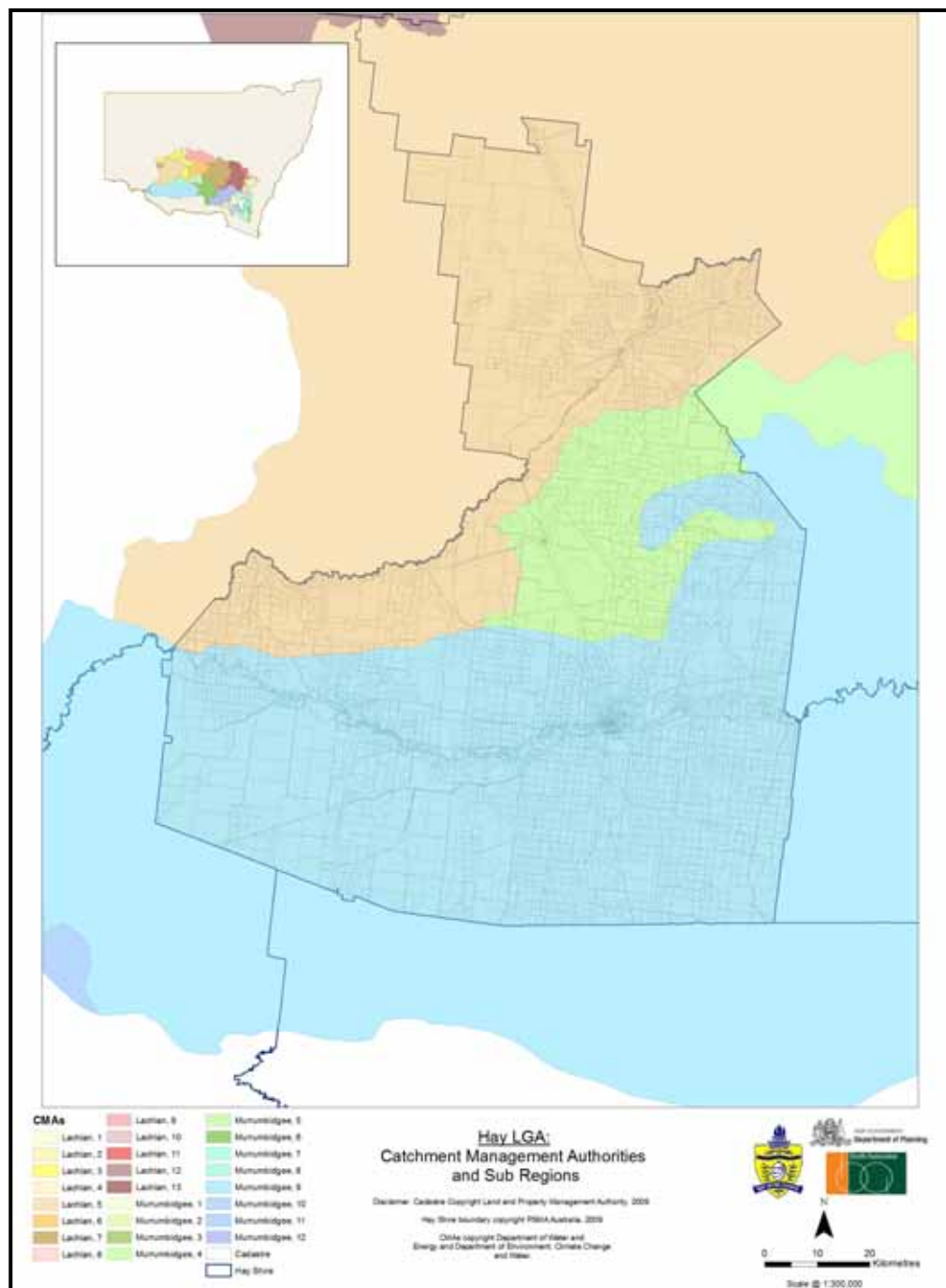
No	S117 Ministerial Directions	Intention	Relevance for Hay LGA LEP
6.2	Reserving land for Public Purposes	To facilitate provision of public services and facilities by reserving land for public purposes and to facilitate the removal of reservations of land for public purposes where the land is no longer required for acquisition across the State.	The Draft LEP shall not create, alter or reduce existing zonings or reservations of land for public purposes unless specifically approved by the relevant authority and where a Ministerial or public authority request Council to reserve land for public purposes in accordance with the <i>Land Acquisition just Terms Compensation Act 1991</i> , that land must be appropriately reserved.
6.3	Site Specific Provisions	To discourage unnecessary restrictive site specific planning controls across the State.	The applicability to Hay LGA is it only applies if a particular development proposal arises.

6.0 ENVIRONMENTAL CONTEXT

6.1 Administrative Areas

Hay LGA is situated within the Riverina bioregion. The areas managed by Catchment Management Authorities are shown in Figure 11.

Figure 11: Catchment Management Areas Hay LGA





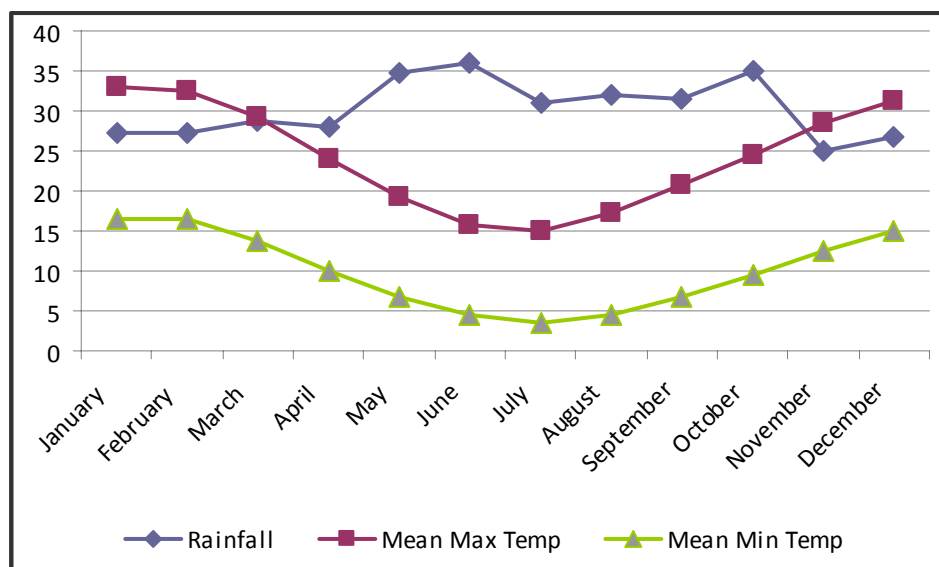
6.2 Climate

Hay's climate can be described as temperate, with temperatures exceeding 40°C on average, seven times a year, and dropping below 0°C also seven times a year.

Hay's average annual rainfall for the period 1882 to 2010 is 365 mm. A graph showing average annual rainfall for this period is included as Annexure 2.

The average monthly rainfall and maximum and minimum temperatures for Hay is depicted in Figure 12.

Figure 12: Average Temperature and Precipitation Hay LGA 1882-2010



The data in Figure 12 indicates:

- Low average monthly rainfall with a winter predominance; and
- Hot summer temperatures and mild winter temperatures.

6.3 Geology and Geomorphology

Langford-Smith (1960) discusses the Murravian Basin and shows that Hay LGA was previously within the gulf boundaries. Page (1996) mentions that the Riverine Plain has maintained continuous terrestrial environments since the last 60Ma. He discusses the modern Murrumbidgee River system and mentions that the geomorphology of the area has no relationship to this modern stream. The landscape is primarily a product of prior stream deposition associated with large ancestral rivers from the Great Dividing Range. In pluvial times large rivers flowed from the eastern highlands down to down to Narrandera and spread out in a series of significant channels across the plain.



The ancestral Murrumbidgee River around Darlington Point was estimated by Schumm to have a bankful discharge of five times greater than the modern Murrumbidgee. Page (1996), comments that the Riverine Plain provides an excellent record of fluvial, lacustrine and aeolian deposition.

Prior stream deposition phases include:

1. Coleambally Phase (105 – 80Ka);
2. Kerarbury Phase (55 – 35Ka);
3. Gum Creek Phase (35 – 25Ka); and
4. Yanco Phase (20 – 13Ka).

With the present flow regime established about 12Ka.

The first two phases are associated with enhanced fluvial activity in northern and central Australia and reduced dust activity globally. The next phase resulted from increased seasonal snow melt and increased peak flow event. Some bordering Aeolian dunes (lunettes) associated with the Coleambally, Kerarbury and Yanco Phases were also found.

To a large extent the modern Murrumbidgee River is incised 7 metres into the plain (of these old deposits) except for example, in the Lowbidgee area. Page et al (2007) identified four major periods of palaeochannel activity on the Murrumbidgee sector of the Riverina Plain of south eastern Australia, under changing flow conditions during the last full glacial cycle. Here the river discharges out onto the plain during flood events.

Prior streams of the Hay LGA relate to the Kerarbury and Gum Creek Palaeochannels. Major tributaries of the Kerarbury System (60-55ka) include the McGrath, Benerembah, Hay and Romani Arms.

The Hay tributary branches from the northern margin of the main channel and trends west-northwest and is cut by the present Murrumbidgee River at Hay and Maude before losing definition in the Lowbidgee area. North of Hay this tributary is also cut by channels of the younger Gum Creek system.

Kerarbury System channels generally display the prior stream characteristics of low sinuosity tending to tributaries. They are bordered by low levees with scalded surfaces. Source bordering dunes are poorly developed in the Hay arm of the Kerarbury System (Page, 1996).

The Gum Creek palaeochannel (30-25Ka) is characterised by sinuosity and includes the physical separation of palaeochannels with the modern channel system downstream of Carrathool. In the vicinity of Hay sinuosity is low and tributary channels common. Large meander scars of Tombullen Reach exist downstream near Carrathool where they cease. At this point the sinuous palaeochannel and well preserved floodplain of the Carrathool Reach presents.

After paralleling the present floodplain for 30 kilometres the Carrathool Reach is bisected by the Murrumbidgee and then branches into three separate tributaries near Hay, two of which bisect the Kerarbury System northwest of Hay, before being lost in the wetlands around Maude.

West of Maude is the Uara Creek Reach which branches from the southern side of the Murrumbidgee towards Balranald. This sinuous channel follows a low ridge 1-2 metres above the lignum wetlands.

The source bordering dunes derive from deflation of the exposed channel beds with peak deposition occurring around 22Ka, associated with extreme aridity.



The geomorphology of the area is significant and in particular the location of prior streams, source bordering dunes, levees and ridges. This is because geomorphology influences present land use.

For example, the location of prior streams, source bordering dunes, levees and ridges is often associated with treed areas, particularly White Cypress Pine. This is distinct from the floodplains which are generally treeless but do contain the occasional Boree or Black Box stands.

Under natural rainfall these prior stream areas are used only for grazing, but when irrigated, they are suitable for horticultural production. Conversely the extensive floodplain areas provide some of the best extensive sheep grazing in Australia (Langford Smith, 1960).

6.4 Elevation and Topography

Stannard (1966) describes the physiography and surficial stratigraphy of the North East Riverine plain (1966) between Narrandera and Carrathool as comprising subdued topography with localised variations including sandhills, low rises, depressions and ridges. The same description of topography can be applied to the entire Hay LGA.

The region comprises a series of prior streams, which may or may not be elevated in respect to the adjacent plain. A drainage system of linear depressions cover the region located on plains between the prior streams.

The topography of the Hay LGA slopes gently downwards in a westerly direction with the Murrumbidgee River running east to west. Most water courses in the LGA follow the same westerly direction. The exception to this is the Lachlan River which runs in a south westerly direction.

The extent to which the two rivers traverse the LGA provides riparian access to a significant geographic area. This scale of riparian access has supported agriculture since its introduction to the region nearly 200 years ago. Initially water access was required to supply stock and domestic needs and in later years a significant irrigation industry has established.

6.5 Soil Resources

The soils of the Hay LGA were described by Soil Conservation Service (1990) as:

- Red-brown earths interspersed with grey and brown clays on the eastern side of the Hay LGA, including the area surrounding the town of Hay;
- Deep grey self-mulching and cracking clays on the western side of the Hay LGA, including Booligal and surrounds; and
- Alluvial soils immediately adjacent to the river and downstream of Hay fanning out across the Lowbidgee Plains.

The spatial location of these soils is depicted in Annexure 3. Detailed soil maps of the Hay LGA are unavailable and Annexure 3 shows the extent of available soils information for the Shire. Project investigations have identified the better soils for horticulture in the LGA are located on the grey clays immediately surrounding the town of Hay.

Whilst some soils are prone to scalding, the majority of soils in the Hay LGA are well suited to the range of agricultural enterprises carried out in the Hay LGA. The soils are well suited to low rainfall, native pasture production for livestock grazing and a large proportion of the soils are suitable for irrigation. The extent of irrigation development in the Hay LGA is described in Section 8.3.



6.6 Water Resources

6.6.1 Groundwater

Groundwater is water occurring below the surface of the Earth. Contrary to popular myth, it does not occur as underground rivers or streams but instead as water in soil pores and voids between particles, aggregates and rock fractures.

Groundwater may be used for consumptive and beneficial purposes. In the Murray Darling Basin (MDB), groundwater accounts for 15% of the basins' water resources (REM, 2004). In 2001 at 65%, the primary use of groundwater in the Basin was for irrigation purposes with 26% for rural land use, 5% of industrial and commercial purposes and 4% for urban purposes. Recent figures indicate that now an even less proportion is allocated for rural communities.

In 2001, the State of the Environment report found that Australian groundwater usage had increased by 90% to about 5000GL per year. As well, the National Land and Water Resources Audit found that 30% of Australia's 538 recognised groundwater management areas were overcommitted to their sustainable yield.

Since 2001, there has been a further increase in groundwater usage and nationally there has been significant recent change in how groundwater systems are managed.

The current government policy direction is based on conjunctive and sustainable management of surface and groundwater systems to meet social, economic and environmental needs. There is an emerging recognition of the need to consider the hydraulic connectivities between surface water and groundwater systems.

In the MDB groundwater management is impacted by basinal intergovernmental agreements, the National Water Initiative, the National Plan for Water Security, cap on groundwater extractions – Achieving Sustainable Groundwater Entitlements Program (ASGE) and MDB Sustainable Yields program.

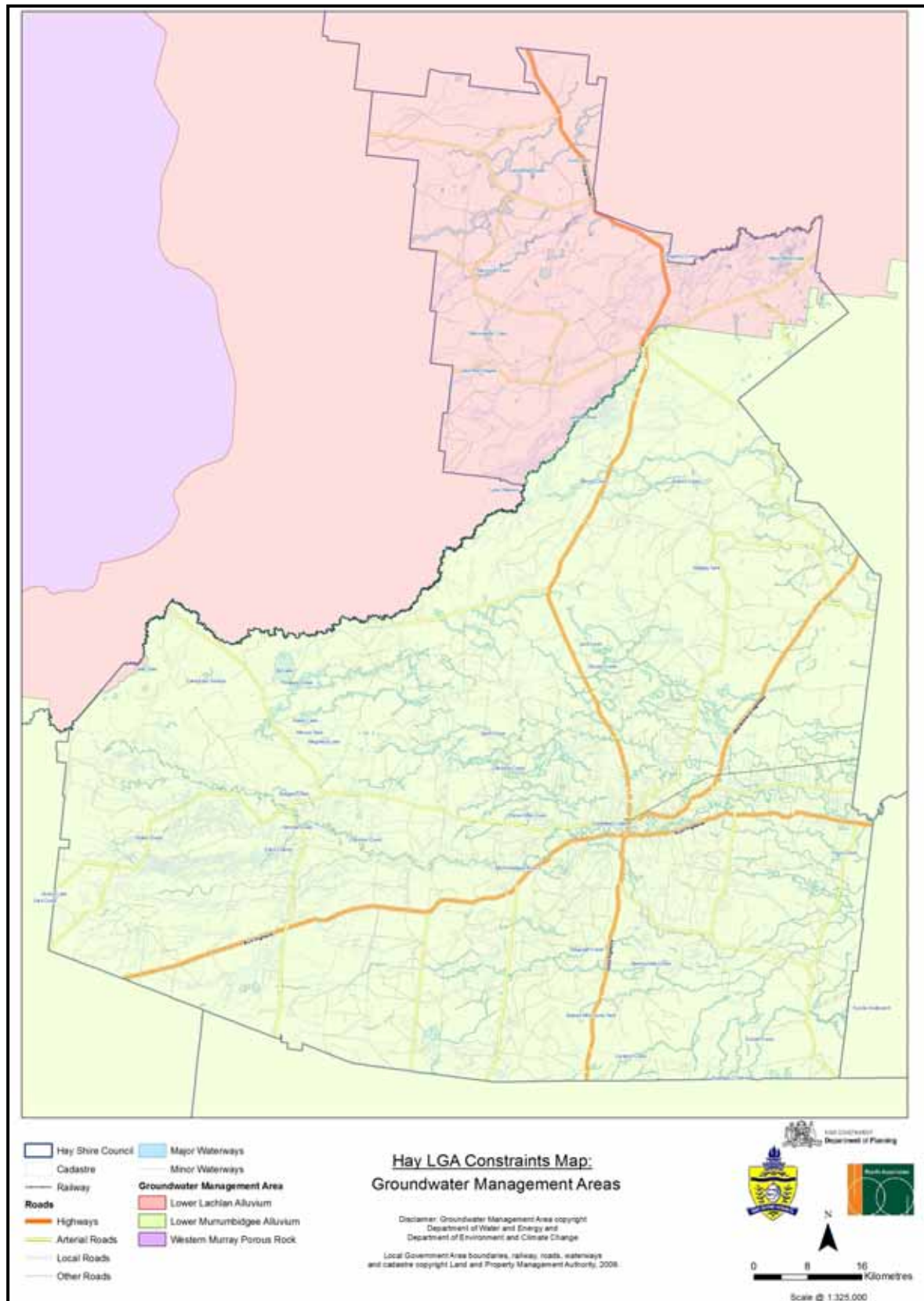
Although uncertainty still exists, for example in respect to connectivities and groundwater dependent ecosystems, increasing scientific knowledge has resulted in an improved understanding of the attributes and behaviour of groundwater systems and their likely response under various conditions. Hydrogeology is a dynamic and inexact science and current limitations of science impacted by uncertainty require that a precautionary approach be taken in the management of water resources. Most modelling reported has not reached dynamic equilibrium despite thorough assessments (CSIRO, 2008).

As knowledge has increased there have been changes in groundwater administrative boundaries.

Hay LGA is bisected by two groundwater management areas (GMA), the Lower Lachlan Alluvium and the Lower Murrumbidgee Alluvium, as shown in Figure 13.



Figure 13: Groundwater Management Areas Hay LGA





While groundwater systems are managed as discrete units, systems may not necessarily represent separate hydrogeological units and connectivities can exist between systems. For instance, the Lower Lachlan and Lower Murray GMA's are physically linked via the deep aquifers of the Murray geological basin (DLWC, 2002).

These potential connectivities are important considerations in the sustainable management of surface and groundwater systems and illustrate the complexity and potential uncertainty inherent in their sustainable management.

Both the Lower Lachlan and the Lower Murrumbidgee GMA's encompass some of the major inland alluvial sedimentary aquifers including the Shepparton, Calivil and Renmark formations with each formation having variable spatial extent, transmissive qualities and water quality. These are the formations of relevance to the Hay LGA.

The deposits of the Lower Murrumbidgee Alluvium are generally semi to unconsolidated sediments laid down as part of an alluvial fan formation in the Tertiary Period. The thickness of the deposits range from 170m at Narrandera, to 400m at Balranald and around 270m at Hay.

The Water Sharing Plan for the Lower Murrumbidgee Groundwater Source (2003 Reg.4), refers to these groundwater sources as:

- The Lower Murrumbidgee Shallow Groundwater Source; and
- The Lower Murrumbidgee Deep Groundwater Source.

"The *Regulations (2003)* describes the formations as:

The Lower Murrumbidgee Shallow Groundwater Source as characterised by the Shepparton Formation, is generally yellow and brown poorly sorted sand and clay sediments that extend to a depth of between 50 and 70 metres below the ground surface. The Shallow Groundwater Source extends to a depth of 40 metres, or the bottom of the Shepparton formation, whichever is the deeper; and

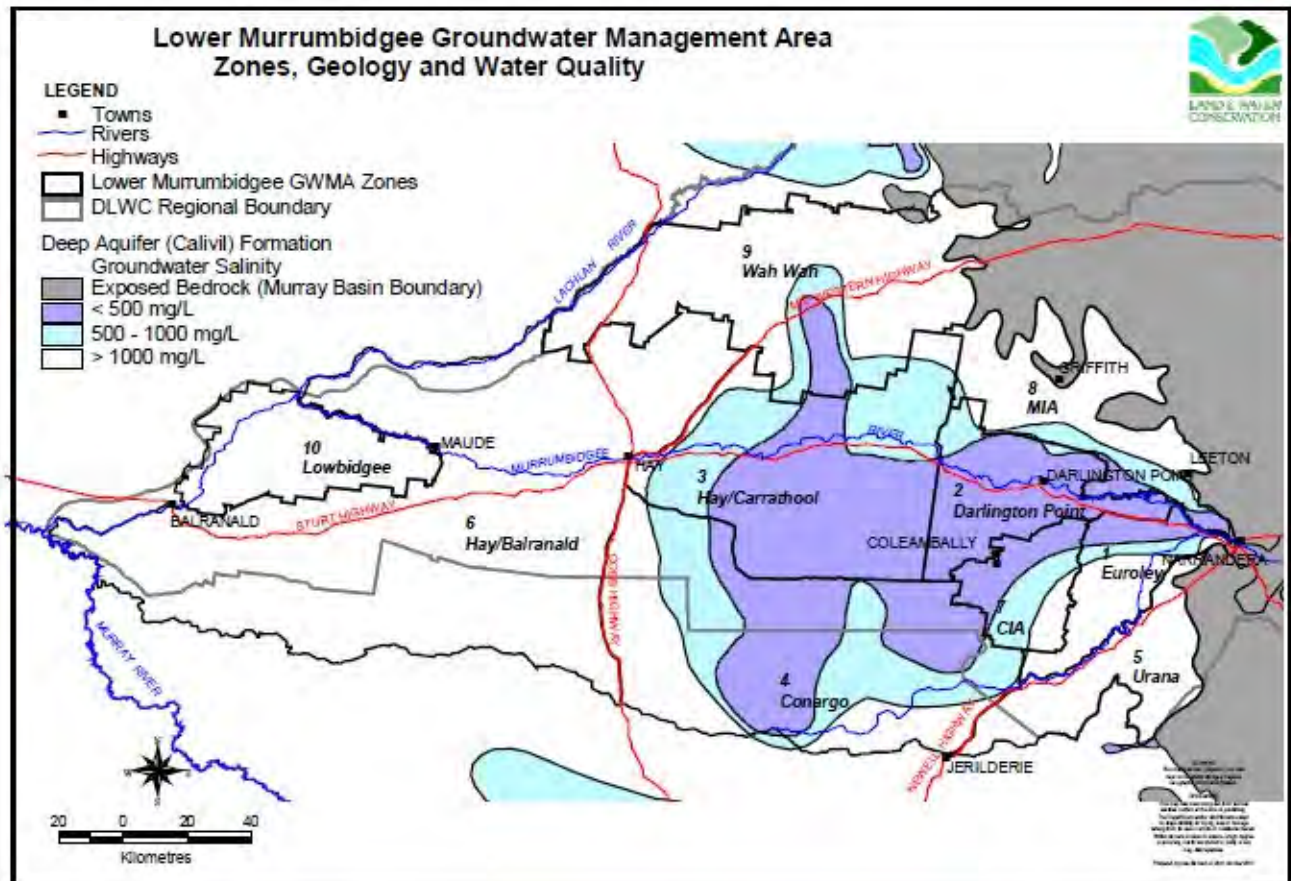
The Lower Murrumbidgee Deep Groundwater Source, generally represented by the Calivil and Renmark Formations, which are characterised by pale grey to white quartz sand layers, with lenses of grey to white clay, extending from the bottom of the Shepparton down to the bedrock, with a typical thickness of 100 to 300 metres."

The aquifers of the Lower Lachlan system are unconsolidated alluvial sediments which comprise a heterogeneous shallow Shepparton formation (unconfined aquifer) and underlying leaky confined aquifers of the Calivil and Renmark group. Although groundwater is extracted from all aquifers, most is from the deeper source with most recharge from rivers and anabranches (and prior streams). The western areas of the Lower Lachlan shallow aquifer are quite saline.

There are variations in the nature, range and quality of information reported between GMA's and there is a need for additional time series data on water quality to properly identify risks such as that from salinisation (MDBA, 2005).

The management zones, geology and water quality of the Lower Murrumbidgee Alluvium has been identified in the *Groundwater Status Report No 6* (DLWC, 2002, recently updated, 2009) and is reproduced in Figure 14. Part of the Lower Murrumbidgee Alluvium overlaps the Lachlan region and most (if not all) of the Lower Lachlan Alluvium in the Hay LGA appears to be within Management zone 3 (CSIRO, 2008).

Figure 14: LMGMA Zones, Geology and Water Quality



Source: Groundwater Status Report No. 6, Figure 1.

The Review of Groundwater Use and the Groundwater Level Behaviour in the Lower Murrumbidgee Groundwater Management Area 002 – Groundwater Status Report No. 6, identifies the low salinity, high yielding aquifers of the deep groundwater source east of Hay, extending to Coleambally, Darlington Point and Narrandera with the north south extension including the Wah Wah and Conargo zones. Figure 14 shows that good quality groundwater (500-1000 mg/L) is found near the eastern boundary of the Hay LGA.

Regional groundwater flow is generally from east to west under low gradients. East of Hay is where the main recharge to the deep groundwater system occurs through leakage from the overlying Shepparton formation. This is an area requiring special protection from potential contamination sources. Further east, outside the Hay LGA are located hotspot areas where significant pumping of good quality water is used for irrigation. Despite high hydraulic conductivity, extraction and recharge still results in significant seasonal variations in resource piezometric head. In this location, the Murray Darling Basin Authority (MDBA) reports that lateral hydraulic conductivity through the Calivil is higher than that of the leakage occurring from the Shepparton, which acts to draw saline water from the poorer quality Shepparton formation into the deeper good quality water source of the Calivil formation. West of Hay the gradient reverses and there is upward leakage. This is where the shallow aquifer is more saline. A review of bores in this area shows evidence of extended periods of saturation of surficial soils and an extensive area has been identified of high groundwater vulnerability. Bores around Booligal show evidence of fresh groundwater at shallow depths, also requiring protection.



Groundwater quality varies spatially and with depth. The shallow groundwater source (Shepparton) is typically of poorer quality than the deep groundwater source of both Renmark and Calivil. The salinity of the upper Shepparton formation is high and variable (1500-7000mg/L) although low salinity water (<500mg/L) occurs close to rivers and within prior stream formations where there is high connectivity between groundwater systems. Elsewhere there is minimal connectivity between surface systems and groundwater systems in the LMGMA (AWR, 2005).

Descriptions of the characteristics of the LMGMA shallow and deep aquifers are shown in Figure 15.

Figure 15: Aquifer Characteristics

Description	Shallow (Shepparton)	Deep (Calivil/Renmark)
Age of Water (years)	Up to 3,000	2,000-20,000
Water Quality (mg/L)	Variable, generally 1,500-7,000, fresher quality closer to river and within irrigation areas	Generally less than 1,000 in eastern parts, approximately over 40% of GMA
Yields (L/s)	Variable, generally between 0.1 – 10, occasionally >10	Variable, generally 50-350 occasionally >350
Groundwater flow direction	Generally east to west	Generally east to west
Hydraulic gradient	1:4,300 (eastern part of GMA) 1:5,000 (western part of GMA)	1:1,900 (eastern part of GMA) 1:7,200 (western part of GMA)
Estimated rate of flow (m/yr)	0.04 - 0.20	0.1 – 11.5
Hydraulic conductivity (m/d)	0.5 – 2.0 (groundwater model)	2.0 – 60.0 (groundwater model)
Specific Yield/Storage Coefficient	0.10 – 0.25 (groundwater model)	1.00E – 05 to 5.00E – 03 (groundwater model)
Average thickness	65m	100 in the eastern parts > 100 in the west
Volume of groundwater in storage (x1,000 GL)	532.5 (assuming a porosity of 0.25)	1,515.6 (assuming a porosity of 0.25)
Recharge to storage ratio	1:1,400	1:6,000
Volume of fresh groundwater in storage (x1,000 GL)	19.8 (assuming 37% of aquifer only)	330.0 (assuming average aquifer thickness of 100m in recharge areas and 40% of aquifer only)

Source: Table 1, Aquifer Characteristics (Kumar, NSW Office of Water 2009)

Despite the MDBA (2008) identifying a need to take into account potential connectivity between surface and groundwater systems in the Lower Murrumbidgee and Lower Lachlan, the respective Regional Water Resources Assessment for the area (2005) states that there is no connectivity of the Lachlan River reach to the underlying aquifers around Hay and records no groundwater dependent ecosystems. However CSIRO in a more recent report (2008) identified the western reaches of the Lachlan River as having high surface groundwater connectivity (modelling suggests 42GL/yr river loss) impacted by prevailing dry conditions.



The Murrumbidgee River is an influent or losing stream which replenishes groundwater flow and the geomorphology of the Hay plain is characterised by prior stream development.

Groundwater dependant ecosystems (GDE) are those which rely either completely or partially on groundwater for survival.

Communities include terrestrial vegetation, fauna, wetlands, river based flow and aquifer dependant communities.

In the Hay LGA, they are likely to include; in-stream riparian communities reliant on river base flow, communities which exist within aquifer (prior stream) formations and effluent wetlands.

Typical wetland communities include the Great Cumbung Swamp and the Lowbidgee floodplain as well as River Red Gum Forests and Black Box Woodlands.

The Lower Murrumbidgee Alluvium has been identified as a high risk inland groundwater system on a State basis (DLWC, 1998; 2002) using multi-criteria analysis. This is due to the quality of the water resource, the extent of irrigation development, over allocation, seasonal drawdown, bore interference and potential impacts to long-term sustainability.

The MDBA groundwater status report (2005) identified continuing declining trends in groundwater levels associated with the Renmark and Calivil systems. East of Hay the Shepparton system shows rising groundwater levels.

Despite limitations, (Rassam *et al* 2008), groundwater modelling has identified a sustainable yield for each of the groundwater systems, where sustainable yield can be defined as: “the groundwater extraction regime that promotes social, economic and environmental benefits without compromising the integrity and values of the resource”.

To achieve this long term average extraction limits have been identified for both the Lower Lachlan and Lower Murrumbidgee GWMA.

The Lower Lachlan Groundwater Management Area (LLGMA) is situated north of the LMGMA and comprises 26,118km². Schedule 2 of the Lower Lachlan Groundwater Sharing Plan identifies the area covered with the majority of the groundwater source being north of the Lachlan River.

The Long Term Average Extraction Level (LTAEL) from the lower Lachlan has been identified as 108GL/yr excluding basic landholder rights, however extraction cannot be sustainably maintained at this level (CSIRO, 2008) with average extraction about 74% of the effective recharge. This has the potential to lower groundwater levels by up to 10m. This will impact upon resource availability into the future.

Factors impacting on the security and quality of groundwater sources in the Hay LGA include the continuing impacts of drought. Natural events also result in adverse impacts. For example reduced flooding impacts on baseflow, recharge and the replenishment of groundwater systems and affects the ecological condition of the instream channel environment as well as floodplain wetlands. Increased temperatures and sustained dry conditions exacerbate bushfire risk which can result in increased erosion and runoff, sedimentation, eutrophication and turbidity of streams impacting the ecological health and connectivities and exchanges between rivers and wetlands. As well, increased piezometric pressure in hotspot drawdown areas impact on the rate and exchange between systems and salinisation of systems. This means that the condition (quality) and availability of the water resource within the Hay LGA and its potential beneficial usage is influenced by activities both inside and outside the area.

6.6.2 Surface Water

Waterways within the Hay LGA include rivers, streams and wetlands as shown in Figure 16.

Figure 16: Streams and Wetlands - Hay LGA





The Murrumbidgee catchment covers an area of 84,000km² and drains much of southern NSW and the entire ACT.

The Murrumbidgee River is the main watercourse within the catchment, rising in the Kosciuszko National Park on the Long Plain and flowing 1,600 river kilometres westward to its confluence with the Murray River southwest of Balranald (MCMA, 2006). The river ends in an inland delta region (a vast alluvial fan) comprised of complex interwoven and interconnected channels (MCMA 2008).

The river is a regulated system and has 14 dams and eight large weirs. Dams include Burrinjuck Dam near Yass and Blowering Dam near Tumut which control water for irrigation districts situated in the lower Murrumbidgee Catchment. More than 10,000 km of irrigation channels supplied by the two storages service the major irrigation areas (MCMA, 2009).

The Lachlan Catchment is comparable in size to the Murrumbidgee Catchment area being approximately 84,700km². The main stream through the catchment is the Lachlan River rising near Goulburn and flowing 1,450 river km to the west, terminating in the Great Cumbung Swamp near Oxley, eventually draining into the Murrumbidgee River to the south (LCMA, 2009).

Wyangala Dam located at the junction of the Lachlan and Abercrombie Rivers, upstream of Cowra, is the major water storage. This storage regulates supply of water to the downstream irrigation industry. Other important water storages include Carcoar Dam, Lake Cargelligo and Lake Brewster.

Unlike the Murrumbidgee River the Lachlan does not have its source in the snow fields and therefore is not affected by spring flows from melting snow. In drier years the Lachlan can cease to flow unlike the Murrumbidgee River which has constantly flowed since European settlement.

Apart from environmental flows, the Lachlan River has been cut at Condobolin with downstream villages such as Booligal being forced to access stock and domestic plus town supplies from bore water sources.

Section 6.2 of this report provides information on climate. Hay has a generally low rainfall with droughts common in the Western Division every eight years or so.

The Murrumbidgee River has a high level of surface water extraction and usage from irrigation, stock and domestic, town supplies and riparian rights.

If recent climatic conditions (1997 to 2006) were to persist, average surface water availability would reduce by 30%, diversions by 18% and end-of-system flow by 46% (CSIRO, 2008).

Potential commercial plantation forestry expansion at the east of the catchment would have significant local effects on runoff; the impact on average annual runoff for the entire region would be negligible. Groundwater extraction is expected to increase by around 22 % to become 21% of total average annual water use by 2030.

The Hay LGA is not traditionally considered largely an irrigation area (on an average per hectare basis). Most irrigation occurs adjacent to river throughout the system (Refer Section 8.0).

The Hay PID covering an area of 36km² supplies about 80 small farms with general security allocations and stock and domestic water through a network of open channels but the area has been recently piped to minimise evaporative losses. This provides water security to the PID customers even in times of severe drought (WFR, 2009).

Flows in the Lachlan River are highly regulated and general security water in the system is highly utilised (71% of the allocated general security water used).



Current average surface water availability is 1139 GL/year and on average about 321 GL/year (or 28%) of this water is used. This is a moderately high level of development and includes surface water diversions (292 GL/year) and streamflow leakage to groundwater.

Current levels of groundwater extraction from the Upper and Lower Lachlan Alluvium are expected to eventually increase streamflow losses from the Lachlan River by about 50% over and above the natural streamflow loss to groundwater. Most of the additional loss will occur in the Upper Lachlan (while most of the natural losses will occur in the Lower Lachlan).

Projected future development (additional groundwater extraction and farm dams) would reduce inflows (under the best estimate future climate) by 2% or 28 GL/year. Of this, about two thirds would be due to future farm dams and about one third due to future groundwater extraction.

Landholders in most rural areas are allowed to collect a proportion of the rainfall runoff on their property and store it in one or more dams up to a certain size. This is known as a 'harvestable right'. Harvestable right water is generally intended for essential stock and household use but can be used for any purpose. Rural landholders in NSW can build farm dams on hillsides and minor streams that capture up to 10% of the average regional rainfall runoff for their property without requiring a licence. Maximum harvestable right dam capacity is the total dam capacity allowed under the harvestable right for a property. Other specific conditions apply for those areas included in the western division. (NSW Office of Water, 2009).

The CSIRO (2008) reports that likely future development of farm dams would reduce total runoff by 1 % in the Murrumbidgee catchment and of the total inflow reduction within the Lachlan catchment, about two thirds would be due to future farm dams.

Floodplain Harvesting

Floodplain harvesting is the collection, extraction or impoundment of water flowing across floodplains.

Harvesting comprises:

- Diversion or capture of floodplain flows using purpose built structures or extraction works to divert water into storages, supply channels or fields or to retain flows.
- Capture of floodplain flows originating from outside of irrigated areas using works built for purposes other than floodplain harvesting. Examples are:
 - o Levees and supply works such as off river storages constructed in billabongs or depressions that fill from floodplain flows; and
 - o Below ground level water channels from which the water is pumped into on farm storages.
 - o Opportunistic diversions from floodplains, depressions or wetlands using temporary pumps or other means.

Capture of rainfall or runoff from farm irrigation fields, via tailwater systems or other means, is not floodplain harvesting.

The harvesting of water from floodplains reduces the amount of water reaching or returning to rivers. This decreases the amount of water available to meet downstream river health, wetland and floodplain needs and the water supply components of other users. As well, floodplain harvesting can seriously affect the connectivity between the local floodplain, wetlands and the river, through the loss of flow volume and redirection of water flows.



The Sustainable Rivers Audit (MDBC, 2008) found that most mid and lowland rivers in the catchment were in poor condition.

Jansen et al (2001; MDBC, undated) in a number of riparian condition assessments, in the region, found many riparian areas to be in poor to moderate ecological condition. This poor condition is associated with anthropogenic impacts, particularly river regulation.

The Lachlan Riverine Health Assessment (Massey, 1997) reports heavy to moderate infestation of willows on the banks of the Lachlan River.

DEWHA (2008) has also reported Murrumbidgee river condition by riparian value with identified values diminishing to the west with mixed values for the Lachlan independent of position within the catchment.

6.6.3 Wetlands

Known wetlands recorded in the Hay LGA are shown in Figure 16. These include permanent and ephemeral water bodies.

Wetlands within the Murrumbidgee catchment include the Mid Murrumbidgee wetlands, which are an assemblage of lagoons and billabongs along the river on the floodplain, from Narrandera to Carrathool. These receive flows from the river mostly during winter and spring floods (CSIRO, 2008). The Lowbidgee floodplain located lower on the river downstream of Maude receives floodwaters from overbank flooding or from controlled diversions in winter and spring.

The Lachlan region contains several important and large wetlands, with the Booligal wetlands and the Great Cumbung Swamp being the most notable sites. Both areas rely on flood flows into the system, with Environment Australia (CSIRO 2008) noting in relation to the Booligal wetlands that flows are infrequent and the area drains rapidly once floods in the river recede.

Regardless of type and function, most wetlands have been significantly affected throughout the Lachlan and Murrumbidgee catchments since the introduction of river regulation and changes in the hydrological regime.

Wetlands that are located away from rivers have been significantly impacted due to river regulation, resulting in loss of peak flow events and the loss of floodplain connectivity.

Frazier (MCMA, 2008) estimates that there are 2000 wetlands in the Murrumbidgee Catchment that have currently been identified using remote sensing methods. It is difficult to quantify how many wetlands exist across the Hay LGA. Because many are ephemeral, a high percentage less than 5ha and many existing on private lands have been difficult to identify.

Wetlands are ecologically important as they provide an interface between terrestrial and aquatic environments. These specialised areas support biodiversity filter sediments and contaminants, provide flood mitigation and traditionally have provided support for various agricultural enterprises. They are also important food sources and refuges for threatened species as well as being potentially of Aboriginal cultural heritage significance.

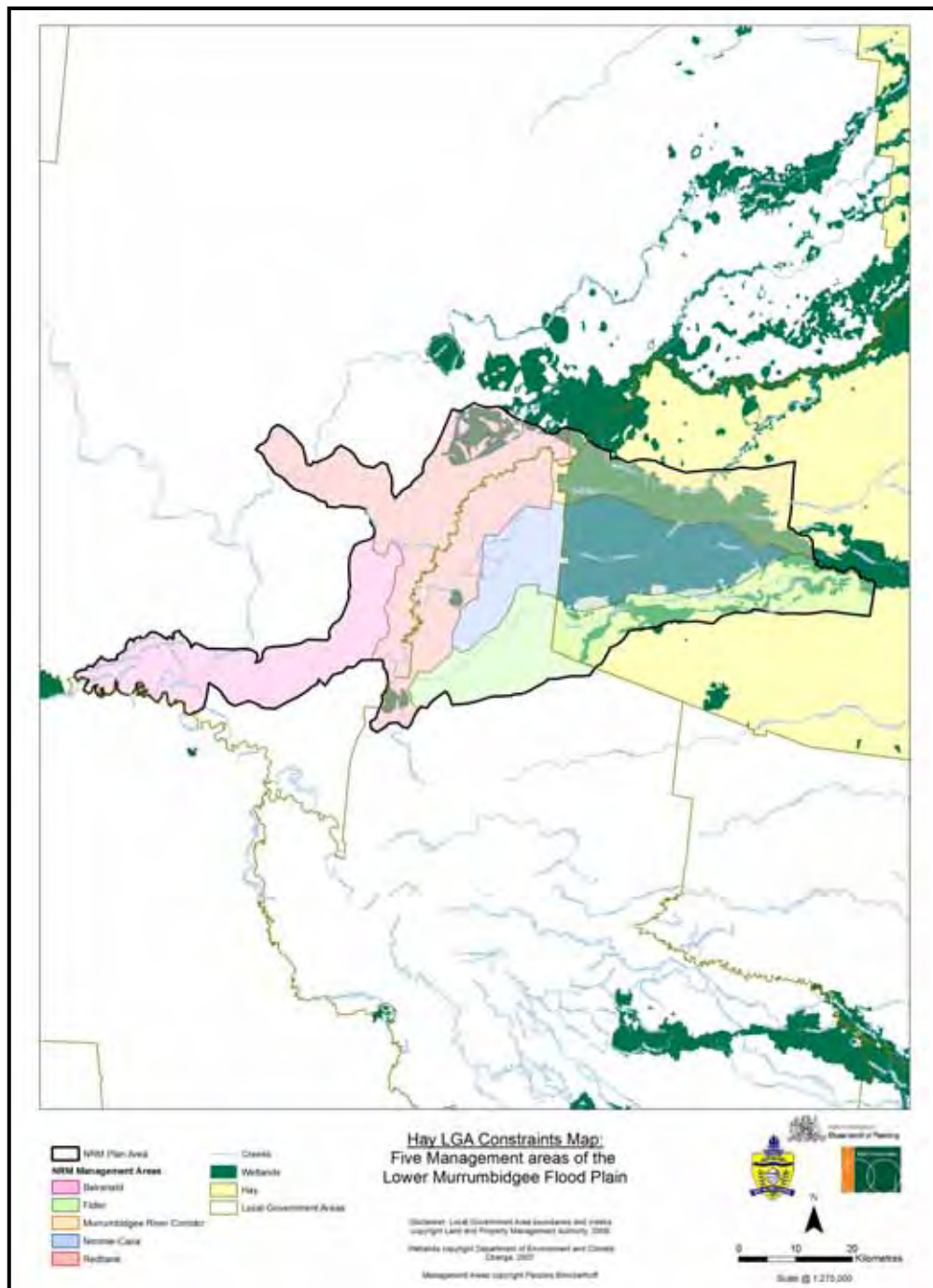
Rapid appraisal methods exist to quantify wetland ecological condition and although some surveys have been carried out they are not extensive. The continuing drought, anthropogenic impacts including agricultural activities, livestock and the loss of environmental flows have adversely impacted on wetland condition.

Lowbidgee Floodplain

The Lower Murrumbidgee Floodplains (Lowbidgee Floodplains) is located to the west of Hay LGA downstream of Maude.

It is a wetland complex on a semi-arid floodplain and has been described and mapped by Parsons Brinckerhoff (2008) and Kingsford and Thomas (2001) amongst others. It is characterised by permanent and ephemeral zones and a range of vegetation landscapes and communities. Natural resources management zones based on hydrological attributes and as mapped by Parsons Brinckerhoff (2008), are shown in below.

Figure 17: Lowbidgee Floodplain Management Zones





Flows are conveyed throughout the floodplain by a series of distributary creeks which form a complex of anastomosing channels. Discharge is conveyed primarily south but also to the north where the Great Cumbung Swamp is a terminal basin for the Lachlan River. From 303,781ha at the turn of the century it has been estimated that 76% of the Lower Murrumbidgee Floodplain has either disappeared or been degraded due to irrigation development (Kingsford and Thomas, 2001). This has resulted in significant adverse impact to ecological health and condition.

Great Cumbung Swamp

The Great Cumbung Swamp comprising 16,000ha represents the terminal drainage basin on the Lachlan River upstream from its confluence with the Murrumbidgee River. These floodplain areas provide significant groundwater vulnerability constraints. The Wetlands are replenished through flows from the Lachlan River and reduced flows in recent times significantly impact on ecological condition.

Booligal Wetlands

The Booligal wetland complex including Booligal Swamp and Little Gum Swamp comprise approximately 5,000ha to the north of the Hay LGA. They are located on the Muggabah-Merrimajeel creek systems, a distributary of the Lachlan River.

The lignum wetlands are associated with Lake Merrimajeel and Murrumbigil Swamp which are downstream of the same creek system (CSIRO, 2008).

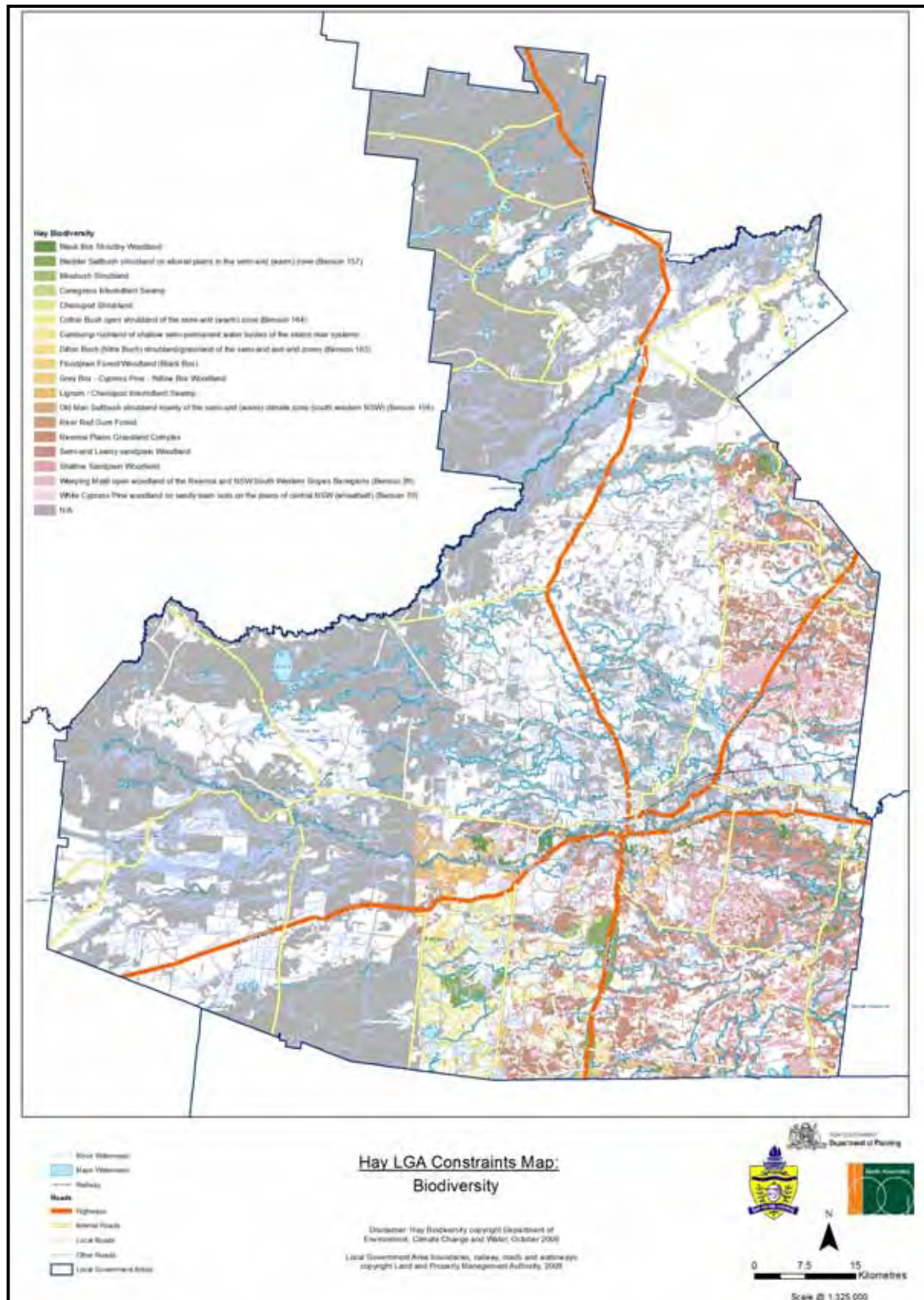
In flood, the wetlands are important for providing breeding habitat for water birds. The area is one of the five top breeding sites for Straw-necked Ibis, White Ibis and Glossy Ibis. Further discussion regarding threatened and endangered species is made in Section 6.9.

6.7 Vegetation Communities and Conservation Status

DECCW have mapped vegetation biodiversity for the Hay LGA as shown in Figure 18.



Figure 18: Biodiversity - Hay LGA





As can be seen in Figure 18, the Hay LGA consists of a wide diversity of vegetation across the area. This ranges from extensive grassy plains, Chenopod Shrublands and shrubby Box woodlands through to open large River Red Gum forests. Vegetation communities are well defined throughout the region as the topography varies from riparian areas through to the floodplain. Keith (2004) provides broad scale maps depicting the Hay region to be dominated by Riverine Chenopod Shrublands with a distinct area of Riverine Plain Woodland to the east of the LGA and scattered patches of Riverine Sandhill and Inland Floodplain Woodlands.

Different classification methods have resulted in a range of attributes used to define vegetation type, class and formation which results in difficulty in defining, comparing, measuring and monitoring vegetation across temporal and spatial scales. The National Vegetation Information System (NVIS) is a means to address this.

At a State level, to improve management continuity, the NSW Vegetation Classification Assessment Database Project has been utilised to provide a comprehensive account of ecological communities and biodiversity description. This classification system aims to meet an increase in the demand and need for fine level ecological classification to assist with environmental assessment and ecosystem management. The classification system instigated by Dr John Benson builds upon previous work conducted by Keith (2004) and Beadle (1981). It is anticipated that between 1,200 and 1500 plant communities will be classified across the State once the database is completed, however at this time only several hundred are currently published. The bioregion mapping as included, displays current vegetation classes as known/investigated and all indications are that the remaining district will be mapped in coming years.

Conservation status is assessed having regard to local, regional, state, national, international and global context. Of immediate relevance is the bioregional context and Hay is situated within the Riverina bioregion. In this context conservation status of vegetation communities is measured in terms of their bioregional extent, intactness or regional depletion or vulnerability.

The Murrumbidgee Catchment CAP (2008) provides information on vegetation classes that occur within the catchment as adopted by Keith (2004). These classes are delineated into high, medium and lower conservation values with

- “High” conservation value vegetation generally meaning high priority for conservation and ongoing management with areas of native vegetation in good condition unlikely to be approved for clearing and where areas have sustained considerable impact they may be approved for clearing with appropriate offsets;
- “Medium” conservation value vegetation generally means medium priority for conservation and ongoing management where clearing may be approved with appropriate offsets;
- “Lower” conservation value vegetation being low priority but still requiring conservation and ongoing management which are already well conserved for biodiversity management on private and public land or significant areas of their original extent remains intact. Clearing may be approved within these areas with appropriate offsets.

Table 15 indicates vegetation classes and conservation status plus value relevant to the Riverina bioregion which occurs within the Hay LGA.




Table 15 Conservation Vegetation Classes and Status

CONSERVATION VEGETATION CLASSES AND STATUS			
Keith Class: vegetation unit	Conservation status	Vegetation class (dominant canopy species)	Conservation Value
Western Slopes Grassy Woodlands: White Box – White Cypress Pine Woodland	Regionally endangered	<i>Eucalyptus albens</i> (White Box), <i>E.microcarpa</i> (Grey Box), <i>Callitris glaucophylla</i> (White Cypress Pine)	High
Inland Riverine Forests: Tablelands Riparian Woodlands	Regionally vulnerable	<i>Eucalyptus camaldulensis</i> (River Red Gum), <i>Casuarina cunninghamiana</i> (River Sheoak)	High
Floodplain Transition Woodlands: Black Box Floodplain Forest/Woodland	Regionally vulnerable	<i>Eucalyptus largiflorens</i> (Black Box)	High
Western Slopes Dry Sclerophyll Forests: Stringybark – Black Cypress Pine	Regionally depleted = 30-50% Original extent remaining	<i>Eucalyptus macrohyncha</i> (Red Stringybark), <i>Callitris endicheri</i> (Black Cypress Pine), <i>E. sideroxylon</i> (Mugga Ironbark), <i>E.dealbata</i> (Tumbledown Gum), <i>E. rossii</i> (White/Scribbly Gum), <i>E. polyanthemus</i> (Red Box)	Medium
Riverine Plain Grasslands	Regionally depleted	<i>Acacia pendula</i> (Boree)	Medium
Riverine Plain Woodlands	Regionally depleted	<i>Acacia pendula</i> (Boree)	Medium
Dune Mallee Woodlands	Regionally depleted	Various <i>Eucalyptus</i> spp. Including <i>E. viridis</i> (Green Mallee), <i>E. ploybractea</i> (Blue Mallee), <i>E. Dumosa</i> (Dumosa Mallee), <i>E. incrassate</i> (Yellow Mallee)	Medium
Riverine Sandhill Woodlands: Shallow Sandplain Woodland	Regionally depleted	<i>Callitris glaucophylla</i> (White Cypress Pine), <i>Eucalyptus intertexta</i> (Inland Red Box), <i>Casuarina cristata</i> (Belah)	Medium
Aeolian Chenopod Shrublands	Regionally well-retained	<i>Maireana pyramidata</i> (Black Bluebush), <i>Maireana sedifolia</i> (Pearl Bluebush)	Low
Riverine Chenopod Shrublands	Regionally well-retained	<i>Atriplex nummularia</i> (Old Man Saltbush), <i>Atriplex vesicaria</i> (Bladder Saltbush) in undisturbed sites; <i>Maireana aphylla</i> (Cottonbush), <i>Nitraria billardieri</i> (Dillon Bush) in disturbed sites	Low
Inland Riverine Forests: River Red Gum Forest	Regionally well-retained	<i>Eucalyptus camaldulensis</i> (River Red Gum)	Low
Inland Floodplain Shrublands: Lignum/Chenopod Intermittent Swamp	Regionally well-retained	<i>Chenopodium nitrariaceum</i> (Nitrate Goosefoot), <i>Muehlenbeckia florulenta</i> (Lignum)	Low



CONSERVATION VEGETATION CLASSES AND STATUS			
Inland Floodplain Swamp: Canegrass Intermittent Swamp	Regionally well-retained	<i>Eragrostis australasica</i> (Canegrass)	Low
Inland Floodplain Woodlands	Regionally well-retained	<i>Eucalyptus largiflorens</i> (Black Box)	Low
Semi-arid Sand Plain Woodland	Regionally well-retained	<i>Casuarina cristata</i> (Belah), <i>Alectryon oleifolius</i> (Rosewood), <i>Allocasuarina luechmannii</i> (Buloke or bull-oak))	Low
Riverine Sandhill Woodlands	Regionally well-retained	<i>Callitris glaucophylla</i> (White Cypress Pine)	Low
Sand Plain Mallee Woodlands	Regionally well-retained	Various Mallee Eucalyptus spp. Including <i>Eucalyptus viridis</i> (Green Mallee), <i>E. polybractea</i> (Blue Mallee), <i>E. Dumosa</i> (Dumosa Mallee), <i>E. incrassate</i> (Yellow Mallee)	Low

Methods are currently being adopted to establish appropriate offset assessment tools to ensure vegetation degradation throughout the State does not continue with cumulative impacts being taken into account to ensure the extent of clearing is considered at a catchment and regional scale. Biobanking is an offset scheme established in 2008 by the DECC which provides such opportunity. The Biobanking scheme facilitates biodiversity impact assessment for developments, is also a rigorous credible offsetting scheme, and as well gives rural landholders the ability to generate an income from conservation actions. The Biobanking assessment methodology is a science based quantitative measurement tool and used to assess the current biodiversity values at either a development site, or biobank site. There is also a use to measure the loss of biodiversity values that result from development and the gain from biodiversity values from undertaking management actions on a biobank site.

The methodology provides the means to calculate the number of credits associated with a loss or gain of biodiversity values and provide the offset rules related to retirement credits. It is anticipated that the Biobanking assessment tool will be applied in the future to areas to be developed such as those considered as regionally endangered, vulnerable or depleted. The concept attempts to acknowledge the need for ongoing development and the requirement to either retain remnants or rehabilitate other areas through a series of management actions and reclamation through conservation agreements.

6.8 Threatened Flora Ecological Communities and Populations

The three primary Acts to protect threatened ecological communities in NSW include the Threatened Species Conservation Act (TSC Act), the Fisheries Management Act (FM Act), and the Environmental Protection Biodiversity and Conservation Act (EPBC Act, 1999).

A threatened ecological community is defined or listed in schedules in the TSC Act and/or the EPBC Act. Essentially it represents a community that is subject to a threatening process and includes an ecosystem undergoing stress.



A search of the Threatened Species database for the Murrumbidgee and Lachlan sub-regions and results from a Protected Matters search identified threatened ecological communities that are known to occur within Hay LGA.

The Buloke Woodlands, Inland Grey Box, Acacia Ioderi Shrublands and the Weeping Myall Woodlands are listed as endangered ecological communities under the TSC Act 1995, two of which, the Buloke Woodlands and the Weeping Myall Woodlands, are also recognised within the EPBC Act.

Inland Grey Box Woodlands consist of a mix of Inland Grey Box (*Eucalyptus Microcarpa*); Bimble Box/Poplar Box (*Eucalyptus populnea subsp. Bimble*), Northern Cypress Pine (*Callitris glaucophylla*); Kurrajong (*Brachychiton populneus*); Bull-oak (*Allocasuarina luehmannii*) or Yellow Box (*Eucalyptus melliodora*) and sometimes contain White Box (*Eucalyptus albens*). Typical understory of these woodlands consists of sparse or absent shrubs with a variable layer of grass and herbaceous species (DECCW, 2009).

Buloke Woodlands are characterised by the Buloke tree (*Allocasuarina luehmannii*) with scattered White Cypress Pine (*Callitris glaucophylla*) and Moonbah (*Melaleuca lanceolata*) (Murray CMA, 2009). Other species that may occur within Buloke Woodlands include Slender Cypress Pine (*Callitris gracilis*), Bull Mallee (*Eucalyptus behriana*) and Black Box (*Eucalyptus largiflorens*) (Murray CMA, 2009). The understory is a scattered shrub layer which includes Black Rolpoly (*Sclerolaena muricata*), Ruby Salt Bush (*Enchylaena tomentosa*), Blue Bushes (*Maireana spp.*) and/or Hooked Needlewood (*Hakea tephrosperma*) (Murray CMA, 2009).

A search of the Threatened Species database, Murrumbidgee and Lachlan sub-regions and results from EPBC Act Protected Matters search identified one endangered population being the White-Browed Treecreeper population which occurs within the Carrathool area south of the Lachlan River and is known to exist within the Murrumbidgee and Lachlan sub-regions (DECCW, 2009).

The White-Browed Treecreeper occurs within semi-arid and arid tall shrublands and woodlands including Mulga, Brigalow, Bidgee, Belah, Buloke and White Cypress (DECCW, 2009).

Main threats to the White-Browed Treecreeper's existence is clearing and fragmentation of habitat, grazing which prevents tree re-generation and modifies habitat structure and the removal of fallen timber and dead trees for firewood (DECCW, 2009).

The DECCW has identified five priority actions to help recover the White-Browed Treecreeper population.

- Community and land-holder liaison/awareness and/or education;
- Habitat management;
- Habitat rehabilitation/restoration and/or regeneration;
- Research and establish monitoring sites to determine population trends over time and undertake studies to determine the habitat requirements of the species and potential threats to the species; and
- Survey/mapping and habitat assessment.

Within these five priority actions, opportunities exists to not only increase the level of community understanding of woodland birds, but to use management agreements and incentives on private land to manage total grazing pressure through such actions as removal of artificial water points and feral and native herbivore control (DECCW, 2009).



6.9 Threatened Species

Hay LGA is located along the banks of the Murrumbidgee River with 70% of the LGA being within the MCMA and 30% being within the Lachlan CMA (MCAP, 2008 and LCAP 2006). The Murrumbidgee Catchment contains a very high diversity of vegetation types, reflecting the variety of landforms and altitudinal and climatic gradients from east to west (DECCW, 2005).

Vegetation types vary from herbfield, grasslands and woodlands in the sub-alpine areas of northern Kosciusko National Park to the semi-arid chenopod shrublands and River Red Gum forests located within the far west and therefore within Hay LGA (DECCW, 2005).

The most widely distributed native vegetation classes within the Murrumbidgee CMA is Box-Gum Woodlands and Grey-Box Woodlands, however they have been extensively cleared (MCAP, 2008). Hay LGA is located within the Riverina bio-region which is 31% cleared with only 0.4% of the area within conservation reserves (MCAP, 2008).

Threatened species include flora and fauna groups. The distribution of protected, vulnerable and endangered species of the Hay LGA has been mapped and is shown in Annexure 16.

6.9.1 Flora

A search of the DECCW Threatened Species database, Murrumbidgee and Lachlan sub-region and NPWS Atlas search for Hay LGA area and the EPBC Act Protected Matters Report returned a total of 22 threatened and/or endangered plant species within Hay LGA, seven of which are listed as either vulnerable or endangered under the Commonwealth EPBC Act, (as shown in Annexure 4).

There were a number of species found to be vulnerable or endangered within Hay LGA, therefore the scope of this section is dedicated to those species that are listed under the EPBC Act, species that have a number of representatives from the one family, species that are considered high conservation value species under the Murrumbidgee Catchment Action Plan (CAP), and those species listed under the Hay LGA high priority actions.

The Asteraceae plant family had the largest number of species listed as either, protected, vulnerable or endangered within the Hay LGA under the NPWS Act, the TSC Act and the EPBC Act. The species from the Asteraceae family listed include:

- Drumsticks (*Pycnosorus globosus*);
- Soft Billy Buttons (*Pycnosorus pleiocephalus*);
- Common Billy Button (*Pysnosorus thomsonianus*);
- Fleshy Minuria (*Kippistia suaedifolia*);
- Claypan Daisy (*Brachycome muelleroides*);
- Mossgiel Daisy (*Brachycome papillose*);
- A Burr-Daisy (*Calotis moorei*); and
- Lanky Buttons (*Leptorhynchos orientalis*).





High Conservative Value Species

The Murrumbidgee CAP identifies the Slender Darling-pea (*Swainsona murrayana*) as a high conservation value flora species of the Murrumbidgee Catchment, with importance arises from its profile within the community (DECCW, 2009).

The Slender Darling Pea inhabits Bladder Saltbush communities, Black Box and grassland communities occurring on level plains, floodplains and depressions. Additionally, plants have been found in remnant native grasslands or grassy woodlands that have been intermittently grazed or cultivated (DECCW, 2009).

Furthermore, the Slender Darling Pea is listed as a high priority flora species for the Hay LGA area and this status that requires it to be considered within the Hay LEP as a species of significance.

Commonwealth Listed Vulnerable and Endangered Species

A search of the DECCW Threatened Species database, Murrumbidgee and Lachlan sub-region, NPWS Atlas search for Hay LGA area and the EPBC Act Protected Matters Report returned a total of seven threatened and protected flora species listed under the EPBC Act which occur within Hay LGA.

These species include:

- A Spear Grass (*Austrostipa wakoolica*);
- River Swamp Wallaby-grass (*Amphibromus fluitans*);
- Winged Peppercress (*Lepidium monoplacoides*),
- Menindee Nightshade (*Solanum karsense*);
- Slender Darling Pea (*Swainsona murrayana*);
- Spike Rush (*Eleocharis obicis*); and
- Chariot Wheels (*Maireana cheelii*).

In addition, A Spear Grass and Winged Peppercress are listed as endangered under the EPBC Act, whilst the others are listed as vulnerable.

Winged Peppercress (*Lepidium monoplacoides*) is found scattered throughout the semi-arid Western Plains region of NSW, and in Black Box depressions which are scattered throughout Hay LGA (refer to Annexure 5) (Benson *et al* cited in DECCW, 2009). Within the Hay LGA area Winged Peppercress is known to be associated with the vegetation types illustrated in Table 16.



**Table 16: Vegetation Associations - Winged Peppercress**

Winged Peppercress – Vegetation Associations	
Vegetation Class	Vegetation Type and Description
Aerolian Chenopod Shrublands	Black Bluebush low open shrubland of the alluvial plains and sandplains of the arid and semi-arid zones (Benson 153).
Inland Floodplain Shrublands	Canegrass swamp of drainage depressions, playa lakes and pans of the inland plains (Benson 24).
Inland Floodplain Swamps	Cane Grass swamp grassland of the Riverine Plan (Benson 47).
Riverina Plain Grasslands	Curly windmill grass – speargrass – wallaby grass on alluvial clay and loam on the Hay Plain, Riverina Bio-region (Benson 46). Plain Grass grassland on alluvial dark grey layers of central NSW (Benson 45).
Inland Floodplain Woodlands	Weeping Myall open woodland of the Riverina and NSW south Western Slopes Bio-region (Benson 26).

Source: Book "Ocean Shores to Desert Dunes" by Dr David Keith published by the NSW Government (cited in DECCW, 2005)

Winged Peppercress is essentially higher dependant on periodically flooded and waterlogged habitats and does not tolerate grazing disturbance. Additionally, agricultural development has seen most of the former range of the species cropped and used for improved pastures (DECCW, 2009).

This species can be found on floodplains of the Murray River tributaries of central-western and south-western NSW (DECCW 2009). Within Hay LGA Spear Grass is known to be associated with the vegetation types illustrated in Table 17.

Table 17: Vegetation Associates - Spear Grass

A Spear Grass – Vegetation Associations	
Vegetation Class	Vegetation Type and Description
Floodplain Transition Woodlands	Inland Grey Box – Poplar Box – White Cypress Pine tall woodland on red loams mainly of the eastern Cobar Penneplain Bio-region (Benson 82).
	Inland Grey Box – White Cypress Pine tall woodland on sandy loam soil on alluvial plains of NSW South-western Slopes and Riverina Bio-regions (Benson 80).

Source: Book "Ocean Shores to Desert Dunes" by Dr David Keith published by the NSW Government (cited in DECCW, 2005)

Spear Grass is predominantly found within Inland Grey Box – White Cypress Pine woodlands within the Hay LGA area (DECCW, 2009). The species does not tolerate habitat reduction/modification by pastoral development, grazing, drought and weed invasion and competition (DECCW, 2009).



Flora Priority Actions – Hay LGA

The Department of Environment and Conservation website specifies a series of priority actions for each LGA within a given Catchment. The flora species listed as high priority within the Hay LGA of the Murrumbidgee Catchment include:

- Burr Daisy;
- Chariot Wheels;
- Mossgiel Daisy;
- Slender Darling Pea;
- Spike Rush; and
- Winged Peppercress.

The priority actions listed for these species fall within a number of distinct categories such as:

- Monitoring (populations and habitat);
- Investigation (threats, effectiveness of conservation measures and additional populations); and
- Research (species specific).

In relation to the LEP, there is opportunity to consider these species and their populations through appropriate written ordinance and land use zoning where relevant such as that provided by a biodiversity overlay and clause as recommended by DECCW.

6.9.2 Fauna

Threatened Fauna Family

The Psittacidae fauna family has the largest number of species listed as protected, vulnerable or endangered within the Hay LGA under the NPW Act, the TSC Act and the EPBC Act. The species listed within the Psittacidae family include:

- Swift Parrot (*Lathamus discolor*);
- Turquoise Parrot (*Neophema pulchella*);
- Night Parrot (*Pezoporus occidentalis*); and
- Superb Parrot (*Polytelis swainsonii*).

The Night Parrot is listed as E4, presumed extinct (under the TSC Act).





High Conservation Value Species

The Murrumbidgee CAP identifies the Gloss Black Cockatoo (*Calyptorhynchus lathamii*) the Southern Bell Frog (*Litoria raniformis*) and the Superb Parrot (*Polytelis swainsonii*) as a high conservation value fauna species of the Murrumbidgee Catchment. The Southern Bell Frog and Superb Parrot's importance arises from their profile within the community, whilst the Glossy Black Cockatoo's significance arises from the specie's endemic nature to the Murrumbidgee Catchment (DECCW 2009).

The Southern Bell Frog inhabits inland Riverina forests, inland floodplain swamps, water bodies, rivers, lakes and streams and inland floodplain woodlands (DECCW 2009). The main threats to the Southern Bell Frog are (DECCW 2009):

- Removal of groundcover;
- Removal of fallen timber;
- Removal of leaf litter;
- Alteration to natural flooding regimes;
- Predation by exotic fish;
- Introduction of chemicals;
- Loss of aquatic and terrestrial habitat; and
- Road kills.

The main threats to the Glossy Black Cockatoo (DECCW, 2005) include:

- Reduction of suitable habitat;
- Loss of tree hollows; and
- Excessively frequent fires; and illegal bird smuggling and egg collecting (DECCW, 2009).

The main threats to the Superb Parrot include (DECCW, 2009):

- The removal of hollow bearing trees;
- Clearing of woodland remnants;
- Poor regeneration of nesting trees;
- Being struck by vehicles;
- Loss of hollows to bees and exotic species; and
- Illegal trapping.





Commonwealth Listed Vulnerable and Endangered Species

A search of the DECCW Threatened Species database Murrumbidgee and Lachlan sub-region NPWS Atlas search for Hay LGA area and the EPBC Act Protected Matters Report returned a total of eight vulnerable and endangered fauna species listed under the EPBC Act which occur within Hay LGA.

These species include:

- Thick-Billed Grasswren (*Amytornis textilis modestus*);
- Regent Honeyeater (*Xanthomyza phrygia*);
- Southern Bell Frog (*Litoria raniformis*);
- Swift Parrot (*Lathamus discolor*);
- Superb Parrot (*Polytelis swainsonii*);
- Plains-wanderer (*Pedionomus torquatus*);
- Painted Snipe (*Rostratula benghalensis*); and
- Eastern Long-Eared Bat (*Nyctophilus timoriensis*).

In addition, of the eight Commonwealth listed species, six are listed as vulnerable and the remaining two are listed as endangered. The two endangered species are the Regent Honeyeater and the Swift Parrot (DECCW, 2009).

Within the Murrumbidgee Catchment the Regent Honeyeater is associated with the vegetation illustrated in Table 18.

Table 18: Vegetation Associations - Regent Honeyeater

Regent Honeyeater – Vegetation Associations	
Vegetation Class	Vegetation Type and Description
Inland Riverine Forests	River Red Gum – herbaceous tall open forest of the Riverina and Murray Darling Depression Bio-regions (Benson 7). River Red Gum – Silver Wattle – grassy very tall open forest of the inner floodplains of the lower NSW South West Slopes and Riverina Bio-regions (Benson 5).
Floodplain Transition Woodlands	Riverine Yellow Box – River Red Gum tall grassy woodland of NSW South West Slopes and Riverina Bio-regions (Benson).
Riverine Sandhill Woodlands	Yellow Box – White Cypress Pine grassy woodland on deep sandy-loam alluvial soils of the eastern Riverina and western NSW South West Slopes Bio-regions (Benson 75).



In the Murrumbidgee Catchment, the Swift Parrot is associated with the following vegetation associates illustrated in Table 19 (DECCW 2009).

Table 19: Vegetation Associations – Swift Parrot

Swift Parrot – Vegetation Associations	
Vegetation Class	Vegetation Type and Description
Western Slopes Dry Sclerophyll Forests	Inland Grey Box – Black cypress Pine shrubby woodland on stony slopes NSW South Western Slopes and Riverina Bio-regions (Benson 110).
Inland Riverine Forests	River Red Gum – herbaceous tall open forest of the Riverina and Murray Darling Depression Bio-regions (Benson 7).
	River Red Gum – Silver Wattle – grassy very tall open forest of the inner floodplains of the lower NSW South West Slopes and Riverina Bio-regions (Benson 5).
Floodplain Transition Woodlands	Inland Grey Box – White Cypress Pine tall woodland on sandy loam soil on alluvial plains of NSW south western slopes and Riverina Bio-regions (Benson 80).
	Inland Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bio-regions (Benson 76).
	Riverine Yellow Box – River Red Gum tall grassy woodland of NSW South West Slopes and Riverina Bio-regions (Benson 74).

The Swift Parrot is predominantly found within tall grassy woodlands (Riverine Yellow Box and Inland Grey Box) and tall open forests (River Red Gum, River Red Gum/Silver Wattle). The main threat to the Swift Parrot is clearing for agriculture and urban and industrial development (DECCW 2009). During the breeding season and migration the major threat to the Swift Parrot is wire netting fences, windows and travelling vehicles (DECCW, 2009).

Fauna Priority Actions – Hay LGA

The Department of Environment and Conservation website specifies a series of priority actions for each LGA within a given catchment. The fauna species listed as high priority within the Hay LGA include:

- Australian Bittern;
- Bush Stone Curlew;
- Diamond Firetail;
- Plains Wanderer;
- Superb Parrot; and
- Yellow Bellied Sheath Tailbat.



The priority actions listed for these species fall into a number of distinct categories such as:

- Community awareness and engagement;
- Research;
- Protection and monitoring; and
- Strategic use of incentive based mechanisms and environmental instruments in order to conserve high conservation value land.

Opportunities exist for private landowners to develop and implement conservation agreements using measures such as:

- Incentive funding;
- Off-setting;
- Bio-banking; and
- Acquisition of land for reserve establishment.

6.10 Endangered Aquatic Ecological Communities

The Murrumbidgee River within Hay LGA is included within the Lower Murray Ecological Community and is considered to be endangered (DPI 2005) and characterised by meandering channels and wide floodplains and in its natural state, highly variable water flows, ranging from floods to droughts (DPI, 2005).

Fish are an important part of the river and aquatic eco-systems, with the structure of fish communities providing an indication of the overall health of river systems (DPI, 2005). According to the Murrumbidgee CMA the Murrumbidgee River is severely degraded with eight of the 21 native species which previously occurred within the Murrumbidgee Catchment are either locally extinct or surviving in very low abundances (DPI, 2005).

Introduced Carp (*Eastern gambusia*) and Redfin (English Perch) are three of the most widespread and abundant fish species in the Catchment. Together these species make up to 66% of individuals. Carp accounted for 87% of the total biomass of fish sampled and is therefore considered the single largest feature of the river's poor health and the main inhibitor of the river's restoration back to a more natural state (DPI, 2005).

It has been suggested that rehabilitation of in-stream and riparian vegetation, rehabilitation of wetlands, elimination of thermal pollution, improving environmental flow management, reinstating fish passage at a number of key barriers, contribution to the control of alien species, captive breeding and reintroduction programs for locally extinct populations and education within the community is required in order to improve fish species and their communities within the Murrumbidgee River (DPI, 2005).

At present, there are several aquatic habitat rehabilitation projects underway in the Murrumbidgee River including the Murrumbidgee Aquatic Biota Enhancement Project which demonstrates a range of on-ground works to improve aquatic diversity and native fish abundance (MCMA and NSW DPI, 2005).

A search of the Primary Industries Fishing and Aquaculture website and an EPBC Act protected matters report found a total of three fish species that are listed as either vulnerable or endangered that are found within the Hay LGA. Furthermore, the Trout Cod which is a large, predatory freshwater fish is listed under the FM Act and the EPBC Act as endangered (DPI, 2005). Additionally, the Murray Cod and Macquarie Perch are listed under the EPBC Act as vulnerable (as shown in Table 20).



The Lachlan River within Hay LGA is included within the aquatic ecological community in the natural drainage system of the lowland catchment of the Lachlan River (Lachlan Endangered Ecological Community). This includes 19 species of fish, 10 crustaceans, eight molluscs, two sponges and various insects.

Table 20: Vulnerable and Endangered Fish Species within Hay LGA

Vulnerable & Endangered Fish Species within Hay LGA				
Family Name	Scientific Name	Common Name	Legal Status	Count
Percichthyidae	Muccullochella macquariensis	Trout Cod	FE E – EPBC Act	53
	Maccullochella peelii peelii	Murray Cod	V (EPBC)	Likely to occur
	Macuaria australasica	Macquarie Perch	FV V EPBC Act	2
FE – Endangered (Fisheries Management Act, 1994) FV – Vulnerable (Fisheries Management Act, 1994) E – Endangered (Environmental Protection & Biodiversity Conservation Act, 1999) V – Vulnerable (Environmental Protection & Biodiversity Conservation Act, 1999)				

The rehabilitation of aquatic fish habitats is the key to improving native fish populations. Opportunities exist through planning and market-based mechanisms to rehabilitate riparian areas and control exotic and invasive species.

6.11 Migratory Species

The Commonwealth Department of Environment, Water, Heritage and the Arts (2009) defines migratory species as those animals that migrate to Australia and its external territories, or pass through or over Australian waters during their annual migrations. In Australia, all migratory species are considered matters of national significance under the EPBC Act (DEWHA, 2009).

Australia provides critical breeding and non-breeding habitat for millions of migratory water birds annually. To ensure conservation, Australia has developed a range of agreements like the Ramsar convention, on migratory species, bilateral relations with Japan, China and the Republic of Korea and the most contemporary the East Asian Australian Flyway Partnership (DEWHA, 2009).

Table 21 lists the migratory species likely to occur within the Hay LGA listed under the EPBC Act. 1999.



Table 21: Migratory Species Likely to Occur Within Hay LGA

Migratory Terrestrial Species				
Family Name	Scientific Name	Common Name	Legal Status	Count
Accipitridae	Haliaeetus leucogaster	White-bellied Sea-Eagle	Migratory (EPBC)	Likely to occur
Apodidae	Hirundapus caudacutus	White-throated Needletail	Migratory (EPBC)	Likely to occur
Megapodiidae	leipoa Ocellata	Malleefowl	Migratory (EPBC)	Likely to occur
Meropidae	Merops ornatus	Rainbow Bee-eater	Migratory (EPBC)	Likely to occur
Meliphagidae	Xanthomyza Phrygia	Regent Honeyeater	Migratory (EPBC)	Likely to occur
Migratory Wetland Species Birds				
Family Name	Scientific Name	Common Name	Legal Status	Count
Ardeidae	Ardea alba	Great Egret, White Egret	Migratory (EPBC)	Likely to occur
Ardeidae	Ardea ibis	Cattle Egret	Migratory (EPBC)	Likely to occur
Scolopacidae	Gallinago hardwickii	Latham's Snipe, Japanese Snipe	Migratory (EPBC)	Likely to occur
Rostratulidae	Rostratula benghalensis s. lat.	Painted Snipe	Migratory (EPBC)	Likely to occur
Migratory Marine Birds				
Family Name	Scientific Name	Common Name	Legal Status	Count
Apodidae	Aprus pacificus	Fork-tailed Swift	Migratory (EPBC)	Likely to occur
Ardeidae	Ardea alba	Great Egret, White Egret	Migratory (EPBC)	Likely to occur
Ardeidae	Ardea ibis	Cattle Egret	Migratory (EPBC)	Likely to occur

The main threats to migratory species are wetland habitat loss and degradation, which are believed to be attributed to population growth and economic development (DEWHA, 2009).

The Murrumbidgee Catchment Management Authority (MCMA) identifies two wetlands of international significance, Fivebough and Tuckerbil Swamps. These swamps are located near the Township of Leeton and are approximately 170 km from Hay.



6.12 Weeds and Pests

Alien species including weeds and pest animals are acknowledged as the greatest cause of biodiversity decline after habitat loss. Weeds rank highly when compared with broader threatening processes such as the destruction and modification of native vegetation. The threat posed by weeds alone, has been ranked second after land clearing, similar to that of altered fire regimes, and greater than that from pest animals. Despite this, there is a lack of information on biodiversity at risk from many alien species. Although invasive species such as weeds and feral animals are identified, their impact on biodiversity is not well understood or quantified (CRC 2006).

Key threatening processes have been identified under the TSC Act. These processes are listed because they have the potential to significantly adversely impact on biodiversity and resources. The Murrumbidgee Catchment Action Plan (2008) lists a number of key threatening processes as legislated, relating to weeds and pests species that require greater focus and management. These key threatening processes are currently affecting ecological communities, habitat and individual species across the catchment. Both MCMA and LCMA CAP's include management initiatives to mitigate and/or alleviate the risk to biodiversity as posed by introduced, invasive and alien species within both the terrestrial and aquatic realms. These management initiatives should be considered as integrated within future planning for the Hay LGA to ensure that situations and conditions that pose threats are not exacerbated.

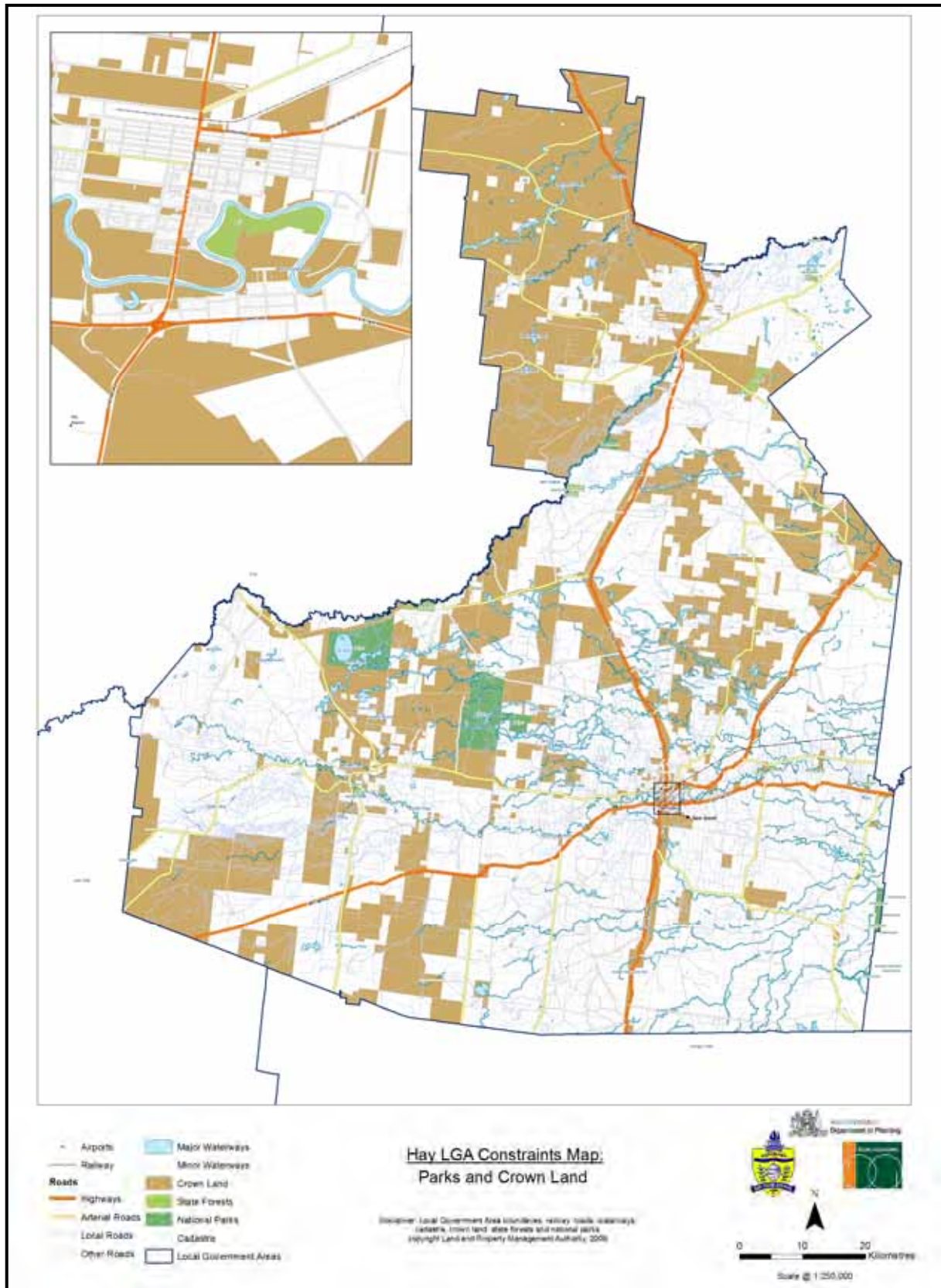
6.13 Crown Land, Parks and Reserves

Crown Land, National Parks and State Forests within the Hay LGA are shown in Figure 19.





Figure 19: Parks and Crown Land of the Hay LGA

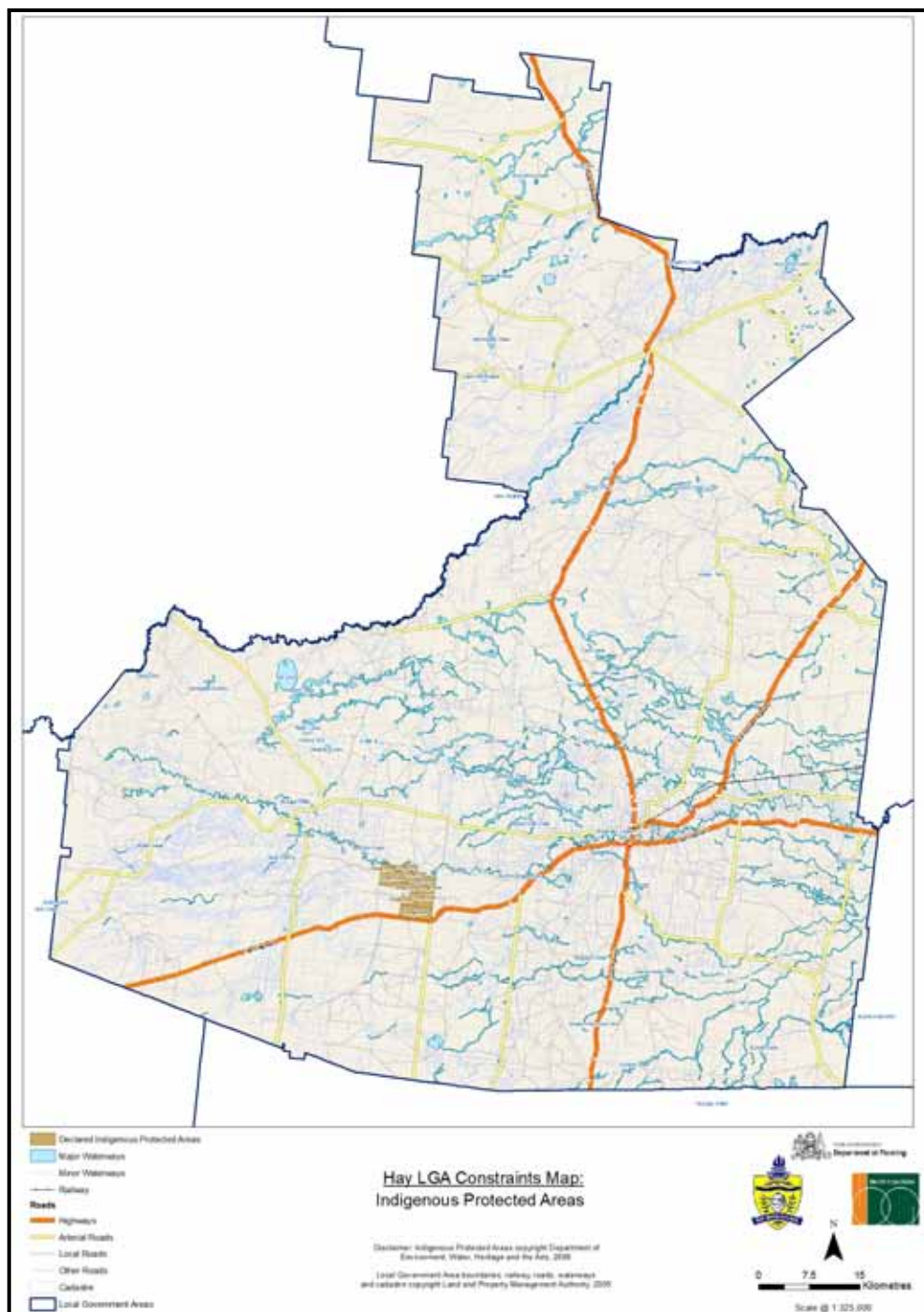




6.13.1 Aboriginal Reserves

Toogimbie and Glenhope Stations were purchased by the Aboriginal Land Corporation on behalf of the Nari Nari Tribal Council in 2001. The Tribal Council in conjunction with DECCW have initiated conservation works to protect Aboriginal cultural heritage. Littleton (2002) refers to 114 burials on Toogimbie and 76 at Jeraly. Barman Reserve Aboriginal Mounds and Toogimbie Aboriginal Burial Ground are places listed on the Register of the National Estate. Toogimbie Reserve is shown in Figure 20.

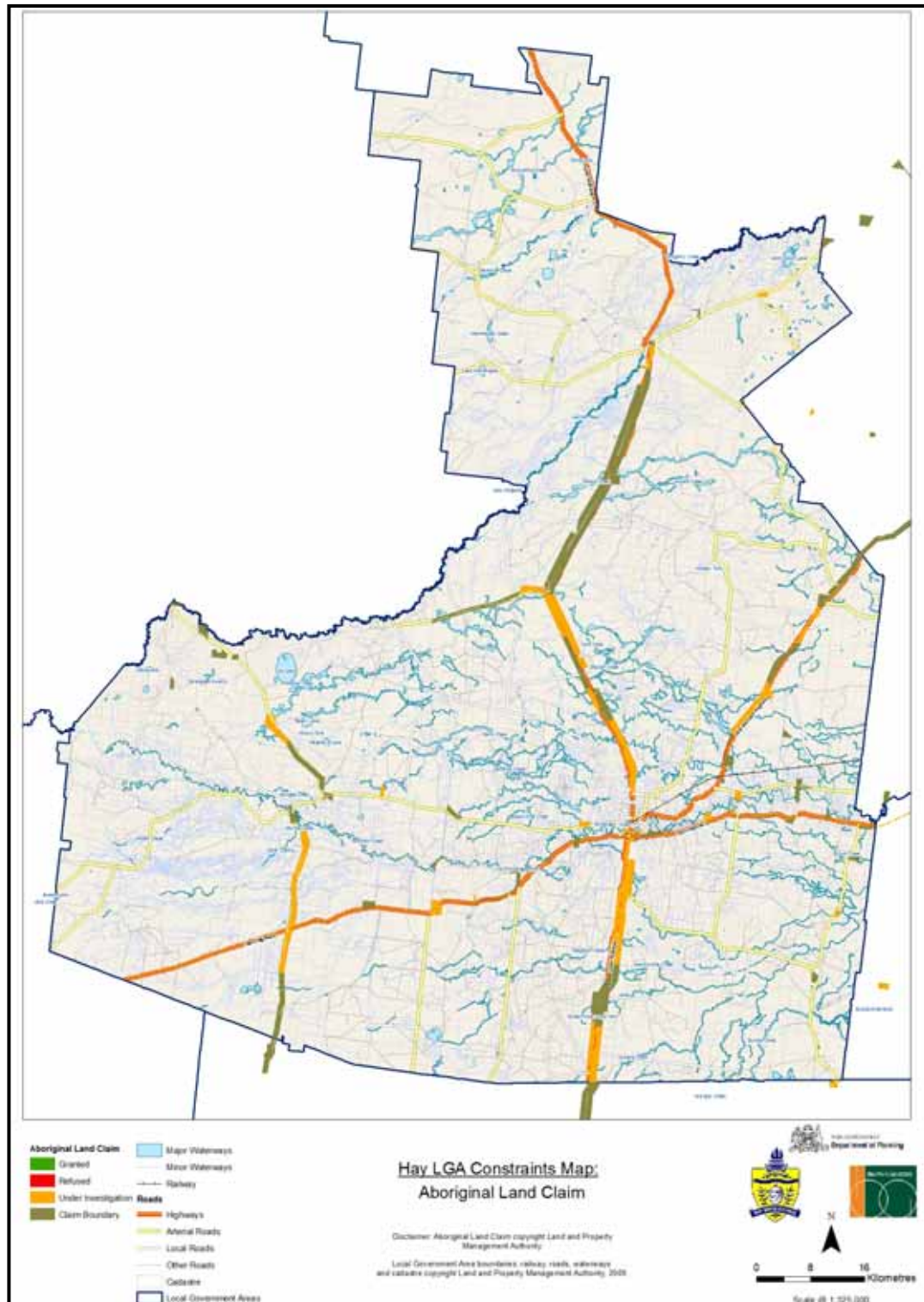
Figure 20: Declared Indigenous Protection Areas – Hay LGA



6.13.2 Aboriginal Land Claims

There are various locations within the Hay LGA which have been or are being investigated as Aboriginal land claims as shown in Figure 21. Many of these claims are on travelling stock routes.

Figure 21: Aboriginal Land Claims – Hay LGA





6.13.3 Natural Areas with Cultural Significance

Murrumbidgee Swamp and Lake Merrimajeel near Booligal are listed under Schedule 1 of Hay LEP 1998.

Other reserves or area, listed on the Register of the National Estate (RNE) include Goonawarra Nature Reserve, Great Cumbung Swamp area and Merrimajeel and Muggabah Creeks, tributary creeks of the Lachlan River.

6.14 Cultural Heritage

6.14.1 Aboriginal

Aboriginal heritage is intimately tied to the landscape (Pardoe and Martin, 2001). The Murrumbidgee province is one of four Riverina provinces and its morphology derives from its origin as a shallow basin of the Murravian Gulf. The surface features of the Hay plain have been derived from the climate, hydrology and drainage conditions associated with various geological periods and particularly the evolution of ancestral river systems through the Pleistocene and Holocene. Palaeochannels associated with fluvial, pluvial and arid phases were responsible for depositing significant floodwaters originating in the eastern highlands. The major palaeochannels relevant to the Hay local government area include the Kerarbury (55-35ka) and the Gum Creek systems (35-25ka).

The primary landforms which exist in the region include rivers and riparian areas including ephemeral lakes and wetlands as well as source bordering dunes, drainage lines, plains, scalds and depressions. The origin, location and landform type strongly influence the likelihood of occurrence and the degree of protection afforded to Aboriginal archaeological sites and places within the Hay LGA.

Despite some significant early work, until relatively recently, little has been known about Aboriginal occupation of the region. Significant investigations, by Littleton in the mid 1990s, Martin slightly later and Pardoe (2001), as well as that commissioned by the Hay Local Aboriginal Lands Council, have shown the Hay region to be a place rich in Aboriginal heritage (1995-98).

Various Aboriginal tribes have occupied the region. Kabaila has documented the Wiradjuri occupation of the Murrumbidgee river basin, including both banks of the Lachlan River through to its junction with the Murrumbidgee River.

Pardoe and Martin (2001) comment on the Ithi Ithi (Yita Yita) people inhabiting the area at the junction of the Lachlan with the Murrumbidgee to Booligal and mention the Nari Nari's occupation of the Murrumbidgee River to Narrandera.

The Nari Nari tribe were believed by historians to be an amalgamation of tribes in the Hay region including the Wiradjuri from the east and the Mathi Mathi in the west to Balranald. During summer, Nari Nari occupied Murrumbidgee river country which provided a rich food source of fish, kangaroo, native fowl and freshwater mussels. In winter, when the river flooded, tribes moved out onto the plains in search of slightly higher ground and surface water.

Sturt observed that recent occupational trends (just after European contact) involved Aboriginal people living in family groups with increased population down-gradient from the river to the west to a large tribe near the junction of the Lachlan and Murrumbidgee rivers.



Reed beds and swamps were common areas for habitation because they were high in biomass and provided a source for food and water. The Great Cumbung Swamp near Booligal, at the junction of the Lachlan and Murrumbidgee Rivers and Dry Lake west of Hay on the outskirts of the Nari Nari's traditional boundary, are significant places in terms of Aboriginal occupation and use. Pardoe and Martin (2001) identify a need for sampling and conservation of swamps in the Murrumbidgee province.

Pardoe and Martin identify the need for riparian zones to be managed appropriately in view of their potential heritage significance and heritage assessments are recommended prior to action occurring which may potentially adversely impact values.

Literature review and consultation with the local Lands Council; including the Hay Local Aboriginal Community, has revealed that the Hay LGA is a significant place rich in Aboriginal history and containing significant surface and subsurface archaeological evidence of occupation including surface mounds, burials, middens, hearths, ovens, scar trees and stone artefacts.

On 10 November, 2009, a DECCW search undertaken of Aboriginal Heritage Information Management System (AHIMS) database revealed 322 features including 237 aboriginal sites recorded, comprising;

- 40 burials;
- 48 mounds;
- 78 hearths;
- 5 potential archaeological deposits;
- 13 shell middens;
- 4 aboriginal resource/gathering sites;
- 1 art site;
- 94 artefact sites;
- 1 ceremonial ring;
- 1 grinding groove;
- 1 habitation structure;
- 3 non-human bone/organic material;
- 1 stone arrangement; and
- 42 modified trees.

Burial sites exist throughout the Hay LGA and can comprise isolated and individual burials or many individual and related burials. Many mounds contain evidence of burials and some, like that found on Nap Nap station, are considered cemeteries because of the numbers involved. The density of burials follows density of occupation and is commonly found on source-bordering dunes or lunettes.

Pardoe and Martin (2001) identify mounds, dating from around 4000 years ago as being the most common and visible of the archaeological features of the Hay plain. These areas were used as cooking ovens, plant processing and habitation sites and are generally found near waterways and palaeochannels.



The Hay Local Aboriginal Lands Council and Pardoe and Martin (2001) have identified a number of properties in the area which have high conservation value, including St Pauls, Walmea Downs, and Green Swamp at the back of Mungadal, Yerrimbool, Murrumbidgee and Norwood.

As mentioned earlier, in 2001, the Aboriginal Land Corporation purchased Toogimbie and Glenhope Stations, situated 40km west of Hay, on behalf of the Nari Nari Tribal Council and conservation works have commenced on these properties.

Nap Nap Cemetery has been nominated as an “aboriginal place” under the NPW Act. The Hay Local Aboriginal Lands community, through this process have indicated their willingness for this site and other significant sites to be protected through the promotion of public awareness of site location and the establishment of appropriate conservation mechanisms, such as through environmental planning instruments.

A search under the EPBC Act revealed two aboriginal areas including the Barman Reserve Aboriginal Mounds and the Toogimbie Aboriginal Burial Ground.

Recent artefacts of aboriginal occupation are also found near existing settlements including Maude and Boolgal.

Table 22: An Assessment of Site Significance

Assessment of Site Significance				
Sites	Landforms	Type of significance	Tenure	Investigated
DRY LAKE Mounds, burials, mounds with shells, microblade workshops	Ephemeral lake Ephemeral creek in palaeochannel, lunette, Sandridge (palaeochannel levee?)	Ancestral remains. Sites in context with landforms and vegetation (cultural landscape) Aboriginal cultural information	Pastoral property on Hay LALC list of significant areas	YES
TOOGIMBIE & GLENHOPE Mounds, burials, middens, scarred trees, open sites	River, creeks, swamps, palaeochannels and levees, lignum	Ancestral remains. Sites in context with landforms and vegetation (cultural landscape). Aboriginal cultural information. Fishing places, camping places.	Owned by Hay LALC (Indigenous Land Corporation-ILC purchase)	No, managed by LALC
MURRUMBIDGEE Mounds, burials, middens, scarred trees, open sites	River, creeks, swamps, lagoons, lignum, River Red Gum forest not cut	Ancestral remains. Sites in context with landforms and vegetation (cultural landscape).	Smaller property on list of significant areas from survey. Well conserved River Red Gum forest	YES
ILLIWARA RESERVE Midden, mounds, burials, fishing place	River, levee, River Red Gum forest, lagoon, high sandy area	Ancestral remains. Sites in context with landforms and vegetation (cultural landscape). Aboriginal cultural information. Used for fishing and cray fishing.	PPB Reserve but may be changing to Local Shire control.	YES, can be managed by LALC (They have already fenced in area with burials).
BARMAN SF Mounds, scarred trees	River, levee, River Red Gum forest	Sites in context with landforms and vegetation (cultural landscape).	State Forest	YES can be managed by LALC



Assessment of Site Significance				
Sites	Landforms	Type of significance	Tenure	Investigated
		Aboriginal cultural information.		
SOAPWORKS BEND, HAY Historic camping place, fishing and camping place	River, lagoon, "island"	Historic camping place. Aboriginal cultural information. Used for fishing and camping.	Local Shire?	YES can be managed by people with association.
BRANDON'S BEND, HAY Historic camping place, fishing and camping place	River	Historic camping place. Aboriginal cultural information. Used for fishing and camping.	Crown land?	YES can be managed by people with association.
YERRINBOOL Mounds, open sites, scarred trees	Palaeochannel, ephemeral lake, chenopod plains	Sites in context with landforms and vegetation (cultural landscape). Aboriginal cultural information.	Pastoral property with well conserved sites and vegetation	YES
DHARCOOLA Open sites in sandhills with quantities of stone artefacts (Ian Woods p.c.)	Palaeochannel, ephemeral lake, chenopod plains	Sites in context with landforms and vegetation (cultural landscape). Aboriginal cultural information.	Pastoral property with well conserved sites and vegetation.	YES
NORWOOD (just out of survey) Mounds, burials, open sites, scarred trees, and archaeological deposit.	River, Red Gum forest, Large lake with lunette, Inlet and outlet creek, Chenopod plains, Palaeochannels.	Ancestral remains. Sites in context with landforms and vegetation (cultural landscape). Aboriginal cultural information.	Pastoral property with well conserved sites and vegetation.	YES (Conservation priority of Hay LALC and National Parks % Wildlife Services (NPWS)) Steve Meredith p.c.
RAVENSWORTH Mounds, burials, open sites	Ephemeral lakes, palaeochannels, swamps, plains.	Ancestral remains. Sites in context with landforms and vegetation (cultural landscape). Aboriginal cultural information.	Irrigation property with 3 voluntary conservation areas.	NO managed by owners, DLWC & Hay LALC.
COOEY POINT LAGOON RESERVE Mounds, scarred trees, middens.	River, Lagoon, forest	Sites in context with landforms and vegetation (cultural landscape).	PPB Reserve	YES
UARDRY STOCK RESERVE Mounds, scarred trees, middens		Aboriginal cultural information.	PPB Reserve	



Assessment of Site Significance				
Sites	Landforms	Type of significance	Tenure	Investigated
YANGA STATION Middens, burials, scarred trees	Lakes, inlet creek, lunettes, creeks, floodplain, plains	Ancestral remains. Sites in context with landforms and vegetation (cultural landscape). Aboriginal cultural information	Irrigation & pastoral property. Employs Aboriginal Heritage Officer	NO Managed by owners but needs some monitoring.
YANGA NATURE RESERVE Mounds, burials, open sites, scarred trees	Creeks, floodplain	Ancestral remains. Sites in context with landforms and vegetation (cultural landscape). Aboriginal cultural information.	Nature reserve.	Needs assessment and management of heritage.
YANGA LAKE Dreaming site, Middens, burials	Lake, lunette, inlet creek	Dreaming site. Ancestral remains. Sites in context with landforms and vegetation (cultural landscape). Aboriginal cultural information.	Part of lake shore is a reserve? Recreation reserve?	YES. Suggested for AP.
BALRANALD FISH TRAP AND DREAMING SITE Fish trap, dreaming site, nearby burials, middens, scarred trees	River, rocky bar.	Dreaming site. Ancestral remains. Sites in context with landforms and vegetation (cultural landscape). Aboriginal cultural information.	In river	YES
DIPPO TREE Ceremonial site		Area with continuous history of association		NO. AP declaration in process.
KOONADAN PA Burials	Sand dunes	Ancestral remains		NO. AP declared 1993.
KOOMARINGA PA				1990
WERAI STATE FOREST (Out of survey area but priority of Deniliquin LALC) Mounds, burial mounds with marked trees, middens, scarred trees, dreaming sites, fishing places, historic and continuing resource gathering for Moonacullah people.	Rivers, creeks, lagoons, forest, sand dunes.	Dreaming site. Ancestral remains. Sites in context with landforms and vegetation (cultural landscape). Aboriginal cultural information.	State forest	YES. Management of sites and landscape a priority.



Assessment of Site Significance				
Sites	Landforms	Type of significance	Tenure	Investigated
MURRUMBIDGEE & LACHLAN RIVERS JUNCTION/ GREAT CUMBUNGI SWAMP/POSSIBLY BOYONG OR TOOPUNTAL STATIONS Mounds, open sites, scarred trees, possible historic use of mounds.	Rivers, creeks, lakes, cumbungi and clear water swamps, channels	Sites in context with landforms and vegetation (cultural landscape). Aboriginal cultural information. Possible historic associations	Private	YES

Source: Table 9.1, Pardoe & Martin (2001)

Pardoe and Martin's work in 2001 is significant as they analysed, recorded and surveyed sites within the Murrumbidgee Province and developed a predictive model or tool to predict the likelihood of occurrence of archaeological sites across the region.

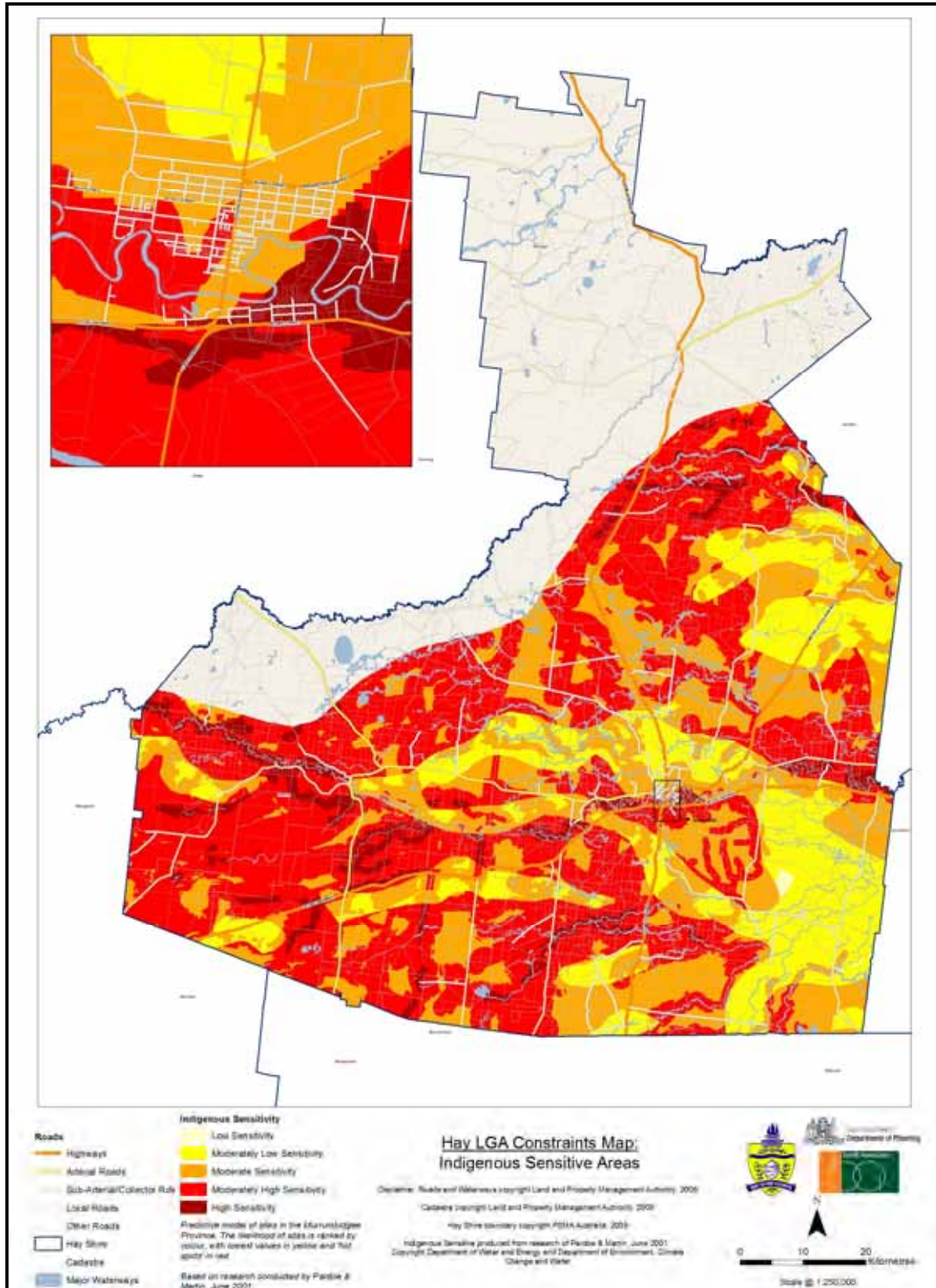
Unfortunately the predictive model does not include the north western most boundary of the Hay LGA.

The predictive model is shown in Figure 22 . This spatial model shows landscapes within the Hay LGA and their degree of sensitivity in respect to Aboriginal cultural heritage. For instance landscapes of high sensitivity have a high likelihood that items (object or places) of Aboriginal cultural heritage would be present.





Figure 22 Predictive Model Map Murrumbidgee Province



Source: Figure 7.1, Pardoe and Martin (2001)



The tool was developed to assist in land use planning decisions and particularly to guide the Local Aboriginal Land Council, land managers and developers as to the areas most likely to contain artefacts or include evidence of prior occupation.

The tool can be used to guide future planning decisions. Where high-moderate areas should require archaeological investigation to guide land use planning decisions and low risk areas might just require consultation with stakeholders.

Potential risk areas and mapping of recorded sites can be used as an educational tool to promote awareness and knowledge of Aboriginal cultural heritage in the region. The tool can facilitate the local Aboriginal community being provided with an opportunity to be involved in planning decisions.

DECCW's Aboriginal Heritage Information Management System (AHIMS) is continually being updated and it is important to realise that a map showing existing or potential sites identified at a particular search date might be "out of date" or unreliable.

Regarding this last point, it is important to bear in mind that the predictive model has been developed based on an analysis of recorded sites at a particular time but also an assessment of geomorphological processes and landscapes, anthropogenic impacts and site surveys which mean that the model identifies locations based on likelihood of occurrence. It does not categorically denote that sites will or will not be found and planning processes are required to cater for a range of contingencies.

Areas not covered on the predictive model map may also be culturally significant and contain evidence of prior Aboriginal occupation. Guidelines within a development control plan might be an option whereby detailed site investigation might be triggered by distance to landforms such as wetlands and riparian zones as described by Pardoe and Martin (2001).

While the actual location of sites on freehold land cannot be given due to the desire to protect them, the Hay Local Aboriginal Land Council believe that crown land sites should be publically identified to assist in their conservation.





6.14.2 European

A search of the Australian Heritage Places Inventory and Councils LEP (1998) has revealed that heritage items and places in Hay LGA are protected in various ways as shown in the Table 23.

Table 23: Heritage Listed Places

Item	Commonwealth Heritage List	NSW Heritage Register	Register of National Estate	Hay LEP Schedule 1
Hay Post Office	√	√	√	√
Bishops Lodge		√		
Bishops Lodge & Outbuildings			√	√
Hay Railway Station and Yard Group		√		
Goonawarra Nature Reserve, Booligal			√	
Hay Courthouse			√	√
Former Hay Gaol		√	√	√
Hay Hospital Complex			√	√
Hay Railway Station			√	√
Aboriginal Place, Maude			√	
Aboriginal Place, Hay			√	
Land Board Office			√	√
Merrimajeel and Muggabah Creeks area, Booligal			√	√ (Lake Merrimajeel)
Former One Tree Hotel			√	√
Witcombe Memorial Drinking Fountain			√	√
Westpac Bank				√
Hay Council Chambers				√
Hay Courthouse				√
Station Masters House				√
Railway Porters Cottages				√
Railway Water Tower				√
Gatekeepers Cottages				√
Former Terminus House				√
St Fergal's Roman Catholic Presbytery				√
St Pauls Pro-Cathedral				√
St Andrews Presbyterian Church				√
Presentation Convent				√
Commercial Hotel				√



Item	Commonwealth Heritage List	NSW Heritage Register	Register of National Estate	Hay LEP Schedule 1
Booligal Church				√
Former Sewerage Treatment Works				√
Murrumbidgee Swamp				√

Records of listings under the NSW Heritage Register and Commonwealth Register are provided as Annexure 6.

The above table shows that there is a need to ensure the integration of conservation mechanisms for European cultural heritage within the Hay LGA.

The Township of Hay includes many buildings of potential heritage significance which are not currently listed or protected. Included amongst these are many fine examples of period homes. Other notable elements include the old water tank and stand in Hay Park and the old Presentation (Presbyterian) Convent. The southern end of Lachlan Street is also significant as a potential civic conservation precinct.

No heritage study has been conducted for the Hay LGA and in view of the significant European cultural heritage values, some of which are indicated through existing conservation mechanisms, it is a priority that a shire wide assessment be undertaken. This should also consider Aboriginal and possibly Chinese heritage. This assessment should consider settlement history and the significance of Sandy Point and Bushy Bend. Sandy Point and Bushy Bend being the likely original Langs Crossing place (Sandy Point) and site for Leonard's punt (Bushy Bend) as well as comprising physical evidence of Aboriginal occupation.

The original location of Lang's Crossing place has not been verified and is of significant historical interest and importance to the Hay Community. However, The Sydney Morning Herald on 11 May 1858 "*The Past Season*" cited that Baggot operated a punt at the original Lang's Crossing place at that time and that Leonard's new punt is to be located nearby.

A perusal of the 1891 Parish maps shows Baggot's punt was located north of Bungah Creek between the existing golf course and Sandy Point. The same map reveals Leonard's punt operated further to the east, access being achieved south of the existing tennis courts and east over the river at the existing location of Ferry Street in South Hay. Parish maps also record original town allotments, leased by Lang and in the ownership of Leonard and also Simpson who all played a role in the early development of Hay. The scope of this project has meant that potential sites could not be investigated to determine their historical significance. However, in the vicinity of the existing tennis courts are located dwellings which may be of some significance and which have a nexus to the adjoining areas of open space and river in terms of heritage and tourism potential.

Identified cultural heritage sites for the Hay LGA including Booligal and One Tree is shown in Annexure 7.



Key findings

A review of the Hay LGA environmental context has identified the following key findings

- Good quality groundwater exists towards the eastern boundary of the Hay LGA and the predominate land use for groundwater is irrigation;
- Both the Lower Lachlan and Lower Murrumbidgee groundwater systems are high risk systems due to the level of extraction and trends in groundwater behaviour;
- Surface and groundwater connectivities exist with sections of the Lachlan and Murrumbidgee Rivers being losing streams, discharging to underlying aquifers. Riparian zones and prior stream formations are significant in this regard;
- An extensive area around Maude shows evidence of upward leakage to the saline water table (shallow unconfined aquifer);
- There is significant competing demand for surface water allocations;
- Riparian zones exist along the Murrumbidgee and Lachlan Rivers with significant social, biodiversity and cultural heritage values;
- Significant wetlands exist in Hay with biodiversity and cultural heritage values.
- Hay LGA has rich and significant cultural heritage values including European and Aboriginal heritage, and potentially Chinese heritage subject to further research;
- A shire-wide heritage study is strongly recommended to guide conservation incentives. This study should examine European, Chinese and Aboriginal cultural heritage and consider both modern and historical occupation;
- Future planning should include the predictive model developed by Pardoe and Martin (2001) as a planning overlay to guide future planning decisions. Local provisions including the retention of a consultation clause with the LALC should be retained;
- Future LEP conservation mechanisms ensure integration with the State and Commonwealth register under the Heritage Act as well as other legislation such as the National Parks and Wildlife Act in the Standard Instrument and existing legislation;
- Sites with the potential to be included as conservation areas include the Nap Nap Cemetery, Great Cumbung Swamp, Sandy Point and Bushy Bend;
- Hay LGA has four threatened ecological communities listed under State legislation, these include:
 - o Buloke Woodlands;
 - o Inland Grey Box;
 - o Acacia loderi shrublands; and
 - o Weeping Myall Woodlands.

Two of these woodlands, the Buloke Woodlands and the Weeping Myall Woodlands are also listed under the EPBC Act.

- One endangered species exists within Hay LGA, the White-Browed Treecreeper, although its distribution within Hay LGA is restricted to the northern edges of the LGA, south of the Lachlan River;



- Opportunities exist to conserve threatened species and their populations through innovative environmental planning instruments and the adoption of market based conservation incentives including biobanking. Rehabilitation of riparian areas should also be considered within this context; and
- In Hay LGA the Murrumbidgee River and the Lachlan River are included with endangered aquatic ;ecological communities.





7.0 URBAN CONTEXT

7.1 Hay

The urban form of Hay Township originates from an 1850 to 1870s 'grid' style settlement pattern. The urban area generally comprises slightly elevated floodplains. The Township benefits from the key transport intersections of a river-crossing and three State highways connecting major cities and ports. A north-south/east-west grid pattern prevails, with most of the urban area located north of the river.

Older settlement areas are distinguished from newer areas through built form, with central and central-east areas comprising original small-lot land releases, which generally contain most remaining built items of European heritage significance.

Foreshore areas comprising flood-prone land and large tracts of remnant native vegetation are mostly contained in public reserves with much of this land having reasonable public access and amenity for recreation purposes.

The main commercial area is located along Lachlan Street (part of the Cobb Highway) and is generally bounded from Leonard Street in the north to Belmore Street in the south (CBD). Core retail and office land uses exist in this area and along certain side-streets, generally to the west of Lachlan Street.

Industrial land uses are mostly confined to northern and north-western fringe areas with some located to the south. Throughout urban Hay mixed land uses prevail including light industrial.

Today most of urban Hay is not flood-prone owing to a constructed levee system along town boundaries which is proposed to be further raised and extended in the near future to provide additional security against flooding to cater for the 1 in 100 year flood event.

Since 1998 the strategic land use planning direction for Hay has been set by the *Hay Local Environmental Plan 1998* principally through its five land use zones:

- Zone No. 1(a) (General Rural Zone);
- Zone No. 1(c) (Rural Small Holdings Zone);
- Zone No. 1(f) (Forestry Zone);
- Zone No. 2(v) (Village or Urban Zone) and
- Zone No. 8(a) (National Parks and Nature Reserves Zone).

Urban Hay is currently zoned 2(v) (Village or Urban Zone), which is also the case for both Maude and Booligal.

The Hay Development Control Plan was intended to guide land use planning. The DCP does not apply to Maude or Booligal. An analysis of the effectiveness of the DCP in implementing planning decisions for urban Hay has not been undertaken as a part of this report.

An indicative survey of urban land uses in Hay Township (2009; 2010) is shown in Figure 23 and a survey of occupied and vacant floor space for retail, commercial, and industrial land uses (2009) in Table 25.

Figure 23 can be considered in conjunction with Annexure 8.



Methodology used to prepare the survey included identifying all urban land uses (residential, industrial, retail and commercial, trade and industry, tourism, heritage, open space, recreation, educational establishments, sewage treatment plant, waste facilities, and cemeteries) within and immediately surrounding the urban area as shown in Table 24. For ease of presentation some of these land use classes are recorded in the survey and others have been recorded in constraints maps as appearing elsewhere in this report.

Table 24: Land Use Survey Methodology

Land Use Classification Name	Where recorded
Residential	Land Use Survey: <i>Residential</i>
Industrial	Land Use Survey: <i>Industrial</i>
Retail and Commercial	Land Use Survey: <i>Commercial</i>
Trade and Industry	Land Use Survey: <i>Industrial</i>
Tourism	Land Use Survey: <i>Commercial</i>
Heritage	Land Use Survey: <i>Heritage</i>
Open Space	Land Use Survey: <i>Open Space/Recreation</i>
Recreation	Land Use Survey: <i>Open Space/Recreation</i>
Educational Establishments	Land Use Survey: <i>Education</i>
Sewage Treatment Plant	Land Use Survey: <i>Civic Infrastructure</i>
Waste Facilities	Land Use Survey: <i>Civic Infrastructure</i>
Cemeteries	Land Use Survey: <i>Civic Infrastructure</i>

For the purposes of calculating land supply and vacant allotments, Figure 23 identifies significant areas of vacant land east of the hospital and south of Wharf Street because Council's DCP and 2(v) Village or Urban Zone included these areas.



Table 25: Survey of Occupied and Vacant Floor Space for Commercial and Industrial Land Uses (2009)

OCCUPIED FLOOR SPACE (LACHLAN STREET, HAY)								
Retail (shops, merchandise etc)			Commercial (offices)			Industrial		
Dimension (m)	Dimension (m)	Total area (m2)	Dimension (m)	Dimension (m)	Total area (m2)	Dimension (m)	Dimension (m)	Total area (m2)
4.0	20.0	80.0	30.0	5.0	150.0	40.0	22.0	880.0
9.0	13.0	117.0	50.0	22.0	1,100.0		Sub-total	880.0
8.0	10.0	80.0	12.0	7.0	84.0			
7.0	20.0	140.0	15.0	10.0	150.0		TOTAL	20,049.5
15.0	10.0	150.0	5.5	17.0	93.5			
40.0	16.0	640.0	12.5	20.0	250.0			
7.0	20.0	140.0	8.0	13.0	104.0			
7.0	20.0	140.0	14.0	15.0	210.0			
14.0	9.0	126.0	9.5	20.0	190.0			
9.0	8.0	72.0	12.5	18.0	225.0			
23.0	34.0	782.0	23.5	11.5	270.3			
9.5	4.5	42.8	10.5	32.0	336.0			
16.5	8.0	132.0	15.5	31.0	480.5			
49.0	30.0	1,470.0	11.5	20.0	230.0			
22.5	4.5	101.3	13.5	50.0	675.0			
22.5	4.5	101.3	10.0	8.5	85.0			
22.5	4.5	101.3	23.0	7.0	161.0			
22.5	9.0	202.5	5.0	31.0	155.0			
22.5	4.5	101.3		Sub-total	4,949.3			
4.5	16.5	74.3						
5.0	16.5	82.5						
6.5	16.5	107.3						
14.0	15.0	210.0						
20.0	40.0	800.0						
10.0	26.5	265.0						
15.5	43.0	666.5						
12.0	20.0	240.0						
10.0	8.0	80.0						
13.0	31.0	403.0						
9.0	15.0	135.0						
15.0	9.0	135.0						
5.5	17.0	93.5						
6.0	20.0	120.0						
8.0	10.0	80.0						
8.0	22.0	176.0						
15.5	44.0	682.0						
26.0	44.0	1,144.0						
5.5	12.0	66.0						
15.0	44.0	660.0						
10.0	15.0	150.0						
11.0	18.0	198.0						
9.0	20.0	180.0						
8.0	20.0	160.0						
18.0	40.0	720.0						
6.5	12.0	78.0						
10.0	40.0	400.0						
10.5	30.0	315.0						
4.0	12.0	48.0						
7.0	40.0	280.0						
47.0	16.0	752.0						
	Sub-total	14,220.3						

VACANT FLOOR SPACE (LACHLAN STREET, HAY)		
Retail		
Dimension (m)	Dimension (m)	Total area (m2)
8.0	15.0	120.0
7.0	20.0	140.0
9.0	16.5	148.5
5.5	17.0	93.5
5.0	20.0	100.0
	Sub-total	602.0
Commercial		
22.0	20.0	440.0
17.0	5.5	93.5
25.0	18.0	450.0
10.0	8.5	85.0
	Sub-total	1,068.5
Industrial		
0.0	0.0	0.0
	Sub-total	0.0
	TOTAL	2,739.0

Note: Floor space not measured/estimated

- Public buildings (e.g. NPWS, post office, police, court house, council, CMA, DoL library, hall, tourist info. Centre, RFS, SES, LHPA, council works depot & recycling, RTA depot, firestation)
- Services stations
- Motels
- Hotels with 1st floor space clearly not occupied due to BCA (otherwise included)
- Offices (heritage) with 1st floor space clearly not occupied due to BCA (otherwise inc.)
- Automotive dealerships
- Home occupations (e.g. veterinarians, IT servicing)
- Outside defined urban area (e.g. ag sheds etc)
- Grain silos/storage sheds
- Hospital
- Clubs

OCCUPIED FLOOR SPACE (HAY, NOT INC. LACHLAN ST OR SOUTH HAY)		
Retail (shops, merchandise etc)		
Dimension (m)	Dimension (m)	Total area (m2)
10.0	18.0	180.0
	Sub-total	180.0
Commercial (offices)		
Dimension (m)	Dimension (m)	Total area (m2)
15.0	10.0	150.0
15.0	20.0	300.0
15.0	20.0	300.0
10.0	15.0	150.0
25.0	15.0	375.0
15.0	25.0	375.0
15.0	20.0	300.0
15.0	15.0	225.0
15.0	52.0	780.0
15.0	15.0	225.0
8.0	8.0	64.0
	Sub-total	3,244.0
Industrial		
Dimension (m)	Dimension (m)	Total area (m2)
23.0	20.0	460.0
33.0	16.0	528.0
10.0	15.0	150.0
10.0	20.0	200.0
15.0	25.0	375.0
10.0	15.0	150.0
15.0	20.0	300.0
15.0	25.0	375.0
25.0	15.0	375.0
10.0	10.0	100.0
20.0	50.0	1,000.0
15.0	10.0	150.0
15.0	25.0	375.0
15.0	20.0	300.0
20.0	15.0	300.0
	Sub-total	5,138.0
	TOTAL	8,562.0

VACANT FLOOR SPACE (HAY, NOT INC. LACHLAN ST OR SOUTH HAY)		
Retail		
Dimension (m)	Dimension (m)	Total area (m2)
0.0	0.0	0.0
	Sub-total	0.0
Commercial		
Dimension (m)	Dimension (m)	Total area (m2)
20.0	10.0	200.0
15.0	10.0	150.0
15.0	8.0	120.0
10.0	10.0	100.0
	Sub-total	570.0
Industrial		
Dimension (m)	Dimension (m)	Total area (m2)
15.0	10.0	150.0
10.0	8.0	80.0
	Sub-total	230.0
	TOTAL	800.0

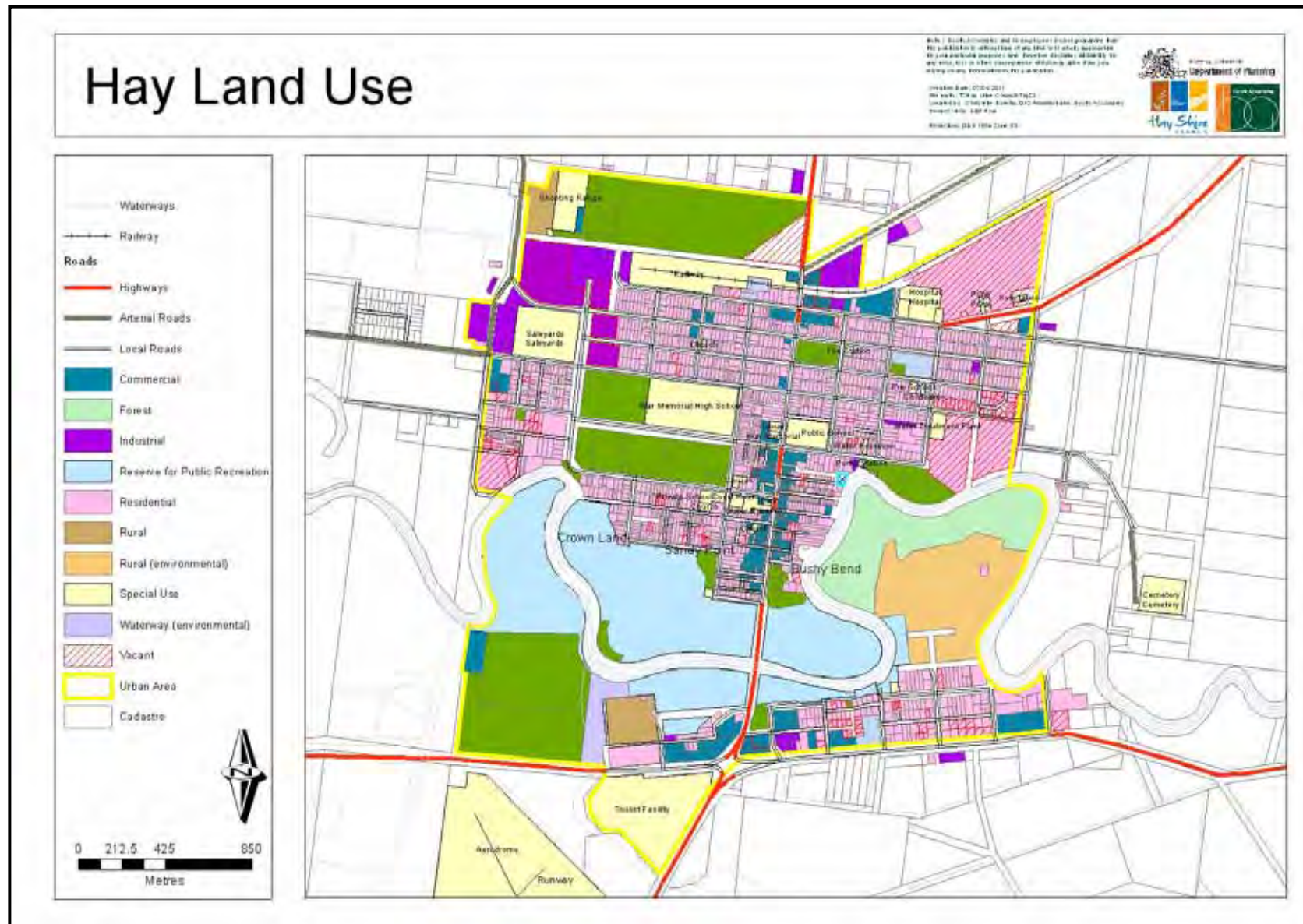
Note: Floor space not measured/estimated

- Public buildings (e.g. NPWS, post office, police, court house, council, CMA, DoL library, hall, tourist info. Centre, RFS, SES, LHPA, council works depot & recycling, RTA depot, firestation)
- Services stations
- Motels
- Hotels with 1st floor space clearly not occupied due to BCA (otherwise included)
- Offices (heritage) with 1st floor space clearly not occupied due to BCA (otherwise inc.)
- Automotive dealerships
- Home occupations (e.g. veterinarians, IT servicing)
- Outside defined urban area (e.g. ag sheds etc)
- Grain silos/storage sheds
- Hospital
- Clubs

OCCUPIED FLOOR SPACE (SOUTH HAY AND AIRPORT)		
Retail (shops, merchandice etc)		
Dimension (m)	Dimension (m)	Total area (m2)
0.0	0.0	0.0
	Sub-total	0.0
Commercial (offices)		
Dimension (m)	Dimension (m)	Total area (m2)
0.0	0.0	0.0
	Sub-total	0.0
Industrial (South Hay)		
Dimension (m)	Dimension (m)	Total area (m2)
12.5	30.0	375.0
15.0	30.0	450.0
15.0	30.0	450.0
15.0	30.0	450.0
15.0	30.0	450.0
2.0	5.0	10.0
	Sub-total	900.0
Industrial (Hay Airport, not inc. club house)		
Dimension (m)	Dimension (m)	Total area (m2)
25.0	10.0	250.0
28.0	12.5	350.0
17.5	16.0	280.0
30.5	12.0	366.0
50.0	30.0	1,500.0
	Sub-total	2,746.0
	TOTAL	3,646.0

VACANT FLOOR SPACE (SOUTH HAY AND AIRPORT)		
Retail		
Dimension (m)	Dimension (m)	Total area (m2)
0.0	0.0	0.0
	Sub-total	0.0
Commercial		
Dimension (m)	Dimension (m)	Total area (m2)
0.0	0.0	0.0
	Sub-total	0.0
Industrial		
Dimension (m)	Dimension (m)	Total area (m2)
0.0	0.0	0.0
	Sub-total	0.0
	TOTAL	0.0

Figure 23: Survey of Urban Land Uses in Hay Township (2009; 2010)









7.1.1 Residential

7.1.1.1 Spatial Distribution and Supply

Arising from Figure 23, there are approximately 1,469 lots² used for residential purposes within the urban boundary of Hay Township, as defined, with 1,367 of these occupied, 74 fully vacant, and 28 partly vacant (2009). The 28 lots identified as “partly vacant” comprise vacant areas of existing large developed lots considered to be able to be further subdivided and developed for residential purposes. These areas have been identified for context in regard to opportunities for ‘infill’ residential development; however have not been factored into land supply analysis owing to their non market-ready sale status (not subdivided from parent lot).

Locations of “fully vacant” residential lots are mostly confined to northeast and southeast areas as shown in Figure 23, however a concentration of such lots also exists in a western area as shown. The north-eastern area comprises a recent residential subdivision area and the south-eastern area comprises old residential subdivision lots. The western area comprises old residential subdivision lots which have not been developed as the existing flood levee height does not adequately prevent floodwater inundation at this time.

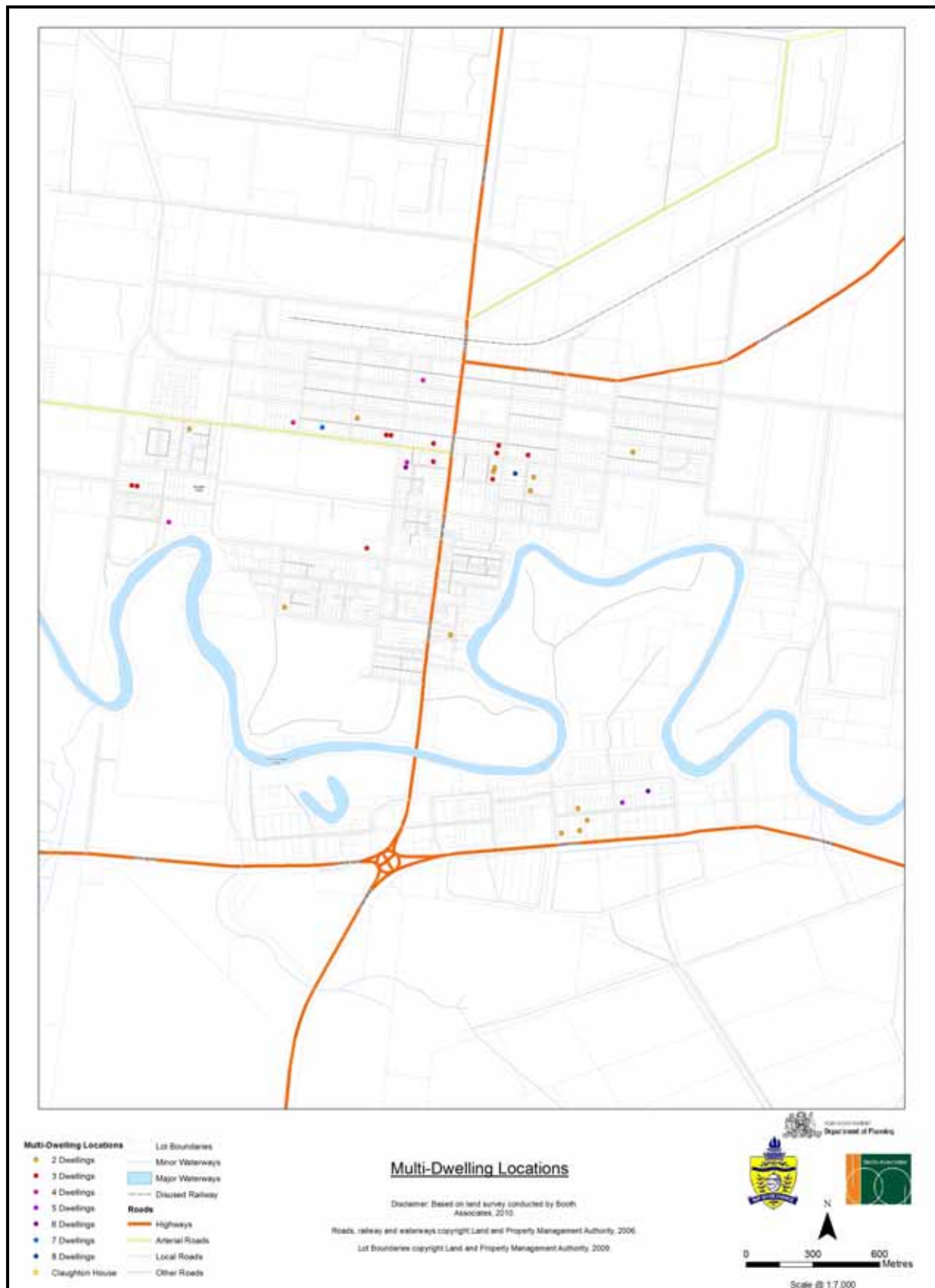
Occupied lots throughout are generally developed with single-storey detached dwellings, and two-storey dwellings are generally confined to river frontage or river public open space frontage locations. Older residential and commercial areas generally have rear lane service access associated with previous sanitary collection times.

Dual occupancy and multi-dwelling housing is shown in Figure 24. There is no discernible pattern with multi-dwelling development occurring throughout the urban area of Hay Township.

Aged-care housing is located near the hospital in central northeast Hay.

² Not including contiguous land holdings or parcels of adjoining land in the same ownership.

Figure 24: Multi-dwelling Housing - Hay LGA (2010)





7.1.1.2 Special Features

Connectivity between all urban locations is excellent, save for the fact of the one river-crossing constraint. Public access ways, including road, footpath, and bicycle networks, are logical and appear for the most part to be well-utilised and provisioned. Council cycleway remains incomplete. This is further discussed in Section 9.1.5.

The amount and distribution of public open space also appears even, well-utilised, and serviced. Access to foreshore public open space, in particular, is excellent and well sign-posted for tourists and visitors.

Heavy vehicle use of Lachlan Street (Cobb Highway), including 19 and 25 metre semi and B-double vehicles appears to significantly impact upon streetscape ambience and function of the CBD, in particular from tourist and shopping pedestrian perspectives, however is tempered by 'outback' town environment expectations.

In terms of urban expansion, the north-eastern fringe of the Hay urban area appears logical for the direction of future growth given:

- The presence in the area of reticulated sewerage, water, stormwater, electricity, and telecommunications infrastructure services with adequate capacity; and
- The area is already or can be made free from the substantial effects of 1-in-100 year floodwater inundation by extending the current levee eastwards (subject to further investigation and design).

Growth strategies should be based on 'supply-led' opportunities (as opposed to 'demand-led' opportunities) in concert with:

- The known increasing trend for lower occupancy dwelling rates despite a declining population trend;
- The need to provide "affordable housing" in response to government initiatives and investment incentives; and
- The need to cater for high-levels of itinerant agricultural sector workers who seasonally frequent the area.

Entranceway signage and general urban design improvements are warranted at all major entrances to the urban area, particularly in regard to visual amenity in response to the key economic sector of tourism.





7.1.2 Commercial

7.1.2.1 Spatial Distribution and Supply

Arising from Figure 23, there are approximately 224 lots used for commercial purposes in urban Hay, with 214 of these occupied and 10 vacant (2009). As for most urban settlement patterns, commercial land use is predominant located along major roads, in this case Lachlan Street and the other major vehicle thoroughfares within urban Hay – Moama Street (Sturt Highway) and Murray Street (Mid Western Highway).

A distinctive commercial precinct is evident in the CBD, as described above, comprising core retail and office land uses. Other commercial land uses are scattered along major thoroughfares and generally comprise service businesses of a light-industry classification, service stations, motels, caravan parks, and clubs.

Arising from Table 25 in consideration of the survey methodology notes mentioned, in 2009 there was approximately:

- 14,220 square metres of occupied retail floor space in Hay along or in proximity to Lachlan Street, and 180 square metres located elsewhere (total 14,400 square metres);
- 600 square metres of vacant retail floor space in Hay along or in proximity to Lachlan Street, with none located elsewhere;
- 4,950 square metres of occupied commercial floor space in Hay along or in proximity to Lachlan Street, and 3,240 square metres located elsewhere (total 8,190 square metres); and
- 1,070 square metres of vacant commercial floor space in Hay along or in proximity to Lachlan Street.

The results of the survey are indicative of a strong retail core, including a retail vacancy rate of 4% and a commercial vacancy rate of 11.5%. It is noted that the commercial vacancy rate would be much less if floor areas of public buildings were included. This survey is the first known to have occurred for Hay and so comparison with historical trends cannot specifically be made.

In the CBD, commercial uses generally have two-storey street facades with single-storey rear curtilages. Many buildings in the CBD are heritage listed, with most recorded as being of local significance, however some are of state or national significance.

7.1.2.2 Special Features

Vacant land previously used for commercial purposes currently occupies two key entranceway sites into urban Hay: the first being at the intersection of Murray Street (Mid Western Highway) and Lachlan Street (Cobb Highway); and, the second being at the intersection of Moama Street (Sturt Highway) and Lachlan Street (Cobb Highway). It is important, given the proximity of these sites along or at key entranceways to urban Hay, that they be appropriately redeveloped as further opportunities arise through design and landscaping to a high visual amenity standard. Remaining vacant land is located at the western fringe of the CBD.



Many two-storey commercial buildings in the CBD do not use their first-floor floor areas due to building design and construction non-compliance with the Building Code of Australia's fire safety standards concerning egress and access for persons with disabilities. As much as 1,670 square metres of floor space is estimated to be unused in this regard (2009). Flexibility in heritage controls are needed to facilitate the reuse of this importantly located amount of floor space as related capital investment interest facilitates.

Commercial signage and building infrastructure (air conditioning units, television aerials, satellite dishes etc) above awning level along Lachlan Street also require special development control in relation to heritage conservation.

7.1.3 Industrial

7.1.3.1 Spatial Distribution and Supply

Arising from Figure 23 there are approximately 15 lots used or partly used for industrial purposes in urban Hay, with all of these occupied and none vacant (2009).

Arising from Table 25, in consideration of the survey methodology notes mentioned, in 2009 there was approximately:

- 8,560 square metres of occupied industrial floor space north of the river, 880 square metres located along or in proximity to Lachlan Street north of the river, 900 square metres south of the river, and 2,740 square metres at the Hay Airport south of the river (total 13,090 square metres or 10,340 square metres excluding Hay Airport which only comprises aircraft hangers); and
- 230 square metres of vacant industrial floor space.

Except for one isolated instance in south urban Hay, all industrial land uses are located in north and northwest areas on serviced land mostly free from the effects of 1-in-100 year floodwater inundation and generally along or near B-double heavy vehicle access routes. Such serviced land includes sealed roads and reticulated sewerage, water, stormwater, three-phase electricity, and telecommunications.

No dedicated serviced industrial land is currently available for sale in urban Hay (2009).

7.1.3.2 Special Features

There are significant opportunities to consolidate northwest Hay as the main industrial precinct for the Hay municipal area. The established Council depot and adjoining private bulk fuel and transport depots at the western end and along Dunera Way would form a node from which to consolidate a dedicated industrial precinct. Disused railway land to the east fronting Showground Road owned by the Australian Rail Track Corporation (ARTC) would provide 'greenfield' development which can be serviced. Approximately five hectares of ARTC land is potentially available for 'general' industrial use along Showground Road and a further two hectares potentially available for 'light' industrial use along Murray Street not including buffer land to adjoining residential areas to the south and east.



Given the 'one river-crossing' transport constraint it is considered that heavy vehicle use of Lachlan Street (Cobb Highway) would be slightly less if traffic attracted to industrial land uses from areas south of the river were to be directed to a dedicated industrial precinct south of the river. In this regard, of the potential sites one area northwest of the existing truck stop service stations in south Hay may be preferred provided the existing levee was extended to provide suitable protection from floodwater inundation.

7.1.4 Special Use

7.1.4.1 Spatial Distribution and Supply

Arising from Figure 23, there are five land parcels used for educational purposes in urban Hay (2009):

- Hay High School;
- Hay Public School;
- St Marys School;
- Hay Preschool/Kindergarten; and
- Hay Plains Childcare.

In terms of public infrastructure assets, there are several sites in urban Hay used for above-ground reticulated water storage and surcharge, and other sites are used for reticulated electricity distribution, raw water treatment and pumping, and sewerage pumping.

In terms of other special land uses, a private commercial sheep yard facility exists in northwest urban Hay.

Beyond the fringe of urban Hay a public airport, golf club, co-op grain storage and handling facility, and private commercial sheep and cattle yard facilities exist.

7.1.4.2 Special Features

The large undeveloped land areas occupied by the western portions of the Hay High School and Hay Park, comprising sports ovals and recreation areas, act as flood storage in times of floodwater inundation.





7.1.5 Open Space

7.1.5.1 Spatial Distribution and Supply

Arising from Figure 23, there are 14 land parcels used for public open space/ recreation purposes in urban Hay (2009):

- John Houston Memorial Pool;
- Hay Apex Park;
- Hay Park;
- Pal Richards Park;
- Brewery Park;
- Dal Wright Park
- Lions Park/Sturt Park;
- Toby Brown Park;
- Pocock Park;
- Halse Park;
- Madman's Bend Reserve;
- Bushy Bend Reserve
- Skate Park;
- Sandy Point Reserve; and
- Cemetery Bend.

Other commercial or club recreation facilities comprise: tennis courts; squash courts; lawn bowls; golf course; football; netball; cricket; gymnasiums; pony, rodeo, gymkhana, and camp drafts; horse racing; fishing, clay target shooting, touch football and hockey.

7.2 Maude

An indicative survey of urban land uses in Maude village (2009) is shown in Figure 25. Methodology used in carrying out the survey was the same as completed for Hay as described above.





Figure 25: Survey of Urban Land Uses in Maude Village (2009)





Arising from Figure 25, within the urban boundary of Maude village, there are approximately 31 lots³ used for residential purposes and six lots⁴ used for commercial purposes, which comprise the general store/post office and hotel/caravan park. No land is used for industrial purposes.

There are 16 vacant residential lots, not including the 36 vacant lots north of Nimmie Street. Open space/recreation areas include Murrumbidgee River foreshore and billabong parklands, tennis courts, BMX track, and cricket oval.

Maude does not have reticulated water or sewerage services but has a private water scheme for subscribed landowners. Maude appears to have poor stormwater drainage near the existing hotel.

Maude appears to be a popular stopover for travellers and a fishing destination.

7.3 Booligal

An indicative survey of urban land uses in Booligal village (2009) is shown in Figure 26. Methodology used in carrying out the survey was the same as completed for Hay as described above.

³ Not including contiguous land holdings or parcels of adjoining land in the same ownership.

⁴ Not including contiguous land holdings or parcels of adjoining land in the same ownership.



Figure 26: Survey of Urban Land Uses in Booligal Village (2009)





Arising from Figure 26, within the urban boundary of Booligal village, there are approximately 30 lots⁵ used for residential purposes and seven lots⁶ used for commercial purposes, which comprise the hotel and recently closed general store and like service businesses. No land is used for industrial purposes.

There are 17 vacant residential lots. Open space/recreation areas include the cricket oval and tennis courts.

Booligal does not have reticulated water or sewerage services but has a private water scheme for subscribed landowners.

Booligal appears to be a popular stopover for travellers and has a number of key tourist events each year.

⁵ Not including contiguous land holdings or parcels of adjoining land in the same ownership.

⁶ Not including contiguous land holdings or parcels of adjoining land in the same ownership.



8.0 RURAL CONTEXT – RURAL LAND USE ANALYSIS

8.1 Key Findings

The purpose of this section of the report is to describe the rural land use planning context of the Hay LGA. Key agricultural industries and their characteristics have been identified along with trends influencing agricultural production. An assessment of the minimum size of a commercial farm has also been undertaken based on the main agricultural enterprises found within the Hay LGA.

8.2 Forces Driving Agriculture

Agricultural business, like all other businesses, operates in an environment with many differing and often conflicting forces that:

- Create opportunities;
- Act as constraints; and
- Actively or passively drive change.

Some of the forces that influence all agricultural businesses as described above include:

- The ever declining terms of trade (described in Section 8.5.1);
- The need to make a commercial return;
- Climate and climate change;
- Government policy;
- National and international commodity prices;
- Society's attitude towards environmental management;
- Succession planning;
- Changes in best practice natural resource management; and
- Landholder goals.

The above forces are described in detail in the following sub-sections, except for terms of trade which are described in Section 8.5.1.

Commercial Return

All businesses need to generate commercial returns. These returns are used to:

- Retire debt;
- Fund capital expenditure;
- Pay a dividend to shareholders; and
- Build cash reserves.



Levels of debt can vary widely between businesses across all industries. Frequently debt is used for the common purpose of growing businesses. In cases where debt levels are low or absent, cash reserves can be built up or used on an on-going basis to grow a business.

Climate and Climate Change

The climate of the Hay LGA was described in Sections 4.8.1 and 6.2. The ongoing drought which has been prevalent since 2002 has placed most agricultural business under pressure. Whether this drier pattern of weather is likely to become normalised is unknown, but adaptation in response to change in climate by agriculture is a reasonable assumption.

Modern agriculture has been practised in Hay LGA approaching 200 years since European settlement first occurred in the 1830s. During this time agriculture has demonstrated its ability to adapt to varying climate and to prosper.

An analysis of the likely changes to rainfall in the Hay LGA under various climate change scenarios is provided in Section 12.1.1.

Government Policy

Government policy has changed significantly over time, from periods of encouraging “more people on the ground” through such schemes as soldier settlement and establishment of irrigation areas up until the late 1960s and the increased use and extraction of surface and groundwater for irrigation up until the mid 1990s.

The trend is for Governments to de-regulate so that market forces influence change.

Government policy influences include:

- Local planning determining agricultural land use;
- Returning of irrigation water to rivers and streams for enhanced environmental flow;
- Removal of water trading barriers allowing water to be traded out of the region;
- Restrictions to land clearing;
- Increased native vegetation for fauna/flora, habitat enhancement and improved biodiversity;
- Resource allocation dependent on productive return;
- Legislation as it relates to new technologies such as genetically modified crops; and
- Resource conservation and utilisation including the clean and green production image.

Government policy is a key fundamental of this project and was explored in detail in Section 5.0 of this report.

Significance of Agriculture to the Region

Australian agriculture is subject to variance in commodity prices. As a significant proportion of Australian produced agricultural commodities are exported, world markets have a major influence on commodity prices received by farmers. Real changes in commodity prices over time are detailed in Section 8.5.1.



Society's Attitude towards Environmental Management

Society's attitude towards environmental management is constantly evolving with ever increasing demands being placed on land managers. General views include the need for/to:

- Conserve resources, do not fritter them away;
- On-going environmental improvement;
- Sustainable resources management/responsible resource stewardship;
- Inter-generational equity;
- Food security and healthy lifestyles;
- Food and fibre at competitive prices; and
- Balance between production and conservation.

Succession Planning

As many agricultural businesses are family owned and operated, succession of family generations in agriculture is continually occurring and remains one of the key means of sustaining viable business.

In relation to land use and local government planning policy, succession planning can be an issue, especially with respect to minimum lot sizes. In some circumstances, a generation trying to establish themselves may seek to build a house on a parcel of land that is attached or related to the agricultural business within which they work. It is sometimes the case that the parcel of land is of insufficient size to meet the minimum lot size requirements. It is also sometimes the case that the family proposing the house are deemed by their financier to have insufficient equity to provide security for the construction of a house. Rural councils are often confronted with these issues.

Councils should do all they can to facilitate and assist rural succession; they are not responsible for solving family and financier issues. If the family do not wish to provide more land as equity for the financier or to meet a minimum lot size, then this is a family rather than a Council issue.

In circumstances of succession planning where an additional dwelling is required on an agricultural property and the dwelling is ancillary to the business, the Department of Industry and Investment's (DII) position as stated in their section 62 letter dated 26 August 2009 is:

The strategic process should identify whether there is a need for ancillary dwelling opportunities to support agricultural and forestry industries in the area. This should clearly be linked to productive capacity and aimed at minimising the potential for future subdivision and conflict. Dwellings on the same title, with shared access point and with reasonable proximity to the primary dwelling are encouraged. Temporary residences and detached duplexes can also be considered.

As farm sizes increase over time, there will be an on-going need for dwelling rationalisation. Some older dwellings located remotely from the homestead will be abandoned and new dwellings for family members and for staff within a suitable proximity to the homesteads may be required. The erection of such dwellings is supported by NSW DII as evidenced in the above paragraph.





In some cases remote houses are being abandoned as on-farm staff numbers decrease via improved labour efficiencies and/or use of contractors. Some family members are also actively choosing to live in or near Hay and travel to properties, as Hay provides access to services including education and also off-farm income opportunities.

Changes in Best Practice Natural Resource Management

Changes in best practice natural resource management thinking have accelerated in the past 10 to 15 years.

Expectations and knowledge are driven to provide:

- A program of constant operational improvements;
- Surety through environmental management systems;
- Commercial operations which balance commerce with environmental imperatives; and
- Enhancement of the environment.

Landholders' Goals

Landholders' goals are changing, growing, being refined, etc, as are all aspects of society. Current aspirations and goals of landholders include:

- Living and participating in communities;
- Maintaining viable communities;
- Healthy lifestyles;
- Commercial sustainability and growth ahead of the declining terms of trade;
- Fair reward for effort, risk and investment;
- Reduced physical labour; and
- More mechanical labour.

Agricultural Progression

It is the forces described in the above sub-sections (and declining terms of trade) that compel businesses to grow. In an agricultural sense growth need not simply be to expand the area under production. Growth of agricultural businesses can be a function of increasing production and/or productivity, which can be achieved by expanding operations, or intensifying operation or diversifying into new operations. In the Hay LGA intensification opportunities largely relate to irrigation, and are many and varied such as pasture irrigation for livestock production, a shift from pasture irrigation to annual irrigated crops, or a shift from annual irrigated crops to horticulture.





In regard to agriculture, the DII made the following comments in their section 62 consultation letter dated 26 August 2009:

Agriculture is a dynamic and changing business with the potential for ongoing sustained development and growth which also provides opportunity for other forms of rural development such as tourism and energy development.

The two core issues for the sustainable development of agriculture are the protection of the land resource base and the minimisation of conflict.

The strategy for rural lands, recommended in this report is based on protecting the land resources and minimising conflict. Agriculture warrants this level of protection due to the significance of their industry in the Hay LGA. This level of significance is detailed in Section 8.4.

8.3 Agricultural Industries in the Hay LGA

Agriculture has a long history of production in the Hay LGA. According to Soil Conservation Service (1990) the area was first settled for agriculture in the 1830s, and by the 1860s had established itself as a renowned wool producing region. Subsequently numerous large pastoral holdings were established in the Hay LGA, a number of which included high profile Merino studs.

Investigations in this project have revealed there are three main agricultural systems in the Hay LGA, being:

- Pastoral production, both sheep and cattle for wool and meat production;
- Broadacre irrigation for the production of annual crops including rice, maize, cotton and wheat; and
- Horticulture, especially vegetable production and viticulture to a lesser extent.

Pastoral production has been practiced in the Hay LGA for nearly 200 years and remains the dominant land use in the Hay LGA. The nature of pastoral production has changed over years from wool to more a meat production focus. Notwithstanding this trend the key feature of this agricultural system remains extensive grazing of livestock on native pastures. Whilst irrigation has been practised in the Hay LGA for over a century, the scale and nature of production has changed significantly in the last 20 years from pastures and crops for livestock production to high input specific cropping production systems.

To support pastoral production in the late 1800s and early last century, irrigation was established along the Murrumbidgee River with pastures and crops grown to support large scale livestock enterprises. Irrigation development was spread throughout the Hay LGA as most properties, either adjacent to or within short proximity to the river, established areas for irrigation. A number of farms which did not have direct river access established Joint Water Authorities which shared common infrastructure for the supply of water to their farms for irrigation stock and domestic purposes. The scale of irrigation increased significantly in the second half of the last century with Soil Conservation Service (1990) indicating that from 1964 to 1974 the area licensed for irrigation in the Hay LGA grew from 12,000ha to 53,000ha.



The extent of flood irrigation in the Hay LGA shown in Annexure 9 which shows most flood irrigation development spread in a band adjacent to the Murrumbidgee River. A limitation of this map is that it does not contain any data on the northern side of the Lachlan River. The data in Annexure 9 demonstrates irrigation development is fragmented with a developed area of just over 43,000ha. This level of development is less than the 53,000ha recorded in Soil Conservation Service (1990). It is likely that as water availability reduced over time, irrigation techniques have advanced and irrigation practices have intensified on smaller areas. It is understood that 40 years ago, large areas were irrigated one to three times a year in order to supplement rain fed pasture production. In the past 10 to 15 years this practice has ceased in favour of irrigating intensively smaller areas developed for highly efficient water use.

The Hay LGA has a highly productive horticultural industry and is renowned for the production of vegetables including lettuce and broccoli. There is also a small viticultural industry which includes one winery.

All horticulture and viticulture undertaken in the Hay LGA is practiced within a 15km radius of the town of Hay, predominantly in areas close to the river. The exception to this is a small olive plantation south of Booligal on the Lachlan River. The reasons for the horticulture being refined to this small area around Hay include:

- Horticulture requires ready access to infrastructure and labour, both of which are readily available in Hay;
- High value horticultural production requires secure access to water, provided by the Murrumbidgee River; and
- This area includes some of the best soils found in the Hay LGA;

As a water source, the Murrumbidgee River is arguably the most reliable source in the Murray-Darling Basin. High security irrigators have received allocations of at least 95% of their entitlement since volumetric allocations were introduced in the 1980s. These high allocations contrast with general security irrigation allocations which are depicted in Figure 53 which have only averaged 15% allocation over the past four years. Not all horticultural production in the Hay LGA is undertaken via access to high security water entitlements. However, a combination of high security entitlements and active market for the temporary trade of water in the Murrumbidgee has allowed for horticultural production to grow significantly in the Hay LGA.

The nature and extent of the agricultural systems in the Hay LGA is described in Section 8.4.

8.4 ABS Agricultural Census Data

In compiling this report ABS agricultural census data for the Hay statistical local area was obtained for the following years:

- 1989/90;
- 1993/94;
- 1996/97;
- 2000/01; and
- 2005/06.



A summary of the key data components from these agricultural censuses is provided in Annexure 10. Whilst a complete dataset was not available for each of the census, sufficient data was available to enable a sound understanding of the nature of agricultural production in the Hay LGA and trends which have emerged over the past 20 years.

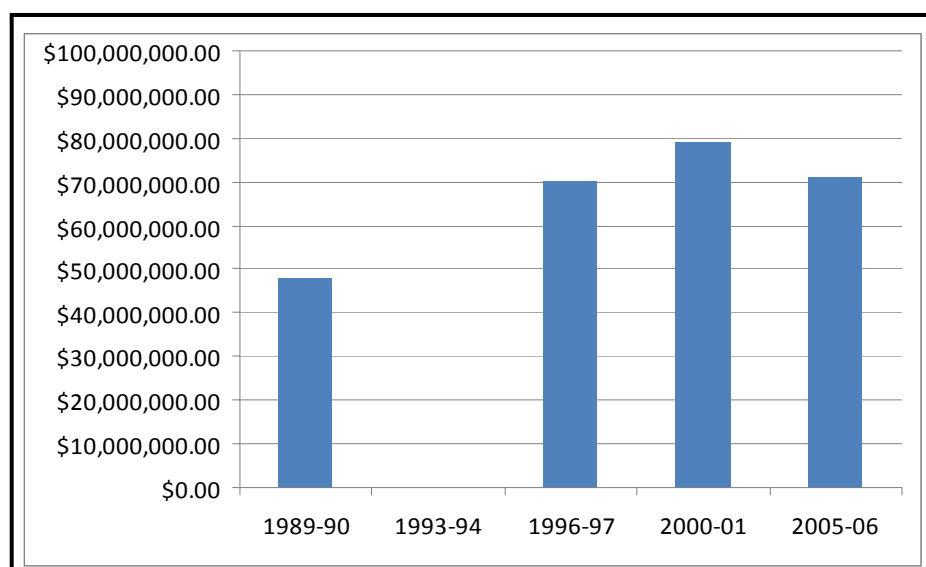
A review of the ABS map of the Hay statistical local area indicates the boundaries of this area align with the Hay LGA boundary. Hence, the ABS agricultural census data covers the entire Hay LGA.

8.4.1 Agricultural Overview

According to the Council website the area of the Hay LGA is 11,348km² which equates to 1,134,800ha. According to the 2005/06 ABS agricultural census the area under agricultural production was just over 1,100,000ha which is 98% of the Hay LGA. The number of establishments has grown over the census period depicted in Annexure 10 to 157, in 2005/06. This equates to an average farm area of just over 7,000ha.

The gross value of agricultural commodities produced in the Hay LGA is depicted in Figure 27.

Figure 27: Gross Value of Agricultural Commodities Produced



Source: ABS Agricultural Census

Note: No data was available for 1993/94

Some points arising from the data depicted in Figure 27 are:

- The value of agricultural commodities produced in 2005/06 was \$71.4M;
- The value of agricultural commodities produced in the Hay LGA increased from 1989/90 to 2000/01 at a rate of 4.6% per annum; and
- The value of agricultural commodities produced in the Hay LGA from 2000/01 to 2005/06 declined by 2% per annum.



The recent decline in the value of production is most likely a consequence of the sustained drought the area is currently experiencing. More detail on the drought is provided in Section 12.1.1. Had the drought not occurred and the value of agricultural commodities continued to grow at 4.6% per annum, then the value of agricultural commodities produced in 2005/06 would have been just under \$99.0M.

Therefore, the impact of the drought on the value of agricultural commodities produced in the Hay LGA can be calculated as:

$$\$99.0M \text{ (predicted value)} - \$71M \text{ (actual value)} = \$28.0M \text{ per annum in 2005/06 dollar values.}$$

In other words more than one third of the Hay LGA's potential value of agricultural production is currently lost as a direct impact of the drought. Investigations in this project suggest that agricultural businesses within the Hay LGA have the physical and financial resources and management skills to recover from the drought and growth in the value of agricultural commodities produced in the Hay LGA is most likely.

The inherent level of resilience of agricultural business in the Hay LGA was affirmed during project consultation with local agribusiness financiers who commented that their clients in the Hay LGA were probably in a better position than other regions and they typically ran more conservative operations with less debt and had destocked because of the drought. There was a general consensus that business had the financial wherewithal to respond to improving seasons.

8.4.2 Crop Production

The ABS Census data indicates in 2005/06 that just over 18,000ha of crops were produced, which is approximately half the area of crops grown in 1996/97. The significant reduction in the area used for crops is most likely due to:

- The ongoing impact of the drought as depicted in Figure 27 especially via reduced irrigation water allocations; and
- A reflection of the increasing intensification of cropping systems. According to the ABS Agricultural Census data presented in Annexure 10 1996/97 the value crops produced per hectare was \$950/ha and in 2005/06 this had increased to \$1,390/ha.

This trend of increasing intensification is not unique to the Hay LGA and is likely to continue.

Volumes of irrigation entitlements traded out of the Hay LGA, under the Federal Government's Water Buy-Back Program is unknown. Despite this, irrigators who have maintained their water entitlements will continue to improve their water use efficiency and the loss of water from the Hay LGA via permanent trading will be off-set to a significant extent by gains in efficiencies. In addition given the reliability of the Murrumbidgee River as an irrigation water source compared to all other river systems in the Murray-Darling Basin, and the large area developed for irrigation within the Hay LGA, it is likely in the longer term that water trading will provide opportunities for water to move back into the area and allow new enterprises to establish and prosper.

The ABS Agricultural Census data indicates the main summer crops are generally rice, maize and cotton. Winter crops produced are predominantly cereals such as wheat and barley, and to lesser extent oilseeds such as canola and grain legumes.



The soils and climate in the Hay LGA are such that they are unsuitable for dryland production of crops, so all crops produced in the Hay LGA are irrigated to some extent. Some winter crops are able to be grown on the residual moisture provided following a rice crop plus in crop rainfall. Many crops require irrigation water for more than 80% of their water requirement. Irrigation production systems in the Hay LGA have evolved to an extent where both high input/high yielding crops and low cost winter crops can be produced with minimal inputs, maximising returns from all available water.

8.4.3 Horticulture

The ABS Agricultural Census data indicates the area of horticultural production in the Hay LGA has increased significantly from 1996/97 to 2005/06 (four-fold) and the value of horticultural commodities produced has increased over the same period by more than eight-fold. In 2005/06 horticultural production comprised more than one-third the value of all agricultural commodities produced in the Hay LGA, and represented a value greater than crops or livestock. The area on which horticultural crops is produced is relatively small when compared to broadacre crops and pastoral production.

This trend in increasing predominance of horticulture in the Hay LGA is typical of intensification of agriculture that is occurring in the Murray-Darling Basin, underpinned by secure access to water. Drought has not had as significant an impact on horticulture in the Hay LGA as many producers have high security entitlements or are able to purchase water on the temporary market.

Increasing intensification of production underpinned by secure access to water is likely to continue in the Hay LGA into the future.

8.4.4 Livestock

The ABS Agricultural Census data indicates livestock numbers in the Hay LGA have declined significantly over time. The total number of Dry Sheep Equivalent (DSE) in the Hay LGA presented in Annexure 10 has been nominally calculated by rating all cattle at 10DSE/head and all sheep at 1.5DSE/head. While this may be an over simplification it allows for the relativity of sheep and cattle numbers to be examined. The ABS Agricultural Census data indicates the average total DSE for the 1996/97 and 2000/01 census is just over 1.5 million DSE. These livestock numbers represent the longer term sustainable carrying capacity of the Hay LGA. Therefore, the current livestock numbers of 900,000DSE as recorded in the 2005/06 census should conceivably increase by 70% when seasons return to long term average conditions.

The value of livestock commodities produced in the Hay LGA as depicted in Annexure 10 has declined since 1996/97 to be only one quarter of the total value of agricultural commodities produced in the Hay LGA in the 2005/06 census. The total value of agricultural livestock commodities produced in 2005/06 was just under \$19.0M. When the drought abates this will increase by more than \$10.0M to be in line with the values recorded in 1996/97 and 2000/01.

Consultation with pastoral producers indicates there has been a trend away from wool to meat production. From 2000/01 to 2005/06 the decline in the value of wool produced was similar to the decline in sheep numbers. Longer term producers will continue to adapt to markets and seasons and despite this any enterprise changes/shifts between meat and wool, the value of livestock products produced in the Hay LGA should grow in line with the increase in efficiency and production seen across all agricultural industries.



8.4.5 Other Data Sources

In compiling this study other agricultural data sources accessed include:

- Bureau of Rural Science;
- ABARE;
- Riverina LHPA; and
- Rice production data provided by SunRice.

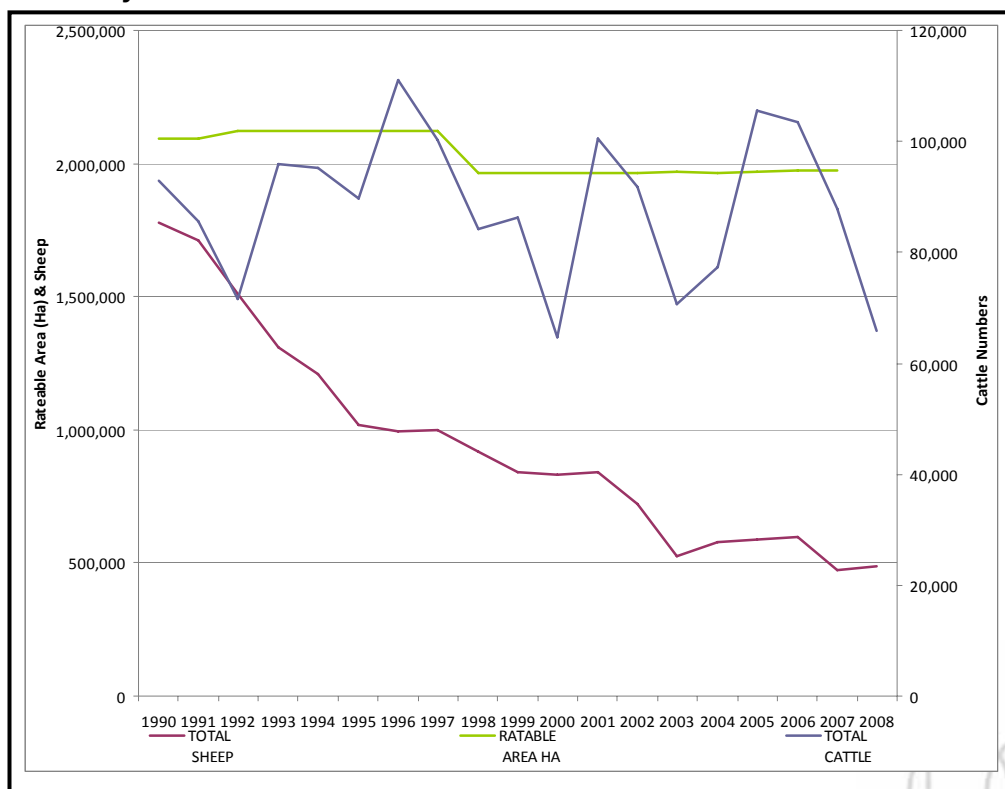
Bureau of Rural Science data was reviewed but no data of relevance to this project specific to the Hay LGA was accessed.

ABARE data of particular interest to this project included ABARE's interactive database called AgSurf. AgSurf data for the Riverina indicates from 2005 to 2008 average farm equity decreased from 90% to 80% and off-farm income averaged just over \$20.0K per annum. 80% equity is still a sound business position. Off-farm income is a significant consideration in a minimum lot size assessment.

The Riverina Livestock Health and Pest Authority (LHPA) were able to provide data relating to the former Hay Rural Land Protection Board (RLPB). The rateable area of the former Hay RLPB was just under 2Mha which is not quite double the Hay LGA, despite this the overall trends are of significance to this project.

Total sheep and cattle numbers and rateable area for the former Hay RLPB are depicted in Figure 28.

Figure 28: Hay RLPB Livestock Numbers



Source: Riverina LHPA



Points arising from the data depicted in Figure 28 are:

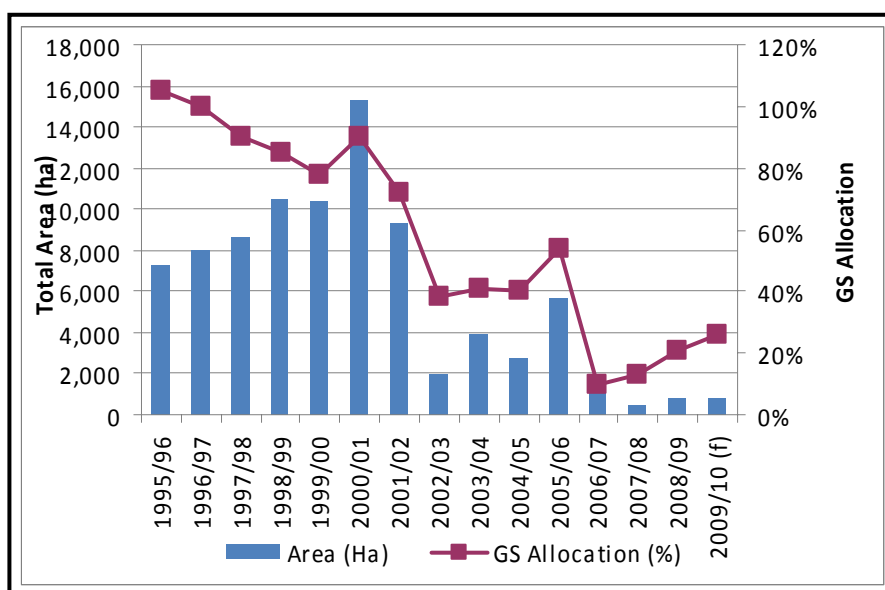
- The rateable area (depicted on the left hand axis) declined in 1998 by 157,000ha, most likely reflecting an adjustment on RLPB boundaries. This reduction in area will have had some reduction on the total carrying capacity of the RLPB and needs to be considered when analysing any change in stock numbers;
- Sheep numbers (depicted on the left hand axis) have declined to be less than 30% of 1990 numbers and have reached a relative plateau since 2003; and
- Cattle numbers, depicted on the right hand axis, have varied significantly over time indicating their numbers are more dynamic than sheep numbers, and are currently at the lowest point recorded in the dataset.

The data depicted in Figure 28 for the former Hay RLPB aligns with the trends observed in the ABS Census data and indicates that livestock numbers have most likely declined further since the 2005/06 Census.

The reason for the decline in livestock numbers relates to the on-going drought and once seasonal conditions improve livestock numbers in the Hay LGA will recover enhancing agricultural production with numerous flow-on benefits to the region.

Rice production data supplied by SunRice for the Hay LGA is shown in Figure 29.

Figure 29: Rice Production in Hay LGA



Source: SunRice and NSW Water Information



The data in Figure 29 depicts:

- Rice production area increasing from 1995/96 to peak in 2000/01, average area grown during this period was 10,000ha and average general security allocation was 93%; and
- Declining rice production area since 2000/01 in line with declining general security allocation.

From 1995/96 to 2000/01 an average of 84,000 tonnes per annum was produced. If future production plateaued at two thirds of this level (assuming future average allocations to be 60%) then the farm gate value of this production is \$25M, compared to \$10M for rice recorded in the 2005/06 ABS Agricultural Census.

8.5 Agricultural Industry Trends

Agriculture like all industries is subject to constant changes. Whilst it is not possible to predict the future, an examination of industry background, history and current trends provides an insight into possible future direction.

Some key trends of note within agriculture are described within this section of the report.

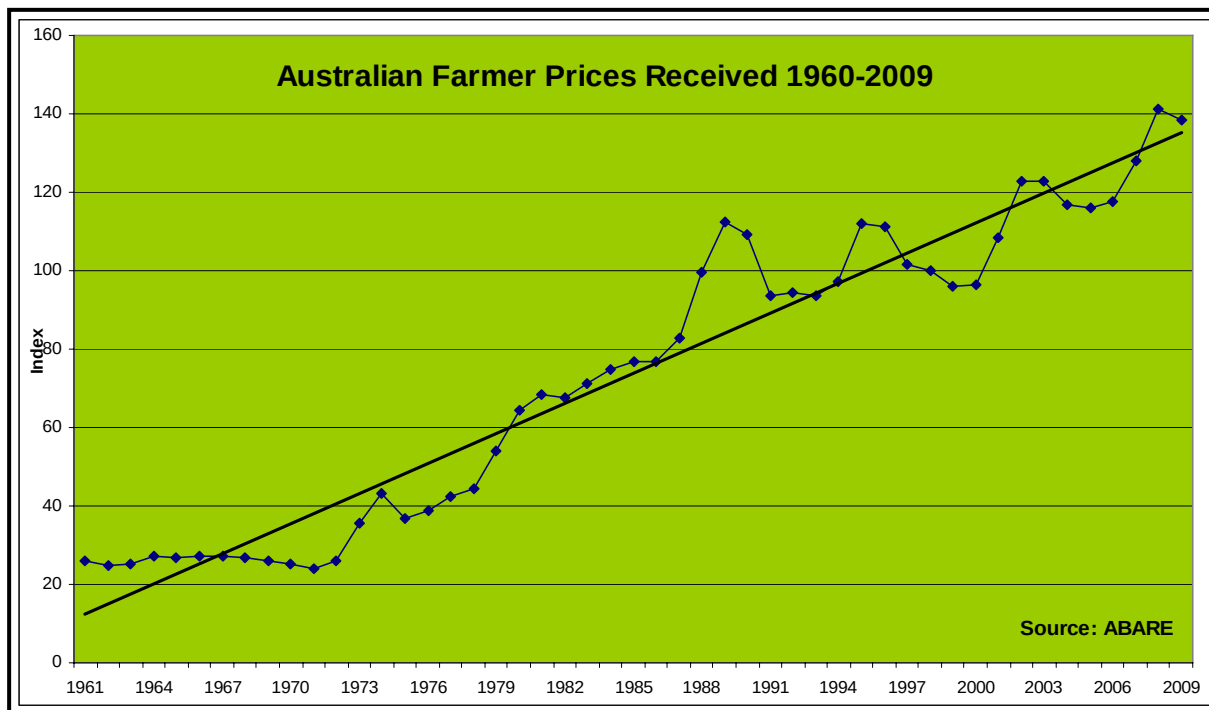
Key trends observed in Section 8.4 of this report include:

- Varying values of agricultural commodities produced in particular influenced by the drought;
- Reduction in area cropped in line with reduced general security irrigation allocations;
- Increased horticultural production; and
- Significantly reduced livestock numbers.

8.5.1 Terms of Trade

In the real world, long term trend values for pricing are only encountered in passing. Prices generally fluctuate substantially around the long term trend value, hence the term “boom/bust” cycles. Figure 30 is an indexed representation of prices received by an Australian farmer from 1960 to 2008.



**Figure 30: Australian Farmer Prices Received 1960-2009**

Sources: ABS, Australian National Accounts, National Income and Expenditure, Cat No. 5206.0, Canberra; ABS, Consumer price Index, Cat. No. 6401.0, Canberra; ABS, Agriculture, Australia, Cat. No. 7113.0, Canberra; ABS, Value of Agricultural Commodities Produced, Australia, Cat. No. 7503.0, Canberra; ABARE. www.rba.gov.au

Note: ABARE revised the method for calculating farm, price and production indexes in October 1999. The indexes for the different groups of farm commodities are not calculated on a chained weight basis using Fishers' ideal index with a reference year of 1997/98 = 100.

The data in Figure 30 shows how prices received by farmers have fluctuated over the past 40 years. The long term trend value is the straight line which captures the average change in prices over time. This line indicates the overall trend in prices which is increasing over time in actual but not necessarily real dollar terms.

For the decades depicted in prices received by farmers fluctuated generally:

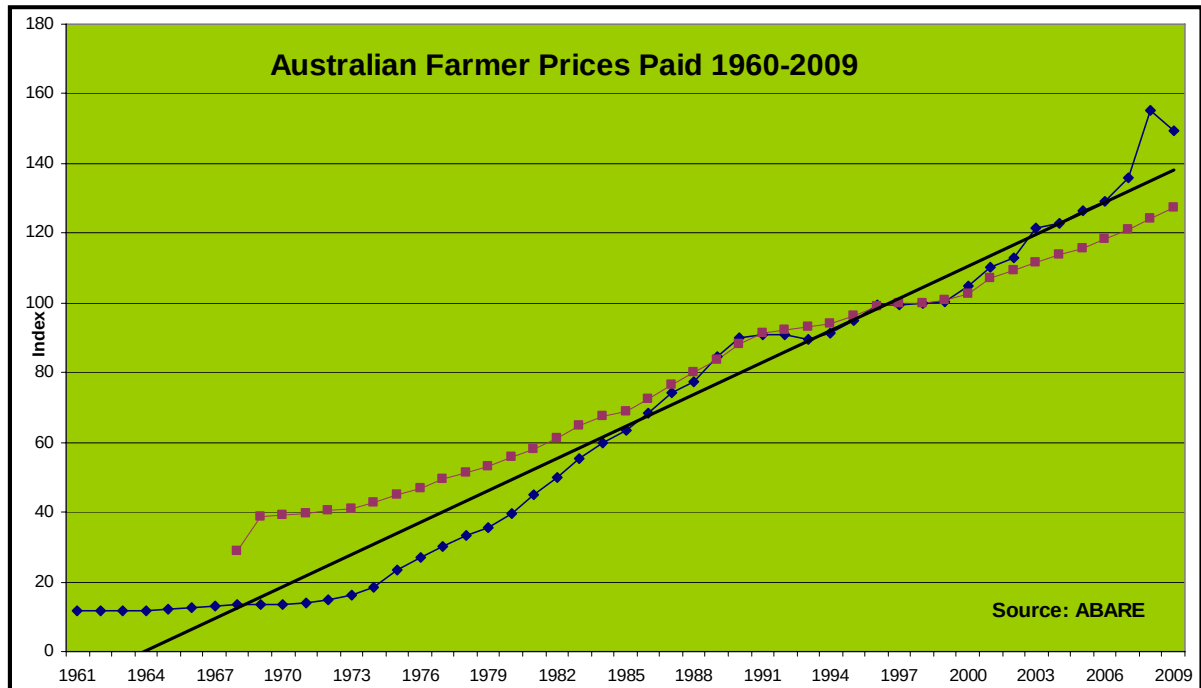
- Above and below the average in the 1960s;
- Below the average in general in the 1970s;
- Above the average in general in the 1980s and 1990s; and
- Has been generally below average in the past decade, with the exception of a recent peak due to local drought influences and global supply and demand.





An indexed representation of farm costs (prices paid by farmers for farm inputs) covering the same period as Figure 30 is depicted in Figure 31 included to provide a reference line for context is the Consumer Price Index (CPI) over the same timeframe (using 1997/98 as a reference year = 100).

Figure 31: Australian Farmer Price Paid 1960-2009



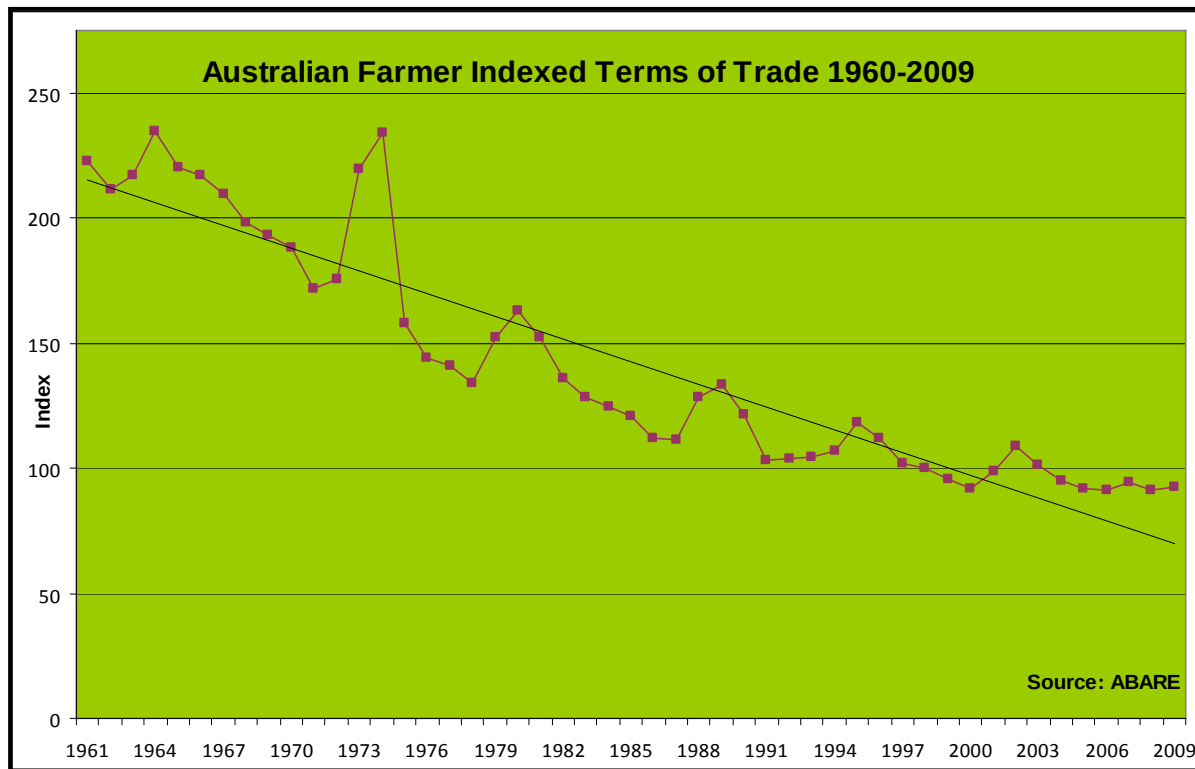
Sources: ABS, Australian National Accounts, National Income and Expenditure, Cat No. 5206.0, Canberra; ABS, Consumer price Index, Cat. No. 6401.0, Canberra; ABS, Agriculture, Australia, Cat. No. 7113.0, Canberra; ABS, Value of Agricultural Commodities Produced, Australia, Cat. No. 7503.0, Canberra; ABARE. www.rba.gov.au

Note: ABARE revised the method for calculating farm, price and production indexes in October 1999. The indexes for the different groups of farm commodities are not calculated on a chained weight basis using Fishers' ideal index with a reference year of 1997/98 = 100.

Figure 31 indicates costs have risen at a similar rate to prices over the same period of time, however in a much more stable manner than prices. The data in Figure 31 does include the significant rises in chemicals, fuel and fertiliser that have occurred in the past year.

As indicated in Figure 31 prices paid by farmers generally aligns with the same upward trend as CPI, however most typically at an elevated plateau of price. Recent times have again seen farmers pay an elevated price increase to CPI levels.

To determine the relative status of income and costs, the ratio of the index of prices received and the index of prices paid is used. This is called "the terms of trade" or Prices Received/Price Paid and is depicted in Figure 32.

**Figure 32: Australian Farmer Indexed Terms of Trade 1960-2009**

Sources: ABS, Australian National Accounts, National Income and Expenditure, Cat No. 5206.0, Canberra; ABS, Consumer price Index, Cat. No. 6401.0, Canberra; ABS, Agriculture, Australia, Cat. No. 7113.0, Canberra; ABS, Value of Agricultural Commodities Produced, Australia, Cat. No. 7503.0, Canberra; ABARE. www.rba.gov.au

Note: ABARE revised the method for calculating farm, price and production indexes in October 1999. The indexes for the different groups of farm commodities are not calculated on a chained weight basis using Fishers' ideal index with a reference year of 1997/98 = 100.

It is the normal trend for the terms of trade to be in constant decline with periods of boom/bust being experienced in the process. The decline is relentlessly ongoing and highlights the need to constantly grow a business and constantly improve business performance. Whether the terms of trade are depicted for the last 40 years or the last 2,000 years, the trend is the same.

Agricultural businesses respond to the declining terms of trade by means such as:

- Increasing the intensity of operation;
- Becoming more efficient with operations;
- Growing the scale of their business; and
- Combinations of the above.





Farms like most businesses are utilising technology and systems such as environmental management systems to meet the challenges of declining terms of trade.

Not only agriculture is affected by the declining terms of trade. It does not matter whether we are individuals in the street, a steel mill, winery, and retailer, bank, government or even the World Bank or International Monetary Fund. All entities are subjected to the cost/price squeeze or declining terms of trade. At its basic level, \$100 today will not buy what it did 10 years ago and it will buy more today than it will in 10 years from now.

The harsh reality of declining terms of trade cannot be ignored by any (agri) business owner and it can be deduced from the long term trends described above that a business content to maintain the *status quo* will inevitably struggle in future years, for some it will be a matter of time, and for others a matter of which generation. To survive and thrive, a policy of business growth and best practice management must be adopted.

8.5.2 Other Farm Trends

The *Review of Land Use Planning in the Central West* (2007) report made several comments in relation to current trends in agriculture, including:

“Significant changes in agriculture have occurred over recent decades. These include large farms generally reducing in number and increasing in size, small farms, increasing in number and generally getting smaller, a reduction in the area of land in agricultural production and an increased reliance on off-farm income particularly in times of drought. The increase in the size of large farms and concurrent reduction in the size of small farms is understood to be a worldwide trend.

In terms of off farm income the Productivity Commission report (ibid) notes that off farm income has become increasingly important to maintaining family farm incomes. Since 1990, the proportion of families, deriving income from off-farm wages and salaries increased from 30% to 45% with average earnings rising from \$15,000 to approximately \$33,500 per year (NSW farms) in 2005 – 2006 (ABARE, Australian Commodities 2007 March Quarter). This increase in reliance on off-farm income has occurred consistent with the wider trend within the Australian community toward two income families. This has now become the norm rather than the exception and it would appear rural communities are no different to the rest of Australia in this regard.

In terms of productivity the Productivity Commission report notes that agricultural productivity has exhibited strong growth over the last three decades – more than twice the rate achieved in Australia’s market sector as a whole. It further notes that productivity has accounted for the entire increase in output by the agriculture sector over the last 30 years. This has occurred while big farms have become bigger and small farms smaller.”

As the report notes the trend towards increasing levels of off-farm income may be a result of the drought, driving the need for alternative sources of income. It is expected that farming families will continue to access off-farm income in order to continue to manage rising costs and on-going climate risk. However, off-farm income may not be an option for some farming families in the Hay LGA due to their location.



In relation to farm size the *Review of Land Use Planning in the Central West* states:

“large farms generally reducing in number and increasing in size, small farms increasing in number and generally getting smaller.”

Such comments are relevant to the Hay LGA. “Small farms getting smaller” may be as a result of the increasing trends of intensification described in Section 8.4.2.

In line with changing farm size, the population of people living on farms is understood to be declining over time. Evidence of this can be seen across the Hay LGA with a number of abandoned houses throughout the Hay LGA.

The Central West Rural Lands Inquiry Report also stated:

“agricultural productivity has exhibited strong growth over the last three decades.”

This agriculture in the Hay LGA's productivity growth (pre-drought) is demonstrated in Figure 27. The decline in terms of trade is driving the need for farmers to be increasingly skilled at improving efficiencies and controlling their costs to be low cost producers. Farmers are also taking control of the prices they receive by a range of means, such as:

- Selling direct to processors rather than sending livestock to the regional saleyards;
- Forward marketing of grain;
- More on-farm grain storage reducing the proportion of grain delivered to local sites at harvest; and
- A greater emphasis placed on relationships direct with wholesalers particularly in the horticultural industries.

8.6 Irrigation Profile

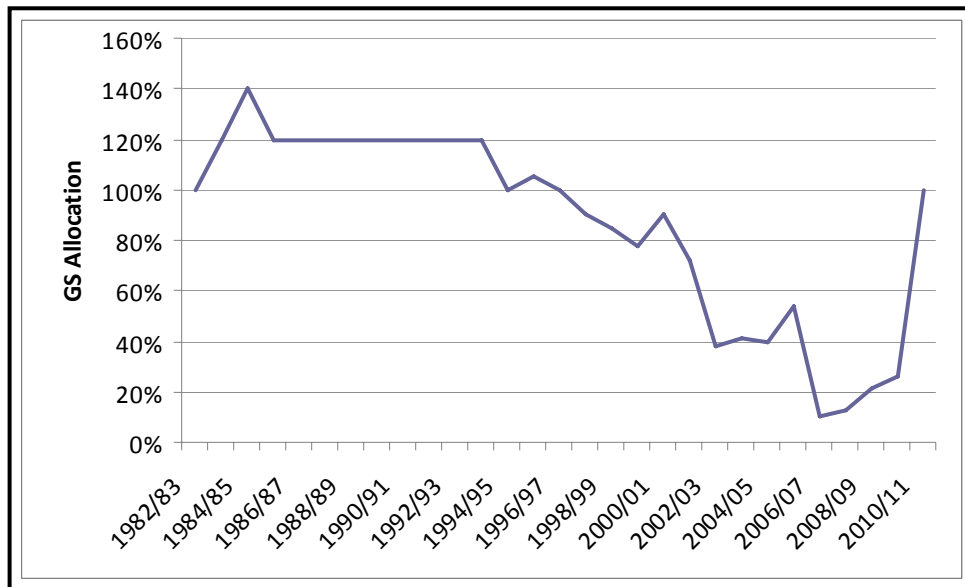
In the Hay LGA there is only one private irrigation district (Hay PID). Irrigators outside the Hay PID access water from several sources including, directly from the Murrumbidgee and Lachlan Rivers, from one of several joint water authorities with channel systems that stretch many kilometres from the river and from bores in the Lower Murrumbidgee Groundwater Source, which is located beneath most of the Hay LGA. This wide range of water sources means irrigation water can be accessed from nearly anywhere in the LGA.

General security irrigation allocations for the Murrumbidgee River since volumetric allocations commenced in 1982 are depicted in Figure 33.





Figure 33: Murrumbidgee River General Security Allocations



The data in Figure 33 depicts high allocations in the 1980s through to the early 1990s with average allocations:

- 86% for the 28 years period depicted in the graph;
- 91% for the last 10 years;
- 25% for the last 5 years;
- 65% for the period 1997/98 through to 2005/06; and
- 100% in 2010/11.

The allocations received in recent years are not reflective of the longer term expected allocations, but rather a function of the on-going drought. Detailed analysis of the Murrumbidgee River and its catchment indicate the longer term expected reliability of the Murrumbidgee River is in the order of around 60%. This is based on CSIRO (2008) most likely climate change scenario. Information published by DEWHA on their website relating to recent water purchases in the Murrumbidgee indicates their expectation of the longer term reliability of allocation in the Murrumbidgee is 64% which is similar to the Project Team's calculations. With the exception of 2010/11, both figures are far greater than recent allocations.



8.7 Agricultural Holdings Analysis

Land holding data has been depicted spatially as a map with each individual holding depicted as a separate colour. A copy of this map is Annexure 11. The raw data behind this holding map was summarised and is presented in Table 26.

Table 26: Holdings Summary

Holding Area	Number of Holdings	Proportion of Holdings	Total Area (ha)	Proportion of Area	Average Size (ha)	Median Size (ha)
<100ha	36	21%	1,708	<1%	47	48
>100ha and <1,000ha	28	17%	13,447	1%	480	438
>1,000ha and <5,000ha	36	21%	100,313	9%	2,786	2,532
>5,000 and <10,000ha	33	20%	241,493	23%	7,318	6,917
>10,000ha	36	21%	714,930	67%	19,859	18,188
Total	169		1,071,891		6,343	

The data presented in Table 26 has been sorted using farm holding areas categories. Some pertinent points arising from the data presented in Table 26 include:

- The average farm size is in excess of 6,000ha;
- Total area comprises 94% of the total area of the Hay LGA⁷;
- 89% of the land is held in holdings of 5,000ha or greater which are owned by 41% of landholders; and
- 59% of landholders own holdings which comprise 11% of the total holdings in the Hay LGA.

This analysis indicates that the average holding sizes in the Hay LGA are large, which is a well known characteristic of the region. A limitation of such an analysis is that property boundaries do not necessarily respect or align with LGA boundaries, therefore it is possible that landholders own land outside of the Hay LGA which form part of their farm enterprises.

Annexure 11 indicates there is no spatial pattern to the range of holdings sizes spread across the Hay LGA, and that there are large and small holdings located both within the immediate vicinity of the town of Hay and within the extreme boundaries of the LGA. A significant number of large pastoral holdings adjacent to the Murrumbidgee River are rectangular, which relates back to original holdings that maximised the number of holdings by minimising each holdings riparian access.

⁷ Hay LGA area is 1,134,800ha as described in Section 8.4



8.8 Commercial Agricultural Property Size

The current minimum lot size in the Hay LEP (1998) is:

- For the 1A zone 1(a) General Rural Zone - 1,500ha
- For the 1C zone 1(c) Rural Small Holdings Zone - 2ha

8.9 Commercial Agricultural Assessment Approach

In order to ascertain the minimum size of a commercially sustainable agricultural business, a detailed economic analysis has been undertaken. The methodology used for this analysis is based on the *Draft Methodology for Determination of Minimum Lot Size* prepared by DoP and DPI in 2006.

The methodology comprises steps, viz:

- Step 1 - Identify the key agricultural industries and enterprises within the LGA;
- Step 2 - Identify the characteristics of farms in the LGA.
- Step 3 - Determine the existing production levels of key enterprises on farms;
- Step 4 - Determine appropriate gross margins for key enterprises;
- Step 5 - Determine a target income level for a commercial farming unit;
- Step 6 - Calculate the overhead costs; and
- Step 7 - Calculate the land area needed to generate the break-even level of income."

The methodology utilised for the commercial assessment in this project is based on the seven steps above in a diverse range of regions and industries, and in assessing farm commercial performance and technical sustainability.

Despite criticisms concerning limitations, it is our experience that when applied appropriately with sound local data the methodology provides a reliable indication of what constitutes a commercially sustainable agricultural business. That is, the process is sound, but the outcomes rely on the quality of data used and the interpretation of the analysis.

Additional context of the background for the methodology used for the economic analysis is presented in the following sub-sections.





Business Performance Assessment

For more than 200 years Australian farmers have demonstrated an ability to manage their business through a range of variable trading conditions based on seasons and markets. During periods of difficult trading conditions farmers have become particularly adept at “tightening the belt”. Such practices as minimising capital expenditure, capital renewal, personal drawings etc are all sound cash flow management techniques during difficult trading conditions. However such practices are only sustainable in the short term. If such practices are to continue in the medium to long term they can and will eventually result in:

- Capital run down of businesses; and
- Families forced to live on sub standard drawings.

Such cost management techniques are all too frequently utilised by farmers and this has created the perception that farmers should be forced to assume/accept sub standard or subsidised living conditions and achieve only minimal returns on the capital invested. Businesses, including agricultural based business, should be assessed at full commercial performance and be capable of;

- Standing equally as an investment with any other commercial sector;
- Growing ahead of the decline in terms of trade;
- Providing a salary at least equal to an independent manager; and
- Generating a commercially attractive operating profit balance with an appropriate rate of capital growth.

It is recognised that in the past eight years trading conditions in agriculture have been constrained due to a series of dry years, lower price markets and rising costs. To a degree this has been offset by significant capital growth in farm assets particularly driven by increasing land prices. Land value increases in the past three to five years have been significant; however when averaged over a ten to fifteen year timeframe, the rate of land value appreciation is in line with long term trends.

Agriculture is an industry that is typified by a large variation in business and it is difficult to find two businesses similar in size, structure, enterprise mix etc. Every agricultural based business is unique, and at a different stage of evolution typified by varying:

- Debt levels;
- Management skills;
- Personal needs;
- Family circumstances;
- Resource constraints; and
- Stages in the terms of trade cycle.

The unique nature of businesses has necessitated in this project an analysis with a level of understanding of the types of business structures and individual circumstances common to the Hay LGA though it is not possible to account for all variances.



Capital Renewal

Capital expenditure, often referred to as “capex”, is an important component of every business’s on-going growth and risk management strategies. Capex is used to upgrade farm infrastructure and facilities to improve efficiencies, reduce risks (such as OH&S) and improve performance. Capex requirements vary from business to business and year to year. Typically capex programs are closely tied in with the cash flow performance of any business. To best represent capex in a planning sense the commercial assessment includes an allowance called capital replacement and/or renewal (capital renewal).

Capital renewal as a procedure:

- Allows for the continual renewal and/or replacement of farm plant equipment and infrastructure;
- Avoids embedding capital run down into any business assessment;
- Is more relevant than depreciation; and
- Is over and above fair and reasonable repairs and maintenance.

An example of capital renewal allowance for a mixed farming enterprise would be 15% of the total value of plant and equipment. This means all farm equipment would be replaced/renewed over a seven year period and in doing so accounts for the constant changes in technology associated with new or replacement items.

In this commercial assessment, capital renewal is used to indicate capital expenditure allowances without trying to replicate actual capital expenditure programs and ensures that there is sufficient allowance for businesses to avoid embedding capital rundown into the analysis.

EBIT Yield

Best business practice is all agricultural business should be expected to produce commercially attractive returns. In order to assess commercial returns EBIT yield is frequently utilised.

EBIT is the acronym for “Earnings Before Interest and Tax”. Despite some flaws it is the most universal means of comparing businesses and investments even across industries. The most appropriate consideration in calculating a true EBIT is the substitution of a full capital renewal provision for depreciation and a salary which would be paid to an independent manager to run that business, rather than actual drawings. Some people erroneously omit a salary provision and even when included the provision (minimally) is for what may be drawn rather than a commercial provision for that specific business.

EBIT yield is the debt free profit divided by the gross value of all assets employed by the business.

Our client base generates the following EBIT yields for a range of managerial capabilities and seasonal/market scenarios.





The average rural business generates a long term EBIT YIELD between 3% and 5%.

As a comparison, according to ABARE farm surveys farm return on assets, excluding capital appreciation for broadacre industries in NSW has been:

- 2005/06 - 0.7%
- 2006/07 - -0.8%
- 2007/08 - 0.8%
- 2008/09 (provisional estimate) - -0.9%

These figures have been significantly impacted by the on-going drought.

Why is EBIT yield important? Assuming a generational period of a business is 25 years, and then an initial gross asset base of \$1.0M the business would, in the absence of income tax costs, will grow to the sums detailed in Table 27 as generated by the differing EBIT yields.

Table 27: EBIT Yields

EBIT Yield	\$M
3% EBIT	\$2.1M
7% EBIT	\$5.4M
10% EBIT	\$10.8M
15% EBIT	\$32.9M
20% EBIT	\$95.4M

- At 2% to 3% EBIT yield a business is covering inflation at current levels;
- At less than 10% EBIT yield a business is yet to hit its potential; and
- At >15% a business compares well with alternative investments.

EBIT yield is a standard business performance assessment procedure used across all industries and is not specific or unique to agriculture.

Definition of a Commercial Farm

For this project a best business practice definition of minimum size for a sustainable and commercial farm is:



A business (when returns are averaged over a 3 to 5 year timeframe) capable of:

- Providing a fair and reasonable salary to the owner/manager;
- Providing sufficient return for full provision of capital renewal;
- Generating sufficient revenue to cover all fixed, variable allocated and unallocated costs; and
- Providing the owner a return on investment that falls within their desires/expectations; when balanced against longer term rates of land and property capital appreciation.

For every area/industry the parameters in the above definitions will vary, however the outcome should always be the same, that is, an individual farm business with sufficient scale, productivity, and efficiency to generate sufficient revenue to cover the above requirements. Note the costs do not include the servicing of debt as the above analysis is based on debt free performance. In practice, debt servicing could be undertaken utilising the business returns.

Commercial Farm Scale

For businesses to withstand all of the pressures associated with difficult trading conditions and survive in order to prosper when things improve, they must have a great ability to “shock absorb” such times. Scale of business is an important aspect in having this ability, and this is often referred to as “business critical mass”.

Essentially all businesses are challenged to grow to survive. In fact to stand still is to actually go backwards. To mitigate this, businesses must increase both efficiency of operations and scale of production. Many businesses with less than ideal business critical mass will struggle to pass on to successive generations. This includes an inherent ability and need to grow the scale of production. What is often considered a viable business today, does not always have the critical mass needed to move into the future. Hard commercial experience has shown the “rule of thumb” for business critical mass per family when using value of gross assets (2008) is as follows:

- \$2M – current generation can live and retire, but the next generation is less likely to succeed;
- \$4M – with care and prudent cost management the next generation can grow the business; and
- \$6M – the business has the scale to grow but management cannot rest on its laurels.

Some points arising from these three categories are:

- Bankers seek clients in relation to categories. They are not shedding smaller clients but waiting out the generation change. Processors also prefer to work with fewer, larger, well managed and reliable suppliers through ever shortening supply chains;
- Recent growth in land values is placing the above gross asset categories under constant and strong upwards pressure; and
- Strong management in a \$1.5M business with 10% EBIT is more viable than a manager of \$3.0M yielding 3% EBIT.

In any business, best operational and commercial efficiencies are obtained through achieving no less than minimum business critical mass.



Methodology Summary

For the commercial assessment the following model was adopted in Figure 28 for defining the minimum size of a commercially sustainable farm:

Table 28: Defining Minimum Farm Size

	All fixed overhead and unallocated costs	A
+	Full provisions for capital renewal	B
+	A salary payable to an independent manager	C
+	Return to total business assets	D
=	Required gross revenue (A+B+C+D)	E
÷	Gross Margin /ha	F
=	Minimum Farm Size	E/F

Data Analysis Parameters

The commercial farm size was undertaken based on data collected during the project from sources including:

- ABS data;
- Information obtained from agricultural business operators during the consultation process; and
- Knowledge of agricultural operations in the Hay LGA.

These data sources were used in order to undertake the seven step process, which is summarised as follows:

Step 1 – Identify the Key Agricultural Industries and Enterprises within the LGA

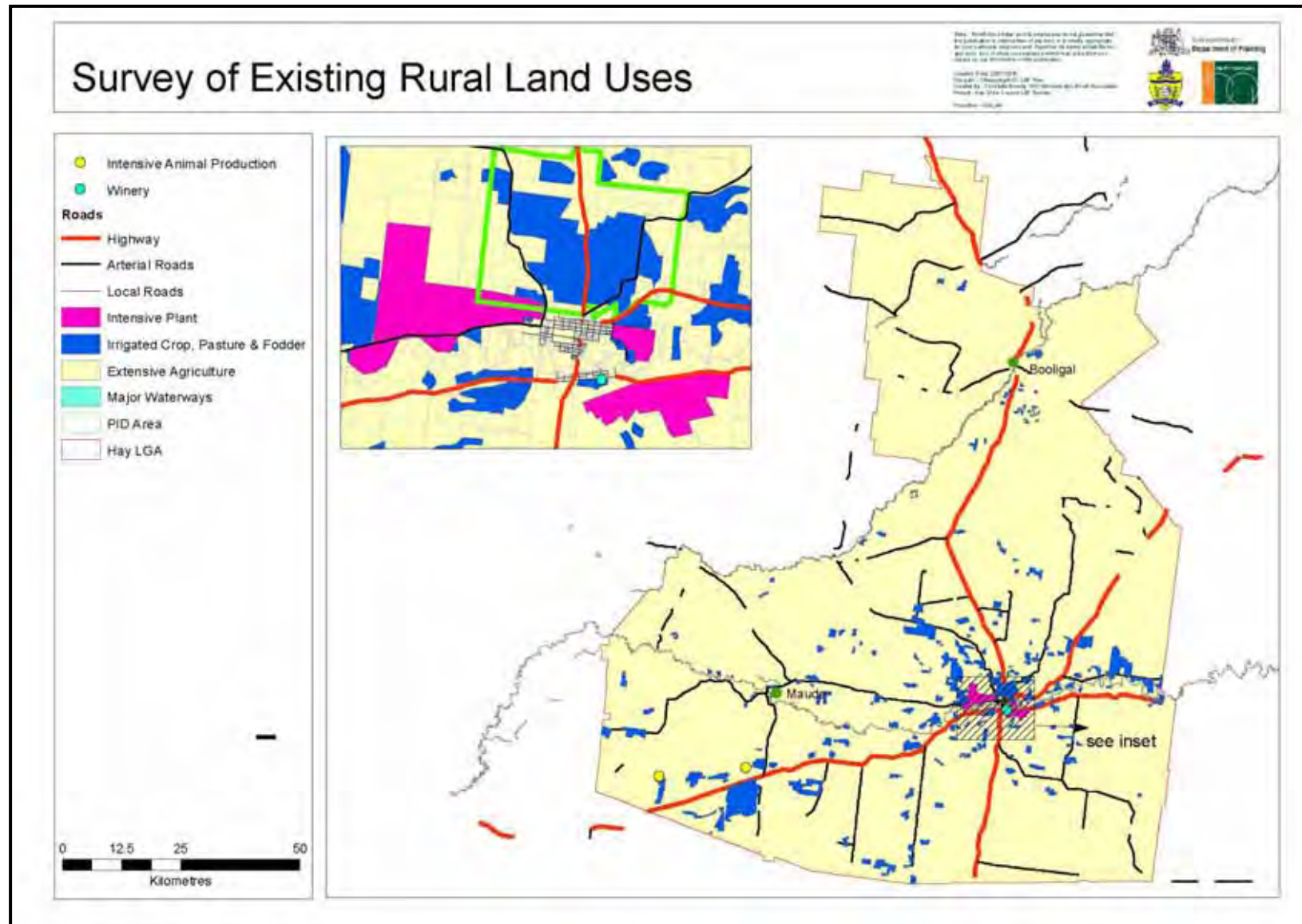
The key agricultural industries and enterprises in the Hay LGA are:

- Extensive grazing of sheep for wool and meat production and cattle;
- Broadacre irrigation of summer and winter crops including rice, wheat, canola and maize; and
- Horticultural production including broccoli, lettuce and rockmelon.

These agricultural industries will be used as the base enterprises for the commercial farm size assessment.

The following figure represents key agriculture enterprises in the Hay LGA including those within the specialised PID area. These comprise of extensive agriculture and intensive production systems as well as the development of irrigation.

Figure 34: Survey of Existing Land Uses





Step 2 - Identify the Characteristics of Farms in the LGA

The main characteristics of farms in the Hay LGA are:

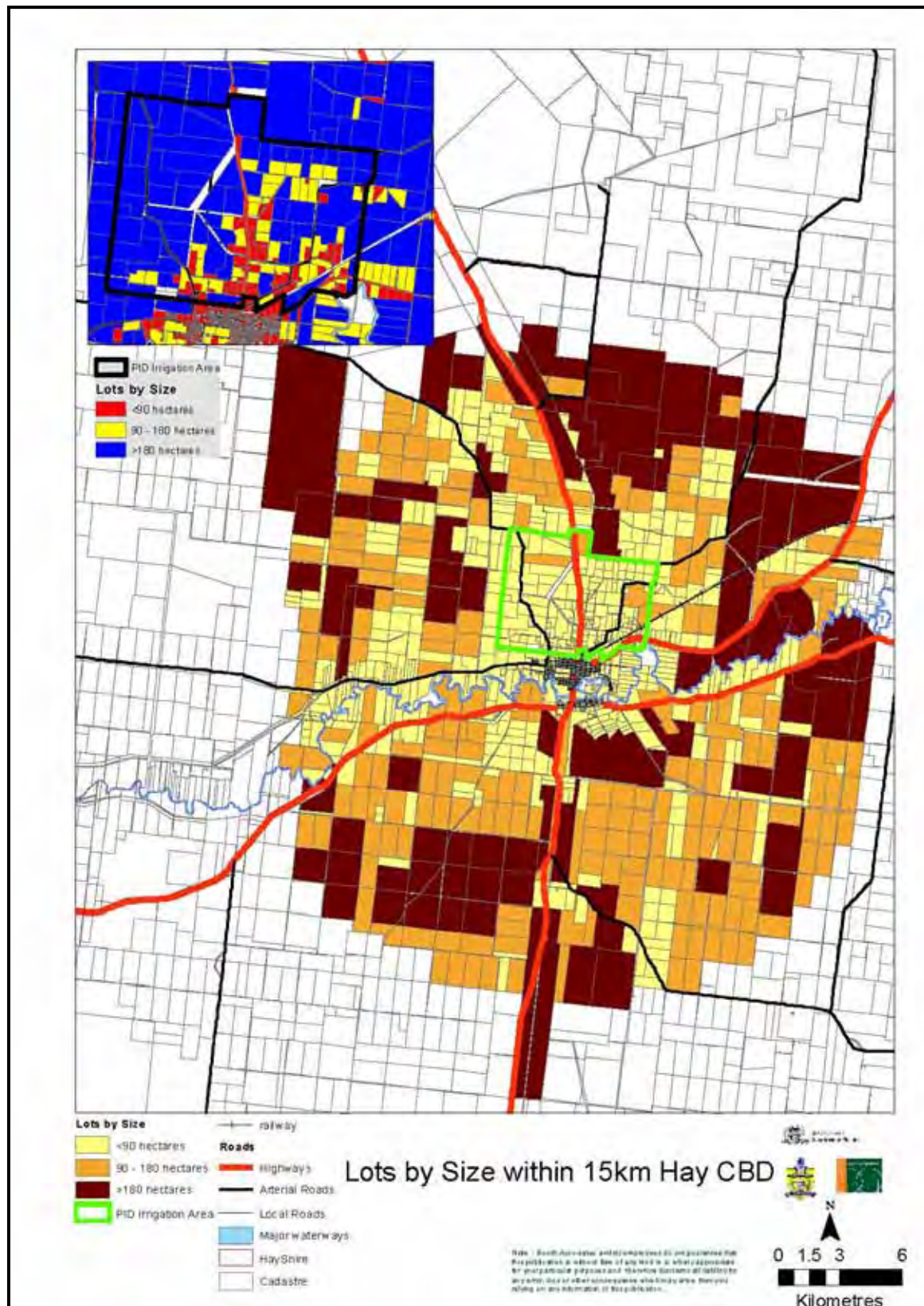
- Majority of the land is occupied in large holdings focussed on the extensive grazing of livestock;
- Broadacre irrigation is spread throughout the Hay LGA and mostly conducted in conjunction with extensive grazing activities; and

Horticultural activities are carried out in close proximity of Hay and tended to be operated as stand-alone businesses.

The figure below represents the intensified horticultural zone that currently exists within the Hay LGA and noted to be primarily within a 15km radius of Hay CBD.



Figure 35: Lots by Size within 15km Hay CBD





Due to the fragmented nature of broadacre irrigation development across the Hay LGA, as described in Section 8.3, and the range of holding sizes that exist in the Hay LGA, as described in Section 8.7, it is difficult to describe a typical mixed grazing and irrigation property. A very coarse analysis of irrigation area per farm is assuming the total area of flood irrigation developed in the Hay LGA is 44,000ha (as per Section 8.3) and the total number of agricultural holdings in the Hay LGA is 169 as depicted in Annexure 11 then the average irrigation area developed per farm is 260ha.

Step 3 – Determine the Existing Production Level of Key Enterprises on Farms

Existing production levels for the range of enterprises detailed in Step 1 has been based on:

- Information on typical production levels provided by agricultural producers during the consultation process;
- Information provided by DII staff and other relevant industry contacts;
- Assessment of ABS Agricultural Census and other background reports; and
- DII gross margins and knowledge of the region and its capabilities.

Step 4 – Determine Appropriate Gross Margins for the Key Enterprises

Appropriate gross margins relevant to the specific agricultural enterprises assessed in this economic analysis were obtained from NSW datasets. These gross margins are representative of agricultural production in the Hay LGA.

Gross Margins (GM) have been defined by NSW DII as:

"A gross margin is the gross income from an enterprise less the variable costs incurred in achieving it.

Variable costs are those costs directly attributable to an enterprise and which vary in proportion to the size of an enterprise. For example, if the area of wheat sown doubles, then the variable costs associated with growing it, such as seed, chemicals, and fertilisers, will also roughly double.

The gross margin is not gross profit because it does not include fixed or overhead costs such as depreciation, interest payments, rates, or permanent labour which have to be met regardless of enterprise size.

*Gross margins are generally quoted per unit of the most limiting resource: eg land, irrigation water, capital or labour. All gross margins in this booklet are provided on a per hectare basis."*⁸

To facilitate understanding of GM and subsequent model we note the following:

- Firstly, like all representative data there is no perfect data set and therefore each and every assumption can always be queried if there is a desire to be less than constructive with a critique;
- *Apropos* the first point, we have our extensive data base of actual client performance and our professional experience to use as a reference point. Our datasets and experiences do not conflict with NSW DII data sets and gross margins;
- Each GM is highly sensitive to yield, price, DSE ratings and managerial skills; and
- There is a need to differentiate between committed producers and those who are not solely driven by profit, such as long term GM investors, lifestylers and retirees.

⁸ Source: www.agric.nsw.gov.au/reader/budget



A summary of the NSW DII GMs used for this commercial assessment is included in Annexure 12. This data has been used to assist in the development of standardised farms for the commercial analysis and average gross margins have been determined as follows:

▪	Broadacre crops	-	\$240/ML
▪	Horticultural crops	-	\$487/ML
▪	Livestock	-	\$27.93/DSE

Step 5 – Determine Target Income Level for a Commercial Farming Unit

Based on the parameters described in at the start of Section 8.9 a target income for an agricultural business has been broken into three categories being:

- Full provision for capital renewal;
- Salary payable to an independent manager; and
- EBIT yield (return on total business assets).

The target income for a commercial farming unit is subject to whether or not off-farm income is included in the analysis. According ABARE data the average off-farm income for the last five years in the Riverina is just over \$20.0K/annum. For simplicity no allowance for off-farm income has been made in the commercial analysis, however should such off-farm income be included in the analysis it will decrease correspondingly the commercial farm size calculation.

For the commercial farm size analysis capital renewal has been set at \$20.0K/annum for a pastoral property and \$30.0K/annum for an irrigation property. The additional allowance for the irrigation property represents the increased maintenance required on irrigation infrastructure.

The salary allowed for in the analysis is \$40.0K/annum. This figure is the minimum salary which an independent manager for one labour unit farm business enterprise would command considering the other non-salary benefits such a manager would be provided including accommodation and some living expenses.

Step 6 – Calculate the Overhead Costs

The gross margins outlined in Step 4 accounted for all variable production costs including fuel and direct labour costs such as harvesting and shearing.

The balance of farm costs to be considered is those not captured within the GM being:

- Variable unallocated costs such as fuel and repairs and maintenance; and
- Overheads (fixed costs) such as rates, telephone, electricity, insurance, etc.





For a standardised agricultural business operating in the Hay LGA these costs have been determined to be:

- Variable unallocated costs for a pastoral property - \$35.0K/annum
- Variable unallocated costs for an irrigation property - \$55.0K/annum
- Overheads for both pastoral and irrigation properties - \$25.0K/annum

The background detail of these figures is provided in Annexure 12. The difference between variable and unallocated, between pastoral and irrigation costs, arises from increased fuel and repairs and maintenance required to undertake the farming operation.

Step 7 – Calculate the Area Needed to Generate the Break-Even Level of Income

The break-even level of income required, as described in Step 5 and Step 6, is detailed in Annexure 12 and correlates to:

- \$120.0K/annum for a pastorally focussed business; and
- \$150.0K/annum for an irrigation focussed business.

Therefore a commercial farm size needs to generate, as a minimum, this revenue as a gross margin from the enterprises it conducts before any consideration for return on investment is considered.

In addition to providing enough revenue to cover the break-even level of income additional, consideration needs to be given to a return on the investment. In order to calculate the return on investment, average land and water values have been ascribed to a range of businesses based on the knowledge of land and water values and feedback from the consultation process.

The commercial farm size analysis was collated utilising the standardised gross margins and farm land and water values plus the following assumptions:

- The carrying capacity of pastoral land in the Hay LGA is 1DSE/ha;
- The future reliability of general security irrigation entitlements is conservatively set at 50%;
- The future reliability of high security irrigation entitlements is 95%; and
- For rounded and tidy output of analysis the return on investment (EBIT yield) figure of 2.6% pa was used which is also just above the mid-point of the RBA's target CPI range of 2%pa to 3%pa.



8.10 Planning Considerations

The Rural Lands SEPP 2008 provides guidelines for the planning, development and management of rural lands in NSW.

The aims of this Policy are:

- (a) To facilitate the orderly and economic use and development of rural lands for rural and related purposes;
- (b) To identify the Rural Planning Principles and the Rural Subdivision Principles so as to assist in the proper management, development and protection of rural lands for the purpose of promoting the social, economic and environmental welfare of the State;
- (c) To implement measures designed to reduce land use conflicts;
- (d) To identify State significant agricultural land for the purpose of ensuring the ongoing viability of agriculture on that land, having regard to social, economic and environmental considerations; and
- (e) To amend provisions of other environmental planning instruments relating to concessional lots in rural subdivisions.

The rural lands policy introduces rural planning principles and rural subdivision principles to guide councils when preparing comprehensive LEP's. These principles identify key considerations in planning for rural areas and arriving at appropriate minimum rural lot sizes. The rural planning and subdivision principles are identified below:

Rural Planning Principles

The Rural Planning Principles are as follows:

- (a) The promotion and protection of opportunities for current and potential productive and sustainable economic activities in rural areas;
- (b) Recognition of the importance of rural lands and agriculture and the changing nature of agriculture and of trends, demands and issues in agriculture in the area, region or State;
- (c) Recognition of the significance of rural land uses to the State and rural communities, including the social and economic benefits of rural land use and development;
- (d) In planning for rural lands, to balance the social, economic and environmental interests of the community;
- (e) The identification and protection of natural resources, having regard to maintaining biodiversity, the protection of native vegetation, the importance of water resources and avoiding constrained land;
- (f) The provision of opportunities for rural lifestyle, settlement and housing that contribute to the social and economic welfare of rural communities'
- (g) The consideration of impacts on services and infrastructure and appropriate location when providing for rural housing; and
- (h) Ensuring consistency with any applicable regional strategy of the Department of Planning or any applicable local strategy endorsed by the Director-General.



Rural Subdivision Principles

The Rural Subdivision Principles are as follows:

- (a) The minimisation of rural land fragmentation;
- (b) The minimisation of rural land use conflicts, particularly between residential land uses and other rural land uses;
- (c) The consideration of the nature of existing agricultural holdings and the existing and planned future supply of rural lifestyle land when considering lot sizes for rural lands;
- (d) The consideration of the natural and physical constraints and opportunities of land; and
- (e) Ensuring that planning for dwelling opportunities takes account of those constraints.

These principles are considered in Section 14.0, Recommendations for the Hay LGA Strategy.

8.10.1 Conclusion

Details of the minimum commercial farm size analysis are provided in Annexure 12 and can be summarised as follows:

▪ Pastoral farm	-	5,750ha
▪ Broadacre irrigation farm	-	600ha
▪ Horticultural farm	-	90ha

The commercial farm size analysis did not include a mixed broadacre irrigation and grazing property, due to the fragmented location of irrigation development across the LGA, as outlined in Section 8.3 however it is noted:

- The average irrigation area developed per farm is 260ha;
- This area is just under half the area calculated for the minimum size of a commercial irrigation farm; and
- Therefore it is reasonable to assume that the minimum size of a mixed irrigation and grazing property would be 50% of the area calculated for a pastoral farm plus 50% of the area calculated for an irrigation farm that is 3,125ha.

Should off farm income of \$20K per annum (Section 1.1.1) be considered in the minimum commercial farm size analysis then the farm sizes calculated as per the procedure used in Annexure 12 are:

▪ Pastoral farm	-	4,850ha
▪ Broadacre irrigation farm	-	530ha
▪ Horticultural farm	-	80ha



The minimum commercial farm sizes calculated do not align with the current LEP minimum lot size for land zoned 1(a) General Rural (the majority of the Hay LGA) being 1,500ha. The minimum pastoral farm size of 5,750ha (excluding off-farm income) is not dissimilar to the average farm size of just over 6,000ha and from a holdings perspective:

- 86% of the Hay LGA is held in land which is 5,750ha or greater;
- Comprises 37% of all holdings.

From the perspective of the LEP the purpose of the minimum lot size is to provide protection for agricultural land from fragmentation and land use conflict. A recommended minimum lot size taking into account these needs and a commercial farm size analysis and holding analysis is provided in Section 14.4.

Key findings of the Rural Land Use Analysis are:

- There are numerous forces driving change in agriculture;
- There are three main agricultural industries in the Hay LGA being:
 - o Extensive grazing of livestock, predominantly sheep for meat and wool, and cattle;
 - o Broadacre irrigation of crops;
 - o Horticulture, especially vegetable production.
- The value of agricultural production in the Hay LGA is significant and is a major industry in the area. The value of agricultural production in recent years has been impacted by the ongoing drought, with areas of broadacre cropping and livestock numbers significantly reduced in the Hay LGA. In contrast horticultural production has been steadily increasing; and
- Land holdings in the Hay LGA on average are very large, and irrigation development is spread in a fragmented nature across the shire.

The minimum size of a commercial farm in the Hay LGA is:

- 5,750ha for an extensive grazing operation;
- 600ha for a broadacre irrigation farm;
- 90ha for a horticultural farm.

The detail behind these key findings is explained in the following sub-sections. Recommended minimum lot sizes for the Hay LGA are provided in Section 14.4.





PART C INFRASTRUCTURE AND CONSTRAINTS

9.0 INFRASTRUCTURE

9.1 Transport and Access

9.1.1 Public Transport

The Hay Township has limited public transport facilities.

The system in town presently consists of a school bus morning and afternoon pick up and drop off service for school children. There is also a hire car system which operates similar to a taxi service, but does not operate 24 hours a day. This service is not technically classed as a taxi, as it cannot meet the operating requirements of a taxi licence in terms of operating times.

As Hay is located at the junction of three major highways (the Cobb, Sturt and Mid Western Highways), there are quite a few options for travel to and from Hay to other major centres.

McCafferty's Coach Line has runs services to Sydney, Canberra and Adelaide on a daily basis except for the Adelaide service.

Countrylink operates has services to Sydney, Melbourne, and Canberra on a daily basis except for the Melbourne service.

9.1.2 Air

Hay aerodrome is operated by the Council and was registered on 28 February 2005 with the Civil Aviation Safety Authority. It is not identified on the Certified Aerodromes Register, but has the same physical standards as a certified aerodrome. Aerodrome operators are required to monitor obstacles and aerodrome safety inspections are required for Regular Public Transport (RPT) and charter operation with more than nine passenger seats.

Although no commercial air services are available, air charter flights operate to and from the Hay Airport and there are private aeroplane users.

Australian Air Express operates daily flights to Sydney for freight only.

9.1.3 Roads

There are approximately 941km of roads within the Hay LGA. This road network consists of roads fully funded and maintained by the Council (Local Roads), roads fully funded and maintained by the Roads and Traffic Authority (RTA Roads), and roads funded by both the Hay LGA and RTA (Regional Roads)



9.1.4 RTA Road Network

The RTA is responsible for funding and maintenance all of 351.70 km of main roads within the Hay LGA, namely the Sturt, Cobb, and Mid-Western highways. These roads form a part of the RTA road network. An RTA depot located in Hay, which services these roads.

The break-up of roads is as follows:

- Sturt Highway (Highway 14) runs for 120.31 kilometres in the Hay LGA;
- Cobb Highway (Highway 21) runs for 181.97 kilometres in the Hay LGA;
- Mid-Western Highway (Highway 6) runs for 49.42 kilometres in the Hay LGA.

Local and Regional Road Network

The Council maintains approximately 941km of local and regional roads within the Hay LGA.

The breakup of these roads is as follows:

Local Urban Sealed Roads	45.85 km
Local Non-Urban Sealed Roads	135.98 km
Local Non-Urban Unsealed Roads	594.73 km
Regional Urban Sealed Roads	1.47 km
Regional Non-Urban Sealed Roads	128.13 km
Regional Non-Urban Unsealed Roads	26.55 km
Urban Shoulders outside RTA Road	8.34km

Local Roads are fully funded by the Council. Regional roads are funded by a system of grants from the RTA, and matching contributions from Hay LGA.

The local sealed road network is reportedly in a fair condition at present. The Hay LGA believes that maintenance works are keeping up with the current demand on the network. There are however insufficient funds to greatly improve the network from its current condition. Minor improvements such as sealing small quantities of unsealed roads may be possible, however this will need to be on an 'as needs' basis depending on future land developments.

The local unsealed road network is mostly 'dry weather only' roads. Of the 594km's approximately 100kms has been surfaced with prior stream gravel. This material is not really classed as a gravel. It is a naturally occurring clayey sand product, which is only marginally better than the natural surface. It would not hold up to much traffic in wet conditions.

The nearest commercial gravel quarry with rock meeting the RTA standards for road base is located at Rankins Springs, some 150 kilometres from Hay.



Unsealed roads are maintained on an irregular basis. Grading frequencies vary from one grade every 12 months to up to one every three years. Maintenance works are generally carried out following rain events, as there is insufficient water to do maintenance works when the road is dry. When it rains, works are generally prioritised on a worst case basis, with school bus routes gaining priority.

Again, the network is considered in a fair condition. Most major road damage occurs during rain events. Given the current drought conditions, road damage has been less than normal over the last seven years. Again, for budget reasons, it is unlikely the network will be improved in the near future. Re-surfacing of prior stream roads again occurs on an as needs basis, with school bus routes taking priority.

The entire regional unsealed road network has been surfaced with prior stream material.

9.1.5 Pedestrian Access and Cycleways

The Hay LGA pedestrian access system consists of a concrete footpath system. This network is localised to around the Hay CBD and schools. The main pedestrian usage in this area includes local shoppers, tourists and school children.

The network is considered to be in a fair condition. It covers the important areas of pedestrian usage, but is not comprehensive.

Hay LGA has prepared a staged cycleway network plan. This plan has been in operation since 2006. This plan aims at providing a cycle network that connects the three schools, the swimming pool and library, and major tourist attractions in Hay. Its secondary aim is for the cycleway to follow a more scenic route, and to divert cycle traffic away from the main street of Hay.

The network is partly completed, with the majority of the network due to be completed in 2009/10. In certain locations, where the cycleway is to be located on the levee bank, these will not be constructed until the levee bank is completed as relevant. The existing and proposed cycleway network in Hay Township is shown in Figure 36.



Figure 36: Hay LGA Proposed Cycleway





9.1.6 Rail

Rail services from Junee to Narrandera were opened on 28 February 1881 and Carrathool to Hay services on 4 July 1882. The Railway Station was also opened this time. The line from Willbriggie to Hay was closed in 1985 and Carrathool to Hay on 6 December 1989, with the last train running on 10 April 1985. Passenger services ceased in 1983 and freight services in 1984.

The railway facilities at Hay were impressive given the class of the line because in 1920 the Commonwealth Railways proposed building a standard gauge line from Port Augusta to Hay via Morgan and Wentworth and Hay was to be the changeover. The railway station site includes a 60 foot manual turntable.

There is still an area of land which houses the original Train Station, several houses, water tanks, and vacant land. This land is owned by the Australian Rail Track Corporation (ARTC).

The Hay railway station, station masters house, railway porters cottages, and railway water tank are all listed heritage items. The Hay railway station is also listed on the National Estate Register.

The area of vacant land surrounding the station and associated buildings is being considered as a possible site for light industrial use zoning. In particular the land on the northern side of the old rail reserve appears most suitable. The rail reserve could then be used as a buffer zone between the proposed site and the existing Station and houses.

The Council intends to purchase the vacant land from the ARTC. Negotiations between ARTC and the Council have been continuing for several years.

9.1.7 Bus

A Countrylink bus service is available from Hay to the Griffith interchange where the southern train service is available to Junee.

K Purtill and Company coaches are based in Deniliquin and operate bus services, including a school bus run in the Deniliquin, Hay and Wakool local government areas.

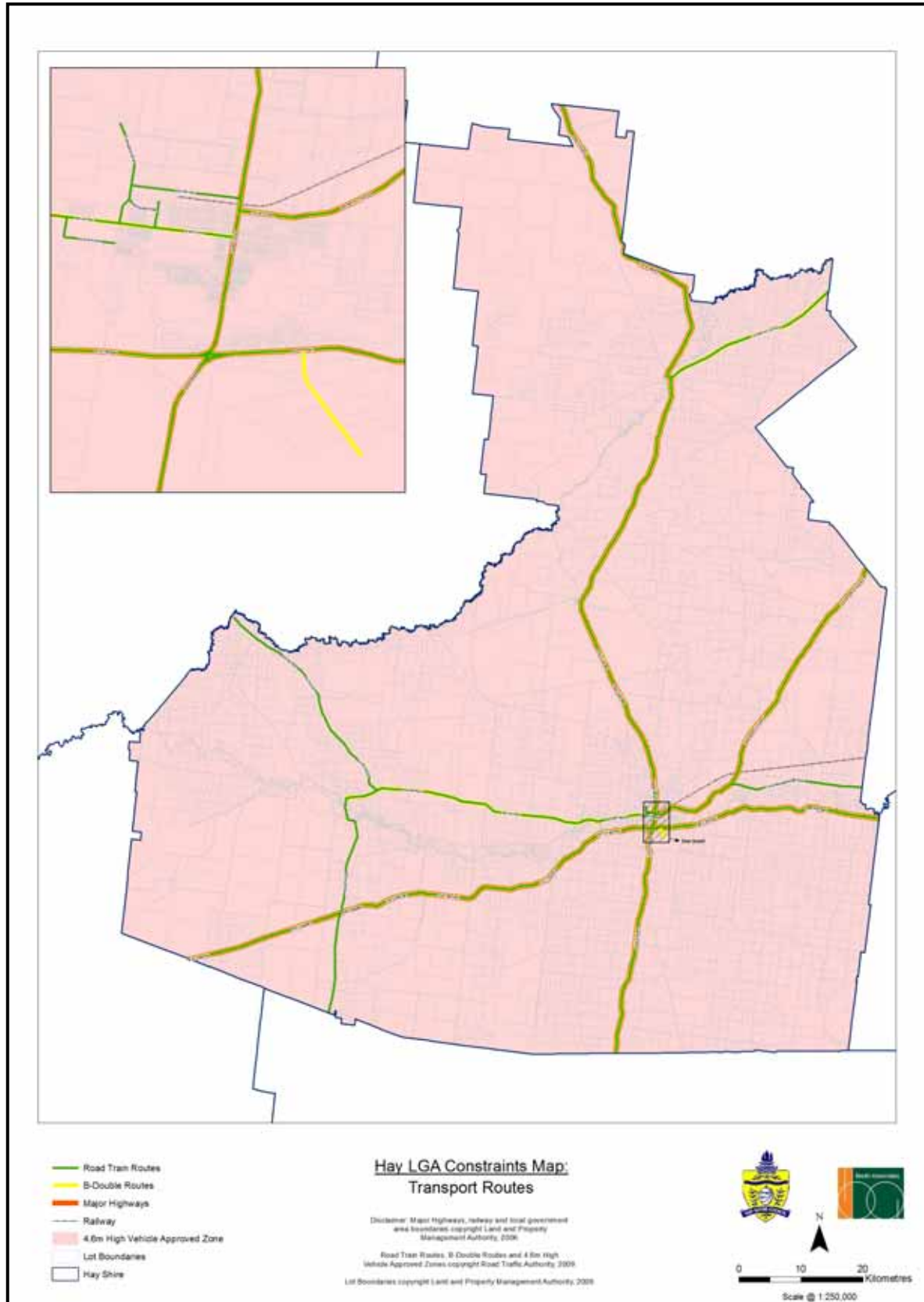
Other transport services are provided by Tony Lauer Transport from the Hay Station and ML Harrison Transport.

9.1.8 Transport Corridors

Major transport corridors are shown in Figure 37.



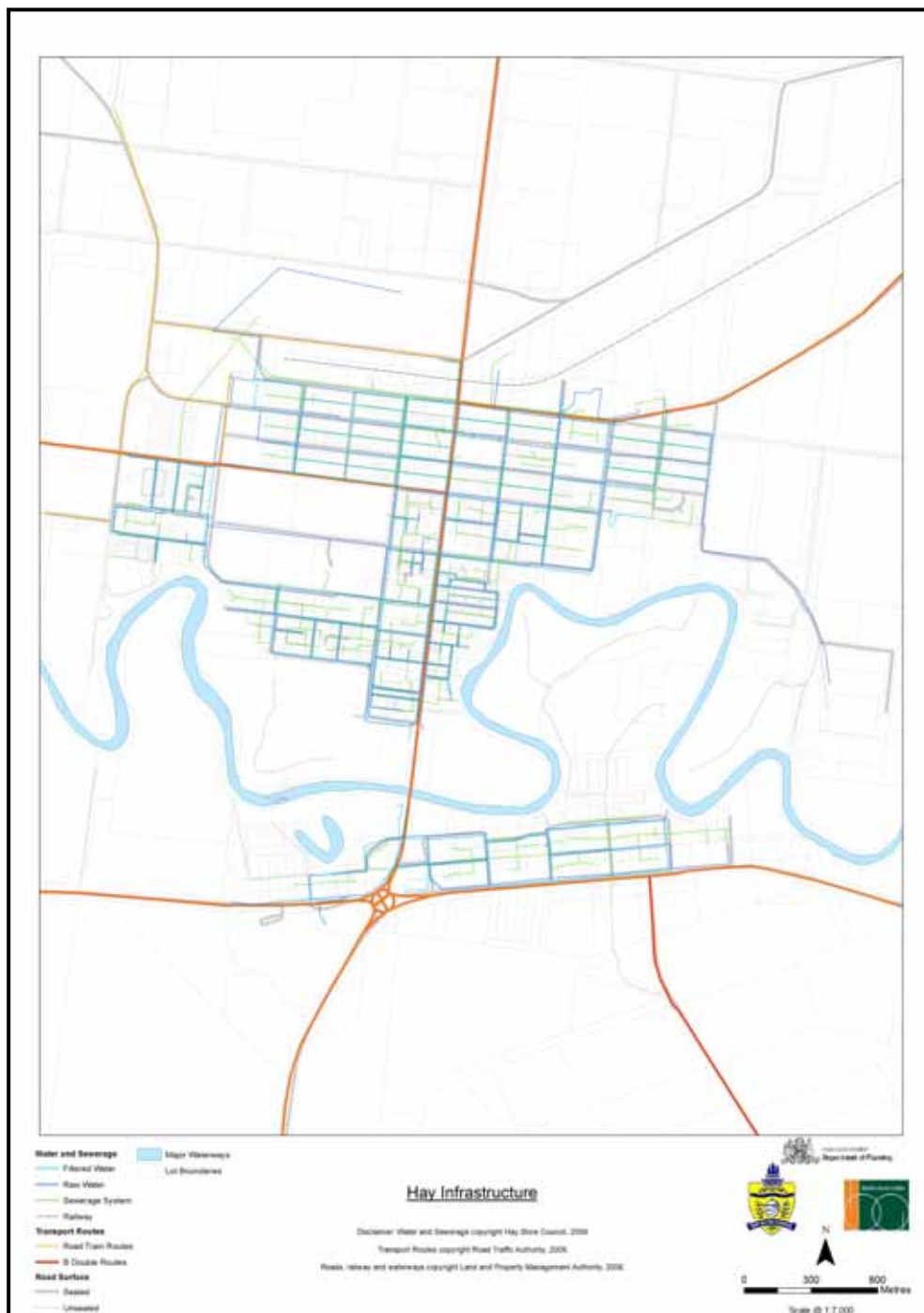
Figure 37: Road Train and B-Double Routes - Hay LGA



9.2 Water Supply

The Council has a dual water supply system, supplying both treated and raw water to the Hay Township. Hay also has a third water supply system known as the Hay Private Irrigation District. This system provides irrigation and stock and domestic water to a farming area north of the Hay Township. The reticulated water network is shown in Figure 38.

Figure 38: Infrastructure - Hay LGA





9.2.1 Treated Water System

The treated water is extracted from a weir pool on the Murrumbidgee River, and then treated in Council's water treatment plant. The plant is located adjacent to the river in north east Hay. The water treatment plant is twenty years old and currently operates at approximately 60-70% capacity. It therefore has considerable capacity for expansion.

Council owns and maintains a considerable underground water main network. This network consists of pipes varying from 50mm to 300mm in diameter. The condition of the network is fair, with a sustainable mains replacement program currently in place.

Hay has a reasonably well defined service boundary, whereby it can service all areas within that boundary with adequate pressure. Given the extra capacity of the water treatment plant, to expand the water main network beyond that boundary would only require the upsizing of some feeder mains. These works would not be overly onerous, and considered cost effective.

9.2.2 Raw Water System

Similar to the treated water system, raw water is extracted from the Murrumbidgee River via a pump station. The water is chlorinated, and pumped through a network of underground water mains. The raw water system covers a similar area to that of the treated water system.

The capacity of the system relies on the size of the pump, with the current pump operating at 60-70% capacity.

The water main system meets the demand loading, except in the case of South Hay. The main feeding South Hay is undersized, and has problems meeting demand. It is planned to duplicate this main as part of Council's Water and Sewerage Strategic Management Plan, which is currently being drafted.

To expand the current network beyond the service boundary would again be feasible with minor upgrade works to feeder mains.

9.2.3 Hay Private Irrigation District

The Hay PID is located approximately two kilometres north of the Hay Township, and supplies irrigation and stock and domestic water to an area of approximately 36 km², consisting of 80 small farms (2009). The location and extent of the Hay PID was identified by Council in the Project Brief and is shown in Figure 39.

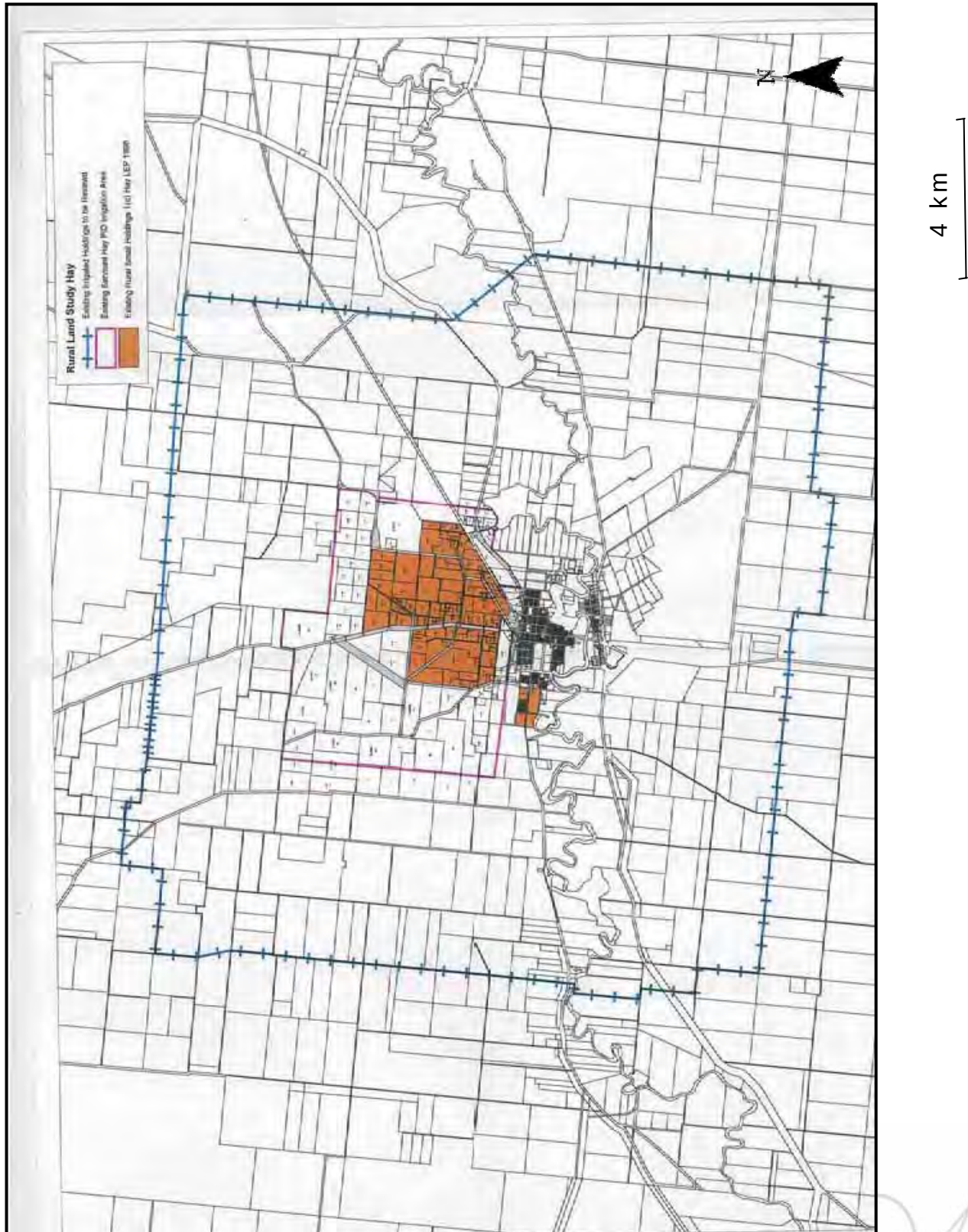
The PID is a privately operated irrigation scheme. It was recently upgraded via the 'Water for Rivers' program, which installed 36km of underground pipelines. This replaced the less efficient open channel system, and in the process saved considerable water from evaporation and seepage losses. The system is in good condition.

PID water is pumped out of the Murrumbidgee, from a location two kilometres East of Hay.

The PID pumping system is designed to operate mainly on off peak electricity, so it is only required to operate twelve hours per day. The pumping station is therefore presently operating at less than fifty percent of its full capacity.

Due to the current drought, water allocations for this scheme have been very low in recent times.

Figure 39: Hay Private Irrigation District





9.3 Sewage Management

Hay Township has a gravity mains sewerage system which covers the urban boundary as shown in Figure 38). Outside of the Hay urban area properties are required to operate on-site septic tank sewage systems.

9.3.1 Town Sewerage System

The Council operates a gravity mains sewer system within the Hay Township. The extent of this system is again defined as the service boundary.

The Hay sewer main system is in a fair condition, and meets the current demands.

The Sewerage Treatment Plant (STP) however is in urgent need of replacement. The plant was originally built in 1943, and then expanded in the 1950's and early 1970's. It has effectively reached the end of its serviceable life. It will need replacing in the next five years.

The current plant is a trickle filter system with evaporation ponds. The water evaporation rates in Hay are so high that even in wet periods, no water is discharged from the evaporation ponds.

The current plant is running close to its operational capacity and it treats 850-900 KL per day on average.

The new plant is estimated to cost in the vicinity of \$7M. The planned replacement treatment plant will have the ability to treat the effluent to the point where the output water is of a quality to use as raw water for irrigation purposes.

Expansion of the gravity sewer main system will need to consider the expected increased sewerage loads from the expansion, and how that fits in with the replacement of the STP. If the replacement of the STP is delayed, the expansion may place too high a load on the existing system.

Extension of the mains should be feasible, providing a large output facility is not proposed, e.g. a winery or processing plant. If gravity mains are not feasible due to insufficient grade levels, a grinder pump system would be proposed. Most new light industrial subdivisions are installing grinder pump systems in lieu of gravity mains.

9.3.2 On-Site Effluent Disposal

Prior to October 2007, there was an informal process for the approval of septic tank installations on properties outside of the town gravity main sewerage system. As a part of this informal process, Hay LGA maintained an on-site sewerage management system register.

In October 2007 Council introduced an *On Site Sewer Management Plan for Septic Tank & Grey Water Effluent Policy*.

This document applies to all lands within the Hay LGA that are not already connected to the Hay town sewerage system, or another EPA licensed premises for effluent disposal.

It requires Council approval of all new septic tank or grey water effluent treatment plants, and sets out the design, location, soil condition and monitoring requirements of new facilities.



All new systems are now registered on the previously mentioned on-site sewerage management system register, and are required to undergo regular inspections at the frequency stated in the management plan.

9.4 Hay Township Drainage System

The Hay Township drainage system consists of a combination of overland flow, and grated inlet concrete underground piped stormwater network.

The network covers the majority of the currently occupied lands.

As a general rule, the slope of the land in Hay Township falls towards the river. This has the benefit of allowing for expansion of the stormwater system, without encountering problems with inadequate levels. That being said, the current pipe grades are relatively low (approximately 0.2%). This has the effect of increasing siltation problems in the pipes, thus reducing their capacity. A regular maintenance program to de-silt pipes is carried out by the Council to overcome this problem.

It is reported anecdotally by Council staff that the system capacity is adequate for smaller events to the 1:5 ARI size. Bigger events result in short term minor local flooding, without causing damage to current housing or businesses.

9.5 Electricity

Country Energy supplies electricity to the Hay LGA.

The Township is surrounded by a grid of suitable high voltage feeders that are capable of supplying either industrial or housing subdivisions. Additional costs would be involved to extend these lines and install suitably sized transformers for any new developments.

Capacity wise, the current system is more than capable of meeting any growth needs in the Hay Township and surrounding areas.

9.6 Waste Management

The Township of Hay has a weekly 240 litre bin collection service operated by Council. The Council sub-contracts the collection service to Hanford Earth Moving. This consists of one collection truck, operating two days per week.

There is no re-cycling collection in Hay.

There is also no commercial collection service, such as skip bins. Hanford Earthmoving is proposing to introduce this service in the near future. All are operated by Council.

The main landfill is located with access from Thelangerin Road near the STP. It is a manned landfill, and is open on Tuesday, Wednesday, Friday, Saturday and Sunday. Opening hours vary on each day. Council charges a scale of fees for the different types of waste. The facility is not required to be licensed by the Environment Protection Authority.

The landfill consists of an above ground dump site, enclosed by earth embankments. The waste is covered on regular occasions with earth to prevent vermin and odour issues.



The landfill is estimated to have at least another fifty years of operational life at current waste intake rates. Council own more land to the north of the existing facility. There is also no reason why another layer of waste could not be placed over the current layer. The current landfill has been in operation for over 25 years.

There are two other landfill sites located at Booligal and Maude. They are un-manned and open 24hrs per day. To date Council has not had any problems with dumping of unauthorised waste.

9.7 Cemetery

The Hay Cemetery is located on the south eastern corner of North Hay, and is within the existing levee bank system.

The Cemetery is a typical cemetery, with both traditional gravestones and a lawn section.

It is presently approximately 50% full, and has a capacity of 100 plus years based on current mortality rates.

9.8 Livestock Saleyards

There are three livestock saleyards located in the Hay LGA. They are all privately owned.

Two are owned and operated by a partnership between Elders and Landmark. One is a sheep saleyard, located in Lindsay Street, Hay. The other is a cattle saleyard, located two kilometres along the Maude Road.

The third saleyards is owned and operated by Rawlinson & Brown, and is located on the Thelangerin Road. This saleyard has not been used for approximately two years due to a lack of trade associated with the drought.

Local livestock agents, reveal that the saleyards are in a reasonable condition, and can handle the quantities of livestock sold in the area. Any growth in sales could be easily handled by selling on more days than they currently operate.





10.0 CONSTRAINTS

10.1 Productive Agricultural Land

The soil resources of the Hay LGA as described in Section 6.5 of this report can be classified in terms of productivity based upon their current use and level of fragility. For the purpose of assessing the productivity potential of soils in the Hay LGA, the following classifications have been developed:

- Prime agricultural land;
- Good agricultural land; and
- Fragile agricultural land.

Project investigations reveal a significant proportion of the prime agricultural soils in the Hay LGA have been developed for irrigation. These areas developed for irrigation are indicated in the Land Capabilities map in Annexure 9.

Good agricultural soils cover the majority of the Hay LGA and can be identified as those soils depicted in the Land Capability map in Annexure 9 as suitable for grazing with regular or occasional cultivation. Note the data does not extend north of the Lachlan River as land capability mapping of the Western Division has not been undertaken.

Prime agricultural soils in the Hay LGA not located near an irrigation water source (river and/or bore) are unlikely to be developed for irrigation and hence good agricultural land classification suffices.

Fragile agricultural land is those soils depicted in the Land Capability map in Annexure 9 as land "suitable for grazing with no cultivation". These soils are shallow, fragile and prone to erosion and not suited to irrigation.

All three classes of land types are currently being used for agricultural production and warrant protection due to the importance of agriculture to the Hay LGA. In terms of productivity potential, the priority of protection of these lands would be "prime", then "good", then "fragile" agricultural land.

Most of the land in the Hay LGA is suitable for grazing with regular/occasional cultivation. Most of the better quality agricultural land has been developed for flood irrigation. Collectively these lands represent the areas which, as far as practicable, should be protected from development and should be retained for agricultural production systems. These areas are depicted in Annexure 13 as productive agricultural land. As the original dataset (Annexure 9) did not extend north of the Lachlan River, this area has not been classified in Annexure 13. The majority of the land north of the Lachlan River in the Hay LGA is most likely productive agricultural land.





10.2 Flood Protection Planning

Most of the information reproduced below has been adopted verbatim from *Flood Planning Levels* (Floodplain Development Manual, 2005).

The *Floodplain Development Manual* (2005) relates to the development of flood liable land for the purposes for section 733 of the *Local Government Act* (1993). The *NSW Flood Prone Lands Policy* aims to reduce the impact of flooding on individual owners and occupiers and to reduce private and public losses from floods. The responsibility for the management of flood risk remains with local government. Flood Planning Levels (FPL's) are important tools to manage flood risk. They are derived from a combination flood event, a historic flood or a certain Annual Exceedance Probability (AEP) and freeboard. FPL's do not however ensure that development is located in appropriate areas where it will not have significant adverse impacts on flooding, nor do they address personal danger issues. These are the issues that need to be considered within strategic studies and strategic planning and managed through appropriate land use restrictions in environmental planning instruments and in emergency response planning. There is a duty of care of decision makers in this respect. Historical planning practice in NSW is focussed on the adoption of the one in 100 year ARI to define the limits of flooding for residential development. This perception precluded assessment of risk levels associated with rarer floods that may be more critical for a particular location. Floodplain risk management studies involve determining appropriate land uses and densities and selecting both the flood events and freeboards upon which FPL's for different purposes are based. Therefore the decisions on FPL's are based on a detailed understanding of flood behaviour across the full range of floods and their likelihood of occurrence and associated consequences in terms of danger to personal safety and social, economic and cultural issues.

Although not mandatory and merits based, in the majority of cases FPL's for new residential development should be based on the one in 100 ARI event. Any variation of this standard is only possible where it can be clearly demonstrated that there is an exceptional situation. The manual requires the adoption of appropriate zoning and development controls that vary with flood hazard and incorporated into LEP's and DCP's. It is generally not feasible, nor socially, environmentally or economically desirable to safeguard development against the PMF (Probable Maximum Flood). The PMF is the largest flood that could conceivably occur at a particular location, as discussed in Section 10.2.3. In typical situations the FPL minimum floor level for standard residential development would then be 1% AEP flood event plus a freeboard (typically 0.5m) with minimum fill levels at the 1% AEP flood level. High FPL's may be necessary for aged care facilities and other types of development with particular evacuation or emergency response issues. It might be considered necessary to use the PMF as the FPL when siting and developing emergency facilities such as police stations, hospitals, State Emergency Services (SES) headquarters and critical infrastructure such as major telephone exchanges if possible. The decision on appropriate FPL's for commercial and industrial developments relates more to economic benefits versus cost, therefore there is greater potential for FPL's for these developments to be based on events more common than the 1% AEP flood for example 5% AEP. An FPL for a mitigation work to protect existing development from flooding such as a levee, needs to consider the range of issues inherent with flood risk, existing land use and siting, need to evacuation and response requirements as well as what development controls are required to protect development.

In cases such as Hay, flood related development controls within the area protected by the levee may only need to relate to local overland flooding issues within the levee. However when a levee excludes the PMF, it is necessary that future planning ensure zero risk as there is a degree of uncertainty regarding the absolute accuracy of PMF estimates. Overtopping or failure of works, including levees, can result in catastrophic damage and danger to personal safety. Therefore an asset management plan with failsafe maintenance programs is essential for all levees, together with sound local flood plans to address the inevitable overtopping provided for in both levee designs. Where a levee is designed to exclude the PMF it is necessary to inform residents that it will be overtopped at some time in the future and the need for local flood planning in the event of overtopping or failure to plan against a perception or false sense of security amongst the community.



The development of greenfield sites provide an excellent opportunity to determine appropriate development limits and apply conditions including FPL's to reduce the continuing risk to an unacceptable level. Current FPL's for planning purposes has generally been set by previous decisions of Council, based on previous studies or historical precedents. Flood studies might find that what was believed to be a 1% AEP is now a 1-in-80 ARI flood event, but there may be marginal benefits in damage reductions and risk exposure in adopting a higher FPL for new development. This is particularly relevant in the case of Hay where the 1956 flood event has been previously accepted as anywhere between a 1-in-50 and 1-in-100 year event. This flood has been determined to the flood of record and has more recently been accepted as a 1-in-90 year event. (This is the flood protection standard on which the proposed levee design has been modelled with a one metre freeboard; the flood protection of the levee will be 1 in 100 ARI).

Formal community based plans of actions in accordance with NSW emergency management legislation, to deal with the threat, onset and aftermath of flooding, is required. These plans are called Local Flood Plans and are records of intent for the management of floods. In some cases there is also a need for site specific flood plans prepared for individual development, businesses or households including for hospitals, aged care housing, and schools where relevant.

10.2.1 Flood Impacts

The Township of Hay lies either side of the Murrumbidgee River. As a result the Township has experienced several flooding events over its history. The most recent major event being the 1956 event. Flooding is one of the major constraints that need to be considered when looking at the possible expansion of Hay.

Levee banks were constructed around the northern Hay Township prior to the 1956 flood event, which prevented major flooding. Further levee banks were constructed in 1974 to protect south Hay. There is currently an intention by Council to upgrade the levee bank system again, to fix settlement issues and increase protection to residents. The proposed level of protection has been estimated at 1 in 100 ARI event.

Hay can be impacted by flooding in two ways:

- Channel Bankful discharge associated with rain in the upstream part of the catchment; and
- Flooding through localised rainfall and runoff.

While the existing levee provides some protection to urban Hay a flood event similar to the 1956 flood event would result in significant flooding. Localised rainfall and runoff also results in flooding, even when pumps can be operated to discharge water back into the river. The main area impacted through this flooding is the north western sector of town, west and south of Hay War Memorial High School and Hay Park Oval.

It is acknowledged that when the Murrumbidgee River rises there is a significant lead up time until the increased flow reaches Hay.

These two flooding scenarios are depicted in the *Hay Town Levee Hydraulic Assessment* (2009) which shows flooding associated with bankful discharge and the *Hay Overland Flow Study* (2009) which shows areas flooded through localised rainfall and runoff.



Figure 40 represents the extent of river induced flooding based on no modification to the existing levee and Figure 41 with the recommended upgrading of the levee.

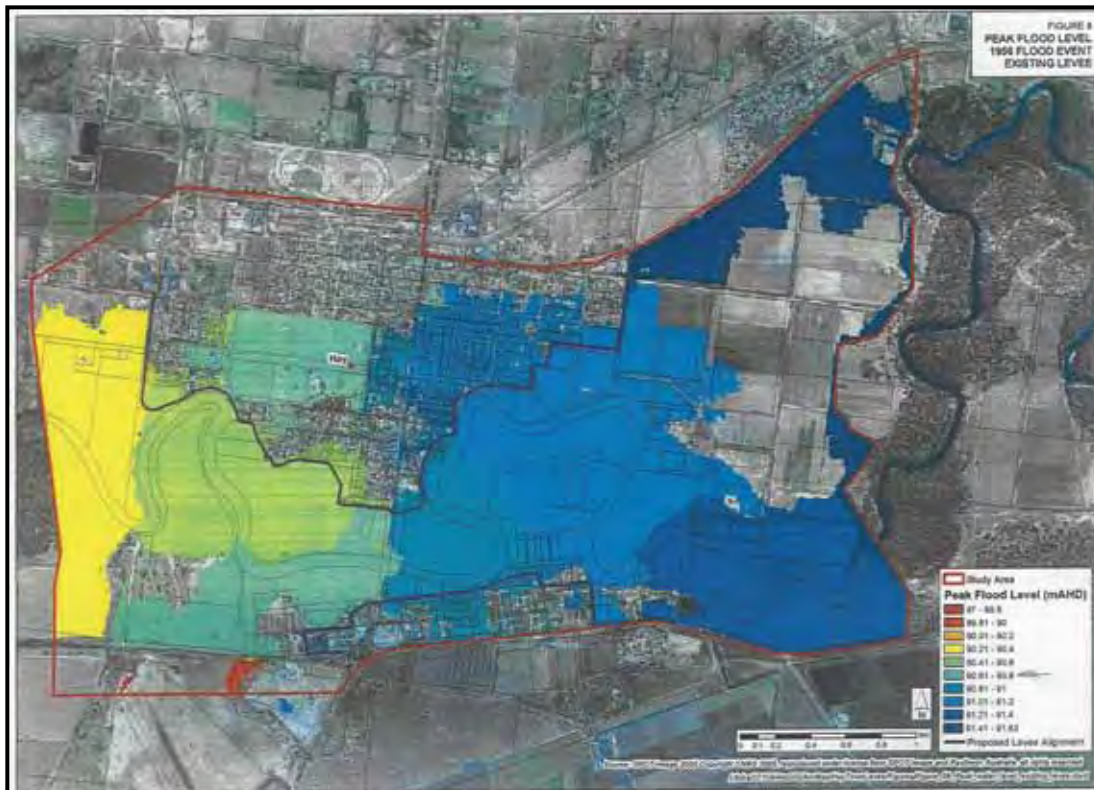
Figure 42 shows localised flooding resulting from when the river is high and outlets are closed. This shows that significant areas are impacted when water is not pumped back out to the river.

Figure 43 shows the extent of Hay impacted by flooding when water is able to be discharged into the river via outlet locations.

The areas identified provide support for a targeted pumping strategy, with sufficient capacity and in locations to provide greatest flooding alleviation.

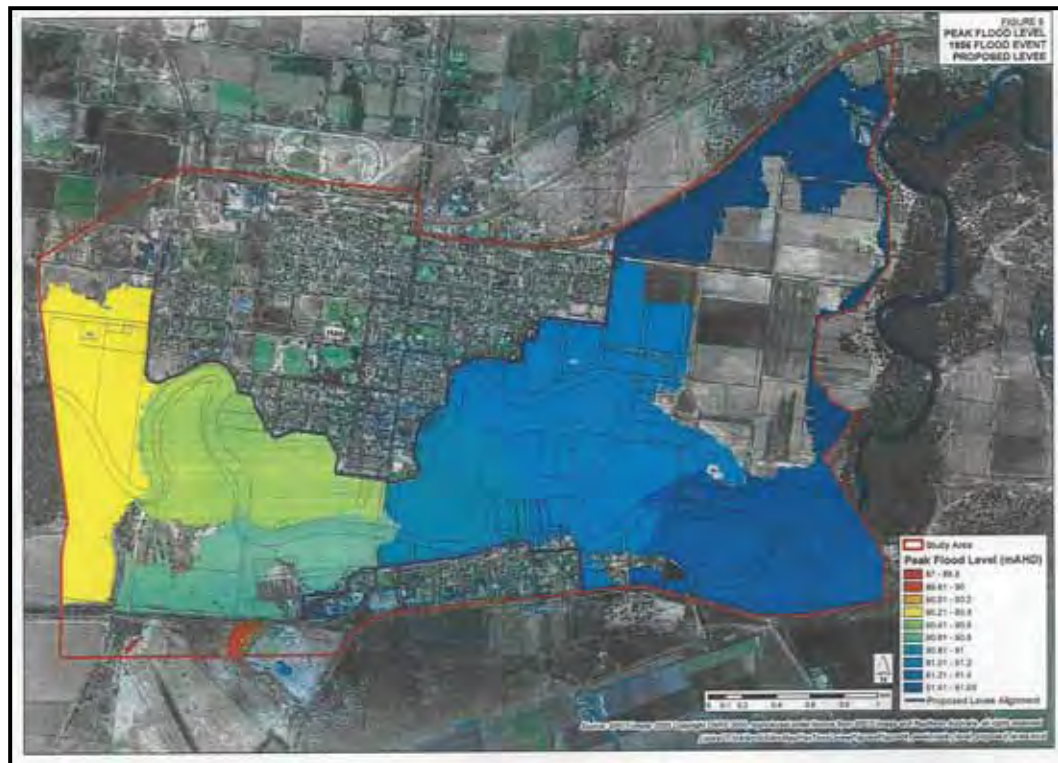
In the rare event that the river is high and there is extensive local rain, then it is highly likely that significant areas in Hay would be affected.

Figure 40: Peak Flood Level 1956 Flood Event - Existing Levee



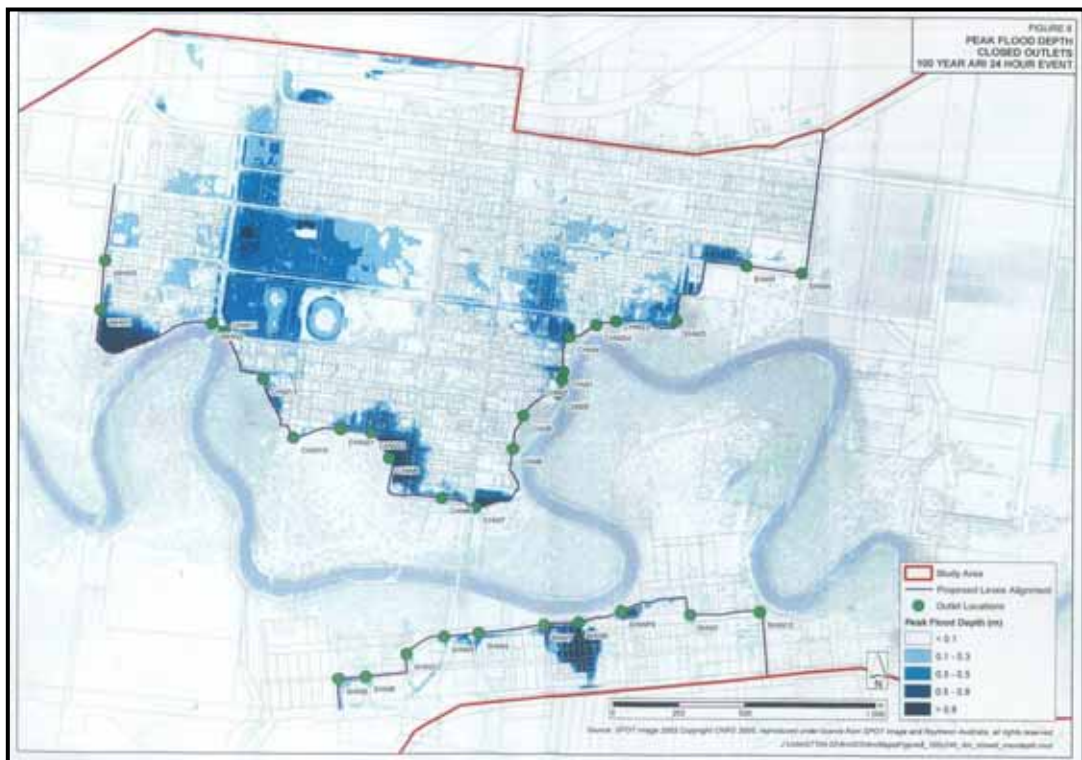
Source: WMA Water 2009

Figure 41: Peak Flood Level 1956 Flood Event Proposed Levee



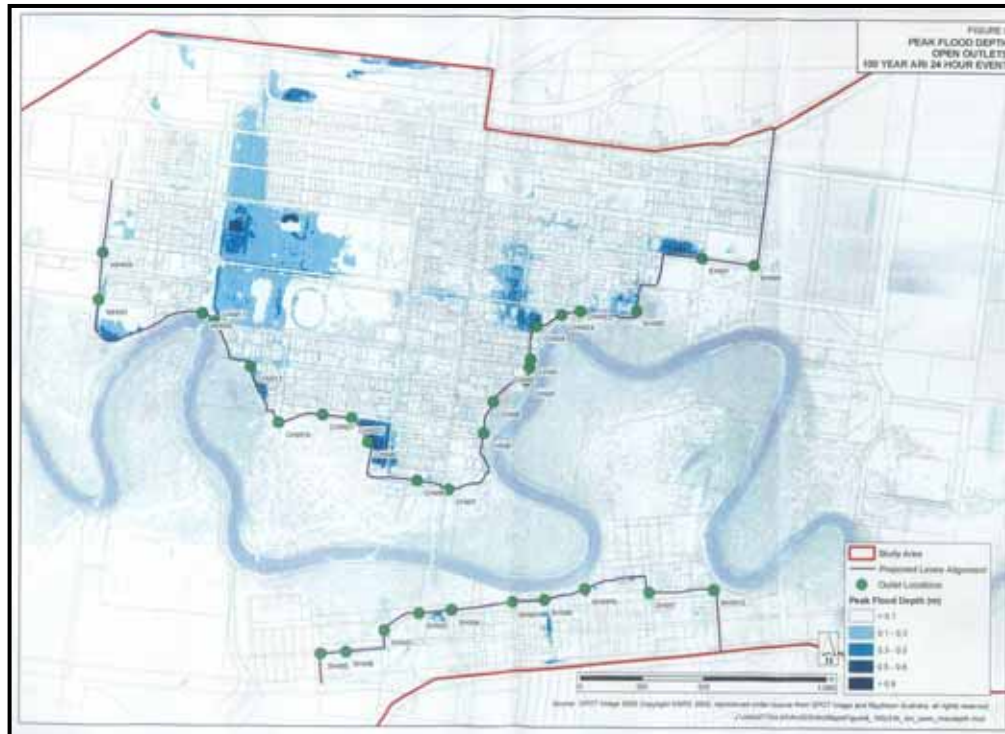
Source: WMA Water 2009

Figure 42: Peak Flood Depth Closed Outlets 100 Year ARI 24 Hour Event (Hay Overland Study)



Source: WMA Water 2009

Figure 43: Peak Flood Depth Open Outlets 100 Year ARI 24 Hour Event (Hay Overland Flow Study)



Source: WMA Water 2009

10.2.2 Flooding Reports

Several fundamental reports have been undertaken to ensure that flood mitigation undertaken for the Hay Township is appropriate and effective.

1. Hay Town Levees – Hydraulic Assessment Report (2009)

This report looks at what works are required to be completed to upgrade the existing levee system around Hay, to prevent overtopping from a flood event equal in magnitude to the 1956 flood event. This flood event is estimated at slightly greater than a 1:100 ARI event.

The report has recommended the required new heights and alignment of the levee bank that will withstand this magnitude flood event.

The existing levee system was hurriedly installed as a result of the 1956 flood event. Some upgrade works were undertaken in 1974. A review of the levee has found that it has settled over time, and is structurally inadequate as a permanent levee.

As a result, the levee will need to be totally reconstructed in order to be considered a proper levee system.



These works are estimated to cost approximately \$10 million. Council has programmed these works to commence this financial year (2009/2010). For financial reasons it is expected the works will take ten years to complete. The work will be broken up into segments to suit funding availability for that particular financial year. The works will be completed on a 'worst first' priority. When constructed the levee system should protect all existing dwellings within the Hay Township from flooding of the Murrumbidgee River in a 1 in 100 year flood event (based on the 1956 event – 1 in 90 ARI plus a freeboard of one metre, not 0.5m as generally provided),.

It is worth noting that there are some areas of land currently on the river side of the levee that are being investigated as possible industrial and housing areas. Obviously these would not be recommended as potential housing or industrial sites without further modification of the levee system. At present there is no formal system in place that protects development of areas outside the levee bank system.

2. Hay Overland Flow Study (2009)

This report investigates the potential flooding that may result from the water level of the Murrumbidgee River being higher than the outlets of the Hay Township stormwater system.

The Hay Township stormwater system has non-return valves on the discharge outlets of its stormwater pipes. These valves prevent water from flowing back from the Murrumbidgee River into the Township. They also prevent water from flowing out of the pipes if the water level of the river is higher than the pipe outlets. The result being that any rainfall falling within the Township cannot be discharged.

There are 31 outlets in total that discharge into the Murrumbidgee River.

In the past, the Council has operated an informal pumping regime whereby stormwater was pumped over the levee bank, and into the Murrumbidgee River. This system has not been documented, and was carried out on an as needs basis for localised flooding.

The report aims at formalising the pumping policy, and determining the required location and capacity of pumps to best protect the Township.

Modelling on the 20 year ARI and 100 year ARI events was undertaken for both North and South Hay.

Modelling results showed that some areas of Hay would be inundated during such events.

Remodelling of these events was then recalculated using various pump sizes at different locations.

The end result being that not all sites will be required to be serviced by temporary pumps. Critical sites could utilise a pumping capacity of up to $1.4\text{m}^3/\text{s}$, however in the main, pumps between $0.5\text{m}^3/\text{s}$ and $0.25\text{m}^3/\text{s}$ would be adequate.

Council plan to include the results of this report into the next review of the *Hay LGA Local Flood Plan* document. This document is a jointly authored plan prepared by Council and the SES. It recommends actions to be taken in the event of major flooding. This includes evacuation routes etc.

Council does not propose to purchase pumps to store for potential flood events. They do not consider the cost of this for the frequency of the event to be justified. Instead, potential pump hire companies, and pump sizes and locations will be documented in the above Plan.

It is noted anecdotally that flood events in Hay have considerable lead times. There can be as much as six weeks notice of an impending flood event. Similarly, water levels rise very slowly, and are also slow to recede. For example, the original levee system, built in 1956, was built by locals as the flood waters rose during the 1956 flood event.



Council therefore believes they will be able to source adequate pumps in a timely manner, to manage flooding.

3. Hay to Maude Rural Floodplain Study

There is a further report commissioned that is estimated to be soon released in draft form. This report is currently titled the *Hay to Maude Rural Floodplain Study*, and considers general flooding issues within the Hay LGA.

10.2.3 Probable Maximum Flood Event

The PMF is the largest flood that could conceivably occur at a particular location. It is calculated using amongst other factors, the probable maximum precipitation rate. It is a flood event greater than the 100 year ARI event. Whilst it is usually uneconomical to design levee's and flood mitigation systems to cater for the PMF, it is still worth assessing to determine the consequences of such an event.

The 1956 flood was estimated to be slightly lower than a 100 year ARI event. As stated above, the embankment around the Township of Hay is being designed to cater for a similar event to the 1956 flood plus freeboard (1.0m).

The PMF has not been modelled for the Township of Hay. Again, there are several different scenarios to be considered when looking at the consequences of such an event: the flooding from upstream events in the Murrumbidgee River catchment and flooding from a localised event in the Township of Hay.

The PMF for the first scenario would overtop the current and proposed embankment surrounding the Township. Depending on the source of the flooding, there may or may not be adequate time to raise the embankment to cater for this event. Once the embankment is overtopped, the water would not be able to escape until the river levels receded to below the embankment. This water would have to be pumped back over the embankment until the water level was lower than the town stormwater outlets. After this the water would escape by gravity means.

If a PMF event hit the Township of Hay, there would definitely be localised flooding as the current stormwater system would not be able to handle the inflow. If the river was already higher than the stormwater outlets, then pumps would be needed to pump the water over the embankment. More pumps than those recommended in the *Hay Overland Flow Study Report* (2009) would be needed. If the river water level was lower than outlets of the Hay stormwater system, then there would still be localised flooding, as the outlets could not handle this size event.

The extent of flooding from all of these scenarios should be investigated, as resources permit, to ascertain the consequences of such an event. The determination of the PMF flooding extent could be used to look at potential major risk issues such as:

- Contamination of town drinking water due to inundation;
- Inundation of the Sewerage Treatment Plant;
- Inundation of medical facilities; and
- The blocking of evacuation routes from town.





10.2.4 Flooding Analysis

The Hay district in the past has undergone major flooding events which replenish storages, groundwater aquifers, wetland areas plus promoting infiltration into soil profiles. However these dynamics have been considerably altered due to river regulation, modification to topography and the affect of current long term drought conditions. Even with the presence of these influences the Hay LGA and more critically the contained villages periodically undergo flooding.

The frequency of these events, as demonstrated from information for the Hay Township, is that there has been 27 floods since 1952 equal to or greater than 7.5 metres; in 1956 there were eight flood peaks over 7.5m in a seven month period; and the largest of these floods in 1974 measured 9.02m on the Hay gauge. Data from the Bureau of Metrology provided as Annexure 14 for stations located within Hay confirm these heights plus provides additional information for Booligal Weir relating to the Lachlan River.

The Hay Township is afforded a degree of protection from flooding events through levee constructions (to the north of the river, Hay Town Levee and along the southern bank, South Hay Levee) that are described by PPK (2002) to consist of formed levee embankments, public roadways and elevated natural or filled ground. In addition, privately constructed levee embankments exist to the north-west and south-east of the Township. The levees around north Hay and South Hay have stemmed major flooding in 1974, 1975, 1978 and 1989; however it has been observed that settling and erosion of these levees since these floods means that failure of these levees will occur at lower flood levels than in the past.

To ensure that the Hay levee continues to provide adequate flood mitigation into the future, as described in previous sections of this report, the Council have commissioned a series of investigations to establish required rehabilitation to the existing embankment. Patterson Britton (2005) conducted hydraulic analysis for Hay Township and concluded that the 1956 flood is regarded as being equivalent to a flood with an ARI of between 50 and 100 years and in its present condition a flood greater than this magnitude would overtop parts of the current levee. This flood is considered to be a 1-in-90 year event which is accepted as being 91.75m Australian Height Datum (AHD) at the Lachlan Street bridge crossing. The provision of a freeboard of one metre above the 1956 peak flood level is to be incorporated in design (as a factor of safety), which will require levee works to lift the crest elevation by 800 to 900mm. Threats to the current Hay town levees, due to structure and river bank instability, have also been noted within recommendations for modification and reconfiguration of levee alignment.

PPK (2005) also rightly noted that the upgraded levee services the entire town over its design life. The future expansion of Hay also needs to be considered.

Stakeholders have questioned the reliability of previous mapping of the floodplain. The urban and rural flood studies recently undertaken have used flood modelling to identify flood liable land in certain areas.

Should the recommendations in this report be adopted further modelling of potential rezoning sites is required, prior to development to ensure lands are adequately protected against flooding in accordance with the Floodplain Development Manual 2005. The Floodplain Development Manual defines three hydraulic categories of flood prone land. They are:

- Floodway;
- Flood storage areas; and
- Flood fringe areas.





Flood liable land for the whole LGA needs to be defined to allow the production of flood planning maps for the Hay LEP.

Floodways are areas where there is a significant volume of waterflows during floods and are often aligned with natural channels. If obstructed they would cause a significant increase in flood levels and/or a significant redistribution in the flood flow.

Flood storage areas are those parts of the floodplain that are important for the temporary storage areas of floodwaters during the passage of a flood.

Flood fringe areas are the remaining areas of land affected by flooding after the floodway and flood storage have been derived.

A recognised deficiency which is required to be undertaken is for modelling and the mapping be conducted to define flood-way, flood storage and flood fringe areas of the floodplain.

10.3 Bush Fire Prone Lands

All local councils in New South Wales must consult with the NSW Rural Fire Service when preparing draft local environmental plans for land identified as being bushfire prone, and comply with specific provisions in *Planning for Bushfire Protection 2006* (PBF).

The aim of PBF is to use the NSW development assessment system to provide for the protection of human life (including fire fighters) and to minimise impacts on property from the threat of bushfire, while having regard to development potential, on-site amenity and protection of the environment.

More specifically, the objectives are to:

- Afford occupants of any building adequate protection from exposure to a bushfire;
- Provide for a defensible space to be located around buildings;
- Provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent direct flame contact and material ignition;
- Ensure that safe operation access and egress for emergency service personnel and residents is available;
- Provide for ongoing management and maintenance of bushfire protection, measures, including fuel loads in the asset protection zone (APZ); and
- Ensure that utility services are adequate to meet the needs of fire-fighters (and others assisting in bushfire fighting).

Chapter 4 (Performance Based Controls) is the main section of the document and contains planning controls for:

- Residential and Rural Lifestyle development;
- Special purposes development (schools, hotels, seniors living etc); and
- Infill and other development.

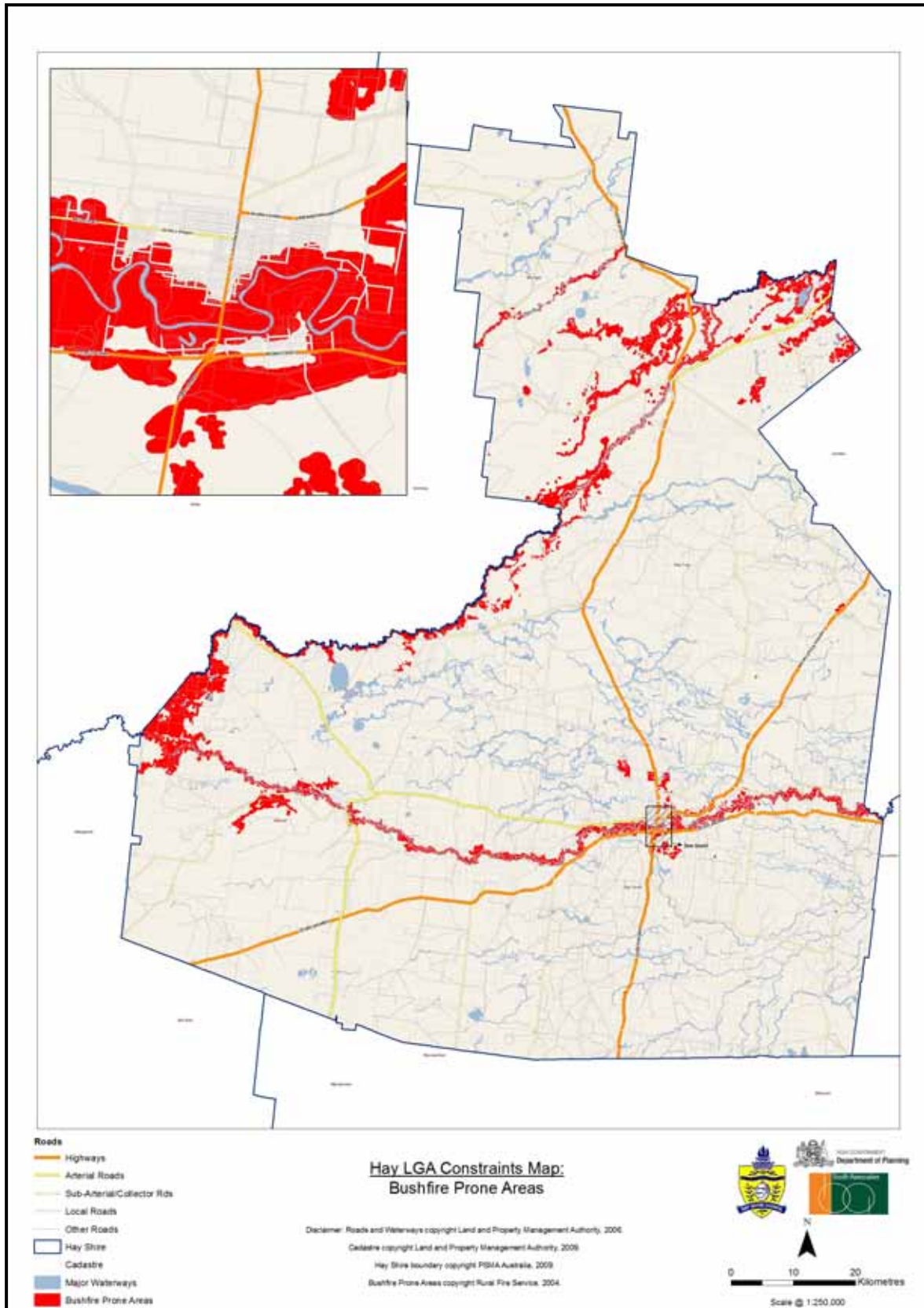


If the specified acceptable solutions cannot be met by an applicant then there is the option for an applicant to demonstrate compliance with performance criteria.

Consultation has occurred with the NSW Rural Fire Service to discuss bushfire hazard for the Hay LGA and to review and confirm the bushfire prone land mapping identified in Figure 44.



Figure 44: Hay LGA Bushfire Prone Land





The map shows that apart from a few patches of vegetation, most of the bushfire risk is associated with the riparian systems of the Murrumbidgee River and Lachlan River.

This means that the suitability of land use zonings and development close to riparian areas or nearby other risk classes of vegetation must consider bushfire hazard and risk. It is considered that in most situations bushfire hazard risk can be managed through appropriate separation distances, APZ's and the imposition of control/safeguard conditions.

However, Bushfire Risk Management Planning Guidelines have yet to be developed for the Hay LGA.

Such guidelines are recommended and would deal with ignition management, hazard reduction, property planning and community education and planning. There is an opportunity for these aspects to be considered within any new development control plan developed for the Hay LGA.

10.4 Contaminated Lands

Council's contaminated lands register has identified almost 200 land parcels potentially impacted by contamination within the Hay LGA.

Potentially contaminated land is listed in Annexure 15.

Potential land contamination presents a significant constraint to redevelopment opportunities. *State Environmental Planning Policy No.55 – Remediation of Land* requires Council to assess potential contamination and remediation requirements prior to rezoning land and determining development applications. Existing potentially contaminated sites affecting Hay, Booligal and Maude are shown in Figure 45.

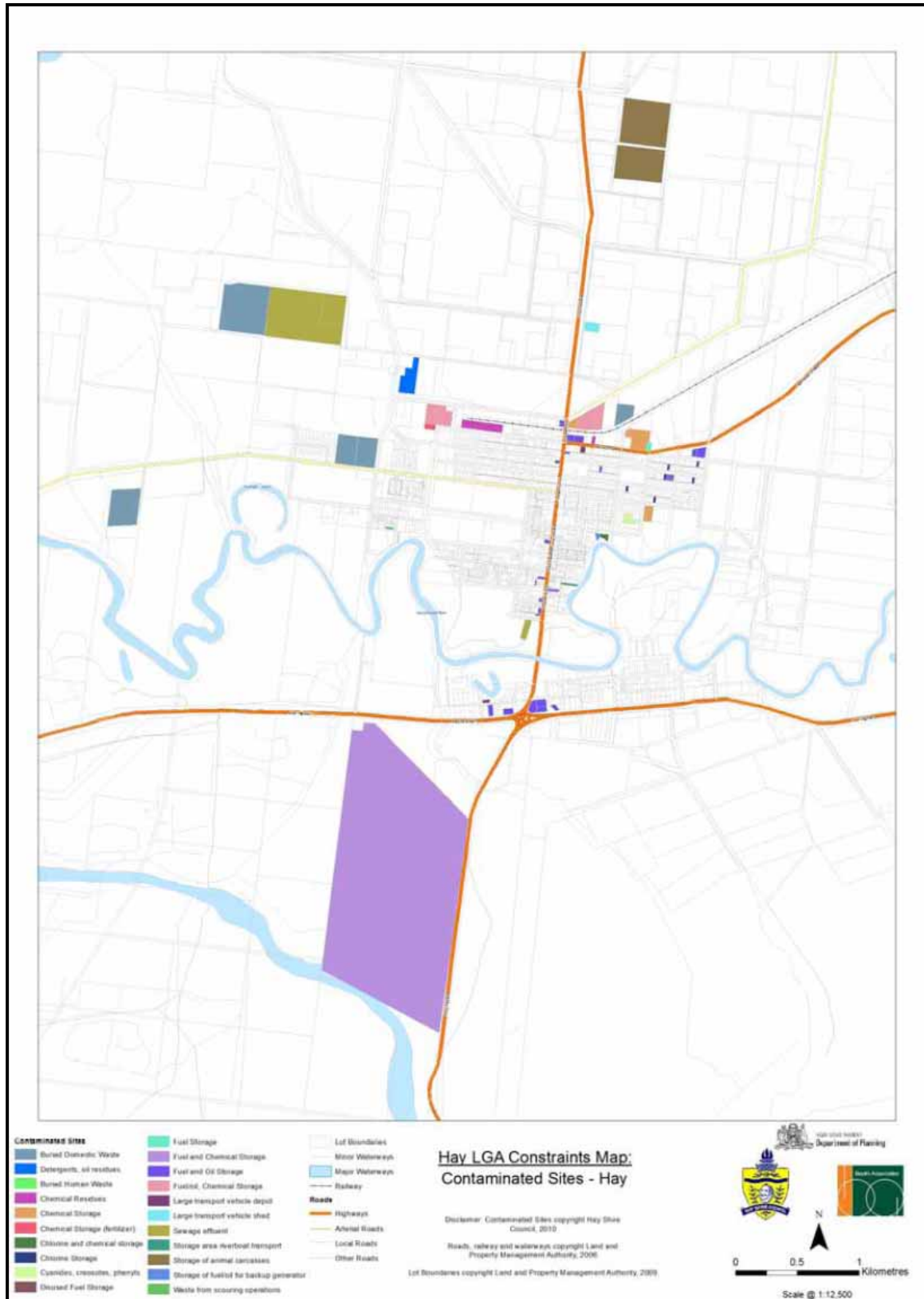
Sites that are potentially contaminated in Hay have been recorded on Council's Land Contamination Register.

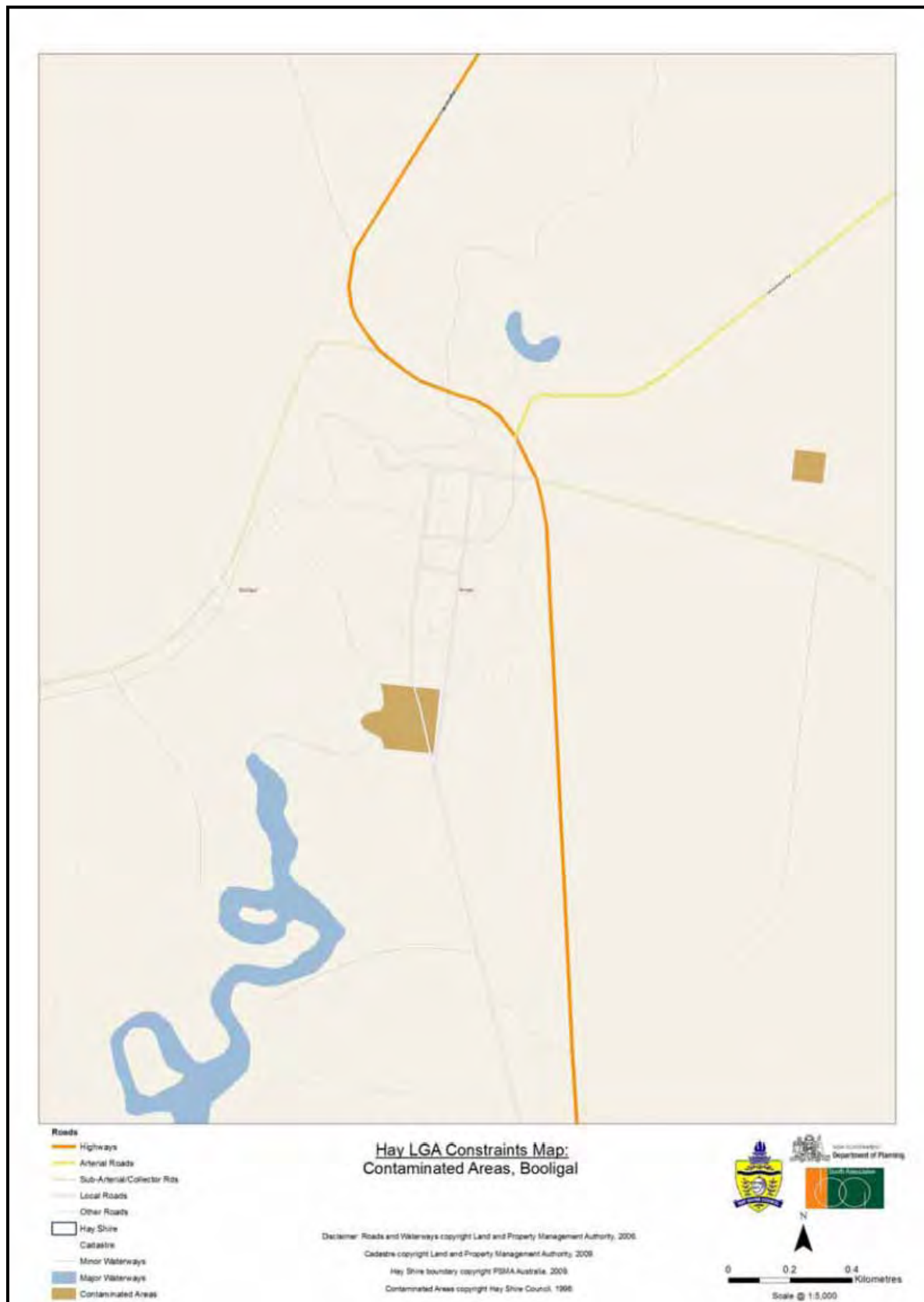
For the Hay LGA potential contamination source categories generally include the following:

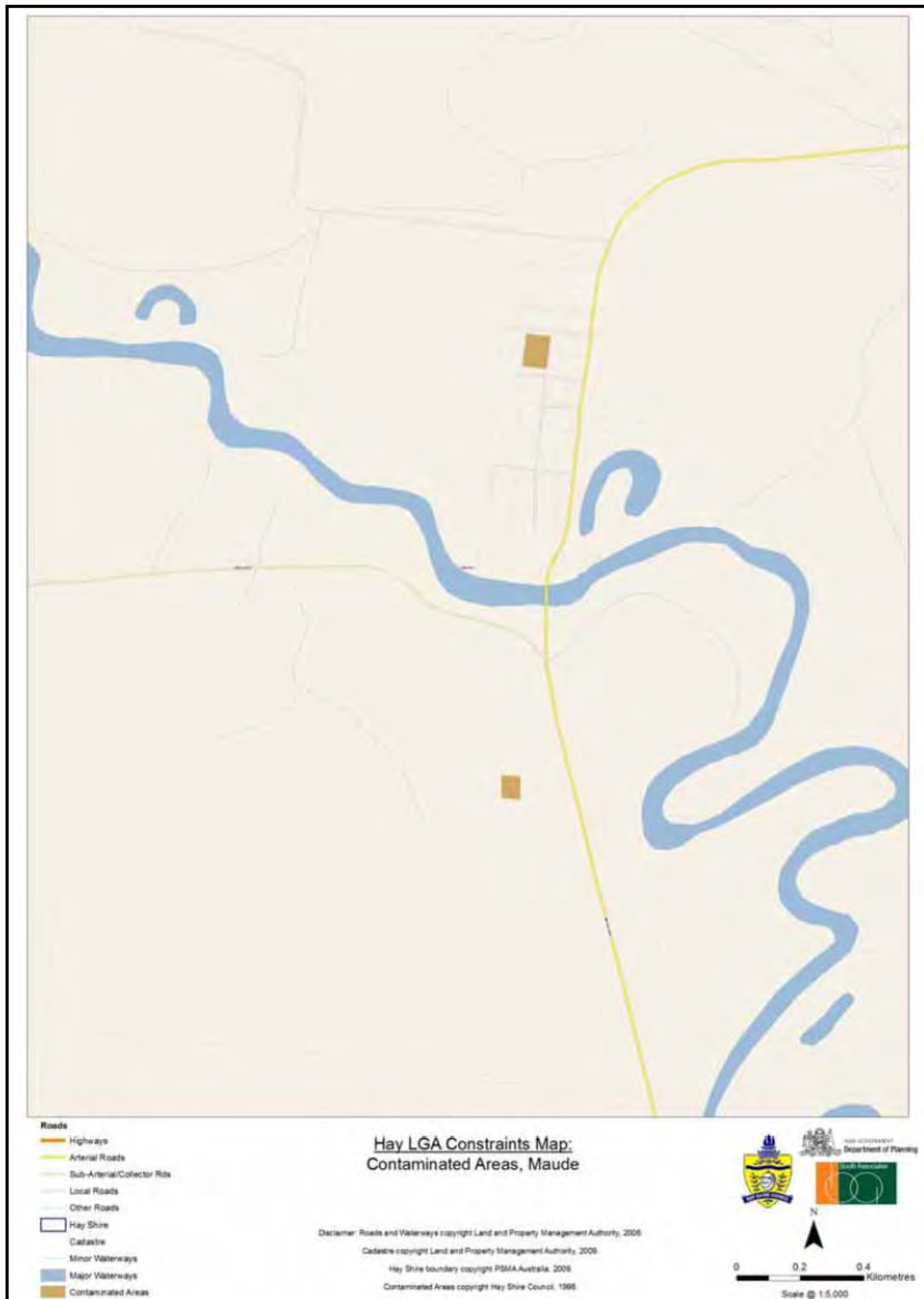
- Chemical storage;
- Buried putrescible waste;
- Sewerage effluent;
- Wool scouring wastes;
- Animal carcasses; and
- Fuel and oil storage



Figure 45: Hay LGA Constraints - Potential Contaminated Sites









There is no contaminated land in the Hay LGA listed in the DECCW public record database of:

- Orders made under Part 3 of the Contaminated Land Management Act 1997 (CLM Act);
- Approved voluntary management proposals; and
- Site audit statement under section 53B of the CLM Act.

10.5 Environmentally Sensitive Land

Environmentally sensitive lands (including land, water, biodiversity and key fish habitat) within the Hay LGA, as identified by DECCW and DI&I are depicted in Annexure 16. A practice note for using spatial information in LEP's to protect and manage environmentally sensitive lands has been developed and is available at www.environment.nsw.gov.au/resources/biodiversity/09353PNforESL.pdf.

The basis for the classification of these sensitive lands is subject to one or more of the following:

- Steep slopes (>25%);
- Shallow soils;
- Salinity;
- Temporary or permanent inundation;
- High proportion of rock outcrop;
- Dispersible or sodic soils;
- Erosion potential;
- Groundwater vulnerability; and
- Biodiversity and high value conservation areas.

In Hay LGA the topography is mostly flat and there is no land with slopes greater than 25%. As well, most of the LGA includes unconsolidated sediments with no significant rock outcrops.

The most likely parameters for the classification of environmentally sensitive lands in the Hay LGA are areas subject to temporary or permanent inundation and soil constraints.

Areas subject to temporary or permanent inundation exist along both the Murrumbidgee and Lachlan rivers and in particular throughout the Lowbidgee Floodplain, downstream of Hay and Maude. (Refer to Figure 47 and Figure 48.

Hay LGA is impacted by primary salinity, that is, salts occur naturally in the landscape. This is from the prior incursion of the Murravian Gulf and from erosion and weathering processes including aeolian deposition.

The NSW Natural Resource Atlas does not specifically identify the Hay LGA as having a potential for dryland salinity. However, parts of the LGA may be impacted by secondary salinity. Secondary salinity is associated with water table rises from anthropogenic impacts including irrigation. Irrigation is not extensive compared to nearby irrigation areas, but occurs throughout the Hay LGA, as depicted in Annexure 9.



Water use efficiencies in irrigation systems and improved drainage has reduced the risk of soil salinisation.

The area around Maude is likely to be subject to soil salinisation due to reversed hydraulic gradient (i.e. raising water table) and saline shallow aquifers. As well, saturated areas present a risk of soil structural decline.

The soils found in the Hay LGA have a level of fragility such if they are not well managed they can be subject to degradation.

As the Hay LGA and the wider region was once part of an inland sea, there are significant levels of salts including sodium and magnesium in the soil. Hence, sodicity and to a lesser extent salinity levels in the soil in the Hay LGA can present challenges to development, including agriculture.

Important management techniques to mitigate salinity risks include the maintenance of groundcover through appropriate grazing management, and in irrigation systems the retention of crop residues plus strategic use of soil ameliorants.

The NSW Natural Resource Atlas does not indicate areas of moderate or high erosion hazard in the Hay LGA. Despite this, there are areas susceptible to erosion hazard in the region including some duplex soils and land impacted by aeolian deposition.

Red brown earths (also called hard pedal red duplex soils) occur on the eastern edge of the western zone and on the Riverine Plain. They occur in association with grey cracking clays west of Hay in association with various other red and brown duplex soils. These soils have sandy loamy textures which set hard when dry. The sub-soils are red to reddish brown highly pedal clays with a prismatic to blocky structure and limestone is often present in the profile. Such soils are highly prone to wind and water erosion when the topsoil or vegetation cover has been lost and soft and hard scalds form. Wind speed increases on these scalds and they are difficult to re-vegetate due to seed dispersal, high temperatures and low infiltration rates (Soil Conservation Service 1991).

Aerial photography and satellite imagery show evidence of scalds across the Hay region which are associated with levees and prior stream formation.

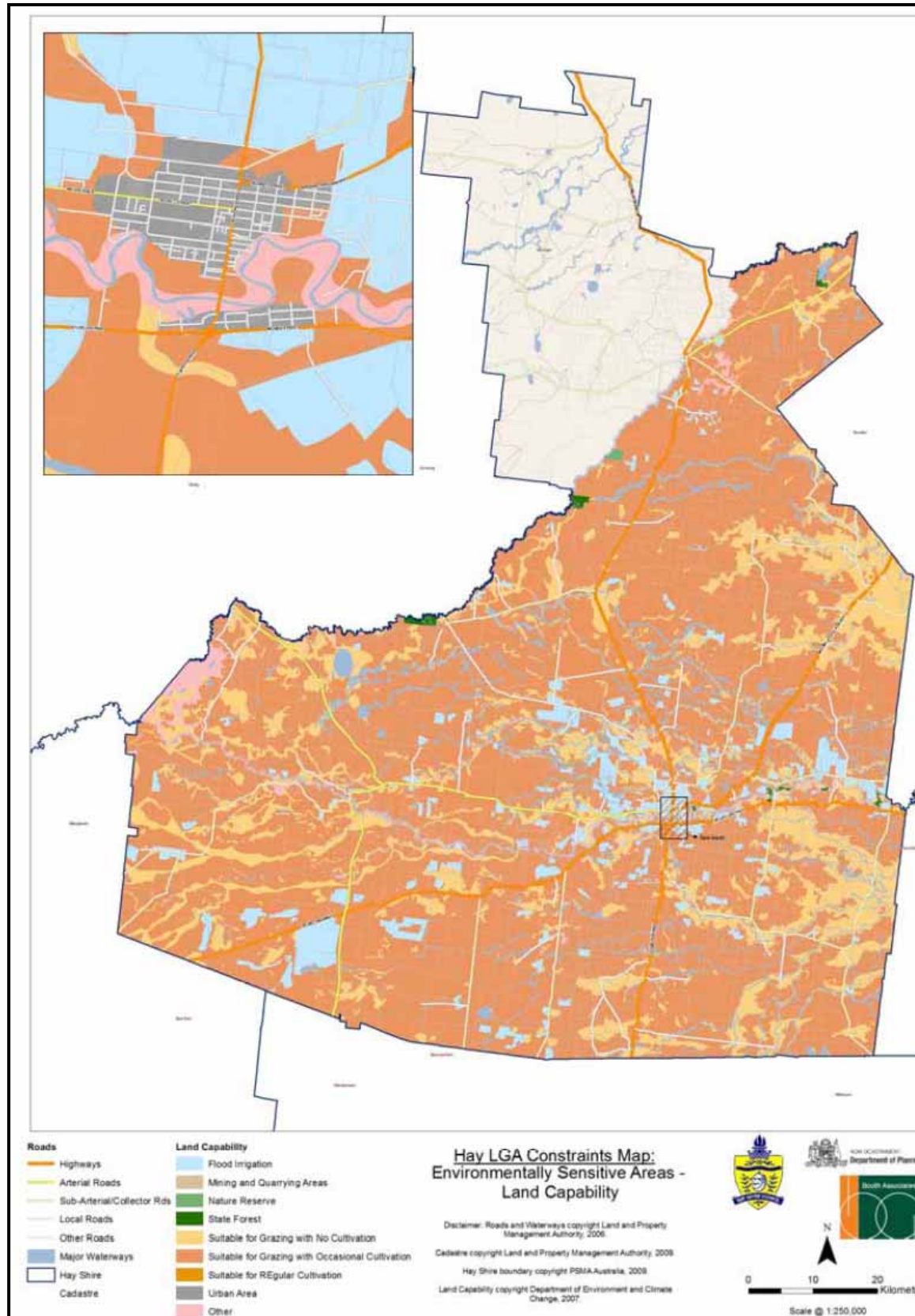
Aeolian deposition has also impacted landforms which are susceptible to erosion and Wilson (1976) found that bluebush communities are also indicative of areas subject to erosion hazard.

Salinity can be managed by prudent management especially the maintenance of groundcover to protect topsoil. A review of previous chemical analyses on several sites in Hay LGA show evidence that sodic and saline soils exist, particularly in the B horizon. However paucity of data and project scope limits conclusions on degree and extent. The soils noted in Section 10.1 as fragile (and depicted in Annexure 9 as not suited to cultivation) are also part of the environmentally sensitive land areas depicted in Annexure 16. These fragile soils are prone to scalding and are shallow, highly dispersible and prone to erosion. These soils are generally not suited for irrigation development. Poor management practices in the past have seen the shallow topsoil from scalded areas lost which has resulted in the exposure of hostile, saline sub-soil that without appropriate remediation remain denuded of vegetation.

Land capability class 7 to 8 have been identified as generally not suitable for intensification of land use. This is shown in Figure 46.



Figure 46: Land Capability Hay LGA





Significant areas of groundwater vulnerability exist in the Hay LGA.

Regional groundwater flow is from east to west and around Maude is an area of reversed hydraulic gradient where the shallow saline aquifer is recharged through upward leakage from the underlying aquifer.

In the western part of the Lachlan region streams run across the top of the Shepparton formation and the rivers at the eastern margin of the plain are in direct hydraulic contact with the unconfined aquifer. Further to the west the watertable depth increases and there is constant leakage from the river bed through the unsaturated zone to the underlying aquifers (CSIRO, 2008).

Recharge to the groundwater system in the Booligal area is mainly through channel leakage. This results in moderately high groundwater vulnerability in riparian zones.

In the far western part of the area the watertable is shallow and diffuse groundwater discharge can occur.

Vulnerability mapping for the Hay LGA has been undertaken as part of the implementation of the Water Management Act 2000 and is in accordance with the *Guidelines for Groundwater Protection in Australia* (1995).

Mapping is based on the DRASTIC approach where weighting is given to the various indicators cognisant with the local and regional hydrogeological context.

For example, in the Lachlan catchment, the features and weighting of the DRASTIC indicators are:

▪ Depth to water table	4
▪ (net) Recharge	2
▪ Aquifer media	5
▪ Soil media	2
▪ Topography	1
▪ Impact of vadose zone media	2

Depth to Watertable was considered taking into account the depth (generally of unconfined aquifer or watertable) as well as surface topography using Departmental records of standing water levels with a 5m contour interval at 1:250,000 scale. This is important as attenuation of the ability for the potential contaminant to disperse increases with depth to watertable. This means that areas with a reduced watertable depth close to the surface are more vulnerable than where the depth to watertable is greater.

Net recharge is a function of slope, rainfall and soil permeability. More permeable soils result in greater hydraulic conductivity. The position in the landscape is important in determining the flow path and potential hotspot sites. Rainfall is important in determining potential flushing and leaching potential.

Aquifer media such as transmissivity influences the ability of the medium to convey flow and flow direction. This impacts on potential attenuation time for sorption, reactivity and dispersion to occur which influences the time and ability of the contaminant to result in degradation.

Soil media impact on recharge ability through infiltration and hydraulic conductivity. Soil permeability information was obtained using 1:250,000 soil landform information.



Topography is the slope and slope variability of the land surface. Topography also impacts soil development and therefore impacts contaminant attenuation.

The vadose zone identifies the area above the watertable and its degree of saturation.

DRASTIC features are assigned to ranges taking into account pollution potential.

The higher the DRASTIC index the greater the groundwater pollution potential.

Although the DRASTIC technique is a useful guide it does not provide absolute certainty and further confidence can be introduced through groundwater and local site investigations in areas where there is risk. For Hay LGA, DECCW environmentally sensitive land mapping is indicative only due to limitations of scale and site monitoring and investigation.

The Lachlan groundwater vulnerability map is shown in Figure 47.

Within the Lachlan Catchment there are five classes of vulnerability ranking that have been indicated on the Lachlan Groundwater Vulnerability map ranging from high to low.

- High – High vulnerability ranked groundwater resources are found predominantly in the upland to middle catchment along the Lachlan River. The classification has characteristics of predominantly alluvial aquifers coupled with shallow water tables, high to moderate recharge potential and permeable soils. Small areas of high groundwater vulnerability in the western area are associated with prior streams and permeable soils near Booligal and north of Lake Brewster.
- Moderately high – Moderately high groundwater vulnerability ranked groundwater resources are found in where there is high recharge potential. Depth to watertable, geology and vadose zones also play an important role. These areas extend from the upper catchment all the way down to the southern end of the catchment with minor discontinuities upstream of Lake Cargelligo and downstream of Hillston.
- Moderate – Vulnerability areas include much of the unconsolidated sediments and colluvial cover where low slope, relatively deep watertables and soil permeability are moderate to slow.
- Low-moderate – Vulnerability classifications along with moderate make up the largest area of vulnerability in the Lachlan Catchment. Permeability, depth to watertable and low potential for recharge play an important role. These characteristics encompass the overlying alluvial sediments of the Murray Basin west of Hillston where the presence of clay rich mineralogy affects the permeability of the sediments.
- Low – Vulnerability class is predominantly characterised by very steep slopes, deep water tables, low recharge potential and fractured meta-sedimentary or granite geology.

The Murrumbidgee Catchment groundwater vulnerability areas are shown in Figure 48.





Figure 47: Lachlan Groundwater Vulnerability

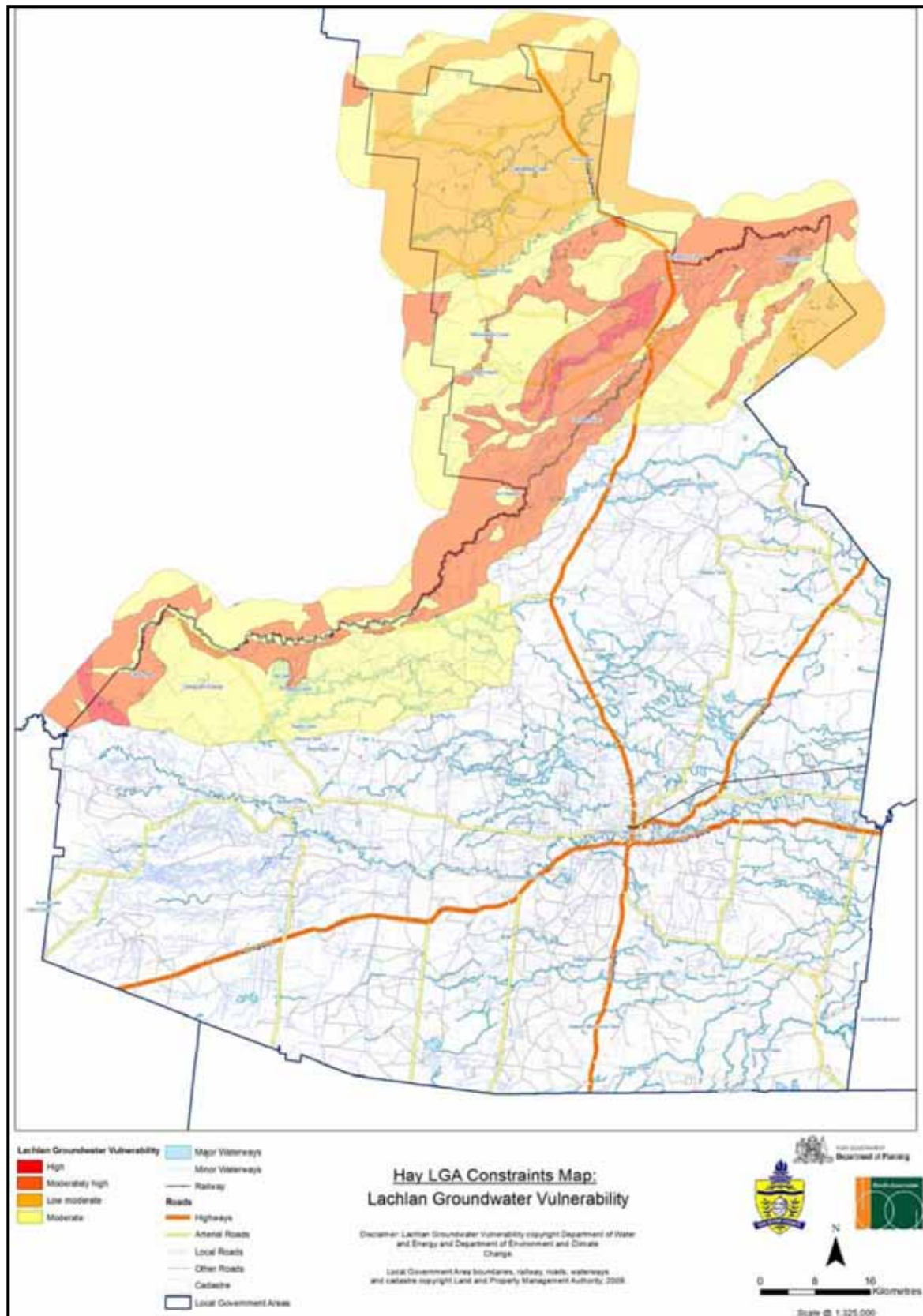
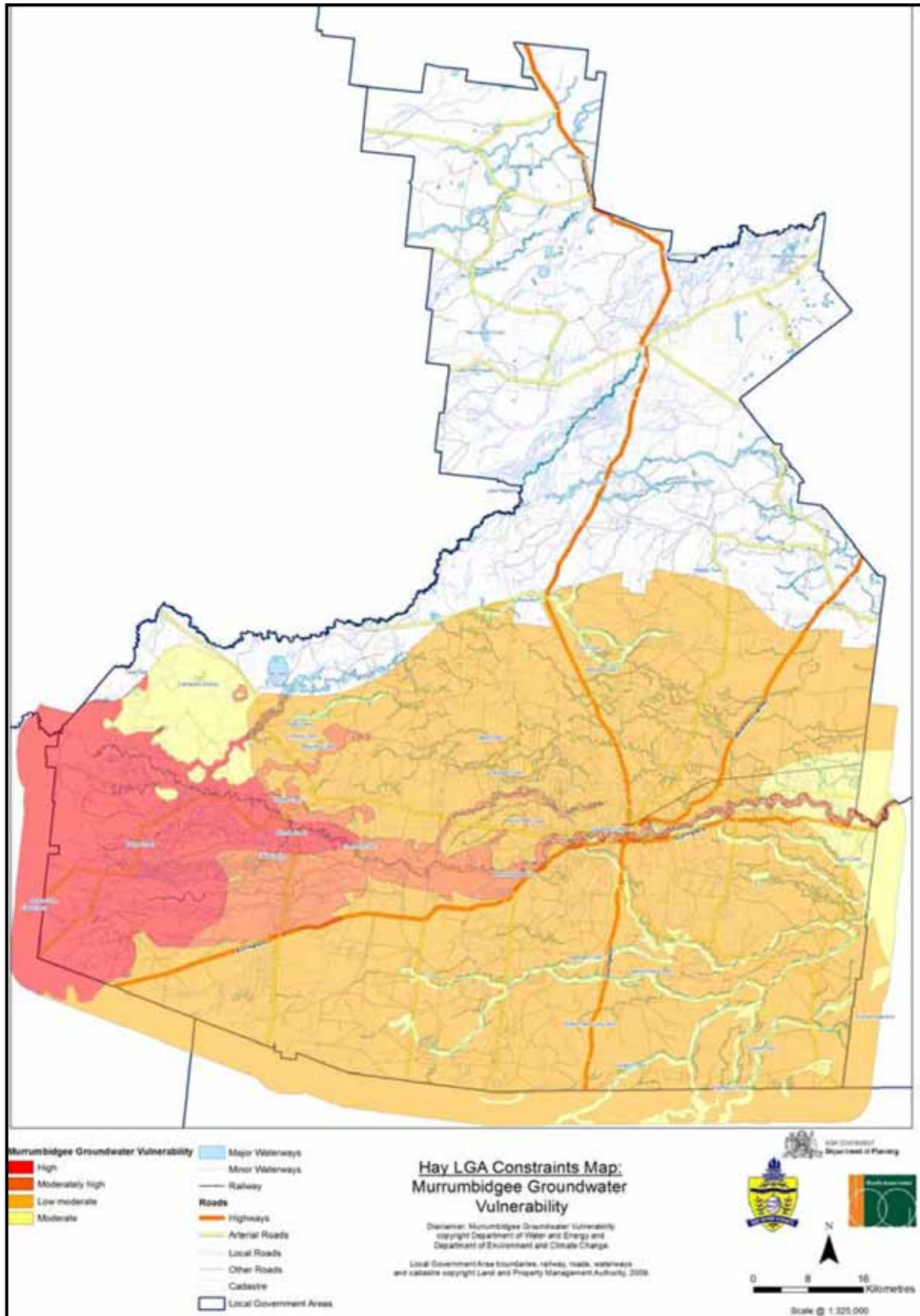


Figure 48: Murrumbidgee Catchment Groundwater Vulnerability





Explanatory notes for groundwater vulnerability within the Murrumbidgee catchment have not been reviewed due to their unavailability.

Despite this, review of Figure 48 shows that most of the high and moderately high vulnerability areas relate to the Lowbidgee Floodplain encompassed by permanent and seasonably inundated wetlands and shallow watertable areas around Maude.

There is extensive wetland development in the Redbank, Nimmie/Caira and Murrumbidgee River corridors. The moderate vulnerability classification north of Redbank may be associated with paucity of data, however the area is considered least impacted by water resources development (Kingsford and Thomas, 2001).

To the east of Hay lies good quality groundwater which is required to be protected. The remainder of the LGA has (apart from riparian zones) low to moderate vulnerability.

The explanatory notes associated for the Lachlan Catchment provide an indication of the significance of groundwater constraints. High vulnerability classification present a significant risk and any proposed development likely to adversely impact the groundwater system is likely to be prohibited or to require a remedial action plan.

The moderately high classification denotes an area where contamination to the groundwater cannot be tolerated and where a demonstrated groundwater protection system would be required. Moderate vulnerability areas include those areas where there is a demonstrated risk to groundwater resources and where detailed site investigations are needed. Low to moderate designation indicates a potential risk requiring some investigation and groundwater monitoring. The lowest vulnerability classification warrants a groundwater contamination assessment report and desktop study to confirm that the risk of groundwater contamination is minimal. Hence groundwater vulnerability represents a significant constraint to development

Recharge areas are those areas which are important to the replenishment of water resources, in terms of both groundwater and surface water systems.

Water is conveyed to systems through precipitation, runoff and as baseflow.

Water travels vertically and laterally through the soil profile. The longer the soil residence time, the greater the attenuation time for potential contaminates.

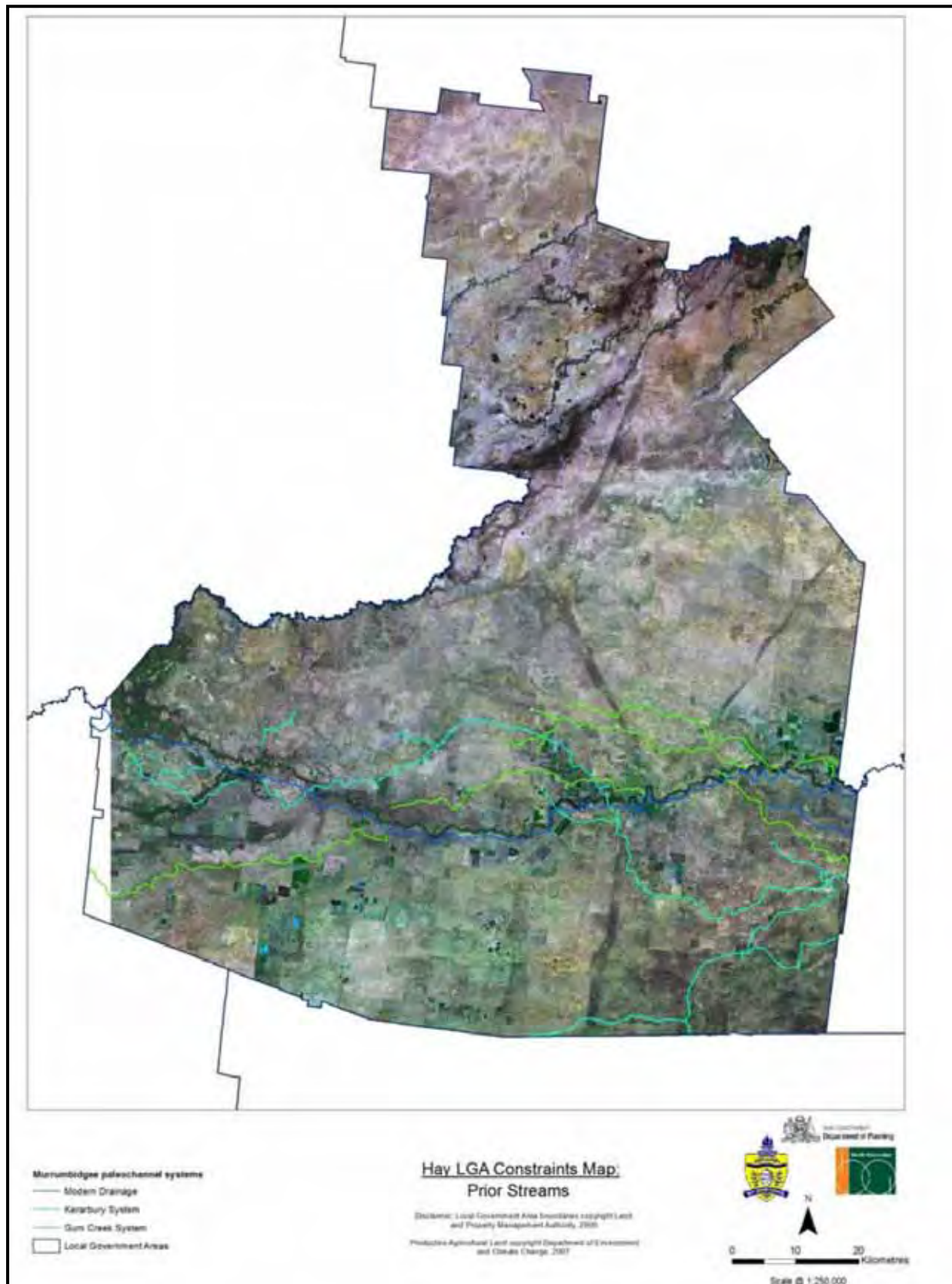
Areas which require protection therefore are:

- Surface water catchments;
- Good quality groundwater systems;
- Areas of high connectivity between surface and groundwater systems including areas of high hydraulic conductivity and riparian areas.

In Hay recharge areas include riparian zones where connectivities are strong. Areas of prior stream development are shown in Figure 49.



Figure 49: Prior Streams - Hay LGA





Sensitive land also includes riparian zones comprising rivers, streams and wetlands as shown in Figure 16. These areas are significant because they are community assets with significant social, environmental and economic values. Riparian zones provide the interface or transition zones between terrestrial and aquatic environments. They should be conserved and if necessary rehabilitated, as they contain significant abiotic and biotic resources, biodiversity and habitat connectivity. Although not extensive, surveys of riparian ecological condition in mid-Murrumbidgee and Lowbidgee areas have been conducted at a coarse scale. The National Rivers Audit found that most channels were in poor condition due to anthropogenic impacts such as regulation. Other surveys indicate some riparian zones are in moderate to good condition. Riparian zones are important because they impact on water quality, biodiversity, habitat, potential connectivity and soil condition. Riparian zones extend both sides of the channel in a lotic environment and incorporate part of the floodplain which can be defined by standard ecological condition assessment methodologies including the presence of graminoids. Riparian zones in lentic environments include the area (permanently or intermittently) inundated and impacting biota and ecological processes occurring there. Because certain activities might be 'controlled' activities requiring approval under the *Water Management Act 2000*, Figure 16 includes land 40m either side of the channel from the top of the bank.

There are various ways of classifying vegetation communities in NSW. Keith undertook a broad range vegetation classification exercise for Australia in 2004 and others have adopted other vegetation classification systems. Currently in Australia there is a focus on arriving at a consistent and uniform vegetation classification system within Australia and in NSW. For the purpose of this project DECCW have undertaken biodiversity mapping as shown in Figure 18. This biodiversity map identifies 19 vegetation structural units across the Hay LGA. A review of the Murrumbidgee Catchment Action Plan (2008) identifies a range of conservation vegetation classes and with their conservation status according to Keith's Table S2.3 (2005).

The relevant vegetation units for the Riverina that have a high conservation value include three vegetation classes related to the south west slopes, Riverina bioregion, Western Slopes Grassy Woodlands and White Cypress Pine Woodland and conservation status is "regionally endangered". Also within the Riverina bioregion is the Floodplain Transitional Woodlands, Black Box Floodplain Forest/Woodland, which is "regionally vulnerable". Review of the DECCW biodiversity constraints map shows that the closest descriptors to the Keith classifications are:

- Black Box Shrubby Woodland;
- River Red Gum Forest; and
- White Cypress Pine Woodland on sandy loam soils.

Due to recognition of high conservation value and also depleted status within the region these communities should be conserved in any future planning.

10.6 Culturally Sensitive Areas

Culturally Sensitive Areas include heritage items as well as those sensitive landscapes are depicted in Figure 22.

10.7 Mineral and Extractive Resources

Mineral and extractive resources within the Hay LGA are shown in Figure 50.





Figure 50: Major Industrial Mineral Sites - Hay LGA

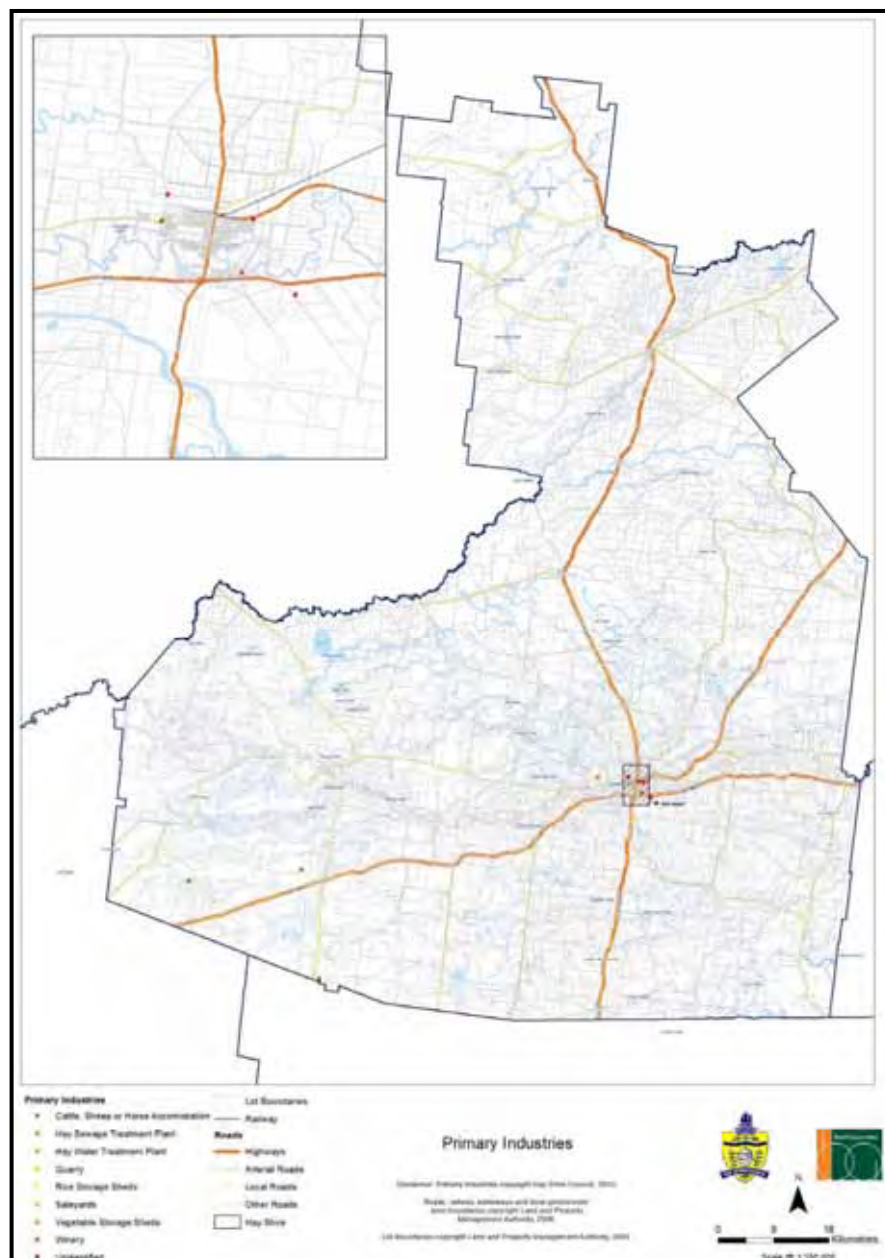


10.8 Intensive Industries

Intensive industries are those industries which because of their scale or extent or potential impact have the potential to significantly impact on the environment. This includes those industries which are required to be licensed as scheduled activities under the Protection of the Environment Operations Act.

Scheduled premises according to DECCW database and other identified intensive or offensive industries within the Hay LGA have been identified in Figure 51. This figure shows that several offensive or intensive industries exist within the LGA including the saleyards. These are generally separated from sensitive receivers, and future development should be located away from them. If necessary, spatial separation can be achieved by the imposition of appropriate buffers.

Figure 51: Intensive Industries - Hay LGA





PART D COMMUNITY ENGAGEMENT AND ISSUES IDENTIFICATION

Engagement can only be achieved through an open and transparent community consultation process whereby individuals and groups can participate in decision making and influence the outcomes of local policy and decision planning.

11.0 COMMUNITY ENGAGEMENT AND ISSUES

11.1 Community Engagement Plan

A Community Engagement Plan was developed and submitted to the Department of Planning by email on 3 August 2009.

This plan was developed to inform the community of the project and to seek stakeholder and community input to assist the project.

The proposed engagement plan was implemented by the Project Team with minor modifications as shown below.

Figure 52: Community Engagement Plan

COMMUNITY ENGAGEMENT PLAN					
Project Phase	Phase Description	Method of Engagement	Target Dates	Target Audience	Expected Outcome
1	Rural and Urban Land Use Study and Rural Settlement Strategy	Formal correspondence - letter drafted by Booth Associates and emailed to Council	3-Aug-09	Agency stakeholders identified in Tender	Agency made aware of the project and Agency requirements identified
		Letter drafted by Booth Associates mailed out by Council	10-Aug-09	Ratepayers of the Hay LGA	Residents made aware of the project; invited to participate in the planning process and identify their issues.
		Community Survey developed by Booth Associates mailed out by Council to ratepayers.	17-Aug-09	Ratepayers of the Hay LGA	Residents informed of the project. Residents able to input into the planning process and provide their views and comment on issues. Consultants provided with information about the views and issues of the community.
		Community Survey developed by Booth Associates available on Council's website	21-Aug-09	Persons interested in the Hay LGA	Online audience. But specifically residents made aware of the project and given the opportunity to input into the process. Consultants provided with information about community views.



COMMUNITY ENGAGEMENT PLAN					
		Primarily face-to-face meetings, some phone contact necessary in some instances.	17-Aug-09 to 4-Sept 2009	Targeted agency and community stakeholders identified in the tender and at the inception meeting plus others identified by Booth Associates.	Stakeholders made aware of the project. Stakeholders given an opportunity to input into the process and to attend community meeting/workshop about the project
		Street Talk- Project booth set up in Lachlan Street, Hay.	4-Sept-09	Residents and visitors to the Hay town centre	The Hay community and visitors to the Hay town centre made aware of the project and given an opportunity to participate in the planning process via communication of issues
		Street Talk- Project Team members available at Maude and Booligal Halls	Lunchtime Maude 24-Sept-09 Booligal 25-Sept-09	Outlying residents	Outlying residents informed of the project and given an opportunity to participate in the planning process via communication of issues
		Community Public Meeting to be facilitated by the Council	Evening of 24- Sept-09	Community	Community engagement facilitated and issues identified
		Community Workshop facilitated by Council and Booth Associates	Evening of 24-Sept-09	Community	Vision, values and issues identified
		Exhibition of draft background report (urban and rural land study and rural settlement strategy) and Public Meeting to explain findings	First week in May: Public Meeting; Public Exhibition during May 2010	Community	Community informed of the findings from background studies as well as the proposed recommendations
		Scheduled formal interviews	Towards end of May 2010	Community	Issues considered options and ramifications better understood by Project Team, Council and community.
2	Draft LEP	Public exhibition of draft LEP	Nov-10	Community	Awareness of draft LEP
		Public Meeting	Nov-10	Community	Community informed of the draft planning provisions



The key elements of the plan included agency and stakeholder consultation as well as:

- i. Community survey and web link;
- ii. Hay street talk;
- iii. Hay values, vision and issues workshop; and
- iv. Village meetings.

11.2 Community Survey

The community survey developed for the project is provided in Annexure 17.

The survey was designed as a planning tool to inform the following key aspects:

- Values identification;
- Community capacity and social capital;
- Issues identification;
- Guiding principles for future development;
- Planning priorities; and
- Supply and demand of lifestyle lots.

The community survey was made available on the Project Team's and the Council's websites on 24 August, 2009. The online version differed slightly from the hard copy in that it contained additional coding information to assist in analysing results.

The Council encouraged community residents to complete the survey in a newsletter mailed out to ratepayers in September 2009. This was followed up by a mail out after actual survey to ratepayers in September, 2009, with return stamped addressed envelopes provided to facilitate survey response.

A collection box was also made available at the front counter of the Council administration office to promote awareness and assist in survey collection.

An analysis of the results obtained from the survey is discussed in the draft Issues Paper included as Annexure 18.





11.3 Formal Agency Consultation

On 6 August, 2009, a range of government agencies were notified about the project and requested to provide advice as shown in Annexure 19.

The agencies consulted included:

- Ambulance Service of NSW – Rozelle;
- Ambulance Service of NSW (Hay) – Hay;
- Civil Aviation Safety Authority - Canberra;
- Department of Community Services – Griffith;
- Department of Community Services – Wagga Wagga;
- Department of Education and Training – Sydney;
- Department of Education and Training – Wagga Wagga;
- Department of Environment and Climate Change (Central NSW) – Griffith;
- Department of Environment and Climate Change (Central NSW) – Wagga Wagga;
- Department of Health – North Sydney (now Department of Health and Ageing);
- Department of Housing (now Department of Human Services) – Ashfield;
- Department of Housing (now Department of Human Services) – Griffith;
- Department of Lands – Griffith;
- Department of Lands – Wagga Wagga;
- Department of Planning – Heritage Branch – Parramatta;
- Department of Planning – Western Region – Dubbo;
- Department of Primary Industries (Agriculture) – Orange (now Department of Industry and Investment);
- Department of Primary Industries (Fisheries) – Cronulla (now Department of Industry and Investment);
- Department of Primary Industries (Forests) – Beecroft (now Department of Industry and Investment);
- Department of Primary Industries (Minerals) – Maitland (now Department of Industry and Investment);
- Department of State and Regional Development – (v Industry and Investment);
- Department of Transport and Infrastructure – Wagga Wagga;
- Department of Water and Energy – Leeton;
- Griffith Community Health Service – Griffith;



- Murray Darling Basin Authority – Canberra City;
- Murrumbidgee Catchment Authority – Hay;
- Murrumbidgee Catchment Authority – Leeton;
- Murrumbidgee Catchment Authority – Wagga Wagga;
- Murrumbidgee Irrigation – Leeton;
- Lachlan Catchment Management Authority – Forbes;
- Rural Fire Service (State Office) - Granville;
- Rural Fire Service (Regional Office) – Hay;
- Roads and Traffic Authority – Wagga Wagga;
- State Emergency Services (State Office) – Wollongong;
- State Emergency Services (Regional Office) – Hay;
- Sate Water – Hay;
- Tourism NSW – Sydney
- Tourism NSW – West Wyalong;
- Land and Property Management Authority;
- Member for Murray Darling;
- Department of Environment, Climate Change and Water; and
- NSW Maritime.

Responses received are included in Annexure 20. Issues raised in this process are examined in the Issues Paper in Annexure 18. Also added to this Annexure is the following:

- List of agency requirements and where this report addresses those requirements; and
- Issues raised through community engagement and where this report addresses or responds to those issues.

11.4 Stakeholder Meetings

Stakeholder meetings were convened in Hay on 20 and 21 August 2009 and 1 and 2 September, 2009.

Over 120 community stakeholders, identified by Council or selected from the Community Register were invited to participate at a series of workshops (refer to Annexure 21) where the following issues were proposed to be discussed.

1. Tourism and economic development;
2. Industry, transport and infrastructure;





3. Retail, commercial development and town centre;
4. Housing, land supply and demand;
5. Education;
6. Health;
7. Sport and recreation;
8. Community, arts and leisure;
9. Aboriginal and cultural heritage;
10. Environment and streetscape;
11. Agricultural and rural issues; and
12. Seniors and youth; access and equity.

Stakeholders were also forwarded a copy of a questionnaire which identified the range of issues that the Project Team were interested in.

On the Street

Between 9:00am and 3:00pm on Friday 4 September, 2009 the Project Team manned the old Fire Station building in Hay. The purpose of the day was to inform residents and visitors with an opportunity to become aware of the Project and to discuss any planning issues or concerns with the Project Team.

Approximately 20 people stopped to discuss relevant issues.

Matters raised addressed a range of issues including environmentally sensitive areas, flooding, tourism, economic development and lifestyle opportunities. These matters were canvassed in the draft Issues Paper considered by the Steering Committee.

11.5 In the Villages

11.5.1 Maude

Between 11.00am and 1.00pm on 21 October 2009, representatives from Council and the Project Team convened at the Maude Community Hall. Despite Council advising residents about the proposed village meetings through local radio advertisements, community newsletter and a notice onsite at the Maude Store/Post Office and hotel, no residents attended the meeting.

In view of this, the Project Team undertook a village street walk and door knock exercise to meet with local residents, discuss the project and provide an opportunity for residents to provide input into the project.





11.5.2 Booligal

At 11.15am on 22 October, 2009, representatives the Council, staff and the Project Team, met with local residents at the Booligal Community Hall.

Meeting participants included the Teacher/Principal of the local school and representatives from local and outlying farms. The Project Team also interviewed the licensee of the Booligal Duke of Edinburgh Hotel.

Outcomes from the Maude and Booligal village meetings are included in Annexure 22.

11.6 Community Workshop

A community workshop was held at the Hay Services Club at 7.00pm on 21 October, 2009. This workshop was attended by representatives of Council and the Project Team.

The agenda for the workshop is included as Annexure 23.

The Mayor and General Manager introduced the Project Team and a power point presentation was given by Michael Ryan, Project Team workshop facilitator.

The workshop provided an opportunity for community representatives to:

- Identify the key values important to the Hay community;
- Identify and project the community vision over the 30 year planning horizon; and
- Identify issues to be managed or resolved and opportunities to be facilitated through the planning process.

Workshop outcomes are provided in Annexure 24 and issues raised included in Annexure 18.

11.7 Outcomes from Community Engagement

11.7.1 Participation

Stakeholders, including government agencies and community members who participated in project community engagement forums are identified in Annexure 25.

In total the project has attracted submissions from 83 community individuals and organisations as well as relevant government agencies.

Participation numbers for each of the formal community engagement initiatives are listed in Table 29.



**Table 29: Community Engagement Plan**

Initiative	Date	Number of participants
Inception Meeting	29 July 2009	
Agency Consultation	6 August 2009	
Targeted Stakeholder Meetings:		
▪ Tourism and economic development	20 August 2009	8
▪ Aboriginal Cultural Heritage	20 August 2009	4
▪ Seniors, Youth, Access and Equity	20 August 2009	3
▪ Environment and Streetscape	20 August 2009	2
▪ Community, Arts and Leisure	20 August 2009	5
▪ Sport and Recreation	20 August 2009	3
▪ Retail Commercial Development and Town Centre	1 September 2009	3
▪ Industry, Transport and Infrastructure	1 September 2009	3
▪ Housing Land Supply and Demand	2 September 2009	3
▪ Agricultural and Rural Issues	20 August 2009	6
On the Street		20 approx (unidentified)
Maude doorknock	21 October 2009	6
Booligal Community Meeting	22 October 2009	6
Hay Community Workshop	21 October 2009	6
Other contacts (i.e. telephone, email, etc)	Various	14

11.8 Identified Issues

11.8.1 Issues paper

A range of issues have been identified through community engagement. These issues have been identified in a project draft issues paper included as Annexure 18, which was prepared for a steering committee meeting.

The draft issues paper prepared for this project was a key outcome of the Hay LEP review process.

Its purpose was to identify the various issues raised through the stakeholder and community engagement process as well as to communicate the key agency requirements.

The issues gleaned through project background investigation and reporting were also required to be identified as well as the measures impacting future sustainability.



Despite substantial progress, project background reporting remained incomplete and agency responses still pending, when the draft issues paper was presented to the project Steering Committee on 3 December 2009.

The draft issues paper explained the community engagement process, the various stakeholder meetings conducted and the range of issues that had been communicated to the Project Team up to that time. It also explained the key findings identified at that stage of the project. It established guiding principles for planning and made various recommendations.

The Project Steering Committee were unable to endorse the draft issues paper and recommendations due to the limitations explained above.

This was primarily because the Project Team and the Project Steering Committee could not be confident or satisfied that the full range of issues and planning context had been completely established and identified.

It was not considered necessary to finalise the draft issues paper as this represented an outcome relevant to a defined reporting stage in the project development process.

Issues have not substantially changed from those presented and key background findings have been expanded and discussed in this report. Themes and guiding principles initially presented have been somewhat modified to take into account total project communications, issues and findings.

11.8.2 Community Values and Vision

At the Hay workshop on 21 October 2009, and as discussed in Section 11.6 the community identified key values and vision and a range of issues as shown in Annexure 24.

The values and future vision identified by the community is summarised in Table 30 and further developed in Section 13.0.

Table 30: Hay LGA Values and Vision

Current Values and Assets (2009)	Future Vision (2040)
Safe community	Safe and crime free
Friendly community	Friendly, supportive and diverse
Local initiative	Local and regional partnerships to deliver services and get things done
Agricultural production	Just the right amount of development
	Productive agriculture
River asset	Utilise and optimise assets (e.g. water, river, production, tourism)



11.8.3 Principles Developed from Workshop

From the community workshop planning principles were derived as shown in Table 31. These have been expanded; taking into account the project issues findings and communications raised by the Project. The principles have been formulated to promote community sustainability and are articulated in Part F of this report. The principles are directed at promoting community sustainability and are related to economic prosperity, community capacity and ecological integrity.

Table 31: Guiding Principles for Future Sustainability Hay LGA

Sustainability Indicator	Guiding Principles (no particular order of importance)
Economic Prosperity	- Productive agricultural land will be protected; - Key transport infrastructure will be identified, developed and protected; - Opportunities to engage and attract visitors and tourists will be promoted including strengthening connectivities between Hay and South Hay, integrating, enhancing and strengthening the tourist product; - The Hay town centre will be reinforced as a vibrant place to encourage community interaction and promote visitor engagement opportunities; and - Industrial land will be made available to both support agriculture and provide opportunities to minimise reliance on agriculture.
Community Capacity and Community Resilience	- Innovative partnerships will be fostered to deliver key human services in health and education; - Strategies will be developed to encourage population retention, including employment and training for young people and lifestyle choice for residents; and - Attention will be given to promoting community access and equity and fostering community diversity.
Ecological Integrity	- Important riparian habitats will be protected; - Innovative opportunities for biodiversity conservation will be promoted; - Land which is not capable of supporting development will be identified; and - The connectivities that exist between surface water systems and groundwater systems will be recognised and conjunctive water management facilitated



PART E OPPORTUNITIES AND RISK MANAGEMENT

12.0 FUTURE SUSTAINABILITY

Rather than being a “fixed thing”, Roseland (2000) advocates that a sustainable community is continually adjusting to meet the social and economic needs of its residents while preserving the environment’s ability to support it.

The concept of “sustainable development” raises questions about cultural paradigms and values (Hoff, 1998). These paradigms and values are sometimes centred around an individual’s area of interest, for example, economic development proponents focus on economics, greens on the environment and those concerned with the human sector, on social capital.

Hoff advises that the challenge is to integrate and harmonise various cultural, economic, political, social and environmental factors to achieve sustainable communities.

Roseland (2000) advocates that

Sustainable communities require unprecedented and simultaneous emphasis on the efficient use of urban space, on minimising the consumption of essential natural capital, on multiplying social capital, and on mobilising citizens and their governments towards these ends.

Such a synergistic approach should enable communities to be cleaner, healthier, less expensive, to have greater accessibility and cohesion, and to be more self-reliant in energy, food and economic security than they are now. In this way sustainable communities would not merely sustain the quality of life, they would dramatically improve it.

For the Hay LGA to be sustainable in the future, planning strategies and corporate governance needs a balanced investment in economic prosperity, ecological integrity and community capacity. This will build community resilience, mitigate risk and promote future community sustainability.

12.1 Investing in Economic Development

One of the key findings of this Project is that agriculture and tourism are the key drivers of economic development within the Hay LGA. Therefore Hay community sustainability requires investment in these pivotal areas.

12.1.1 Agriculture

The Hay LGA is currently in the grip of a long drought.

The first opportunity for agriculture in the Hay LGA is to recover from drought. Rainfall for the first half of 2010 has been above average at Hay, this is a positive start. Once sustained changes in seasonal patterns occur, local agricultural producers in the Hay LGA possess the financial, physical and managerial resources to recover from drought.



Other opportunities that exist for agriculture in the Hay LGA are based around the premise of change. In the Hay LGA agriculture has a longstanding history of adaption and change to varying seasons, market dictates and new technologies. Examples of this include:

- Development of sustainable grazing practices initially focussed on wool production, which has in more recent years swung towards meat production via both sheep and cattle;
- Increasing intensification of irrigation including a shift away from traditional irrigated pasture production towards high value crops such as rice and cotton; and
- The steady growth of horticulture in the region.

These examples indicate key changes in LGA agricultural practices driven by access to new technologies and market forces. Future opportunities for agricultural prosperity lie in agriculture's ability to adapt and change as new opportunities arise.

The key agricultural resources of water and land provide the potential for many different agricultural enterprises to be conducted within the Hay LGA. These opportunities should not be restricted or undermined.

As the largest industry and land user in the Hay LGA, economic prosperity of agriculture is essential to the future sustainability of the region and hence this industry warrants protection via planning controls. Key principles of the planning process provide for the protection of the land resource via the minimisation of land use conflict and fragmentation of agricultural land. The on-going protection of the agricultural resource must also be facilitated via flexibility within planning controls. This flexibility should allow for change within agricultural production systems and encourage new development. For example, a recent LGA trend identified in the rural land analysis is growth of horticulture. The growth of horticulture reflects an increasing intensification of production in this case, characterised by high value production from small areas of land using small amounts of water. The present minimum lot size of 1,500ha for the entire LGA is not appropriate for industries such as horticulture and is a constraint to future agricultural development of this nature.

Despite the increasing intensification of some industries, the majority of the Hay LGA is, and will remain, best suited to extensive livestock grazing practices. The nature of how these grazing systems are operated is expected to continue to change. It is important that the planning process not only protects this agricultural land resource, but also provides flexibility for change.

Examples of change in extensive grazing systems include the supplementation of pasture production via irrigation, and the growth in off-farm income. These two changes have meant the minimum area required to sustain a commercial grazing enterprise is reduced. However, the overall trend is increasing farm size as agricultural businesses grow their scale of production.

This report has not specifically identified potential future agricultural enterprises. It is up to the businesses who invest their capital in agriculture to determine their preferred agricultural pursuits. It is Council's role to, via the planning process; best facilitate growth of existing agricultural businesses and the introduction of new agricultural businesses. Business growth includes expanding scale of production via increasing farm size and/or intensifying production. Facilitating the growth of existing agricultural businesses can be achieved via planning mechanisms which facilitate structural adjustment. For example, streamlining boundary realignment and facilitating the erection of new dwellings on farms where the new dwellings are ancillary to the business and located close to existing dwelling(s). Both these actions are encouraged by the I & I as per their Section 62 consultation letter dated 26 August 2009.

Minimum lot sizes that are appropriate to provide protection of the agricultural land resource but also facilitate the introduction of new or expanding farm enterprises and emerging trends are important.



Both drought and climate change presents as risks to the future prosperity of the Hay LGA. Droughts remain a challenging feature of the region and local adaptation has strived to mitigate drought impacts. Climate change however is a new challenge. Annual rainfall for Hay recorded since 1882 has been included in Annexure 2. This graph also includes a series of trend lines which can be summarised as follows:

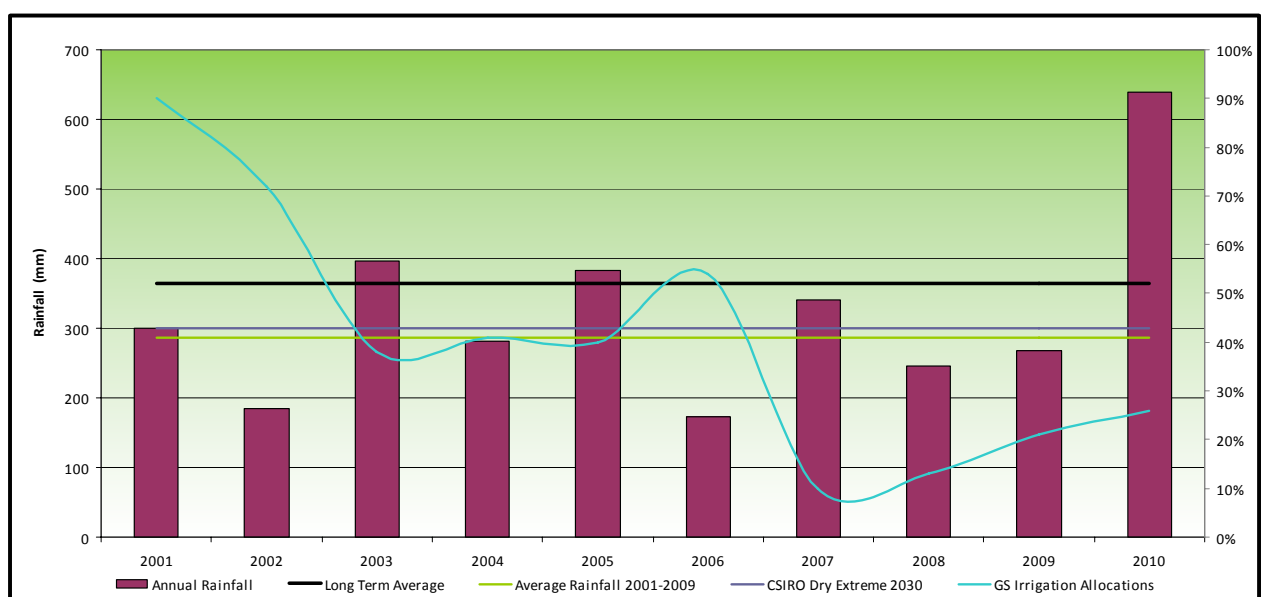
- Average annual rainfall for 1881 to 2010 is 365mm;
- Rolling seven year average which shows that a series of dry years such as currently being experienced has occurred twice previously in the 1900s and 1940s;
- Climate change scenarios described by CSIRO (2008):
 - o Dry climate 2030 which equates to average annual rainfall of - 298mm;
 - o Best estimate 2030 which equates to average annual rainfall of - 356mm;
 - o Wet extreme 2030 which equates to average annual rainfall of - 385mm.

The best estimate and wet extreme scenarios are not significantly different to the long term average of 365mm, but the dry extreme is significantly less. The implications of the data depicted in Annexure 2 and the CSIRO (2008) climate change predictions for the Hay LGA are:

- Rainfall recorded in recent years is less than the dry extreme 2030 scenario predicted by the CSIRO (2008); and
- The best estimate climate change scenario is a reduction in rainfall of less than 10mm per annum. Such a small change is likely to have minimal impact. However, changes in seasonality of rainfall under climate change may have a significant impact.

To further explore and understand the recent climate in the context of potential climate change impacts, Figure 53 has been prepared as shown below.

Figure 53: Recent Rainfall





The data depicted in Figure 53 can be described as:

- Annual rainfall for the period 2001 to 2010;
- Long term (1298 years) average rainfall of 365mm;
- Average rainfall for the period depicted in 2002 to 2010;
- Predicted average annual rainfall under CSIRO (2008) dry extreme 2030 scenario; and
- General security irrigation allocations.

The data depicted in Figure 53 shows for the past ten years average annual rainfall has been achieved only three times. During this same period the Murrumbidgee Catchment has also been dry and general security irrigation allocations have declined accordingly. Nearly two-thirds of the 639mm recorded in 2010 fell in July to December hence irrigators only reached 26% in 2009/10. The current general security irrigation allocation at the time of writing of this report in 2011 is 100%.

Including the 2009/10 water year the average general security allocation for the past four years is 18%. This figure contrasts significantly with the current allocation and previous research undertaken into future water allocation predictions and DEWHA information, both which indicate the longer term annual allocation of the Murrumbidgee should be in the order of 60%. This average future allocation includes the consideration of Government water buybacks and the most likely climate change scenario as per CSIRO (2008).

Agricultural production in the Hay LGA is being constrained by drought, reducing pasture production and irrigation allocations. However, under the most likely climate change scenario, agricultural productivity gains will ensure production in the Hay LGA will be greater than it has been in recent (drought) years.

Droughts are not uncommon to the Hay LGA and the region has developed and displayed a level of resilience. Local adaption and resilience to drought will place the region in good shape to address potential future impacts of climate change.

Despite this the overall concern that is inherent with any potential climate change impact, the Hay LGA may actually be a beneficiary of climate change. The rainfall data depicted in Annexure 2 demonstrates that Hay's rainfall for its entire recorded history has been extremely variable. Despite this variation in rainfall, a prosperous agricultural sector has established in the Hay LGA. The erratic nature of rainfall has meant the agricultural industries that have thrived in the Hay LGA, have needed a high level of resilience, and so a benefit of this process is that agricultural producers are already well placed to address climate change impacts.

This level of climate change readiness has been further enhanced by the severe drought of the past eight years which has dramatically accelerated the rate of change and adaption necessitated by agricultural businesses. Should future rainfall patterns be more erratic than those in the past and vary in intensity and amounts, the inherent level of resilience already possessed by agricultural producers in the Hay LGA puts them in a good position to address this challenge.

From an irrigation perspective, producers in the Hay LGA are well placed to manage climate change impacts. Despite the drought, high security irrigation allocations in the Murrumbidgee have proven to be as reliable as any within the Murray-Darling Basin. DEWHA predictions of long term water allocations indicate the reliability of high security water in the Murrumbidgee will remain high. DEWHA predictions of long term general security allocations in the Murrumbidgee indicate the Murrumbidgee River is in the top one third of water sources in terms of projected future reliability.



The geographical and topographical fundamentals of the Murrumbidgee Catchment provide some of the greatest reliability within the Murray-Darling Basin. Hay LGA's relatively close proximity to the point source of water storages for the Murrumbidgee River system provides rationale for its irrigation supply security.

In addition to having a highly reliable water resource, the Hay LGA also possesses the soils and climate that are well suited for irrigated cropping with the production of a large range of both intensive and broadacre crops. This provides agricultural producers with a large range of options they can pursue subject to market forces and managerial resources.

12.1.2 Tourism

Tourism has been identified as a key industry in the Hay LGA based on the existence of major transport corridors and potential added value from the significant natural and cultural heritage assets which exist within the region. The lack of public transport has not proved a barrier to tourism and visitors take advantage of a range of private transport options. "Nomads" in particular visit Hay and there is significant opportunity in investing in facilities and infrastructure to optimise assets, attract further visits or additional overnight stays and build on existing daily visitor experiences.

As Australia becomes more interested over time in its history, as evidenced by increasing participation in both Australia Day and ANZAC Day ceremonies, the Hay LGA has the potential to expand its tourism industry via enhancement and promotion of its existing cultural heritage assets. Aboriginal heritage in the area is significant and there is substantial opportunity to promote and celebrate Aboriginal heritage locally.

12.1.3 Industry, Employment and Training

Employment remains one of the fundamental reasons for individuals to choose their town, city or locality of residence. In Hay's case the potential for increased employment and training opportunities will underpin the town's growth and development. Government agencies, including local government, education and health care, have been identified as key employers in the Hay LGA. Future employment opportunities in the Hay LGA lay within the introduction of new industries as well as the growth of existing industries including tourism and hospitality. The growth of these industries and the potential introduction of industrial development in the Hay LGA improve access to employment and training and will underpin the town's population and create additional reasons for young people to remain living in the community.

12.1.4 Regional Service Centre

Hay is a well-established regional agricultural service centre with the nearest competing service towns Balranald and Deniliquin being located 120km to 130km from Hay. The closest regional city to Hay is Griffith, which is located approximately 160km away. Hay is well serviced by daily freight from Deniliquin, Griffith and Wagga Wagga, and therefore most frequently required household and business inputs can be readily accessed in Hay. Given the population trends in rural Australia, it is unlikely there will be shifts in geographic access to such services. Therefore, it is important that Hay retains its current service capacity to attract and service Hay residents rather than locals travelling further to one of the larger shopping centres. This can best be achieved by ensuring Hay provides not only the range of shopping opportunities, but ensures goods and services are available at competitive prices. Promoting the commercial core through improved urban infrastructure will also add value to the personal shopping experience.



12.2 Investing in Community Capacity

Community capacity and resilience is strengthened through investment in social capital. This includes investment in social infrastructure, for example in facilities and activities which enhance the social fabric of the community as well as providing a range of opportunities and experiences promoting social engagement, community cohesion and community diversity. Investment in arts, culture, recreation, health and education are priorities. There is also a need to encourage the revitalisation of the two villages, Maude and Booligal. This can be achieved through promotion of affordable housing, investment in civic infrastructure and optimisation and promotion of civic, natural and cultural assets.

12.3 Investing in Ecological Integrity

The most widely used definition of “sustainable development” is the one coined by the World Commission on Environment and Development (Bruntland Commission),

“forms of progress that met the needs of the present generation without compromising the ability of future generations to meet their needs.”

The opportunity for effective natural resource management to promote the objectives for ecological integrity should be based on the principles of ecologically sustainable development and the opportunities as shown in Figure 54.

Figure 54: Principles of Ecologically Sustainable Development

Principle	Strategic Opportunity
1. Precautionary principle	Careful evaluation to avoid, when practicable, serious or irreversible damage to the environment
2. Intergenerational equity	Ensure health of the environment maintained or enhanced for future generations
3. Conservation of biological diversity and ecological integrity	Conservation as a “fundamental” consideration
4. Improved valuation, pricing and incentive mechanisms	Incentive structures and market mechanisms to respond to environmental interests

Source: Local Government and Shires of NSW, 2009.

12.4 Investing in Good Corporate Governance

While the balanced investment in economic prosperity, ecological integrity and community capacity represents the best chance of promoting community sustainability, there is a need to recognise the role of corporate governance in this process. The sustainability of the Hay LGA community is dependent on the effective implementation of this strategic policy. This means that decision-making across all sectors of the community needs to be integrated and aligned with the achievement of the sustainability objectives. The Council must play a lead role in this regard.



12.5 Managing Sustainability Risk

In promoting community sustainability risks need to be understood and managed.

Risks to sustainability are shown in Figure 55.

Figure 55: Risks to Sustainability

Risks to Sustainability/Parameter Condition and Availability	
Ecological Integrity	▪ Decline in the soil resources (condition and availability); ▪ Decline in the water resources (condition and availability); ▪ Decline in biological resources (condition and availability); and ▪ Reduced air quality.
Economic Prosperity	▪ Loss or impairment of assets (natural and built); ▪ Inadequate industry and employment; ▪ Reduced knowledge base; and ▪ Failure to embrace technology including conservation and renewable resources.
Community Capacity	▪ Loss of cultural heritage assets; ▪ Decline in community values; ▪ Reduced social capital; and ▪ Reduced social diversity.

Future strategic direction of the Hay LGA should be geared to promote community sustainability and manage sustainability risks.





PART F STRATEGIC DIRECTION AND SETTLEMENT STRATEGY

13.0 VISION 2040

The future vision for the Hay community has been identified through stakeholder consultation and community engagement.

The current values and assets important to the Hay community will be protected enhanced and promoted. The community vision for 2040 is for a community that is;

- A welcoming vibrant, safe, diverse and supportive community;
- Benefited by institutional frameworks and partnerships which support and encourage innovative, holistic and integrated approaches to community development and management;
- Centred on a proud built and natural environment which is reflective of ecological integrity, community capacity and economic prosperity;
- Responsible and committed to ecological sustainable development principles including the preservation of global resources, the use of alternative technologies and renewable energy to sustain the community;
- Benefited by a strong tourism focus;
- Committed to the agricultural sector and its enhanced productivity; and
- Enriched by appropriate development to protect current values, optimise opportunities and promote sustainable development.

13.1 Themes and Guiding Principles for a Sustainable Community

The following key themes and principles have been developed in response to a review of the issues impacting the community and the need to strengthen the resilience of the community and secure continued community sustainability. They centre on the critical areas impacting community sustainability being economic prosperity, ecological integrity and community capacity. (These themes were originally canvassed in the draft Issues Paper presented to the Project Steering Committee in December 2009).

The key themes derived are listed in no particular order:

1. Protection and advancement of agriculture;
2. Community development and improved housing, recreation, commerce, industry and tourism opportunities;
3. Community development and capture of growth;
4. Optimisation of values and assets including protection and conservation of biotic and abiotic resources;
5. Resolution of land use interface conflict;
6. Promotion of community equity, access and diversity;
7. Improved urban design;



8. Improved management and opportunities for transport;
9. Promotion of rural settlement opportunities;
10. Integrated partnerships and technology capture for improved services delivery; and
11. Improved corporate governance.

The recommended guiding principles for future planning for Hay 2010 to 2040 are identified below.

13.1.1 Protection and Advancement of Agriculture

- Land use planning will allow for the development of systems and processes that facilitate primary production and protect agricultural production assets including land, water and biological resources, and which provide opportunities for agricultural diversification;
- Land use planning will consider the resilience of the farming community and the peaks and troughs associated with agricultural production systems; and
- Land use planning will consider the impact and influence that agriculture has on local development activities, its unpredictable nature and its rapid response rate to climatic and market forces.

13.1.2 Community Development and Improved Housing, Recreation, Commerce, Industry and Tourism Opportunities

- Tourism opportunities should be promoted by supporting local businesses and working with them to offer flexible and location inter-dependent accommodation options of appropriate size and location.
- Existing green space areas should be developed to provide a range of recreational opportunities and enhance local and visitor usage;
- A range of recreational opportunities should be provided to support local and visitor usage and optimise opportunities to enjoy natural assets including river assets;
- Opportunities for affordable housing will be promoted especially within villages;
- Options for seniors' housing will be provided to facilitate Hay hospital as a potential multi-purpose facility and to provide both affordable and lifestyle accommodation opportunities;
- By 2040 a significant proportion of the Hay LGA community will be over 70 years of age and strategies to foster seniors' housing and integrated support facilities will be promoted;
- Industrial land should be made available in a range of locations (infill as well as "greenfield") to facilitate local economic development opportunities and cater to community development and to facilitate feeder opportunities associated with Hay's strategic location on three major highway corridors;
- The Hay retail and commercial core should be developed so that cultural heritage values and opportunities are promoted and links to natural assets improved;



- Provision of opportunities to facilitate the development of a transport hub including servicing of vehicles and facilities to support local tradesmen will be promoted;
- Servicing of the tourism sector's key reported activities including optimising opportunities to eat out and "wander around" will be promoted; and
- Flooding, bushfire and other hazards should be appropriately managed to mitigate risk and land use conflict.

13.1.3 Community Development and Capture of Growth

- Despite pessimistic growth forecasts for the Hay LGA to year 2040 strategies will be developed to positively impact all three measures of community sustainability:
 - o Economic prosperity;
 - o Community capacity;
 - o Ecological integrity;
 - o To better stimulate and promote community development.

13.1.4 Optimisation of Values and Assets (including protection and conservation of biotic and abiotic resources)

- The Hay Township and the villages of Maude and Booligal shall be developed and managed to protect and promote local community values;
- Land use planning will promote strategies which encourage certainty for developers and the community by offering a range of community development opportunities and protect existing values and assets.
- Riparian environments, iconic saltbush plains, riverine forests, native grasslands and wetlands all have significant value and opportunities to protect and improve them will be encouraged;
- Land use decision-making will consider conjunctive water management including resource availability and quality, and potential connectivities between systems, processes and communities including groundwater and surface water and dependent ecosystems;
- Land use planning shall consider opportunities to improve the catchment health, condition, conservation and processes of riparian, terrestrial and aquatic environments and better manage community natural and cultural assets;
- Opportunities to increase community knowledge, enhance and promote Aboriginal and European cultural heritage and landscapes shall be advanced through land use planning; and
- Land use planning will promote the use of market based incentive mechanisms to improve catchment health and optimise biodiversity conservation outcomes.

13.1.5 Resolution of Land Use Interface Conflict

- Land uses shall be located and developed so that there are no significant adverse off-site impacts. Where this cannot be practically achieved or avoided buffers will be required to regulate and protect adjoining development.



13.1.6 Promotion of a Community Equity, Access and Diversity

- Opportunities to encourage a socially diverse community shall be promoted;
- Opportunities shall be provided to promote social, artistic and cultural exchange and experiences for the community;
- Sustainable pedestrian, cycling and vehicle movement corridors shall be established and optimised to promote linkages to civic spaces, places and natural assets, for example the river, and enhance local and visitor usage and promote cultural tourism opportunities; and
- All sectors of the community shall be valued and an inclusive community promoted.

13.1.7 Improved Urban Design

- Urban streetscape design should promote pedestrian, cycleway and vehicle linkages with river and river foreshore assets;
- Urban streetscape should integrate links with riparian and other natural resources where possible;
- Gateways should be developed on primary transport corridors to attract visitors into the Hay town centre; and
- Best practice urban design will be encouraged to foster the conservation and enhancement of natural resources.

13.1.8 Improved Management and Opportunities for Transport

- Provision shall be made for the maintenance and development of important transport corridors within the Hay LGA so that there is no adverse impact on community values and future vision; and
- The significance of Hay being located on a transport divergence corridor (or the junction of major highways) to generate visitor opportunities and community development will be promoted.

13.1.9 Promotion of Rural Settlement Opportunities

- Promotion of rural lifestyle allotments that meet the needs of the community while not reducing, degrading or compromising land, water, cultural and biological resources will be facilitated; and
- River lifestyle opportunities will be promoted for the benefit of existing and future generations where:
 - o Conjunctive water management results in no net increase to existing water entitlements, including riparian rights;



- o Location, number and size of lots can be justified with regard to demand and supply analyses, community sustainability principles or regard to other socio economic, cultural or environmental benefits afforded;
- o There is no net loss to biodiversity and the proposal is in accordance with the principles of “maintain and improve”;
- o Servicing arrangements in accordance with standards determined by the Council and community are made available; and
- o Risks and constraints such as bushfire, flooding and environmental degradation are appropriately managed.

13.1.10 Integrated Partnerships and Technology Capture for Improved Service Delivery

- Flexible and innovative inter-agency partnerships and it will be facilitated to generate employment, childcare, transport, education, training and health solutions across the community.

13.1.11 Improved Corporate Governance

- Strategies to promote the key drivers of community development and sustainability will be promoted and funded as priorities as far as practicable; including the adoption of technological advances and sustainable resources management; and
- Investment, management and regulation of the Hay LGA will promote the optimisation of community values and assets through;
 - o Investment in the built environment and community assets, including urban infrastructure, communal spaces and places and protection of local values;
 - o Investment in natural assets, cultural heritage and social diversity opportunities;
 - o Promotion and community inclusion;
 - o Master planning, urban design and streetscape works including visitor generation gateways, improved signage and integrated civic, natural and cultural asset management and development and connectivities;
 - o Leadership and strategic partnerships for improved service delivery; and
 - o Consider climate change adaptation plans in decision making investment and prioritisation strategies for the Hay LGA.





13.2 Hay LGA Planning Elements – Current Status and Future Direction

13.2.1 Housing

Existing Status

The Hay Township is based on traditional neighbourhood settlement patterns; as such the street grid pattern is spatially dominant with predominately wide streets and away from the CBD, in most cases, generous setbacks.

Housing mostly comprises single-storey detached dwellings. Medium density development is interspersed throughout South and North Hay and while this consists mostly of dual occupancies, clusters of 3, 4, 5 and more villa units are found throughout the Township.

In the CBD, residential accommodation is located above shopfronts, although much of this currently remains vacant in many cases apparently due to non-compliance with the Building Code of Australia (BCA).

Throughout the Township, there are many instances of fine period buildings, including non-heritage listed items. There are significant instances of mixed land uses within village precincts.

Limited seniors housing is provided.

Future Directions:

Future directions should promote:

- Accessible neighbourhoods with increased opportunity for active recreational pursuits through new urbanism, traditional neighbourhood design and other tools such as increasing development densities to promote rejuvenation and liveability close to the CBD. Current opportunities exist between commercial development east of Lachlan Street and the Murrumbidgee River and west between Lachlan and Pine Streets.
- Opportunities for affordable housing within urban areas as well as opportunities for seniors housing. Seniors housing should be provided close to the existing Hay Hospital on land to the east or southeast in any urban expansion zone. Any land developed for this purpose should be protected from flooding up to the PMF event;
- Footpaths and trails in new development areas and retrofitting already developed areas with footpaths, trails, gophers and bike paths etc;
- Linking civic open space areas, plus natural and cultural assets, to promote access for local and visitor usage;
- Investment in utilities and urban infrastructure to promote community values; and
- Diversity in lot size, building form and location to accommodate a diverse population.





13.2.2 Commercial

Existing Status

While Hay settlement has been based on a design encouraging mixed use throughout the Township, there exists a defined commercial core along Lachlan Street. Uses include retail, light industry, petrol stations and accommodation facilities. Civic buildings in close proximity to, or contiguous to the commercial core include the Police Station, Courthouse, Library and War Memorial Hall. In South Hay there are several industrial uses and a few commercial land uses including accommodation support facilities.

Significant heritage listed and non-listed items exist within or close to the Hay CBD.

Future Direction

Reinforcement of the concentrated commercial core from just north of Leonard Street, south to Brunner Street, capturing existing commercial development west of Lachlan Street and also eastwards including some redevelopment opportunities, as shown in Figure 59. Significant heritage and tourism values to be protected through a cultural heritage conservation precinct and optimised through appropriate civic centre urban design treatments.

- Development within and close to heritage items or with potential significance should consider impact to those places. This is not just related to the built form, but also to important public spaces impacting heritage values, views, vistas and streetscape. Commercial advertising to be better managed and regulated to protect community values.
- Public place development to be considered within the context of promoting and optimising local and visitor usage and experiences including exterior lighting, fencing, public seating, signage, rubbish receptacles, bollards, hardstand areas, awnings and covered (shade) areas and landscaping; and
- Maintenance of limited mixed use zones to the north of Hay Township and to the south capturing existing high value development.

13.2.3 Industry

Existing Status

Industry is mainly located towards the northern and north western fringes of the Hay Township. There also appears to be light industrial land uses scattered around the town. Community consultation has revealed a desire for industrial ready land (with the potential to be serviced ready for development) to promote growth opportunities.

Future Direction

- Through land use planning and development control, ensure that community values are protected and economic prosperity facilitated by segregation of incompatible land uses. This may be better achieved through the application of standard zones rather than the existing village zone in Hay Township for reasons identified in Section 15.1;
- To ensure a sufficient area of industrial zoned land is available to capture future growth/development opportunities;



- Where industrial land is located adjacent to sensitive receptors, ensure the provision of appropriate land use buffers and mitigate against and reduce the potential for significant adverse off-site impacts. Both South and North Hay include residential areas adversely impacted by potentially conflicting land uses. An example of this is where you have industrial/storage/junkyard land uses ancillary to the primary residential use. The lack of regulation of such land uses potentially results in diminished residential amenity and degradation of soil, water and air quality. Ways to better manage this through regulation includes the application of vegetation screening buffers onsite or in worst case situations through orders;
- Vehicle access routes to industry should, where practicable, be located away from sensitive receptors to minimise traffic impact and better regulate, control and separate land use traffic;
- To assist in the relocation of existing land uses where there are impacts to amenity and sensitive receptors. For example, dust associated with the saleyard operations has resulted in adverse impacts to residential amenity. Relocation of this land use has been estimated at \$6M and is cost prohibitive. Ensuring the maintenance of land use separation and buffers and management controls by way of regulation is considered the most viable way of managing these impacts at least in the short to medium term. Land east of the saleyards, currently zoned village, remains undeveloped. This land is not considered appropriate for industrial land use because it directly adjoins existing residential development. While the land may comprise a residential zone, further subdivision and development is inappropriate. It is noted that most of the land comprises Crown Land and it is likely that any land assessment undertaken would recommend (at least in part) its development for environmental management purposes as a vegetated buffer;
- Through improved urban design, encourage separation and buffering of and any potential conflicting land uses;
- Planning for employment generated industry will take advantage of key infrastructure, particularly major road transport corridors. It should focus on creation of opportunity through regulatory flexibility and facilitative assessment processes. Enterprise development (offices ancillary to agricultural, transport related and other industries) should be encouraged but stand-alone retail and commercial use shall be directed to the retail core; and
- The fragmentation and proliferation of industrial areas will be avoided because they can reduce the ability to create enterprise clusters and facilitate investment.

13.2.4 Mixed

Existing Status

North and South Hay and the villages of Maude and Booligal have been established according to mixed land use principles which has resulted in some adverse impacts and the disruption of key community values.

Future Direction

For the Hay Township only, segregated residential, commercial and industrial zones are recommended to better define places and protect community values. On this basis sensitive receptors should, as far as practicable, be segregated from the potential adverse impacts associated with more intense land uses (for example the situation with the saleyards as described previously). Where mixed use development exists in North and South Hay, limited areas should be protected by zoning only where there is a need to protect and maintain economic values into the future. An example of this is land immediately southwest of the existing saleyards and the existing enterprise corridor in South Hay.



13.2.5 Villages

Existing Status

The villages of Maude and Booligal comprise mixed land use including contaminated land, and have heritage and environmental values. Currently the villages suffer from urban decay through lack of investment and renewal.

Future Direction

Opportunities exist within the villages to capture growth through tourism associated with heritage values and eco-tourism opportunities. Affordable housing opportunities should be promoted and investment in urban infrastructure facilitated for community revitalisation and capacity.

13.2.6 Tourism

Existing Status

Hay is conveniently located at the convergence of three major highways and attracts visitors through:

- Place generated opportunities; and
- Overnight stays.

Significant community values relate to cultural heritage and the biophysical environment (biodiversity). While there has been significant attention focused on European cultural heritage, not as much attention has been given to Aboriginal cultural heritage.

A generally unrelated collection of interpretative signs and plaques exist in places throughout Hay.

Although significant accommodation facilities exist in both North and South Hay there appears to be further strong demand. One of the issues raised is the impact of free river camping on existing accommodation providers, including caravan parks.

There is a perceived lack of attention to South Hay amenity/infrastructure/signage to entice visitors off the highway and across the river into North Hay.

Future Direction

The tourism plan for the Hay LGA will need to focus on:

- Defining those places and aspects which are community assets and which comprise significant values, particularly ecological and cultural;
- Defining the existing infrastructure which currently supports those values/assets;
- Identifying the gaps in support infrastructure and facilities; and
- Identifying aspects which augment, support and bolster connectivity between assets, optimise local and visitor awareness and promote usage opportunity.



The vision is to improve local place and experience generated tourism opportunities within Hay LGA, promote wanderer opportunities and experiences and capture additional visitations and overnight stays. Aspects identified in Sections 13.1.7, 13.1.11 and 13.2.9 regarding the development and promotion of pedestrian and vehicular connectivities to cultural, natural and civic places should be promoted. Key tourist infrastructure including Shear Outback, the Dunera Museum, Bishops Lodge and the Hay Gaol should be protected and promoted through zoning and land use planning. Support facilities, for example tourism accommodation, should be facilitated in the vicinity of key sites such as Shear Outback.

Key focal points should be given attention through appropriate urban design treatment and integrated flexible tourism land use opportunities. Tourism opportunities which support the Hay commercial core and promote existing natural and civic infrastructure should be promoted. Currently three dwellings exist close to Lachlan Street, east of the Hay tennis courts and northwest of Bushy Bend with open space connectivity. These dwellings could potentially be utilised for the promotion of tourism.

Support facilities should be provided not on an ad hoc basis, but as planned opportunity clusters throughout the LGA. Urban gateways need to be constructed at critical highway divergence points to direct and entice visitor traffic.

Low-impact tourism support clusters should be located close to assets, including natural areas, including accommodation, trailer parking, al fresco dining areas and cultural/natural interpretative facilities. These facilities should not adversely impact or undermine existing provision of facilities.

13.2.7 Agriculture

Existing Status

Soil, water and biological assets exist and are utilised for productive agricultural systems. While peaks and troughs are naturally associated with such systems, the prolonged drought has impacted community capacity, ecological integrity and economic prosperity.

Future Direction

The vision for agriculture in 2040 for the Hay LGA is that of a productive and sustainable industry, which has been a key driver since white settlement. Features of this future agricultural industry include:

- Diversity;
- Efficiency;
- Resilience; and
- Adaptivity.

Agriculture in the Hay LGA has a history of prosperity and resilience and will need to continue to adapt to challenges and opportunities that include:

- Drought;
- Climate change;
- Markets; and
- Changing technology.



It is the adaptive nature of agriculture which underpins its sustainability in a challenging environment.

The key resources of agriculture historically, today and in 2040 will remain land, water and climate. These resources are recently available in the Hay LGA and provide the necessary base for a productive and sustainable agricultural industry. The protection of land and water resources for agriculture is an imperative for the planning process.

13.2.8 Transport

Existing Status

As a feature, Hay is located on the convergence of three major highways and is impacted by heavy vehicular usage along defined heavy vehicle routes, including Lachlan Street. Heavy vehicle traffic is expected to significantly increase in transport corridors over the life of this plan. There is a need to alleviate heavy vehicle traffic from Lachlan Street, CBD, particularly from the southern end which has significant natural and cultural heritage values. Also heavy vehicle traffic is problematic within the retail/commercial hub as other movements are high, particularly during peak business hours, including light vehicles, pedestrians, bicycles and gophers. Detailed assessment is required of the options available to alleviate heavy vehicle usage of the main street. Comments provided during consultation have inferred that heavy vehicle traffic movement in the main street is unavoidable. However a possible option that has been suggested (but not assessed) is directing heavy vehicle traffic from the bridge, west into Brunker Street, along Pine Street then back to Lachlan Street, to avoid the primary retail/commercial area including potential heritage conservation precinct. A community health transport scheme exists to cater for the lack of public transport.

Future Direction

There will be a continued reliance on strategic partnerships led by Council to solve local transport issues. Investment in infrastructure to promote and better control access, redirect heavy vehicle movements and improve pedestrian and vehicular connectivity to civic places, spaces and assets is required to promote local and visitor area usage and reduce traffic conflict.

The concept of a second river crossing to separate and divert heavy vehicle traffic from Lachlan Street would be ideal but is subject to significant funding constraints and further investigations.

13.2.9 Open Space and Recreation Reserves

Existing Status

Small pocket parks and large conservation reserves exists throughout North and South Hay. Hay Park includes a sports oval, athletic area and an inviting playground complex.

The Hay Township includes a racecourse adjacent to the north urban fringe as well as a 50m swimming pool complex. Significant reserves close to the commercial core include Bushy Bend and Sandy Point, which accommodates a skate park and also camping, barbeque and shaded eating areas. The Murrumbidgee River traverses the centre of Hay, separating North and South Hay and provides significant environmental values. In the vicinity of urban Hay the Murrumbidgee River provides significant recreational opportunities for residents.



Future Direction

Focal places include:

- Hay Park;
- Swimming Pool;
- Sandy Point;
- Bushy Bend; and
- Pocock Park and Lions Park.

The above focal places should be developed in North and South Hay so that they are spatially connected with pedestrian and cycling access to promote local and visitor usage.

Open space connectivity to the Sturt Highway, Pocock Park and Lions Park should be promoted through sensitive urban design to attract, entice and guide visitors from South Hay to North Hay. Lions Park is spatially connected to the Hay commercial core, key recreational areas and significant natural and cultural areas. Its development for tourism opportunities should be considered along with adjacent residential development in the vicinity.

Hay Park should be optimised and beautified to provide a range of recreational opportunities and to promote its visual amenity and attractiveness to meet the needs of all user groups. Connectivity between these places and the commercial core is also important and should be promoted through urban design. The site of the old Hay water tank could be improved in view of its values.

Sandy Point Reserve has been identified as a busy community, social and recreational meeting place and the adequacy of existing infrastructure to meet boating demand has been identified.

It is recommended that prior to further development, Sandy Point be subject to a Recreational Development Plan to ensure the protection of identified natural and cultural values and to ensure the community has input into the vision for the long-term development of the reserve.

Without compromising core ecological values, consideration should be given to provision of tourism support facilities which foster the nexus between the CBD and foreshore natural values. Potential sites include the Lions Park and Sandy Point Reserve areas or other sites within the southern part of the CBD. Land use and facilities should be developed which promote ecological and cultural heritage awareness. There is a need to support and enrich local and visitor usage experiences. This can be achieved through the promotion of community engagement and social and recreational exchange opportunities such as, al fresco dining, community arts and crafts, markets and the like.

13.2.10 Cultural Heritage

Existing Status

The Hay LGA has significant cultural heritage values comprising both European and Aboriginal features. European cultural heritage has been given focus and attention through investment in interpretive signage. As well, some heritage buildings have been restored. Some signage exists promoting Aboriginal cultural heritage.



Future Direction

Further investment in the optimisation of European and Aboriginal heritage values is recommended through a range of tools including working with stakeholders to promote awareness and local and visitor usage opportunities. As well, civic precinct urban design elements should be encouraged within the core commercial area. The use of street lighting, heritage colour pallet controls, advertising controls, traffic controls, landscaping and pedestrian treatments are all required to enhance the existing cultural fabric of the town. The area bounded by Pine, Brunker, Lachlan and Leonard Streets, plus properties abutting Lachlan Street to the east between Leonard and Randall Streets, be protected as a conservation precinct.

Council should seek to work closely with the Local Aboriginal Lands Council to promote awareness of Aboriginal cultural heritage values that are manifested on the Hay Plains. Interpretive signage and conservation displays within the civic precinct and within key communal areas including public reserves with natural and cultural values are appropriate settings to record this history.

13.2.11 Community, Arts and Leisure

Existing Status

Demographic analysis and community consultation has identified a potential lack of diversity within the Hay LGA. Although there are a range of tourism related events and festivals, it has been identified that further attention is required to develop and promote the range of arts and leisure opportunities available.

Future Direction

Further investment in areas as distinct from sport, are recommended to satisfy community needs and expectations. Investment in arts and leisure opportunities should be considered within the vision for the development of areas adjoining, or close to reserves such as Sandy Point and local parks.

13.2.12 Education

Existing Status

The Hay LGA has one existing State high school, a State primary school, Catholic primary school, preschool and childcare centre. Numbers in education facilities, particularly the high school, have been declining over time. There are restricted education and training opportunities in town.

Future Direction

- Enhanced partnerships and strategic delivery of training and education and the adoption of technology to achieve this is required for the future; and
- Investment in support facilities such as the recently closed Cloughton House is required if student numbers are to be encouraged from remote areas.





13.2.13 Equity, Access and Diversity

Existing Status and Future Direction

Council through development control and implementation of the BCA and the *Commonwealth Disability Discrimination Act 1992* aims to promote equity and access for disabled sectors of the community. While pedestrian, cycle and gopher access is generally available to civic and communal spaces, definition, signage and connectivity could be improved.

13.2.14 Defined Infrastructure and Improved Place Management

Existing Status

As mentioned, Hay comprises mixed development throughout the town. This scattering of land uses, while adding interest to the urban form, does result in adverse impacts associated with:

- Traffic flow; and
- Amenity impacts including those to sensitive receptors. For example air quality impacts (i.e. dust, noise, and odour) from incompatible land uses.

The contaminated lands audit has revealed land in Hay with the potential to be contaminated. Land use surveys also reveal that both north and south Hay and the villages, include ad hoc light industrial land uses including 'junkyards'. This is most often associated with existing or previous uses involving trucking/machinery/fuel/construction activities.

Currently important places such as the commercial core and significant reserves appear to be redeveloped in an incremental and possibly somewhat ad-hoc manner.

Future Direction

Land use zoning and development control will protect sensitive receptors (such as residences) from impacts associated with potentially high impact land uses such as industries and traffic generating development. If necessary, separation distances or buffers shall be implemented through development control planning. Community pride will be encouraged through better regulation and incentives to encourage urban clean-ups.

Important civic places with ecological, cultural heritage, social and economic values will be protected through appropriate urban design and master planning to a community/stakeholder agreed vision.





13.2.15 Emergency Services

Existing Status

Hay Township includes emergency services and facilities, including:

- State Emergency Service;
- Rural Fire Service;
- Police Station;
- Ambulance and Hospital;
- Fire Brigade; and
- Electricity and telecommunications infrastructure.

Future Direction

Critical infrastructure, such as State Emergency Service Headquarters, public utilities such as electricity substations and sewerage pumping stations, evacuation routes and vulnerable development (e.g. hospitals and senior housing), should ideally be located above probable maximum flood lands, where it is economical to do so. Attention is required to ensure existing facilities and services are adequately protected from flooding through incorporation of the proposed levee upgrade works.





14.0 KEY STRATEGIES AND RECOMMENDATIONS

14.1 Hay Township

14.1.1 Spatial Analysis from Settlement Pattern

These comments are based on a review of Hay settlement and Table 1.

Currently there is land available within urban Hay that is identified in the existing DCP for industrial development which currently remains undeveloped. The land is situated to the northwest of the Hay urban boundary and includes the area north of the railway line and the area southwest of the existing council depot. One of the major impediments to the release of this land has been the fact that the area near the railway line is in the ownership of ARTC and Council has not been able to successfully conclude negotiations for its sale and redevelopment. This land is within reasonable proximity to defined heritage sites. Despite this, spatial analysis has demonstrated that industrial land uses have extended over and beyond the DCP allocated areas. This includes mixed land uses within urban Hay which include some light industrial development and areas on the fringe of the urban centre which have been developed for industrial uses. Of particular note is that there is no ready available land adjacent to the major strategic advantage offered by the convergence of the main roads to the south.

Spatial analysis also shows that while significant areas within urban Hay have been allocated by the DCP for commercial land uses, some of this development has not occurred in accordance with this plan. Within the Hay urban area there is some infill capacity adjacent to the existing commercial land uses within the CBD and this may include potential redevelopment sites. It would appear from the land use survey that commercial land use has been strong with mixed use representation throughout the Hay Township.

In respect to public open space there are some areas particularly close to the foreshore that will obviously remain as public open space even though they may be not currently identified as such through the DCP. West of the War Memorial High School and Hay Park, there remains a small section of open space that remains undeveloped however the land is constrained as it appears to have been used as a *defacto* detention basin in time of flooding. In recent flood studies this land has been identified as potentially being suitable for development as a spillway.

While spatial representation shows a considerable area that remains available for residential development as per the allocated DCP sites, it should be noted that as indicated in the residential land matrix later in this report that some of these sites are unsuitable for development. This is particularly so in respect to the land in the vicinity to the southwest of Wharf Street and on the south western fringe of urban Hay. Currently within south Hay there remains reasonable infill residential development opportunity. Within the northern sector of urban Hay the most obvious available residential infill sites with capacity is within the vicinity of the more recent residential development estate. This is particularly the case when you consider that areas close to the CBD may be needed to strengthen the retail core or to offer higher residential densities to revitalise the CBD. Also of note is that the undeveloped area east of the hospital while potentially available for development may have cultural heritage values due to its previous use as a prisoner of war camp.





14.1.2 Recent Sales Activity

Hay Township property sales for residential, commercial and industrial land uses in the period 2000 to 2009 are shown in Table 32 .below.

Table 32: Number of Property Sales by DCP Precinct Hay Township 2000-2009

Year	Residential	Commercial	Industrial
2000	26	3	0
2001	25	5	1
2002	27	13	0
2003	36	8	1
2004	55	8	0
2005	46	8	0
2006	50	10	2
2007	43	14	1
2008	25	8	0
2009	31	7	0
Average	36.4	8.4	0.5
Maximum	55	14	2
Median	36.2	8	0.25

This table shows that the median and average number of sales over the period for the residential, commercial and industrial precincts in the DCP is 36, 8 and less than 1 sale per year respectively.

This compares with the maximum number of sales for each precinct which were 55, 14 and 2 sales respectively.

The data shows that, based on trends over the last decade, in an average year the average number of sales in the Hay Township would be not greater than 36, 8 and 1 for existing residential, commercial and industrial precincts.





14.1.3 Sales Price Trends

Residential land

The *Land and Property Management Association (L&MPA)* (2010) shows that there was strong growth in residential land prices in 2004 which remained positive up to 2008 then experienced an average decline (-2%) in 2009.

They compare average land prices for a single dwelling within certain cities and towns. Within the Riverina region, prices range from \$110,000 in Wagga Wagga; \$90,000 for Griffith; \$63,000 for Leeton while in Deniliquin the average land price was \$35,000 the latter showing a 30% decline in value over the last year. Currently in Hay a typical 1000m² lot sells for approximately \$25,000 with a location dependant differential of approximately 0.08%.

In NSW, in 2005, the median sales price for all dwellings for the June quarter was \$365,000, *NSW Department of Industry and Investment* (2010).

A search of *The Australian Property Monitor, Home Price Guide* (2010) shows that in the last 24 month period the price paid for a home or unit in Hay ranged from \$50,000 up to \$300,000.

This compares with the Domain Real Estate website which identifies the median house/unit price from \$95,000 to \$250,000. This site also identified a significant slump in sale prices for Hay since 2008, considerably worse than the corresponding decline experienced across the region.

Despite this, currently in Hay, homes are being advertised for sale within the bracket \$450,000 to \$500,000 but they are considered to be at the top end of the market. Older homes are currently advertised for sale within the range \$100,000 to \$250,000 with more modern homes advertised around \$300,000

Commercial land

L&PMA indicate a retail shop site to range in price within the region from \$1,250,000 in Wagga Wagga; \$481,000 in Griffith, to \$57,700 in Deniliquin. Both Griffith and Deniliquin experienced a decline in values ranging from 5% to 10% over the last year. Commercial land in Hay (bulky goods) is currently being advertised for \$50,000 with retail shop and building together for approximately \$450,000.

Industrial Land

L&PMA, in Table 9 Small Industrial Sites (generally between 1,200 to 2,700m²) show that all cities and towns researched experienced significant growth in industrial land prices since 1996.

Within the region Wagga Wagga has experienced 20% growth over the 2008 to 2009 period compared to Griffith which showed a decline of 5%. Average prices in Wagga Wagga for a small industrial site was \$212,000 and Griffith \$203,000. In comparison a similar site in Moree cost \$62,000.

In comparison serviced industrial land within Hay, with highway frontage (3,700m²) is currently being advertised for sale at \$50,000.

A key finding from this analysis is that residential, commercial and industrial land in Hay Township appears to be generally more affordable than other comparative sites available within the region.



Spatial analysis shows that there is no discernible pattern in sales activity for any land use class within Hay with land sales occurring throughout the Township. There has been greater sales activity in North Hay than South Hay. This is thought to relate to the greater geographic area of North Hay and associated greater land use development options. Recent land use surveys indicate that land use development does not always match the precinct indicated by Council's DCP. Land use spatial analysis has shown that residential, commercial and industrial land uses occur outside nominated DCP precincts. This means that demand and supply analysis by DCP zone is problematic and may impact on the reliability of conclusions.

14.1.4 Residential Land Supply and Demand Analysis

Without accounting for medium density development, residential land supply within Hay Township is shown in Table 33 below.

Table 33: Residential Land Supply 2010

Existing Developed Land	Total Number of Lots	Total Number of Developed Lots	Total Number of Available Lots
East Hay New Residential Estate	46	18	28
Remainder North East Hay currently developed	435	422	13
North West Hay – Developed-	703	675	28
South Hay-	154	129	25
Total Available Supply	1,338	1,244	94
% Available Supply	7%		

The land use survey and Table 33 show that for Hay Township there are 1,338 existing residential zoned lots which currently allow for a 7% infill capacity of 94 lots. Of this, almost 30% is provided within the newer residential estate north and east of the water treatment plant in Cadell Street.

From Section 4.0 of this report:

- The Hay LGA population is expected to decline to a mid-range forecast of 2,700 persons over the thirty year planning horizon of this study to 2041;
- The estimated vacancy rate (unoccupied dwellings) based on 2006 census is 15%;
- The proportion of dwellings comprising medium density development is approximately 10%;
- The dwelling occupancy rate of Hay LGA is expected to further reduce to 2.38 person per household by 2038 commensurate with state trends;
- A quarter of the regional population will be over 65 years of age, with the Hay LGA almost doubling the over 70 2001 population by 2031;
- The majority of all new lots created over the last 10 years have been residential lots located in the northern sector of the Hay Township.



- From the above, the estimated dwelling requirement to year 2040 is 1,134. Assuming that 10% of the existing stated lot supply represents medium density development this equates to an existing single dwelling available lot yield of 1338 minus 133 or just over 1,200 lots.
- Assuming an urban rural split of 0.8:0.2 in 2040, the urban population of Hay is estimated to be 0.8 multiplied by 2,700 persons or 2,160 persons. The number of households required to accommodate this population, assuming an occupancy rate of 2.38 is 907 households. Even with a projected vacancy rate of 15%, the total number of households required for the Hay urban area to accommodate the expected population is 1,043. Taking into account an increased reliance on single dwelling households over the planning horizon and accounting for dwelling decay and redevelopment opportunities, it is unlikely that the projected demand will exceed the current available supply.
- Despite this Section 4.9 identified:
- Development rates in Hay LGA are strongly influenced by rainfall patterns, irrigation allocations and agricultural production levels with significant fluctuation potential between 'good and bad' years;
- In Hay LGA the agricultural and tourism sectors are key drivers of economic development; and
- There is potential to capture "wanderers" and increase the average number of overnight stays through strategic development of tourist facilities

If the economic development opportunities expressed within this report are optimised by appreciation of natural and cultural assets and the return of more seasonal conditions for agriculture then the population forecast could be more optimistic than predicted in this report.

When one considers that some of the existing Hay Township DCP allocated areas are considered to be unsuitable for residential development (for example land east and south of the Water Treatment Plant shown in Figure 57) then a case can be made for an additional residential estate to accommodate opportunities commensurate with the current rate of provision (i.e. approx. 20ha over the planning horizon of this report).

14.1.4.1 Residential Land Future Requirements

Investigations into areas for future residential development have been undertaken arising from the identified limited supply of residential land in urban Hay. The investigation areas and analysis is shown in Table 35 below, with the potential for 1 in 100 year floodwater inundation being the major limiting factor.

Annexure 26 identifies the location of the various options sites for residential expansion.




Table 34: Residential Land Suitability Matrix

Residential Investigation Areas					
	Option 1	Option 2	Option 3	Option 4	Option 5
	Railway lands north of Murray Street	Land east of the Hay Hospital and north of Mid Western Hwy	Land east of Burke Street	Land south of Sturt Hwy, South Hay	Land South of Cadell St
Title details	Lots 7 & 14 DP 812034	Lots 191-193 & 195 DP 756755	Lot 2 DP 448476; Lots 135, 200 & 201 DP 756755; part Lot 4 DP 448476	Lot 7002 DP 1026024; Lots 1-6, Sec 14, DP 758508; Lot 1 DP 1128992; Lot 1 DP 252475; Lots 94, 117-119, 142-144, 146, 148, & 149 DP 756756; Lot 161 DP 257046	Lot 222, DP 891305; Part Lot 211 DP 756755
Ownership	ARTC	Crown	Private	Private	Private
Approx. area investigated	3.5 ha	17.8 ha	43.6 ha	33.4 ha	4.5 ha
Current land use	Vacant disused railways lands	Agricultural land (former WWII POW camp and pony club lands)	Agricultural land (part irrigation)	Agricultural land (part irrigation)	Remnant vegetation
Approx no. of lots available assuming 15% roads, 40% 450m², and 45% 900m²	48	247	605	463	62
Reticulated services availability and cost to developer (marketability)	Available; low cost	Available; low cost	Available; low cost	Available; medium cost	Available; low cost
Affected by 1-in-100 year floodwater inundation?	No (minor occurrence)	No	No, provided proposed levee extended	No, provided proposed levee extended	This is a low lying area and affected by inundation unless protected by levee.
Land capability (soils, subsidence, landslip etc)	Suitable	Suitable	Suitable	Suitable	Unknown
Contaminated land likelihood and cost of remediation?	High likelihood; high cost (investigation and remediation)	Low likelihood; low cost (investigation)	Low likelihood; nil cost	Low likelihood; nil cost	Low likelihood; nil cost
Native vegetation removal likely?	No	No	No	No	Yes
Cultural Heritage/Archaeological investigations required?	No	Yes	Yes	Yes	Yes
Bushfire Prone Land?	No	No	No	No	Yes



Residential Investigation Areas					
	Option 1	Option 2	Option 3	Option 4	Option 5
	Railway lands north of Murray Street	Land east of the Hay Hospital and north of Mid Western Hwy	Land east of Burke Street	Land south of Sturt Hwy, South Hay	Land South of Cadell St
Is Land-filling required to prevent ponding inside levee protection area?	No	No	No	No	Yes, extensive filling required

To provide for demand for new residential land uses over the next 30 years with 10 years residential land supply available in the first instance, it is recommended that land in northeast urban Hay be rezoned from rural to residential. Rezoning will be dependent on the existing flood levee being extended to protect the land from flooding. It is also recommended that the former WWII POW Camp lands to the east of the Hay Hospital be investigated for future residential use pending contaminated land and heritage archaeology investigations.

It is considered on “first principles” strategic land use planning grounds that one new residential estate is required for Hay and one investigation area.

The recommended new residential estate, described in Table 34 as “Option 3: Land east of Burke Street” is considered the preferred location in accordance with the following Figure 56



Figure 56: Proposed Northeast Hay Urban Release Area for Residential Development

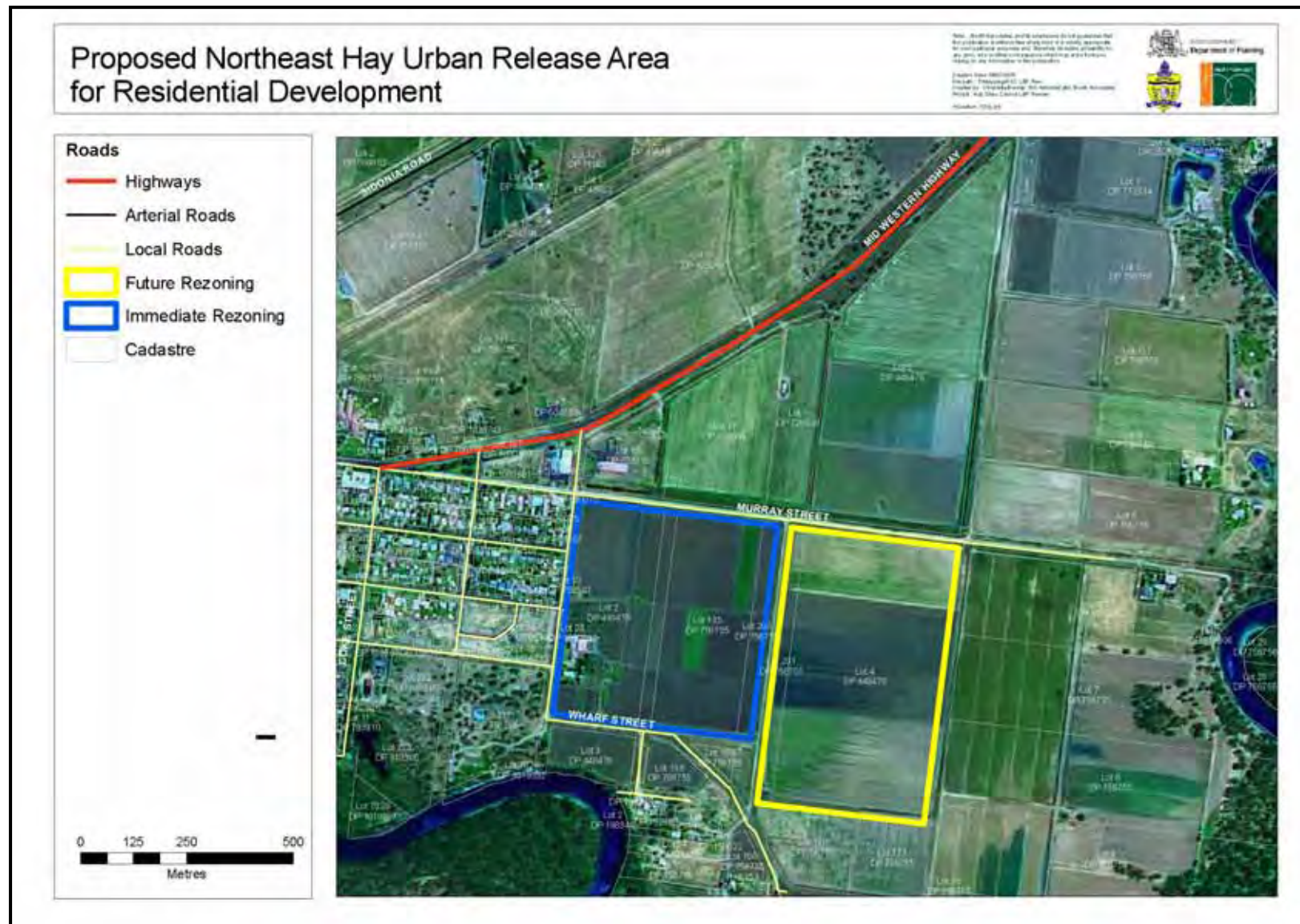
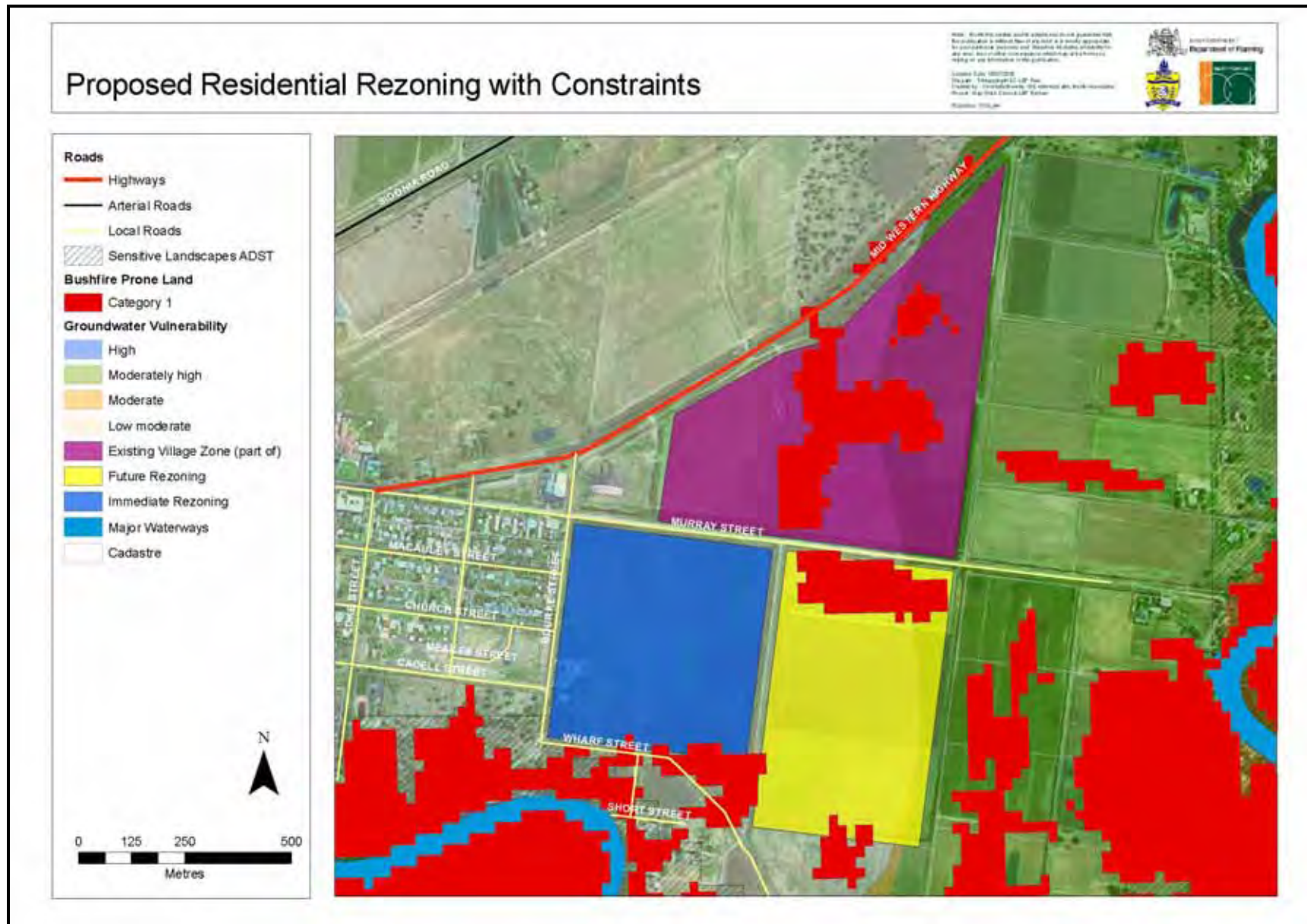


Figure 57: Proposed Residential Rezoning with Constraints





The area which is already within the existing Hay village described in Table 34 as Option 2: land east of the Hay Hospital and west of the Mid Western Highway should be developed for residential purposes with provision for Seniors Living after the recommended site investigations.

The residential investigation area subject to future rezoning based on demand is also shown in Figure 56.

The relevant Section 117 Directions impacting this proposed residential rezoning are:

- 1.2 Rural Zones;
- 1.5 Rural Lands;
- 2.1 Environment Protection Zones;
- 3.1 Residential Zones; and
- 4.3 Flood Prone Land.

1.2 Rural Zones

The purpose of this Section 117 Direction is to ensure that draft LEP's do not rezone land to a residential, business, industrial, village or tourist zone unless there is consideration to the primary objective of protecting the agricultural value of rural land.

1.5 Rural Lands

The objective of this direction is to protect the agricultural production value of rural land and to facilitate economic development for rural and related purposes. The direction applies when a council prepares a draft LEP that effects land within the existing or proposed Rural or Environment Protection zone or when an existing minimum lot size on land within a Rural or Environment Protection zone is impacted. In these situations the proposal must be consistent with the Rural Planning Principles and the Rural Subdivision Principles listed in State Environmental Planning Policy (Rural Lands) 2008.

2.1 Environment Protection Zones

This direction requires a draft LEP to facilitate the protection and conservation of environmentally sensitive areas.

3.1 Residential Zones

This direction applies when a Council prepares a draft LEP affecting an existing or proposed residential zone. The objectives are to encourage a variety and choice of housing types, make efficient use of existing infrastructure and services and ensure that new housing has appropriate access to these as well as minimise the impact of residential development on the environment and resource lands.

4.3 Flood Prone Land

Section 117 Direction 4.3 Flood Prone Land is relevant for proposed residential and industrial rezoning recommended in this report. The objective of this Direction is to ensure that the development of flood prone land is consistent with the NSW Government Flood Prone Land Policy and the principles of the Floodplain Development Manual 2005. To ensure that LEP provisions for Flood Prone Land are commensurate with flood hazard and include consideration of the potential flood impacts both on and off site. Draft LEP's shall not rezone land within the flood planning areas for Special Use, Special Purpose, Recreation, Rural or Environmental Protection zones to a Residential, Business, Industrial, Special Use or Special Purpose zone or contain provisions that permit development of floodway areas, result in significant flood impacts to other properties, increase the requirement for government spending on flood mitigation, infrastructure or services or in most cases, permit development to be carried out without consent. Draft LEP's should not permit a significant increase in development of flood prone land. Further a Draft LEP must not impose flood related development controls above the



residential flood planning level for residential development on land unless there is adequate justification.

Comment:

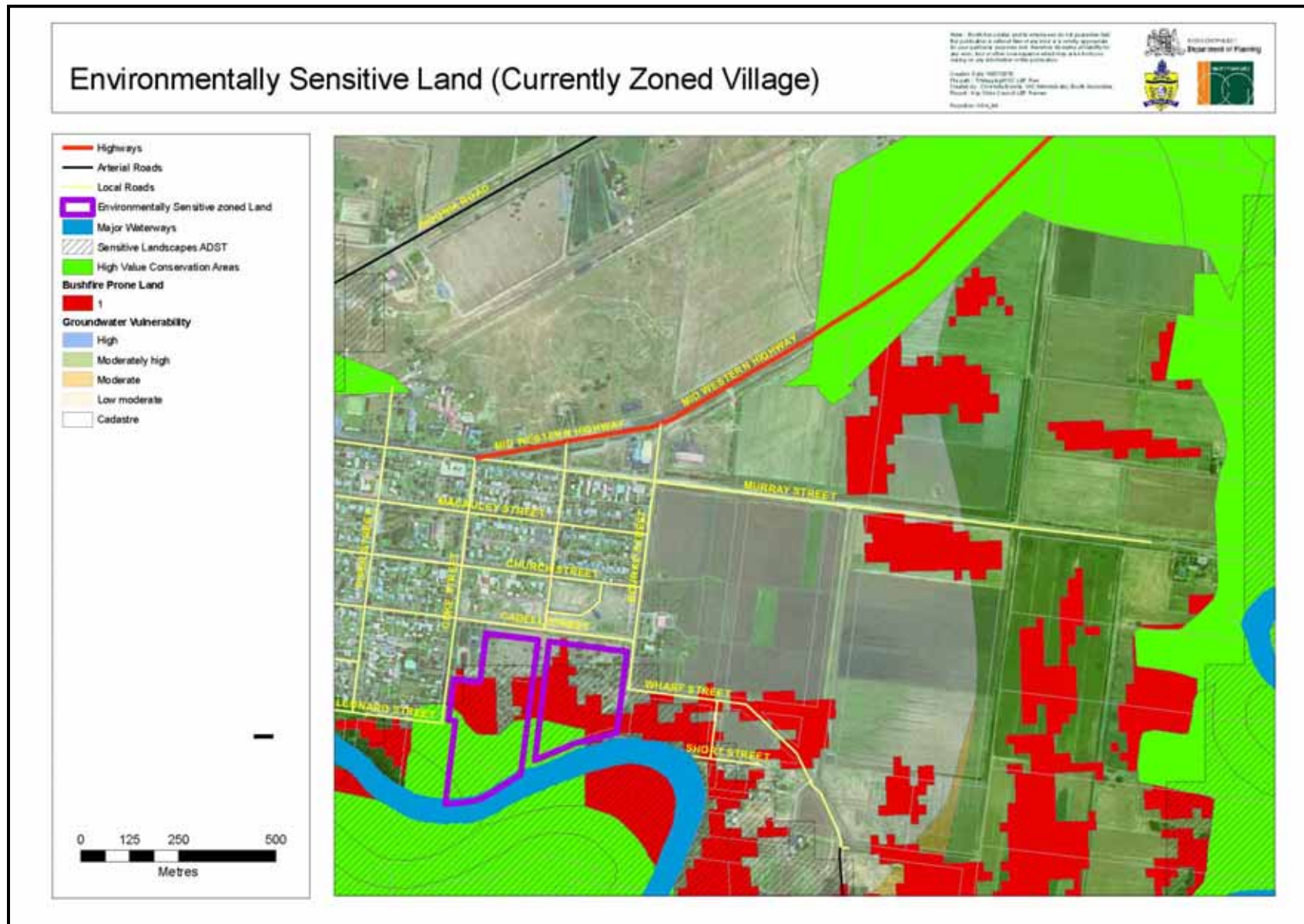
The subject land is currently being used for the purposes of vegetable production. The loss of this productive agricultural land can be justified when considering spatial and locational aspects, servicing capability, and the suitability of existing village zoned land. This site is located on the north-eastern fringe of the Hay urban area. Its location, immediately adjacent to the existing western urban boundary of Hay, and close to existing services, such as the hospital, make its conversion to residential development logical.

It has access to existing services including sealed road, raw and filtered water, sewerage and utilities. Its location on the eastern side of Hay means that it is located away and separated from the incompatible land uses associated with the landfill and saleyards. The site is also located south of the Mid Western Highway (Murray Street) and its position compliments the compact urban form of North Hay.

The impact of rezoning this site to residential is negligible taking into account the area south of Cadell Street and north of the Murrumbidgee River that is currently identified as Residential within Council's DCP, but is considered unsuitable for residential development because of its environmental sensitivity (Refer to Figure 58). This is because the land is low-lying, includes a wetland area and comprises native vegetation which is of high conservation value. This area should be rezoned for environmental purposes accordingly.



Figure 58: Environmentally Sensitive Land (Currently Zoned Village)





This report recommends that land to the east of the Hay Hospital which is currently vacant be developed for residential purposes. Because of this land's proximity to the Hay Hospital it is appropriate that any development of the site include provision for seniors housing. It should be noted that this land is already contained within the existing Hay village zoning and identified within Council's DCP. Prior to development, it is recommended that a cultural heritage assessment and a land contamination investigation (SEPP 55) be undertaken to ensure residential land use can occur and maintenance of social, cultural and environmental values including public health.

Upon development this land should be appropriately protected against the 1 in 100 year flood event and preferably the PMF event to protect sensitive land uses including the Hospital and any senior's development. The Council will need to ensure that the relevant flood study is amended or further flood modelling is conducted to ensure that the levee is appropriately extended and designed to protect the land against flooding in accordance with Section 117 Direction 4.3.

Staging

The land currently contained within the existing village zone and recommended to be rezoned environmental conservation comprises over 12ha.

The land (Lot 2 DP448476 and Lot 135 DP 756755) shown within Figure 56 proposed to be rezoned immediately for residential development comprises approximately 20ha.

In considering staging options, the following is relevant:

- The aerial photograph shows the proposed area to be rezoned is managed as a single farming unit with no reference to allotment boundaries;
- The configuration of both lots is regular and would facilitate incremental development for residential development purposes whilst maintaining some form of agriculture or residue (undeveloped lands); and
- Prior to any development a DCP should be prepared to guide the development and staging of the land.

It is therefore recommended that both lots comprising 20ha be rezoned for residential purposes. Land to the east (Lot 4 DP 448476) is recommended as a potential expansion area, should this be required.

14.1.5 Commercial and Industrial Land Supply and Demand Analysis

Commercial

Commercial subdivision has been skewed throughout the Hay Township over the past 10 years. In 2007, 10 new lots were created, the majority being in the north-western area at Hay. In 2008 12 new commercial lots were created, these were located on the Cobb Highway and included a motel.

- Retail and commercial vacancy rates are discussed in Section 7.1.2.1. Hay is dominated by Griffith in terms of that city's function as a regional service centre. Griffith is located approximately a 1.5 hour drive northeast of the Hay CBD. Griffith has a retail catchment of approximately 50,000 persons and services an estimated geographic radius of over 130km. Griffith contains the major shopping centres, employment opportunities and provides a range of allied and professional health services and specialist retail services. The community survey indicated that Hay residents routinely travelled (fortnightly and monthly) to centres such as Griffith to access specialist health services and to enjoy wider shopping experiences.

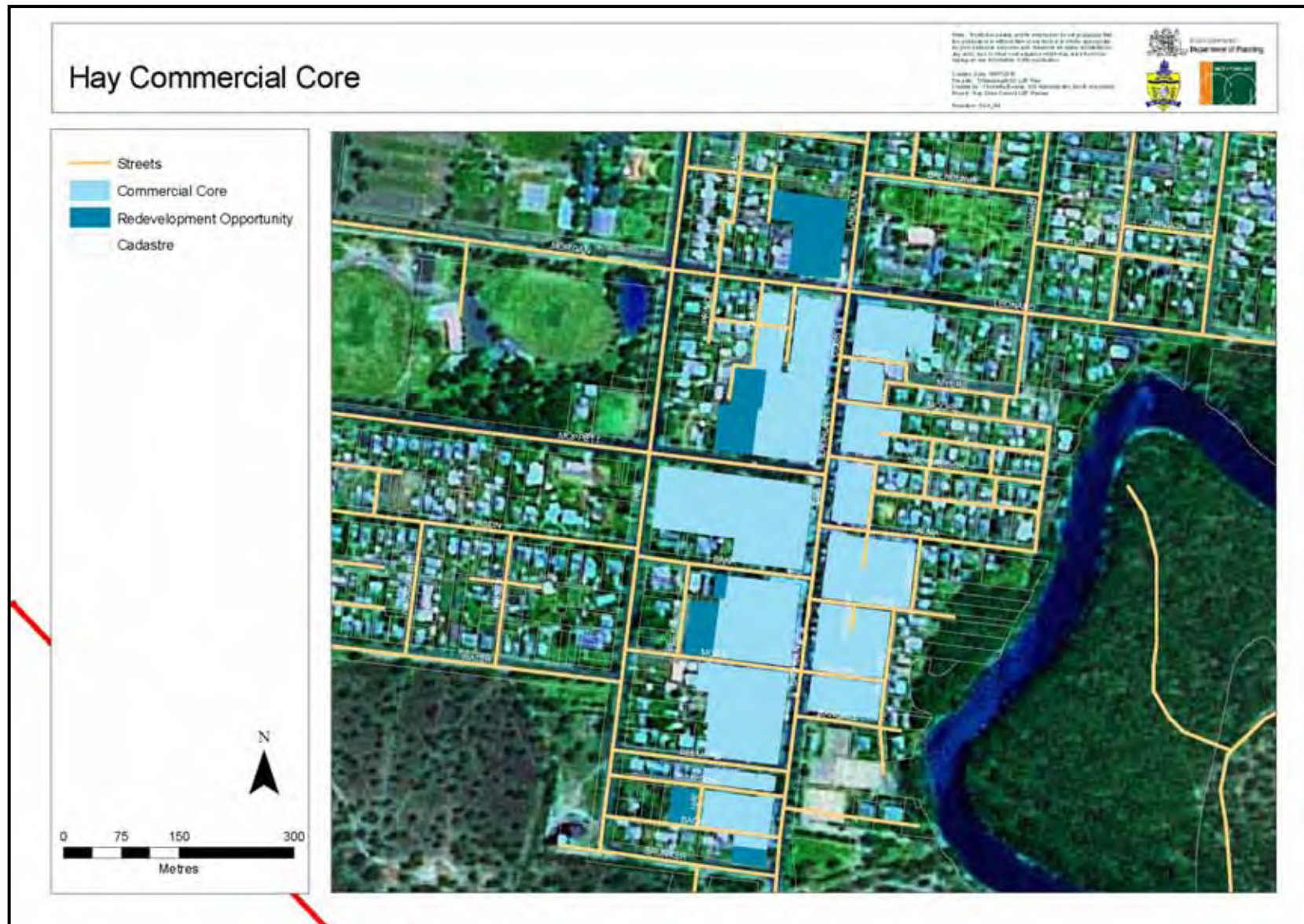


- Hay Township provides a range of local services and employment opportunities as mentioned in Section 4.0 of this report. The retail and commercial characteristics of Hay are locally strong. Both low order and high order goods are available locally with some specialty stores locally situated. Hay's role in the retail hierarchy, function and viability is impacted by residents need to visit other larger centres such as Griffith for other services, particularly health services. Most goods are available locally in Hay and most professional services are provided including outreach services at least on a periodic basis.

It is considered that Hay's CBD or core retail and commercial area along Lachlan Street generally between Leonard Street in the north to Belmore Street in the south, be strengthened by consolidation and protected from leakage and fragmentation. This should be able to be achieved through appropriate standard land use zoning. The identified commercial core area is shown in Figure 59. The need for more commercial land was not considered to be a high priority by the respondents of the community survey undertaken. Despite this, it is important that the commercial centre of Hay be capable of responding to future commercial/retail demand. While Lachlan Street provides the primary commercial/retail floor space further opportunities provided through redevelopment are shown in Figure 59. The accommodation of existing civic buildings and facilitation of redevelopment opportunities in the commercial core is recommended.



Figure 59: Commercial Core - Hay Township





Other commercial land uses within urban Hay should be either recognised through appropriate standard land use zoning in consideration of their strategic advantage to the community or made 'existing uses' if their long-term use is undesirable on the basis of 'first-principles' land use planning or for basic adverse amenity generation reasons. This should be achieved through appropriate standard land use zoning and drafting of written ordinance.

Industrial

Industrial land supply is currently limited in the main to north Hay. There has been little industrial subdivision occurring within Hay over the last 10 years with the exception of 2007 where seven new lots were created in Hay's north-western sector. Industrial vacancy rates are discussed in Section 7.1.3.1. A review of historical sales activity and the development register has not demonstrated that a strong demand exists. Despite this, spatial analysis indicates that industrial development of various scales has established in designated areas in Hay as well as outside of defined precincts and on the fringes of the urban area. Available land has been discussed in Section 14.1.1. The need for further industrial land was the second highest priority (15%) indicated by respondents of the community survey undertaken and 50% of respondents identified the need for improved employment opportunities that investment in industrial development might provide.

Industrial Land Future Requirements

Investigations into suggested areas for future industrial development have been undertaken in accordance with the project brief. The investigation areas and analysis is shown in Table 35 below and identified in Annexure 27. Before undertaking this analysis investigation was made independently of Council's suggestions with Council's nominations confirmed as the most obvious on strategic land use planning grounds.




Table 35: Industrial Land Suitability Matrix

Industrial Investigation Areas					
	Option 1	Option 2	Option 3	Option 4	Option 5
	Disused railways lands, Showground Rd	RTA depot land and surrounds, Sidonia Rd	Riverina Poly Irrigation land and surrounds, Mid Western Hwy and Bourke St	Handford Earthmoving land and surrounds, Archer St	Hay Airport land and surrounds, Sturt Hwy and Cobb Hwy
Title details	Lots 5 (part) & 15-18 DP 812034. Also refer to Figure 63	Lot 7038 DP 1019894; Lot 1 DP 620326; Lot 10 DP 748943; Lot 7037 DP 1024228; Lot 226 DP 756755	Lots 10 & 11 DP 823018; Lot 2 DP 448476	Lots 1-4 DP 745298; Lots 5-6 DP 60303; Lot 1 DP 243209; Lots 1-6 & 9-12, Sec 13 DP 758508; Lots 81-82 DP 880102; Lot 1 DP 197393; Lot 1 DP 197399	Lot 11 (part) DP 756756; Lot 7304 DP 1136213; Lot 177 DP 1011314
Ownership	ARTC and unknown	Private	Private	Private	HSC Crown and private
Approx. area investigated	> 6 ha	8.3 ha	36 ha	8.2 ha	77 ha
Approx no. of lots available assuming 20% roads, 40% 2,000m², and 40% 5,000m²	17 (min)	23	101	23	170
Reticulated services availability and cost to developer (marketability)	Available; low cost	Available; low cost	Available; medium cost	Available; medium cost	Availability investigations needed; high cost
B-double heavy vehicle road access	Yes, via Showground Rd to Cobb Hwy/Mid Western Hwy	Yes, via Sidonia St to Cobb Hwy	Yes	Yes, via Archer St to Sturt Hwy	Yes
Affected by 1-in-100 year floodwater inundation?	No (minor occurrence)	No	No, provided proposed levee extended	Yes, levee would require extension to comply	Unknown
Land capability (soils, subsidence, landslip etc)	Suitable	Suitable	Suitable	Suitable	Suitable
Cost of establishing buffer areas to sensitive land uses	Medium cost	Not required	Low/medium cost	Medium cost	Low cost
Native vegetation removal likely?	No	No	No	No	No
Known Potential Contamination	Yes	Yes	No	No	Yes



Industrial Investigation Areas					
	Option 1	Option 2	Option 3	Option 4	Option 5
Cultural Heritage/Archaeological investigations required?	No	No	Yes	Yes, proximity to billabong, however history of deep ripping agricultural practices	Yes
Bushfire Prone Land?	No	No	No	Yes, part	No

It is considered on 'first principles' strategic land use planning grounds that two dedicated industrial estates are required for the Hay area: one north of the river in the Hay urban area and one south of the river.

The recommended northern industrial estate, described in Table 35 as "Option 1: Disused railways lands, Showground Rd", should include and extend eastwards from the established Council depot and adjoining private bulk fuel and transport depots at the western end of Showground Road and along Dunera Way to 'brownfield' disused railway land owned by the ARTC (refer to Figure 63).

The recommended southern industrial estate, described in Table 35 as "Option 4: Handford Earthmoving land and surrounds, Archer St", should be established with principal access from Archer Street and with a buffer area established to the residential land uses fronting the Sturt Highway to the south (refer to Figure 60).

To provide for demand for new industrial land uses over the next 30 years with 10 years industrial land supply available in the first instance, it is recommended that land in northwest urban Hay and South urban Hay be rezoned from village and rural respectively, to industrial. For the area in south urban Hay, rezoning will be dependent on the existing flood levee being extended to protect the land from an appropriate interval of floodwater inundation.



Figure 60: Proposed Industrial Area South Hay

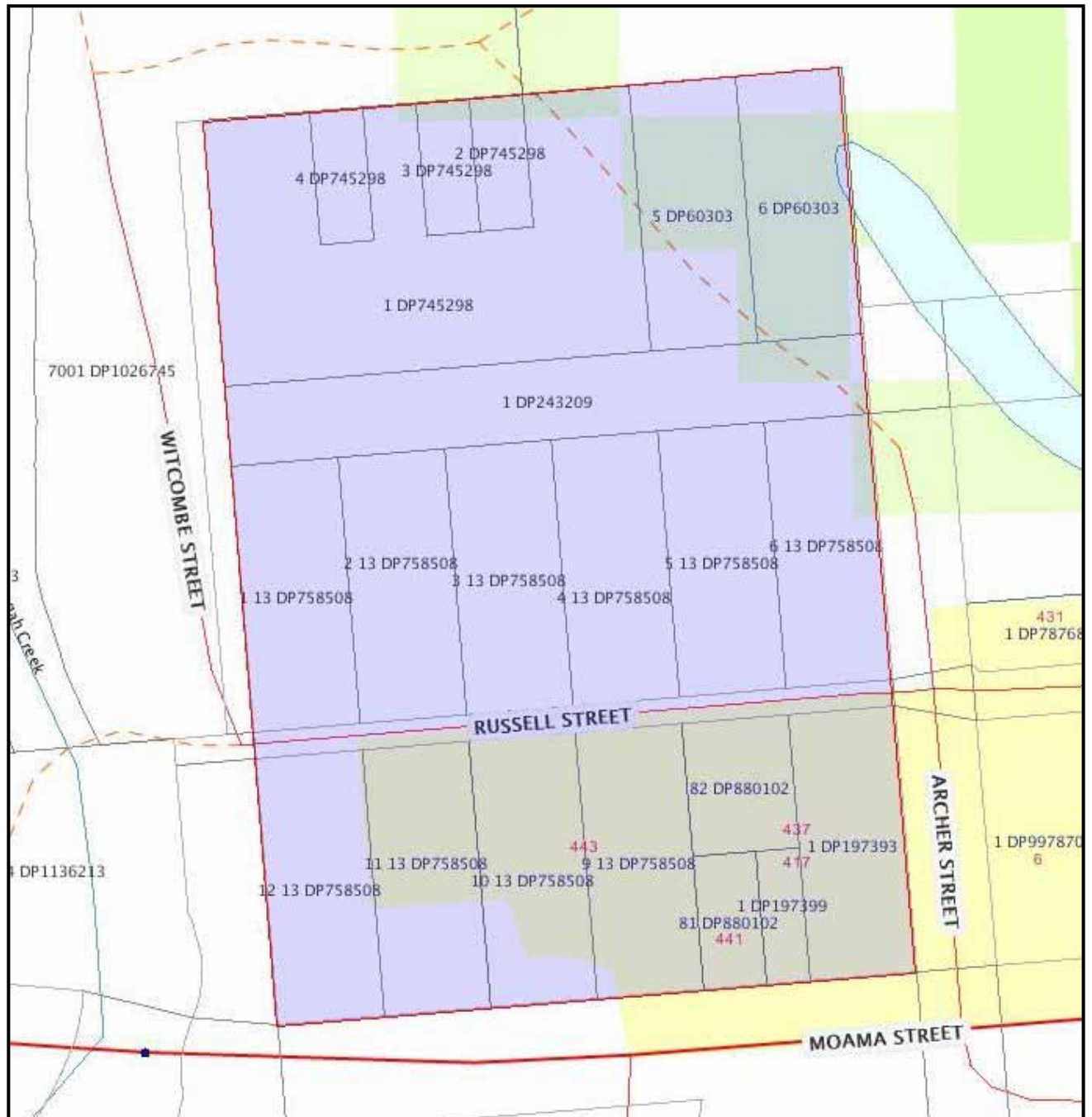
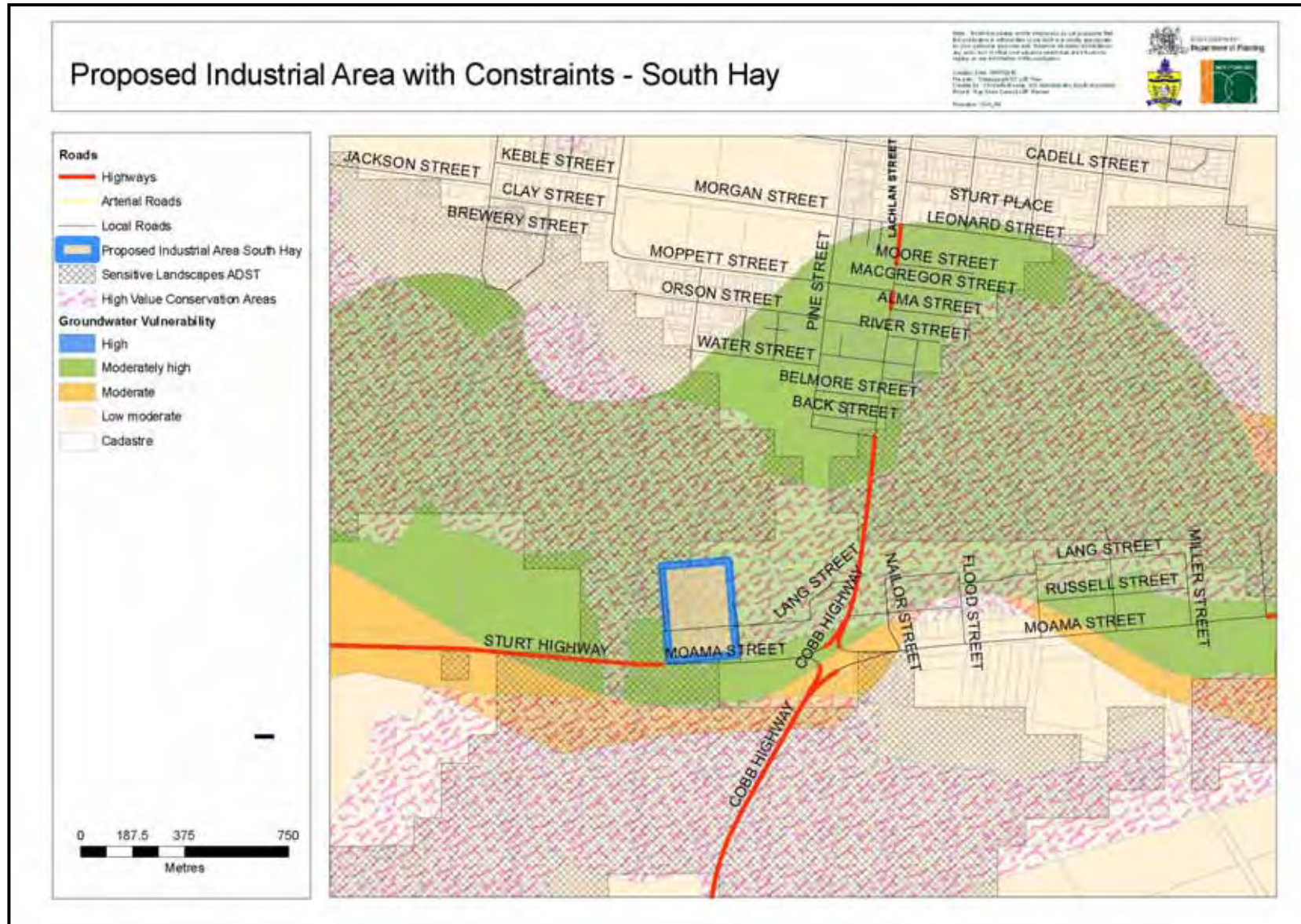


Figure 61: Proposed Industrial Area with Constraints – South Hay





The proposed industrial zoning in South Hay is northeast of Witcombe and Moama Streets. Land to the northeast contains a wetland or cut off meander. This abandoned meander was once part of the main river channel but became cut off through the process of erosion and sedimentation. Groundtruthing of the site has revealed the wetland to be in poor ecological condition and significantly adversely impacted by anthropogenic impacts. These include low native cover, high exotic weed cover and pollution from neighbouring land uses.



Figure 62: Aerial View of Proposed Industrial Rezoning - South Hay

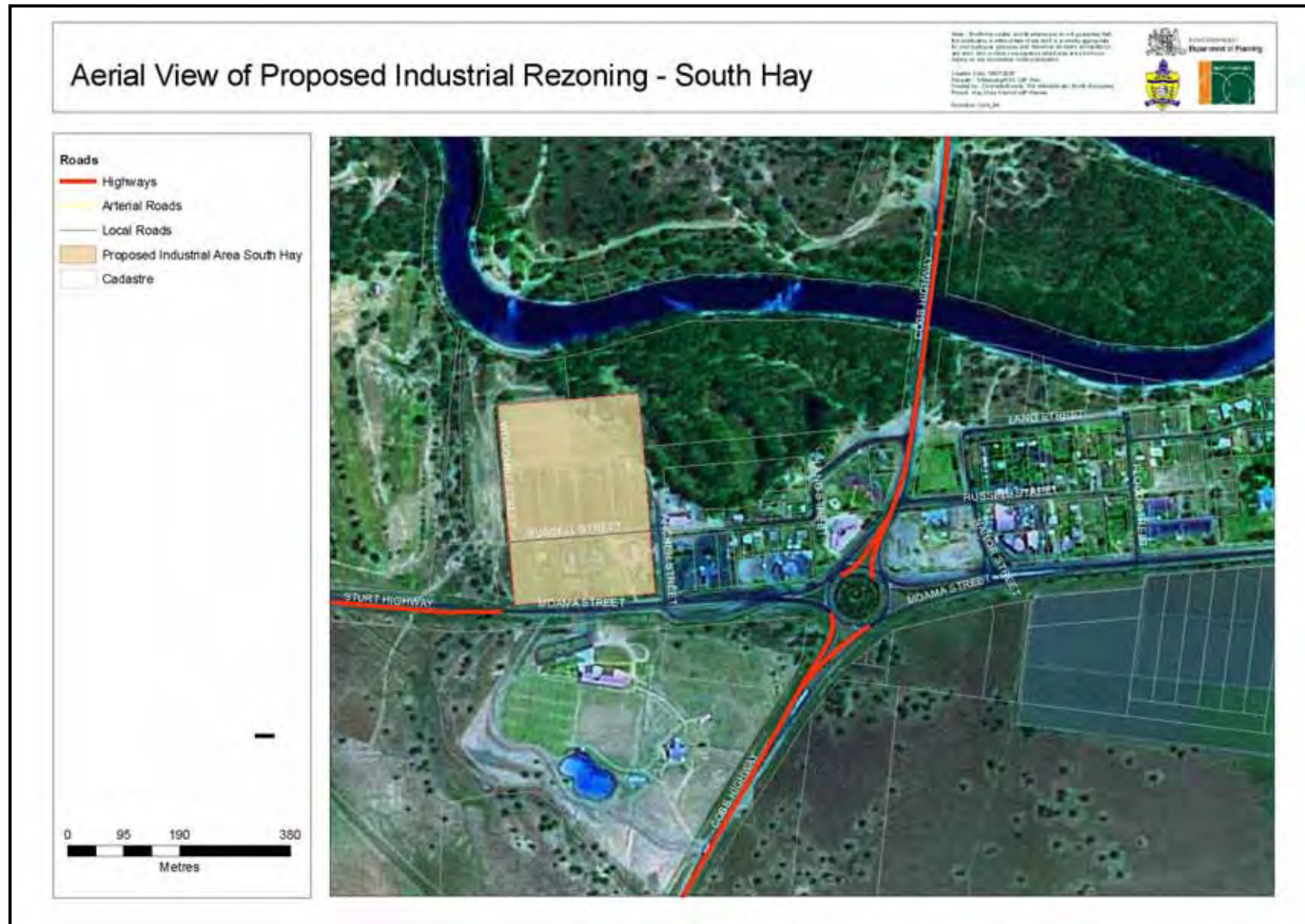


Figure 63: Proposed Industrial Area North Hay

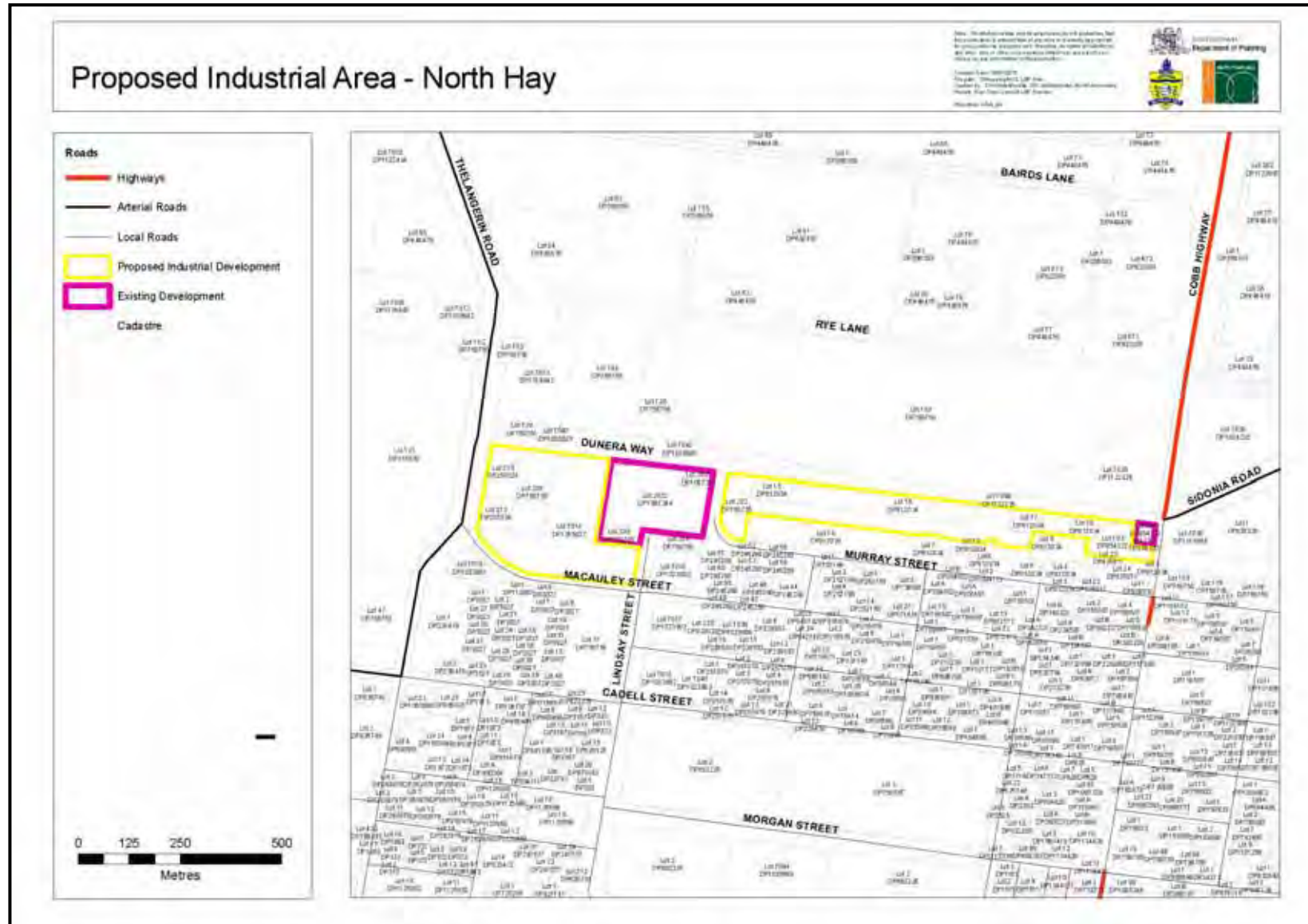
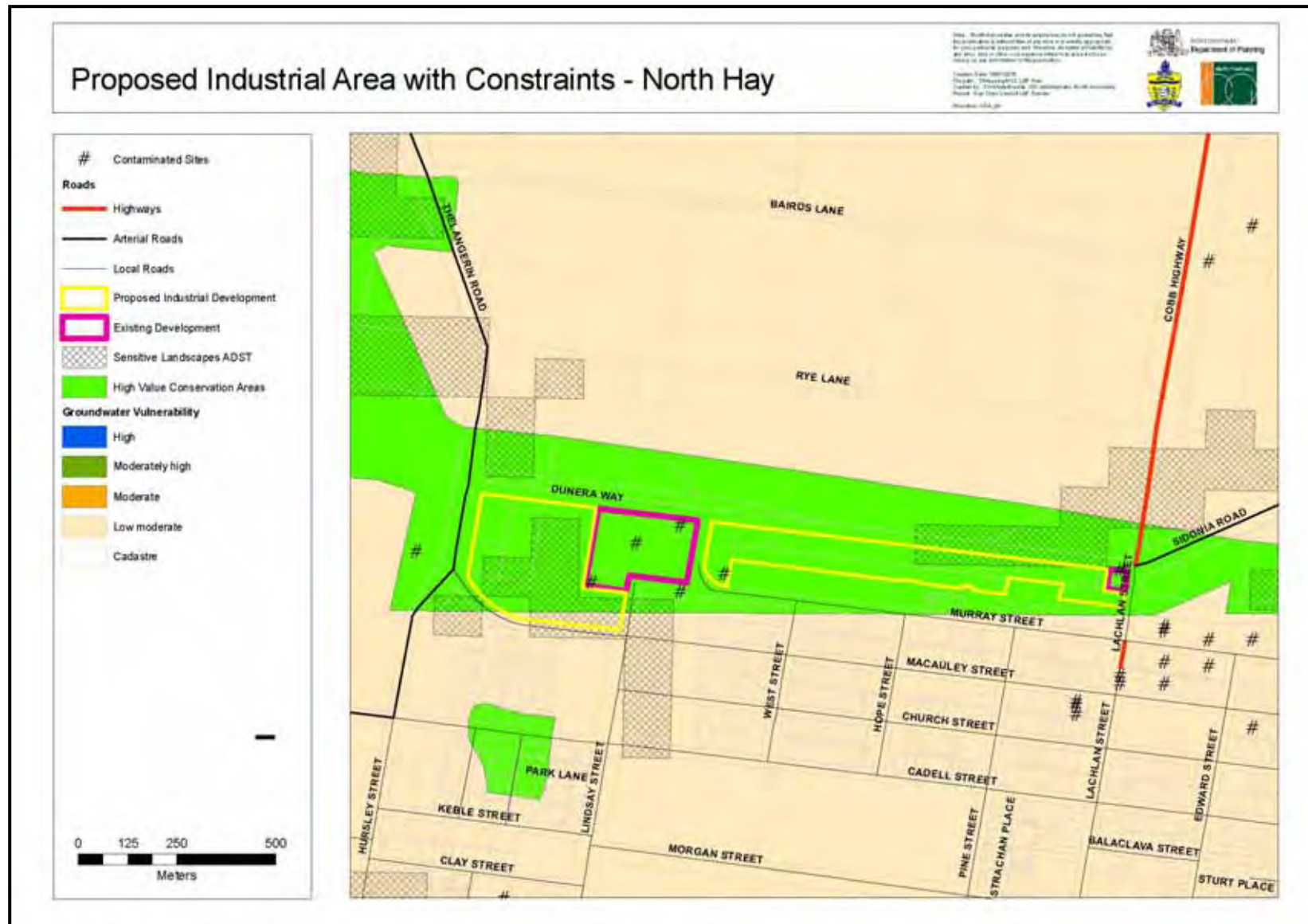


Figure 64: Proposed Industrial with Constraints - North Hay





The following Section 117 Directions are relevant to the proposed rezoning of land in North and South Hay to General Industrial. They are:

- 1.1 Business and Industrial Zones;
- 1.2 Rural Zones;
- 1.5 Rural Lands;
- 2.1 Environment Protection Zones;
- 3.4 Integrating Land Use and Transport;
- 4.3 Flood Prone Land.

The objectives of Section 117 Directions 1.2, 1.5, 2.1 and 4.3 have been discussed earlier in this Section. Other relevant Section 117 Directions relating to the proposed industrial rezonings are mentioned below. Commentary on the relevant Section 117 Directions and how they are impacted by the proposed industrial rezonings is also provided.

1.1 Business and Industrial Zones

The objectives of this direction are to encourage employment growth in suitable locations, protect employment land in business and industrial zones and support the viability of identified strategic centres. Council is required to consider the objectives in any rezoning process, retain existing areas and locations of existing business and industrial zones; not reduce the total potential floor space area for employment uses and related public services in the business zones; not reduce the total potential floor space area for industrial uses in Industrial zones and ensure that proposed new employment areas are in accordance with the strategy approved by the Director-General of the DoP.

3.4 Integrating Land Use and Transport

The objective of this direction is to ensure that, amongst other things, land use locations achieve the planning objectives of:

- (a) Improving access to housing, jobs and services, by walking, cycling and public transport;
- (b) Increasing the choice of available transport and reducing the dependence on cars;
- (c) Reducing travel demand including the trips generated by the development and distance travelled, especially by car.
- (d) Supporting the efficient and viable operation of a public transport service;
- (e) Providing for the efficient movement of freight.

Comments:

This proposal is consistent with Section 117 Direction 1.1 because it proposes industrial rezoning to encourage development and employment growth in a suitable location. The implementation of a Standard Industrial zone will protect employment land and support business viability by ensuring a conglomeration of compatible land uses within a defined precinct. The area also has access to existing services. Council's current DCP provides for the allocation of industrial land uses in North Hay. However no available land is provided in South Hay. It is submitted that the provision of this industrial zone will alleviate some heavy vehicle usage from the town centre (Lachlan Street) and will offer some strategic advantage afforded by the convergence of the highways to the south.





Figure 62 shows the proposed industrial site in South Hay includes a range of constraints including being adjacent to bushfire prone land as shown in Figure 68. The site is well positioned in view of existing transport corridors and South Hay development. Its location on the western fringe of South Hay means that the area can be appropriately buffered to manage constraints.

The land in South Hay has been mapped by (DECCW) as high value conservation area. The land is adjacent to an existing wetland which is situated within the riparian zone. The ecological condition of this wetland has been assessed as less than optimal and probably poor. Despite this any redevelopment for industrial purposes would need to demonstrate protection of the adjacent values and preferably lead to an improvement in values.

There is no public transport service available in Hay and the movement of freight is restricted to road transport corridors as the existing railway network has been closed and Hay is not located near a port. The proposed northern and southern industrial rezonings achieve the objectives of integrating land use and transport because the southern industrial site is located close to transport corridors, being the two major highways, to the south and is easily accessible particularly for residents in South Hay by walking or cycling. The proposed northern industrial zoning meets the objective of integrating land use and transport Section 117 Direction because it is located within the northern Hay precinct and is readily accessible by the community by walking and cycling as well as by motor vehicles.

Flooding has been identified in Section 10.2.4 as being outside the scope of this project. This is because the Council in conjunction with the DECCW have commissioned an urban and rural flood study. The Urban Flood Study shows that the railway land situated to the north is not constrained by flooding but the land to the south is potentially impacted. This means that prior to any development of the land appropriate flood mitigation measures must be established to protect industrial development from the effects of flooding. The FPL for industrial development will need to be determined. The existing levee will need to be extended and upgraded to protect industrial zoned land.

To date the Rural Flood Study has not been released. Further flood modelling will be required to consider the impact of flooding on proposed rezoning sites. As mentioned previously the floodway, flood storage areas and flood fringe areas will need to be mapped. Prior to development of any rezoning sites land will need to be appropriately protected and FPL's determined for various land uses.

In summary, both the proposed northern and southern industrial zones are appropriately located in view of existing development despite, in the case of South Hay, the existence of constraints. Both areas can be appropriately serviced and are capable of staged development according to demand. The development of both sites should be guided by a development control plan to minimise the potential for land use conflict, not adversely impact adjacent sensitive receptors, ensure the protection of existing adjacent values and be developed in accordance with best practice.

Option for Strategic Advantage

Key recommendations of this report are that there is a need for a more strategic industrial node to take advantage of the key infrastructure available via the transport corridor convergence in South Hay.

Negotiations to secure the land near the railway have been problematic and in view of adjacent residential and heritage land uses transport generating industries and transport logistic enterprises are unlikely to be appropriately accommodated there. This, together with the need to alleviate heavy vehicle traffic from Lachlan Street means that there is a strong argument for another industrial node to the south.

Despite seeming evidence of a weak property market in industrial land sales over the last decade, spatial analysis has revealed that mixed land uses occur throughout urban Hay outside defined DCP precinct and indeed outside existing village boundaries.



Should the recommendations of this report be adopted by promoting a consolidated zoning approach with defined residential, commercial and industrial zones with minimal mixed use, a case can be made for the provision of an additional industrial estate to accommodate larger enterprises. This is particularly so when considering that community sustainability may potentially be impacted unless there is an optimisation of Hay local and regional strategic advantage.

The size and location of this zone will be mandated by the nature and type of industrial enterprises sought and the need to optimise strategic advantage and manage constraints.

Tradesmen and trade contractors could potentially be accommodated within an existing area west of the currently developed area in South Hay. However, transport and logistics enterprises should have highway frontage with reasonably large holdings. Assuming an average 4,000m² land requirement and a modest take up rate over the 30 year planning horizon a minimum future land release provision of 10ha may be appropriate to facilitate choice and stimulate market investment. This report has not identified a site to cater for this type of development. But unconstrained land in South Hay is shown in Figure 68. Should Council consider the need for such a site in the future then further investigation would be required.

14.2 Maude

It is recommended that land within the existing urban boundary of Maude be zoned for 'village' purposes, permitting all ranges of residential land use and most commercial uses.

14.3 Booligal

The existing Township area should be zoned for village purposes, including the recent Crown land for sale for residential purposes to the south of Harvey Street and north of Adelaide Street. A 'village' land use zoning facilitates all residential and most commercial development.

14.3.1 Specific Areas

Council has received requests to rezone land and has identified anomalies within the existing zone maps. These anomalies were included in the Draft Issues Paper and are included in Annexure 2 of the Draft Issue Paper (included as Annexure 18). Any rezoning should be in accordance with Council's adopted strategy and rezoning of land should be in accordance with land use.

Note: These anomalies have been addressed in the Future Land Use maps in Section 15.0.

14.4 Rural Settlement

Agriculture is the largest land user and employer in the Hay LGA and is essential to the region's future prosperity, therefore warrants protection. NSW I&I in their section 62 consultation letter dated 26 August 2010 stated:

"Agriculture is a dynamic and changing business with the potential for ongoing sustained development and growth".

and

"The two core issues for the sustainable development of agriculture are the protection of the land resource base and the minimisation of conflict"



Section 8.0 of this report provided the rural context of the Hay LGA including a description of:

- Forces driving agriculture in the LGA;
- Characteristics of the key agricultural industries present in the Hay LGA;
- Trends within agricultural industries;
- Irrigation profile;
- An analysis of current holding sizes in the LGA; and
- An assessment of the minimum size of a commercial farm for a range of agricultural industries.

The primary planning tool, to protect agriculture via the minimisation of fragmentation and land use conflict, is minimum lot size.

The minimum lot size sets the standard for the minimum area upon which a new dwelling may be erected or the minimum lot size that can be created via subdivision. The minimum lot size aims to limit speculative and lifestyle development in prime agricultural areas, whilst not constraining agriculture's growth or development.

The recommended minimum lot size for the Hay LEP with accompanying reasoning is detailed in Section 14.4.1.

14.4.1 Minimum Lot Size

Section 8.9 of this report identifies that the minimum size of a commercial farm as:

- Pastoral Farm - 5,750ha;
- Broadacre Irrigation Farm - 600ha;
- Horticulture Farm - 90ha.

The derivation of these numbers is provided in Annexure 12.

The Holdings Analysis detailed in Section 8.7 indicated that 41% of holdings comprised farm sizes of 5,000ha or greater which covered 89% of the LGA. Therefore the majority of the LGA is held in holdings of 5,000ha or greater.





Section 117 of the EPA Act, 1979 Includes Direction 1.5 Rural Lands. This direction includes the following:

- “(2) The objectives of this direction are to:*
- (a) protect the agricultural production value of rural land*
 - (b) facilitate the ordering and economic development of rural lands for rural and related purposes.”*

The recommendation relating to minimum lot sizes provided in this report are made with due consideration to these objectives.

In their Section 62 consultation letter dated 26 August, 2009 I&I stated:

The minimum lot size selected should retain the capacity for efficient production, minimise the risk of conflict, retain future development options and ensure that typical enterprises suitable for that location are profitable over the longer term.

and

“within areas of importance for agriculture, priority should be given to maintaining allotments in sizes that can support profitable and efficient enterprises that are typical and sustainable for each locality which retain future development options and diversity.”

The recommended minimum lot sizes for the Hay LGA are provided on the basis of:

- The S117 direction 1.5 – Rural Lands;
- The aforementioned comments by I&I;
- The Rural Planning Principles and Rural Subdivision Principles in State Environmental Planning Policy (Rural Lands) 2008; and
- The detailed Rural Land Use Analysis carried out as part of this report and detailed in Section 8.0.

The following minimum lot sizes are recommended for the Hay LGA:

- *90ha for all lots within a 15km radius of the Hay Post Office hereafter the horticultural zone; and*
- *600ha for all rural lands outside the horticultural zone, hereafter called the pastoral zone.*



The basis for these recommendations is described as follows:

Horticultural Zone

The commercial assessment in Section 8.9 determined the minimum size of a horticultural farm is 90ha. As horticulture represents the highest value use of land close to Hay 90ha has been adopted as the recommended minimum lot size for the area surrounding the Hay town.

The Rural Land Use Analysis ascertained that all horticulture currently conducted on scale in the Hay LGA is undertaken within a 15km radius of Hay. The reasons for horticulture to be confined to this area include:

- Location of most of the soils best suited to horticulture production in the Hay LGA;
- Secure access to water (via the Murrumbidgee River);
- Access to infrastructure; and
- Access to labour resources.

Outside of this area there is potential for horticultural production to expand, but this is limited due to soil type (i.e. lack of suitable soils), the industry's reliance on secure water access (Murrumbidgee River) and the limited number of groundwater irrigation bores, located on or near prime agricultural soils. The area surrounding Hay provide sufficient opportunity for horticultural expansion. Further horticultural expansion in the Hay LGA is constrained by flood risks, soil types, and access to water, labour and infrastructure.

Pastoral Zone

The area of the LGA beyond the three horticultural zones is predominantly used for extensive grazing and broadacre irrigation, this area will be referred to as the pastoral zone. The commercial assessment in Section 8.0 determined the minimum size of a broadacre irrigation farm is 600ha. As broadacre irrigation is the highest value use of land outside the horticultural zone, 600ha has been adopted as the recommended minimum lot size for the pastoral zone.

In recommending 600ha it is noted that:

- The minimum size of a commercial pastoral farm was calculated in Section 8.9 to be 5,750ha;
- The holding analysis indicated that 89% of the LGA is held in holdings of 5,000ha or greater; and
- According to Council's rates database, there are only 12 lots in the LGA that are 5,000ha or greater. Therefore a large minimum lot size (of this size) provides almost no future development opportunities.

In essence, a large minimum lot size of 5,750ha or even the current 1,500ha, does not provide agricultural business the opportunity to adjust, and may sterilise land against future development and does not recognise the changing face of agriculture (for example intensification of farm production).



Selecting a minimum lot size of many thousands of hectares (such as 5,750ha) is a significant disincentive to the development of intensive irrigation properties and would therefore stifle future development. Such an area (e.g. 5,750ha) conflicts with Section 117 direction 1.5 objective of “facilitate the orderly and economic development of rural lands”.

In contrast, 600ha is sufficient to provide future opportunities for growth and facilitate the entry of young farmers into the industry. 600ha also protects existing pastoral operations as a 600ha lot size is large enough for example, to carry 600 DSE which equates to 300 merino ewes, but is too large to manage as a lifestyle block without any agricultural enterprise or necessary farm equipment. The land management costs associated with 600ha including rates, noxious weed control, bush fire hazard management, fencing and general maintenance will be a significant disincentive to lifestyle or speculative development that could otherwise lead to fragmentation of land or land use conflict. However a 600ha minimum would be appropriately sized to provide opportunities for rationalisation and amalgamation of large existing holdings.

It is recognised that 600ha is significantly less than the current LEP minimum of 1,500ha. Notwithstanding, **600ha as a minimum lot size for the pastoral zone of the Hay LGA should:**

- **Be large enough to retain the capacity for efficient production;**
- **Be large enough to minimise the risk of land use conflict;**
- **Be small enough to retain future development options including entry by young farmers; and**
- **Be appropriately sized to ensure that typical enterprises suitable for the Hay LGA are profitable over the longer term.**

A 600ha minimum lot size is not expected to unduly influence land prices as a result of development speculation and/or of life-stylers but will reduce the potential of land fragmentation and land use conflict.

A 600ha minimum lot size will facilitate economic development via the entry of new industries such as intensive animal production providing sufficient land for infrastructure with provision for buffers, but not being so large as to prohibit such operations establishing in the LGA.

While this Strategy recommends 600ha as a minimum lot size in the pastoral zone which should be implemented through Council's new LEP, it is recommended that Council monitor and review the impact of this changed minimum lot size. This review should consider the objectives of the various Rural Planning Policies and the impact that the proposed 600ha minimum lot size has had on agriculture in Hay since introduction. This review should be conducted within a 5–10 year time frame after the gazettal of the new Standard Instrument LEP.

This Strategy, Rural Lands Analysis and recommendations for minimum lot size are consistent with the Rural Subdivision Principles and Rural Planning Principles of the Rural Land SEPP as shown below.

Rural Subdivision Principles

The Rural Lands 2008 (SEPP) include five subdivision principles which are relisted in Section 5.3.3. The recommended minimum lot sizes comply with these principles as follows:

- *“The minimisation of rural land fragmentation”.* The recommended areas of 90ha for the horticultural zone and 600ha for the pastoral zone are large enough to discourage lifestyle and/or speculative development, thereby the minimising of the potential for rural land fragmentation;



- *“The minimisation of rural land use conflicts, particularly between residential land uses and other land uses”,* the recommended minimum lot sizes are sufficiently large enough to minimise the potential for lifestyle development that may conflict with agricultural land use. The recommendation of two different minimum lot sizes for different sections of the LGA based on current agricultural practices, recognises the predominant industries/land use within these portions of the LGA;
- *“The consideration of the nature of existing agricultural holdings and the existing and planned future supply of rural residential land when considering lots sizes for rural lands”.* The recommended minimum lot sizes have been based on existing agricultural production and agricultural holdings. The planned future supply of rural lifestyle land is described in Section 14.5 of this report and has been specifically targeted at land identified as good agricultural land (Section 10.1) rather than prime agricultural land;
- *“The consideration of the natural and physical constraints and opportunities of the land”.* The recommended minimum lot sizes have been made taking into consideration the physical resources available that underpin agricultural production. For example, the recommended pastoral zones minimum lot size is based upon the premise that current broadacre irrigation development is fragmented across the LGA and provides a significant proportion of the agricultural holdings within the Hay LGA the opportunity to intensive their production via irrigation.
- *“Ensuring that planning for dwelling opportunities takes account of these constraints”.* The opportunities for new dwellings have been considered in the derivation of the recommended minimum lot sizes. For example, the horticultural zone minimum lot size is based upon detailed analysis of the area which is capable of supporting a single family unit allowing. Even though these areas are located in close proximity to Hay the recommended minimum lot size does not take into account the potential for off-farm income.

Note: sections in italics are taken direct from Rural Lands (2008) SEPP.

Rural Planning Principles

The Rural Planning Principles and their relevance to this Strategy have been discussed earlier in Section 5.3.3. This discussion is reproduced below to illustrate how the Principles have been followed in the Rural Lands Analysis conducted and the minimum lot size recommendations made for Rural Lands in the Hay LGA.

(a) *The promotion of protection of opportunities for current and potential productive and sustainable economic activities in rural areas.*

Current rural land use activities in the Hay LGA have been identified through a number of mechanisms including stakeholder consultation and desktop assessment. The Project Team has liaised and consulted with key stakeholder groups including agencies such as DI & I, services providers and landholder representatives.

Rural resources have been identified through stakeholder consultation, desktop assessment, and constraints analysis. This includes irrigated and non-irrigated agricultural land uses, forestry and extractive industries, all of which contribute to the local, regional and state economy. Because planning controls need to be flexible to provide opportunities for changes in agriculture, existing industries and potential economic activities, the project assessment has included an analysis of agriculture and the changes and trends impacting agriculture including those likely to impact in the future.

Holdings analysis has provided further information on land sizing requirements to sustain viable economic activities. Lot sizes recommended considered current and potential productive and sustainable economic activity. A number of minimum lot sizes have been recommended to facilitate key agricultural industries, to protect productive agricultural resources and facilitate agricultural investment.



(b) Recognition of the importance of rural lands and agriculture and the changing nature of agriculture and of trends, demands and issues in agriculture in the area, region or state.

Agricultural economic activities in rural areas contribute significantly to the local, regional and state economy. In 2006/07 it was estimated that agriculture contributed \$7.3B to the economy of NSW and without the impact of drought the value of agricultural commodities that would have been produced in Hay has been predicted at \$99M. This Strategy has identified agriculture as one of the most significant contributing factors to the local economy and one of the key drivers of economic prosperity to the community.

In Hay, trends impacting agriculture include:

- Irrigated cropping systems;
- Intensification of cropping systems;
- Water use efficiencies;
- Pastoral production trending away from wool to meat production;
- Growth in off-farm income with average off-farm income in the Riverina being estimated by ABARE at \$20,000 per annum; and
- Drought impacting trends.

Planning for rural areas should recognise these trends and changes to agriculture and their impact on farm sizes, sector restructuring, changing farm practices and productivity and provide appropriate controls through planning to facilitate future agricultural development.

The Hay Strategy has considered the changing nature of agriculture and the trends, demands and issues impacting it. The Strategy recognises social, economic and environmental aspects which impact on how agricultural operations are currently conducted and land use activities managed. While some of the aspects impacting agriculture in the Hay LGA are unique, many aspects are similar to those impacting agriculture in other areas. This includes greater reliance on off-farm income, greater accessibility and mobility, diversity and best farm management practices including land stewardship. This Strategy recognises planning for rural land use activity, needs to be flexible and farm adjustment facilitated to enable rural producers to cope in changing cyclic conditions including different seasonal and global conditions.

(c) Recognition of the significance of rural land uses to the state and rural communities including the social and economic benefits of rural land use development.

The proper management and development of rural areas has social and economic benefits to the local and wider community. The Strategy recognises the significance of rural land uses to the Hay LGA and recommends the protection of agricultural resources through land use zoning. The Strategy identifies the need for planned housing opportunities that do not conflict or undermine rural land use activities. Land use planning should facilitate and assist those engaged in agriculture to adapt their farming practices to cope with changing conditions, including facilitating irrigation and intensification of systems. The Strategy recognises that for agricultural industries to grow and prosper into the future there needs to be economies of scale and opportunities to diversify. The Strategy recommendations in respect to rural planning, minimum lot size and rural dwellings attempt to facilitate and provide opportunities for the development of agriculture. Without any development the agricultural sector will not be able to grow and expansion and investment opportunities are curtailed.



(d) In planning for rural lands to balance the social, economic and environmental interests of the community.

Rural lands have a range of social, economic and environmental values, including agriculture, extractive resources, water resources, environmental services, tourism, housing, conservation, landscape values and sustaining rural communities. The Strategy identifies the key assets and resources of the community and puts forward a strategic planning framework based on a balanced approach for the optimisation of community values to facilitate community sustainability in the future.

(e) The identification and protection of natural resources, having regard to maintaining biodiversity, the protection of native vegetation, the importance of water resources and avoiding constrained land.

The Strategy has identified key biodiversity resources, including natural assets to the Hay LGA. Constraints mapping has identified significant environmental values including surface water resources, (including wetlands), groundwater sources, vegetation systems and habitats, and soil resources. Through the identification of these resources, the Strategy recommends the protection of the key and significant resources (soil, water and biological) through sensitive land use planning, including consideration of land capability and suitability for development.

(h) The provision of opportunities for rural lifestyles, settlement and housing that contribute to the social and economic welfare of rural communities.

One of the key issues identified through this project has been the desire for rural lifestyle opportunities close to the river. This demand for rural housing has both social and economic advantages and disadvantages for rural communities such as Hay. Through a range of methods including multi-criteria analysis, potentially suitable sites have been identified. The options recommended includes the need to protect and conserve key natural resource systems, yet promote social and economic development opportunities including bolstering community resilience, through provision of rural housing options. If the report recommendations are adopted the community will benefit from well planned rural lifestyle development which will contribute to economic prosperity and community capacity as well as the protections, conservation and enhancement of natural systems. Minimum lot sizes and dwelling entitlements have been considered to promote a range of social, environmental and economic outcomes while ensuring the protection of agricultural resources and the minimisation of potential land use conflict.

(i) The consideration of impacts of services and infrastructure and appropriate location when providing for rural housing.

In planning for housing in rural areas, the cost and impacts to the community, councils and state government of providing access to services and infrastructure is required to be considered. The cost to local councils for basic services, such as roads, (including maintenance), water, garbage collection etc, should be a significant factor in considering rural housing opportunities in remote locations. Of relevance to the Strategy is the typical standard of infrastructure required by council to the community in rural lifestyle areas. The Strategy recommends a range of options to provide rural housing opportunities. These options include permitting dwellings on viable holdings, facilitation of dwellings for rural workers, planned residential areas in urban locations, a range of rural lifestyle hobby farms and lifestyle development areas. Development and location criteria are subject to land use demand, should avoid constrained land and not result in land use conflict and optimise social, economic and environmental outcomes.





Lot Size Analysis

In order to check whether the recommended minimum lot sizes will provide sufficient, but not excessive, subdivision potential, an analysis of lot sizes in the horticultural and pastoral zones based on existing lot sizes in the LGA using Land and Property Management data provided and summarised in Table 36 below.

Table 36: Lot Size Analysis Summary

Horticultural Zone			Pastoral Zone		
Lot Size	No	Proportion	Lot Size	No	Proportion
<90ha	2,835	89%	<600ha	9,238	94%
90 – 180ha	257	8%	600 – 1,200ha	316	3%
>180ha	101	3%	>1,200ha	317	3%
Total	3,193			9,871	

The data in Table 36 provides details of:

- The number of lots within the two recommended zones;
- The number of lots larger than the recommended minimum lot size (for each zone) but not large enough to be subdivided; and
- The number of lots that are large enough to subdivide based on the recommended minimum lot size (for each zone).

The data in Table 36 shows that the recommended minimum lot sizes provide sufficient potential for future growth. The recommended minimum sizes are also large enough to protect against fragmentation of land, land use conflict and/or impact on land values.

To test this statement maps were produced which show the spatial distribution of lots greater than the recommended minimum lot size for both zones as detailed in Table 36. These maps are provided in Annexure 28.

The maps in Annexure 28 show a distribution of lots across both proposed zones that are large enough to be provided a dwelling entitlement based on the recommended minimum lot sizes. That lots large enough to be subdivided to the recommended minimum lot sizes are predominantly located in the outer portions of the zone or LGA.

In critiquing the recommended minimum lot sizes in terms of measured risk, that is, could the recommended minimum lot sizes create undue opportunity for land use conflict or fragmentation, the context of local history and land use must be considered. ABS Census data indicates from 1996 to 2006 the number of dwellings in the LGA (both urban and rural) increased by 22 (to be 1,603 in 2006 refer to Table 3). This equates to just over two new dwellings per year. This suggests a change of minimum lot sizes from the current 1,500ha, will not lead to a significant change in the number of dwellings in rural areas.

The recommended minimum lot sizes are both large enough to provide significant surface area to act as a catchment for farm dams and not conflict with NSW farm dam and water harvesting policies.



14.5 Rural Lifestyle Settlement Strategy

In this Section 'Rural Lifestyle' means that type of development not including extensive or intensive agriculture and commonly referred to as hobby farms, Rural Small Holdings, and rural residential development. Note that the current definition of 1(c) Rural Small Holdings in the existing Hay LEP 1998 allows for a variety of uses and has in the past incorporated both agricultural uses and residential used. This Strategy recognises that the standard instrument LEP definition of Rural Small Holdings incorporates land which is agricultural in nature undertaken on smaller lots or at greater intensity. Residential development is ancillary to the agricultural use in this definition. Large Lot Residential is the term which the standard instrument adopts which relates to land uses which are primarily residential in nature carried out on larger allotments. This term is the accepted planning term to describe development referred to in this Strategy as Rural Lifestyle Development.

Rural lifestyle settlement strategies should be developed according to regional planning principles and accepted processes.

Regional planning principles for inland NSW as identified by NSW DoP (2001) are based on the precepts of:

- Creating stronger rural communities where quality of life is enhanced;
- Fostering prosperous and diverse communities;
- Promoting social justice outcomes; and
- Caring for natural resources and cultural assets.

Principles have been identified to guide supply, location, subdivision design and lot size for rural lifestyle development as shown in Table 37.

Table 37: Principles for Rural Lifestyle Development

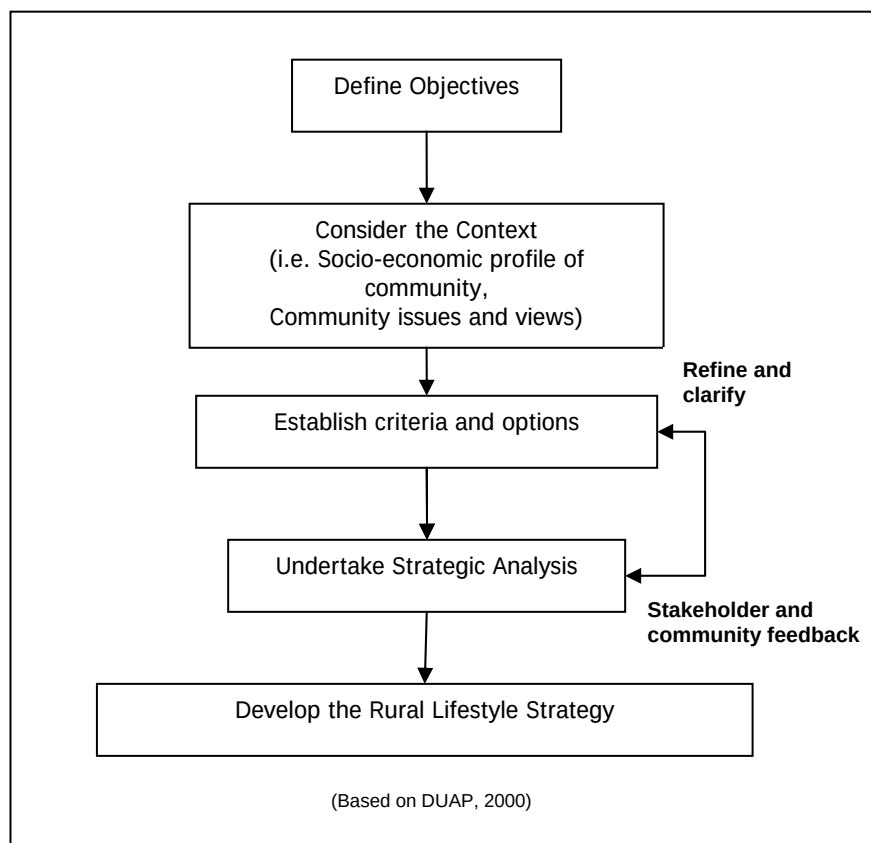
Aspect	Principle for Consideration
Supply	▪ Require a statistical basis; ▪ Consider population trends guided by a land monitor; ▪ Provide lifestyle choice; and ▪ Support rural communities.
Location	▪ Consider land suitability and land capability; ▪ Minimise land use conflicts; ▪ Consider impacts on sustainable agriculture; ▪ Consider water resources; ▪ Conserve biodiversity; ▪ Create liveable communities; ▪ Consider existing infrastructure; and ▪ Consider community well-being.



Aspect	Principle for Consideration
Lot Size	▪ Use land sparingly; ▪ Consider proximity; ▪ Consider adjoining uses; ▪ Adjust for landscape; and ▪ Adjust for lifestyle.
Subdivision Design	▪ Encourage site analysis; ▪ Consider lifestyle options; ▪ Care for the environment; ▪ Optimise character and amenity; ▪ Manage risks; ▪ Manage interface conflicts; and ▪ Identify servicing requirements and desired outcomes.

The recommended process for the rural lifestyle strategy is shown in Figure 65.

Figure 65: Rural Lifestyle Strategic Process





14.5.1 Objectives

The objectives for Hay LGA Rural Lifestyle Settlement Strategy are to:

- Take into account the views of all stakeholders including government agencies and the community in formulation of the strategy and allocation of areas;
- Provide for a range of lifestyle opportunities to cater for the existing and future population of the Hay LGA;
- Ensure that areas are reflective of the range of community values and satisfy community needs and expectations;
- Ensure lifestyle solutions contribute towards economic prosperity; community capacity and ecological integrity and do not undermine Hay LGAs future sustainability.
- Ensure that supply and location of rural lifestyle allotments are appropriate, taking into account potential demand, the need to protect and enhance community values and assets, existing constraints and potential servicing arrangements; and
- Prescribe planning criteria to optimise rural lifestyle opportunities including location, design, lot size, building envelope and servicing requirements;

14.5.2 Context

To plan appropriately for rural lifestyle development it is necessary to understand the context for planning. This means appreciating the socio-economic profile of the Hay LGA community, understanding the issues and drivers impacting the community and planning appropriately. The socio-economic profile of the community has been identified in Section 4.0 and values, visions and issues presented in Sections 11.0 and 13.0.

Key issues are:

- The Hay LGA population is predicted to decline to a mid-range of 2700 persons by year 2040;
- The majority of population loss is expected to come from the rural area;
- Occupancy rate is expected to decline in accordance with state trends from 2.51 in 2006 to 2.38 persons per household by 2036; and
- The current average household vacancy rate is 15%.

The primary finding through community engagement in respect to rural lifestyle development is that there is a demand for rural lifestyle opportunities. Throughout the Project, Council has expressed a desire to provide rural lifestyle opportunities, with land adjoining or in proximity to the Murrumbidgee River being the preferred location because of its amenity and values.

Location Criteria

Criteria can be selected to guide the location of rural lifestyle areas. The following table list aspects for consideration in promoting a balanced investment in sustainability and optimising outcomes to achieve objectives for economic prosperity, community capacity and ecological integrity.


Table 38: Location Criteria Objectives

Objectives			
CRITERIA	Ecological Integrity	Economic Prosperity	Community Capacity and Resilience
	Soil type and slope	Agricultural land capability	Relationship to existing urban and rural settlement
	Flood liability	Existing agriculture	Urban expansion areas
	Bushfire hazard	Existing rural holding pattern	In-town community services and facilities including schools
	Remnant vegetation	Future agriculture	Water availability
	Natural corridors linking large patches of bushland, creeks and waterways	Existing rural industry and impact areas	Town water and sewerage network
	Threatened species	New business/employment opportunity areas	Other public utility infrastructure
	Koala habitat	Known mineral resources	Travel time/distances to centres or towns
	Catchment health	Routes to mines or timber plantations	Existing road access and capacity
	Salt affected and susceptible land	Tourism assets	Sites of Aboriginal and other cultural heritage significance
	Recharge areas	Retail network	Public/private land ownership
	Groundwater		Rural landscape character
	Drinking water catchments		
	Contaminated land		
	National parks and reserves and their surrounds		

Source: Fig 3 DUAP, (2001)

For the Hay LGA, locational criteria listed in Table 38, has been refined taking into account the following aspects:

- Hay socio-economic profile (Section 4.0);
- Biophysical aspects (Section 1.0) and constraints (Section 9.0);
- Community values and assets (Section 10.0); and
- Environmental risk assessment criteria as well as considering the precautionary principle and the principles of ESD.

Locational criteria has been developed with the objective of avoiding major constraints and promoting opportunities for balanced investment in community sustainability and is in accordance with the Regional Planning Principles of the Rural Lands State Environmental Planning Policy.


Table 39: Broad Locational Criteria Hay LGA

Avoid (ideally)	Prefer	Consider Opportunities
Productive Agricultural land;	Sealed road access;	Provide growth opportunities;
Flood liable land;	Reticulated water ;	Promote habitat connectivity;
Bushfire prone land;	Within 15km Hay urban area;	Improve catchment condition;
Groundwater vulnerable areas;		Promote awareness and conservation of natural and cultural values;
Known mineral/extractive deposits;		Energy and water conservation;
Increasing basic landholder riparian rights;		Rehabilitate degraded land, water and biological resources and systems.
High value conservation areas;		
High value natural and cultural assets;		
Contaminated areas;		
Threatened species populations and communities;		

These broad locational criteria are useful as a first step in defining the location of potentially suitable areas for rural lifestyle development. Modification of these might be required dependent on further strategic analysis.

The 15 kilometre zone alluded to in Table 39 relates to access to the town of Hay for proximity to services. It also coincidentally aligns with the recommended horticultural zone for minimum lot sizes. To avoid any potential conflict between Rural Small Holdings and horticulture, Rural Small Holdings will be targeted in areas that do not have prime agricultural soils as referred to in Section 10.1.

14.5.3 Supply and Demand Analysis

Demographic and housing trends over the planning horizon have been discussed in Section 4.0 in relation to socio-economic context and the key indicators have been identified in Sections 4.9 and 14.5.2.

Existing Rural Small Holding Supply

Hay LEP 1998 provides for the existing 1(c) Rural Small Holding Zones, which allows for a minimum lot size of 2ha.

Existing 1(c) Rural Small holding zones are shown in Figure 66. A land use survey of the Rural Small Holdings zone was conducted in January 2011 and results are depicted in Figure 67. Annexure 28 contains data on existing holding and allotment sizes as well as dwellings and vacant lots. The land use survey and Figure 66 shows that the majority of development is associated with agricultural land use activity.

Figure 66: Existing Rural Small Holding Zones



Land Use

- Cropping
- Horticulture
- Lifestyle
- Rural Industrial
- Vacant

Roads

- Highways
- Arterial Roads
- Local Roads
- Major waterways
- Cadastre

Land Use Survey Rural Small Holdings

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Drawn Date: 11/01/2011
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 Project: H.C. LEP Review
 Revision: 10/04/2011

0 0.25 0.5 1 Kilometres



The existing rural small holding zone is located to the north of the Hay urban area. It includes a significant part of the Hay PID which extends further to the northwest of the existing small holding zone. Preliminary analysis of the 1(c) boundary identifies an extensive area of land has been allocated for small holding development. The extent of this area is appreciated when considering the adjacent and smaller area constituting the Hay Township. In view of the size of the Hay PID and the small holding area there appears to be little justification for its extent.

“Hay irrigation trust was constituted under the Hay Irrigation Act, 1892, which vested approximately 17,147 acres of land in Hay Municipal Council to enable the construction of works for water conservation and irrigation and to lease such lands. The purpose also included provision of infrastructure and communication.

Infrastructure provisions included the establishment and management of facilities essential for the support of a community. It included communication, historically, postal or telegraph, roads, transport, energy, water supply and sewerage including public buildings.

The Hay Irrigation Amendment Act, 1895 reduced the schedule of land vested in the Hay Irrigation Trust by excluding the whole of the land on the southern side of the Murrumbidgee River and the land with the town boundary on the northern side. Subsequent repeal and amendments substituted three locals and three officers of the public service to oversee the area instead of the local council. The Trust was dissolved in 1912 and the area was administered by the then Department of Agriculture and subsequently the Water Conservation and Irrigation Commission (WCIC). It was privatised in 1989.”

Source: State Record Archives

Plate 1: Hay PID



In the period before refrigeration part of the purpose of the PID was to provide an irrigation area to support local dairy production. The northern small holding area in the PID has historically been associated with the more remote property owners of the district. A review of the holding, land use and ownership data indicates there has been a shift in PID ownership patterns. It is estimated that only 15% of holdings currently remain associated with extensive agriculture, and 85% of holdings appear to relate to rural lifestyle areas with reliance upon off farm income.



This shift in PID ownership patterns is not considered to be associated with the gazettal of Hay LEP 1998 but has been a gradual transition since the establishment of the irrigation trust in the late 19th century driven in part by the development of road transport and refrigeration. The small relative holding sizes and the associated (general) water security has facilitated the take-up of blocks for quasi-agricultural and industrial activities.

The small holding zone located to the west of Hay contains a few dwellings as well as some light industrial land use. None of this area is currently being used for horticultural production, though there is significant horticulture to the north and west.

Current production within the PID should not be considered representative of the area's future potential. The size and layout of the PID coupled with its general security entitlements means it is not efficient to irrigate within the PID in years of low general security allocations as experienced in recent dry years (refer to Figure 33). Based on future allocations of 60%, the Hay PID will be able to support significant annual pasture and crop production into the future. The annual style of production found within the PID provides flexibility that allows the PID to adapt to available water rather than be dependent on a fixed annual supply. This scalability will in part ensure the sustainable future of the PID.

These two areas represent the extent of Hay LGA existing formal small holding zones. This includes the remainder of the Hay PID and the villages of Maude and Booligal which due to their distance from the Hay CBD area have not been analysed further.

The existing small holding supply for the Hay LGA is indicated in Table 40.

Table 40: Existing Rural Small Holding Supply

	Site	Total Land Area (ha)	No of Private Holdings	No of Lots	Average Small holding Size (ha)	Median Small holding Size	No of Existing Vacant Lots	No of Lots with Dwelling(s)	Potential Maximum Lot Yield	Potential Additional Dwelling for Existing Lots
Formal Area	North Hay and West Hay	1,085	102	177	10.7	5.4	123 (19 Crown; 103 Freehold)	55	252	57
De Facto Areas	Hay PID (Remainder)									
	Village - Maude									
	Village - Booligal									



Spatial analysis and a review of small holding data indicate the following:

- The existing small holding zone comprises 1085ha, including 102 separate holdings and consists of 177 lots;
- 15% of existing holdings are understood to be associated with extensive agricultural pursuits;
- 46 holdings comprising 123 lots are currently vacant;
- 55 of the 102 holdings contain a total of 60 dwellings; 52 holdings having a single dwelling, two holdings have two dwellings and one holding with three dwellings;
- Vacant land comprises 505 ha or 46 holdings; 13 of these are less than 2ha in size; and
- Of the 122 vacant allotments within the 1(c) zone 65 lots are less than 2 ha in size leaving 57 lots potentially able to be developed with a dwelling (with no regard to existing holding provision).

Rural Lifestyle Demand

Rural lifestyle demand can be estimated by both quantitative and qualitative means.

Quantitative assessment of demand can be estimated by:

- Review of previous rural lifestyle development take-up rates and trends;
- Estimation of existing rural/urban/rural lifestyle split and projecting this into the future with upwards and downwards adjustments to account for other impacting forces; and
- Assessment of survey results.

Qualitative assessment of demand can be estimated through assessment through stakeholder engagement i.e. accounting for community views and stakeholder views including for instance the opinion of property agents, with upwards and downwards adjustment to take into account other potential impacting forces.

Previous Rural Lifestyle Take-up Rate

The Hay northern and western 1(c) zones are located outside of the Hay urban centre census boundary. An assessment on development approvals over a 10 year period, a review of ABS census data and Table 10 of this report indicates that from 2001 to 2006 there was a reduction in the number of total private dwellings in the rural area of Hay. The proportion of occupied dwellings and unoccupied dwellings decreased by 6% from 13% to 7%. Vacancy rates are high in the rural areas with almost a quarter of rural dwellings being unoccupied.

Since gazettal of Hay LEP in 1998 the following sales activity has occurred in respect to the existing rural small holding zones.

- From 2000 to 2009 there have been on average 1 to 2 sales per year peaking at 20 sales in 2006, however on closer inspection this sales data is impacted by significant sales associated with land tenure conversions and structural adjustment sales involving vacant holdings.



- A closer inspection of sales activity indicates that there have been no sales within the existing rural small holding areas within five of the last nine years which can be attributed to rural lifestyle take-up. Of the remaining four years the most sales activity in one year has been three.
- In view of the above and absence of intensive agriculture it might be concluded that there is minimal demand for rural lifestyle development within the existing rural small holding zones.

Projection of Rural/Urban Centre/Rural Lifestyle Split

Although an analysis of holdings data could be undertaken this would only be useful when splits are considered over several census periods. Irrespective the projected future population decline is likely to adversely impact demand.

Survey Results

As part of the project community engagement plan, a survey was distributed to the Hay LGA community (refer to Annexure 17) to obtain information on a range of aspects including future lifestyle preferences. 9.2% of respondents identified planning for lifestyle allotments as one of their three top priorities in future planning.

In the survey 7.66% of respondents (n = 20) identified that they currently live on a lifestyle allotment. However 63 or over 24% of respondents expressed a desire to live on a lifestyle allotment in 5 to 10 years time.

The survey results indicate that an underlying demand exists for lifestyle allotments.

Assuming one survey was completed per household this potential demand equates to 43 new dwellings. Taking into account a 15% vacancy rate there is a potential demand for 50 rural lifestyle allotments currently. With each residential lot requiring no more than 2ha each, a minimum area of 100ha is required to cater for this type of development without any regard for community facilities or other sustainability objectives.

Supply and Demand Conclusions

Supply and demand analysis has revealed the following conclusions:

- Substantial supply exists within the existing rural small holding zone boundaries to cater for rural lifestyle development well beyond the 30 year planning horizon of this study;
- Limited sales and development activity within the small holding zones since the gazettal of Hay LEP 1998 suggests that there may be limited interest in developing this area to its potential. It may be appropriate to reduce the existing small holding zone in this area.
- The capacity of the existing rural small holding zones to satisfy the expectations of the Hay LGA community to meet their needs for rural lifestyle development opportunities is questionable;
- A demand does exist for rural lifestyle opportunities with high value amenity;
- A minimum of 100 ha is required to satisfy an immediate projected 10 years demand for rural lifestyle development;
- An equivalent additional area should be set aside to cater for future rural lifestyle expansion purposes, should that be required, over the 30 year planning period.



There is a need to:

- Provide rural lifestyle options with improved amenity value and to reinvigorate and build economic and social capital within the Hay LGA;
- Provide urban renewal opportunities in villages to promote opportunities for growth.

Table 39 has been refined for the Hay LGA to promote the objectives of community sustainability as indicated in Table 41.

Table 41: Multi-Criteria Suitability Analysis - Hay LGA

Sustainability Objective	Aspect	Locational Criteria
Ecological Integrity	Environmentally Sensitive Land	▪ Exclude land classified as high, moderately high and moderate risk of groundwater contamination; ▪ Exclude high value conservation areas (HVACs') ▪ Exclude riparian areas (streams and wetlands) within 40m either side of the channel; ▪ Exclude prior stream and other recharge areas; ▪ Consider opportunities to promote biodiversity, landscape, connectivity and facilitate conservation of threatened species.
	Contaminated Land	▪ Exclude potential contaminated land as identified in Council's contaminated land register or advised by DECCW
Economic Prosperity	Productive Agricultural Land	▪ Exclude prime agricultural land;
	Flooding	▪ Exclude 1-in-100 year flood liable land;
	Bushfire	▪ Exclude bushfire prone land;
	Mineral and Extractive Resources	▪ Exclude areas where there are known deposits; and
	Intensive Industries	▪ Exclude existing intensive and rural industry sites.
Community Capacity	Culturally Sensitive Lands	▪ Exclude high risk areas under predictive modelling mapping (Pardoe & Martin, 2001)) or Sensitive Landscapes recently modelled and mapped by DECCW ADST; ;
	Riparian Rights	▪ Exclude any development which incurs an increase to existing landholder riparian rights;
	Access to Services	▪ Exclude areas further than 15 kilometres from Hay CBD; and ▪ Consider potential serviceability and access to services/land capability.
	Lifestyle Preference	▪ Include land adjacent to major waterways and with sealed road frontage; and ▪ Include land with an area of at least 50 – 100 ha.



Section 10.0 of this Report has provided general information in relation to the aspects mentioned in Table 41.

DECCW Sensitive Water Resources mapping identifies that high, moderately-high, moderate and low-moderate groundwater vulnerable areas exist over most of the Murrumbidgee and Lachlan catchments. For the Murrumbidgee River, high groundwater vulnerable areas exist in the Lowbidgee Floodplain area. Moderately high vulnerable areas follow the riparian zone and moderate vulnerable areas exist over good quality aquifers as well as recharge areas including prior streams. Bushfire Prone Land is also primarily associated with riparian land.

High value conservation areas include the River Red Gum Forests, Black Bow Woodlands and Riverine Grasslands. They also include threatened ecological communities such as the Weeping Myall Woodlands. Different vegetation communities are important for some have been extensively cleared and are habitat for threatened species.. Habitat conservation and promotion of vegetation connectivity are opportunities to assist in the promotion of biodiversity and the recovery of species. Sensitive landscapes mapped by DECCW Aboriginal Decision Support Tool (ADST 2010) should only be included as potential rural lifestyle sites, subject to prior cultural heritage investigation.

Landholder riparian rights accrue when a lot is created adjacent to a waterway. This can be avoided by ensuring that any development or subdivision does not result in any net increase to river lot/holding frontage.

The 15km distance to the Hay CBD was chosen as this represents approximately 10 minutes travel time. In terms of the local context and vast distances between centres, this is considered to be within proximity to existing services.

It is not considered essential that rural lifestyle development have access to reticulated water and sewerage. However the local context warrants that services acceptable to Council be made available to any development. This should include those mentioned in later in this Section.

Productive agricultural land exists over most of Hay LGA and this analysis therefore requires that productive agricultural land be disregarded because the retention of this constraint would result in the exclusion of most of the Hay LGA

Although limited flood modelling has been undertaken in Urban Hay, the floodway, flood storage areas and flood fringe areas of the LGA have to date not been modelled or mapped. On this basis any area identified through this analysis as potential rural lifestyle development sites will need to be appropriately protected against the 1 in 100 year flood event prior to any development occurring.

Multi-criteria analysis and constraints mapping has revealed that the urban area around Hay is significantly constrained and is not suitable to support rural lifestyle opportunities. This is depicted in Figure 68.



Figure 68: Hay Township Constraints

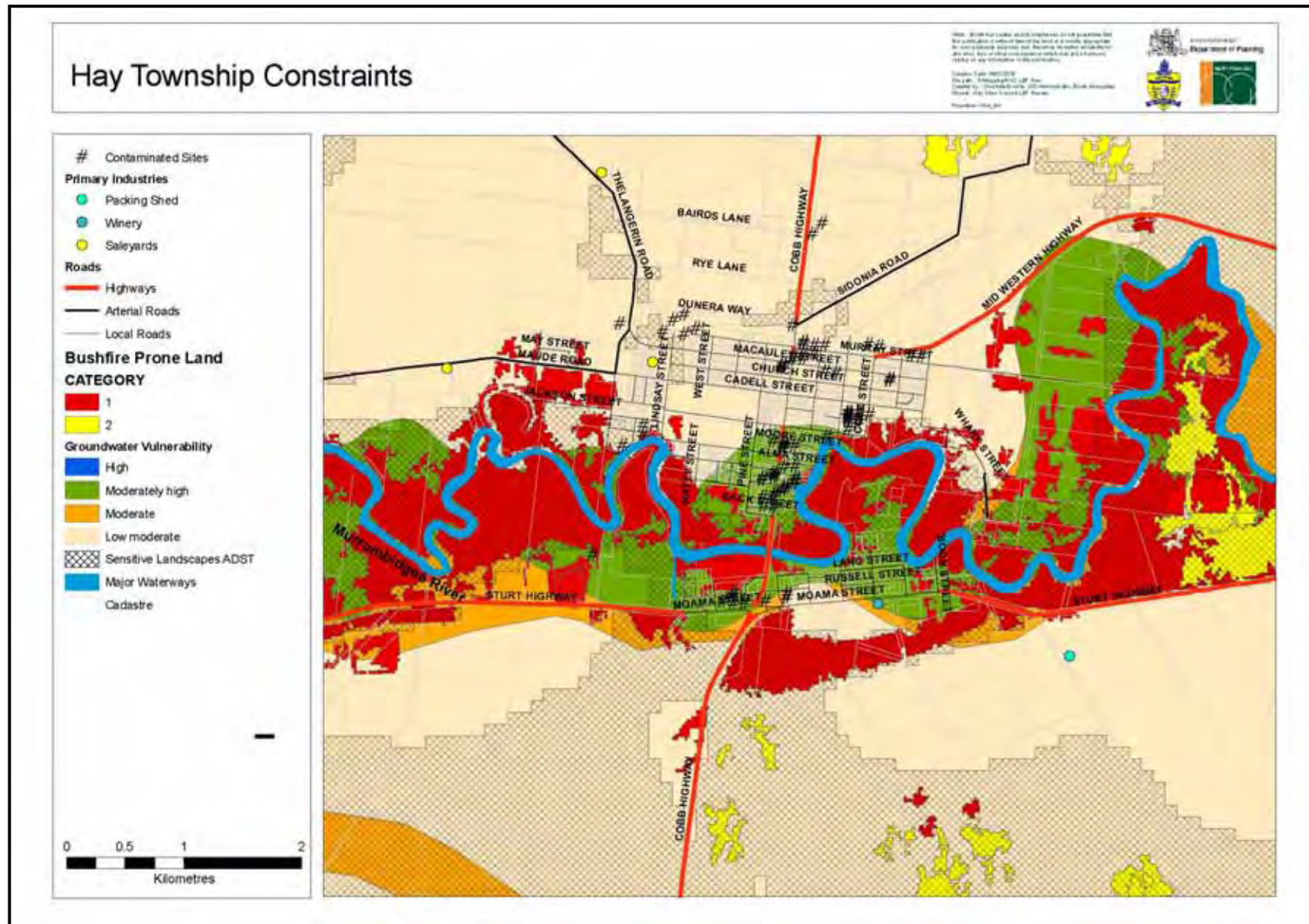




Figure 68 shows that moderately-high and moderate groundwater vulnerable areas are located adjacent to the Murrumbidgee River in urban Hay. A significant area is also bush fire prone land. These two factors alone preclude development occurring adjacent to riparian zones immediately east and west of the Hay Township.

Because of the requirement to ensure adequate separation distances from potentially offensive land uses, the location of the Landfill and two Saleyard facilities on the north western and western fringe of urban Hay also limit development opportunities and impact land suitability.

A recent development enquiry for rural lifestyle development in South Hay has been made to the Hay Council. The fringes of South Hay are not considered suitable to support rural lifestyle development because, again, a range of constraints exist. Some areas in South Hay have excellent connectivity with existing vegetated areas and Public Reserves and in view of the need to retain such connectivity there is only limited opportunity for further development, even without considering impact on threatened species.

Land north east of Cooladgerry Lagoon is currently zoned for Rural Small Holdings and is only partly developed as indicated by the Land Use Survey. Because this area is most likely situated within the floodway and is within 500m of the Saleyard, this location is also considered unlikely to be suitable for rural lifestyle development.

Figure 69 is an expanded view of Figure 68. It shows constraints within 15km east and west of the Hay CBD.



Figure 69: Constraints - 15km Radius Hay CBD

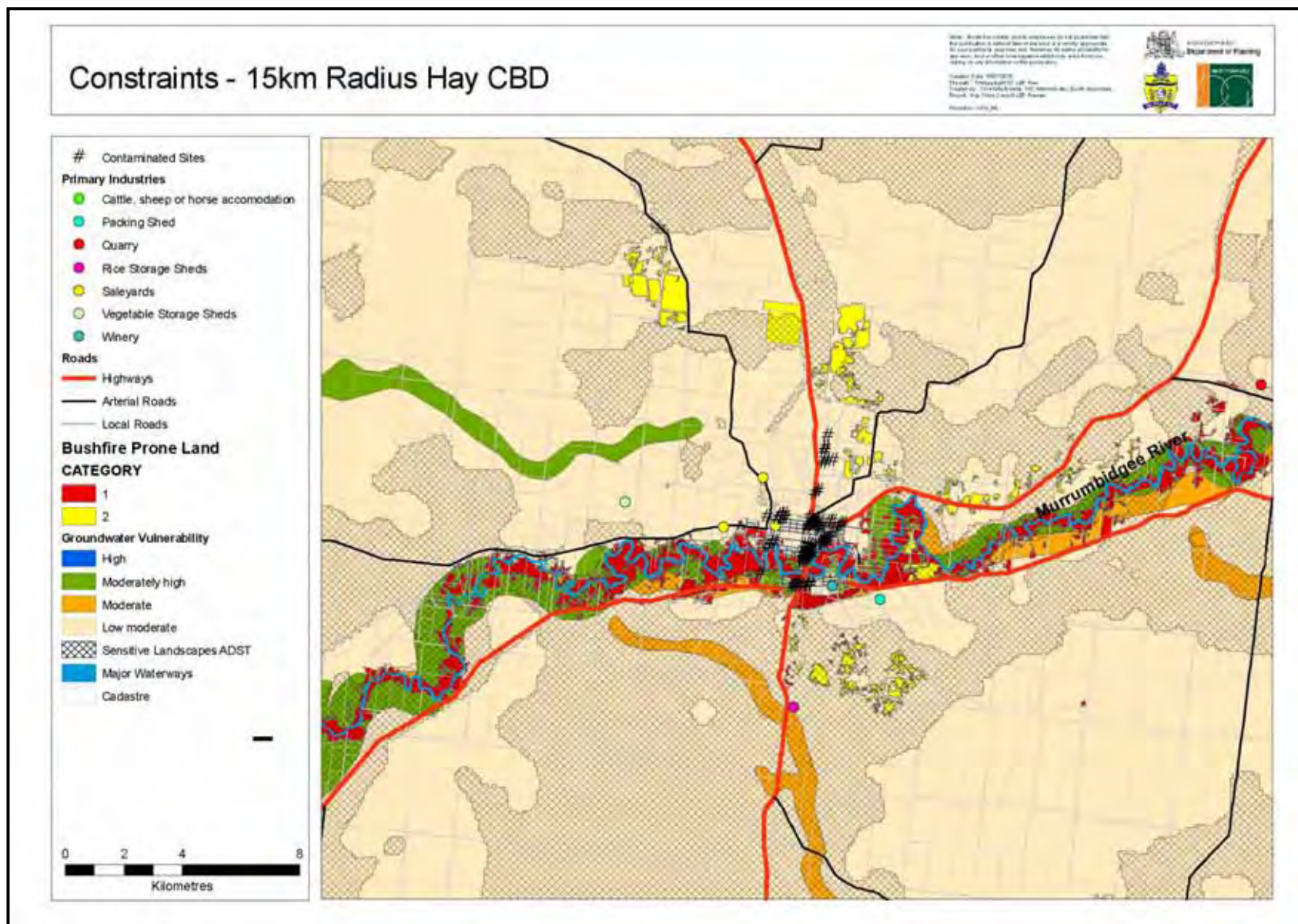




Figure 69 shows land to the west of Hay CBD is significantly constrained. There is only one possible potential site located to the west of the Hay urban area. It is situated approximately 10km west. This land is part of a large agricultural holding. An unconstrained area exists at the frontage of the Sturt Highway. This land has been developed for irrigated agriculture and it is almost 2km from the highway north to the river. High value conservation areas exist adjacent to the land.

Figure 69 shows that the most logical area to consider rural lifestyle development opportunities is to the east of the Hay CBD. This is because the eastern corridor is serviced by a main road on a major route, is not as affected by potentially offensive industries, is better situated on the floodplain and offers more options for development of unconstrained land.

Figure 70 shows constraints around the Hay Township extending to 15km eastwards. This shows that groundwater vulnerable areas and higher category bushfire prone land are associated with the riparian zone. Category 2 bushfire prone land is generally associated with woodland vegetation. The figure shows that there are three locations not impacted by high and moderate groundwater vulnerability, category 1 bushfire hazard and which are not incorporated within the sensitive landscapes modelled in ADST.

The most westerly site, located closer to Hay CBD appears to contain more significant irrigation infrastructure, is more denuded of vegetation and further away from the riparian zone but is situated close to an arterial road. The central site contains the largest area of unconstrained land. It is located centrally, situated off an arterial road, contains good potential riparian connectivity and is capable of being buffered around the entire development site. The most easterly site has good potential connectivity links to the riparian zone, is incorporated over a range of lots and is accessed from a secondary arterial road.



Figure 70: Constraints - 15km East Hay CBD

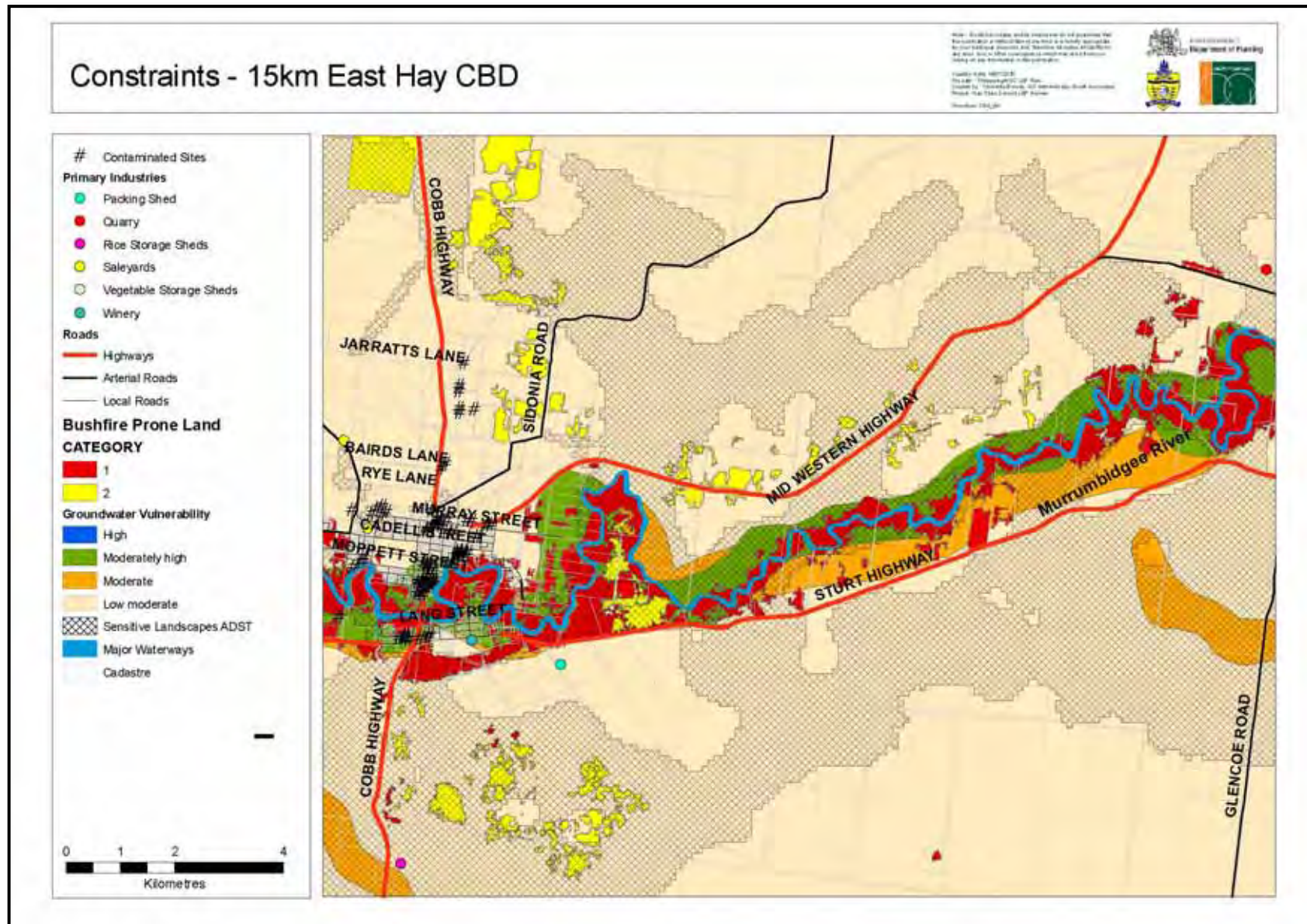




Figure 71 shows the location of HVC areas within 15km east of Hay. These areas comprise a range of community types including, Riparian Forests, Black Box Woodlands and Riverine Grasslands.

The endangered Weeping Myall ecological community is also present. This community is situated adjacent to existing crown land which is the land parcel closest to both the Mid Western Highway and the Murrumbidgee River. It is shown located near the centre of the map, a small unconstrained area except for comprising part of ADST sensitive landscape.

Figure 71 show that unconstrained land present has good linkages with existing vegetation communities. This means that opportunities to promote conservation are available and can be implemented through development.



Figure 71: HVC Areas within 15km East of Hay CBD

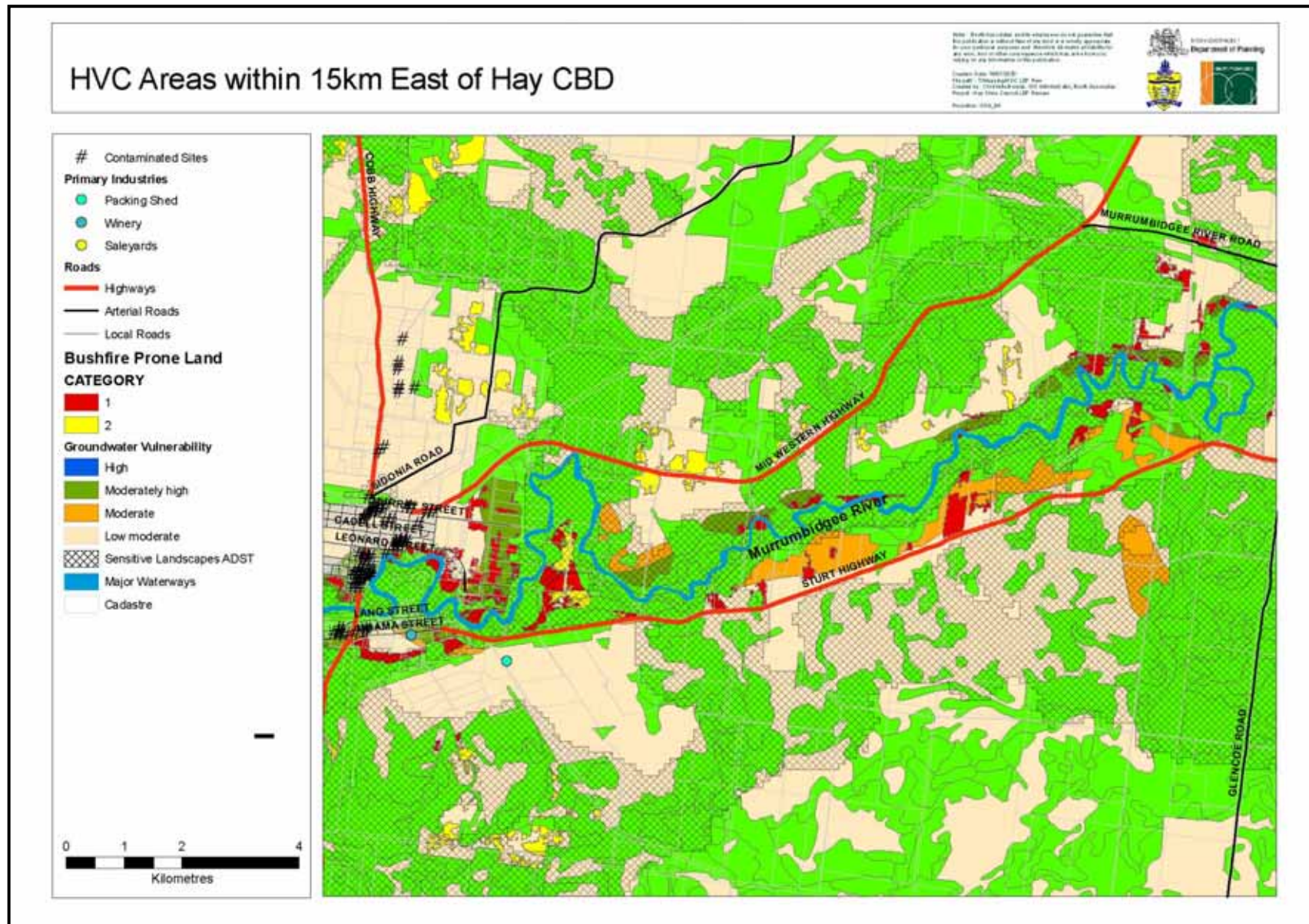
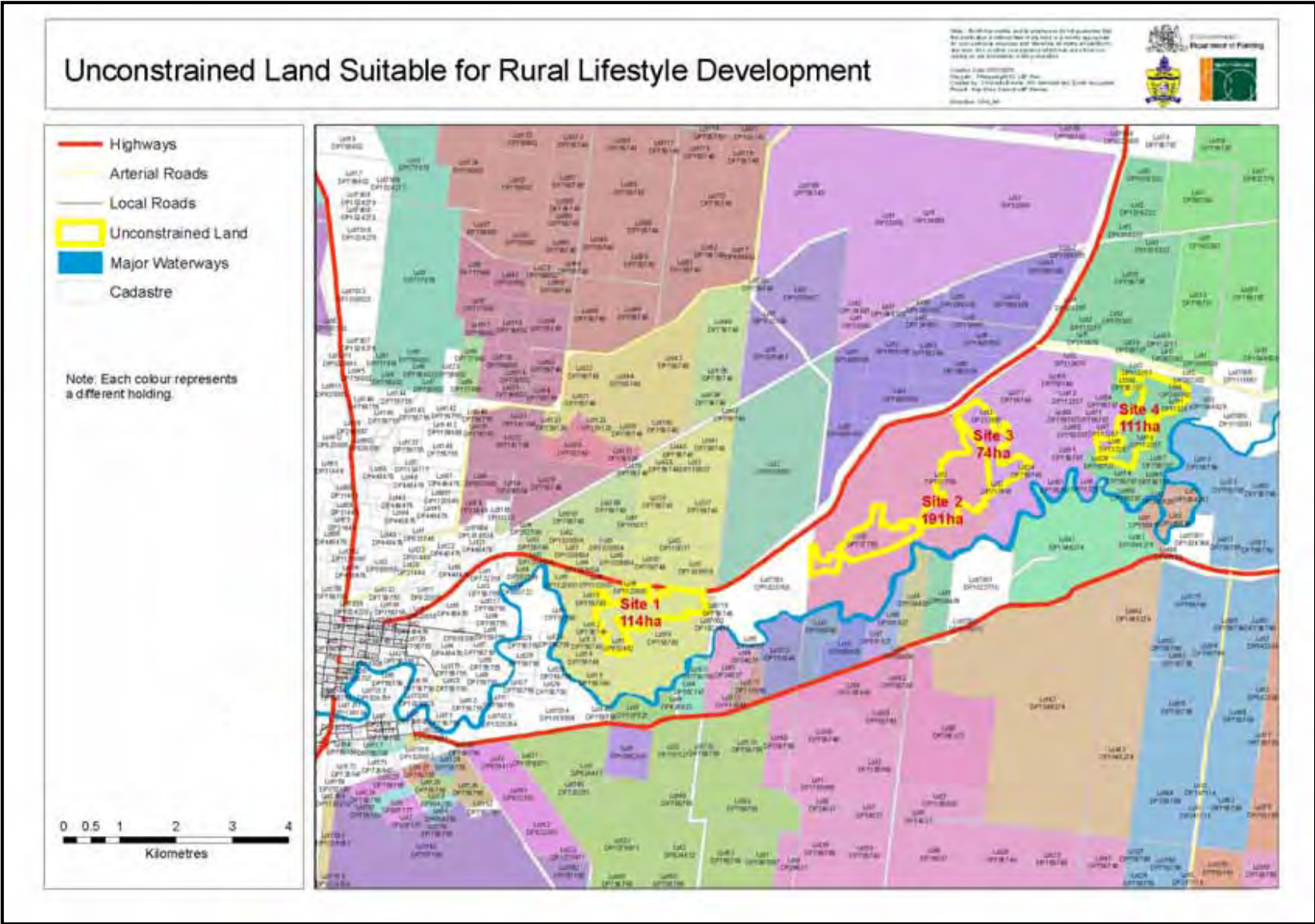


Figure 72 shows the location of unconstrained land potentially suitable for rural lifestyle development.

Figure 72: Unconstrained Land Suitable for Rural Lifestyle Development





Four potential sites are indicated and their suitability is further explored in the matrix shown in Table 42.

Table 42: Suitability Assessment Potential Rural Lifestyle Sites Hay LGA

RURAL LIFESTYLE INVESTIGATION SITES				
Aspect	Site 1	Site 2	Site 3	Site 4
Ownership	Private	Private	Private	Private
Real Property Description	Lots, 10,11,12,13 16 DP 756748; Lot 6 & 9 DP 1122601	Lots 1 & 2 DP 707768	Lots 2 & 3 DP 213681; Lot 24 DP 756748	Pt Lot 10; 11 DP 112257; Pt Lot 30, 67 DP 756787; Lot 8, 10, 11 DP 112257;
Area of Holding (ha)	> 1000	> 1000	> 1000	> 1000
Area of Unconstrained Land (ha)	114	191	74	111
Current Land Use	Irrigated agriculture	Grazing	Grazing	Grazing
Potential Lot Yield(2)	57	95	37	55
Approximate Distance from Hay CBD (km) (3)	5	9	12	14
Services Potentially Available?	Yes	Yes	Yes	Yes
Flood liable	Further investigation required	Further investigation required	Further investigation required	Further investigation required
Adjacent to Riparian Land	Yes	Yes	Yes	Yes
Cultural Heritage Assessment Required (4)	No	No	No	No
Environmental Audit Required (SEPP 55) (5)	Yes	Possible	Unlikely	Unlikely
Landscape Potential Connectivity	Yes	Yes	Yes	Yes

Notes:

- (1) From aerial imagery;
- (2) Assumes an average lot yield of 2ha;
- (3) From closest point;
- (4) If development wholly contained within nominated envelope;
- (5) Dependent on further information about site land use history.



Table 42 shows that:

- All sites apart from one incorporate at least 100 ha which is the area which has been identified as being required for rezoning to cater for a 10 year future supply;
- Only one site contains sufficient land in itself to provide for a 10 year supply and potential additional supply over the 30 year planning horizon;
- All sites have good potential landscape connectivity;
- The most westerly site (closest to town) appears to be more intensely developed, is more modified and has a greater distance from the riparian zone.

From the analysis conducted it appears that Site 2 offers the best opportunity for development because:

- It represents a less modified landscape with high quality conservation values;
- It retains riparian connectivity and potential passive access opportunities;
- It is large enough to be appropriately buffered from adjoining land uses;
- It offers both north-south and east-west landscape connectivity opportunities;
- Having greater area, it provides additional future rezoning opportunities;
- It is conveniently located close to the Hay Township and situated on the primary route to the closest regional service centre (Griffith);
- It offers an opportunity for a development envelope which would not result in disturbance to existing high value conservation areas;
- Development offsets and standards would result in significant social, environmental and economic returns to the community;
- Strategic development would not result in an increase to existing landholder riparian rights;
- The development would not require uneconomic servicing and the developer would be required to provide services to the satisfaction of the Hay Shire Council.

Additional rural lifestyle development sites were considered south of the Murrumbidgee River and west of urban Hay. Unconstrained land in these locations as well as the four sites mentioned above is shown in the following Figure 73 and the suitability of the additional sites explored in Table 43.



Figure 73: Other Potential Rural Lifestyle Development Sites

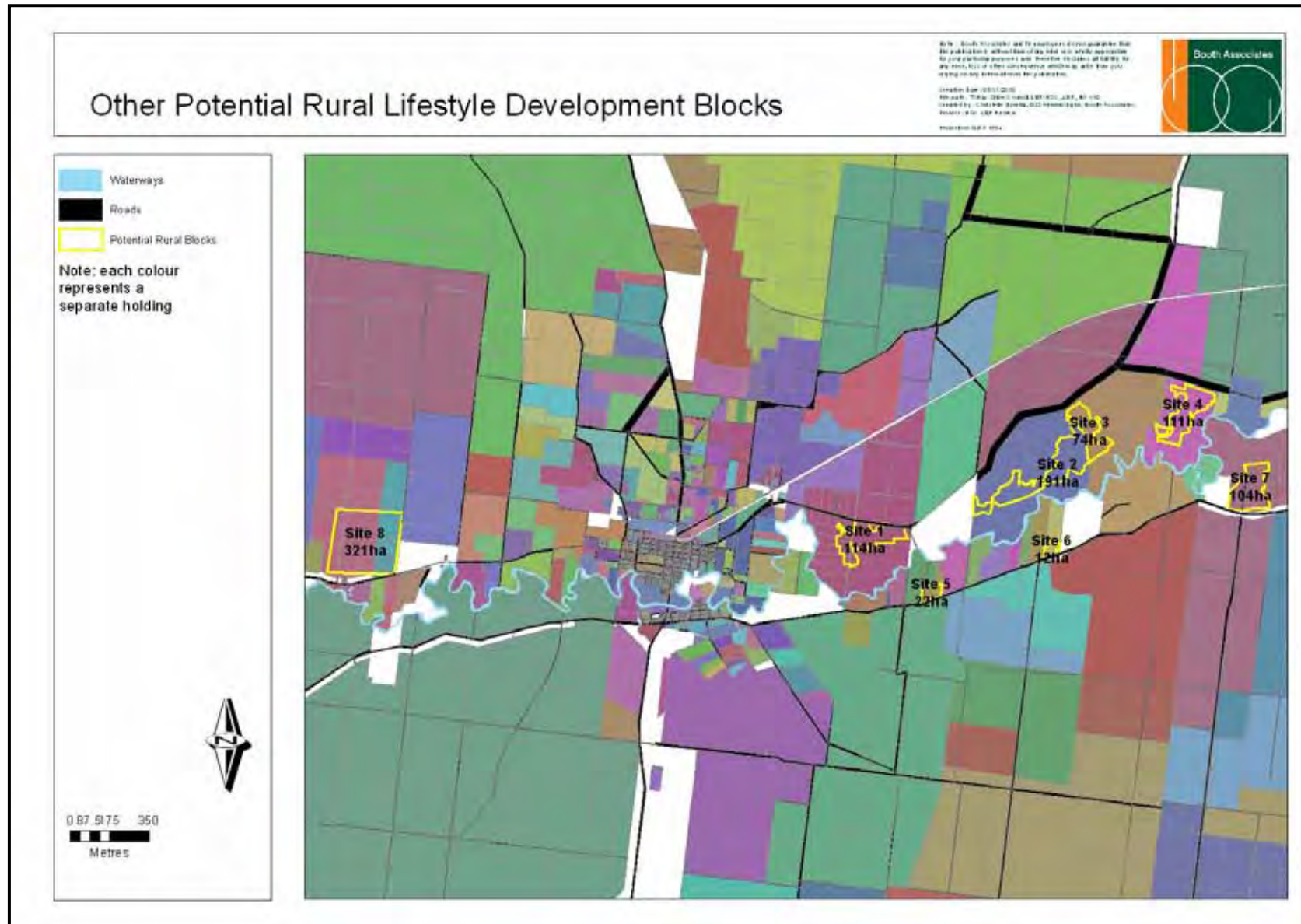



Table 43: Suitability Assessment Additional Potential RLD Sites

Aspect	Site 5	Site 6	Site 7	Site 8
Ownership	Private	Private	Private	Private
Real Property Description	Lot 111 DP 713644	Lot 5 DP 558409	Lots 12, 17, 80, 82 DP 756799	Lots 2, 3 DP 614823 Lots 2, 3, 4, 6, 39, 40, 41 DP 756764
Area of Holding (ha)	22	12	104	321
Area of Unconstrained Land (ha)	22	12	104	321
Current Land Use	Irrigated Agricultural	Irrigated Agriculture	Irrigated Agriculture	Irrigated Agriculture
Potential Lot Yield (2)	11	6	52	160
Approximate Distance from Hay CBD (km) (3)	8	11	18	9
Services Potentially Available?	Yes	Yes	Yes	Yes
Flood liable	Further investigation required	Further investigation required	Further investigation required	Further investigation required
Adjacent to Riparian Land	Yes	Yes	Yes	No
Cultural Heritage Assessment Required (4)	Potentially	Potentially	Potentially	Potentially
Environmental Audit Required (SEPP 55) (5)	Yes	Yes	Yes	Yes
Landscape Potential Connectivity	Some	No	To riparian zone	No

Notes:

- (1) From aerial imagery;
- (2) Assumes an average lot yield of 2ha;
- (3) From closest point;
- (4) If development wholly contained within nominated envelope;
- (5) Dependent on further information about site land use history.



Plate 2: Rural Lifestyle Development Locality



Council is keen to promote a strategy that:

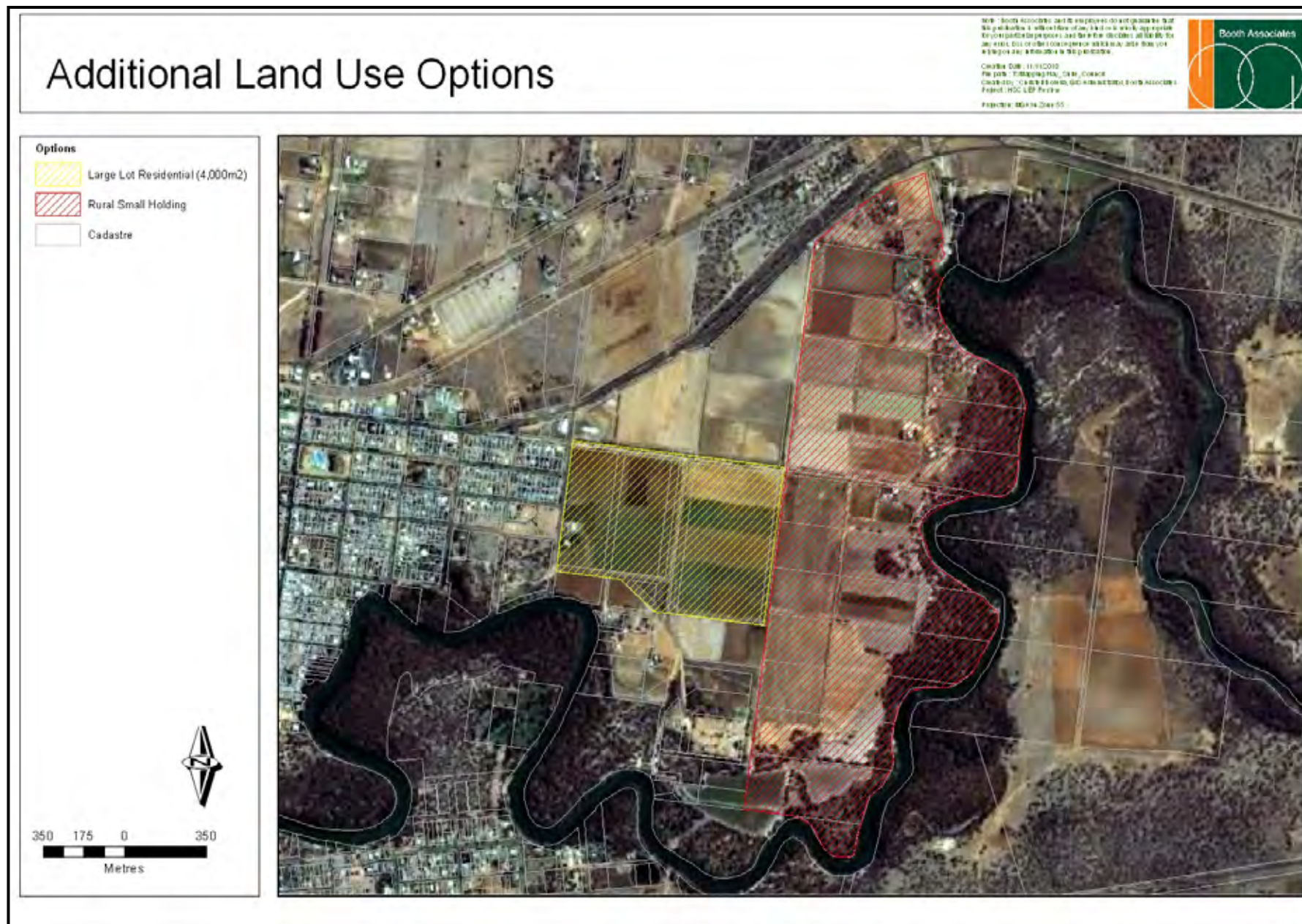
1. Offers a range of options, particularly to offset the risk of rezoned land remaining undeveloped.
2. Promotes flexibility and adaptive management.
3. Responds to the recent uncertainty about water and the proposed Murray Darling Basin Plan.

On this basis, two further land use options can be considered as shown in Figure 74 as follows:

- i. For the land east of Burke Street (identified as Option 3 in Table 43), this land be used for residential as previously identified, with the option of promoting larger lots (4000m²), to accommodate large lot residential development.
- ii. In the vicinity of the land mentioned above in the north eastern sector, the rezoning of that agricultural land for Rural Small Holdings.



Figure 74: Additional Land Use Options





Both options are worthy of consideration because they offer alternatives in an uncertain future where land use demand is difficult to quantify.

While first principles multi criteria analysis has been conducted to identify the most appropriate rural lifestyles sites to promote a range of community values, locating sites closer to town facilitates economic service provision, optimises travel convenience and provide a range of accommodation and lifestyle opportunities.

The major issues impacting the proposed smallholding area relates to flood risk and flood management, groundwater vulnerability, bush fire prone land, indigenous sensitivity, loss of productive agricultural land and HVCA. However all these factors can be potentially managed, at a cost, subject to appropriate detailed assessment, planning and management. A smallholding zone could also still facilitate the land's agricultural use. The primary issue relates to the control of basic landholder riparian rights through subdivision design so that an increase in basic landholder riparian access rights are not accrued as a result of future development. Because the land is already partially developed and a range of landholders are involved, should the land be rezoned then all these issues should be appropriately identified, assessed and managed through a detailed environmental investigation and inclusion into Council's DCP. Similarly the DCP should manage the development of land east of Burke Street, so that future redevelopment and infill opportunities of smaller lot sizes can be facilitated, should future need arise.

The incorporation of these two options into the strategy will ensure a flexible solution to promote community sustainability in the midst of a changing environment. In particular they will assist in addressing Council's concern that a limited number of rezoned sites are insufficient to manage the risk of rezoned sites remaining undeveloped due to lack of landholder interest.

Staging

100ha should be immediately rezoned for rural lifestyle development. This land should be closest to the Hay urban area. While 100ha is the identified area for the development envelope, the residue of the allotment could also be rezoned and or managed to promote its conservation values. An additional area of similar size (for example the adjacent easterly allotment) can also be identified for similar rezoning in the future, subject to demand.

A Development Control Plan should be prepared to guide the staging and development of the rezoning site following more detailed site investigations, analysis and discussions with the owner. The east-west orientation of the envelope available for development would facilitate progressive staging of the development based on demand take up rate.

Council liaise with the owners of the potential RLD sites to nominate their preferred site for development with the final site being determined after exhibition.

Council identify to owners the importance in optimising natural and cultural values and improving the condition of resources on any land to be developed.

Council determine the preferred development site(s) through market-based assessment according to the highest value social and environmental return based on owner's development intentions and commitments.





About Rural Lifestyle Development

In considering the future sustainability of the Hay LGA the provision of rural lifestyle development opportunities adjacent to a riparian area has been supported because:

- If promoted in accordance with the Principles identified in Section 13.1.9 of this report they will promote opportunities to improve social, economic and environmental values and stimulate investment to improve and potentially optimise those values;
- The promote the well being and liveability of the community by improving housing choice;
- There is a recognised demand for this type of development.

While this report recommends a first stage (up to 10 year supply) minimum land requirement of 100ha, based on assessed demand, this assumes an average lot size of 2ha. The minimum and average size of land parcels should satisfy community expectations, avoid the alienation and loss of land for other productive purposes and be of a size to facilitate sustainable development and management.

Having regard to the local context, the Murrumbidgee River provides significant values and amenity opportunities. The Murrumbidgee River has more reliable flows than the Lachlan and is close to the more populated centre of urban Hay.

However any development close to sensitive riparian landscapes require careful management to maintain values.

Potential adverse impacts on the riparian environment from urban (rural lifestyle) development include:

- Eutrophication of waterways through nutrient loadings, associated erosion and sedimentation, uncontrolled wastewater discharge and clearing of the forest canopy resulting in increased solar access and higher in-stream temperatures exacerbating risk of algal blooms, particularly during low flows;
- Introduction and/or spread of exotic weeds;
- Introduction of domestic animals (cats and dogs) can adversely impact biodiversity values;
- Increased erosion and runoff through poor siting of building envelopes and poor land management practices through clearing, compaction, reduced ground cover, inadequate soil and water management controls;
- Potential loss of riparian habitat and impact on threatened species through clearing land landscape modification adversely impacting on the structure, composition and function of biodiversity values;
- Potential decline in water quality due to increased erosion, adverse impacts to vegetation, potential toxicity through inappropriate land use activities including poor application of chemicals such as pesticides; and
- Impact on channel morphology and bank stabilisation through a range of anthropogenic impacts.





These risks can be prevented and mitigated through strategic planning and development control so that:

- The footprint of rural lifestyle development, which adjacent to the riparian zone and maintaining low impact river access opportunities has a distance separation buffer of at least 100m from any adjoining land uses and particularly the river channel;
- Building envelopes are to be of an appropriate size and be strategically situated avoiding and managing constraints such as drainage lines, bore separation from effluent disposal sites and include vegetated corridors;
- Impervious areas within development sites are minimised;
- Land use is restricted to rural lifestyle development;
- The broad scale multi-criteria constraints analysis is further supported to guide future development applications through more detailed site investigations including a land capability assessment and site analysis. Unless biodiversity certification is obtained prior, a 7 part test is required along with a SOEE and DCP which includes servicing and staging details. The DCP should identify landholder commitments and management guidelines regulating access, land use activities, domestic, stock and feral animal control, pest and weed control, environmental responsibilities and fencing. DCP lot sizes should be based on land capability particularly in respect to onsite sewage management disposal; in view of environmental constraints to optimise biodiversity outcomes and conservation gains sought; be in keeping with the expectations of the community and sized to accommodate land use separation buffers. Lot sizes should be tailored to suit the lifestyle and amenity situation being offered and in view of whether separate title, community title, rural land sharing or other contractual arrangements are proposed. Contractual measures may be required to ensure that anthropogenic impacts to sensitive landscapes are prevented or minimised, particularly the spread of exotic weeds, grazing from animals or livestock, pests and introduced species;
- Sites should be small enough so that excessive irrigation is not required but large enough to sustain on-site waste water disposal;
- Rural lifestyle development should ensure an appropriate level of services is provided prior to occupation. The following should be applied:
 - o High security water should be made available to the development through existing allocations or purchase including any contingency for fire fighting in accordance with the Rural Fires Act.
 - o Existing potable water supply through on site water tanks should be required on development.
 - o Standard utility services are required to service the development.
 - o All weather access to the site is to be made available including any maintenance arrangements to the satisfaction of Council.
 - o Riparian frontage be excluded to the development site, although passive access and conservation opportunities maintained.
 - o Water and energy conservation and reuse measures should be implemented
 - o Supplementary planting be provided north south and east west to promote aquatic, riparian and terrestrial connectivity, utilising internal and external development corridors and provide buffer separation.
- Riparian and vegetation/habitat corridors should be fenced so that stock access is restricted, while low impact passive community recreational opportunities are maintained;



- Domestic animals should be restricted to prevent predation opportunities;
- Promotion of both individual and collective community responsibility to manage and optimise biodiversity values within the development and adjacent areas is required;
- Building envelopes should be appropriately sited so that they are away from drainage lines and impervious areas within allotments are minimised.
- Within individual lots and within the total development area, endemic vegetation should be promoted through retention, maintenance and supplementation of existing vegetation and the promotion of connectivity within the development to adjacent vegetated areas;
- Priority should be given to the development of sites where owners can demonstrate a higher environmental and social return through the development and the optimisation of values;
- The future zoning of the land should relate to the special environmental sensitivities as a tool to both market and optimise development potential, lifestyle amenity and environmental returns. and
- Development should minimise the impact on natural systems, threatened species, habitat and native vegetation. Developers should be encouraged to promote and optimise biodiversity conservation outcomes through development design and standards to ensure that sensitive landscapes are protected, particularly riparian areas.

For Council in determining and selecting a preferred site for rural lifestyle development, regard should be had to social, environmental and economic returns afforded by the development or initially committed to by the developer. This process and assessment would follow the exhibition of this Draft Strategy and be based on the expressions of interest and level of commitments given by landholders to develop the site options indicated in Figure 73. Whilst multi-criteria analysis based on similar best practice outcomes was used to derive the sites identified in Figure 72, the preferred development sites from all of the options should be similarly evaluated. An example of how returns can be assessed according to qualitative measures is shown below:

Social returns can be assessed with regard to the following criteria:

- Is the site capable of meeting community identified demand and expectations?
- Does the site in its current form or in its developed form contain attributes which promote community amenity, liveability and sustainability?
- Will the site, if developed result in broader lifestyle choice and diverse housing opportunities?

Environmental returns can be assessed with regard to the following criteria:

- Would the site and adjacent environs benefit from environmental works proposed by the development? Including works to promote habitat quality and connectivity, supplementary planting, buffering, livestock and weed control, improvement to soil, water and biological health in-situ and adjacent?
- Does the development result in an acceptable ecological footprint?
- Does the development promote water and energy conservation?



Economic returns can be assessed with regard to the following criteria:

- Does the development offer an opportunity that is otherwise unavailable in the community?
- Will the development result in measures to attract and retain population or stimulate population growth?
- Will the development result in satisfactory service provision?
- To assist site selection, council may wish to engage with landholders and seek their interest in lodging tenders which demonstrate compliance with the principles identified in this report and which allow environmental benefits to be independently evaluated. Land use controls should be considered within development sites so that inappropriate activities are restricted.

Rural Lifestyle Development and Section 117 Directions

Relevant Section 117 Directions,

- 1.5 Rural Lands
- 2.1 Environment Protection Zones
- 4.3 Flood Prone Lands

1.5 Rural Lands

The objective of this direction is to protect the agricultural production value of rural land and to facilitate economic development for rural and related purposes. The direction applies when a council prepares a draft LEP that effects land within the existing or proposed Rural or Environment Protection zone or when an existing minimum lot size on land within a Rural or Environment Protection zone is impacted. If in these situations the proposal must be consistent with the Rural Planning Principles and the Rural Subdivision Principles listed state environmental planning policy (rural lands) 2008.

Comment:

The proposed rezoning of land for rural lifestyle purposes complies with Section 117 Direction 1.5 Rural Lands because of the following:

Regarding Rural Planning Principle 1 – The Promotion and Protection of Opportunities for Current and Potential Productive and Sustainable Economic Activities in Rural Areas.

This report includes an in-depth analysis of the rural context and agricultural economic activities within the Hay LGA. This analysis has been undertaken in Section 8.0 of this report. The area proposed for rezoning (a minimum of 100ha and maximum 200ha) is of a minimal size when considering the total expanse of productive agricultural land within the LGA. It is considered that the current and future productive and sustainable economic base of the Hay LGA will not be greatly impacted. The proposed rural lifestyle development area will increase housing opportunities within the rural area close to rural activities and within proximity to existing facilities. The proposal therefore will support existing opportunities.

Regarding Rural Planning Principle 2 – Recognition of the Importance of Rural Land and Agriculture and the Changing Nature of Agriculture and of Trends, Demands and Issues in Agriculture in the Area, Region of State.



This report has considered the changing nature of agriculture and the trends, demands and issues impacting agriculture in the region. Of particular relevance is the increasing reliance on off-farm income to support viable agricultural land use activities. This means that it is likely to be increasingly common in the future for one of the owners of an agricultural business to be employed off-farm. This fact, together with the enormous distances separating outlying rural activities from the Hay urban centre, mean that it is not unreasonable to allocate additional land to provide rural housing opportunities within the rural area and not necessarily adjacent to the urban centre.

Regarding Rural Planning Principle 3 – Recognition of the Significance of Rural Land Uses to the State and Rural Communities including the Social and Economic Benefit of Rural Land Use and Development.

This proposal to rezone land for rural lifestyle development recognises the significance of rural land uses to the community and the social and economic benefit of providing this type of development to support the rural economy. The provision of rural lifestyle development will provide choice to allow those engaged in agricultural production activities to live in a rural lifestyle block if they so choose without overcapitalising (the family farm). The provision of rural lifestyle development will add to the social capital available within the Hay LGA and perhaps assist in stimulating interest from those outside Hay to live on a river block, thereby stimulating social and economic benefits to the community.

Regarding Rural Planning Principle 4 – In Planning for Rural Lands to Balance the Social, Economic and Environmental Interests of the Community.

The provision of rural lifestyle development (particularly when addressing an identified demand) is an important measure to satisfy community expectations and promote the social, economic and environmental interests of the community. The proposal does this by providing for lifestyle development in a high amenity environs which is not currently otherwise provided for within the Hay LGA. The provision of this housing option may well stimulate economic development for those already living within Hay and those who might be attracted to reside there. The proposed location adjacent to a riparian corridor close to existing HVCA vegetation will result in an opportunity to improve existing biodiversity values.

Regarding Rural Planning Principle 5 – The Identification and Protection of Natural Resources having Regard to Maintaining Biodiversity, the Protection of Native Vegetation, the Importance of the Water Resources and Avoiding Constrained Land.

The area proposed to be rezoned has been carefully identified to avoid constraints. Its location has been targeted having regard to the community interest in living adjacent to a riparian environment and its convenience on a primary transport route close to the Hay urban centre. The future rezoning of this land will be required to be carried out in accordance with a DCP which provides for the protection of natural resources including maintaining and improving biodiversity by protecting existing native vegetation, fencing vegetated areas, promoting only low impact passive access to riparian zones, ensuring building envelopes are appropriately sited away from recharge areas and drainage lines and ensuring that the amount of impervious areas are minimised by promoting stock exclusion and weed control.

Regarding Rural Planning Principle 6 – The Provision of Opportunities for Rural Lifestyle Settlement and Housing that Contribute to the Social and Economic Welfare of Rural Communities.

The proposed rezoning for rural lifestyle is in accordance with this principle. It is a considered response to the identified issues impacting Hay community sustainability and the development of the land in accordance with the principles of ecologically sustainable development and to promote social, economic and environmental outcomes as mentioned elsewhere in this report, is recommended.

Regarding Rural Planning Principle 7 – The Consideration of Impacts on Services and Infrastructure and Appropriate Location when Providing for Rural Housing.



The proposed development site will be adequately serviced as previously discussed.. Services will include sealed access to the development site as well potable water will be provided by provision of on-site tanks. Irrigation water will be provided from existing allocation of the owner or alternatively by acquisition on the water trading market. Volumes required will be sufficient to support household and domestic use as well as contingency fire-fighting provision. There will need to be on-site wastewater disposal of at least secondary treatment and it is considered that enviro-cycles are particularly suitable to this area. The development site is located within 15km of the Hay urban area and therefore local facilities are available within a 10 minute drive. The site is located on the major Hay-Griffith route which means that the convenient access to regional service facilities is able to be achieved.

Regarding Rural Planning Principle 8 – Ensuring Consistency with any Applicable Regional Strategy of the DoP or any Applicable Local Strategy Endorsed by the Director-General.

The rezoning of land for rural lifestyle development is a significant theme that has been recommended within this report. The provision of such rural lifestyle opportunities has been identified as a fundamental community concern and is considered significant to the continued sustainability of the community because of its potential direct and indirect impacts to social, economic and environmental outcomes which can support the community into the future.

The proposed rezoning for rural lifestyle development is in accordance with the rural Subdivision Principles as indicated:

1. The Minimisation Of Rural Land Fragmentation.

This issue of rural land fragmentation has been discussed earlier in this report. The allocation of 100 ha, or in the future potentially 200ha, for rural lifestyle development is not considered to have a significant impact on the total productivity of rural land within the Hay LGA. The preferred sites are generally used for grazing and have a lower land capability than prime agricultural land. Land fragmentation will not result from the proposed rezoning because the sites comprise part of larger agricultural holding which are potentially able to accommodate the development without adverse impacts and uncontrolled subdivision and development is not proposed.

2. The Minimisation of Rural Land Use Conflicition Particularly Between Residential Land Uses and Other Land Uses.

- The rezoning of land for rural lifestyle development will not result in rural land use conflict between residential and rural land uses because the development can be entirely appropriately buffered and spatially separated between adjacent land uses.
- Note: the DCP that is recommended to be prepared to guide the development of this site will include the protection and reinforcement of existing vegetation buffer surrounding the proposed subdivision which will also improve biodiversity values and creates land use separation as a buffer to the adjoining agricultural holdings.

3. Consideration of the Natural and Physical Constraints and Opportunities of Land.

The development area has taken into account the existing constraints that exist within the Hay LGA and generally unconstrained land has been identified as being potentially suitable for rural lifestyle development. As well the biophysical attributes of the site and the natural assets that exist on the land and on land surrounding the site including the adjacent riparian areas, have been identified and a range of land use activities and development controls are proposed to be implemented to improve catchment condition and promote the values and assets of the site.



4. *Ensuring that Planning for Dwelling Opportunities Take Account of Those Constraints.*

Prior to the rural lifestyle area being developed it is recommended that a development control plan be prepared to ensure that dwellings are appropriately located having regard to natural and cultural constraints and taking into account the biophysical attributes and the existing land capability as well as opportunities for improvement of those assets.

3.1 Residential Zones

The objective of this Direction is to encourage a variety and choice of housing types to provide for existing and future housing needs, to make use of existing infrastructure and services and ensure that new housing has appropriate access to infrastructure and services and to minimise the impact of residential development on the environment and resource lands. The Direction applies when a draft LEP proposes a rezoning to any existing or proposed residential zone, or where a significant residential development is permitted or proposed to be permitted. In this situation there is a requirement to:

- Broaden the choice of building types and locations available in the housing market;
- Make more efficient use of existing infrastructure and services;
- Reduce the consumption of land for housing and associated urban development on the urban fringe; and
- Be of good design.

As well any draft LEP needs to contain the requirement that residential development is not permitted until land is adequately serviced or arrangements satisfactory to the Council have been made.

Comment:

The proposed rural lifestyle rezoning is considered to be consistent with this Direction or can be justified because of the following:

- The proposal will facilitate a lifestyle development for which the community and the Council have identified a need and where a demand has been identified;
- The proposed development area will be appropriately serviced as mentioned previously; and
- The location of the site, less than 15 km from the urban centre of Hay will reduce the consumption of land for housing and associated urban development on the urban fringe which as shown in Figure 68 is significantly constrained. A DCP is required to provide guidelines for the lands sustainable development in order to ensure the promotion, improvement and/or optimisation of natural and cultural values.





15.0 FUTURE ZONING AND LAND USE

15.1 Future Zoning Direction

The future zoning for the Hay Township has yet to be resolved.

The options for zoning include the retention of the village zone for the Hay Township with the addition of a General Industrial zone to define the proposed industrial precincts in North and South Hay.

This is the preferred option because of the flexibility that it allows in the promotion of economic development.

This report has identified several aspects that should be considered in determining a future zoning strategy for the Hay Township. These aspects are:

- The Hay town centre has a strong retail/commercial core. The opportunity to conduct business activity within the CBD should not be compromised by inappropriate land uses or through leakage outside the core area. The sterilisation of land within the CBD and with frontage to primary roads such as Lachlan Street should be avoided. Redevelopment opportunities exist currently and pressures will increase in the future. The concentration of business uses in the commercial core area should be facilitated through appropriate land use planning. Higher density housing opportunities should be promoted on the fringe of the commercial core to encourage the revitalisation of the town centre (apart from shop-top housing which may be appropriate to support retail/commercial uses in the commercial core).
- Natural, civic and cultural values are important to the future sustainability of the community. Optimisation and enhancement of these values will stimulate economic development activity through tourism as well as promote social capacity and ecological integrity. These values can be eroded or degraded through inappropriate development and land use planning;
- In developing the draft SI LEP, the Land Use Matrix is a tool which facilitates the identification of land uses which are prohibited, permissible with consent or do not require consent. In terms of mandatory zoning directions, there are not significant distinctions between comparable zones in the RU, R, B IN, SP, RE, E & W zone groups. In adopting standard zones there is significant opportunity to promote flexibility in drafting the “Land Use Tables” to best suit Council.
- The application of a Village zone with a separate Industrial zone (with appropriate DCP) would not be similar to the application of Standard zones; The difference being that DCP criteria can be more easily overturned.

The ‘benefit’ of a *Village* zone is it promotes “flexible decision-making’ and provides broader options.

The disadvantages of a *Village* zone are:

- A conglomeration of mixed land uses can result throughout the town;
- Potential adverse impact on land values;
- Potential erosion of community values;
- Undermines the presentation and development of a strong and robust commercial core and industrial precinct;



- Can result in incompatible land uses and creation of land use conflict; and
- Can result in a legacy of inappropriately located land uses, thus potentially adversely impacting on community investment and potentially eroding community values.

The benefit in *Standard* zones are:

- They promote long-term community planning objectives;
- They promote certainty for developers and the community and thereby encourage investment in key areas like the town centre and industrial precincts; plus promote community values; and
- They help to avoid short-sighted *ad hoc* and what might be considered as politically motivated decisions.

The disadvantage of *Standard* zones is that they may result in a lost economic development opportunity;

By supporting the vision identified in 'Planning Elements and Future Directions (Section 13.2) this will ensure that:

- The commercial core is strengthened and promoted;
- Industrial precincts are made available, appropriately serviced and developed accordingly;
- Defined commercial and industrial zones are more likely to promote enterprise clusters and so contribute to local economic development;
- Residential amenity within residential areas is protected and maintained;
- The separation of incompatible land uses is achieved;
- Higher density housing can be promoted close to the CBD;
- Traffic flow can be better predicted and managed; and
- Investment in place management, open space networks, connectivities and civic infrastructure will not be compromised or undermined.

It is recommended that consideration be given to applying standard zones in the Hay LGA.

15.2 Future Land Use

The future recommended land use planning to support report recommendations is shown in the following Figures.

Figure 75 and Figure 76 show the future land uses for the Hay Township including special activities such as the landfill, cemetery and sewage treatment plant.



Figure 75: Future Land Use - Hay Township

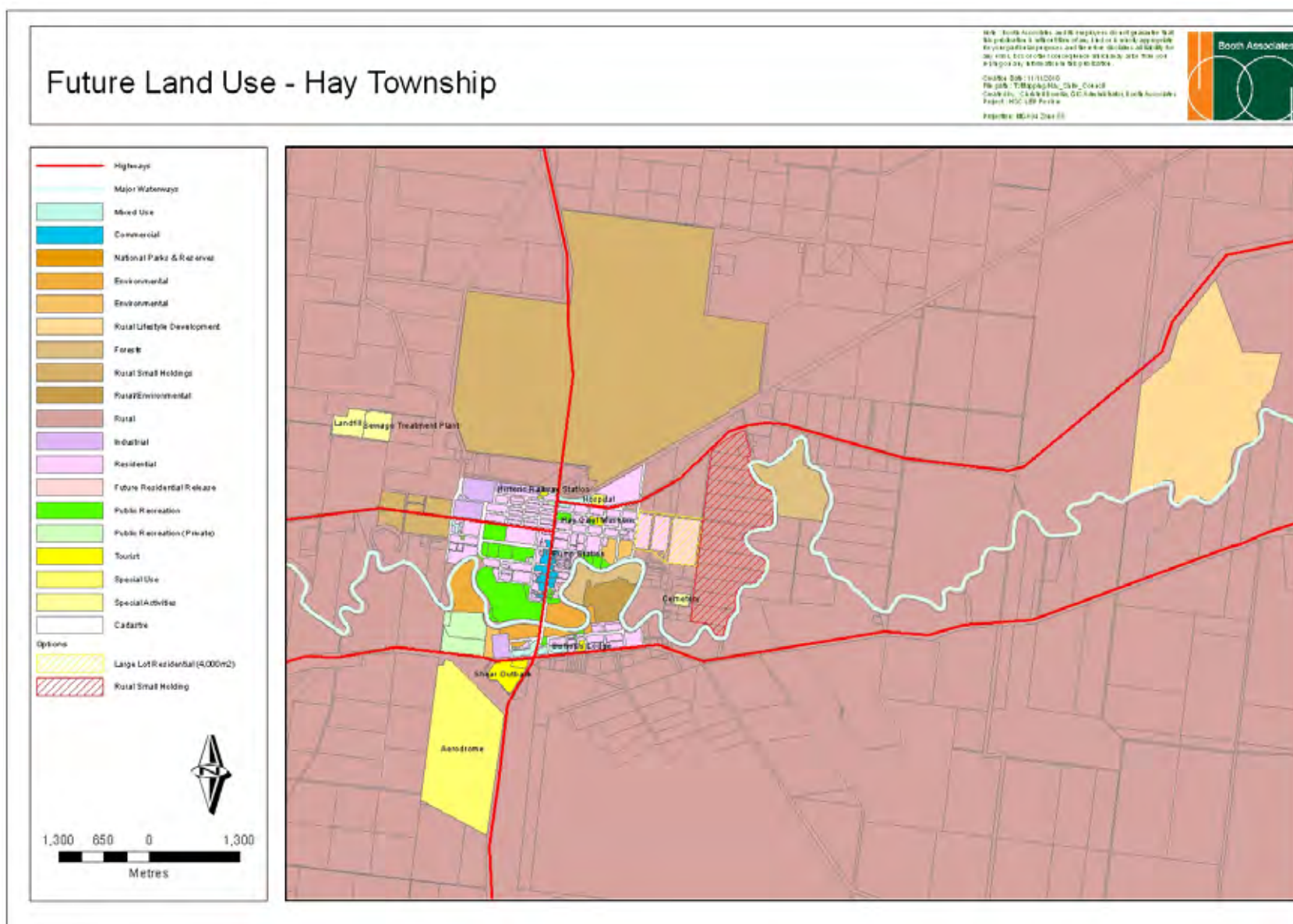
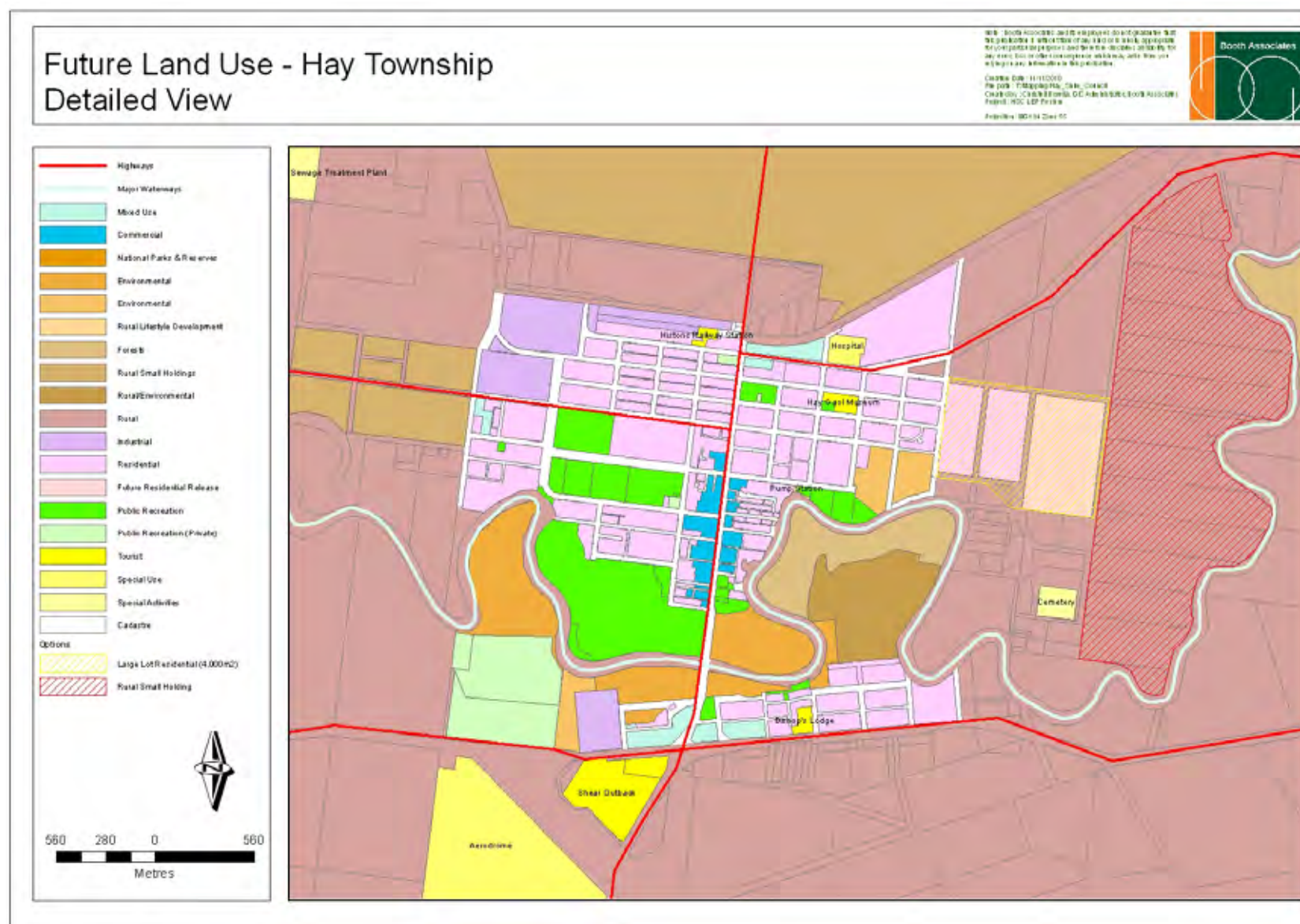


Figure 76: Future Land Use - Hay Township Detailed View





Should Council decide to resolve to maintain the existing *Village* zone, then it is recommended that the land use concepts advocated be considered within a comprehensive DCP.

Maude and Booligal should retain their existing village land use in the future. The land uses shown in the constraints maps for the existing rural smallholding areas, forest areas, nature reserves and national parks are recommended to remain the same in the future.

The Lachlan River and the Murrumbidgee River future land use should be consistent with their current waterways values.

Future land use of the Hay rural area should be consistent with its primary production values.

The recommended future rural lifestyle development site is Lot 1 DP 707768 shown as part of Site 2 in Figure 72.





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ANNEXURE 1.0

Legislative and Policy Context Tables

TABLE 1 INTERNATIONAL TREATIES, CONVENTIONS AND STRATEGIES

Commonwealth Legislation	Purpose	Relevance for Hay LGA
Asia-Pacific Migratory Waterbird Conservation Strategy 2001-2005 and the East Asian-Australasian Shorebird Site Network.	Launched in 1996 the East Asian-Australasian Shorebird Network falls under the Asia-Pacific Migratory Waterbird Conservation Strategy 2001-2005. Under this initiative one of the aims is to establish a network of the most important wetland sites used by migratory shorebirds on their annual pilgrimage to their Northern hemisphere breeding grounds and back. Today there are 29 sites on the East Asian-Australasian Shorebird Site Network.	Any wetlands within the Hay LGA should be considered for their potential to be used by migratory shorebirds and protected and managed accordingly through land use planning.
Convention on Biological Diversity (CBD)	Australia is a signatory to the Convention on Biological Diversity (CBD) which has global coverage and has as its primary aims the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising from the use of genetic resources. For Australia, the <i>National Strategy for the Conservation of Australia's Biological Diversity</i> (1996) provides the national framework for agreed actions under the CBD. Victoria, the ACT, NSW and Tasmania have developed complementary biodiversity strategies. SA uses a regional planning approach, and the NT has developed sectoral policies.	Hay Shire Council through land use planning is required to identify and conserve high value areas of biological diversity. Also through national and state biodiversity objectives Council should consider any opportunities to promote positive biodiversity outcomes in land use planning. Australia's national reserve system is managed in accordance with international conventions. In respect to recognising the need for conservation of indigenous areas in Hay shire the Toogimbie Indigenous Protected Area is a reserve managed by the Nari Nari tribal council and includes the Toogimbie aboriginal burial mounds.
Convention to Combat Desertification	This Convention aims to arrest the processes of land degradation which are brought about by factors such as overgrazing, poor irrigation methods, deforestation and climate change. The Convention aims to achieve its objectives through <i>"long-term integrated strategies that focus simultaneously in affected areas, on improved productivity of the land and the rehabilitation, conservation, and sustainable management of land and water resources leading to improved living conditions, in particular at the community level."</i>	In land use planning Council needs to ensure that land, water and biological resources are not degraded. In rural and urban planning, care must be taken to identify biophysical attributes, constraints and opportunities and ensure an integrated approach is taken in understanding land capability and its suitability over the planning horizon.
Convention on the Conservation of Migratory Species of Wild Animals. Japan/Australia and China/Australia migratory bird agreements (JAMBA and CAMBA respectively) and Apia Convention.	The Convention expects its signatories to take actions which will see the long term conservation of migratory species assured. Australia's actions under the bilateral migratory bird agreements with Japan and China and the East Asian-Australasian Shorebird Network are a significant response to our obligations under the Convention on Migratory Species. Through the Convention on Migratory Species, the CAMBA and JAMBA treaties and the Apia Convention, Australia cooperates with other countries in activities to preserve migratory bird species. Australia also participates in the multilateral RAMSAR convention which supports migratory species.	These are considerations under specific legislation including EPBC Act and TSC Act which Hay Council must consider in the assessment and determination of proposals under part 3, 4 and 5 of the Environmental Planning and Assessment Act.
Convention on Wetlands (RAMSAR, Iran, 1971)	An intergovernmental treaty that provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. It is best known for its List of Wetlands of International Importance - listing particularly important sites in all Australian jurisdictions. Australia is a contracting party to the treaty and signatories to this Convention are expected to undertake a range of actions, among them being to identify and designate those sites that qualify for being RAMSAR sites, and from then on to ensure these sites are managed so as to retain their special attributes. Signatories are also expected to <i>"..... formulate and implement their planning so as to promote as far as possible the wise use of wetlands in their territory."</i> (Article 3.1 of the Convention).	The RAMSAR list of Wetlands of national Importance does not currently include any areas within the Hay LGA. In strategic planning for the Hay LGA it is necessary to identify any potential sites that qualify for RAMSAR listing and to ensure that those sites are appropriately protected and managed through appropriate land use planning.

Commonwealth Legislation	Purpose	Relevance for Hay LGA
Inter Governmental Agreement on the Environment 1992	On 31 October 1990, Heads of Government of the Commonwealth, States and Territories of Australia, and representatives of Local Government in Australia, meeting at a Special Premiers' Conference held in Brisbane, agreed to develop and conclude an Intergovernmental Agreement on the Environment to provide a mechanism by which to facilitate: (a) a cooperative national approach to the environment; (b) a better definition of the roles of the respective governments; (c) a reduction in the number of disputes between the Commonwealth and the States and Territories on environment issues; (d) greater certainty of Government and business decision making; and (e) better environment protection. Importantly, section 13 of schedule 9 (Nature conservation) committed State governments to the establishment of <i>representative protected areas</i> in all environments, including freshwater. All sectors of government agreed to principles relating to ecologically sustainable development, precautionary principle, intergenerational equity, biological diversity, cumulative impact and responsibilities including nature conservation and stabilisation of greenhouse gases.	In land use planning for Hay there is a need to consider the various principles which have been endorsed through the agreement. In particular there is a need to ensure land is identified, developed and appropriately managed according to its attributes and values. Constraints mapping will be used to identify major constraints to develop, and sensitive land, water and biological resources.
The United Nations Framework Convention on Climate Change (UNFCCC or FCCC) and World Summit in Sustainable Development (Rio "10")	An international environmental treaty produced at the United Nations Conference on Environment and Development (UNCED), informally known as the Earth Summit held in Rio de Janeiro from 3 to 14 June 1992. The Climate Change Convention aims to address the problems resulting from the increasing concentrations of carbon dioxide and methane in the atmosphere – the so-called 'greenhouse effect'. The treaty is aimed at stabilising greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Annex I countries are required to adopt national policies and measures which demonstrate that developing countries are taking the lead in combating climate change, with the aim of returning emissions to their 1990 levels. For Australia, the major response to the obligations under the Climate Change Convention is addressed through the National Greenhouse Strategy adopted by the Commonwealth and State/Territory Governments in 1998. Various ESD principles are adopted including the precautionary principal, intergenerational equity and common but differentiated responsibilities. Some of these principles are also enshrined in various environmental planning legislation. Cities for Climate Protection (CCP) program includes local councils who wish to take action to reduce their greenhouse gas (GG) emissions. The world summit on sustainable development progressed action on the 5 themes of water, energy, health, agriculture and biodiversity. precautionary principle - where there are threats of serious or irreversible damage to the community's ecological, social or economic systems, a lack of complete scientific evidence should not be used as a reason for postponing measures to prevent environmental degradation. In some circumstances this will mean actions will need to be taken to prevent damage even when it is not certain that damage will occur. The principle of intergenerational equity - the present generation must ensure that the health, integrity, ecological diversity, and productivity of the environment is at least maintained or preferably enhanced for the benefit of future generations.	Landuse planning needs to consider ESD principles. Council needs to be proactive about preventing enironmental degradation and recognise the principle of intergenerational equity.

Commonwealth Legislation	Purpose	Relevance for Hay LGA
Agenda 21	The principle of conserving biological diversity and ecological integrity - aims to protect, restore and conserve the native biological diversity and enhance or repair ecological processes and systems. The principle of improving the valuation and pricing of social and ecological resources - the users of goods and services should pay prices based on the full life cycle costs (including the use of natural resources at their replacement value, the ultimate disposal of any wastes and the repair of any consequent damage). The 1992 <i>Earth Summit</i> held in Rio de Janeiro, Brazil, provided a global blueprint for ecologically sustainable development - <i>Agenda 21, the Rio Declaration</i>. In Australia, the <i>National Strategy for Ecologically Sustainable Development</i> was the national policy response to Agenda 21, and today there are several Australian States and Territories with Agenda 21 programs. Emerging from this conference were the three international conventions designed to provide primary mechanisms for implementing Agenda 21; namely the Convention on Biological Diversity, the Convention to Combat Desertification and the Framework Convention on Climate Change.	Council through land use planning must promote ecologically sustainable development.

A substantial part of the above has been directly sourced through:

[http://74.125.155.132/search?q=cache:Gs1qN4To_SUJ:www.ids.org.au/~cnevill/ASL_water_agreements.doc+Japan/Australia+and+China/Australia+migratory+bird+agreements+\(JAMBA+and+CAMBA+respectively\)+AND+NSW+environmental+planning+act.&cd=2&hl=en&ct=clnk](http://74.125.155.132/search?q=cache:Gs1qN4To_SUJ:www.ids.org.au/~cnevill/ASL_water_agreements.doc+Japan/Australia+and+China/Australia+migratory+bird+agreements+(JAMBA+and+CAMBA+respectively)+AND+NSW+environmental+planning+act.&cd=2&hl=en&ct=clnk) accessed Wednesday, 14 October 2009.

TABLE 2 - COMMONWEALTH AND STATE LEGISLATION

Legislation	Purpose	Relevance for Hay LEP Review
Aboriginal Lands Right Act, 1983	This Act provides for land rights of Aborigines, including the constitution of Aboriginal Land Councils, the vesting of land in those Councils, the acquisition of land by or for those Councils and the allocations of funds to and by those Councils.	The Hay land use strategy needs to consider the views of hay LALC on a range of matters including indigenous cultural heritage. Within the shire, various lands have been subject to aboriginal land claims including significant linear tracts of crown land, possibly TSRs, many of which are still under investigation which has implications for future zoning and land use.
Aboriginal Land Rights Act 1983	The Aboriginal Land Rights Act 1983 provides for Aboriginal land rights in NSW and for the acquisition of land by Aboriginal Land Councils in NSW. Part 2, Section 36 relates to claims to crown land.	A number of parcels are identified as claim boundaries and are under investigation. Many include TSRs.
Agricultural and Veterinary Chemicals Act, 1994	Australian Pesticides and Veterinary Medicines Authority registers chemicals and issues permits for the use and application of certain chemicals such as pesticides in NSW.	The use and application of pesticides are mandated under this act. There are requirements to ensure no adverse site and off site impacts associated with pesticide applications and limitations on certain chemicals being applied on or near water bodies. Aerial applicators need licenses to spray pesticides and there are restrictions within 150m of a dwelling, schools, industries or public places. The Hay Land Use Strategy needs to consider sensitive receivers and whether the application of buffer zones might be appropriate to mitigate against adverse impacts.
Catchment Management Act, 2003	This Act establishes catchment management authorities and devolves to them certain natural resource management functions in their regions. These include • Natural resource planning; • Ensuring decisions made at a catchment level consider both catchment and local community issues and broader state level concerns and standards; • Applying expert knowledge to achieve a fully functioning and productive landscape; and • Providing a framework for financial assistance and incentives to landholders in connection with natural resource management; • This Act repealed the Catchment Management Act 1989;	The Hay land use studies should report the natural resource catchment issues and targets and seek implementation options in the development of the land use strategy.. The two relevant CMAs for the Hay shire are the Lachlan CMA and the Murrumbidgee CMA.
Contaminated Land Management Act 1997	This Act enables DECC to respond to contamination that is causing a significant risk of harm to human health or the environment, and sets out criteria for determining whether such a risk exists. The Act facilitates investigation of potentially contaminated sites and the remediation of contaminated sites and places responsibility on land owners and polluters.	Contaminated land identified by the Council indicates significant areas of contaminated land exist within the township of Hay. Booligal has contaminated parcels south and east of the village and Maude has a large area of contaminated land within the centre of the village and to the south. The Hay Land Use Study needs to identify contaminated land within the Hay LGA and consider contamination issues prior to developing any rezoning strategies and whether land use is appropriate in view of contamination risk and whether future remediation may be required under SEPP 55. DECC and Council are required to keep a register of contaminated land and this information should be considered within the Land Use Study.

Legislation	Purpose	Relevance for Hay LEP Review
Crown Lands Act 1989	The Crown Lands Act is concerned with the management, development and conservation of crown land having regard to the principles of crown land management. The Act also provides for the assessment of crown land and the reservation of crown land for public purposes as well as other use and occupation of crown land.	Significant areas of crown land under perpetual leasehold or other tenure arrangements exist within the Western Division and other areas of Hay LGA. The Hay Land Use Study may identify opportunities for the use of vacant or surplus crown land within the Hay LGA. Consultation is required with the Land and Property Management Authority to identify crown land and if necessary explore options to optimise their appropriate conservation, development and management.
Environmentally Hazardous Chemicals Act 1985	This Act regulates the manufacture, storage, conveyance and disposal of hazardous chemicals	No direct relevance
Environmental Protection and Biodiversity Conservation Act 1999	The EPBC Act is the Australian government's primary piece of environmental legislation. The EPBC Act provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places — defined in the Act as matters of national environmental significance. In making planning decisions involving actions which may impact areas identified under the Act of national environmental significance (NES) a referral is required to be made to the Department of the Environment, Water, Heritage and the Arts. If the Minister for the Environment, Heritage and the Arts determines that an approval is required. Under the EPBC Act, the proposed action is deemed to be a controlled action'. It must then undergo. Assessment under the EPBC Act and obtain an approval under the Act prior to being undertaken.	Current NES matters are: • World heritage areas • National heritage places • Wetlands of international importance (RAMSAR sites) • Threatened species and ecological communities • Migratory species • Commonwealth marine areas • Nuclear actions. The Hay land use study should identify any areas that are of national environmental significance or with the potential to be considered for inclusion (for example RAMSAR listing). Future land use activities should ensure that NES areas are protected and not devalued.
Fisheries Management Act, 1994	Part 7 Division 2 deals with the protection of aquatic habitats and ecological communities and is implemented by NSW DI &I.	Hay land use planning needs to consider two endangered ecological communities protected under this legislation, including: The Aquatic ecological community in the natural drainage system of the lower Murray River catchment.- Including all native fish and aquatic invertebrates within all natural creeks, rivers, and associated lagoons, billabongs and lakes of the regulated portions of (amongst others) the Murrumbidgee River downstream of Burrinjuck Dam and all their tributaries anabranches and effluents Excluded from this recommendation are the Lachlan River and the Darling River and their tributaries, and artificial canals, water distribution and drainage works, farm dams and off-stream reservoirs; The aquatic ecological community in the natural drainage system of the lower Lachlan River catchment . Planning strategies should consider opportunities for the recovery of these communities.

Legislation	Purpose	Relevance for Hay LEP Review
Forestry and National Park Estate Act, 1998	Develop and maintain the parks and reserve system, and conserve natural and cultural heritage	The Hay Land Use Study should identify and quantify the existing parks and reserves system within the Hay LGA, consider biophysical attributes and values and make recommendations as to its adequacy within the planning horizon to year 2040.
Hay Irrigation Act 1902	This Act defines the private irrigation area in Hay and makes provision for irrigation infrastructure and levies.	Hay land use planning needs to consider the extent of the hay Private irrigation area, its agricultural capacity and infrastructure in terms of its productivity potential its capability and suitability for future land use development.
Heritage Act, 1977	Natural, cultural and built heritage is protected in NSW under the <i>Heritage Act 1977</i> . The Act allows for heritage items or places to be listed on the State Heritage Register, or for interim heritage orders to be made to protect heritage items or places. Approval must be obtained from the Heritage Council or local council before work can be done which might damage the item or place.	The Hay Land Use Study should identify existing and potential heritage items or places of significance and ensure that they are appropriately protected. Currently Hay LEP 1998 Schedule 1 identifies 24 heritage items or potential archaeological sites.
Local Government Act,1993	This is the primary legislation impacting local government in NSW. The charter and responsibilities are wide and there is an emerging focus on integration of responsibilities in respect to environmental planning and reporting. Functions include providing for: • Community services and facilities; • Public health services and facilities; • Cultural, educational and information services and facilities; • Sporting, recreational and entertainment services and facilities; • Environment conservation, protection and improvement services and facilities; • Waste removal, treatment and disposal services and facilities; • Pest eradication and control services and facilities; • Public transport services and facilities; • Energy production, supply and conservation; • Water, sewerage and drainage works and facilities; • Storm water drainage and flood prevention, protection and mitigation services and facilities; • Fire prevention, protection and mitigation services and facilities; • Property development; • Housing; • Industry development and assistance; • Tourism development and assistance.	Hay land use strategy should consider the mitigation of risk, adequacy of services, facilities and assets and provision for community development.

Legislation	Purpose	Relevance for Hay LEP Review
National Parks and Wildlife Act, 1974	Under the National Parks and Wildlife Act, the Director-General of the NPWS is responsible for the care, control and management of all national parks, historic sites, nature reserves, reserves, Aboriginal areas and state game reserves. State conservation areas, karst conservation reserves and regional parks are also administered under the Act The Director-General is also responsible under this legislation for the protection and care of native fauna and flora, and aboriginal places and objects throughout NSW. Indigenous heritage items or places are protected under the National Parks and Wildlife Act 1974, although these things can also be listed for protection on the State Heritage Register or under an interim heritage order.	The Kalyait and Goonawarra Nature Reserves are located within the shire and McFarlands, Maude, Quandong and Booligal State Forests and Toogimbie Indigenous Protected Area. As well Nap Nap burial has been nominated for listing as a defined aboriginal place under the Act and consideration should be given to listing under the heritage provisions of the standard instrument LEP.
National Resources Commission Act 2003	There have been a number of significant changes to natural resource management requirements since the local government planning and reporting framework was developed. These include the introduction of the Native Vegetation Act 2003 and Native Vegetation Regulation 2005, the Catchment Management Authorities Act 2003 and the Natural Resources Commission Act 2003. The legislation. Resulted in the establishment of the Natural Resources Commission and the development of state-wide standards and targets for natural resources. On a local level, these standards and targets are implemented primarily through Catchment Action Plans, under the direction of the State's 13 Catchment Management Authorities (CMAs). The Natural Resources Commission reports annually on progress in achieving compliance with the State-wide standards and targets.	A range of priorities have been identified for both the Lachlan and Murrumbidgee CAPs. As well various priorities have been indicated on DECC website for the Hay LGA. The Hay Shire land use study and strategy development should consider opportunities to implement from the various priorities nominated.
Native Title Act 1993 and Native Title (NSW) Act 1994	The Commonwealth Government enacted the <i>Native Title Act 1993</i>, following the High Court's Mabo judgment. This Act recognises and protects native title; provides that native title cannot be extinguished contrary to the Act; provides for agreement making - Indigenous Land Use Agreements (ILUAs); validates any past grants of freehold or leasehold interests that were thrown into doubt by the Mabo decision; and created a National Native Title Tribunal to administer claims to land by Aboriginal people. The <i>Native Title (New South Wales) Act 1994</i> works in accordance with the Commonwealth Native Title Act 1993 to ensure that NSW law is consistent with standards set by the Commonwealth for future dealings affecting Native Title. It confirms New South Wales' existing ownership of any natural resources; New South Wales' existing rights to use, control and regulate the flow of water; existing fishing access rights; and existing public access to waterways and public places.	In certain situations prior to future specified actions Council is required to consult with the Aboriginal and Torres Strait Islander Representative Body. The future act most relevant to Hay Shire Council may be the acquisition by compulsory process of land, waters or interests that may be affected by native title.

Legislation	Purpose	Relevance for Hay LEP Review
Native Vegetation Act, 2003	The NVA aims to regulate broad scale clearing in NSW and provides powers to CMA to determine local clearing proposals. Offsets are calculated accordingly as part of the property vegetation planning process and Native Vegetation Assessment Tools (NVAT) decision support programs. Unless exempted or excluded from the provisions of the Act, native vegetation cannot be cleared unless development consent is granted in accordance with the NVA or a Property Vegetation Plan (PVP) has been developed. Clause 25 of the Act provides that any clearing that is, or is part of an activity carried out by a determining authority within the meaning of Part 5 of the EPA Act, is excluded from the NVA providing that the determining authority has complied with that Part.	Broad scale clearing has major implications for land degradation and biodiversity values. The Land Use Study should not identify land where broad scale clearing would be required to be carried out to allow land use conversion unless appropriately justified and compensated through offsets, compensatory banks or development control policies. Where high value biodiversity sites exist they should be appropriately protected and conserved. Opportunities to promote no net loss to biodiversity values should be promoted within land use planning for the Hay LGA.
Nature Conservation Trust Act, 2001	This Act establishes the Nature Conservation Trust, a non-government body-corporate the primary function of which is to facilitate the conservation of natural heritage on private land through the negotiation and administration of conservation agreements under the <i>National Parks and Wildlife Act 1974</i>, property agreements under the (now repealed) <i>Native Vegetation Conservation Act 1997</i> and Trust agreements. Trust agreements are made under Part 3 of the Act and are entered into between the Nature Conservation Trust and landholders for the purpose of managing the land the subject of the agreement so as to protect natural heritage. A trust agreement may be registered and if registered, binds the landowner's successors. The Act also provides that the Nature Conservation Trust is to operate a Revolving Fund Scheme under which the Nature Conservation Trust may buy or acquire land that is significant for the conservation of natural heritage, arrange for a covenant to be registered on the title to the land to protect that heritage, sell or lease the land subject to the covenant and use the proceeds for the further purchase of land that is significant for the conservation of natural heritage.	The only landscape represented in the one voluntary conservation agreement in the Riverina bioregion is the Murrumbidgee Scalded Plains landscape at 17.90 hectares. Property Vegetation Plans Number in shire.
Pesticides Act, 1999	This Act controls and regulates the use of pesticides in New South Wales. It is an offence under the Act: to (amongst other things): Use a pesticide in a manner that injures or is likely to injure another person (section 10); Use a pesticide in a manner that damages or is likely to damage any property of another person (Section 10); Use a pesticide in a manner that harms any non-target animal or plant, or harms any animal or plant if there is no approved label or permit for the pesticide (Section 11); Wilfully or negligently use a pesticide in a manner that causes material harm to threatened species or protected animals (Section 9); Aerial spraying of farmland crops is also regulated as are protocols for neighbour notification and incident reporting.	Effective land use and rural planning is critical to minimising conflict between agricultural production and the use of adjoining lands. The Hay land use study and settlement strategy should ensure the appropriate siting of rural production areas and if necessary buffers to protect and regulate land use.

Legislation	Purpose	Relevance for Hay LEP Review
Protection of the Environment Operations Act	This Act is the key environmental protection legislation administered by DECC. The POEO Act enables the Government to set out explicit protection of the environment policies (PEPs) and adopt more innovative approaches to reducing pollution. The POEO Act provides a single licensing arrangement to replace the different licences and approvals under existing separate Acts relating to air pollution, water pollution, noise pollution and waste management There is an integration of EPA licensing with the development approvals system. There is a broad allocation of responsibilities under the Act between the EPA, local councils and other public authorities. The EPA is made the regulatory authority for activities listed in Schedule 1 to the Act and the premises where they are carried on; activities carried on by a State or public authority; and other activities in relation to which a licence regulating water pollution is issued. In nearly all other cases, the regulatory authority is the relevant local council.	The Hay Land Use Study will need to consider the biophysical attributes of the Hay LGA and ensure that all land use strategies are sustainable with no adverse impacts on the environment. This means an assessment of air quality, land , water and biological resources needs to be conducted to understand the context for planning, identify resources to be protected and major constraints to development and ensure sustainable development strategies are recommended. There are 5 scheduled activities within the shire including the sewerage treatment plant, water treatment plant and intensive livestock operations. As well licences have been held by industries including CSR, cement mixing, service stations and truck wash operations. Hay land use strategy should consider the location and the impact of such operations on sensitive receivers.
Rivers and Foreshore Improvement Act, 1948 (repealed)	Permits for activities in or near rivers were required to be obtained under this Act. However the Act was repealed on 4 February, 2008 and replaced with the controlled activity provisions of the Water Management Act	Refer to the controlled actions of the Water Management Act.,2000.
Roads Act, 1993	This Act provides for the classification of public roads, the rights of people to use roads and the regulation of activities on public roads.	Hay shire is located on 3 major highways which results in constraints and opportunities for development. The Hay land use strategy should consider the transport network (heavy vehicle, passenger vehicle, bicycle and pedestrian) network ensure that provision is made for the safe and efficient movement of traffic and the protection of the local environs. This is a significant issue for Hay in view of the single river crossing linking South and North Hay, the opportunities for improved pedestrian and cycle links to shire assets and the importance of regulating transport and generating visitor traffic into north Hay for economic development purposes.
Rural Fires Act 1997	Councils are required to prepare Bushfire Prone Land Maps to use for planning and development Control based on Bushfire Hazard Maps prepared under the Rural Fires Act as part of council's Bushfire Risk Management Plan. Councils are required to use <i>Planning for Bushfire Protection 2001</i> when preparing draft LEPs and DCPs and consider the relevant Ministerial s117 direction.	Bushfire Prone Land maps have been prepared for the Hay LGA. Most areas of risk follow riparian corridors. Recommended strategies should consider bushfire risk and have regard to Planning for Bushfire Protection 2001. If the draft LEP does not comply with the specific provisions listed in the section 117 Direction, the council must obtain written advice from the Commissioner of NSW Rural Fire Service to the effect that, notwithstanding the non-compliance, NSW Fire Service does not object.
Rural Lands Protection Act 1998	Significant recent reform to the 'board system 'has led to the formation of 14 Livestock Health and Pest Authorities in NSW. These were formed on 1 January 2009, replacing Rural Lands Protection Boards. Livestock Health and Pest Authorities deliver the frontline livestock health service in NSW. They are committed to safeguarding agricultural production from the biosecurity risks posed by disease and pests and manage travelling stock reserves, stock movement and identification and assist with drought relief.	Hay LGA is located within Division B and C of the Riverina Livestock Health and Pest Authority District. Should the Land Use Study seek to vary land use requirements which may impact travelling stock reserves then consultation with the authority is required.

Legislation	Purpose	Relevance for Hay LEP Review
Soil Conservation Act, 1938	This Act provides for the conservation of soil resources and farm water resources and for the mitigation of erosion.	No land within Hay LGA has been identified as an area of erosion hazard.
Threatened Species Conservation Act, 1995	This is an Act to provide for the conservation of threatened species, populations and ecological communities of animals and plants (although the Act does not generally apply to fish). The Act sets out a number of specific objects relating to the conservation of biological diversity and the promotion of ecologically sustainable development. Identified species, populations, ecological communities and key threatening processes are listed in the Schedules to the Act. Provision is made for the preparation of recovery plans for listed threatened species, populations and ecological communities and threat abatement plans to manage key threatening processes. The Act also provides for the declaration and mapping of habitats that are critical to the survival of those identified threatened species, populations and ecological communities that are classified as endangered (critical habitats). Part 7A of the Act establishes the Biodiversity Banking and Offsets Scheme. The Scheme enables the establishment of biodiversity banking sites, the creation of biodiversity credits, the trading of biodiversity credits and the use of credits to offset development otherwise impacting on biodiversity values.	The Hay LGA Land Use Study needs to identify threatened biological resources over the Hay LGA as well as identify any relevant critical habitats (or areas with potential to be considered) that need to be protected. The Study should consider development strategies and whether potential biobanking schemes might be appropriate as a means to facilitate future sustainable community development.
The Water Management Act, 2000	The Water Management Act 2000 is a key component of the NSW Government's water reform agenda flowing from the 1994 Council of Australian Governments (CoAG) Strategic Water Reform Framework. It effectively converts current water entitlements to three separate licences or approvals: An access licence. This effectively entitles the holder to a share of a water resource as specified in a water sharing plan and does not relate to any particular parcel of land or property on which that water may be used; A water use approval. This attaches to a specific piece of land and confers the right to use water for a particular purpose according to specific conditions; and A water supply work approval. This also attaches to a specific piece of land. It confers the right to construct or use a water supply work for the purposes of bringing water to a specified property. The Rivers and Foreshores Improvement Act was repealed in 2008 and controlled activities are regulated now under this Act. This act also provides for water sharing amongst a range of users including making provision for basic rights, (stock and domestic), native title, irrigators and communities.	The separation of land and water has implications for particularly rural planning in the Hay LGA. Water trading has implications for rural and urban land use sustainability which is required to be examined in the Land Use Study. Other aspects requiring investigation concern the sustainability of the water resource and conjunctive water management. The existing administrative, policy and management environment can provide opportunities or constraints to implementing conjunctive water management and can involve agencies at three levels of government in Australia, as well as non-government organisations. Aspects that the Hay Land Use Study should consider include water allocation and licensing; catchment management plans and targets; water pollution and water quality protection; drainage and flood mitigation and protection of public health. There is a need to ensure that conjunctive water management is advocated in the Land Use Study and that strategies align with the water reform agenda, that there is no inconsistency with existing water policy and no cross-sectoral conflicts. For example, recharge enhancement for water banking may be in conflict with existing strategies for minimising recharge for salinity control; Strategies should take into account sustainable yield of water sources and facilitate compliance with existing requirements in terms of protection of water quality, public health and environmental assets;

Legislation	Purpose	Relevance for Hay LEP Review
		The Study should also consider the future catchment water requirements and priorities. Works or activities proposed near waterways unless exempt may require permits as controlled activities under this Act.
Water Act 1912	This Act provides that licences are required for certain irrigation and drainage works, volumetric allocations from a water source, flood control works and pollution offences and confers that the State Water Corporation is one of the management authorities listed under the Act.	The Hay Land Use Study needs to consider any floodplain management plans prepared under the Act. There is the requirement to consider sustainability of any regulated water source such as the Murrumbidgee River. Approval is required for extraction of water from a river or lake
Water Sharing Plan for the Lower Lachlan Groundwater Source	This plan provides for water sharing amongst beneficial users of the Lower Lachlan water source in accordance with the State Water Management Outcomes Plan. The plan provides for basic landholder rights stock and domestic, native title and cultural values, protection of groundwater dependent ecosystems, environmental water rules and water access and extraction. The plan identifies uncertainty in respect to recharge and the need for a precautionary approach in sustainability planning. The plan recognises that stock and domestic rights may vary under the plan and that currently there are no holders of native title rights under the plan.	The northern part of Hay LGA is impacted by the plan. The Natural Resources Commission has recommended changes to the groundwater model to incorporate recharge/environmental water areas outside the LLGMA. Land Use Planning need to consider connectivities between surface and groundwater systems and the need for environmental water plus the impact of reducing over-allocation to sustainable yields. Hay land use study and strategy should not make recommendations that jeopardise water resource volumes and quality or impact on the identified sustainable yield.
Water Sharing plan for the Lower Murrumbidgee Groundwater Source	This plan provides for water sharing amongst beneficial users of the Lower Murrumbidgee water source in accordance with the State Water Management Outcomes Plan in a similar way to that mentioned above.	This plan applies most of the Hay LGA except the northern portion. Licences have been converted from the Water Act to the Water Management Act. Land Use Planning need to consider connectivities between surface and groundwater systems and the need for environmental water plus the impact of reducing over-allocation to sustainable yields. The Achieving Sustainable Groundwater Entitlements (ASGE) program applies to the over-allocated Lower Murrumbidgee. The licences issued offer the opportunity for adaptive environmental water to be applied as part of a landholders licence. Hay land use study and strategy should not make recommendations that jeopardise water resource volumes and quality or impact on the identified sustainable yield.
Water Sharing Plan of the Regulated Murrumbidgee River	This plan provides for water sharing amongst beneficial users of the regulated Murrumbidgee River water source.	Hay land use study and strategy should not make recommendations that jeopardise water resource volumes and quality or impact on the identified sustainable yield. Development along riparian corridors if considered suitable should not result in increased riparian landholder water access rights.

Legislation	Purpose	Relevance for Hay LEP Review
Waste Avoidance and Resource Recovery Act, 2001	This Act: - Promotes waste avoidance and resource recovery; - Repeals and replaces the Waste Minimisation and Management Act 1995; - Establishes a scheme to promote extended producer responsibility in place of industry waste reduction plans; and - Continues the Waste Fund for the purposes of funding relevant programs. The Waste Fund is now administered by the Director-General of the Department of Environment and Conservation (DEC). Note that Resource NSW, originally established under the Act, was abolished in 2003. Its functions are now carried out by the Director-General of DEC.	No immediate relevance
Western Lands Act, 1901	The Act regulates the manner in which land in the Western Division can be used, how roads and rights of way are created, how leases are issued. The Act also aims to ensure that Western Division land is used in accordance with the principles of ecologically sustainable development.	Unlike the rest of NSW, in the western Division, most land is held under lease from the Crown (under 'Western lands leases') with only a small area of land being held as freehold. The area is managed by NSW Land and Property Management Authority. In addition to this, many State planning and development laws do not apply in the Western Division because most areas outside of the major towns are not incorporated into Local Government Areas. The northern part of the Hay LGA incorporates land within the Western Division.

Table 3 - National, State and Regional Guidelines, Strategies, Plans and Policies.

Item	Purpose	Relevance for Hay LEP Review
ASGE Program	The Achieving Sustainable Groundwater Entitlements Program was released in 2005 to help manage the reduction in groundwater entitlements in specific groundwater management areas.	Hay land use planning should consider the sustainable management of groundwater resources and not recommend land use strategies which will direct water resources beyond their sustainable capacity or lead to degradation of quality. Entitlements are being reduced to be commensurate with the modeled sustainable yield of groundwater and surface water resources. This has implications for development and consumptive use and land use strategies should not lead to increases in water access entitlements under basic rights unless appropriately justified.
Australia's Biodiversity Conservation Strategy 2010-2020	Australia's Biodiversity Conservation Strategy is a new approach to addressing biodiversity conservation in a rapidly changing world. The strategy is a call to action. It sets a national direction for biodiversity conservation over the next decade and it asks all Australians to contribute. The strategy outlines the activities that must begin straight away and those that are needed to effect longer-term change with a minimum 10-year outlook. All actions sit within a list of six 'priorities for change'. These priorities-building ecosystem resilience, mainstreaming biodiversity, knowledge for all, getting results, involving Indigenous peoples and measuring success-reflect the essential changes that we must make urgently to achieve the strategy's vision.	Local Councils need to consider land use and impacts on biodiversity. In local planning, where biodiversity values are identified as significant they should be appropriately protected. In environmental planning instruments protection mechanisms include zoning, overlays and environmental protection clauses. Development Control Plans and policies can also be developed to achieve biodiversity objectives. A lateral and strategic approach in land use planning is recommended to achieve and promote biodiversity outcomes without compromising other values. This may have particular relevance in Hay rural planning.
Caring for our Country	Caring for our Country took over from the National Action Plan for Salinity and Water Quality. It is a business approach to investment in natural resource management Caring for our Country commenced on 1 July 2008 and integrates delivery of the Australian Government's previous natural resource management programs, including the Natural Heritage Trust, the National Landcare Program, the Environmental Stewardship Program and the Working on Country Indigenous land and sea ranger program.	In strategic planning for Hay consultation should be had with Lachlan and Murrumbidgee CMAs to identify and prioritise natural resource management objectives. Land use planning should facilitate the achievement of these objectives.
Council of Australian Governments (COAG) Water Reforms	The role of COAG is to initiate, develop and monitor the implementation of policy reforms that are of national significance and which require cooperative action by Australian governments. A strategic framework was adopted for environmental and water reforms amongst others, covering water pricing, institutional arrangements, sustainable resources management and community consultation..	In Hay land use planning there is a need to protect sensitive natural and biological resources and restore the health of degraded systems including for example water dependent ecosystems.
Farm Dams Policy	The Farm Dams Policy was introduced in 1999. Under this policy you do not have to obtain a licence or other consent from DNR for a farm dam or dams provided: - they are not collecting flow from a major stream; and - the combined capacity does not exceed the Maximum Harvestable	Harvestable rights are maintained as basic landholders' rights in accordance with the farm dams policy. In the Lachlan catchment there is expected to be an increase of 14% of storage volumes required from the existing 260,000ML as a result of the maximum harvestable right being stored on farms (CSIRO 2008). Consideration of future water requirements and competing needs for

Item	Purpose	Relevance for Hay LEP Review
	Rights Dams Capacity (MHRDC) for your property. Dams within the Western Division of NSW are exempt from the Farm Dams Policy.	the range of users (consumptive and beneficial) to be given in and Hay Shire Land use Strategy.
Flood Plain Harvesting Policy	Flood waters play a vital role in replenishing the flood plain and wetland environment and is an important water source for many irrigators. The Flood Plain Harvesting Policy ensures that flood plain harvesting is appropriately licensed, is sustainable for the long term to meet the requirements under the Murray Darling Basin Ministerial Basin Cap and the National Water Initiative. Under the Policy, flood water available for extraction is to be capped and shared amongst existing water users and all works undertaking flood plain harvesting extractions require approval. Works such as levies, banks and diversion channels therefore require an approval prior to be used to capture flood plain harvesting water.	The 1956 flood for Hay has been identified as approximate to the 1 in 100 year flood and modeling has identified land subject to flooding based on the condition of the existing levee. Hay shire council propose to upgrade the levee by raising it and with some locational modifications, although this work is a long term project subject to funding being made available. The Hay land use study and supporting strategy should consider the impact of flooding on future development and ensure appropriate flood protection measures are in place to cater for future development.
Lachlan Catchment Action Plan	In 2006, the Lachlan CMA developed the Lachlan Catchment Action Plan (CAP). This document outlines the priority issues of concern and sets the strategic direction for natural resource management (NRM) in the Lachlan catchment for the period 2006-2016. The CAP was approved by the Minister for Natural Resources in January 2007. The CAP provides a framework for the investment in works, projects, planning and research that are necessary to achieve sustainable and productive landscapes in the catchment. The CAP reflects the intention of the Lachlan CMA to develop and deliver innovative and integrated projects to address the causes that have led to a decline in the quality of our natural resources. In line with the Natural Resource Commission Standards, the CAP provides specific Catchment and Management Targets. These targets reflect broader state-based targets and have been developed in consultation with the Lachlan community including farmers, Landcare members, industry groups, Local Aboriginal Reference Groups, federal, state and local government representatives and other stakeholders. This strategic direction combines community goals for the catchment with local, state and federal government guidelines for NRM and are based around four themes: • Biodiversity and Native Vegetation; • Water and Aquatic Ecosystems; • Land Management, and • People and Community.	See Murrumbidgee CAP comments

Item	Purpose	Relevance for Hay LEP Review
Murray-Darling Basin Agreement and Basin Salinity Management Strategy 2001-2015	The Murray-Darling Basin Agreement replaced the earlier River Murray Waters Agreement which had been in place since 1915. The Murray-Darling Basin Agreement provides the process and substance for the integrated management of the Murray-Darling Basin. The purpose of the Agreement is: "to promote and co-ordinate effective planning and management for the equitable efficient and sustainable use of the water, land and other environmental resources of the Murray-Darling Basin." The Murray-Darling Basin Agreement Consistency Review Issues Analysis Report documents jurisdictional perspectives on issues of consistency between the Murray-Darling Basin Agreement and both the National Water Initiative and The Living Murray Intergovernmental Agreement. Considers and plans for basin salinity management and integrated management within the Basin. Basin Salinity Management Strategy supersedes the 1988 Salinity and Drainage Strategy and responds to the 1999 MDBC salinity audit. With objectives to maintain shared water quality, protect resources, manage salinity, promote improved farming systems and ameliorate salinity impacts	In land use planning for Hay the MDBC should be consulted to identify issues of relevance for local land use planning. For instance groundwater and surface water resources within the Hay shire have been identified and reported as well as a discussion of the current issues impacting future sustainability.
Murrumbidgee Catchment Action Plan	The Murrumbidgee Catchment Action Plan provides a strategic framework for natural resource management in the Murrumbidgee Catchment and direction for future natural resource management investment. The Murrumbidgee Catchment Action Plan provides for periodic 5 and 10 yearly reviews. The Catchment Action Plan is a statutory document to provide clear direction for future natural resource management through provision of incentives, education, planning and partnership development. The Murrumbidgee Catchment Action Plan builds on the Murrumbidgee Catchment Blueprint (2003), Vegetation Management Plans and Water Sharing Plans. The Murrumbidgee Catchment Action Plan's development has involved the community in the setting of targets and actions for natural resource management. The catchment action plan objectives, targets and management actions for a range of issues: • People and community; • Salinity; • Water; • Soils and land use;	The Murrumbidgee catchment action plan identifies management actions requiring local government consents and approvals to be undertaken to ensure that impact on natural resources is minimised and, where appropriate, enhance natural resource outcomes. The plan requires that strategic planning address biodiversity, native vegetation management, soil health, water quality, water quantity, fragile lands and salinity. The Hay Urban and Rural Lands Study should consider the priorities and targets relevant to the LGA and where possible incorporate elements in strategic planning to meet catchment objectives and targets.

Item	Purpose	Relevance for Hay LEP Review
	- Vegetation and biodiversity; and - Cultural heritage.	
National Land and Water Resources Audit	The National Land and Water Resources Audit is a component of the Natural Heritage Trust funding initiative of the Commonwealth Government. It aims to provide a comprehensive nationwide appraisal of Australia's land, water and vegetation resources. The seven national theme studies focus on water availability, dryland salinity, vegetation, rangelands, land use, capacity for change in water/land management and catchment/estuary health.	The audit looks at a range of topics including land salinity, invasive species (weeds and vertebrate pests), land use, rivers and wetlands, socio-economic, soils, species and communities, vegetation and water quality and measures change in condition. In land use planning for Hay, the audit will provide a useful indicator of health at the macro scale which will need to be considered in local planning.
National Principles for the Provision of Water for Ecosystems	ARMCANZ and ANZECC jointly developed the national principles for the provision of water for ecosystems in July 1996. The purpose of these 12 principles is to guide jurisdictions on how to deal with the specific issue of providing water for ecosystems in the broader context of water allocation. South Australia, for example, has adopted the goal, <i>to sustain and, where necessary, restore ecological processes and biodiversity of water-dependent ecosystems by ensuring the provision of water for ecosystems</i> and has used the 12 principles in developing the <i>State Water Plan 2000</i>	In land use planning for Hay, should important ecosystems be identified then appropriate planning must occur to ensure the protection of those ecosystems and that opportunities to provide an appropriate water regime for their sustainable development and management are considered.
National Principles and Guidelines for Rangelands Management	The focus of these Principles and Guidelines is on sustainable management of Australia's rangelands which represent some of the most sensitive ecosystems and support diverse industries and communities, including Australia's important pastoral industries. It identifies a need for rangeland communities to develop regional strategies which address the full range of social, cultural, aesthetic, economic and environmental issues they face.	Strategic planning for Hay should take into account ecological and economic objectives particularly in rural planning. This means that an integrated approach is required to ensure that economic prosperity from rural land use is facilitated whilst not compromising environmental objectives.
National Reserves System Program – terrestrial and marine/coastal	These are collaborative programs between the Commonwealth and the State/Territory Governments which aim to achieve national systems of protected areas which are comprehensive, adequate and representative for both the terrestrial and marine/coastal environments. Under these programs the identification of potential additions to the national reserves system are guided by the Interim Biogeographic Regionalisation for Australia and the Interim Marine and Coastal Regionalisation for Australia.	Consideration should be given to the landscapes protected through the national reserves system and to identify significant areas within the Hay LGA. The Toogimbie indigenous Protected Area on the Sturt highway is an example of indigenous conservation land protected through this program.
National State of the Environment Report	These Reports are generated by the Commonwealth Government every five years with the next one due for release in 2011. Most States now produce State of the Environment Reports for their jurisdictions.	Hay land use planning should consider the conclusions and recommendations from previous local reporting and consider land use planning measures to improve outcomes. The Riverina Murray ROC produced a 2008/2009 comprehensive SOE report and identified key aspects including:

Item	Purpose	Relevance for Hay LEP Review
		Current issues • Loss of urban natural environment (1) • Ongoing drought (8) • Zero irrigation water allocations (1) • Government buy back of water for environmental flows (2) • Financial security of local businesses and the family farm (3) • Land management (1) • Lack of irrigation water (3) • General lack/availability of water (2) • Climate change mitigation (1) • Organisational and community environmental education (1) • Internal capacity and structure to address environmental issues (1) • Incremental loss of native vegetation (1) • Water issues/savings (3) • Environmental water (1) • Weeds/pests (1) Future issues • Destruction of the Murray River foreshore due to management practices. • Weather patterns / rainfall (1) • Reliability and supply of irrigation water (2) • Government management of water for irrigation and environmental flows (2) • Commonwealth water buy-back scheme (1) • Lack/availability of water (4) • Drought (5) • Loss of agricultural sector income (1) • Storm damage (1) • Fire (1)

Item	Purpose	Relevance for Hay LEP Review
		• Human health (1) • Pests (1) • Influence of issues on the human/social, economic and natural environment context (1) • The rate of change in social, economic and physical environment conditions induced by the combined effects of climate change and peak oil, phosphorus and gas and the national power infrastructure grid issues. (1) • Water (2) • Tree plan (1) • Water supply for town and agriculture (1) • Climate change (2) • Noxious weeds (1) Further the report identifies 60 known sites of contamination within the shire and comments that the shire is not impacted by salinity or acid sulphate soils.
National Strategy for Ecologically Sustainable Development 1992.	The Council of Australian Governments endorsed a national strategy for ecologically sustainable development in December 1992. This strategy sets out principles and objectives for achieving ecologically sustainable development (ESD) in Australia. It defined ESD as <i>“using, conserving and enhancing the community’s resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased.”</i>	Hay land use planning will need to ensure environmental and economic land use decision making which takes full account of all relevant land and resource values.
National Water Initiative and National Plan for Water Security	COAG revised its water reform agenda to foster sustainability of urban and rural water supplies and improve the health of surface and groundwater systems with a focus on Murray-Darling Basin. The NWI is underpinned by a market based approach, secure entitlements, water use efficiencies and recovery and environmental flow management. Significant funds have been directed to address the issue of over allocation. In 2007 the government allocated 10 billion dollars to improve the security of Australia’s water resources.	Planning within Hay shire should consider sustainability and integrated management of water resources taking into account connectivities between surface and groundwater systems. Opportunities to improve catchment condition and health and ecological and water resources should be promoted. Land uses should not adversely impact on the condition and volume of resources..
National Water Quality Management Strategy	The national water quality management strategy was developed through the ARMCANZ and ANZECC Ministerial Councils and endorsed by Australian State and Territory Government in 1992. It is now widely recognised as the basis for water quality policy development throughout Australia. The objective of the strategy is to achieve sustainable use of the nation’s surface and groundwater resources by protecting and enhancing their quality while maintaining economic and social development. . Policies, Processes and guidelines have been developed to this end.	In Hay land use planning there is a need to protect water resources (surface and groundwater) by improving their quality and reducing pollutants and ensuring those that rely on these resources for example businesses, industry and the community are able to access and utilise water for their continued development. This means there is a need to identify areas which should be protected from potentially contaminating development through the use of zoning, overlays or environmental protection clauses.

Item	Purpose	Relevance for Hay LEP Review
Natural Resource Commission Statewide Targets	The NSW Government has adopted 13 state wide targets for NRM, to ensure sustainable landscapes and communities in the future. The targets are embedded in the State Plan and relate to Biodiversity Water, Land and community.	Liaison with the Lachlan and Murrumbidgee CMAs and review of their CAP is required to be undertaken to ensure that opportunities are taken through Hay shire land use planning to meet identify targets and implement identified priority actions at a local and landscape level.
NSW Biodiversity Strategy	NSW first biodiversity strategy was released in 1999 and a discussion paper of a new biodiversity strategy was released earlier this year. The strategy attempts to address land use impacts on biodiversity and recognises other threats such as climate change. It identifies important goals, principles and objectives for biodiversity conservation. There is a need for the integration of biodiversity conservation into decision making at all levels of government, industry and the community and across the whole landscape. The Strategy recognises that the reserve system and other protected areas are vital but unlikely to ever be sufficient in itself to protect the State's biodiversity. The efficiency and cost effectiveness of conservation programs is needed.	The requirement in land use planning for Hay shire is to consider the need for integrated programs across management agencies responsible for conservation and natural resource management. Where opportunities exist to promote conservation in the Hay shire, the land use strategy should consider options for integration of conservation objectives and implementation strategies of other agencies including identified priority actions of CMAs and DECC.
NSW Flood Prone Land Policy	On 6 May 2005, the Floodplain Development Manual 2005 was gazetted, as the manual relating to the development of flood liable land for the purposes of section 733 of the Local Government Act 1993. The Manual highlights the government's ongoing commitment to managing the risks resulting from natural hazards to reduce their impacts on the community. It incorporates the NSW Flood Prone Land Policy, which aims to reduce the impact of flooding on individual owners and occupiers of flood prone property and to reduce private and public losses resulting from floods. The policy also recognises the benefits of use, occupation and development of flood prone land. This State Government manual indicates that responsibility for management of flood risk remains with local government. The Manual assists councils to balance the conflicting objectives of the floodplain through a risk management process. The New South Wales Government provides local government with technical, financial and policy assistance in floodplain risk management. The 2005 Manual builds upon and replaces the 2001 Floodplain Management Manual. Key changes include outlining altered agency roles in floodplain risk management and clarifying the State Government's position on development standards.	Hay shire is potentially impacted by flooding associated with the Murrumbidgee and Lachlan rivers and also localised flooding associated with the construction of the Hay township protection levee. The town levee was constructed hastily to withstand the 1956 flood event and has compacted. Currently several flood studies have been conducted for the Hay urban area and the rural area. Land use planning needs to consider the area inundated as a result of the 1 in 100 year flood event with and without proposed works to the town levee system. As well the Probably maximum Flood event should be considered in terms of managing floodplain risk. These standards need to be considered in the selection of any urban and rural residential release areas and development opportunities.
NSW State Groundwater Dependent Ecosystems Policy	This is a component policy of the NSW State Groundwater Policy Framework document. The objectives of this Policy are to manage the states groundwater resources in a sustainable manner to ensure environmental social and economic value are not undermined.	No groundwater dependent ecosystems (aquifers and caves) have been currently identified in the two groundwater sharing plans applying to the Hay shire. Uncertainty and limited knowledge exists however and a precautionary approach is recommended through land use planning.

Item	Purpose	Relevance for Hay LEP Review
	The Policy recognises the range of ecosystems depend on groundwater including wetlands and red gum forests. A range of terrestrial vegetation as well as others. A range of Groundwater Management Committees have been established and management plans developed to identify and classify groundwater dependent ecosystems and ensure that water is provided to meet environmental needs.	
NSW State Groundwater Policy Framework Document	This Policy provides guidance and clear direction on the ecologically sustainable management of the states groundwater resources for the people of NSW. It establishes objectives and principles for groundwater management, a coordinated programme for policy development reporting in review, tools for policy implementation and opportunities for information sharing.	The Lower Lachlan and Lower Murrumbidgee alluvium represents significant groundwater resources in Hay shire which require protection through appropriate land use planning and strategy development.
NSW Groundwater Quality Protection Policy	This is a Component Policy of the NSW State Groundwater Policy. This Policy discusses the various impacts of different activities and developments and landuse can have on the quality of the groundwater resource and provides a framework for ecologically sustainable development including endorsement of an integrated approach with community involvement as well as a range of legislative responsibilities. This Policy introduces a range of principles as well as some guidelines about how groundwater protection is implemented. Some of the principles that the Policy discusses relate to the requirement for groundwater systems to be managed so that the most sensitive beneficial use or environmental value is maintained. Other principles relate to the protection of town water supplies, the prevention of pollution so that future remediation is not required and principles also relate to risk assessment in terms of research, investigation and reporting about landuse activities.	Various consumptive and beneficial users to Hay shire groundwater resources exist. As well both the Lower Lachlan and Lower Murrumbidgee systems are high risk systems and resources need to be protective through appropriate land use planning in respect to both volumes and quality.
NSW Salinity Strategy	Taking on the challenge NSW Salinity Strategy is a NSW Government response to a Salinity Summit held in Dubbo and that Summits recommendations. The Strategy is designed to slow down the increasing salinity over a ten year period from 2000 and to lay the foundations for salinity management into the future.	The Hay shire includes land which previously incorporated part of the Murravian Basin and as such salts naturally occur in the landscape including within the soil profile. Salinity issues relevant to the shire include reduced flow in the Lachlan River which adversely impacts on water quality through increased concentration with less transport of salt loads downstream. During flood events transport of salt to floodplain wetlands result in adverse ecological impacts to wetland environments such as the Great Cumbungi Swamp. High water tables result in leaching of salts to the surface and fluctuation in water tables through irrigation and risk of salinisation of deep aquifers needs to be considered in strategic land use planning and strategies identified to mitigate the risk of environmental degradation of land and water resources.
NSW Sand and Gravel Extraction Policy for Non Title Rivers	This is a component of the NSW State Rivers and Estuaries Policy and this policy is concerned with ensuring that extraction of sand and gravel of the states non title rivers is undertaken sustainably and appropriately managed so that no adverse impacts on the riparian environment.	The Hay shire lands study should seek to identify alternative land based sources of aggregate to mitigate risks to sustainability of the Lachlan and Murrumbidgee river systems. Mineral and gravel resources will be identified through the land use studies and the ecological, economic and social values of rivers identified.

Item	Purpose	Relevance for Hay LEP Review
The NSW Standard for Quality NRM "The Standard"	"The Standard" underpins high quality NRM practice in NSW. This sets down best practice for implementation of NRM Strategies and actions.	
NSW State Plan	The purpose of the State Plan is to deliver results for the community from NSW Government Services. State Plan will also affect the operation of local councils, with the NSW Government clearly defining the goals and outcomes that will shape public policy over the next 10 years. It includes priorities and targets. Key priorities are: • Reduced crime • Increased participation and integration in community activities • Improved access to quality health care • Improved health • Increasing student education levels • Safer roads • Improved health and education for aboriginals • Improved access for disabled • Maintain and invest in infrastructure • Stronger rural and regional community • Better access to training in rural and regional community to support local economics • Secure and sustainable water supply • Reduced gas emissions • Better environmental outcome for native vegetation, biodiversity, land, rivers and coastal waterways • Jobs closer to home • Housing affordability • Road network efficiency • Increased participation in open space and arts and cultural activity	The NSW Government's State Plan is developed with the expectation that local councils will use its key directions as a guide when preparing their own strategic plans. It also proposes a number of partnerships and opportunities for local government which should be considered.
NSW State Rivers and Estuaries Policy	This is the first Natural Resources Policy (1992) within the total catchment management framework to focus on river and estuaries resources and promotes the need for improved management of rivers, estuaries and flood plains promoting a shared responsibility for management of these natural resources.	Hay shire includes significant riparian areas associated with the Lachlan and Murrumbidgee rivers. The condition of river reach and wetlands should be considered along with any opportunities for their improvement or enhancement of their values through sensitive land use planning.

Item	Purpose	Relevance for Hay LEP Review
NSW State Water Management Outcomes Plan	Contains targets relevant to water sharing.	Hay land use strategy needs to consider the sustainable yield of systems and the identified targets.
NSW Water Conservation Strategy	The Policy introduces a vision for the water conservation in NSW and discusses principles of water conservation in line with ecologically sustainable development including the fact that State and Local Government should provide a leadership role in water conservation policy and strategies.	Land use strategies should be developed according to conjunctive water management principles. Strategies should also consider sustainability of resources and renewable uses. In respect to water management, water use efficiency for agricultural systems and minimum water use requirements for vegetation systems should be encouraged where possible in land use planning.
NSW Weirs Policy	The NSW Weirs Policy aims to halt and reverse the adverse impact of weirs on in-stream ecological environments. Various principles are adopted to achieve this end.	Hay Weir or Johnstone Park is situated 15km from Hay near Maude. The Land Use Study should consider the impacts from river regulation on the ecology of rivers in the Shire and strategies developed to promote riparian and instream biodiversity values.
NSW Wetlands Management Policy	One of the component policies of the NSW State Rivers and Estuaries Policy and provides guidance on wise use best management practice and rehabilitation of wetlands. To achieve its goal the Policy adopts nine principles for the sustainable management of wetlands including: • Water regimes needed to maintain or restore the physical, chemical land biological processes of wetlands will have formal recognition in water allocation and management plans; • Land use and management practices that maintain or rehabilitate wetland habitats and processes will be encouraged; • New developments will require allowance for suitable water distribution to and from wetlands; • Water entering natural wetlands will be of sufficient quality so as not to degrade the wetlands; • The construction of purpose-built wetlands on the site of viable natural ones will be discouraged; • Natural wetlands should not be destroyed, but when social or economic imperatives require it, the rehabilitation or construction of a wetland should be required; • Degraded wetlands and their habitats and processes will be actively rehabilitated as far as is practical; • Wetlands of regional or national significance will be conserved; and • The adoption of a stewardship ethos and co-operative action between land and water owners and managers, government authorities, non-government agencies and the general community is necessary for	Hay Shire includes significant wetlands including the 5000ha Booligal wetlands and the 16000ha Great Cumbungi Swamp. The impact of reduced flows on the ecological values of these wetlands needs to be considered in the urban and rural lands study and a strategy developed that takes into account their function, biodiversity, ecological values and risks.

Item	Purpose	Relevance for Hay LEP Review
	effective wetland management.	
Policy and Guidelines for Aquatic Habitat Management and Fish Conservation 1999	The policy and guidelines for aquatic habitat management and fish conservation is an acknowledgement by the NSW Government that fish habitats are very important assets. The 1998 Policy and Guidelines have now been updated to incorporate amendments to the Fisheries Management Act 1994, and their scope has been broadened and the format changed as a result of comments from the community. The document has been prepared by NSW Fisheries in order to improve the conservation and management of aquatic habitats in NSW. It is targeted at local and state government authorities, proponents of developments and their advisors, and individuals or organisations concerned with the planning and management of our aquatic resources, including conservation organisations.	Hay shire contains significant riparian zones including rivers and wetlands and important fish and aquatic habitats. The impact of development on these areas must be considered and the policy provides different assessment levels. Hay Urban and Rural land Use study should consider threatened species and habitats. Of particular significance is the Murrumbidgee and Lachlan Rivers which in the Hay LGA has been identified as threatened ecological communities. Strategic land use planning should consider ways to avoid adverse impacts on these systems and opportunities to enhance their current values.
Policy for Sustainable Agriculture in NSW	This policy recommends incorporation of ESD principles into agricultural production systems in NSW by encouraging best practice and resource and	Hay Shire Lands Study should identify agricultural resources and constraints. Rural land capability should be assessed and strategies developed to ensure

Item	Purpose	Relevance for Hay LEP Review
	system sustainability while promoting economic, social and ecological objectives. Aspects for consideration include: intergenerational equity where future generations should have similar opportunities to far, facilitation of structural adjustment through economic cycles and economies of scale, minimising risks from interface conflict through inappropriate land use location and development opportunities, preservation of agricultural resources and promotion of diversification and value-adding opportunities. The Policy identifies objectives and strategies for:: • Agricultural production; • Land management • Water use and quality; • Nature conservation on farms; • Rural communities; and • Integrated management.	that land most suited for various agricultural production systems are identified. Management of existing and potential land use conflict is required to ensure the separate of existing and likely future competing uses through regulation including zoning and prescription.
Policy on the Protection of Agricultural Land	The Policy on the Protection of Agricultural Land (NSW Agriculture, 2004) is the updated version of the Policy for Protection of Agriculture Land, 1993. This policy is directed at promoting sustainable agriculture and the conservation of natural resources to maintain their future productive potential for the community. The Department of Industry & Investment (DII) policy objective is to support the retention of agricultural land, particularly prime crop and pasture land, for commercial food and fibre production. However, it is recognised that some alienation of prime crop and pasture land is inevitable as a consequence of population growth and economic development. The policy states that conversion of such land should only take place where fully justified, in an appropriate planning context, including an assessment of alternative sites. The Policy highlights that agriculture uses a variety of land classes and soil types and that there are agricultural pursuits which are independent of the physical character of the land. Such industries include hydroponics, protected horticulture and intensive livestock production. There are numerous distance restrictions placed on farmers and industry such as noise, dust, the use of pesticides and herbicides to avoid non-target and offsite impacts. It is recognised that residential encroachment onto land used for agricultural pursuits means that distance restrictions (buffer zones) cannot be met in these closely settled areas and are effectively sterilised for agricultural use. The Policy goes on to highlight that for all agricultural enterprises, appropriate access to labour, markets, processing facilities and infrastructure is necessary.	Prime agricultural land should be recognised in the Rural Land Study and protected by the LEP.

Item	Purpose	Relevance for Hay LEP Review
	The planning system should provide certainty and security for agricultural enterprises and enable them to maintain efficiency by ensuring the integrity of the agricultural zone is upheld, therefore enabling an appropriate response to future market, policy, technology and environmental changes through protection of the agricultural land resource. The Policy does not prescribe a uniform minimum subdivision policy to be applied on a State-wide basis, as this is acknowledged as being arbitrary and counterproductive to the protection of agricultural land. Rather, it encourages the development of environmental planning policies for LGAs or regions, taking into account: • The agricultural productivity and suitability of the land in question; and • The nature and requirements of agricultural industries in the area being considered. Environmental planning policies should be structured to achieve: • Promotion of the continued use of agricultural land, particularly prime crop and pasture land, for commercial agricultural purposes, where that form of land use is sustainable in the long term; • Avoidance of land use conflicts by preventing incompatible development in or adjacent to agricultural land; • Protection of water resources for commercial, recreational, environmental and agricultural uses; • Deregulated development consent procedures for agricultural land subdivision and transfer, where continued agricultural use of the land is to occur; • A diversity of rural living opportunities in appropriate locations to provide scope for development in rural areas; and • A capacity to effectively cater for specialised agricultural developments.	
Rural Lands Policy	The Rural Lands Policy (Department of Urban Affairs and Planning) was released in November 2000. Part 1 of the Policy establishes planning principles that must be considered when a draft LEP applying to rural land is prepared. It should be consistent with the Government's Policy for Sustainable Agriculture in NSW (as outlined in Section 14.2). The matters to be considered include: • Provide justification for provisions enabling rural dwellings outside of designated urban or rural residential areas; • Ensure provisions do not unreasonably increase agricultural values;	The Hay Rural Lands Study should ensure consideration of the policy in recommendations concerning minimum lot sizes for rural land, rural dwelling entitlements and development opportunities.

Item	Purpose	Relevance for Hay LEP Review
	• Ensure provisions do not impact upon the availability of water; • Encourage the amalgamation of rural lots; • Provide opportunities for a range of rural activities; • Identify and investigate the cumulative impacts of the LEP on agriculture; and • Remove provisions relating to concessional allotments. Part 2 of the Policy focuses on strategic planning for new urban settlement and rural residential development. Draft LEP's for settlement on rural lands must be based upon a Strategy agreed to by the Director-General of the Department of Planning. This policy has been further refined in the Rural Lands SEPP since the Central West Rural Lands Inquiry.	
State Soils Policy	Endorsed in 1987, this policy covers all soils primarily used for agricultural purposes. The Policy includes goals for the protection and conservation of the soil resource within a total catchment management framework. The use of soil should be in accordance with its capacity so its resource values are not degraded.	Hay shire land use studies and strategy should consider the capability of soils and suitability for land use and future development.
Stressed Rivers Assessment Report	This report (1998) considered the level of extraction of rivers within NSW and the level of resultant hydrological and environmental stress.	The Murrumbidgee catchment appeared to be largely unresolved and the Lachlan catchment included identified environmental values with high levels of stress.
Surface and Groundwater Macro Plans	Macro water sharing plans are water sharing plans which apply to a number of water sources across catchments or different types of aquifers. In July 2004, 31 water sharing plans commenced in New South Wales, bringing these water sources and some 80 per cent of the water extracted in New South Wales under the management and licensing provisions of the <i>Water Management Act 2000</i>. The macro planning process is designed to develop broader-scale water sharing plans covering most of the remaining water sources in the state. They will be prepared as river catchment or groundwater system plans. Macro water sharing plans are developed through a process involving technical assessments, classification and development of water sharing rules by seven regional panels and one Groundwater Panel. Macro plans are prepared by classifying sub-catchments according to their social,	For the Hay LGA the relevant water sharing plans include the Lachlan Regulated River, Lower Lachlan Groundwater, Murrumbidgee Regulated River and the Lower Murrumbidgee Groundwater Plan. These plans and impacts to this project have been discussed elsewhere in this section.

Item	Purpose	Relevance for Hay LEP Review
	economic and ecological values. Macro water sharing plans are being developed under the <i>Water Management Act 2000</i>, which requires water sharing plans to: • share water between all water users and the environment • improve the health of our rivers • provide security of access for water users • meet the social and economic needs of regional communities • facilitate water trading. Plans must also take into account the State Water Management Outcomes Plan. Macro water sharing plans also reflect the following priorities for access to water: • the environmental health of rivers • basic landholder rights – domestic and stock rights and native title rights • town water and licensed domestic and stock use • other extractive uses, including irrigation, farming, industry; Aboriginal cultural, education and research purposes (in certain rivers); mining and recreation (e.g. watering playing fields). Water sources addressed in existing water sharing plans will be excluded from the macro water sharing plans, and the two sets of plans will operate in parallel until the initial plan expires. At that time, there may be a case to merge the plans. Trading may be allowed between the existing unregulated water sharing plans and the macro plans where it is consistent with the rules of both plans.	
The Sustainable Rivers Audit	The Sustainable Rivers Audit (SRA) is an initiative of the Murray–Darling Basin Commission, supported by the governments of the five Basin states and territory and the Australian Government. It measures ecological condition by reference to various environmental indicators.	Hay LGA is situated within the lowland zone of the Murrumbidgee Valley, the river health has been assessed as very poor. The indicator assessment for the lowland zones included river ecosystem (very poor), fish (poor), macroinvertebrates (moderate) and hydrological condition (Poor). Land use planning for Hay LGA should consider opportunities to protect and improve river and wetland ecological condition.
Water Compliance Policy	This informs how the Department of Water and Energy manages compliance with water legislation. The NSW Water Extraction Monitoring Policy, Draft Flood Plain Harvesting Policy, NSW State Rivers and Estuaries Policy was published in August 1993. The NSW Wetlands Management Policy, the NSW Sand and Gravel Extraction Policy for Non Title Rivers, the NSW State Groundwater Policy Framework Document, NSW State Groundwater Dependent Eco Systems Policy, NSW	

Item	Purpose	Relevance for Hay LEP Review
	Groundwater Quality Protection Policy, the Aqua for Risk Assessment Report, Stressed Rivers Assessment Report, NSW Salinity Strategy and NSW Water Conservation Strategy. The Water Sharing Plan for the Lower Murrumbidgee Groundwater Source, Murrumbidgee Catchment Action Plan, Biodiversity Banking and Offset Scheme, Caring for our Country. This natural resource initiative primarily represents and promotes a business approach to investment in natural resource activities. The Water Compliance Policy is about ensuring compliance with water legislation in terms of regulating access to water across NSW. The State Plan focuses on five areas of activities of the NSW Government, including the Justice System and Services to promote community involvement and citizenship, delivering better services including health education transport, fairness and opportunity to promote social justice and access and equity, growing prosperity across NSW to promote productivity and economic growth particularly in rural and regional NSW and environment for living which is planning for housing and jobs, environment protection, arts and recreation. The NSW Water Extraction Monitoring Policy addresses the use of water meters and other monitoring techniques in NSW.	

Table 4 – Environmental Planning Policies

Environmental Planning Instruments	Purpose
State Environmental Planning Policies	
SEPP (Affordable Rental Housing) 2009	Establishes a consistent planning regime for the provision of affordable rental housing. The policy provides incentives for new affordable rental housing, facilitates the retention of existing affordable rentals, and expands the role of not-for-profit providers. It also aims to support local centres by providing housing for workers close to places of work, and facilitate development of housing for the homeless and other disadvantaged people.
SEPP (Exempt and Complying Development Codes) 2008	The objective of this instrument is for seamless assessment processes for development that complies with specified development standards. The policy provides exempt and complying development codes that have State-wide application, identifying, in the General Exempt Development Code, types of development that are of minimal environmental impact that may be carried out without the need for development consent; and, in the General Housing Code, types of complying development that may be carried out in accordance with a complying development certificate as defined in the <i>Environmental Planning and Assessment Act 1979</i> .
SEPP (Rural Lands) 2008	The aim of this policy is to facilitate the orderly and economic use and development of rural lands for rural and related purposes. The policy applies to local government areas that are not listed in clause 4.
SEPP (Infrastructure) 2007	Provides a consistent planning regime for infrastructure and the provision of services across NSW, along with providing for consultation with relevant public authorities during the assessment process. The SEPP supports greater flexibility in the location of infrastructure and service facilities along with improved regulatory certainty and efficiency.
SEPP (Temporary Structures) 2007	Provides for the erection of temporary structures and the use of places of public entertainment while protecting public safety and local amenity. The SEPP supports the transfer of the regulation of places of public entertainment and temporary structures (such as tents, marquees and booths) from the Local Government Act 1993 to the <i>Environmental Planning and Assessment Act 1979</i> .
SEPP (Mining, Petroleum Production and Extractive Industries) 2007	This Policy aims to provide for the proper management and development of mineral, petroleum and extractive material resources for the social and economic welfare of the State. The Policy establishes appropriate planning controls to encourage ecologically sustainable development.
SEPP (Major Development) 2005	Defines certain developments that are major projects to be assessed under Part 3A of the Environmental Planning and Assessment Act 1979 and determined by the Minister for Planning. It also provides planning provisions for State significant sites. In addition, the SEPP identifies the council consent authority functions that may be carried out by joint regional planning panels (JRPPs) and classes of regional development to be determined by JRPPs. Note: This SEPP was formerly known as State Environmental Planning Policy (Major Projects) 2005.
SEPP (Building Sustainability Index: BASIX) 2004	The SEPP operates in conjunction with Environmental Planning and Assessment Amendment (Building Sustainability Index: BASIX) Regulation 2004 to ensure the effective introduction of BASIX in NSW. The SEPP ensures consistency in the implementation of BASIX throughout the State by overriding competing provisions in other environmental planning instruments and development control plans, and specifying that SEPP 1 does not apply in relation to any development standard arising under BASIX. The draft SEPP was exhibited together with draft Regulation amendment in 2004.

Environmental Planning Instruments	Purpose
SEPP (Housing for Seniors or People with a Disability) 2004	Encourage the development of high quality accommodation for our ageing population and for people who have disabilities – housing that is in keeping with the local neighbourhood. Note the name of this policy was changed from SEPP (Seniors Living) 2004 to SEPP (Housing for Seniors or People with a Disability) 2004 effective 12.10.07
SEPP No. 65 – Design Quality of Residential Flat Development	Raises the design quality of residential flat development across the state through the application of a series of design principles. Provides for the establishment of Design Review Panels to provide independent expert advice to councils on the merit of residential flat development. The accompanying regulation requires the involvement of a qualified designer throughout the design, approval and construction stages.
SEPP No 70 – Affordable Housing (Revised Schemes)	Extends the life of affordable housing provisions relating to: Sydney Regional Environmental Plan No. 26 – City West, Willoughby Local Environmental Plan 1995, South Sydney Local Environmental Plan 1998. Schemes such as these are helping to provide affordable housing in areas undergoing significant redevelopment.
SEPP No. 64 – Advertising and Signage	Aims to ensure that outdoor advertising is compatible with the desired amenity and visual character of an area, provides effective communication in suitable locations and is of high quality design and finish. The SEPP was amended in August 2007 to permit and regulate outdoor advertising in transport corridors (eg freeways, tollways and rail corridors). The amended SEPP also aims to ensure that public benefits may be derived from advertising along and adjacent to transport corridors. Transport Corridor Outdoor Advertising and Signage Guidelines (DOP July 2007) provides information on design criteria, road safety and public benefits requirements for SEPP 64 development applications.
SEPP No. 62 – Sustainable Aquaculture	Encourages the sustainable expansion of the industry in NSW. The policy implements the regional strategies already developed by creating a simple approach to identify and categorise aquaculture development on the basis of its potential environmental impact. The SEPP also identifies aquaculture development as a designated development only where there are potential environmental risks.
SEPP No. 60 – Exempt and Complying Development	Provides a more efficient and effective approval process for certain classes of development. The policy is an essential part of the reforms introduced to the development assessment system in July, 1998. It applies to areas of the State where there are no such provisions in the council's local plans.
SEPP No. 55 – Remediation of Land	Introduces state-wide planning controls for the remediation of contaminated land. The policy states that land must not be developed if it is unsuitable for a proposed use because it is contaminated. If the land is unsuitable, remediation must take place before the land is developed. The policy makes remediation permissible across the State, defines when consent is required, requires all remediation to comply with standards, ensures land is investigated if contamination is suspected, and requires councils to be notified of all remediation proposals. To assist councils and developers, the Department, in conjunction with the Environment Protection Authority, has prepared Managing Land Contamination: Planning Guidelines.
SEPP No. 52 – Farm Dams and Other Works in Land and Water Management Plan Areas	Applies to 11 irrigation areas or districts and lands shown on the plans. They are: Coleambally, Jemalong, Wyldes Plains, Vurrunga, Tabbita and Wah Wah; Berriquin, Cadell, Dememein and Wakool, which are part of the area administered by Murray Irrigation Ltd; and land in East Cadell in the Murray local government area. The policy amends the threshold used to determine what is 'designed development' in relation to farm dams (artificial waterbodies). It applies in areas where there are approved land and water management plans (LWMP) and farm plans have been approved. Currently only the area administered by murray Irrigation Corporation has approved LWMPs (ie for Berriquin, Caddell, Denemein and Wakool). As other LWMPs are approved, the policy may be amended to incorporate the areas covered by those plans. The policy amends SEPP No. 4 to enable Irrigation

Environmental Planning Instruments	Purpose
	corporations within the areas covered by the policy to carry out routine maintenance and emergency works without the need for development consent.
SEPP No. 5 – Housing for Older People or People with disability	Repealed by SEPP (Seniors Living) 2004 gazetted 31.3.04. Note the name of this policy was changed to SEPP (Housing for Seniors or People with a Disability) 2004 effective 12.10.07.
SEPP No. 50 – Canal Estates	Bans new canal estates from the date of gazettal, to ensure coastal and aquatic environments are not affected by these developments.
SEPP No. 49 – Tourism Accommodation in Private Homes	Draft only
SEPP No. 44 – Koala Habitat Protection	Encourages the conservation and management of natural vegetation areas that provide habitat for koalas to ensure permanent free-living populations will be maintained over their present range. The policy applies to 107 local government areas. Local councils cannot approve development in an area affected by the policy without an investigation of core koala habitat. The policy provides the state-wide approach needed to enable appropriate development to continue, while ensuring there is ongoing protection of koalas and their habitat.
SEPP No. 36 – Manufactured Home Estates	Helps establish well-designed and properly serviced manufactured home estates (MHEs) in suitable locations. Affordability and security of tenure for residents are important aspects. The policy applies to Gosford, Wyong and all local government areas outside the Sydney Region. To enable the immediate development of estates, the policy allows MHEs to be located on certain land where caravan parks are permitted. There are however, criteria that a proposal must satisfy before the local council can approve development. The policy also permits, with consent, the subdivision of estates either by community title or by leases of up to 20 years. A section 117 direction issued in conjunction with the policy guides councils in preparing local environmental plans for MHEs, enabling them to be excluded from the policy
SEPP No. 21 – Caravan Parks	Ensures that where caravan parks or camping grounds are permitted under an environmental planning instrument, movable dwellings, as defined in the Local Government Act 1993, are also permitted. The specific kinds of movable dwellings allowed under the Local Government Act in caravan parks and camping grounds are subject to the provisions of the Caravan Parks Regulation. The policy ensures that development consent is required for new caravan parks and camping grounds and for additional longterm sites in existing caravan parks. It also enables, with the council's consent, long-term sites in caravan parks to be subdivided by leases of up to 20 years.
SEPP No. 33 – Hazardous and Offensive Development	Provides new definitions for 'hazardous industry', 'hazardous storage establishment', 'offensive industry' and 'offensive storage establishment'. The definitions apply to all planning instruments, existing and future. The new definitions enable decisions to approve or refuse a development to be based on the merit of proposal. The consent authority must carefully consider the specifics of the case, the location and the way in which the proposed activity is to be carried out. The policy also requires specified matters to be considered for proposals that are 'potentially hazardous' or 'potentially offensive' as defined in the policy. For example, any application to carry out a potentially hazardous or potentially offensive development is to be advertised for public comment, and applications to carry out potentially hazardous development must be supported by a preliminary hazard analysis (PHA). The policy does not change the role of councils as consent authorities, land zoning, or the designated development provisions of the Environmental Planning and Assessment Act 1979.

Environmental Planning Instruments	Purpose
SEPP No. 32 – Urban Consolidation (Redevelopment of Urban Land)	States the Government's intention to ensure that urban consolidation objectives are met in all urban areas throughout the State. The policy focuses on the redevelopment of urban land that is no longer required for the purpose it is currently zoned or used, and encourages local councils to pursue their own urban consolidation strategies to help implement the aims and objectives of the policy. Councils will continue to be responsible for the majority of rezonings. The policy sets out guidelines for the Minister to follow when considering whether to initiate a regional environmental plan (REP) to make particular sites available for consolidated urban redevelopment. Where a site is rezoned by an REP, the Minister will be the consent authority.
SEPP No. 30 – Intensive Agriculture	Requires development consent for cattle feedlots having a capacity of 50 or more cattle or piggeries having a capacity of 200 or more pigs. The policy sets out information and public notification requirements to ensure there are effective planning control over this export-driven rural industry. The policy does not alter if, and where, such development is permitted, or the functions of the consent authority.
SEPP No. 22 – Shops and Commercial Premises	Permits within a business zone, a change of use from one kind of shop to another or one kind of commercial premises to another, even if the change of use is prohibited under an environmental planning instrument. Development consent must be obtained and the consent authority satisfied that the change of use will have no, or only minor, environmental effect.
SEPP No.6 – Number of Storeys in a Building	Sets out a method for determining the number of storeys in a building, to prevent possible confusion arising from the interpretation of various environmental planning instruments.
SEPP No. 4 – Development without Consent and Miscellaneous Complying Development	Previously titled SEPP No. 4 – Development without Consent. This policy allows relatively simple or minor changes of land or building use and certain types of development without the need for formal development applications. The types of development covered in the policy are outlined in the policy.
SEPP No. 1 – Development Standards	Makes development standards more flexible. It allows councils to approve a development proposal that does not comply with a set standard where this can be shown to be unreasonable or unnecessary.
Local Environmental Plans	
Hay Local Environmental Plan 1998	This is the comprehensive Environmental Plan for the Shire of Hay and provides for Landuse Planning within the Shire. The Draft LEP needs to consider the provisions of the existing instrument and ensure that those provisions are adequately catered for within the proposed Standard Instrument Draft LEP where appropriate. Any variations or any inconsistencies should be of a result of the findings of the Urban Rural Landuse Studies and Rural Settlement Strategies background investigations.
Deemed SEPPs	
No deemed SEPPs apply to the Hay LGA.	N/A

Environmental Planning Instruments	Purpose
Development Control Plans	
Development Control Plan No.1	This Plan was adopted by the Council on 23 May, 2000 and provides for a range of exempt and complying development. Most of these provisions would be impacted by the SEPP Exempt and Complying Development Code. Appropriate provisions may need to be provided in the LEP and in Schedules attached to the LEP for any local variations. Hay Council and the community need to be engaged in determining the extent and nature of any local variations.
Development Control Plan No.2	This Plan was approved by Council on 24 June, 2003. The Plan applies to the urban centre of Hay and provides general guidelines to encourage a range of urban land uses in certain areas.

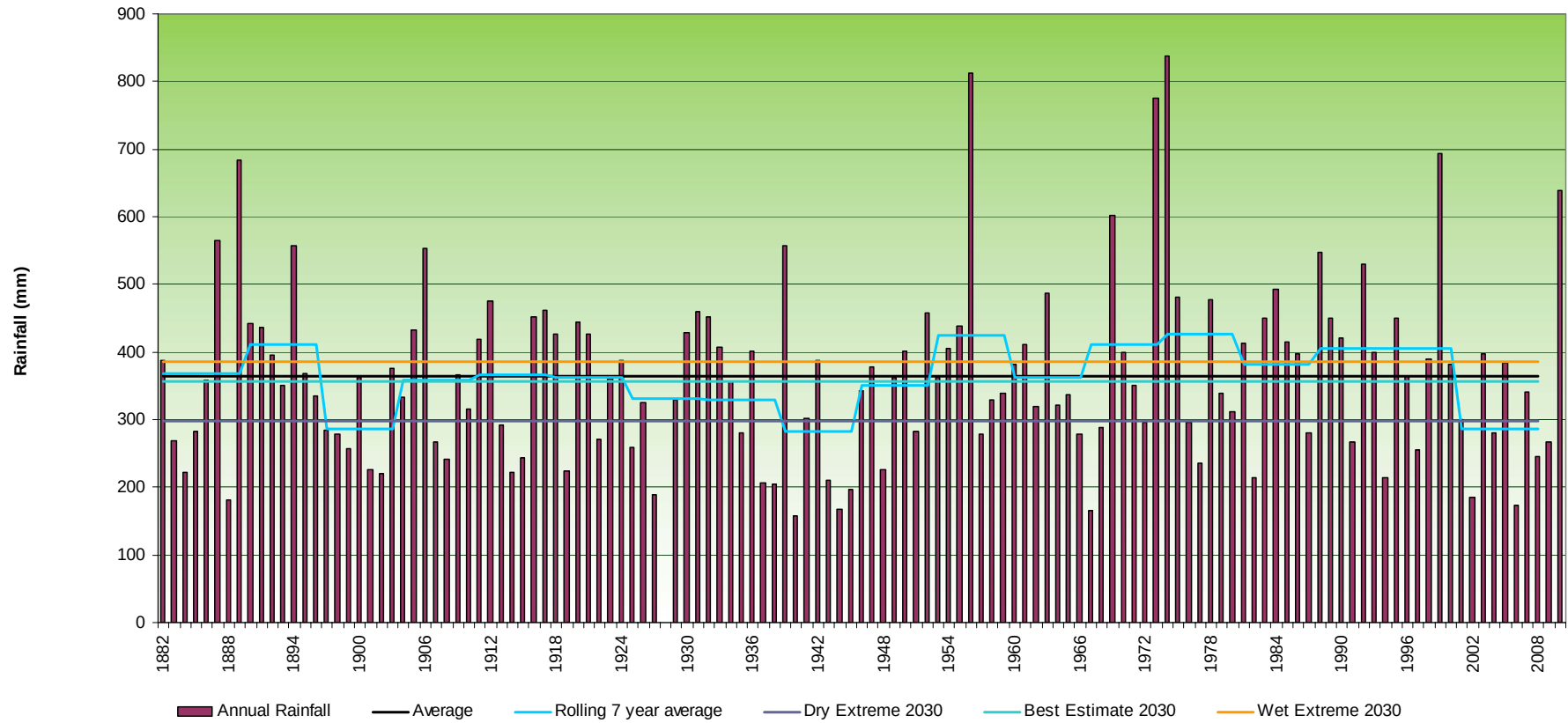
Notes:

- 1 Source: abstracts from SEPPs drawn from the DOP website <http://www.planning.nsw.gov.au/PlanningSystem/Legislationandplanninginstruments/ListofStatePolicies/tabid/78/Default.aspx> viewed 6 August 2009
- 2 Abstracts from Deemed SEPPs as stated on DOP website <http://www.planning.nsw.gov.au/PlanningSystem/Legislationandplanninginstruments/ListofRegionalPlansdeemedStatePolicies/tabid/79/Default.aspx?RegionID=7> viewed 11 August 2009

ANNEXURE 2.0

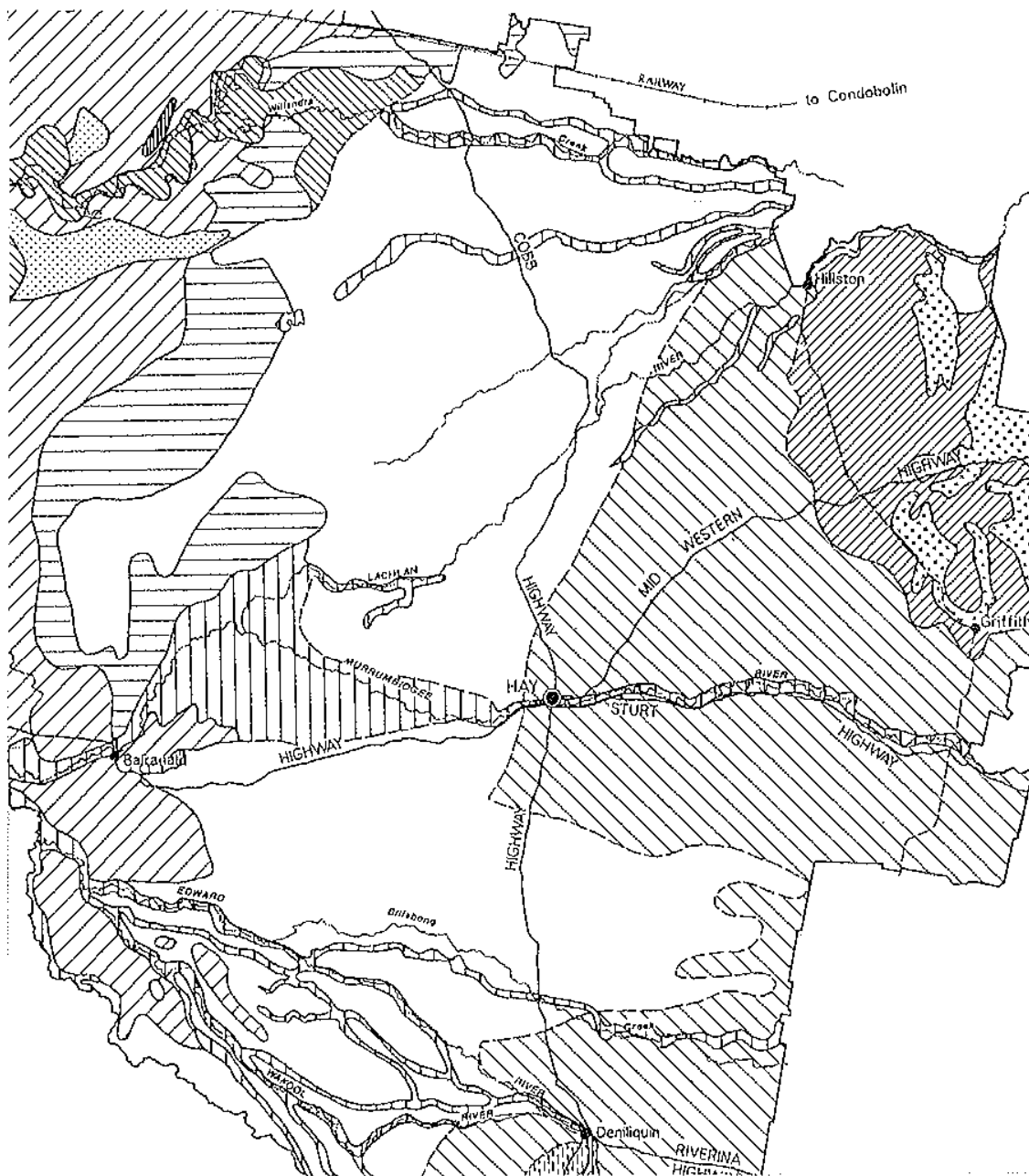
Average Annual Rainfall

Hay (Miller Street) Annual Rainfall



ANNEXURE 3.0

Hay District Soils Map



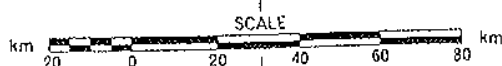
LEGEND

Grey, brown and red clays	
Deep, grey, self-mulching, cracking clays (Ug 5.24 and Ug 5.25)	
Deep, yellow-grey, self-mulching, cracking clays (Ug 5.28) and various duplex soils	
Ancestral streams and floodplain complex	
Solonized brown soils	
Calcareous brown earths (Gc 1.12 and Gc 1.22)	
Red brown earths	
Hard, pedal, alkaline, red, duplex soils with sporadically bleached A2 horizons (Dr 2.33) with other duplex soils	
Hard, pedal, alkaline, red, duplex soils with sporadically bleached A2 horizons (Dr 2.33) with grey and brown clays and some duplex soils	
Desert loams	
Crusty, pedal, alkaline, red, duplex soils with or without sporadically bleached A2 horizons (Dr 1.13 and Dr 1.33)	
Crusty, pedal, alkaline, red, duplex soils with bleached A2 horizons (Dr 1.42)	
Red earths	
Massive, neutral red earths (Gn 2.12)	
Massive, calcareous red earths (Gn 2.13)	
Siltaceous and Earthy sands	
Deep, loose neutral and alkaline sands (Uc 1.23, Uc 5.11, Gn 1.13)	
Lithosols	
Shallow, sandy soils (Uc 1) with small areas of solonised brown soils (Gc 2.12) on the lower slopes	

FIGURE 5.1
Soil Conservation Service of N.S.W.

HAY DISTRICT

SOILS



ANNEXURE 4.0

***Commonwealth and State Government Endangered Flora
within Hay LGA***

Commonwealth & State Government Endangered Flora within Hay LGA				
Family Name	Scientific Name	Common Name	Legal Statue	Count
Asteraceae	Calotis moorei	Moore's Burr-daisy	E1	38
	Leptohynchos orientalis	Lanky Buttons	E1	6
	Caliotis pubescens	Max Mueller's Burr-Daisy	E1	1
	Rutidosia leptorrhynchoidea	n/a	E1	18
	Rutidosia leptorrhynchoidea	Button Wrinklewort	E1	36
Convolvulaceae	Convolvulus tedmoorei	Bindweed	E	Likely to occur
	Wilsonia rotundifolia	Round-leafed Wilsnia	E1	7
Marsileaceae	Pilularia novae-hollandiae	Austral Pillwort	E1	32
Brassicaceae	Lepidium monophloeoides	Winged Peppergrass	E1	Likely to occur
	Irenophora tryphera	Illawarra Irene	E1	2
	Lepidium hyssopifolium	n/a	E1	1
	Lepidium Pseudopapillosum	n/a	E1	3
Cyperaceae	Carex Klaphake	Klaphake;s Sedge	E1	4
	Carex raleighii	Raleigh Sedge	E1	8
Droseraceae	Aldrovanda vesiculosa	Water Wheel Plant	E1	5
Epacridaceae	Monotoca rotundifolia	Trailing Monotoca	E1	3
Euphorbiaceae	Monotaxis macrophylla	Large leafed Monotaxis	E1	3
Fabaceae (Faboideae)	Dillwynia glauca	Michelago Parrot-Pea	E1	26
	Pultenaea pendunculata	Matted Bush-pea	E1	19
	Swainsona recta	Mountain Swainson-Pea	E1	12
Fabaceae (Mimosoideae)	Acacia bynoeana	Bynoe's Wattle	E1	4
Gentianaceae	Gentiana bredboensis	Bredbo Gentian	E1	3
	Gentiana wingecarriensis	n/a	E1	2
Goodeniaceae	Dampiera fusca	n/a	E1	5
Grammitaceae	Grammitis stenophylla	n/a	E1	1
Lamiaceae	Prostanthera askania	n/a	E1	1
	Prostanthera marifolia	n/a	E4	1

Commonwealth & State Government Endangered Flora within Hay LGA				
Family Name	Scientific Name	Common Name	Legal Statue	Count
	Westringia kydrensis	Kydra Westringia	E1	1
Myrtaceae	Euclayptus recurva	Mongarlowe Mallee	E1	19
	Eucalyptus saxatillis	n/a	E1	1
Orchideaceae	Calandenia arenaria	Sand-hill Spider Orchid	E1	3
	Calandenia concolor	Crimson Spider Orchid	E1	3
	Calandenia tessellate	Thick Lip Spider Orchid	E1	3
	Diuris pedunculata	Small Snake Orchid	E1	9
	Diuris ochroma	Pale Golden Moths	E1	4
	Genoplesium plumosum	n/a	E1	3
	Genoplesium superbum	n/a	E1	3
	Prasophyllum petilum	n/a	E1	2
	Prasophyllum bagoensis	n/a	E1	5
	Prasophyllum canaliculatum	n/a	E1	4
Poaceae	Distichlis distichophylla	Australian Saltgrass	E!	16
	Plinthanthesis rodwayi	Budawangs Wallaby Grass	E1	16
	Austrostipa wakoolica	A Spear Grass	E1	82
Proteaceae	Grevillia iaspicula	Wee Jasper Grevillea	E1	22
	Grevillea renwickiana	Nerriga Grevillea	E!	31
	Grevillea rivularis	n/a	E1	1
	Grevillea wilkinsonii	n/a	E1	14
Rhamnaceae	Pomaderris cotoneaster	Cotoneaster pomaderris	E1	7
	Pomaderris delicate	Delicate Pomaderris	E1	6
	Pomaderris sericea	Silky Pomaderris	E1	1
Rubiaceae	Galium australe	Tangled Bedstraw	E4 & E1	3e
Rutaceae	Boronia ruppil	n/a	E1	1
	Zieria adenophpra	n/a	E1	3
Scrophulariaceae	Euphrasia seabra	Rough Eyebright	E1	2
Solanaceae	Solanum celatum	n/a	E1	6
Sterculiaceae	Rulingia prostrate	Dwarf Kerrawang	E1	1

Commonwealth & State Government Endangered Flora within Hay LGA				
Family Name	Scientific Name	Common Name	Legal Statute	Count
Thymelaeaceae	Pimelea axiflora subsp. Pubnescens	n/a	E1	2
	Dysphania plantagenella		E1	2
	Kippistia suaedifolia	Fleshy Minuria	E1	21

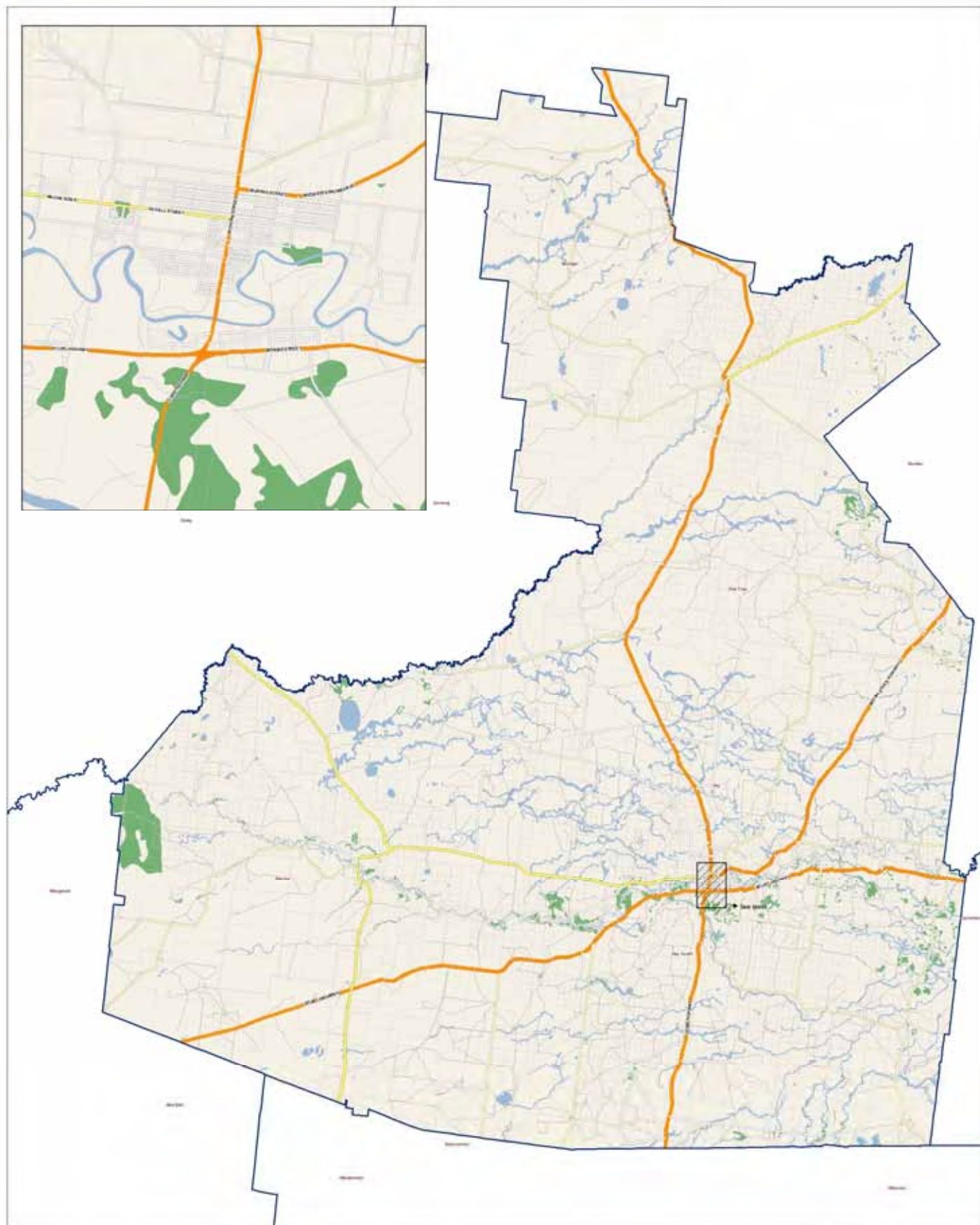
Vulnerable and Endangered Flora within Hay LGA				
Family Name	Scientific Name	Common Name	Legal Statute	Count
Poaceae	Austrostipa wakoolica	A Spear Grass	E E under EPBC Act	Likely to occur
	Amphibromus fluitans	River Swamp Wallaby-grass	V V under EPBC Act	May occur
Convolvulaceae	Convolvulus tedmoorei	Bindweed	E	Known
Brassicaceae	Lepidium monoplocoides	Winged Peppergrass	E E under EPBC Act	Likely to occur
Marsileaceae	Pilularia novae-hollandiae	Austral Pillwort	E	Likely to occur
Solanaceae	Solanum karsense	Menindee Nightshade	V V under EPBC Act	Known
Fabaceae	Swainsona murrayana	Slender Darling Pea	V V under EPBC Act	Known
	Swainsona sericea	Silky Swainson-pea	V	Known
Chenopodiaceae	Dysphania plantaginella	Dysphania plantaginella	E	Predicted
Cyperaceae	Eleocharis obicis	Striate Spike-sedge, Spike Rush	V V under EPBC Act	May occur
	Maireana cheelii	Chariot Wheels	V V under EPBC Act	Known
Asteraceae	Pycnosorus globosus	Drumsticks	P13	7
	Pycnosorus pleiocephalus	Soft Billy Button	P13	8
	Pycnosorus thompsonianus	Common Billy Button	P13	2
	Kippistia suaedifolia	Fleshy Minuaria	E	Known
	Brachycome muelleroides	Claypan Daisy	V	Predicted

Vulnerable and Endangered Flora within Hay LGA				
Family Name	Scientific Name	Common Name	Legal Statue	Count
	Brachycome papillose	Mossgiel Daisy	V	Known
	Calotis moorei	A burr-daisy	E	Predicted
	Leptorhynchos orentalis	Lanky Buttons	E	Predicted
Orchidaceae	Diuris maculate	Spotted Doubletail	P13	1
	Pterostylis biseta	Rustyhood	P13	3
	Diuris tricolour	Pine Donkey Orchid	V	Known
1 – Endangered (Threatened Species Conservation Act, 1995) E4 – Presumed Extinct (Threatened Species Conservation Act, 1995) V – Vulnerable (Threatened Species Conservation Act, 1995) E – Endangered (Environmental Protection and Biodiversity Conservation Act, 1999) V – Vulnerable (Environmental Protection and Biodiversity Conservation Act, 1999) P13 – Protected Plants (National Parks and Wildlife Act, 1974)				

NOTE: The list above was compiled using the DECC Threatened Species – Murrumbidgee CMA (Murrumbidgee & Lachlan sub-region) & Lachlan CMA (Lachlan sub-region), NPWS Atlas search for Hay LGA area and the EPBC act Protected Matters Report.

ANNEXURE 5.0

Hay LGA Constraints Map – Vegetation Black Box



Roads	Vegetation
Highways	Black Box
Arterial Roads	
Sub-Arterial/Collector Rds	
Local Roads	
Other Roads	
Hay Shire	
Cadastre	
Major Waterways	

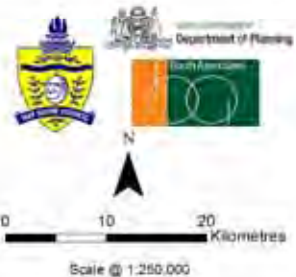
Hay LGA Constraints Map: Vegetation - Black Box

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Hay Shire boundary copyright PSMA Australia, 2009

Vegetation copyright Department of Water and Energy and Department of Environment,
Climate Change and Water



ANNEXURE 6.0

NSW Heritage Register Excerpts



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Bishops Lodge

Item

Name of Item: Bishops Lodge
 Type of Item: Built
 Location: Lat:144.84831014 Long:-34.51922645
 Primary Address: Moama Street, Hay, NSW 2711
 Local Govt. Area: Hay

Property Description:

Lot/Volume Code	Lot/Volume Number	Section Number	Plan/Folio Code	Plan/Folio Number
LOT	34	-	DP	747124

All Addresses

Street Address	Suburb/Town	LGA	Parish	County	Type
Moama Street	Hay	Hay	Hay South	Waradgergy	Primary
Roset Street	Hay	Hay	Hay South	Waradgergy	Alternate

Owner/s

Organisation Name	Owner Category	Date Ownership Updated
Hay Shire Council	Local Government	19 Mar 99

Statement of Significance

This is an important and increasingly rare example of a large intact iron house typical of nineteenth century Riverina domestic architecture. It demonstrates by its positioning and materials the necessary adaptation and concessions made to the local climatic extremes and the nature of the soils. Its design is thought to have influenced the choice of materials used for the Hay Lands Office built in 1895 (National Trust).

Date Significance Updated: 29 Jun 06

Note: There are incomplete details for a number of items listed in NSW. The Heritage Branch intends to develop or upgrade statements of significance and other information for these items as resources become available.

Description

Construction Years: 1888 - 1888

Physical Description: The Bishop's Lodge residence was constructed in Hay by Bishop Sydney Linton after promises of support from the Mayor and

people of Hay. These promises were not fulfilled and the Linton family bore the major part of the debt for construction after the Bishop's death. The diocesan headquarters were later transferred to Narrandera. Subsequently the building was used as a hostel, before being eventually sold into private ownership. This imposing building is located with a north orientation to the Murrumbidgee River. An unobstructed view of the building from the Sturt Highway ensures that the building is a landmark feature in the Hay area and Riverina.

The lodge comprises the main residence, a kitchen block and two outbuildings east of the kitchen. The residence has a courtyard open to the rear, and a verandah encircles the building. All rooms are accessible from the verandah and a central hall is the only internal passageway. Walls are clad externally in corrugated iron and internally in ripple iron, with sawdust within the walls for insulation. Finely detailed verandah posts, window and door mouldings, roof ventilators and skilfully mitred timber linings on the verandah soffits provide relief from the bland corrugated walls. Wisteria grows on the northern verandah and adds protection from the sun.

Orientation was carefully considered in the layout and siting of the residence, rather than it facing the street. The construction system was innovative, to avoid the problems of soil movement in the extremes of seasons which cause masonry buildings to crack and to allow the structure to cool rapidly at night in the summer, while being insulated from the worst of the daytime heat. The roof is hipped, with ventilators in the portion of walls between the verandah roofs and the main eaves. There are gambrel ventilators to the rear hips. The chimneys are of brick. There is a pediment at the entrance, with incised decoration around a Bishop's mitre (AHC).

It is a large single storey building with central courtyard and with encircling verandah around the building perimeters. All rooms are accessible from the verandahs with a central hallway the only internal passageway. The kitchen is detached. Roofing and external walls of corrugated iron and internal linings all of ripple iron on a timber frame with sawdust filled wall cavities to provide insulation. In southern New South Wales iron is a most suitable domestic building material. Its lightness and durability and ability to withstand the seasonal expansion and contraction of western Riverina soil which causes extensive cracking of masonry buildings has not been generally appreciated. As a result many period iron houses have been lost. Rather than facing south onto the main road, the building has a northern orientation which is further evidence of design concessions to climatic extremes.

The utilitarian plainness of the building is relieved by finely detailed timber verandah posts, window and door mouldings, roof ventilators. A timber pediment over the entrance has a finely incised decoration around a carved bishop's mitre. Internally there are eighteen rooms each about 25 ft by 25 ft. The 12 ft high ceilings are of stained boards. Each room has a marble fireplace - black, brown or white - with brick surrounds. The former chapel has a decorated arch and stained glass fanlight. The kitchen block with large kitchen and several small rooms is connected to the house by a raised covered walkway. Building Material: Roofing and external walls of corrugated iron, internal linings of ripple iron, sawdust cavities (National Trust).

Current Use: Residence
Former Use: Residence

History

Historical Notes: The Bishop's Lodge residence was constructed in Hay by Bishop Sydney Linton after promises of support from the Mayor and people of Hay. These promises were not fulfilled and the Linton family bore the major part of the debt for construction after the Bishop's death. The diocesan headquarters were later transferred to Narrandera. Subsequently the building was used as a hostel, before being eventually sold into private ownership. This imposing building is located with a north orientation to the Murrumbidgee River. An unobstructed view of the building from the Sturt Highway ensures that the building is a landmark feature in the Hay area and Riverina (AHC).

Sydney Linton arrived with his wife and family in Sydney on board the PARRAMATTA in early 1885 and was enthroned as the Anglican Bishop of the Riverina at St Paul's Church, Hay on 18th March of that same year. He travelled extensively throughout the area during his early ministry and experienced the extremes of the Riverina climate and had ample opportunity to consider the design of a building to accommodate his family and the administrative needs of the Diocese. The result is an innovative and successful building constructed in 1888 (National Trust).

Historic Themes

Australian Theme (abbrev)	New South Wales Theme	Local Theme
4. Settlement - Building settlements, towns and cities	Accommodation - Activities associated with the provision of accommodation, and particular types of accommodation – does not include architectural styles – use the theme of Creative Endeavour for such activities.	Housing the clergy and religious -

Assessment Criteria

Items are assessed against the  [State Heritage Register \(SHR\) Criteria](#) to determine the level of significance. Refer to the Listings below for the level of statutory protection.

Procedures /Exemptions

Section of Act	Description	Title	Comments	Action Date
57(2)	Exemption to allow work	Standard Exemptions	SCHEDULE OF STANDARD EXEMPTIONS HERITAGE ACT 1977 Notice of Order Under Section 57 (2) of the Heritage Act 1977 I, the Minister for Planning, pursuant to subsection 57(2) of the Heritage Act 1977, on the recommendation of the Heritage Council of New South Wales, do by this Order: 1. revoke the Schedule of Exemptions to subsection 57(1) of the Heritage Act made under subsection 57(2) and published in the Government Gazette on	Sep 5 2008

22 February 2008; and

2. grant standard exemptions from subsection 57(1) of the Heritage Act 1977, described in the Schedule attached.

FRANK SARTOR
Minister for Planning
Sydney, 11 July 2008

To view the schedule click on the Standard Exemptions for Works Requiring Heritage Council Approval link below.



[Standard Exemptions](#) for Works Requiring Heritage Council Approval

Listings

Heritage Listing	Listing Title	Listing Number	Gazette Date	Gazette Number	Gazette Page
<i>Heritage Act - State Heritage Register</i>		00482	02 Apr 99	27	1546
<i>Heritage Act - Permanent Conservation Order - former Local Environmental Plan</i>		00482	10 Oct 86	161	4977
			11 Dec 98	171	
<i>National Trust of Australia register</i>		2933	26 Mar 84		
<i>Register of the National Estate</i>		14490	14 May 91		

References, Internet links & Images

Type	Author	Year	Title	Internet Links
Tourism	Attraction Homepage	2007	Bishops Lodge	Click here
Tourism	Tourism NSW	2007	Bishop's Lodge Historic House & Heritage Rose Garden	Click here
Written	Mary Lous Gardam, Brenda weir, Peter Freeman	2003	The Bishop's Lode, Hay, NSW, Australia	
Written	National Trust of Australia (NSW)	1984	Classification Sheet #2933	
Written	PETER FREEMAN	1982	THE HOMESTEAD: A RIVERINA ANTHOLOGY	
Written	LAUREL CLYDE		IN A STRANGE LAND	

Note: Internet links may be to web pages, documents or images.

**PLAN
UNDER THE
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1977**

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Hay Gaol

Item

Name of Item: Hay Gaol
Other Name/s: Hay Jail, Hay Institution for Girls, Dunera boys internment camp
Type of Item: Complex / Group
Group/Collection: Law Enforcement
Category: Gaol/Lock-up
Primary Address: 355 Church Street, Hay, NSW 2711
Local Govt. Area: Hay
Property Description:

Lot/Volume Code	Lot/Volume Number	Section Number	Plan/Folio Code	Plan/Folio Number
LOT	215	-	DP	756755

All Addresses

Street Address	Suburb/Town	LGA	Parish	County	Type
355 Church Street	Hay	Hay	Hay	Waradgery	Primary

Statement of Significance

The Hay Gaol is of State significance for its aesthetic, rarity and representative values as an example of James Barnett's Hay-type gaol design, and as an example of a Victorian-era country prison that combines foreboding design features (such as its entranceway, perimeter walls, cell block and isolation cell) with vernacular materials. It is furthermore of State significance for its variety of historical functions, associations and social values as a small-scale prison and detention centre. Built as a colonial gaol in 1880 it was later used as a detention and hospitalisation facility servicing Hay's World War II internment and prisoner of war camps (1940 - 1946) and then as a girls' institution run by the NSW Department of Child Welfare (1961 - 1974). Although official records remain unavailable, it is believed that a significant proportion of girls sent to Hay were indigenous 'Stolen Generation' children and many survivors from this era have begun visiting the site from all over Australia. It is probably the only building in Australia directly associated with the internment of the Dunera Boys and with the imprisonment of the Japanese prisoners of war (POWs) following the Cowra Breakout in 1944. The Hay Gaol is also of State significance

for its research, archaeological and interpretive potential as a site or landscape of segregation, which capitalised on the already isolated geographic position of Hay to provide different forms of incarceration in different periods of history.

The Hay Gaol is of local historical and social significance as one of several grand buildings that represent Hay's unfulfilled promise of becoming the capital of the Riverina, for its temporary roles as a maternity hospital (1920 to 1930) and as a site of emergency accommodation during the 1952 and 1956 floods and more recently for its museum collections relating to the social and pastoral history of Hay. As a substantial building complex sited near the centre of the township it is an iconic building in Hay. As one of a network of five vibrant and collaboratively managed museums supported by the Hay Shire Council, the Gaol along with Hay's other museums underpin cultural tourism development in the town and as such are important to supporting and diversifying the local economy.

Date Significance Updated: 03 May 07

Note: There are incomplete details for a number of items listed in NSW. The Heritage Branch intends to develop or upgrade statements of significance and other information for these items as resources become available.

Description

Designer/Maker: James Barnet, Colonial Architect

Builder/Maker: Witcombe Brothers

Construction Years: 1879 - 1880

Physical Description: The Hay Gaol is an example of James Barnet's Hay-type gaol, a classification defined by JS Kerr in his 1988 book 'Out of Sight, Out of Mind' in which Kerr differentiates Barnet's Hay-type gaol from the more common Braidwood-type gaol design of the previous colonial architect. The main difference between the two designs is that the Hay-type gaol is single-storey and the cells larger than the two-storey Braidwood-type gaol. Other gaols built to the Hay-type pattern were at Young (1876-78), Tamworth (1879-81) and Wentworth (1879-81). Of these buildings; Young was destroyed in a fire, with only the gate house remaining and Tamworth is still in use by the Department of Corrective Services. The Wentworth and Hay sites are open to the public, both are currently museums. Braidwood-type gaols were built at: Braidwood, Albury, Armidale, Mudgee, Grafton, Wagga Wagga, Yass and Deniliquin. [Hay Council SHR nomination, 2006]

The Hay Gaol is constructed of English bond red brick, made locally by the Headon Brothers at a kiln in North Hay. [Hay Council SHR nomination, 2006]

Perimeter walls and watchtowers: A perimeter wall 5 meters (15 feet) high and 23 centimetres (nine inches) thick surrounds the complex. There are two watchtowers on diagonally opposite corners of the wall. A catwalk originally ran above the wall with supports on either side. [Hay Council SHR nomination, 2006]

Entranceway: The imposing entrance gateway (in contrast to the utilitarian nature of the rest of the design) bears various forms of decoration including; rusticated quoins, moulding

Physical Condition and / or Archaeological Potential:	over the entrance arch with keystone emphasis, a dentil course, and a parapet with the royal cypher in the centre. Solid double wooden doors, with an inset smaller door, complete the imposing appearance of the front of the gaol. Inside the front gate is a small barred entrance court, with two small rooms marked 'office' and 'guard' in the original plans for the gaol. [Hay Council SHR nomination, 2006] Cell block: Today the cell block contains 14 cells. Its brick walls are 46 centimetres (18 inches) thick and the building has a hipped corrugated iron roof and a gabled entrance. Cells have small barred windows and thick iron doors with peep holes. One cell has additional colonial-style prison bars; it is unclear as to whether all cells were equipped with such bars, but this is doubtful. A closed in verandah at the back of the cell block leads into a large metal shed. [Hay Council SHR nomination, 2006] Services block: Within the compound an L-shaped block with a hipped iron roof and a verandah houses the kitchen, hospital, dispensary, bathroom, store and large workshop. Rainwater from the roofs was collected in a large underground tank. [Hay Council SHR nomination, 2006] Solitary confinement cell: A free standing solitary confinement cell stands in the centre of the compound. Evidence of a second solitary confinement cell attached to the west of this structure is evident. A tin shed housing male toilets and used for storage now abuts the western wall of this structure. [Hay Council SHR nomination, 2006] Gaoler's residence: A gaoler's residence is located outside the compound on the western side of the entranceway. The structure has a hipped iron roof, verandah, the tall chimneys have cornices and windows have flat arches. The structure abuts the perimeter wall. A small free standing carport was added to the south of the complex at some stage. [Hay Council SHR nomination, 2006] Officer's residence: A second, three bedroom residence, is located outside the compound on the eastern side of the entranceway. This building was added in 1935 when the Public Works Department called tenders. Local builders Butterworth and Co constructed the cottage. This structure does not abut the perimeter wall. A free standing residential sized shed and carport has been added to the back of this residence at some stage. [Hay Council SHR nomination, 2006] The Hay Gaol is in a deteriorating physical condition. It has many modifications from its original use as a colonial prison but a study of the physical fabric of the site would yield information about the Gaols history of use. Paint scrapings in the cell block to determine the various paint and surfaces of the different eras is considered important to the possible future interpretation of the site. [Hay Council SHR nomination, 2006] Whilst the Gaol currently functions as a community museum, the Hay Gaol Management Committee has started work on projects interpreting the history of the site. Concrete paths laid by girls at the girls' institution remain in the building fabric as does the girls' laundry box. Objects related to the history of the site, particularly when the Gaol was a girls' institution remain in the Hay Gaol

Modifications and Dates:

Museum collection as significant objects. The Hay Gaol Museum also holds historical images of the site. [Hay Council SHR nomination, 2006] Date Condition Updated: 16 Jan 07

Perimeter walls and watchtowers: 1961: Catwalk is removed from perimeter walls 1961: Stays are installed to the exterior of the eastern wall Entranceway - office: Possibly 1961: Interior of office subdivided to house two small offices and washroom for admitting newly admitted girls. 2004: Interior subdivisions are removed due to white ant attack and space is established as exhibition space interpreting the history of the site Cell block: 1896: Two additional cells for female prisoners were added to the cell block Date unknown: Two original larger cells were halved in size to become the same size as the other cells Date unknown: Back verandah closed in 1961: Cells are modified to include simple seat and bench for girls' institution and electricity added to cell block 1961: Cells are painted and scrubbed by girls for girls' institution Post 1974: Large shed for housing museum collections was added to the northern end of the cell block Post 1974: Cells modified to include housing and security for museum exhibits 2003: Small room used by night staff when the gaol was a girls' institution is dismantled due to white ant attack Services block: Date unknown: verandah added probably after 1974 Solitary confinement cell: 1899: Two solitary confinement cells were constructed in the courtyard Date unknown: The western solitary confinement cell is removed Pre 1973: A tin structure, including male toilets, is added to the western side of the remaining solitary confinement cell. Gaoler's residence: 1897: Wash house added to the gaoler's residence Other modifications: Date unknown: At some stage the underground water tanks in the compound may have been removed. 1898: Acetylene gas is connected to the kitchen and hospital. 1899: Gas lighting is installed in all the cells in 1899 1930: Gaol connected to town gas and sewerage [Hay Council SHR nomination, 2006]

Further Information:

Information about the block on which the Hay Gaol is sited: The Hay Gaol is located on a block of land set aside for a gaol in original town plans. As well as the Gaol there are some other structures sited on the block, most importantly these are:

Apex Park: a children's park is located in the south-eastern corner of the block / its enclosure measures: 42m (along Church St) x 33.5m (along Piper St).

Large storage sheds: run north-south parallel to the eastern perimeter wall / they are 40m L x 8.5m W / are 7m from the eastern perimeter wall / constructed post 1974 to house museum exhibits.

[Hay Council SHR nomination, 2006]

Current Use:

Museum and cultural centre

Former Use:

Colonial prison, hospital, POW camp, emergency flood housing, girls institution.

History

Historical Notes:

Aboriginal land

Aboriginal communities in the western Riverina were traditionally concentrated in the more habitable river corridors and amongst the reedbeds of the region. The district surrounding Hay was occupied by at least three separate Aboriginal groups at the time of European

occupation of their lands. The area around the present township appears to have been a site of interaction between the Nari-Nari people of the Lower Murrumbidgee and the Wiradjuri who inhabited a vast region in the central-western inland of New South Wales (Wikipedia entry on Hay, 17/1/07). The groups in the western plains and Riverina were dislocated as the equipoise of their hunting, fishing and collecting was disrupted by increasing British occupation of their lands in the 1830s and 1840s. Aboriginal missions were created in NSW the 1890s and displacement continued under the Aborigines Protection Act of 1909. (DUAP et al, Regional Histories, pp192-193) [Comment on Stolen Generation].

British occupation of the area

In 1829 Charles Sturt and his men passed along the Murrumbidgee River on horses and drays. During the late-1830s stock was regularly overlanded to South Australia via the Lower Murrumbidgee. At the same time stockholders were edging westward along the Lachlan, Murrumbidgee, Billabong and Murray systems. By 1839 all of the river frontages in the vicinity of present-day Hay were occupied by squatters. By the mid-1850s pastoral runs in the western Riverina were well-established and prosperous. The nearby Victorian gold-rushes provided an expanding market for stock. The prime fattening country of the Riverina became a sort of holding centre, from where the Victorian market could be supplied as required. (Wikipedia entry on Hay, 17/1/07)

The locality where Hay township developed was originally known as Lang's Crossing-place (named after three brothers named Lang who were leaseholders of runs on the southern side of the river). It was the crossing on the Murrumbidgee River of a well-travelled stock-route (known as 'the Great North Road') leading to the markets of Victoria. In 1856-7 Captain Francis Cadell, pioneer of steam-navigation on the Murray River, placed a manager at Lang's Crossing-place with the task of establishing a store (initially in a tent). In August 1858 steamers owned by rival owners, Francis Cadell and William Randell, successfully travelled up the Murrumbidgee as far as Lang's Crossing-place (with Cadell's steamer Albury continuing up-river to Gundagai). By October 1859 "Hay" had been chosen as the name for the township [after John Hay (later Sir John), a wealthy squatter from the Upper Murray, member of the NSW Legislative Assembly and former Secretary of Lands and Works] (Wikipedia, 17/1/07). Hay, situated on the Murrumbidgee, was gazetted as a town in 1859. (DUAP et al, Regional Histories, pp194). In the late nineteenth century, several grand buildings representing Hay's aspirations to become the capital of the Riverina were built. However inter-colonial disputes over trade thwarted these aspirations and instead of booming Hay remained small and isolated, but importantly connected to Sydney via a rail line (Hay Council SHI nomination 2006).

The Gaol's beginnings, 1870 to 1915

Hay's original gaol was a brick lockup at the rear of the Hay Courthouse. In 1878 it was decided to erect a large new gaol on a reserve especially set aside for that purpose. The Hay Gaol's grand scale reflected the view that Hay, as the transport hub of a wealthy wool-growing area, would become the major regional centre in the Riverina. Local builders John and James Witcombe built the Gaol to a design by NSW

colonial architect James Barnet. [Comment on Hay-type gaol design]. The Hay Gaol opened on 21 December 1880 under police control. It was used mainly for offenders with short sentences, as those imprisoned for long terms were sent to Goulburn Gaol. As the years went on Hay Gaol struggled to remain open, due to a lack of prisoners. By 1915 it was closed; at this stage it reportedly had one prisoner guarded by four wardens. The local newspaper, The Riverine Grazier, reported the escape of a Robert Chapman, alias Murray from the gaol in 1893. Closed as a regular prison in 1915 due to a lack of numbers, Hay Gaol's reputation as one of the most secure in the state, coupled with Hay's isolation and easy access to Sydney ensured the Hay Gaol reopen as an incarceration facility in later years (Hay Council SHI nomination 2006).

Hospitals: 1918 to 1940

Between the two World Wars, the Gaol buildings met Hay's medical needs. In 1919, during a local outbreak of the worldwide Spanish Flu epidemic, the Gaol was briefly used as an emergency hospital to isolate patients who couldn't be treated at the Hay Hospital. In 1921 Hay's Red Cross Society turned the Gaol into a maternity home. The two rooms at the front entrance became wards, as did the old hospital area. Many older Hay locals enjoy telling the tale that they were 'born in the Hay Gaol.' In 1930 the maternity home moved to a new site in Hay. That year, the state's gaols were congested, a result of the new Consorting Act which gave police more powers to convict well-known criminals. It was decided to reopen the Hay Gaol and connect the building to town gas and sewerage. The Gaol operated for ten years, in that time one escape was recorded; Reginald Arthur Dawson, a prisoner employed as a cook, scaled the wall of the Gaol using a rope made from towels and a poker. He was captured in a paddock five days later (Hay Council SHI nomination 2006).

Internment and POW camp facility: 1940 to 1946

During World War II Hay was used as a prisoner-of-war and internment centre, due in no small measure to its isolated location. Three high-security camps were constructed there in 1940. The use of the Gaol as a detention and hospitalisation facility that serviced the POW camps from 1940 to 1946 brought aspects of the camps into the town's heart. The first internees were over two thousand refugees from Nazi Germany and Austria, many of them Jewish; they had been interned in Britain when fears of invasion were at their peak and transported to Australia in 1940 aboard the HMT Dunera. Interned under the guard of the 16th Garrison Battalion of the Australian Army they became known as the 'Dunera Boys'. Later that year began the arrival of Italian civilian internees. In February 1941, in the wake of the Cowra POW break-out, a large number of Japanese POWs were transferred to Hay and placed in the three high-security compounds. During 1946 the POWs who remained at Hay were progressively released or transferred to other camps, and the Hay camps were dismantled and building materials and fittings sold off by June the following year. The internment at Hay of the Dunera refugees from Nazi oppression in Europe was an important milestone in Australia's cultural history. About half of those interned at Hay eventually chose to remain in Australia. The influence of

this group of men on subsequent cultural, scientific and business developments in Australia is difficult to over-state; they became an integral and celebrated part of the nation's cultural and intellectual life. The 'Dunera Boys' are still fondly remembered in Hay; every year the town holds a 'Dunera Day' in which many surviving internees return to the site of their former imprisonment (Wikipedia, 17/1/07). Today the Gaol is one of only a few buildings remaining in Hay associated with the camps.

Emergency housing 1952 and 1956 floods

After the Hay camps were broken up in 1946-7, the Gaol was used intermittently for emergency housing during the 1952 and 1956 floods, and as accommodation for Italian workers in town to build the new sewerage system (Hay Council SHI nomination 2006).

The Institution for Girls in Hay: 1961 to 1974

From 1961 to 1974 the Hay Gaol was managed by the New South Wales Child Welfare Department as a particularly coercive maximum security institution for girls between the ages of thirteen and eighteen. The Institution for Girls in Hay, as it was officially known, was established in response to wide scale rioting at Parramatta Girls' Home in 1961. The aim of Hay was to separate the girls involved in the riots and those whose behaviours generally were considered too difficult to be managed at Parramatta. Girls were sent to Hay for three month sentences. Many of the girls detained at Hay in the Institution were Aboriginal. In its conception, as a facility for maximum security segregation; in its governing according to strict discipline and routine; and in its housing in an old colonial prison, Hay mirrored The Institution for Boys in Tamworth previously established in 1947 (Hay Council SHI nomination 2006).

The girls sent to Hay were drugged and removed from Parramatta at night. From Sydney, they were transferred to Narrandera on the overnight train and there moved to the back of a van for the final leg of the journey onto Hay. The Hay Gaol Museum has this van in its collection; significantly it has etchings 'girls' initials and the acronym 'ILWA' (I Love Worship and Adore) carved into its paintwork. Once in Hay the girls encountered a system of strict dehumanizing discipline and routine, often cited as being harsher than what they would have experienced in a women's prison. The girls were only allowed ten minutes, twice a day to talk between themselves; they had to have their eyes downcast at all times; they were only allowed to talk to a staff member by raising their arm and awaiting a response and at all times they had to be at least six feet apart from each other. The girls were worked hard; scrubbing, painting, cleaning, cooking, washing, laying concrete paths, tending vegetable plots and gardens and doing handicraft. The Hay Gaol Museum has handicrafts prepared by the girls in its collection and 'patchwork' concrete paths made by the girls still remain in the gaol courtyard. The girls received no schooling whilst institutionalised (Hay Council SHI nomination 2006).

When the first girls arrived at Hay in 1961 the cell block was unprepared and it was the work of the girls to scrub and paint the walls and floors of the cells, shabby from years of disuse. In later years, new arrivals were detained in the

'isolation cell' of the cell block; here they spent their first ten days in Hay, mostly confined to this cell, scrubbing its walls and floors with a scrubbing brush and alternately a brick. Girls who misbehaved were confined to the isolation block in the gaol courtyard for 24 hour periods, fed on nothing but bread and either water or milk. Subordinate staff members came from the local community and were for the most part untrained. Senior male staff were transferred to Hay from similar institutions such as Tamworth and Gosford boys' institutions. In their cells at night the girls were required to sleep on their side, facing the door so that when they were checked by guards, every twenty minutes to half an hour, their faces could be seen. One of the cells in the cell block is fitted out as it was when the gaol was a girls' institution. The objects furnishing the cell include; bed, bedding, toilet can and standard issue red cardigan (Hay Council SHI nomination 2006).

In the 1960s and 1970s governments started to move towards the closure the large institutions. Even before this time, two reports on Parramatta had questioned the appropriateness of the institution and public opinion generally, was decrying institutions for children as anachronisms. In mid 1974 Dick Healey, the new Minister for the Department of Youth and Community Services closed Hay and Parramatta and started to overhaul the outdated 1939 Child Welfare Act, under which the institutions had been created and administered. By the time Hay was closed, many people had already expressed concern about it; in August 1962 Hay locals reported screams from within its walls in the local newspaper; also in 1962, Anne Press, a member of NSW Parliament, visited and then raised concerns about Hay in Parliament; staff working at the institution were also writing letters to the Child Welfare Department and in 1973 child welfare activist Bessie Guthrie convinced ABC journalist Peter Manning, to investigate Hay and Parramatta for an episode of This Day Tonight. The program screened on the ABC in August 1973 (Hay Council SHI nomination 2006).

Despite the closure of Hay, Parramatta, and other institutions for children the after effects of these places continue to impact society and survivors of these childhood institutions still carry emotional, mental and physical scars. In August 2004 the Senate Inquiry: Forgotten Australians; A report on Australians who experienced institutional or out-of-home care as children was released. The Committee received 614 submissions and estimated that 'upwards of, and possibly more than 500 000 Australians experienced care in an orphanage, Home or other form of out-of-home care during the last century. As many of these people have family it is likely that every Australian either was, is related to, works with or knows someone who experienced childhood in an institution or out of home care environment.' (Senate Committee Report, 2004, p.xv) The memories of some Hay survivors are recorded in submissions to the committee. One woman recalls: 'Hay was the most inhumane place that anyone could be in and it was in Australia. We had to scrub freshly painted cells with bricks and wire brushes when we went into Hay, listening to the drill with the girls running on the spot. We were told that it would make you or break you, and for many it did: it broke a lot of spirits. We [have] to reclaim those spirits.' (Wilma Robb speaking to Senate

Committee on 3 February 2004) The Committee made 34 recommendations as a result of the inquiry and recommendation 34 states that heritage centers be constructed on the site of former institutions (Hay Council SHI nomination 2006).

In addition to speaking up at the Senate Inquiry, many Hay survivors are starting to return to Hay and the gaol to tell their stories to the local community. A common feeling in the Hay community is one of dismay at the suffering of the girls matched by concern at never really knowing what went on behind the walls of the gaol. A reunion of Hay and Parramatta girls is planned at the Hay Gaol on the weekend of 3-4 March 2007. The weekend includes a professionally developed museum theatre production performed by locals and a haunting sound and light display in the cell block (Hay Council SHI nomination 2006).

A community place: today
Today, the Hay Gaol Museum is a treasured community place, dedicated to the preservation, understanding, expression and celebration of Hay's identity and community spirit. A team of dedicated volunteers cares for the museum, its exhibits, archives and grounds. Local craft groups meet here to patch, quilt and spin and visitors come to discover our town's story. The Gaol Museum is the focal point of Hay's Australia Day celebrations; a tradition that goes back to the 1970s. The Hay Gaol Museum is one of Hay's five vibrant museums. The museum program in Hay is supported by the Hay Shire Council, who in addition to providing direct financial assistance to the museums also supports the program by employing a Community Curator to work with museum custodians. Hay's five museums are central to the development of cultural tourism in Hay and as such are important to diversifying the local economy. The Hay Gaol, as both an iconic building and museum housing significant collections related to Hay's social and pastoral history is an important feature of this program (Hay Council SHI nomination 2006).

Historic Themes

Australian Theme (abbrev)	New South Wales Theme	Local Theme
2. Peopling - Peopling the continent	Aboriginal cultures and interactions with other cultures - Activities associated with maintaining, developing, experiencing and remembering Aboriginal cultural identities and practices, past and present.	All nations - imprisoning and detaining Aboriginal peoples -
2. Peopling - Peopling the continent	Ethnic influences - Activities associated with common cultural traditions and peoples of shared descent, and with exchanges between such traditions and peoples.	Controlling ethnicity through detention and imprisonment -
3. Economy - Developing local, regional and national economies	Environment - cultural landscape - Activities associated with the interactions between humans, human societies and the shaping of their physical surroundings	Landscapes of segregation -
3. Economy - Developing local, regional and national economies	Health - Activities associated with preparing and providing medical assistance and/or promoting or maintaining the well being of humans	Caring for the sick in hospitals -

3. Economy - Developing local, regional and national economies	Health - Activities associated with preparing and providing medical assistance and/or promoting or maintaining the well being of humans	Caring for mothers and babies -
3. Economy - Developing local, regional and national economies	Health - Activities associated with preparing and providing medical assistance and/or promoting or maintaining the well being of humans	Operating quarantine facilities -
4. Settlement - Building settlements, towns and cities	Accommodation - Activities associated with the provision of accommodation, and particular types of accommodation – does not include architectural styles – use the theme of Creative Endeavour for such activities.	Accommodating prisoners and internees -
4. Settlement - Building settlements, towns and cities	Accommodation - Activities associated with the provision of accommodation, and particular types of accommodation – does not include architectural styles – use the theme of Creative Endeavour for such activities.	Temporary emergency housing -
7. Governing - Governing	Defence - Activities associated with defending places from hostile takeover and occupation	Involvement with the Second World War -
7. Governing - Governing	Law and order - Activities associated with maintaining, promoting and implementing criminal and civil law and legal processes	Incarcerating prisoners -
7. Governing - Governing	Law and order - Activities associated with maintaining, promoting and implementing criminal and civil law and legal processes	Detaining POWs -
7. Governing - Governing	Welfare - Activities and process associated with the provision of social services by the state or philanthropic organisations	Hospital/nursing home phase -
7. Governing - Governing	Welfare - Activities and process associated with the provision of social services by the state or philanthropic organisations	Rehabilitation of juvenile offenders -
8. Culture - Developing cultural institutions and ways of life	Social institutions - Activities and organisational arrangements for the provision of social activities	Developing and maintaining a local museum -
9. Phases of Life - Marking the phases of life	Persons - Activities of, and associations with, identifiable individuals, families and communal groups	Associations with James Barnet, architect -
9. Phases of Life - Marking the phases of life	Persons - Activities of, and associations with, identifiable individuals, families and communal groups	(none) -
9. Phases of Life - Marking the phases of life	Persons - Activities of, and associations with, identifiable individuals, families and communal groups	Associations with James Hebbard, mine manager and innovator -

Assessment of Significance

SHR Criteria a)
[Historical Significance]

The Hay Gaol is of State significance for its variety of historical functions as a prison and detention centre. It was built as a colonial prison in 1880 but more significantly was used as a detention and hospitalisation facility servicing Hay's World War II internment and prisoner of war camps (1940 - 1946) and then as a girls' institution run by the NSW Department of Child Welfare (1961 - 1974). The Hay Gaol is of local historical significance as one of several grand buildings that represent Hay's unfulfilled promise of becoming the capital of the Riverina, and for its temporary

SHR Criteria b) [Associative Significance]	roles as a maternity hospital (1920 to 1930) and as a site of emergency accommodation during the 1952 and 1956 floods. For its museum collections relating to the social and pastoral history of Hay, the gaol also has local significance.
SHR Criteria c) [Aesthetic Significance]	The Hay Gaol is of State significance for its historical associations. Designed by the prominent NSW Colonial Architect James Barnet, it is probably the only building in Australia directly associated with the internment of the Dunera Boys and with the imprisonment of the Japanese prisoners of war (POWs) following the Cowra Breakout in 1944. The closure of the girls' institution at Hay and associated institution at Parramatta is associated with the lobbying of child welfare activist Bessie Guthrie. The site has local associative significance as one of many buildings constructed by prolific local builders, the Witcombe Brothers. The Hay Gaol is of State significance for its aesthetic values as an example of James Barnet's Hay-type gaol, a classification defined by JS Kerr in his 1988 book, <i>Out of Sight Out of Mind</i>, in which Kerr differentiates Barnet's Hay-type gaol design from the more common Braidwood-type gaol design of the previous colonial architect. It is a relatively intact example of a Victorian country prison that combines foreboding design features - including its entranceway, perimeter walls, cell block and isolation cell - with vernacular materials. Hay Gaol Museum is a substantial building complex sited near the centre of the township that is an iconic building in Hay.
SHR Criteria d) [Social Significance]	The Hay Gaol is of State social significance arising from its use as a girls' institution. Although official records remain unavailable, it is believed that a significant proportion of girls sent to Hay were indigenous 'stolen generation' children, who constituted many of NSW's most vulnerable of wards of state. Many survivors from this era have begun returning to the site from all over Australia as part of their healing. The Hay Gaol is also of local significance to the many Hay residents who were born there when it was a maternity hospital and to others who lived there when it was emergency flood housing. The Gaol is also of local significance for its use by the community as a museum and cultural facility. The site is used frequently by school groups as part of the Hay Museum Learning Program. As one of a network of five vibrant and collaboratively managed museums supported by the Hay Shire Council the Gaol and Hay's other museums underpin cultural tourism development in the town and as such are important to supporting and diversifying the local economy.
SHR Criteria e) [Research Potential]	The Hay Gaol is of State significance for its research, archaeological and interpretive potential as a site or landscape of segregation, which capitalised on the already isolated geographic position of Hay to provide different forms of incarceration in different periods of history. For example, the design of the Gaol combines details reflecting Victorian attitudes towards punishment and detention with vernacular construction features such as locally made bricks. It also displays more recent details remaining from when the site was a girls' institution, including concrete patchwork paths laid by the girls and the laundry box used by the girls. The local history of the site to date has been well documented by the Hay Gaol Management Committee and the Hay Historical Society. Additional information about the site's past as a girls' institution is coming to light as survivors start to speak

SHR Criteria f) [Rarity]	out and return to Hay. It is understood that an examination of government records relating to the site as a girls' institution, when they come available, will yield important information. Likewise a detailed examination of government records relating to the use of the site as an internment camp during World War II will also present new information. Future studies may chronicle the changes to the complex over time and the different ways in which the physical isolation of the town, surrounded by the Hay Plains, added to the segregation effects of the gaol.. The Hay Gaol is of State significance for its rarity as one of only three surviving Hay-type gaols designed by Barnet (of these, Wentworth Gaol has also been converted to a local museum while Tamworth Gaol is still in use by the Department of Corrective Services). The Braidwood-type design of the previous colonial architect was a much more common country gaol design. The Hay Gaol Museum may be found to be of State significance as it is possibly one of only a few substantial buildings remaining state-wide relating to the network of World War II Internment and prisoner of war camps in NSW.
SHR Criteria g) [Representativeness]	The Hay Gaol is of State significance as a relatively intact example of James Barnet's 'Hay-type' gaol. This classification, defined by JS Kerr in his 1988 book <i>Out of Sight Out of Mind</i>, is differentiated from the more common Braidwood-type gaol design of the previous colonial architect. It is additionally representative of a particularly harsh response by the NSW Child Welfare Department to the incarceration of young girls.
Integrity/ Intactness:	The Hay Gaol is in fair condition. The paintwork in the cell block is generally poor and the site has problems with rising damp and white ants. The eastern perimeter wall is considered to be in an unstable condition. At some early stage, part of the isolation block was demolished. After 1974 a large steel shed was added to the rear of the cell block and two large sheds built outside the eastern perimeter wall. These elements are intrusive rather than of heritage significance.
Assessment Criteria	Items are assessed against the  State Heritage Register (SHR) Criteria to determine the level of significance. Refer to the Listings below for the level of statutory protection.

Procedures /Exemptions

Section of Act	Description	Title	Comments	Action Date
57(2)	Exemption to allow work	Standard Exemptions	SCHEDULE OF STANDARD EXEMPTIONS HERITAGE ACT 1977 Notice of Order Under Section 57 (2) of the Heritage Act 1977 I, the Minister for Planning, pursuant to subsection 57(2) of the Heritage Act 1977, on the recommendation of the Heritage Council of New South Wales, do by this Order: 1. revoke the Schedule of Exemptions to	Sep 5 2008

subsection 57(1) of the Heritage Act made under subsection 57(2) and published in the Government Gazette on 22 February 2008; and

2. grant standard exemptions from subsection 57(1) of the Heritage Act 1977, described in the Schedule attached.

FRANK SARTOR
Minister for Planning
Sydney, 11 July 2008

To view the schedule click on the Standard Exemptions for Works Requiring Heritage Council Approval link below.

57(2)	Exemption to allow work	Heritage Act - Site Specific Exemptions	SCHEDULE C	Mar 13 2009

Installation and alterations for interpretative signage, internally and externally, to provide information on the heritage significance of the item, where such signage is sympathetic with the materials and spaces of the heritage item, is free-standing or is fixed into mortar joints with a minimum number of fixtures, and is in accordance with the conservation policies of a Conservation Management Plan.

Activities associated with the ongoing use of the land and buildings for leisure and tourism purposes provided they are in accord with the policies in a Conservation Management Plan for the site and do not materially affect the heritage significance of the place.

Activities associated with the maintenance, rehabilitation and revegetation of the landscape provided they are in accord with the policies in a Conservation Management Plan for the site and do not materially affect the heritage significance of the place. Maintenance and repair of play equipment in the areas outside the perimeter walls of the gaol which do not materially affect the heritage significance of the place.

All curatorial activities within the item identified in any Collections Management Policy.



[Standard Exemptions](#) for Works Requiring Heritage Council Approval

Listings

Heritage Listing	Listing Title	Listing Number	Gazette Date	Gazette Number	Gazette Page
<i>Heritage Act - State Heritage Register</i>		01782	13 Mar 09	51	1388 & 138
<i>Local Environmental</i>	Schedule 1		11 Dec	171	9616

References, Internet links & Images

Type	Author	Year	Title	Internet Links
Tourism	Attraction homepage	2009	Hay Gaol	Click here
Written	ABC Stateline story on Hay Girls Reunion 3-4 March - transcript	2007	"Eyes to the ground and welcome to Hay"	Click here
Written	Hay Historical Society	2006	Haywire - The Wartime Camps at Hay	
Written	P. Quinn	2004	Unenlightened Efficiency': The Administration of the Juvenile Correction System in New South Wales 1905 – 1988, Thesis for a doctorate of Philosophy, University of Sydney	
Written	Martha Sear	2004	Unpublished research for Hay Gaol Museum Committee	
Written	Senate Committee Report - Community Affairs References Committee	2004	Forgotten Australians; A report on Australians who experienced institutional or out-of-home care as children	Click here
Written	Hay Historical Society	1993	Proceedings No. 8 - The Witcombe Heritage; A History of the Buildings of Hay	
Written	Kerr, James Semple	1988	Out of Sight, Out of Mind	
Written	Harry Gordon	1980	Die like the carp!	
Written	W. R. Donnison; Hay Gaol Management Committee and Hay Historical Society	1976	Hay Gaol Museum and Cultural Centre	
Written	Hay Council		Hay Gaol Museum website	Click here

Note: Internet links may be to web pages, documents or images.





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Hay Post Office

Item

Name of Item: Hay Post Office
 Type of Item: Built
 Group/Collection: Postal and Telecommunications
 Category: Post Office
 Location: Lat:144.84308922 Long:-34.50947314
 Primary Address: 120 Lachlan Street, Hay, NSW 2711
 Local Govt. Area: Hay

Property Description:

Lot/Volume Code	Lot/Volume Number	Section Number	Plan/Folio Code	Plan/Folio Number
LOT	1	-	DP	774509

All Addresses

Street Address	Suburb/Town	LGA	Parish	County	Type
120 Lachlan Street	Hay	Hay			Primary

Owner/s

Organisation Name	Owner Category	Date Ownership Updated
Australia Post	Federal Government	

Statement of Significance

Hay Post Office is significant at a State level for its historical associations, aesthetic qualities and social meaning.

Hay Post Office is associated with the early development of the town, as it is linked with the original postal services established in 1859, the same year in which the town was gazetted. The current post office in Hay has been an important communications centre for the Riverina area, and is linked with the development of telegraph and telephone services to the region. The form and scale of Hay Post Office also reflects prominence and development of Hay as the major centre for the Riverina region in the late nineteenth century.

Hay Post Office is a prominent member of the Witcombe Place group of historic buildings in the civic centre of Hay,

which greatly contribute to the character of the town.

Hay Post Office is aesthetically significant because it is an outstanding example of the Victorian Italianate style of architecture, and makes an important aesthetic contribution to the main thoroughfare of Hay. Hay Post Office is a strong example of the range of post offices designed by NSW Colonial Architect James Barnet.

Hay Post Office is also considered to be significant to the Hay community's sense of place.

Date Significance Updated: 03 Aug 00

Note: There are incomplete details for a number of items listed in NSW. The Heritage Branch intends to develop or upgrade statements of significance and other information for these items as resources become available.

Description

Designer/Maker:

Designed by the Colonial Architect's Office under James Barnet.

Builder/Maker:

E Noble and Co under the management of RW Duncan.

Physical Description:

Hay Post Office was constructed in 1882 in the main street and civic centre of Hay. It is a two-storey Victorian Italianate building, with a three-storey clock tower on the northeastern corner. An English bond brick building, it features an ashlar rendered eastern facade wrapping around part of the side facades. The remainder of the two-storey section of the building is face brick. There are two rendered, single-storey later additions to the rear along the northern side of the building, as well as a face brick c1980s-90s single-storey addition to the western side of the building.

The roof of the two-storey section of the building is a u-shaped hipped roof clad with slate or similar tiling. There is also later, profiled sheet metal cladding the sawtooth roof over the rear, single-storey mailroom and rear flat sections of roof. The slate or similar tiling is also present over the first single-storey addition along the northern side and over the southern side addition over the telephone booths. The stepped corner tower is capped with a pyramidal, rolled and lapped sheet metal roof, with a narrow hipped roof section cladding the step below the clock faces with the same material. There is a finial at the apex. Three chimneys punctuate the two-storey roofline, one each to the north, west and south sides. The chimneys are rendered and painted cream with moulded tops. There are crown-type chimney pots topping the northern and southern chimneys, and none on the western chimney.

The clock tower has four clock faces installed on the upper level of each side, with black lettering on a white background. The tower is detailed with fish scaled shingles and arches to the lower level. The bell of the tower tolls hourly and is now controlled by an electric motor. It has been suggested that the original mechanism is retained within the tower, however the tower was inaccessible during the time of inspection in May 2000.

Hay Post Office has an ashlar rendered front facade and corners in a cream and grey colour scheme, with moulded arched openings continuous with horizontal moulded string

courses at the ground floor arch bases, above and below the first floor and at the base of the upper floor arches. There is also a dentil course running around beneath the eaves.

Hay Post Office has a symmetrical two-storey arcade along the eastern facade. The ground floor of the facade has a five bay arcade of round-headed arches fronting Lachlan Street, surmounted by a first-floor arcade with groups of smaller, paired arches either side of a central group of triple arches. The ground-floor arcade is open, with modern brown tiled flooring and steps, a non-original, varnished boarded timber soffit and pendant lights. There is a wrought-iron gate within the arch at the northern end of the arcade. The arcade is continuous with the southern side addition containing the public post boxes and public telephone booths. There is a concrete ramp along the southern boundary leading from the telephone booths.

The first-floor arcade has a modern clay tiled floor and a rendered soffit with a coved cornice. The arches each have green-painted, wrought-iron balustrade sections sitting on a low masonry balustrade wall. There are modern pendant lights and there is a large aluminium vent in the wall to the lunchroom. Access to the clock tower is via a steel ladder at the northern end of the first-floor arcade.

The ground floor of Hay Post Office comprises four main areas. These include the carpeted offices and retail area to the northern side of the building, and the sheet-vinyl-floored mail room and post boxes areas.

The retail area has a lowered, varnished boarded timber ceiling containing air conditioning vents, whereas there is a false ceiling in the northern office and plasterboard in the mail room, hall and centre office. There is a tile-patterned moulded ceiling in the post boxes area with a deep moulded cornice and there is the possibility of the original ceiling being retained behind the boarded ceiling of the retail area. Lighting in the ground floor is predominantly attached and suspended fluorescent lighting, with pendant lights in the retail area.

There are original architraves on the original outer wall windows, mostly of the retail area, and much simpler, later trims to the early and modern rear addition windows. Some original architraves have been modified. Very little skirting was detected on this level, with simple strip skirting from the modern, standard Australia Post fitout.

Windows of the ground floor are predominantly single upper and lower pane timber sash windows with arched top sashes to the eastern and northern facades. There are modern internal windows in the centre office partitions, as well as modern fixed light windows in the hall and sawtooth roof over the mail room, with louvres above the post boxes. All doors on the ground floor are modern, including large sliding doors off the hall to the mail room and post boxes area and flush timber veneer doors.

The ground-floor walls are predominantly painted and rendered masonry in a grey and white colour scheme. The

rear mail room has face red brick walls, with timber veneer panelling to the northern office and laminated and glazed partitions in the centre office. There are some asbestos cement sheet infill sections in the post boxes area and only one chimney breast has been retained in the retail area that has been bricked in.

The main stairwell at the centre of the ground-floor area appears to be original. The stair has polished turned timber posts and square balusters, with shaped handrail and carpeted treads leading up to a curved, vinyl-floored landing. The skirting appears to be original and there is a moulded arch in the hallway over the lower flight of steps.

The first floor of Hay Post Office comprises two major areas, including the combined lunch room/conference area at the front of the building and the staff amenities to the rear, including male and female bathrooms. This level has sheet-vinyl-flooring to all areas, except for the modern tiling in the bathrooms.

Ceilings on this level are plasterboard with a coved cornice. There are suspended and attached fluorescent lights throughout, as well as air conditioning vents and ducting in the walls and ceilings, with some bulkheads resulting.

The French doors and original windows of the first-floor arcade retain original architraves, with the exception of the northern window of the lunchroom. There are some remnants of original skirting along most of the outer walls of this level, however there are none to the internal walls.

The first floor has original French doors with later hardware and fixed arched fanlights. Original timber sash windows have single upper and lower panes with arched top sashes and there is a six-pane, upper and lower sash window in the stair well. Internal doors are all timber veneer finish flush doors, with large fixed fanlights.

The internal walls of the first floor are asbestos cement sheet partitions, with a small section of brick wall to the southern side of the east-west hallway. The perimeter walls are painted rendered masonry and there is tiling in the bathrooms, with modern fitouts. There is a modern folding divider wall between the lunch room and conference area. Two chimney breasts have been retained on this level, however all fireplace fixtures have been removed.

Hay Post Office is set back a substantial distance from the curb, providing a forecourt for the building. This forecourt is paved, and contains planter boxes, seating and a pergola structure over the curving footpath at the front. There is also a pair of rendered square pillars with wrought-iron gates attached, located on either side of the laneway entrance, level with the front facade. These pillars match those on the northern side of the adjacent Department of Land and Water Conservation building.

The surrounding buildings are predominantly one to two-storey commercial and retail, including the two-storey Victorian Free Classical Westpac Bank on the corner to the south, and the large, single-storey WL Vernon designed,

Physical Condition and/or Archaeological Potential: Modifications and Dates: Further Information:	ripple iron building to the north, currently housing the Department of Land and Water Conservation. There is an unsympathetic commercial premises erected between the Post Office and the Westpac Bank, which also impacts upon the historic streetscape. Signage to the building comprises 'Hay Post Office' lettering located between the moulded string courses at the first-floor level of the Lachlan Street facade, with the royal insignia 'ER' above and at the centre. There is a standard 'Australia Post' sign on a pole in the planter bed located away from the building at the southern end of the forecourt. The large rear yard of the building is concrete and bitumen, separating the Post Office from the red brick, single storey Telstra building at the western boundary of the site. There is also a temporary office building along the southern side of the site, adjacent to the Telstra building, and a lane cutting across the site along the northern boundary. Behind the Telstra building to the west is a telecommunications tower which dominates the skyline. Hay Post Office is generally in very good condition. Archaeological potential of the site is considered high. Date Condition Updated: 03 Aug 00 The original two-storey building was occupied in 1882. It is possible that the single-storey hipped roof addition to the northwestern corner of the two-storey section is original or an early addition. A dwarf-iron fence and railing was erected and stabling provided during the mid-1880s. During 1890, a clock was installed on the first-floor arcade. The corner clock tower was constructed in July 1901 with a four-dial clock and an hour striking bell. The earlier clock was removed. The construction date of the flat-roofed, western, single-storey rendered addition along the northern side is unknown, however it appears to be a much later addition. Also unknown is the date of the reconfiguration of the mailroom and retail area for installation of post boxes as shown in the 1917 plans. In 1974 extensive renovations and restoration was carried out, including an extension containing telephone booths on the southern side. Further extensions and additions were made to the rear of the building, probably including the construction of the centre partitioned office and reconfiguration of the first floor, the retail space and post boxes area. In 1988 the Post Office was repainted in a sympathetic colour scheme, and at about this time, a pergola has been erected on the footpath to the front of the building. This is possibly when the varnished boarded timber soffit and retail area ceilings were installed. During c1980s–90s the construction of the modern, unsympathetic, large single-storey, red brick mailroom addition occurred to the rear. Intrusive elements include the aluminium grille in the eastern wall of the lunch room, the exposed air conditioning ducting throughout the building and the large telecommunications tower to the west of the building. Hay Post Office is generally in very good condition, with only minor cracking to some ceilings. The interior of both floors has been substantially altered from its original form, however some original elements have been retained, such as mouldings and architraves. Archaeological potential of

Current Use:

the site is considered high, especially considering the open rear yard, for evidence of previous structures, such as the former 'lock-up', or earlier land use.

Former Use:

Post Office

Post Office and residence

History

Historical Notes:

The first official postal service in Australia was established in April 1809, when the Sydney merchant Isaac Nichols was appointed as the first Postmaster in the colony of NSW. Prior to this, mail had been distributed directly by the captain of the ship on which the mail arrived, however this system was neither reliable nor secure.

In 1825 the colonial administration was empowered to establish a Postmaster General's Department, which had previously been administered from Britain.

In 1828 the first post offices outside of Sydney were established, with offices in Bathurst, Campbelltown, Parramatta, Liverpool, Newcastle, Penrith and Windsor. By 1839 there were forty post offices in the colony, with more opened as settlement spread. During the 1860s, the advance of postal services was further increased as the railway network began to be established throughout NSW. In 1863, the Postmaster General WH Christie noted that accommodation facilities for Postmasters in some post offices was quite limited, and stated that it was a matter of importance that 'post masters should reside and sleep under the same roof as the office'.

The first telegraph line was opened in Victoria in March 1854 and in NSW in 1858. The NSW colonial government constructed two lines from the GPO, one to the South Head Signal Station, the other to Liverpool. Development was slow in NSW compared to the other states, with the Government concentrating on the development of country offices before suburban ones. As the line spread, however, telegraph offices were built to accommodate the operators. Unlike the Post Office, the telegraph office needed specialised equipment and could not be easily accommodated in a local store or private residence. Post and telegraph offices operated separately until 1870 when the departments were amalgamated, after which time new offices were built to include both postal and telegraph services. In 1881 the first telephone exchange was opened in Sydney, three years after the first tests in Adelaide. As with the telegraph, the telephone system soon began to extend into country areas, with telephone exchanges appearing in country NSW from the late 1880s onwards. Again the Post Office was responsible for the public telephone exchange, further emphasising its place in the community as a provider of communications services.

The appointment of James Barnet as Acting Colonial Architect in 1862 coincided with a considerable increase in funding to the public works program. Between 1865 and 1890 the Colonial Architects Office was responsible for the building and maintenance of 169 Post Offices and telegraph offices in NSW. The post offices constructed during this

period featured in a variety of architectural styles, as Barnett argued that the local parliamentary representatives always preferred 'different patterns'.

The construction of new post offices continued throughout the Depression years under the leadership of Walter Liberty Vernon, who held office from 1890 to 1911. While twenty-seven post offices were built between 1892 and 1895, funding to the Government Architect's Office was cut from 1893 to 1895, causing Vernon to postpone a number of projects.

Following Federation in 1901, the Commonwealth Government took over responsibility for post, telegraph and telephone offices, with the Department of Home Affairs Works Division being made responsible for post office construction. In 1916 construction was transferred to the Department of Works and Railways, with the Department of the Interior responsible during World War II.

On 22 December 1975, the Postmaster General's Department was abolished and replaced by the Post and Telecommunications Department. This was the creation of Telecom and Australia Post. In 1989, the Australian Postal Corporation Act established Australia Post as a self-funding entity, heralding a new direction in property management, including a move away from the larger more traditional buildings towards smaller shop front style post offices.

For much of its history, the post office has been responsible for a wide variety of community services including mail distribution, an agency for the Commonwealth Savings Bank, electoral enrolments, and the provision of telegraph and telephone services. The town post office has served as a focal point for the community, most often built in a prominent position in the centre of town close to other public buildings, creating a nucleus of civic buildings and community pride.

Hay Post Office

The town of Hay grew up around what was an important crossing on the Murrumbidgee River. Known as Langs Crossing, it was a major ford for droving cattle from Queensland across the river to the developing Victoria goldfields. With regular traffic crossing the river, a small settlement began to develop to serve the drovers. Captain Cadell, a local landowner and river boat operator, made the first representations for a Post Office in the late 1850s. Cadell approached the Post Master General and local Hon George Macleay MLA for a post office, suggesting Alex Dunbar who looked after Cadell's store, as postmaster. This first request was rejected by the PMG, which preferred to wait until the town was officially gazetted until approving an office.

Hay was gazetted in 1859, being named after the local member for Parliament Sir John Hay. With Hay an official town, the first postal service could commence. A weekly delivery between Condobolin and Hay began from 1 April 1859, with the delivery place being Cadell's store. The first postmaster appointed to Hay was Robert Neilson who had

taken over the duties of Alex Dunbar at Cadell's store after Dunbar returned to England. Neilson resigned his position as postmaster in 1861, as the workload of running a store and the post office was too much. In 1862 the then postmaster Alfred Prince, who was manager of Cadell's former store (now owned by Mr Bardwell), operated the Post Office out of a new purpose-built, brick extension adjacent to the store.

In April 1864 a telegraph station was opened in Hay. Around this time, Alfred Prince resigned as postmaster and Bardwell acted as a temporary replacement. In January 1865 a temporary officer was sent to Hay from Sydney and operated the post office out of the telegraph station, a government-owned building. At this stage the postal and telegraph departments operated as separate government departments and subsequently usually operated out of separate buildings. With this in mind, a number of local businessmen in Hay offered to locate the post office within their businesses, at the charge of £1 per week. However, it was decided that the local telegraph operator, Mr CA Middleton, would also act as postmaster, with post and telegraph services operating out of the same building.

In 1869 Middleton was promoted to a position in Wagga and was replaced by ED Scott as Post and Telegraph Master. Scott received an assistant in 1870 after complaining to the Post Master General that his duties as post and telegraph master were too much for one person. Scott was responsible for repairing damaged telegraph lines in the district and would often be called away from the Post Office, leaving his wife in charge of the Post Office and the telegraph office closed. Scott was granted £25 per annum to pay for an assistant, but left the job soon after being replaced by WH Hilliard, who in turn was replaced in December 1870 by RS Arnott.

During the late nineteenth century, Hay was developing as an important centre for the Riverina. The improvements to community services were a direct result of this economic and population growth. In 1876 the Government Savings Bank opened a branch in the Hay Post Office, and it was recommended that a new Post and Telegraph office be erected. The following year, a postal inspector visited Hay and recommended that a new building be erected in Moppett Street at the rear of the Court House. The Hay Council rejected this site in August 1878 as being too isolated, with a site in Lachlan Street being suggested instead. Meanwhile extensions had been made to the old building.

The site that the Council proposed was the site of the existing post and telegraph office. Adjacent to this site was the former Hay lock-up that was being replaced by a new gaol, then in the course of construction. It was this site that was decided on for the new office. Tenders were called and early in 1881 the tender of E Noble & Co was adopted for erection of the new building at an estimated cost of £3,030. Designed by Colonial Architect James Barnet, the new Post & Telegraph building was completed and occupied by 18 December 1882. An iron-rail fence and stabling were added a couple of years later.

In 1890 a clock, which had been removed from the Bathurst Post Office, was placed on the balcony. This clock proved unreliable and it was decided to erect a clock tower to house a new clock. In July 1901 the clock tower was completed with a new four dial clock and hour bell installed at a total cost of £495. The design of the clock tower was possibly undertaken by the NSW Government Architect's Office under Walter Liberty Vernon. A local watchmaker, Mr Hardingham, was given the contract to wind and regulate the clock for £8 per annum.

In 1974 the Post Office was extensively renovated and restored, which included the addition of public telephone boxes on the southern side. In 1979 the office was classified by the National Trust of Australia (NSW). In 1988 Hay Post Office was painted in a sympathetic colour scheme and a pergola with climbing plants was constructed on the footpath at the front of the building.

Historic Themes

Australian Theme (abbrev)	New South Wales Theme	Local Theme
3. Economy - Developing local, regional and national economies	Communication - Activities relating to the creation and conveyance of information	(none) -
3. Economy - Developing local, regional and national economies	Technology - Activities and processes associated with the knowledge or use of mechanical arts and applied sciences	(none) -
4. Settlement - Building settlements, towns and cities	Towns, suburbs and villages - Activities associated with creating, planning and managing urban functions, landscapes and lifestyles in towns, suburbs and villages	(none) -

Assessment of Significance

SHR Criteria a)
[Historical Significance]

Hay Post Office is associated with the early development of the town, as it is linked with the original postal services established in 1859, the same year in which the town was gazetted. The current Post Office in Hay has been an important communications centre for the Riverina area, and is linked with the development of telegraph and telephone services to the region.

The form and scale of Hay Post Office reflects the prominence and development of Hay as the major centre for the Riverina region in the late nineteenth century.

Hay Post Office also provides evidence of the changing nature of postal and telecommunications practices in NSW.

SHR Criteria b)
[Associative Significance]

NSW Colonial Architect James Barnet, a key practitioner of the Victorian Italianate style of architecture, designed Hay Post Office. The Colonial Architect's Office under Barnet designed and maintained a number of post offices across NSW between 1865 and 1890.

The 1901 clock tower addition was possibly designed by the NSW Government Architect's Office under Walter Liberty

SHR Criteria c)
[Aesthetic Significance]

Vernon.

Hay Post Office is aesthetically significant because it is a strong example of the Victorian Italianate style of architecture and makes an important aesthetic contribution to the main thoroughfare of Hay.

Hay Post Office is a prominent member of the Witcombe Place group of historic buildings in the civic centre of Hay, which greatly contribute to the character of the town. This group includes the Shire Offices (former 1896 court house), the Department of Land and Water Conservation and the present Westpac Bank.

The scale, architectural style and location of the building, along with the later but sympathetic corner clock tower, make it a local landmark for Hay.

The round arched arcades compare with Forbes Post Office (1881). It is also important for its unusual clock tower and the treatment of the front facade.

SHR Criteria d)
[Social Significance]

Hay Post Office is an important local landmark, and has been the centre of communications for the town for over a century. As such, it is considered to be highly significant to the community of Forbes' sense of place.

SHR Criteria e)
[Research Potential]

The Hay Post Office site has some potential to provide archaeological information about the previous use of the site, particularly the Gaol.

SHR Criteria f)
[Rarity]

Hay Post Office is a particularly fine example of the work by James Barnet, and features an unusual facade treatment. The clock tower is an interesting example of a sympathetic Federation period addition to a Victorian period building.

SHR Criteria g)
[Representativeness]

Hay Post Office is a strong example of the Victorian Italianate style of architecture, and is representative of the work of Colonial Architect James Barnet on post offices across NSW.

Integrity/Intactness:

The exteriors of Hay Post Office remain largely intact to their original form. The rear recent addition to the mail room is unsympathetic for the architectural style of the building. The interiors have been extensively changed to accommodate new retail and office facilities, although some original fabric has been retained including mouldings and architraves.

Assessment Criteria

Items are assessed against the  [State Heritage Register \(SHR\) Criteria](#) to determine the level of significance. Refer to the Listings below for the level of statutory protection.

Recommended Management

Preparation of a Conservation Management Plan which includes a curtilage assessment.

Procedures / Exemptions

Section of Act	Description	Title	Comments	Action Date
57(2)	Exemption to allow work	Standard Exemptions	SCHEDULE OF STANDARD EXEMPTIONS HERITAGE ACT 1977 Notice of Order Under Section 57 (2) of the Heritage Act 1977	Sep 5 2008

I, the Minister for Planning, pursuant to subsection 57(2) of the Heritage Act 1977, on the recommendation of the Heritage Council of New South Wales, do by this Order:

1. revoke the Schedule of Exemptions to subsection 57(1) of the Heritage Act made under subsection 57(2) and published in the Government Gazette on 22 February 2008; and

2. grant standard exemptions from subsection 57(1) of the Heritage Act 1977, described in the Schedule attached.

FRANK SARTOR
Minister for Planning
Sydney, 11 July 2008

To view the schedule click on the Standard Exemptions for Works Requiring Heritage Council Approval link below.



[Standard Exemptions](#) for Works Requiring Heritage Council Approval

Listings

Heritage Listing	Listing Title	Listing Number	Gazette Date	Gazette Number	Gazette Page
<i>Heritage Act - State Heritage Register</i>		01441	22 Dec 00	168	13886

Study Details

Title	Year	Number	Author	Inspected by	Guidelines Used
Australia Post - Assessment of 24 Post Office	2000	Hay Post Office	Godden Mackay Logan Pty Ltd	Jennifer Armstrong	Yes

References, Internet links & Images

Type	Author	Year	Title	Internet Links
Tourism		2007	Hay Heritage Walk	Click here
Tourism	Attraction Homepage	2007	Hay Heritage Walk	Click here
Written	Hay Historical Society	1993	Hay Proceedings No. 8. - The Witcombe Heritage. - A History of the Buildings of Hay	
Written	Andrew Ward & Associates and Clive Lucas Stapleton and Associates	1992	Australia Post Survey of Historic Properties in New South Wales	
Written	Apperly, Irving and Reynolds	1989	A Pictorial Guide to Identifying Australian Architecture	

Written Hay Historical Society

1975 Hay Proceedings No. 3 Early Days
of the Hay Post Office

Written Australia Post

Hay Post Office History File

Note: Internet links may be to web pages, documents or images.



(Click on Thumbnail for Full Size Image and Image Details)

Data Source

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Name: Heritage Branch

Database Number: 5051297

File Number: H00/00227

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Hay Railway Station and yard group

Item

Name of Item: Hay Railway Station and yard group
Type of Item: Complex / Group
Group/Collection: Transport - Rail
Category: Railway Platform/ Station
Location: Lat:144.8427446 Long:-34.4993662
Primary Address: Narrandera-Hay railway, Hay, NSW 2711
Local Govt. Area: Hay

Property Description:

Lot/Volume Code	Lot/Volume Number	Section Number	Plan/Folio Code	Plan/Folio Number

Boundary: The listing boundary is formed by the State Rail boundaries to the site to the north, south and west and by a line crossing the tracks 20 metres past the eastern end of the yard formation.

All Addresses

Street Address	Suburb/Town	LGA	Parish	County	Type
Narrandera-Hay railway	Hay	Hay			Primary
Murray Street	Hay	Hay			Alternate
Showground Road	Hay	Hay			Alternate

Owner/s

Organisation Name	Owner Category	Date Ownership Updated
RailCorp	State Government	02 Nov 98

Statement of Significance

Hay is a very significant railway site in the State system. The station building reflects political developments between the States and interstate rivalries that resulted in the construction of a grand building at an important freight site. The whole complex indicates the importance of the site in the production of wool and the policy of shipping it to Sydney rather than through the southern states. The line was opened in response to an aggressive economic Victorian policy offering special rebates for shipping grain through Victoria. There was an unstated plan for the line to be extended to Adelaide through Hay and the scale of the building is evidence of this. The buildings are of very high quality with fine detailing and are

among the most important structures in the State. It is the only first class station in the State not to be built on a main line or at a major junction which gives it added significance. All of the buildings and structures at Hay are of high significance and it is important that the site be retained as a whole.

Note: There are incomplete details for a number of items listed in NSW. The Heritage Branch intends to develop or upgrade statements of significance and other information for these items as resources become available.

Description

Physical Description: BUILDINGS

station building - type 5, first class station building brick 1882, RNE, LEP
residences

- station master's, type 3, brick with pyramid roof type 3, 1881, Murray St, LEP

goods shed - 60' x 16' through shed with awning corrugated iron

STRUCTURES

platform face - brick LEP

water tank - timber framed rivetted steel tank, 1881, Albion Engine Works Pyrmont, LEP

jib crane, LEP

Historic Themes

Australian Theme (abbrev)	New South Wales Theme	Local Theme
3. Economy - Developing local, regional and national economies	Transport - Activities associated with the moving of people and goods from one place to another, and systems for the provision of such movements	(none) -

Assessment of Significance

SHR Criteria f)
[Rarity]

This item is assessed as historically rare. This item is assessed as scientifically rare. This item is assessed as arch. rare. This item is assessed as socially rare.

Assessment Criteria

Items are assessed against the  [State Heritage Register \(SHR\) Criteria](#) to determine the level of significance. Refer to the Listings below for the level of statutory protection.

Procedures /Exemptions

Section of Act	Description	Title	Comments	Action Date
57(2)	Exemption to allow work	Standard Exemptions	SCHEDULE OF STANDARD EXEMPTIONS HERITAGE ACT 1977 Notice of Order Under Section 57 (2) of the Heritage Act 1977 I, the Minister for Planning, pursuant to subsection 57(2) of the Heritage Act 1977, on the recommendation of the Heritage Council of New South Wales, do	Sep 5 2008

by this Order:

1. revoke the Schedule of Exemptions to subsection 57(1) of the Heritage Act made under subsection 57(2) and published in the Government Gazette on 22 February 2008; and
2. grant standard exemptions from subsection 57(1) of the Heritage Act 1977, described in the Schedule attached.

FRANK SARTOR
Minister for Planning
Sydney, 11 July 2008

To view the schedule click on the
Standard Exemptions for Works Requiring
Heritage Council Approval link below.



[Standard Exemptions](#) for Works Requiring Heritage Council
Approval

Listings

Heritage Listing	Listing Title	Listing Number	Gazette Date	Gazette Number	Gazette Page
<i>Heritage Act - State Heritage Register</i>		01167	02 Apr 99	27	1546
<i>Heritage Act - s.170 NSW State agency heritage register</i>					

References, Internet links & Images

None

Note: Internet links may be to web pages, documents or images.

Data Source

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ANNEXURE 7.0

Cultural Heritage – Hay LGA



- Heritage Areas
- Lot Boundaries
- Public Open Space
- Minor Waterways
- Major Waterways
- Disused Railway
- Roads**
 - Highways
 - Arterial Roads
 - Local Roads
 - Other Roads

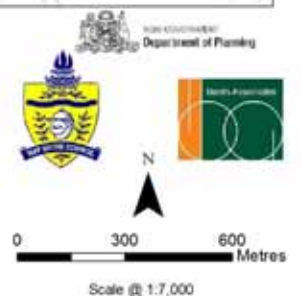
Hay Heritage Map

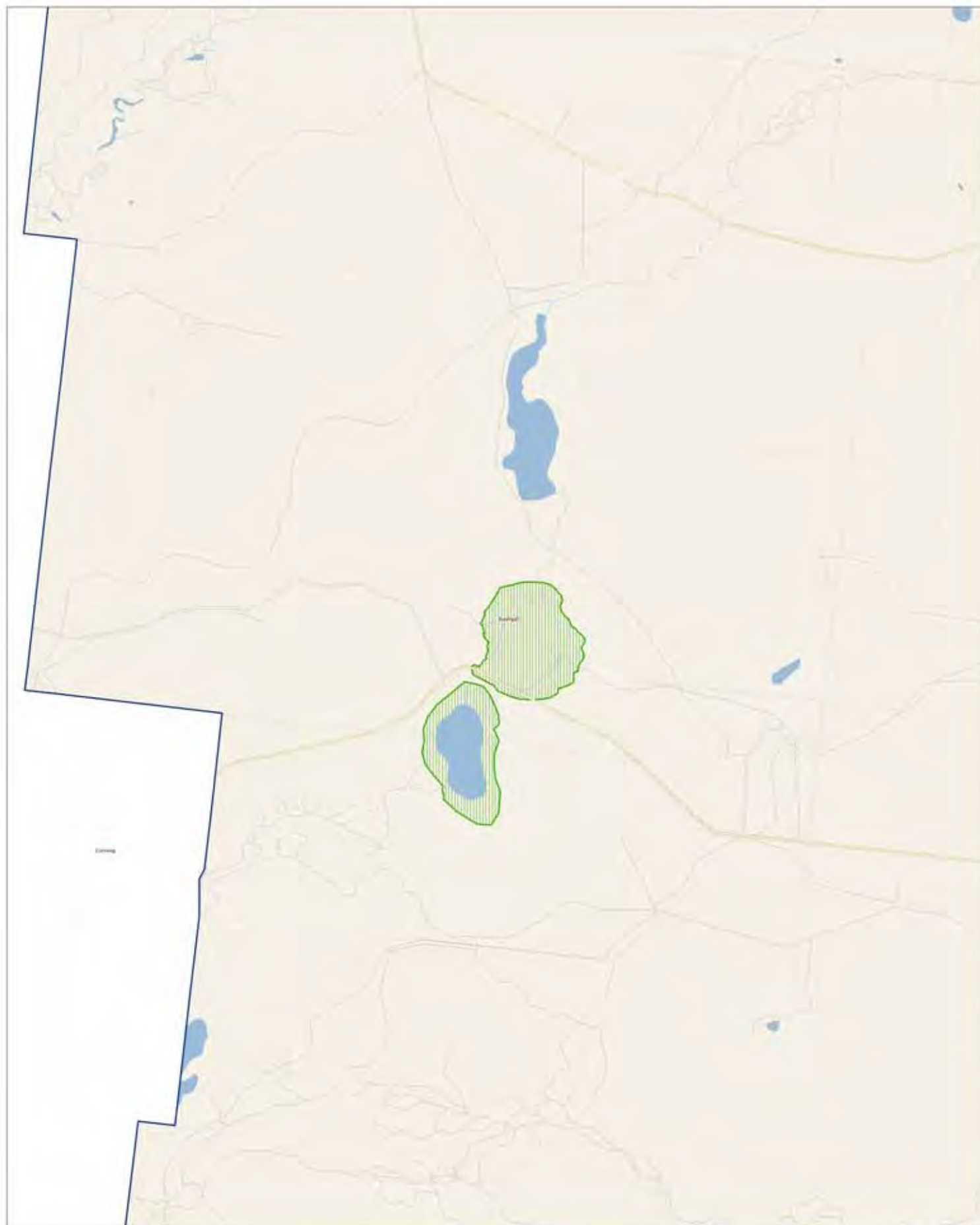
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Lot Boundaries copyright Land and Property Management Authority, 2009.





Roads	Heritage Areas
Highways	Conservation Area - General
Arterial Roads	Conservation Area - Landscape
Sub-Arterial/Collector Rds	Item - General
Local Roads	Item - Landscape
Other Roads	
Hay Shire	
Cadastre	
Minor Waterways	
Major Waterways	

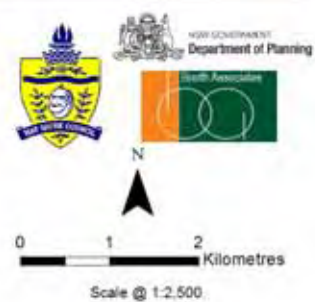
Hay LGA Constraints Map: Heritage Areas, Booligal

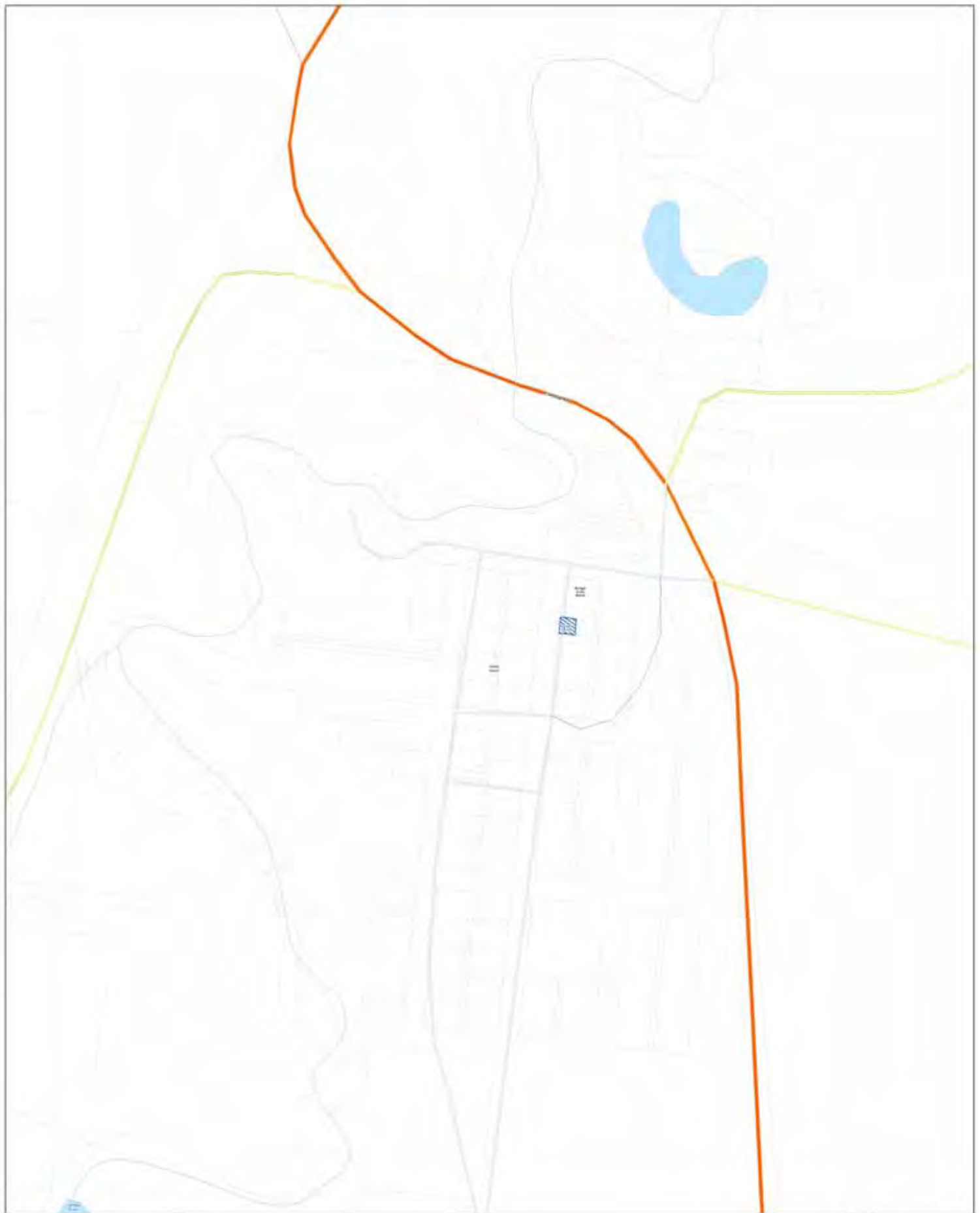
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-  Heritage Areas
-  Lot Boundaries
-  Minor Waterways
-  Major Waterways
-  Disused Railway
- Roads**
-  Highways
-  Arterial Roads
-  Local Roads
-  Other Roads

Booligal Heritage Map

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N

0 125 250 Metres

Scale @ 1:2,500



-  Heritage Areas
-  Lot Boundaries
-  Minor Waterways
-  Major Waterways
-  Disused Railway
- Roads**
-  Highways
-  Arterial Roads
-  Local Roads
-  Other Roads

One Treel Heritage Map

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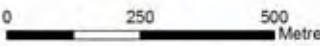
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WARRAGUMBIE
Department of Planning



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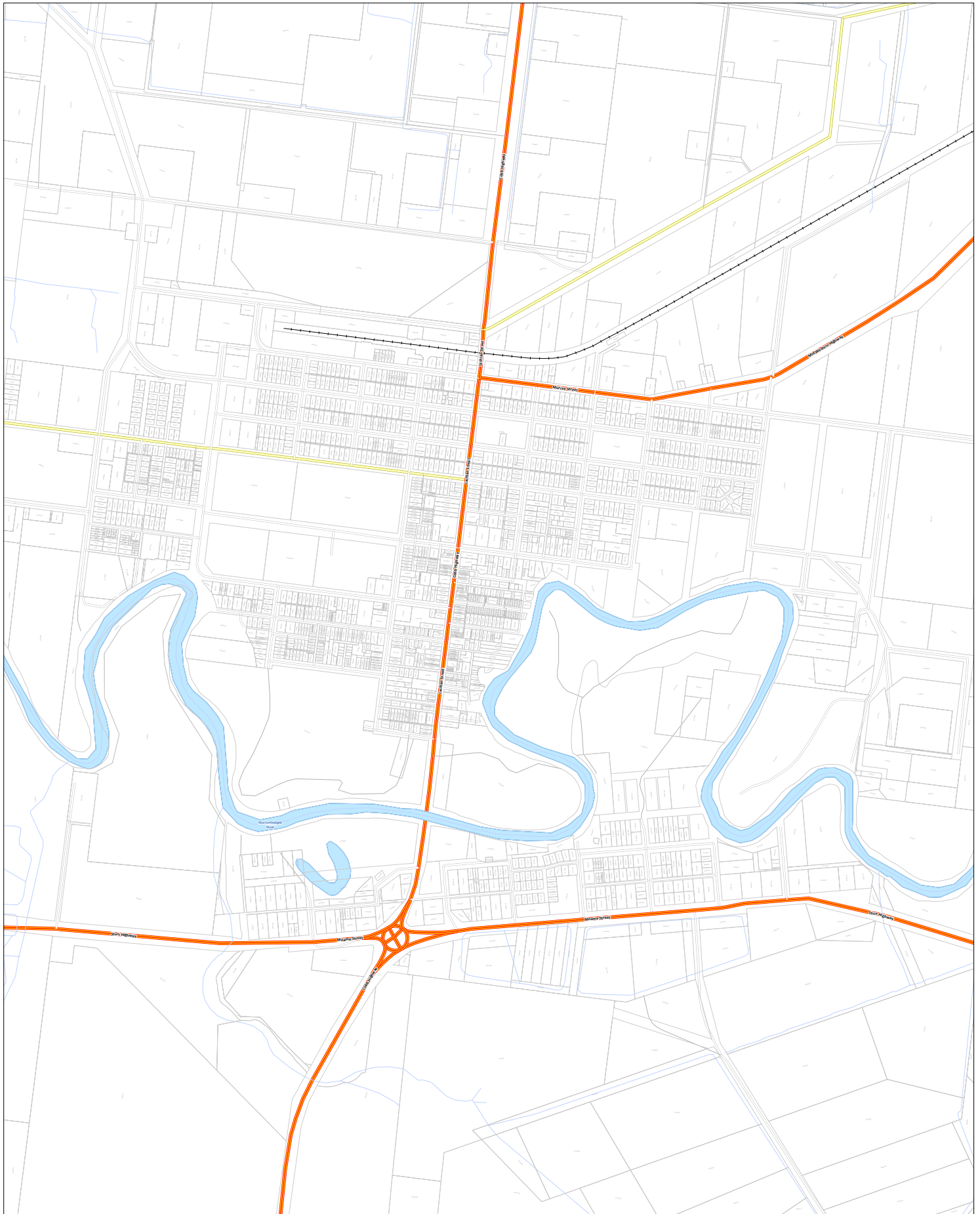


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ANNEXURE 8.0

Hay Base Map



- Lot Boundaries
- Minor Waterways
- Major Waterways
- Disused Railway
- Roads**
- Highways
- Arterial Roads
- Local Roads
- Other Roads

Land Use Base Map (Cadastre)

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0 300 600 Metres

Scale @ 1:7,000



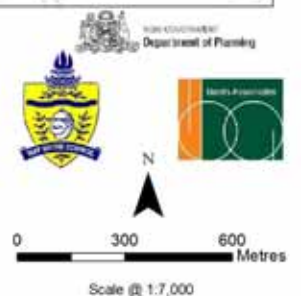
- Lot Boundaries
- Public Open Space
- Minor Waterways
- Major Waterways
- Disused Railway
- Roads**
- Highways
- Arterial Roads
- Local Roads
- Other Roads

Hay Base Map

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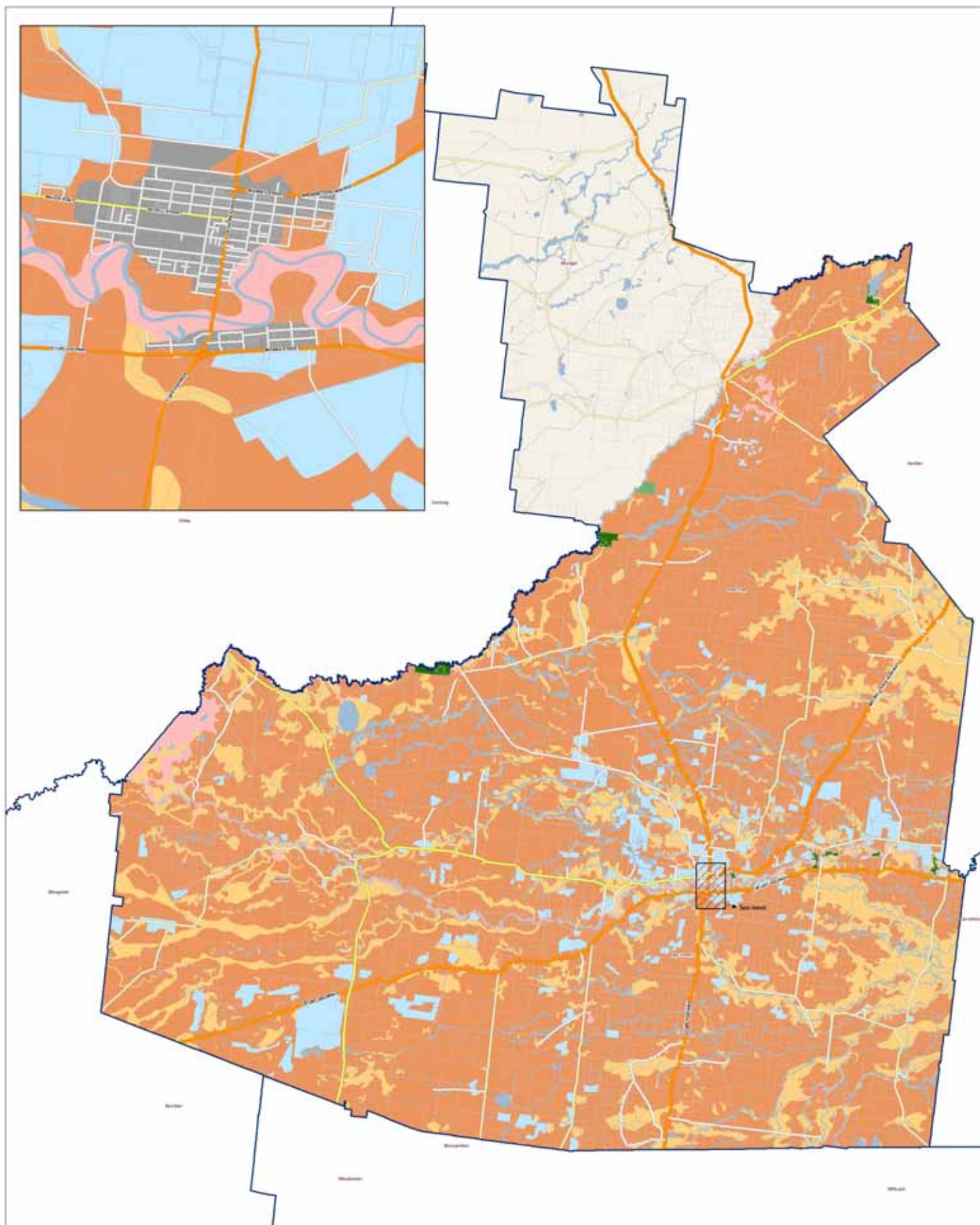
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ANNEXURE 9.0

Land Capability Map



Roads	Land Capability
Highways	Flood Irrigation
Arterial Roads	Mining and Quarrying Areas
Sub-Arterial/Collector Rds	Nature Reserve
Local Roads	State Forest
Other Roads	Suitable for Grazing with No Cultivation
Major Waterways	Suitable for Grazing with Occasional Cultivation
Hay Shire	Suitable for REgular Cultivation
Cadastre	Urban Area
	Other

Hay LGA Constraints Map: Environmentally Sensitive Areas - Land Capability

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Hay Shire boundary copyright PSMA Australia, 2009.

Land Capability copyright Department of Environment and Climate Change, 2007.



NEW SOUTH WALES
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Department of Planning



0 10 20 Kilometres

Scale @ 1:250,000

ANNEXURE 10.0

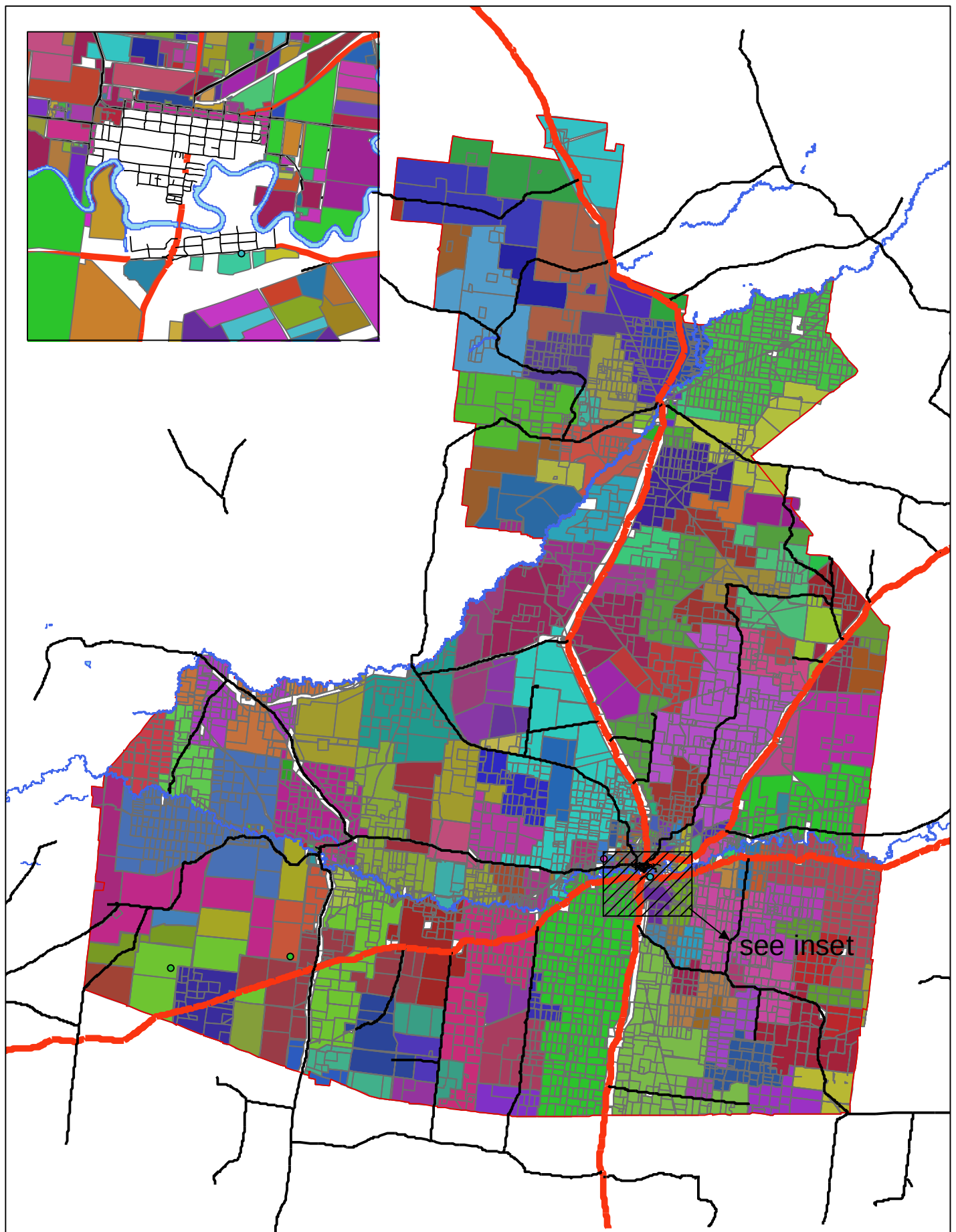
ABS Census Data

Hay Shire Council - LEP Review
ABS Agricultural Census Data



	Unit	1989-90	1993-94	1996-97	2000-01	2005-06
Area	Ha	1,270,569	1,130,793	1,152,142	1,358,313	1,110,723
No Establishments	Value (\$K)	132	127	136	145	157
Average Farm Area	Ha	9,626	8,904	8,472	9,368	7,075
Value of Production	\$K	48,098	NA	70,490	78,982	71,377
Crops						
Winter cereals	Area (Ha)	3,331	2,697	21,602	12,263	9,751
	Value (\$K)			0	6,816	4,537
Other winter crops	Area (Ha)	428	4,144	5,000	5,256	1,985
	Value (\$K)			0	0	1,102
Summer crops	Area (Ha)	0	0	12,511	14,273	6,894
	Value (\$K)			37,023	30,861	1,431
Total crops	Area (Ha)	3,759	6,841	39,113	31,792	18,630
	Value (\$K)			37,023	37,676	25,915
	Proportion Value			53%	48%	33%
Horticulture						
	Area (Ha)	153	659	303	588	1,388
	Value (\$K)			3,118	11,724	26,616
	Proportion Value			4%	15%	37%
Livestock						
Cattle	Number	40,167	58,833	64,990	41,547	33,902
	Value (\$K)				7,629	4,621
	Proportion Value			0%	10%	6%
Sheep	Number	964,531	695,103	686,750	683,554	371,597
	Value (\$K)				21,653	14,224
	Proportion Value				27%	20%
	Wool Value (\$K)				15,951	8,164
	Sheep Meat Value (\$K)				5,702	6,060
Total livestock	Value (\$K)			30,348	29,282	18,846
	Proportion Value			43%	37%	26%
	Total DSE	1,848,467	1,630,985	1,680,025	1,440,801	896,416

ANNEXURE 11.0
Rural Landholdings Map



Primary Industries

- Cattle, sheep or horse accomodation
- Vegetable Storage Sheds
- Winery

Roads

- Highways
- Arterial Roads
- Local Roads

- Major waterways
- HayShire
- Cadastre LGA

Note: Each colour represents a separate holding.

Hay LGA Holdings



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0 5 10 20



Kilometres

ANNEXURE 12.0

Commercial Farm Size Analysis

Hay Shire Council - LEP Review



Minimum Commercial Farm Size Analysis

	Farm details	Value \$/unit	Total
Pastoral Farm			
Balance sheet - Assumed area (Ha)	4,850	200	970,000
DSE carried (@ 1 DSE/Ha)	4,850	50	242,500
Plant and Equipment			150,000
Total Balance sheet			1,362,500
Profitability - Gross margin (\$/DSE)	28		135,477
Annual non allocated costs			100,000
EBIT			35,477
EBIT Yield			2.6%
Holding size analysis indicates 86% of shire is in properties >5,750			
Broadacre irrigation farm			
Total Farm Area (Ha)	530		
Balance sheet - Assumed cropped area (Ha)	440	1,200	528,000
Vacant land, channels & infrastructure	88	200	17,600
Water entitlements (ML @ 4 ML/Ha)	1,760	1,200	2,112,000
Plant and Equipment			500,000
Total Balance sheet			3,157,600
Water reliability		50%	
Profitability - Gross margin (\$/ML)	240		211,199
Annual non allocated costs			130,000
EBIT			81,199
EBIT Yield			2.6%
Horticulture			
Total Farm Area (Ha)	80		
Balance sheet - Assumed cropped area (Ha)	67	3,000	199,500
Vacant land, channels & infrastructure	13	200	2,660
Water entitlements (ML @ 6 ML/Ha)	399	2,800	1,117,200
Plant and Equipment			750,000
Total Balance sheet			2,069,360
Water reliability		95%	
Profitability - Gross margin (\$/ML)	487		184,673
Annual non allocated costs			130,000
EBIT			54,673
EBIT Yield			2.6%
2005-06 ABS stats indicate average cropped vegetable area was 82ha			

Farm Operating Costs



Category	Type	Pastoral	Irrigation
Variable Allocated			
Captured within gross margins	TOTAL	0.0	0.0
Variable Unallocated	Fuel & oil	10.0	20.0
	R & M - vehicles	6.0	8.0
	- plant	11.0	15.0
	- structures	6.0	10.0
	Sundry tools/Hardware	2.0	2.0
	TOTAL	35.0	55.0
Staff			
Assumed to be one labour unit	Labour - permanent		
	- casual		
	Super+compo+group tax		
	TOTAL	0.0	0.0
Overheads	Telephone/electricity	5.0	5.0
	Admin+subs+journals	2.0	2.0
	Professional services	2.0	2.0
	Travel and accom	1.0	1.0
	Rates+rents	4.5	4.5
	Regos+Licences+MV costs	2.0	2.0
	Insurance+assurance	5.0	5.0
	Sundry	2.0	2.0
	Bank fees/collections	1.5	1.5
	TOTAL	25.0	25.0
Personal	Salary allowance	20.0	20.0
	TOTAL	20.0	20.0
Capital Renewal			
Notional allowance for plant, equipment, infrastructure and permanent plantings renewal and/or replacement		20.0	30.0
	TOTAL	20.0	30.0
Return on Assets			
For debt servicing, capex and dividend payments			
	TOTAL	0.0	0.0
	GRAND TOTAL COSTS	100.0	130.0
Note: All figures in \$K			

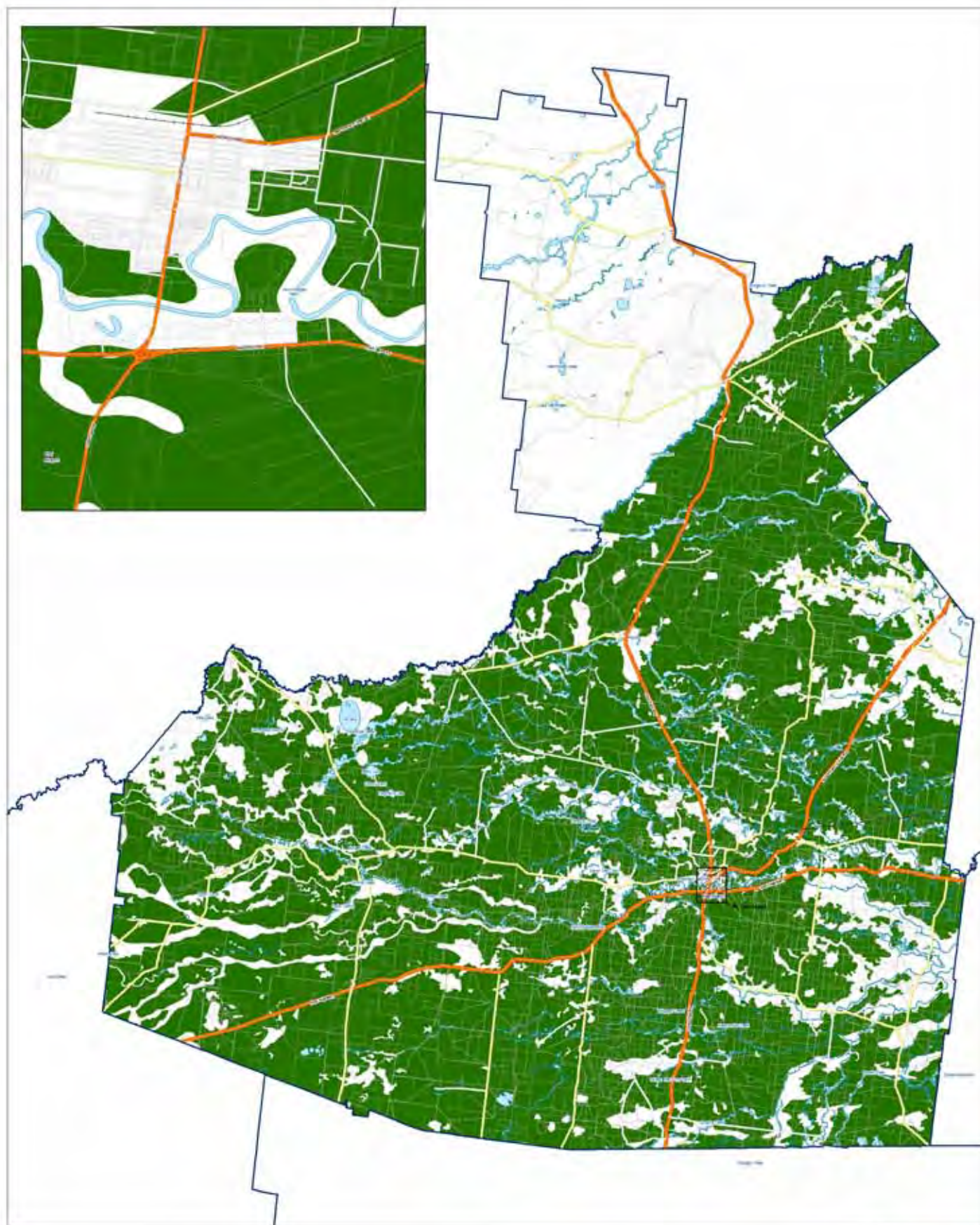
Gross Margins - NSW DI&I



	Yield T/Ha	Price \$/Unit	Revenue \$/Ha	Expenses \$/Ha	Water ML/Ha	GM	
						\$/Ha	\$/ML
Broadacre crops							
Wheat biscuit	5.5	300	1,650	745	3.5	905	259
Canola	3.0	500	1,500	717	3.8	783	206
Rice medium grain aerial sown	10.0	550	5,500	1,446	14.0	4,054	290
Maize Grit	11.0	340	3,740	1,682	10.0	2,058	206
Average							240
Horticulture	Cartons/Ha						
Broccoli	800	14	11,200	8,949	6.0	2,251	375
Lettuce	2,200	8	17,600	14,867	4.0	2,733	683
Rockmelon drip Yr1	1,900	8	15,200	13,588	4.0	1,612	403
Average							487
Livestock						\$/Head	\$/DSE
Cattle Yearling (Southern/central NSW)						465.47	27.56
Merino ewes 21micron 75%mer & 25% terminal rams						67.49	28.12
Weighted average (one third cattle:two thirds sheep)							27.93

ANNEXURE 13.0

Productive Agricultural Land

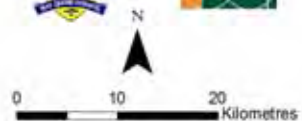


 Productive Agricultural Land	Roads
 Cadastre	 Highways
 Local Government Areas	 Arterial Roads
 Major Waterways	 Local Roads
 Airports	 Other Roads
 Railway	

Hay LGA Constraints Map: Productive Agricultural Land

Disclaimer: Local Government Area boundaries, railway roads, waterways, and cadastre copyright Land and Property Management Authority, 2009

Productive Agricultural Land copyright Department of Environment and Climate Change, 2007



Scale @ 1:250,000

ANNEXURE 14.0
BOM Flooding Events

STATION NAME:	DATE:	TIME:	HEIGHT:	STATION NUMBER:
HAY TOWN	21-Jun-52	9:00	8.36	410002
HAY TOWN	03-Jul-52	9:00	8.74	410002
HAY TOWN	02-Aug-52	9:00	7.98	410002
HAY TOWN	26-Aug-52	9:00	7.26	410002
HAY TOWN	07-Oct-52	9:00	7.80	410002
HAY TOWN	15-Nov-52	9:00	8.05	410002
HAY TOWN	30-Dec-52	9:00	5.79	410002
HAY TOWN	23-May-53	9:00	4.52	410002
HAY TOWN	04-Jul-53	9:00	4.24	410002
HAY TOWN	08-Aug-53	9:00	5.05	410002
HAY TOWN	28-Aug-53	9:00	5.87	410002
HAY TOWN	19-Sep-53	9:00	5.44	410002
HAY TOWN	08-Oct-53	9:00	5.77	410002
HAY TOWN	20-Oct-53	9:00	6.22	410002
HAY TOWN	25-Nov-53	9:00	6.15	410002
HAY TOWN	15-Aug-55	9:00	4.88	410002
HAY TOWN	10-Sep-55	9:00	8.20	410002
HAY TOWN	27-Oct-55	9:00	6.48	410002
HAY TOWN	14-Nov-55	9:00	7.16	410002
HAY TOWN	06-Apr-56	9:00	6.88	410002
HAY TOWN	24-Apr-56	9:00	6.88	410002
HAY TOWN	12-May-56	9:00	7.82	410002
HAY TOWN	21-May-56	9:00	8.26	410002
HAY TOWN	01-Jun-56	9:00	8.36	410002
HAY TOWN	11-Jun-56	9:00	8.36	410002
HAY TOWN	26-Jun-56	9:00	8.69	410002
HAY TOWN	20-Jul-56	9:00	8.99	410002
HAY TOWN	10-Sep-56	9:00	7.85	410002
HAY TOWN	10-Oct-56	9:00	7.37	410002
HAY TOWN	02-Nov-56	9:00	8.41	410002
HAY TOWN	08-Sep-58	9:00	6.12	410002
HAY TOWN	30-Oct-58	9:00	6.71	410002
HAY TOWN	05-Aug-59	9:00	4.27	410002
HAY TOWN	14-Nov-59	9:00	7.16	410002
HAY TOWN	25-May-60	9:00	4.47	410002
HAY TOWN	20-Aug-60	9:00	7.85	410002
HAY TOWN	11-Oct-60	9:00	8.41	410002
HAY TOWN	19-Dec-60	9:00	4.60	410002
HAY TOWN	05-Jan-62	9:00	5.46	410002
HAY TOWN	10-Feb-62	9:00	3.56	410002
HAY TOWN	06-Aug-62	9:00	3.84	410002
HAY TOWN	01-Sep-62	9:00	4.32	410002
HAY TOWN	08-Oct-62	9:00	5.94	410002
HAY TOWN	11-Aug-64	9:00	7.09	410002
HAY TOWN	01-Oct-64	9:00	7.59	410002
HAY TOWN	27-Oct-64	9:00	8.03	410002
HAY TOWN	18-Nov-64	9:00	6.10	410002
HAY TOWN	05-Jul-69	9:00	5.05	410002
HAY TOWN	05-Aug-69	9:00	5.28	410002
HAY TOWN	25-Aug-69	9:00	4.17	410002
HAY TOWN	15-Nov-69	9:00	4.62	410002
HAY TOWN	17-Sep-70	9:00	6.78	410002
HAY TOWN	11-Oct-70	9:00	8.56	410002
HAY TOWN	30-Nov-70	9:00	5.66	410002
HAY TOWN	24-Dec-70	9:00	4.32	410002

STATION NAME:	DATE:	TIME:	HEIGHT:	STATION NUMBER:
HAYSTACK	26-Jan-71	2:06	2.31	416008
HAYSTACK	29-Jan-71	3:51	2.26	416008
HAYSTACK	30-Jan-71	3:09	2.02	416008
HAYSTACK	05-Feb-71	18:22	2.79	416008
HAYSTACK	10-Feb-71	23:21	2.13	416008
HAYSTACK	11-Feb-71	18:12	3.08	416008
HAY TOWN	04-Jan-72	9:00	3.61	410002
HAY TOWN	17-Feb-72	9:00	3.58	410002
HAY TOWN	25-Feb-72	9:00	3.33	410002
HAY TOWN	09-Sep-72	9:00	3.56	410002
HAYSTACK	29-Oct-72	2:24	3.41	416008
HAYSTACK	07-Nov-72	7:21	2.19	416008
HAY TOWN	14-Sep-73	9:00	4.98	410002
HAYSTACK	04-Nov-73	20:44	3.01	416008
HAYSTACK	05-Nov-73	4:20	2.04	416008
HAY TOWN	22-Nov-73	9:00	5.13	410002
HAY TOWN	27-Jan-74	9:34	5.81	410002
HAY TOWN	03-May-74	9:00	7.38	410002
HAY TOWN	18-Jun-74	9:00	6.88	410002
HAY TOWN	08-Aug-74	9:00	7.56	410002
HAY TOWN	12-Sep-74	9:00	9.02	410002
HAYSTACK	19-Nov-74	23:40	2.93	416008
HAYSTACK	15-Mar-75	21:43	2.02	416008
HAYSTACK	18-Mar-75	1:05	2.74	416008
HAYSTACK	20-Mar-75	0:08	2.45	416008
HAYSTACK	29-Mar-75	18:05	4.57	416008
HAY TOWN	17-Jul-75	9:00	7.48	410002
HAY TOWN	03-Aug-75	7:18	7.85	410002
HAY TOWN	04-Aug-75	9:00	7.82	410002
HAY TOWN	26-Aug-75	3:37	5.87	410002
HAY TOWN	17-Sep-75	4:13	6.37	410002
HAY TOWN	04-Oct-75	8:29	6.04	410002
HAYSTACK	22-Oct-75	17:10	3.59	416008
HAYSTACK	24-Oct-75	19:00	2.48	416008
HAY TOWN	11-Nov-75	1:20	8.65	410002
HAY TOWN	17-Apr-76	18:50	3.64	410002
HAY TOWN	07-Nov-76	8:03	7.74	410002
HAYSTACK	22-Feb-77	14:29	2.91	416008
HAYSTACK	15-May-77	20:46	2.93	416008
HAYSTACK	28-May-77	16:46	2.38	416008
HAYSTACK	28-Jan-78	10:08	3.09	416008
HAYSTACK	29-Jan-78	8:39	2.01	416008
HAYSTACK	10-May-78	17:43	2.40	416008
HAYSTACK	03-Jul-78	10:53	2.09	416008
HAY TOWN	25-Jul-78	12:54	5.93	410002
HAY TOWN	09-Aug-78	10:12	5.80	410002
HAYSTACK	08-Sep-78	0:59	2.58	416008
HAY TOWN	27-Sep-78	10:41	8.21	410002
HAYSTACK	27-Dec-78	23:06	2.95	416008
HAYSTACK	29-Dec-78	4:27	3.15	416008
HAYSTACK	01-Jul-81	10:09	2.41	416008
HAY TOWN	12-Aug-81	2:06	6.30	410002
HAY TOWN	15-Sep-81	6:16	5.96	410002
HAYSTACK	11-Mar-82	1:34	4.66	416008
HAY TOWN	06-Oct-82	9:00	4.05	410002

STATION NAME:	DATE:	TIME:	HEIGHT:	STATION NUMBER:
HAYSTACK	02-Jan-83	23:41	2.77	416008
HAYSTACK	03-May-83	6:18	3.56	416008
HAY TOWN	08-Jun-83	9:00	4.21	410002
HAY TOWN	18-Jul-83	9:00	4.41	410002
HAY WEIR D/S	07-Aug-83	18:29	5.70	410136
HAY TOWN	12-Aug-83	9:00	5.65	410002
HAYSTACK	06-Sep-83	12:09	2.07	416008
HAYSTACK	08-Sep-83	7:22	2.36	416008
HAY WEIR D/S	15-Sep-83	14:59	7.84	410136
HAYSTACK	13-Oct-83	18:31	2.08	416008
HAYSTACK	30-Jan-84	15:22	2.18	416008
HAY WEIR D/S	17-Feb-84	13:04	8.05	410136
HAYSTACK	19-Feb-84	4:21	2.07	416008
HAY WEIR D/S	20-Aug-84	14:38	9.13	410136
HAY WEIR D/S	25-Aug-85	13:56	5.88	410136
HAYSTACK	10-Dec-85	12:44	2.02	416008
HAY WEIR D/S	31-Jul-86	10:52	6.18	410136
HAY WEIR D/S	01-Sep-86	12:20	6.10	410136
HAY WEIR D/S	01-Oct-86	10:36	7.42	410136
HAY WEIR D/S	08-Dec-86	14:34	6.62	410136
HAY WEIR D/S	01-Jul-87	9:38	6.20	410136
HAY WEIR D/S	10-Aug-87	16:13	6.31	410136
HAYSTACK	24-Dec-87	12:08	2.97	416008
HAYSTACK	17-Jan-88	1:53	2.46	416008
HAYSTACK	08-Feb-88	0:20	2.42	416008
HAYSTACK	13-Feb-88	5:44	2.35	416008
HAYSTACK	14-Feb-88	2:27	4.20	416008
HAYSTACK	07-Apr-88	5:55	2.97	416008
HAYSTACK	09-Apr-88	20:52	2.92	416008
HAYSTACK	10-Apr-88	9:20	2.03	416008
HAYSTACK	11-Apr-88	19:38	2.48	416008
HAYSTACK	06-Jul-88	8:00	2.53	416008
HAY WEIR D/S	13-Aug-88	12:09	7.01	410136
HAYSTACK	03-Sep-88	15:37	2.05	416008
HAYSTACK	12-Sep-88	16:52	2.51	416008
HAY WEIR D/S	03-Oct-88	20:37	5.88	410136
HAY WEIR D/S	10-Jan-89	9:20	5.43	410136
HAYSTACK	27-Mar-89	20:06	3.69	416008
HAY TOWN	28-Apr-89	8:00	8.59	410002
HAY WEIR D/S	29-Apr-89	4:50	9.84	410136
HAYSTACK	31-Jul-89	19:41	2.75	416008
HAYSTACK	21-Apr-90	6:13	2.85	416008
HAY WEIR D/S	15-Jun-90	9:17	5.61	410136
HAYSTACK	01-Jul-90	22:16	2.26	416008
HAY WEIR D/S	08-Sep-90	11:01	8.97	410136
HAYSTACK	07-Feb-91	18:15	4.37	416008
HAY TOWN	01-Aug-91	12:00	8.05	410002
HAY WEIR D/S	02-Aug-91	1:57	9.28	410136
HAYSTACK	31-Dec-91	6:49	2.63	416008
HAYSTACK	01-Jan-92	23:50	2.52	416008
HAYSTACK	10-Feb-92	4:15	3.16	416008
HAYSTACK	13-Feb-92	23:45	2.03	416008
HAY WEIR D/S	20-Oct-92	9:00	7.61	410136
HAY TOWN	20-Oct-92	9:00	6.34	410002
HAY TOWN	09-Nov-92		7.02	410002

STATION NAME:	DATE:	TIME:	HEIGHT:	STATION NUMBER:
HAYSTACK	18-Nov-92	12:09	2.11	416008
HAYSTACK	06-Dec-92	3:35	2.26	416008
HAY WEIR D/S	28-Dec-92		7.96	410136
HAY WEIR D/S	03-Oct-93	9:00	8.25	410136
HAYSTACK	19-Oct-93	5:45	2.96	416008
HAY TOWN	25-Oct-93	9:00	7.38	410002
HAYSTACK	21-Jan-95	3:46	4.29	416008
HAYSTACK	19-Feb-95	9:59	2.27	416008
HAYSTACK	07-Aug-95	9:00	6.91	416008
HAY TOWN	07-Aug-95	9:00	6.91	410002
HAY WEIR D/S	07-Aug-95	9:00	8.33	410136
HAYSTACK	03-Jan-96	13:30	5.39	416008
HAYSTACK	09-Jan-96	16:30	4.52	416008
HAYSTACK	23-Jan-96	22:15	4.67	416008
HAYSTACK	06-Feb-96	5:30	2.42	416008
HAY WEIR D/S	21-Oct-96	9:00	6.85	410136
HAYSTACK	28-Jul-98	12:00	5.06	416008
HAYSTACK	06-Aug-98	6:00	2.44	416008
HAYSTACK	16-Sep-98	0:00	1.70	416008
HAYSTACK	03-Mar-99	18:00	2.62	416008
HAYSTACK	15-Nov-00	15:00	2.86	416008
HAYSTACK	20-Nov-00	6:00	4.11	416008
HAYSTACK	01-Feb-01	18:00	4.35	416008

STATION NAME:	DATE:	TIME:	HEIGHT:	STATION NUMBER:
BOOLIGAL WEIR WL	02-Jun-50	9:00	2.67	412005
BOOLIGAL WEIR WL	30-Jun-50	9:00	2.74	412005
BOOLIGAL WEIR WL	31-Jul-50	9:00	2.87	412005
BOOLIGAL WEIR WL	28-Aug-50	9:00	2.95	412005
BOOLIGAL WEIR WL	20-Oct-50	9:00	2.82	412005
BOOLIGAL WEIR WL	25-Nov-50	9:00	2.92	412005
BOOLIGAL WEIR WL	25-Dec-50	9:00	2.84	412005
BOOLIGAL WEIR WL	04-Aug-52	9:00	3.00	412005
BOOLIGAL WEIR WL	22-Aug-52	9:00	3.00	412005
BOOLIGAL WEIR WL	11-Sep-52	9:00	3.02	412005
BOOLIGAL WEIR WL	04-Feb-53	9:00	1.98	412005
BOOLIGAL WEIR WL	05-Apr-55	9:00	1.88	412005
BOOLIGAL WEIR WL	16-Apr-55	9:00	1.55	412005
BOOLIGAL WEIR WL	03-Oct-55	9:00	2.49	412005
BOOLIGAL WEIR WL	30-Nov-55	9:00	2.39	412005
BOOLIGAL WEIR WL	29-Dec-55	9:00	2.11	412005
BOOLIGAL WEIR WL	07-May-56	9:00	2.92	412005
BOOLIGAL WEIR WL	18-May-56	9:00	2.87	412005
BOOLIGAL WEIR WL	13-Jun-56	9:00	2.92	412005
BOOLIGAL WEIR WL	17-Jul-56	9:00	3.12	412005
BOOLIGAL WEIR WL	31-Aug-56	9:00	3.38	412005
BOOLIGAL WEIR WL	17-Nov-58	9:00	2.16	412005
BOOLIGAL WEIR WL	08-May-59	9:00	2.41	412005
BOOLIGAL WEIR WL	05-Sep-59	9:00	2.57	412005
BOOLIGAL WEIR WL	28-Nov-59	9:00	1.98	412005
BOOLIGAL WEIR WL	19-Sep-60	9:00	2.59	412005
BOOLIGAL WEIR WL	03-Jan-62	9:00	2.29	412005
BOOLIGAL WEIR WL	27-Feb-62	9:00	2.29	412005
BOOLIGAL WEIR WL	25-Sep-62	9:00	2.34	412005
BOOLIGAL WEIR WL	17-Oct-62	9:00	1.80	412005
BOOLIGAL WEIR WL	01-Oct-63	9:00	2.69	412005
BOOLIGAL WEIR WL	16-Oct-63	9:00	2.72	412005
BOOLIGAL WEIR WL	29-Aug-64	9:00	2.01	412005
BOOLIGAL WEIR WL	23-Nov-64	9:00	2.54	412005
BOOLIGAL WEIR WL	19-Dec-66	9:00	3.11	412005
BOOLIGAL WEIR WL	24-Feb-69	9:00	0.51	412005
BOOLIGAL WEIR WL	08-Apr-69	9:00	0.84	412005
BOOLIGAL WEIR WL	27-May-69	9:00	1.75	412005
BOOLIGAL WEIR WL	25-Jul-69	9:00	2.57	412005
BOOLIGAL WEIR WL	11-Aug-69	9:00	2.57	412005
BOOLIGAL WEIR WL	01-Sep-69	9:00	2.72	412005
BOOLIGAL WEIR WL	23-Dec-69	9:00	2.36	412005
BOOLIGAL WEIR WL	04-Nov-70	9:00	2.31	412005
BOOLIGAL WEIR WL	16-Nov-70	9:32	2.37	412005
BOOLIGAL WEIR WL	13-Dec-73	9:03	1.96	412005
BOOLIGAL WEIR WL	12-Jan-74	12:46	2.28	412005
BOOLIGAL WEIR WL	10-Feb-74	7:28	1.87	412005
BOOLIGAL WEIR WL	11-Jun-74	9:00	2.68	412005
BOOLIGAL WEIR WL	17-Jul-74	9:00	2.84	412005
BOOLIGAL WEIR WL	05-Sep-74	9:00	2.99	412005
BOOLIGAL WEIR WL	24-Oct-74	9:00	3.10	412005
BOOLIGAL WEIR WL	28-Oct-74	23:47	3.12	412005
BOOLIGAL WEIR WL	01-Oct-75	9:00	2.08	412005
BOOLIGAL WEIR WL	28-Oct-75	5:07	2.69	412005
BOOLIGAL WEIR WL	28-Oct-75	9:00	2.72	412005

STATION NAME:	DATE:	TIME:	HEIGHT:	STATION NUMBER:
BOOLIGAL WEIR WL	09-Dec-75	9:00	2.50	412005
BOOLIGAL WEIR WL	23-Feb-76	9:00	2.78	412005
BOOLIGAL WEIR WL	03-Apr-76	7:46	2.59	412005
BOOLIGAL WEIR WL	17-Nov-76	9:00	2.58	412005
BOOLIGAL WEIR WL	19-Nov-76	4:12	2.60	412005
BOOLIGAL WEIR WL	12-Aug-78	9:00	2.72	412005
BOOLIGAL WEIR WL	11-Sep-78	9:00	2.76	412005
BOOLIGAL WEIR WL	01-Oct-78	7:52	2.78	412005
BOOLIGAL WEIR WL	28-Dec-83	9:00	0.34	412005
BOOLIGAL WEIR WL	29-Feb-84	17:57	1.64	412005
BOOLIGAL WEIR WL	14-Oct-84	2:47	2.77	412005
BOOLIGAL WEIR WL	01-Nov-88	3:33	2.24	412005
BOOLIGAL WEIR WL	05-Jun-89	9:00	2.70	412005
BOOLIGAL WEIR WL	30-Aug-89	0:06	2.79	412005
BOOLIGAL WEIR WL	19-May-90	9:00	2.80	412005
BOOLIGAL WEIR WL	23-Jul-90	9:00	2.93	412005
BOOLIGAL WEIR WL	06-Aug-90	9:00	2.94	412005
BOOLIGAL WEIR WL	08-Aug-90	9:00	2.94	412005
BOOLIGAL WEIR WL	11-Sep-90	9:00	3.09	412005
BOOLIGAL WEIR WL	18-Sep-90	1:00	3.16	412005
BOOLIGAL WEIR WL	22-Oct-91	11:38	2.27	412005
BOOLIGAL WEIR WL	09-Dec-92	12:09	2.40	412005
BOOLIGAL WEIR WL	28-Jan-93	8:04	2.25	412005
BOOLIGAL WEIR WL	28-Oct-93	9:05	2.58	412005
BOOLIGAL WEIR WL	29-Aug-98	9:00	2.07	412005
BOOLIGAL WEIR WL	27-Sep-98	9:00	2.66	412005
BOOLIGAL WEIR WL	23-Oct-98	9:00	2.75	412005
BOOLIGAL WEIR WL	10-Dec-98	9:00	1.92	412005

STATION NAME:	DATE:	TIME:	HEIGHT:	ATION NUMBER:
MAUDE WEIR D/S	23-Jun-74	7:09	6.74	410040
MAUDE WEIR D/S	15-Jul-74	7:48	5.04	410040
MAUDE WEIR D/S	20-Sep-74	18:15	7.38	410040
MAUDE WEIR D/S	20-Nov-75	23:50	7.04	410040
MAUDE WEIR D/S	13-Nov-76	15:13	6.67	410040
MAUDE WEIR D/S	28-Jul-78	3:58	6.36	410040
MAUDE WEIR D/S	25-Aug-78	8:26	5.46	410040
MAUDE WEIR D/S	05-Oct-78	12:25	6.90	410040
MAUDE WEIR D/S	17-Sep-81	17:56	6.62	410040
MAUDE WEIR D/S	09-Aug-83	15:52	5.41	410040
MAUDE WEIR D/S	18-Sep-83	16:08	6.71	410040
MAUDE WEIR D/S	31-Jan-84	10:54	5.67	410040
MAUDE WEIR D/S	17-Feb-84	9:10	6.68	410040
MAUDE WEIR D/S	20-Sep-84	23:46	6.92	410040
MAUDE WEIR D/S	08-Aug-86	12:43	5.07	410040
MAUDE WEIR D/S	02-Sep-86	16:19	5.41	410040
MAUDE WEIR D/S	08-Oct-86	6:07	5.91	410040
MAUDE WEIR D/S	25-Oct-86	14:41	5.30	410040
MAUDE WEIR D/S	07-Nov-86	11:09	5.11	410040
MAUDE WEIR D/S	09-Dec-86	21:36	6.24	410040
MAUDE WEIR D/S	08-Aug-88	10:27	6.53	410040
MAUDE WEIR D/S	04-Oct-88	19:47	5.16	410040
MAUDE WEIR D/S	04-May-89	0:55	7.23	410040
MAUDE WEIR D/S	28-Aug-89	13:14	6.89	410040
MAUDE WEIR D/S	23-Sep-89	16:33	5.19	410040
MAUDE WEIR D/S	16-Jun-90	3:23	5.28	410040
MAUDE WEIR D/S	11-Sep-90	2:10	7.00	410040
MAUDE WEIR D/S	06-Aug-91	23:47	6.96	410040
MAUDE WEIR D/S	27-Aug-91	8:38	5.78	410040
MAUDE WEIR D/S	27-Sep-91	11:57	6.55	410040
MAUDE WEIR D/S	21-Jul-92	9:00	5.89	410040
MAUDE WEIR D/S	26-Oct-92	10:00	6.68	410040
MAUDE WEIR D/S	11-Nov-92	6:00	6.75	410040
MAUDE WEIR D/S	22-Oct-96	9:00	5.92	410040

ANNEXURE 15.0

Potentially Contaminated Land

Contaminated Land - Hay LGA

Control LIN	Plan Label	Lot Number	Street Number and Name	Street Type	Locality	Area (Ha)
Department of Lands (Crown)	DP756756	79	0			67.89
Department of Lands (Crown)	DP1025828	7008	0			21.79
Freehold	DP597259	4	152 Lachlan	Street	Hay	0.25
Freehold	DP216778	1	0			0.01
Freehold	DP787682	1	0			0.16
Freehold	DP413386	2	164 Lachlan	Street	Hay	0.15
Department of Lands (Crown)	DP1026734	7019	0			37.31
Freehold	DP725232	1	0			0.29
Freehold	DP25097	1	223 Piper	Street	Hay	0.32
Department of Lands (Crown)	DP819305	223	0			4.20
Freehold	DP793910	10	353 Leonard	Street	Hay	0.30
Freehold	DP37466	4	215 Piper	Street	Hay	0.15
Freehold	DP62471	1	104 Lachlan	Street	Hay	0.07
Freehold	DP37466	8	221 Piper	Street	Hay	0.16
Freehold	DP192731	18	388 Alma	Street	Hay	0.06
Freehold	DP413386	1	0			0.01
Freehold	DP525576	15	Russell	Street	Hay South	0.09
Freehold	DP612738	1	73 Lachlan	Street	Hay	0.08
Freehold	DP173	8	0			0.03
Freehold	DP612738	2	0			0.00
Freehold	DP756755	175	0			0.02
Freehold	D788028	101	83 Pollard	Street	Hay	0.27
Freehold	DP797245	1	0			0.16
Freehold	DP221520	2	66 Lachlan	Street	Hay	0.04
Freehold	DP715490	2	0			0.23
Freehold	DP981980	1	0			0.02
Freehold	DP1119501	216	216 Coke	Street	Hay	0.07
Freehold	DP775602	2	Moama	Street	Hay South	0.11
Freehold	DP997870	2	429 Moama	Street	Hay South	0.37
Freehold	DP174	4	77 Lachlan	Street	Hay	0.03
Freehold	DP747225	4	Moama Street	Street	Hay South	0.25
Freehold	DP119931	1	161 Lachlan	Street	Hay	0.03
Freehold	DP997870	1	1 Archer	Street	Hay South	0.37
Freehold	DP174	18	85 Pollard	Street	Hay	0.24

Control LIN	Plan Label	Lot Number	Street Number and Name	Street Type	Locality	Area (Ha)
Freehold	DP25097	14	224 Coke	Street	Hay	0.08
Freehold	DP631187	1	393 Randall	Street	Hay	0.05
Freehold	DP85084	1	157 Lachlan	Street	Hay	0.05
Freehold	DP620581	14	Moama	Street	Hay South	0.40
Freehold	DP81617	1	411 Moss	Street	Hay	0.07
Freehold	DP525339	112`	0			0.21
Freehold	DP715490	1	416 Russell	Street	Hay South	0.11
Freehold	DP216778	2	159 Lachlan	Street	Hay	0.03
Freehold	DP1083479	21	0			0.06
Freehold	DP1092344	1	0			0.02
Freehold	DPO1103802	2	0			0.05
Freehold	DP1103802	1	0			0.02
Freehold	DP157458	1	0			0.02
Freehold	DP174	11	0			0.03
Freehold	DP192731	15	0			0.06
Freehold	DP192731	14	390 Alma	Street	Hay	0.06
Department of Lands (Crown)	DP1026736	7020	0			0.80
Freehold	DP997870	3	0			0.19
Freehold	DP162670	1	90 Lachlan	Street	Hay	0.09
Freehold	DP174	3	0			0.05
Freehold	DP36660		370 Leonard	Street	Hay	0.23
Freehold	DP40616	1	75 Lachlan	Street	Hay	0.02
Freehold	DP806288	1021	81 Pollard	Street	Hay	0.05
Freehold	DP998822	1	405 Belmore	Street	Hay	0.04
Freehold	DP544647	101	220 Coke	Street	Hay	0.27
Freehold	DP793098	202	366 Leonard	Street	Hay1	0.18
Freehold	DP224127	1	0			0.48
Freehold	DP604388	6	68 Lachlan	Street	Hay	0.12
Freehold	DP174	16	0			0.07
Freehold	DP862826	72	218 Coke	Street	Hay	0.68
Freehold	DP743104	1	394 Moore	Street	Hay	0.06
Freehold	DP862826	71	219 Piper	Street	Hay	0.15
Freehold	DP998065	1	409 Moss	Street	Hay	0.06
Freehold	DP519316	1	0			0.56
Freehold	DP775602	1	Nailor	Street	Hay South	0.38
Freehold	DP743595	1	406 Simpson	Street	Hay	0.14

Control LIN	Plan Label	Lot Number	Street Number and Name	Street Type	Locality	Area (Ha)
Freehold	DP174	7				0.03
Freehold	DP224127		397 Moama	Street	Hay South	0.33
Freehold	DP243178	1				0.26
Freehold	DP819305	221	Cadell	Street	Hay	0.87
Freehold	DP196094	1	58 Lachlan	Street	Hay	0.11
Freehold	DP390799	A	165 Lachlan	Street	Hay	0.03
Freehold	DP37466	6	217 Piper	Street	Hay	0.15
Freehold	DP784185	1	94 Lachlan	Street	Hay	0.13
Freehold	DP57436	4				0.08
Department of Lands (Crown)	DP819305	222				1.64
Freehold	DP787682	2	Russell	Street	Hay South	0.24
Freehold	DP743493	1	0			0.02
Freehold	DP153826	2	394 Alma	Street	Hay	0.11
Freehold	DP793910	11	0			0.38
Freehold	DP812034	18	0			0.85
Freehold	DP228099	1	406 Macauley	Street	Hay	0.10
Freehold	DP840103	21	376 Macauley	Street	Hay	0.10
Department of Lands (Crown)	DP756755	156	383 Murray	Street	Hay	0.23
Freehold	DP748943	10	0			1.33
Freehold	DP812034	14	0			2.29
Freehold	DP618346	32	370 Macauley	Street	Hay	0.10
Freehold	DP812034	16	0			2.31
Freehold	DP756755	132	0			10.77
Department of Lands (Crown)	DP1019894	7038	0			0.54
Freehold	DP1062681	104		Mid Western Highway	Hay	0.38
Freehold	DP388195	B	255 Lachlan	Street	Hay	0.08
Freehold	DP840103	22	374 Macauley	Street	Hay	0.11
Department of Lands (Crown)	DP758507	1	0			2.04
Freehold	DP620326`	1	0			1.99
Freehold	DP658507	4	0			0.21
Department of Lands (Crown)	DP1024228	7037	0			2.49
Freehold	DP1080107	106		Mid Western Highway	Hay	0.57
Freehold	DP1080107	107	0			0.25
Freehold	DP823018	10	0			3.50
Freehold	DP823018	11	0			28.74
Freehold	DP854322	192	0			0.10

Control LIN	Plan Label	Lot Number	Street Number and Name	Street Type	Locality	Area (Ha)
Freehold	DP157580	1	250 Lachlan	Street	Hay	0.10
Department of Lands (Crown)	DP756755	195	0			1.44
Freehold	DP758507	7	328 Macauley	Street	Hay	0.10
Freehold	DP812034	7	0			1.22
Freehold	DP758507	3	392 Murray	Street	Hay	0.21
Freehold	DP812034	5	0			3.63
Department of Lands (Crown)	DP756755	177	0			0.15
Freehold	DP756755	226	0			1.93
Freehold	DP157580	2	248 Lachlan	Street	Hay	0.10
Department of Lands (Crown)	DP448476	37	12234	Cobb Highway	Hay	0.85
Freehold	DP758507	11	0			0.10
Freehold	DP758507	9	326 Macauley	Street	Hay	0.10
Freehold	DP758507	8	0			0.10
Freehold	DP388195	A	251 Lachlan	Street	Hay	0.13
Freehold	DP758507	5	0			0.12
Department of Lands (Crown)	DP756755	176	389 Murray	Street	Hay	0.43
Freehold	DP812034	17	0			0.33
Freehold	DP68346	31	Macauley	Street	Hay	0.10
Freehold	DP854322	191	Lachlan	Street	Hay	0.10
Department of Lands (Crown)	DP448476	36				8.15
Freehold	DP1077622	21	Murray	Street	Hay	2.63
Freehold	DP1077622	20				0.51
Freehold	DP1087260	9	397 Macauley	Street	Hay	0.10
Department of Lands (Crown)	DP756755	174	379 Murray	Street	Hay	0.18
Department of Lands (Crown)	DP1122225	7049				1.99
Freehold	DP41412	1				0.26
Freehold	DP41412	3	Murray	Street	Hay	0.95
Freehold	DP832133	1	381Murray	Street	Hay	0.20
Freehold	DP758507	4	382 Murray	Street	Hay	0.21
Freehold	DP756755	155	Murray	Street	Hay	0.34
Freehold	DP1123997	382	12242	Cob Highway	Hay	10.39
Freehold	DP854322	193				0.10
Freehold	DP443201	57	42 Farlows	Lane	Hay	8.38
Freehold	DP448476	56	29 Ashcrofts	Lane	Hay	13.94
Freehold	DP713143	531	30 Ashcrofts	Lane	Hay	10.51
Freehold	DP48528	1	27 Gum Tree	Lane	Hay	2.19

Control LIN	Plan Label	Lot Number	Street Number and Name	Street Type	Locality	Area (Ha)
Freehold	DP225	12				0.12
Freehold	DP225	10				0.18
Freehold	DP225	17				0.18
Department of Lands (Crown)	DP215830	131	43 The Langering	Road	Hay	42.44
Freehold	DP225	11				0.12
Freehold	DP756755	202	Murray	Street	Hay	0.78
Freehold	DP630069	2				17.69
Department of Lands (Crown)	DP756755	152				0.65
Freehold	DP756755	48				3.94
Department of Lands (Crown)	DP1019642	7013				2.96
Department of Lands (Crown)	DP1055627	7014				5.03
Freehold	DP225	15				0.12
Freehold	DP517869	2				20.33
Freehold	DP517869	1				4.67
Freehold	DP756755	205	Lindsay	Street	Hay	0.41
Freehold	DP1097344	2031	Murray	Street	Hay	0.22
Freehold	DP1097344	2032	Lindsay	Street	Hay	3.20
Freehold	DP756755	204	Lindsay	Street	Hay	0.40
Freehold	DP812034	15				0.40
Freehold	DP225	16				0.12
Freehold	DP756755	47				3.89
Freehold	DP225	13				0.12
Freehold	DP225	14				0.12
Freehold	DP630069	1				14.73
Department of Lands (Crown)	DP1122434	7002				13.47
Freehold	DP100324	2				0.05
Freehold	DP523472	4	510 Clay	Street	Hay	0.72
Freehold	DP725255	1	182 Lindsay	Street	Hay	0.61
Freehold	DP1125802	10	184 Harrison	Street	Hay	2.64
Freehold	DP1125802	11				0.55
Freehold	DP526002	1				0.00
Freehold	DP1125802	12				0.38
Freehold	DP756773	48				36.91
Freehold	DP756773	49				37.54
Freehold	DP135147	1				3.53
Freehold	DP756756	111				199.08

Control LIN	Plan Label	Lot Number	Street Number and Name	Street Type	Locality	Area (Ha)
Freehold	DP756773	47				37.50
Department of Lands (Crown)	DP1023781	7026				0.48
Freehold	DP756773	2	26698	Sturt Highway	Hay South	103.35
Freehold	DP758659	10				0.19
Department of Lands (Crown)	DP1052490	7001				130.18
Department of Lands (Crown)	DP758659	1				0.19
Freehold	DP758659	3				0.19
Freehold	DP758659	4				0.20
Freehold	DP758659	12				0.20
Freehold	D758659	9				0.20
Freehold	DP758659	11				0.19
Freehold	DP758659	2				0.19
Department of Lands (Crown)	DP1025522	7022				0.43
Freehold	DP823011	106				1.00
Freehold	DP755144	3				4.09
Freehold	DP738330	4	74 Jenkins	Street	Booligal	12.66
Department of Lands (Crown)	DP1136213	7304				15.40
Department of Lands (Crown)	DP1136213	7305				135.79
Department of Lands (Crown)	DP1136213	7306				26.62
Freehold	DP48528	2	51 Dairy	Lane	Hay	2.36
Department of Lands (Crown)	DP1138725	7303				1.47
Department of Lands (Crown)	DP266303	1	Gum Tree	Lane	Hay	18.27

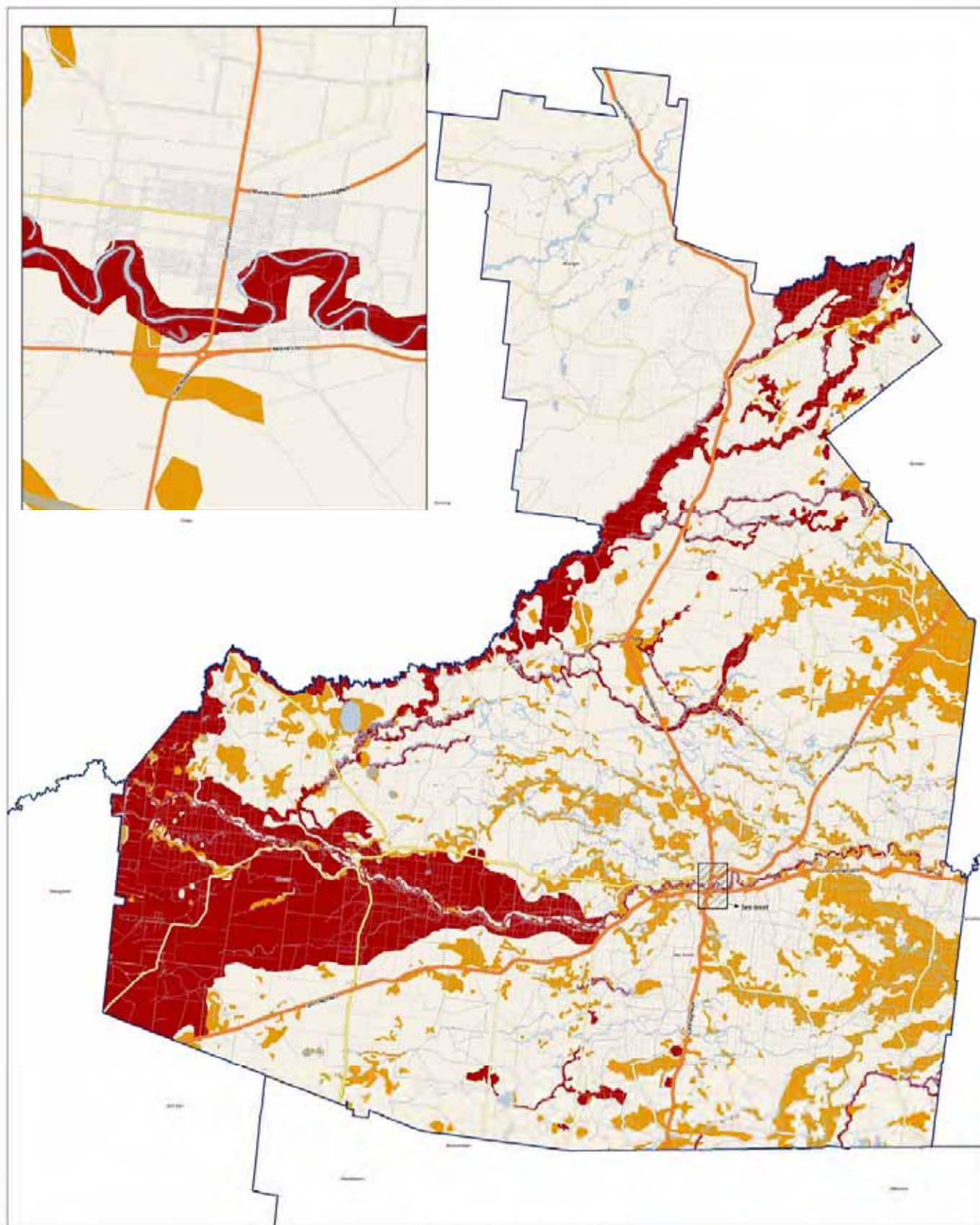
Site Location	Property Description	Description of Premises	Source of Contamination
Booligal Road	Cnr Booligal/Sidonia Road 7038/1019894 R.42953	PP Board	Chemical Storage
	Lot 3 parish Booligal/755144	Old Booligal Tip	Buried domestic waste
	TS & CR:83431 106/823011	Booligal Tip	Buried domestic waster
Brunker Street	Reserve off Brunker Street 7020/1026736	Sewage Treatment Plant	Sewage effluent
Coke Street	Por 112, Ph Hay Near 72/862826	Gas works	Cyanides, creosotes, phenyls
Cobb Highway	Por 111, Ph Hay South 1756756	Aerodrome	Fuel & chemical storage
Harrison Street	Lot 1, 12, DP 372 Lot 43, 44, DP 1883 Lot 1, DP 54919 Lot 1, DP 1000324 (PRV 659/5)	Old wool Scourers Site	Waste from scouring operations

Site Location	Property Description	Description of Premises	Source of Contamination
Irrigation Area	Lot 37/448476 Lot 531, DP 713143	Garners Truck Depot R Vivian's meatworks	Large transport vehicle shed Storage of animal carcasses
	Lot 56/448476	Laracy's old meatworks	Storage of animal carcasses
Lachlan Street	1/784185 94 Lachlan	Warren Fayle Motors	Fuel and oil storage
	Lot 3,4,7,8,11 DP 174 1,2/DP40616, 1/981980, 1/1092344	Old Hay Motors	Fuel and oil storage
	Lot 155/756755 (cnr Lachlan/Murray Sts)	Mobile Fuel Depot	Fuel and oil storage
	Lot 2/413386 (PRV738)	Royce Curtis Motors	Fuel and oil storage
	Lot 2,DP 221520,30 (PRV761) 1&2/1103802	BP Service Station	Fuel and oil storage
	Lot 1/196094, 175/756755 (PRV763)	Ampol Service Station	Fuel and oil storage
	B/388195 (PRV819)	Walters Motors	Fuel and oil storage
	Lot2/DP 216779 (PRV796)	Hay Sportswear	Disused fuel storage
	1/Sec 7/758507	Swimming Pool	Chlorine Storage
Leonard Street	1/725232	Ray water plant	Chlorine & chemical storage
	202/793098 (PRV895)	MCC Line Depot	Storage of fuel/oil for backup generator
Lindsay Street	Lot 205 DP 756755	O'Brien AFL yard	Chemical storage (fertiliser)
Maude Nimmie St	Lots 2,3,10,11 Sec 23 DP 758659	Old Garbage Depot	Buried domestic waste
(Darchy St) Maude Rd	7002/102552	Garbage Depot	Buried domestic waste
Macauley Street	Lot 8,9.11 Sec 26/758507	Caltex Service Station	Fuel and oil storage
	Lot 22, DP 840103 (PRV1007/2)	Peterson's truck Depot	Fuel and oil storage
	1/157580 (PRV711)	Beside Hill's Corner	Fuel and oil storage
Maude Road	Lot 2,3 Sec 23/758659 (PRV1607)	Old Garbage Depot	Buried domestic waste
	Lot 10,11 Sec 23/758659 (PRV1607)	Old Nightsoil Depot	Buried human waste
	Por 47,48 (PRV328) 756755	Jones Truck Depot	Buried domestic waste
Moama Street	Lot 1,2/224127, DP519316 (PRV1090)	Old Esso Service Station	Fuel and oil storage
	Lot 14 DP620581 (PRV16070)	Mobil Service Station	Fuel and oil storage
	Lot 2/997870 (PRV2093/1)	Caltex Service Station	Fuel and oil storage

Site Location	Property Description	Description of Premises	Source of Contamination
Moss Street	Lot 1,2 DP998065 (PRV1155)	Royce Curtis' workshop	Fuel and oil storage
Murray Street	Por 2032/1097344	Council Depot	Fuel/oil, chemical storage
	Por 176, 177/756755 (PRV1167)	Shell Fuel Depot	Fuel and oil storage
	21/1077622	Hospital Site	Chemical storage
	1/41412	Ambulance Station	Fuel storage
	Lot 4 Sec 4 DP758507 (PRV1193)	Harrison's Truck Depot	Large transport vehicle depot
	State Rail property (west) 14/812034	MCC pole storage area	Chemical residues
	1,832133 (PRV1165)	Telecom line Depot	Chemical residues
	106,107/1080107	Old BP Service Station	Fuel and oil storage
Mailor Street	Lot 112 DP525339 (PRV1089)	Crighton's crane (Old service station)	Fuel and oil storage
Old Thelangerine Road	PO 71/7	Truck Wash	Detergents, oil residues
	1,2/517869, Parish Hay	Sewage plant & ponds	Effluent
	Resub lot 1,2 DP581219,1/630069	Garbage Depot	Buried domestic waste
Pollard Street	Lot 101 DP788028 (PRV1323/11)	Block	Storage area riverboat transport
Russell Street	Lot 1 DP787682 (PRV1365/20)	Gash's Truck Depot	Large transport vehicle depot
Showground Road	Lot 191, 192 DP854322	Old Golden Fleece Depot	Fuel and oil storage
	State Rail property	Old Railway loading yards	Fuel/oil & chemical storage
Sidonia Road	1/620326, 10/748943	RTA Depot	Fuel/oil & chemical storage
	Reserve 59751 226/756755	Old garbage depot site	Buried domestic waste
Various locations	Various locations	Sewage Pump stations	Human waste
	Cnr Cadell/Coke Sts 221/819305	Water Treatment Plant	Chemical storage
	Sturt Highway	Road side Chemical Spill	Ordram

ANNEXURE 16.0

Environmentally Sensitive Land



Hay LGA Constraints Map:
Environmentally Sensitive Areas - Sensitive Land Resources

Roads

- Highways
- Arterial Roads
- Sub-Arterial/Collector Rds
- Local Roads
- Other Roads

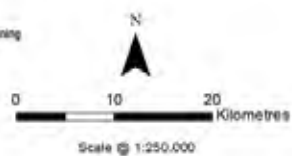
Hay Shire
 Cadastre
 Waterways

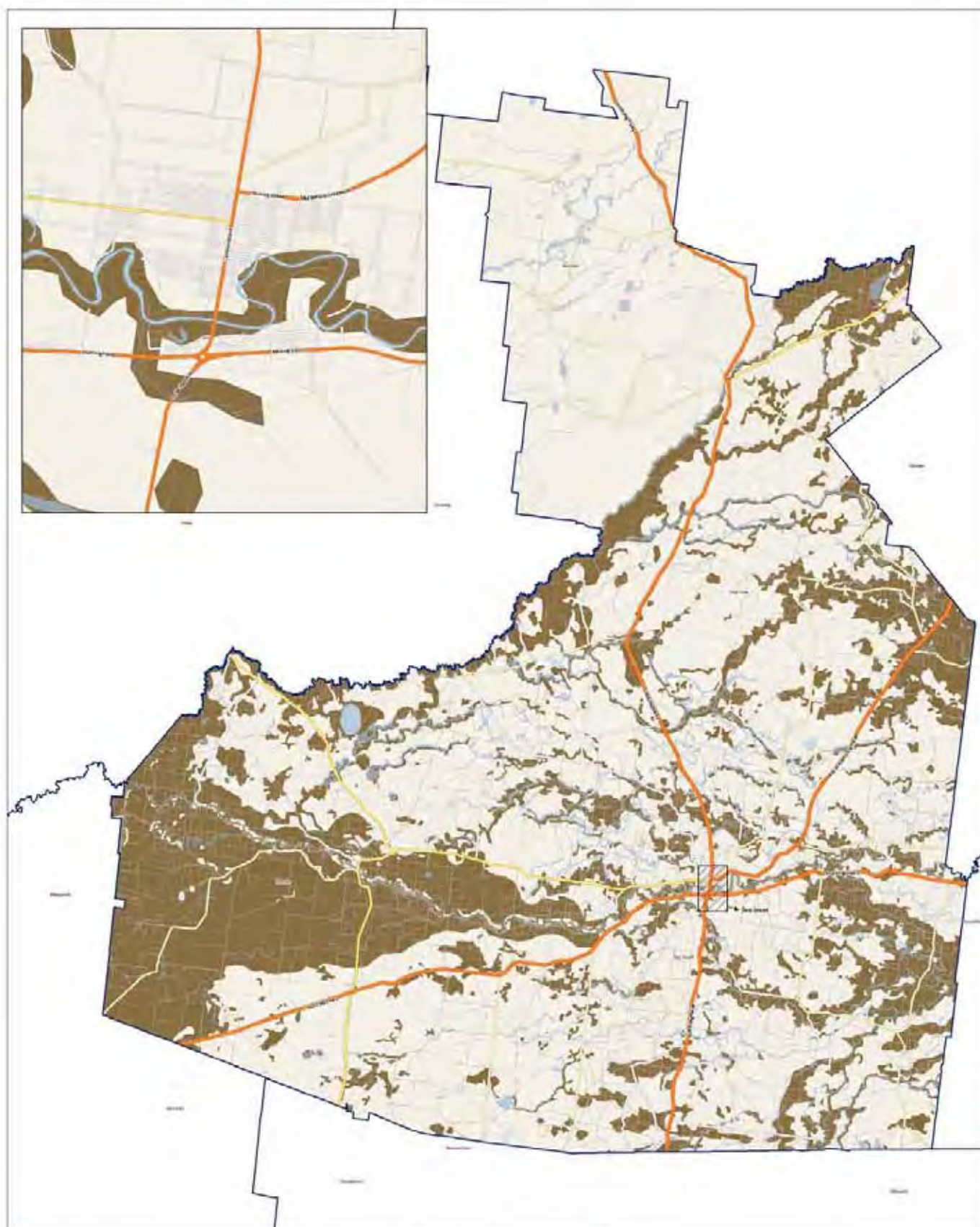
Land Capability Class V & VII
 Development capabilities of these areas will vary.

Land Capability Classes VII, VIII
 Development capabilities of these areas would not be considered appropriate.



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 Land Capability classes V, VI, VII and VIII copyright Department of Water and Energy and Department of Environment and Climate Change





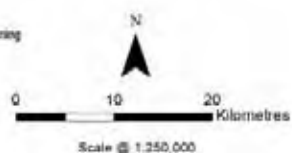
Hay LGA Constraints Map: **Environmentally Sensitive Areas - Land Overlay**

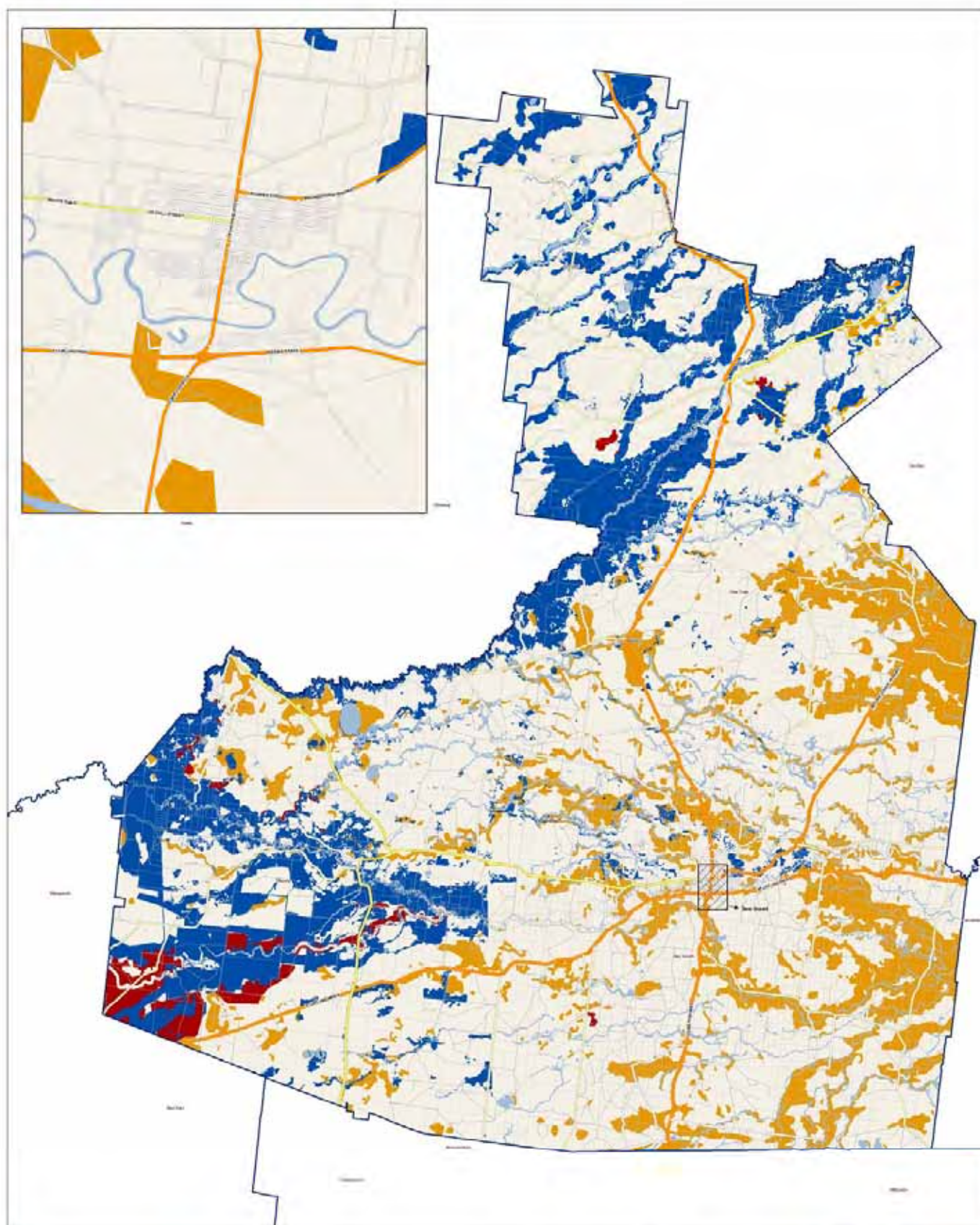
- Roads**
- Highways
 - Arterial Roads
 - Sub-Arterial/Collector Rds
 - Local Roads
 - Other Roads
- Hay Shire
 Cadastre
 Waterways

Environmentally Sensitive Areas - Land
 Subject to one or more of the following:
 steep slopes, shallow soils, salinity, temporary
 or permanent inundation, high proportion of
 rock outcrop, high dispersability and erosion
 potential.



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 Environmentally Sensitive Areas (Land) copyright
 Department of Water and Energy and
 Department of Environment and Climate Change.





Roads

- Highways
- Arterial Roads
- Sub-Arterial/Collector Rds
- Local Roads
- Other Roads
- Major Waterways
- Wetland
- Hay Shire
- Cedastre

Moderate Natural Resource Constraints
(productive agricultural land - generally grazing based on Land Capability Classes V & IV). Development capability of these areas will vary and should be balanced against the agricultural productivity of this land.

Highly Constrained by Natural Resources
(based on Land Capability Classes VII & VIII and data relating to native vegetation, biodiversity, steep slopes, high erodible soils, high groundwater recharge or vulnerability areas). Development of these areas require significant justification but should not include waste generating industry (such as intensive animal agriculture).

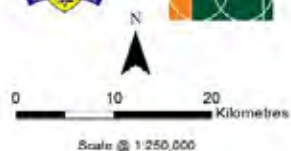
Hay LGA Constraints Map: Combined Environmentally Sensitive Areas

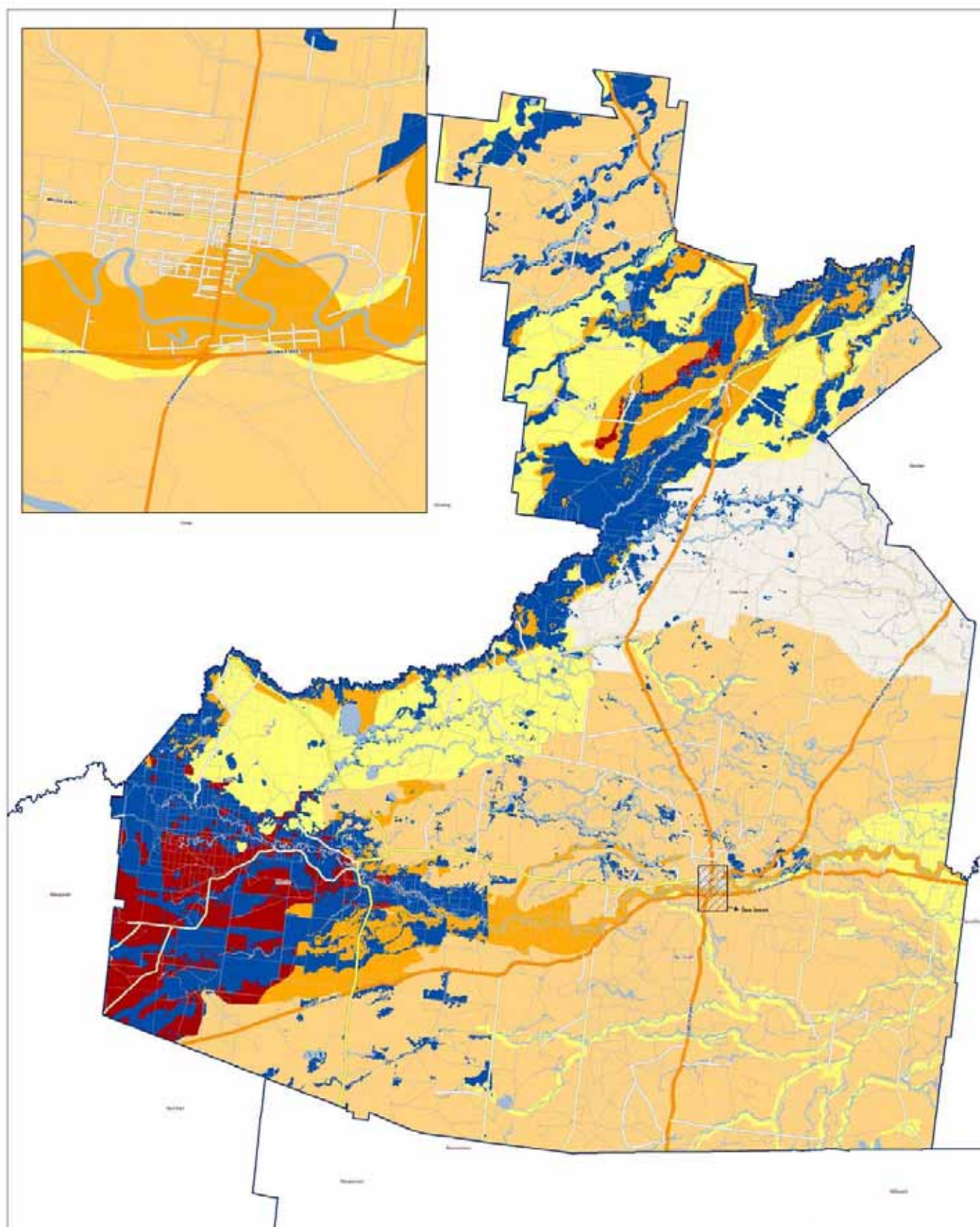
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Cedastre copyright Land and Property Management Authority, 2009

Hay Shire boundary copyright PSMA Australia, 2009

Wetland, Moderate Natural Resource Constraints and Highly Constrained by Natural Resources copyright Department of Water and Energy and Department of Environment and Climate Change.





- Roads**
- Highways
 - Arterial Roads
 - Sub-Arterial/Collector Rds
 - Local Roads
 - Other Roads
 - Hay Shire
 - Cadastre
- Major Waterways**
- Welland
- Groundwater Vulnerability**
- High
 - Moderately high
 - Low moderate
 - Moderate

Hay LGA Constraints Map: Environmentally Sensitive Areas - Sensitive Water Resources

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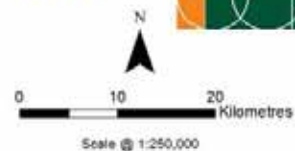
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Department of Planning



Key Fish Habitat

HAY LGA

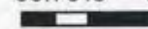


Source: data from the Australian Geoscience, NSW DPI, NSW DECC and NSW LPI
Datum: Geocentric Datum of Australia (GDA)
Grid: Mapping Grid of Australia (MGA94)

The State of New South Wales, the Department of Primary Industries, its employees, officers, agents or servants are not responsible for the result of any actions taken on the basis of the information contained on the map, or for any errors, omissions or inaccuracies that may occur on this map.

Prepared by GIS section, Fisheries Ecosystems Branch, Division of Fisheries, Compliance and Regional Relations, NSW DPI.

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Kilometres

Legend

-  Hay key fish habitat
-  Roads
-  LPI stream layer (reference only)
-  HAY wetlands



NSW DEPARTMENT OF
PRIMARY INDUSTRIES

ANNEXURE 17.0
Community Survey



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***This survey is confidential and takes about 5 minutes to complete.
Check the box which matches your response. If you have no opinion
about an item, check the box **Don't Know*****

Example Only	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know
Hay is a good place to live		☒			

Hay Shire Community Survey

	Question	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't know
1 a	Hay Shire is a good place to live.	☐	☐	☐	☐	☐
b	Hay Shire has a positive future.	☐	☐	☐	☐	☐
c	People in Hay are satisfied with things as they are.	☐	☐	☐	☐	☐
d	Residents have pride in their respective village.	☐	☐	☐	☐	☐
e	Hay main street is attractive for visitors.	☐	☐	☐	☐	☐
f	People in Hay Shire work together to get things done for the community.	☐	☐	☐	☐	☐
g	Your respective village is about the right size.	☐	☐	☐	☐	☐
h	Transport is not a problem in Hay Shire.	☐	☐	☐	☐	☐
i	Hay Shire is a good place to raise children.	☐	☐	☐	☐	☐
j	People in Hay Shire have good access to education.	☐	☐	☐	☐	☐
k	Facilities in Hay Shire are adequate for young people.	☐	☐	☐	☐	☐
l	Younger residents would like to stay in Hay Shire after completing their education.	☐	☐	☐	☐	☐
m	Younger residents are able to stay in Hay Shire after completing their education.	☐	☐	☐	☐	☐
n	Hay Shire is a good place for senior citizens to live.	☐	☐	☐	☐	☐
o	Hay Shire provides adequate services for senior citizens.	☐	☐	☐	☐	☐
p	There are sufficient welfare programs for people in need in the communities of the Shire.	☐	☐	☐	☐	☐
q	There is an adequate mix of commercial and retail development in the Shire.	☐	☐	☐	☐	☐
r	Hay Shire needs new community improvement programs.	☐	☐	☐	☐	☐



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	Question	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't know
s	Hay Shire has good community leaders.	☐	☐	☐	☐	☐
t	There are many opportunities to belong to groups sharing similar interests in Hay Shire.	☐	☐	☐	☐	☐
u	Adequate resources are being used to develop new jobs in the community.	☐	☐	☐	☐	☐
v	Hay Shire Council actively promotes industrial development.	☐	☐	☐	☐	☐
w	Residents of Hay Shire have a positive attitude towards attracting new business and industry.	☐	☐	☐	☐	☐
x	Local businesses serve the needs of residents in Hay Shire.	☐	☐	☐	☐	☐
y	Hay Shire Council should clearly define those parts of the villages where growth is permitted.	☐	☐	☐	☐	☐
z	Hay Shire Council should protect its agricultural lands from urban development.	☐	☐	☐	☐	☐
aa	Hay Shire Council may need to restrict farming practices when they are a nuisance to nearby community residents.	☐	☐	☐	☐	☐
ab	Hay Shire Council should separate agricultural land use from village developments.	☐	☐	☐	☐	☐
ac	There are good public parks in Hay Shire for children and families.	☐	☐	☐	☐	☐
ad	Tourism is significant to the growth of Hay Shire.	☐	☐	☐	☐	☐

For the following questions check the box that best matches your response.

- 2 How much new growth/development do you feel is desirable for the Hay Shire?
- a A great deal ☐
- b A moderate amount ☐
- c A little ☐
- d None ☐
- e No opinion ☐
- 3 How often do you shop out of the Hay Shire?
- a Weekly ☐
- b Fortnightly ☐
- c Monthly ☐
- d Quarterly ☐
- e Yearly ☐
- f Never ☐



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4 What are the 3 best things about living in the Hay Shire? **Do not check more than 3.**

- a Well serviced business, retail and industrial sector ☐
- b Being a safe and crime free community ☐
- c Friendly people and a sense of community ☐
- d The river environment ☐
- e Proximity to National Parks ☐
- f Agricultural production ☐
- g The rural environment ☐
- h Community activities and events ☐
- i Other, please state:

.....

.....

5 What are the 3 worst things about living in the Hay Shire? **Do not check more than 3.**

- a Distance to regional shopping centres and facilities ☐
- b Lack of cultural diversity ☐
- c Social isolation ☐
- d Limited shopping ☐
- e Lack of health services ☐
- f Lack of recreational opportunities ☐
- g Not many events and festivals ☐
- h Lack of entertainment facilities ☐
- i Lack of arts and cultural activities ☐
- j Lack of restaurants ☐
- k Limited educational opportunities ☐
- l Limited employment opportunities ☐
- m Other, please state:

.....

.....



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6 What are the 3 priorities that should be resolved in future planning for the Hay Shire community?
Do not check more than 3.

- a More lifestyle blocks (4,000²m/2ha) ☐
- b More intensive rural agricultural blocks for irrigated farming (20ha – 50ha) ☐
- c Affordable housing ☐
- d More residential land in town ☐
- e More commercial land ☐
- f More industrial land ☐
- g Improved streetscape and public places ☐
- h More social and recreational opportunities ☐
- i Improved educational opportunities ☐
- j Improved employment opportunities ☐
- k Improved health care services ☐
- l Improved aged care facilities ☐
- m Improved transport and tourist facilities ☐
- n Improved public housing facilities ☐
- o Improved range of professional services (eg solicitors, accountants, etc) ☐
- p Community facilities. Please state what. (eg bike paths, community halls, recycling services, etc):

.....

.....

q Other, please state:

.....

7 Are you currently a home owner/landholder? Yes ☐ No ☐

8 Where do you currently live?

- a Hay township ☐
- b Maude village ☐
- c Booligal village ☐
- d Shire rural area ☐



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- 9 In what situation do you currently live?
- a A single dwelling in a village or on a town block ☐
 - b In a flat/unit/townhouse ☐
 - c On a lifestyle block ☐
 - d On a commercial farm ☐
 - e Other, please state:

.....

- 10 Where would you like to live in 5 – 10 years time?
- a Hay township ☐
 - b Maude village ☐
 - c Booligal village ☐
 - d Shire rural area ☐

- 11 In what situation would you like to live In 5 – 10 years time?
- a A single dwelling in a village or on a town block ☐
 - b In a flat/unit/townhouse ☐
 - c On a lifestyle block (see question 12) ☐
 - d On a commercial farm ☐
 - e Other, please state:

.....

- 12 (i) If you answered (c) for Question 11 above, what sort of lifestyle block would you prefer? **Please choose a maximum of 1 from each Section (i) and (ii).**

- a Close to the town of Hay ☐
- b Close to the village of Booligal ☐
- c Close to the village of Maude ☐
- d Close to the river ☐
- e Close to National Parks ☐
- f On a dryland block ☐
- g On an irrigated block ☐
- h Close to a main sealed road ☐
- i On a fully serviced block ie gas/town water/electricity/phone ☐
- j On a partially serviced block ie no gas or town water access ☐



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- 12 (ii)
- | | | |
|---|------------------------|--------------------------|
| a | Lot size 2ha – 5ha | ☐ |
| b | Lot size 5ha – 20ha | ☐ |
| c | Lot size 20ha – 50ha | ☐ |
| d | Lot size 50ha – 200ha | ☐ |
| e | Lot size 200ha – 500ha | ☐ |

Are there any other comments you would like to make?

.....

.....

.....

.....

ANNEXURE 18.0
Draft Issues Paper

- DRAFT -

HAY SHIRE COUNCIL

ISSUES PAPER



Agribusiness and
Environmental Solutions

www.boothassociates.com.au

HAY SHIRE COUNCIL LEP REVIEW ISSUES PAPER

Submitted to:

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November, 2009

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Annexure 2: Prioritised Issues

Annexure 3: Specific Planning Issues

Annexure 4: Agency Requirements

Annexure 5: Community Survey and Statistical Summary of Results

Annexure 6: Draft Table of Contents



1.0 REPORT PURPOSE

The purpose of this report is to:

- Present an overview of the key findings obtained through project background investigation, reporting and analysis conducted to date; and
- Identify the issues obtained through community engagement associated with the Hay LEP review process to date, including:
 - o Stakeholder and community consultation;
 - o Agency consultation; and
 - o Community survey.

The report also:

- Ranks and prioritises the identified issues according to recognised measures of community sustainability;
- Identifies the key themes and guiding principles which are recommended to drive future planning for the Hay Shire to better facilitate community sustainability into the future;
- Identifies specific planning issues arising from public consultation and defines how the project team propose to further analyse and report upon these issues;
- Identifies other aspects for discussion and resolution including:
 - o Agency requirements outside project scope; and
 - o Planning focus and mapping meeting.

This report is considered to be a key report informing the Steering Committee of the results of the project so far and identifies important issues arising from further discussion. Further reporting to the Steering Committee will occur as detailed in the Response to the Brief.





2.0 BACKGROUND INVESTIGATIONS – KEY FINDINGS

2.1 Socio-economic Profile

A community socio economic profile has been developed including an analysis of development and tourism activity and population projections which is included as Annexure 1. Related analysis including and occupied and vacant retail, commercial office, and industrial floor space is still a work in progress.

The key findings of this profile are:

- Health and employment are key issues which require innovative land use planning solutions;
- Land use planning and zoning mechanisms chosen should result in improved certainty for the community, developers and agencies;
- Agriculture and tourism employment sectors are considered to be the key drivers for growth and community sustainability;
- Land should be set aside for community development;
- Affordable housing and seniors housing opportunities should be recognised to support demographic projections for an aging population;
- There is a need for existing vacant more industrial land to be more property identified in north Hay and a new “greenfield” industrial estate in south Hay;
- There is a demand for community improvement programs, including more facilities for youth which are not limited to recreation; and
- It is likely that there is a significant demand for rural lifestyle opportunities from amongst the existing population.

2.2 Urban and Rural Land Use Studies

2.2.1 Preliminary Rural Analysis

The initial findings of the Rural Lands Study are:

- Agriculture is the largest employer, land user and industry in the shire. In 2006/07 ABS agricultural census data indicates the total value of agricultural commodities produced in the Hay Shire was \$71.4M;
- Drought is having a significant impact on agriculture in the shire. In particular since 2002. ABS agricultural census data indicates that from 1990 through to 2000/01 the value of agricultural commodities produced in the shire grew by an average rate of 4.6% pa. From 2000/01 to 2005/06 the value of agricultural commodities produced declined by an average rate of 2.0% pa. Had the value of agricultural commodities produced continued to grow at the previous rate of 4.6% pa, then in 2005/06 the expected value of agricultural commodities produced would have been \$98.9M;



- There are four main agricultural systems in the shire being:
 - o Pastoral – grazing of sheep and cattle, which in 2000/01 made up 37% of the total value of agricultural commodities produced in the shire;
 - o Broadacre irrigation – producing a range of crops including wheat, rice, maize, other cereals, oilseeds, grain legumes and cotton. In 2000/01 this cropping production made up 48% of the total value of agricultural commodities produced in the shire;
 - o Mixed large scale properties – comprising both pastoral grazing and broadacre irrigation activities. The contribution of these farming systems to the value of agricultural commodities produced in the shire was captured in the two previous sub-points;
 - o Horticulture and viticulture – in 2000/01 these farms produced 15% of the total value of agricultural products produced in the shire.
- Livestock numbers have declined significantly in recent years largely due to the on-going drought. Sheep numbers have declined from 965,000 in 1989/90 to 372,000 in 2005/06 and cattle numbers have declined from just over 40,000 to just under 34,000 in the same period;
- The agricultural holdings analysis indicates there is no discernable pattern in holding size across the shire, and that more than 80% of the land within the shire used for agriculture is held in holdings of 5,000ha or greater;
- Irrigation development is fragmented across the shire. Investigation indicate over 43,000ha has been developed for flood irrigation in the shire;
- All known horticulture and viticulture practice within the shire is conducted within a 15km radius of the town of Hay which offers access to the most reliable source of water (Murrumbidgee River) and the best soils located within the shire;
- Given the uniform holding pattern size across the shire, fragmentation of irrigation development and proximity of horticulture and viticulture to the township of Hay, it will be appropriate to have two minimum lot sizes. One within close proximity to Hay and the other for the rest of the shire;
- Initial economic analysis indicates the minimum size of a commercial farm is:
 - o Pastoral only - 5,750ha;
 - o Broadacre irrigation farm - 500ha
 - o Horticulture - 75ha

These figures will form part of the basis for the recommended minimum lot sizes. More analysis is required to derive appropriate minimum lot sizes.

2.2.2 Preliminary Urban Analysis

The initial findings of the Urban Lands Study are:

Hay urban area

- The high amenity environs and flood influences of the Murrumbidgee River represent significant opportunities and constraints for urban Hay, both from the point of view of consolidating existing public recreation opportunities, facilitating infill residential development in existing areas, and determining areas for urban expansion (residential and industrial);



- Determining the 1 in 100 year (1% Average Exceedance Probability) and the 1 in 500 year (to be confirmed) Probable Maximum Flood levels for the Hay urban area are crucial for future land use planning;
- Floodplain mapping and supporting floodplain civil engineering work currently being completed to determine locations for levee banks, combined with estimated staging of such works within and near the Hay urban area are also crucial for future land use planning, importantly for any staged release of land in any urban growth areas;
- Reticulated services including water, sewerage, stormwater, electricity and telecommunications are known to be of an adequate standard and with existing capacity for future growth;
- The declared B-double road network services all existing industrial areas. These road network services appear to be adequate;
- A core commercial/retail precinct exists generally of on lots width either side along Lachlan Street (Cobb Highway) located to the north of Belmore Street and Randall Street and located to the south of Morgan Street/Leonard Street (central Hay);
- The single river crossing of the Murrumbidgee River is a significant constraint for central Hay retail shopping and tourism experiences given heavy vehicles (19m semi-trailer and 25m B-double trucks) must use Lachlan Street (Cobb Highway);
- Tourist accommodation in central Hay appears to be adequate in terms of bed availability, with support facilities such as a central caravan parking being recently implemented via a Council project and septic dumping facilities on northwest Hay at the Council depot;
- Some non-retail commercial land uses are scattered throughout the urban area, including bus, dairy, and electrical transport depots, car showrooms and auto mechanics;
- A concentration of commercial land uses exist in mixed-use residential circumstances in central Hay in proximity to Lachlan Street from historical settlement and sub-division proclamations;
- Industrial land uses are generally defined to the north and the northwest Hay urban areas, with land use patterns generally dominated by declared B-double truck routes (Cobb Highway, Mid Western Highway and Maude Road) and reticulated services, in particular sewerage;
- Built heritage items of European significance are clearly defined at street frontages with Heritage NSW signage – such items are generally located along Lachlan Street in central Hay;
- Streetscape urban design works, including street furniture, paving, parking bay islands, and plantings facilitate a strong positive visual appearance of central Hay, however commercial advertising signage generally gives a cluttered visual image of central Hay above first floor building awning level;
- Some non-sympathetic additions, alterations, painting and advertising signage to built heritage items of European significance in central Hay are evident, including development and signage in proximity to such items;
- The northern and north eastern road approaches to the Hay urban area are generally contained, however do not generally give a clear impression of a defined urban growth boundary, with some linear-style development occurring;
- A variety of low adverse amenity generating “home occupation” land uses exist throughout urban residential Hay and which appear to be appropriate;
- Generally urban Hay has a high standard of existing pedestrian and bicycle infrastructure with a defined network, and many good linkages to public recreation reserves and the river foreshore environs;



- A number of former commercial and industrial land uses are evident either within or at the interface of residential areas which through their former obvious uses as either fuel depots or service stations have limited ongoing higher order uses unless land remediation occurs – some of these sites are significantly located and represent major opportunities for commercial/industrial re-development, including at the intersection of Lachlan Street (Cobb Highway) and Murray Street (Mid Western Highway);
- Many vacant residential lots are evident within urban Hay – these are generally evenly scattered, however larger individual or contiguous holdings are evident in northeast Hay (recent subdivision) and eastern south Hay;
- There are opportunities for improving tourism signage within the Hay urban area and at all road approaches to the Hay urban area;
- Generally all land to the south of the Sturt Highway at south Hay should be prevented from urban growth (residential or large lot residential) with the aim of directing growth pressure to higher priority areas such as to northeast Hay where community infrastructure (retail and commercial land uses, schools, and public recreation assets) exist supported by established pedestrian and bicycle network linkages in an urban 50km/hr vehicle speed environment;
- The vacant Australian Rail Truck Corporation (ARTC) land in north Hay to the west of the Cobb Highway along Showgrounds Road represents a significant opportunity for future industrial land supply for northern Hay (as a separate issue to south Hay – see below), given existing location in relation to sensitive land uses (residential), environmental constraints (vacant cleared former railway lands which are not flood prone), and infrastructure (existing B-double truck access) and reticulated services availability;
- There is a need for a defined industrial precinct in south Hay to lessen *ad hoc* industrial development in the area, to lessen heavy vehicle trips across the river, and to consolidate existing transport opportunities afforded by the Cobb Highway (southern transport origin and destination trips) and the Sturt Highway (east and west) together with existing “truck stop” fuel, restaurant, and amenity facilities – a well suited area in this regard exists in an area with access from the Sturt Highway via Archer Street (with Archer Street to be the point of principle access to prevent strip-development along the Sturt Highway and to allow a buffer to existing sensitive land use to the east);
- In general, there is much opportunity for creating land use development investment certainty by ensuring a co-ordinated roll-out of standard land use zones together with a best practice development control plan to support future co-ordinated development outcomes without significantly prejudicing existing non-conforming land uses which are of low amenity impact. The extent of non-conforming “existing uses” in this regard is observed to be low and can be appropriately managed in the standard LEP template system, however careful implementation will be required to ensure continued land use rights are preserved. Where preferred land use character has been identified, zoning should reflect this intended outcome; and
- Drafting of the existing “Development Control Plan No. 2” has resulted in less than ideal land use outcomes and expectations being generated. These together with the correction of related significant mapping errors will clarify expectations and resolve development uncertainty and promote supporting investment in line with future strategies listed elsewhere in this paper.

Booligal and Maude Urban Areas

- Both towns exist within defined town boundaries and any further development should be confined to these areas to strengthen/consolidate infrastructure provision and servicing;
- Opportunities exist for infill development (residential) and renewal of commercial land uses (general stores, fuel supply, etc) arising from other key strategies, such as supporting agriculture when drought conditions cease and providing for population growth through any increased need for farm labour in proximity to places of work;



- Supporting local recreation and community and tourism event opportunities are important for social networking and community bonding; and
- Increased investment in public assets such as public hall and reserve maintenance are important.

2.3 Environmental Context

Research and reporting of environmental context has commenced and the key findings to date are:

- The Murrumbidgee and Lachlan Rivers and their riparian areas are in poor drought affected condition;
- Grazing management is required to promote the biodiversity of Black Box native vegetation communities;
- A range of opportunities exist to optimise biodiversity outcomes through incentive based land management instruments and innovative land use planning;
- Opportunities to undertake high priority threatened species conservation activities have been identified for the Hay LGA. Targeted areas include wetland, riparian and other threatened species habitats over a range of land tenures. Priority activities can be implemented such as adaptive management strategies and, bio-banking; and
- Good quality groundwater systems exist to the north and east of the Hay urban area which are required to be protected

2.4 Infrastructure, Services and Constraints

Research and reporting is almost complete, and the key findings are:

- No major infrastructure constraints are known exist apart from the sewage treatment plant which is required to be upgraded within five years. Such upgrading has been budgeted; and
- Quotes for works associated with the levee banks modification are currently being sought. Funds have already been allocated to other project and construction is expected to commence in the near future.





3.0 ISSUES

3.1 Stakeholder and Community Engagement

Over 380 issues have been identified from around 70 individuals and organisations which have been contacted to date during the community engagement process.

The identified issues have been categorised according to their impact on the considered best practice measures of community sustainability, which are:

- Economic prosperity;
- Community capacity and resilience; and
- Ecological integrity.

These measures align with the triple bottom line concept, which in recent times has been revised to a quadruple bottom line incorporating corporate governance, and are consistent with Australia's *National Strategy for Ecologically Sustainable Development, 1992*.

The issues were then listed according to their priority, using the following ranks:

- High priority - Issues affecting all three measures;
- Medium priority - issues affecting two measures; and
- Lesser priority - Issues affecting one measure.

The prioritised issues are detailed in Annexure 2.

3.2 Specific Planning Issues

A number of specific planning issues have been identified through consultation as depicted in Annexure 3. These issues will be further discussed and resolved in the Urban and Rural Lands Study and Rural Settlement Strategy.

3.3 Agency Issues

Most agencies have identified their initial requirements for this project which have been summarised in Annexure 4.





3.4 Community Survey

The community survey developed for the project and a statistical summary of results is included in Annexure 5.

The survey was carefully developed as a planning tool to assist in informing the following key aspects:

- Values identification;
- Community capacity and social capital;
- Issues identification;
- Guiding principles for future development;
- Planning priorities; and
- Supply and demand for lifestyle lots.

The community survey was made available on Booth Associates and Hay Shire Council's websites on 24 August, 2009. The online version differed slightly from the printout in that it contained additional coding information to assist in analysing results.

The Hay Shire Council encouraged community residents to complete the survey in a newsletter mailed out on 27 August, 2009.

The Council also completed a survey mail-out to shire residents in September, 2009, with return stamped addressed envelopes to facilitate survey response.

A collection box was made available at the front counter of the Hay Shire Council administration office to promote project awareness and to assist in survey collection.

To date Booth Associates have received 236 completed surveys and a further 25 partially completed surveys. This is a high proportion of the community in the order of 1 in 5 households, though we have not conducted a specific analysis to demonstrate this figure.

The primary findings from the community survey were:

- Most people believe Hay is a good place to live, however the community is divided as to whether Hay has a positive future, with 53% of respondents not satisfied with things as they are. Over 85% of respondents felt that tourism was significant to the growth of the shire and that most people felt that a moderate to a great deal of growth or development was required. 70% of respondents believe that transport is a problem in the shire. Almost 90% of respondents felt that Hay Shire was a good place to raise children. Over 60% of respondents felt that people have good access to education;
- Most respondents felt that there were many opportunities to belong to groups sharing similar interest in the shire. More than 50% of respondents felt that facilities in the shire were inadequate for young people. Although one third of respondents felt that young residents would like to stay in Hay Shire after completing their education the majority of respondents felt that they were unable to;





- Almost 80% of respondents felt that the shire was a good place for senior citizens to live. 60% of respondents felt that the shire provided adequate services for senior citizens. More than 30% of respondents felt that there were insufficient welfare programs for people in need in the community, however almost 75% of respondents felt that the shire needed community improvement programs. The community was divided about whether there was an adequate mix of commercial and retail development in the shire, only 2% of respondents felt there was a need for improved range of professional services and 63% of respondents felt that local business served the needs of local residents. 70% of respondents felt that more resources needed to be used to develop new jobs in the community and almost 70% felt that the Council did not actively promote industrial development, with 44% of respondents feeling that the shire had a positive attitude towards the attraction of new business and industry.
- More than 80% of respondents felt there to be a need for a clear definition in the villages where growth is permitted. Almost 50% of respondents felt that the Council should protect agricultural lands from urban development, in other words prevent urban sprawl. Most people had pride in their respective village and felt that Hay main street was attractive for visitors. Most people felt that there were good public parks in Hay shire;
- The key values identified by the community were friendly people, sense of community, the river asset and the fact that Hay was a safe and crime free community. The limited health services and employment opportunities were the two most significant issues which the community was unhappy about by living in Hay. The three priorities that were identified by the community were improved health care services (70% of respondents); employment opportunities (50% of respondents); improved transport and tourist facilities (24% of respondents); improved education opportunities (22% of respondents). Almost 15% of respondents identified a need for more industrial land and also for improved aged care facilities, with (12% of respondents) identifying a need for affordable housing and (9% of respondents) a need for more lifestyle blocks. 7% identified improved community facilities and 6% improved streetscape and public places and more social and recreational opportunities. Only 3% felt there was a need for more residential land in town, 5% a need for more commercial land and 5% a need for more intensive rural agricultural blocks;
- Regarding the need for community facilities, respondents identified a need for improved programs and more facilities for youth, community hall upgrading, recycling services and off-road pedestrian pathways in south Hay;
- Almost 64% of people indicated that they currently live in a single dwelling in a village or a town block and this figure is not likely to substantially change based on future preferences. However, in 5 to 10 years time, less than 50% of respondents mentioned that they wanted to live in a single dwelling in a village or a town block. However, 24% of respondents indicated they would like to live on a lifestyle block. 9% of respondents indicated a preference to live near the river, with 6% wanting to live on a lifestyle block close to the town of Hay or one which was fully serviced. 10% of respondents who indicated their preference for a lifestyle block indicated they would prefer a lot size of between 2ha and 5ha with almost that number preferring a lot size ranging between 5ha and 20ha. No respondents indicated a preference for lot sizes above 200ha.





4.0 KEY THEMES AND GUIDING PRINCIPLES

4.1 Key Themes

A review was undertaken of the various issues to capture the key themes and the required guiding principles for future planning.

The key themes derived from the process are:

1. Protection and advancement of agriculture;
2. Promotion of rural settlement opportunities;
3. Improved management and opportunities for transport;
4. Community development and capture of growth;
5. Resolution of land use interface conflict;
6. Optimisation of land values and community and infrastructure assets;
7. Improved urban design;
8. Community development and improved housing, recreation, commerce, industry and tourism opportunities;
9. Promotion of a diverse community;
10. Integrated partnerships for improved services delivery; and
11. Improved corporate governance.

4.1.1 Protection and Advancement of Agriculture

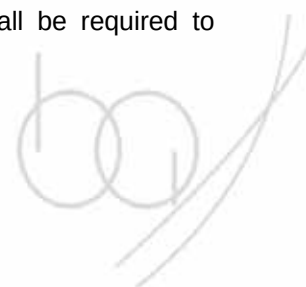
Agriculture is the largest land user, employer and industry in the shire, and significantly impacts socio-economic development and therefore should be protected and facilitated.

4.1.2 Promotion of Rural Settlement Opportunities

The community survey highlights the demand for rural settlement and this issue has been identified as a key issue impacting community sustainability.

4.1.3 Improved Management and Opportunities for Transport

Hay is strategically situated on the junction of three highways. Significant opportunities exist to use the transport corridor as a key driver to stimulate economic investment. As well, in view of the relative isolation of Hay to major service centres innovative community partnerships shall be required to deliver integrated solutions to community transport needs.





4.1.4 Community Development and Capture of Growth

Hay has suffered recently with some out-migration of farming families. Despite pessimistic growth forecasts based on population trends, there is a need for innovative action to stimulate community development and work toward population number sustainability through a balanced socio-economic investment approach by implementing actions which promote economic prosperity, community capacity and resilience and ecological integrity. Priority actions which impact all three measures should be facilitated.

4.1.5 Resolution of Land Use Interface Conflict

The community survey has indicated a need for improved management of land uses with defined areas of development. Existing and proposed land uses which have the potential to adversely impact the community should be managed through the utilisation of buffers.

4.1.6 Optimisation of Land Values and Community and Infrastructure Assets

There is a need to protect and optimise community values and assets which promote Hay as a good place to live and which offer the opportunity to stimulate and foster local and visitor activity.

4.1.7 Improved Urban Design

Hay has significant natural and cultural assets which should be appropriately managed to assist in stimulating and fostering community sustainability. Opportunities to direct and link public places should be promoted.

4.1.8 Community Development and Improved Housing, Recreation, Commerce, Industry and Tourism Opportunities

A range of issues have been identified as requiring active intervention through land use planning to achieve improved outcomes for the benefit of the community. These relate to the need for industrial land, facilities for locals and visitors, improved and affordable housing opportunities particularly for seniors, and improved place management.

4.1.9 Promotion of a Diverse Community

The limited community diversity in Hay impacts on the type and quality of social, recreational, education, employment and cultural opportunities.

4.1.10 Integrated Partnerships for Improved Service Delivery

The lack of particular health and employment opportunities, as well as education and transport has been identified as significant issues by the community. Integrated partnerships for improved solutions in service delivery are required across all sectors.



4.1.11 Improved Corporate Governance

The quadruple bottom line recognises the significant impact that corporate governance has in achieving community sustainability. The objective of ecological integrity, economic prosperity and community capacity and resilience can only be achieved through proper stewardship and implementation across government and industry.

4.2 Guiding Principles for Future Planning, Hay 2010 - 2040

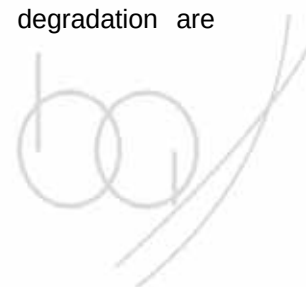
The guiding principles developed from the issues and in accordance with the key themes are detailed as follows:

4.2.1 Protection and Advancement of Agriculture

- Land use planning will allow for the development of systems and processes that facilitate primary production and protect agricultural production assets including land, water and biological resources, and which provide opportunities for agricultural diversification;
- Land use planning will consider the resilience of the farming community and the peaks and troughs associated with agricultural production systems; and
- Land use planning will consider the impact and influence that agriculture has on local development activities, its unpredictable nature and its rapid response rate to climatic and market forces.

4.2.2 Promotion of Rural Settlement Opportunities

- Promotion of rural lifestyle allotments that meet the needs of the community while not reducing, degrading or compromising land, water, cultural and biological resources will be facilitated;
- River lifestyle opportunities will be promoted for the benefit of existing and future generations where:
 - o Conjunctive water management results in no net increase to existing water entitlements, including riparian rights;
 - o Location, number and size of lots can be justified with regard to demand and supply analyses, community sustainability principles or regard to other socio economic, cultural or environmental benefits afforded;
 - o There is no net loss to biodiversity and the proposal is in accordance with the principles of “maintain and improve”;
 - o Servicing arrangements in accordance with standards determined by the Hay Shire Council and community are made available; and
 - o Risks and constraints such as bushfire, flooding and environmental degradation are appropriately managed.





4.2.3 Improved Management and Opportunities for Transport

- Provision shall be made for the maintenance and development of important transport corridors within the shire so that there is no adverse impact on community values and future vision;
- Sustainable pedestrian, cycling and vehicle movement corridors shall be established and optimised to promote linkages to natural assets like the river and enhance local cultural tourism opportunities; and
- The significance of Hay being located on a transport corridor (or the junction of major highways) to generate visitor opportunities and community development will be promoted.

4.2.4 Community Development and Capture of Growth

- Despite pessimistic growth forecasts for the Hay LGA to year 2040 sustainable strategies will be developed to positively impact all three measures of community sustainability, economic prosperity, community capacity and resilience and ecological integrity to better facilitate and stimulate community development.

4.2.5 Resolution of Land Use Interface Conflict

- Infill and urban growth land uses shall be sited so that there are no adverse off-site impacts. Where this cannot be practically achieved or avoided buffers will be required to regulate and protect adjoining development.

4.2.6 Optimisation of Values and Assets

- Riparian environments, iconic saltbush plains, riverine forests, native grasslands and wetlands all have significant value and opportunities to protect and improve them will be encouraged;
- Land use decisions will consider conjunctive water management including resource availability and quality, and potential connectivities between systems, processes and communities including groundwater and surface water and dependent ecosystems;
- Land use planning shall consider opportunities to improve the catchment health, condition and processes of riparian, terrestrial and wetland environments and better manage community natural and cultural assets;
- Opportunities to increase community knowledge, enhance and promote indigenous and European cultural heritage and landscapes shall be advanced through land use planning; and
- Land use planning will promote strategies which encourage certainty for developers and the community offer a range of community development opportunities and protect existing values and assets.





4.2.7 Improved Urban Design

- Urban streetscape design should promote pedestrian, cycleway and vehicle linkages with the river asset;
- Urban streetscape should integrate links with riparian and other natural resources;
- Gateways should be developed on primary transport corridors to attract visitors into the Hay town centre; and
- Best practice urban design will be encouraged to foster the conservation and enhancement of natural resources.

4.2.8 Community Development and Improved Housing, Recreation, Commerce, Industry and Tourism Opportunities

- Tourism opportunities should be promoted by supporting local businesses and working with them to offer flexible and location inter-dependent accommodation options of appropriate size and location.
- Existing green space areas should be developed to provide a range of recreational opportunities and enhance local and visitor usage;
- A range of recreational opportunities should be provided to support local and visitor usage and optimise opportunities to enjoy natural assets including river assets;
- Opportunities for affordable housing will be promoted within villages;
- Options for seniors' housing will be provided to facilitate Hay hospital as a potential multi-purpose facility and to provide both affordable and lifestyle accommodation opportunities;
- By 2040 a significant proportion of the Hay LGA community will be over 70 years of age and strategies to foster seniors' housing and integrated support facilities will be promoted;
- Industrial land should be made available in a range of locations (infill as well and "greenfield") to facilitate local economic development opportunities and cater to community development and to facilitate feeder opportunities associated with Hay's strategic location on three major highway corridors;
- The Hay retail and commercial core should be developed so that cultural heritage values and opportunities are promoted and links to natural assets improved;
- Provision of opportunities to facilitate the development of a transport hub including servicing of vehicles and facilities to support local tradesmen will be promoted;
- Servicing of the tourism sector's key reported activities including optimising opportunities to eat out and "wander around" will be promoted; and
- Flooding, bushfire and other hazards should be appropriately managed to mitigate risk and land use conflict.





4.2.9 Integrated Partnership for Improved Service Delivery

- Flexible and innovative inter-agency partnerships will be facilitated to generate employment, childcare, transport, education, training and health solutions across the community.

4.2.10 Promotion of a Diverse Community

- Opportunities to encourage a socially diverse community should be promoted; and
- As distinct from recreation, opportunities should be provided to promote artistic and cultural exchange and promote a diverse community.

4.2.11 Improved Corporate Governance

- Optimisation of community values and assets will be encouraged through:
 - o Investment in natural assets, cultural heritage and social diversity opportunities;
 - o Masterplanning, urban design and streetscape works including visitor generation gateways, improved signage and integrated natural and cultural asset linkages for improved pedestrian, cycling and vehicular access; and
 - o Strategic partnerships for improved service delivery.
- Strategies to promote the key drivers of community development and sustainability will be promoted and funded as priorities as far as practicable; including the adoption of technological advances and sustainable resources management.





5.0 RECOMMENDATIONS

It is **recommend** that:

1. The Hay LEP Steering Committee acknowledges the issues identified through preliminary community engagement, analyses and reporting.
2. The guiding principles derived from the key themes and issues be accepted as one of the primary tools to guide the development of a planning strategy for the Hay LGA. The development of an Urban and Rural Lands Study and Rural Settlement Strategy Report should also generally be in accordance with the submitted draft table of contents (Annexure 6) which is required to establish and explain the context and drivers for planning.
3. The scope of the report be confirmed as recognising that:
 - a. No significant work on European built heritage or Aboriginal cultural heritage will be undertaken in the project including a shire- wide heritage study, assessments of Aboriginal cultural heritage significance or site specific archaeological surveys. The proposed project report should however include at least an overview of Aboriginal and European cultural heritage including a list of sites and places which are currently protected through heritage conservation mechanisms and any further potential sites indicated through project consultation;
 - b. Results of the recent Hay LGA flood study to be released to the project team including GIS mapping data which will be incorporated and discussed in the proposed project report with no further analyses or investigation. Related work in this regard cannot be completed until the results of the flood study have been adopted and supplied; and
 - c. Land supply and demand analyses will be limited to “residential” and “industrial” as these are the obvious land use classes at this stage which deserve further investigation for significant infill land re-zoning or minor urban growth boundary re-zoning.
4. The environmental lands sensitivity mapping undertaken by the agencies be recognised as potential overlay triggers at the broad or landscape scale, and that future development impacted at the landscape scale as indicated on the overlays will require further detailed investigation and analysis to guide future land use decisions, which should be considered in drafting the standard instrument local environmental plan. In other words, the “macro” implication of relevant constraints should be recognised as just that, with no implied expectations for “micro” circumstances.
5. Should land use planning result in recommendations or strategies for development which potentially impact on biodiversity or Aboriginal cultural heritage, then the Hay Shire Council consider at that time the desirability of commissioning a contract variation to the brief to facilitate further biodiversity investigation (as a prelude to potential biodiversity certification if necessary) or archaeology surveys.



ANNEXURE 1

COMMUNITY SOCIO ECONOMIC PROFILE

DRAFT SECTION FROM LEP REVIEW REPORT



PART B CONTEXT FOR PLANNING

4.0 SOCIO-ECONOMIC CONTEXT

4.1 Population and Housing

4.1.1 Population

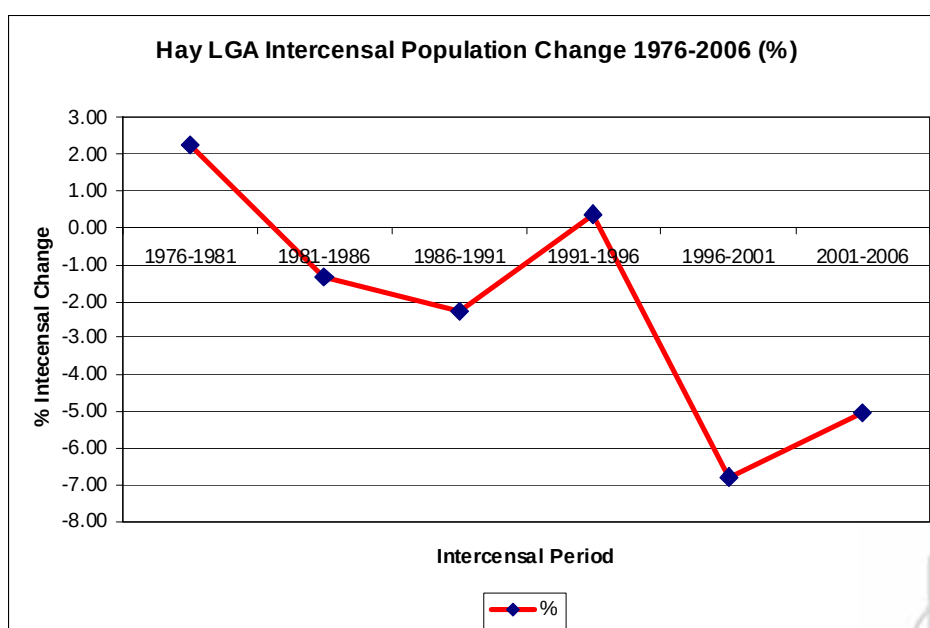
Table 2 shows population change for the Hay LGA from 1976 through to 2006.

The total population of the Hay LGA as at the 2006 census was 3,383 persons. Table 2 shows that apart from the period 1976 to 1981 and 1991 – 1996 when there was an intercensal increase of 14 persons, there has been a downward trend in population since at least 1981, with the most significant change occurring since 1996.

Table 2: Population Change Hay LGA From 1976 to 2006

	1976	1981	1986	1991	1996	2001	2006
Males		2,022	2,003	1,896	1,923	1,827	1,705
Females		1,927	1,893	1,912	1,899	1,735	1,678
Total Persons	3,862	3,949	3,896	3,808	3,822	3,562	3,383

Figure 2 Intercensal Population Change Hay LGA – 1976 to 2006



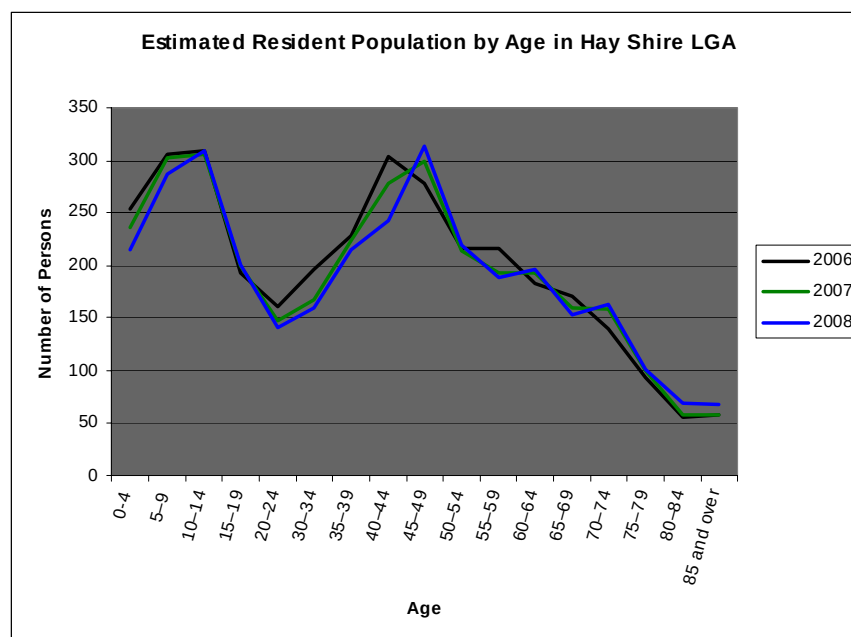


4.1.2 Age Structure

In the Hay LGA the median age of the population has increased from 33.5 years in 1996 to 36.6 years in 2001 up to 39 years in 2006. Family structure is similar to national averages; however the actual population age distribution curve in Figure 3 shows that there is a strong representation of dependent children and those within the 40 to 50 age cohorts compared to other age cohorts of the population. There is also a significant decrease in the number of 20 to 24 year olds within the Hay LGA which may be as a result of a lack of tertiary education and employment opportunities within the Shire. NSW DOP (DIPNR, 2004) identified that by 2031 one quarter of the population of the Murrumbidgee statistical division would comprise persons aged 65 years and over and Greater Southern Area Health Service (GSAHS) (2007) predicted that persons aged 70 years and older in Hay LGA will almost double from 340 in 2001 to 640 in 2031. As well there would be a decline in young people aged under 15 years. NSW DOP (2006) also predicted that the median age in the Hay LGA in 2031 would be 49 years.

The ageing of the population has implications for the services provided. There is likely to be a need for further facilities and housing for the aged (particularly self care units).

Figure 3: Estimated Resident Population By Age Hay LGA 2006



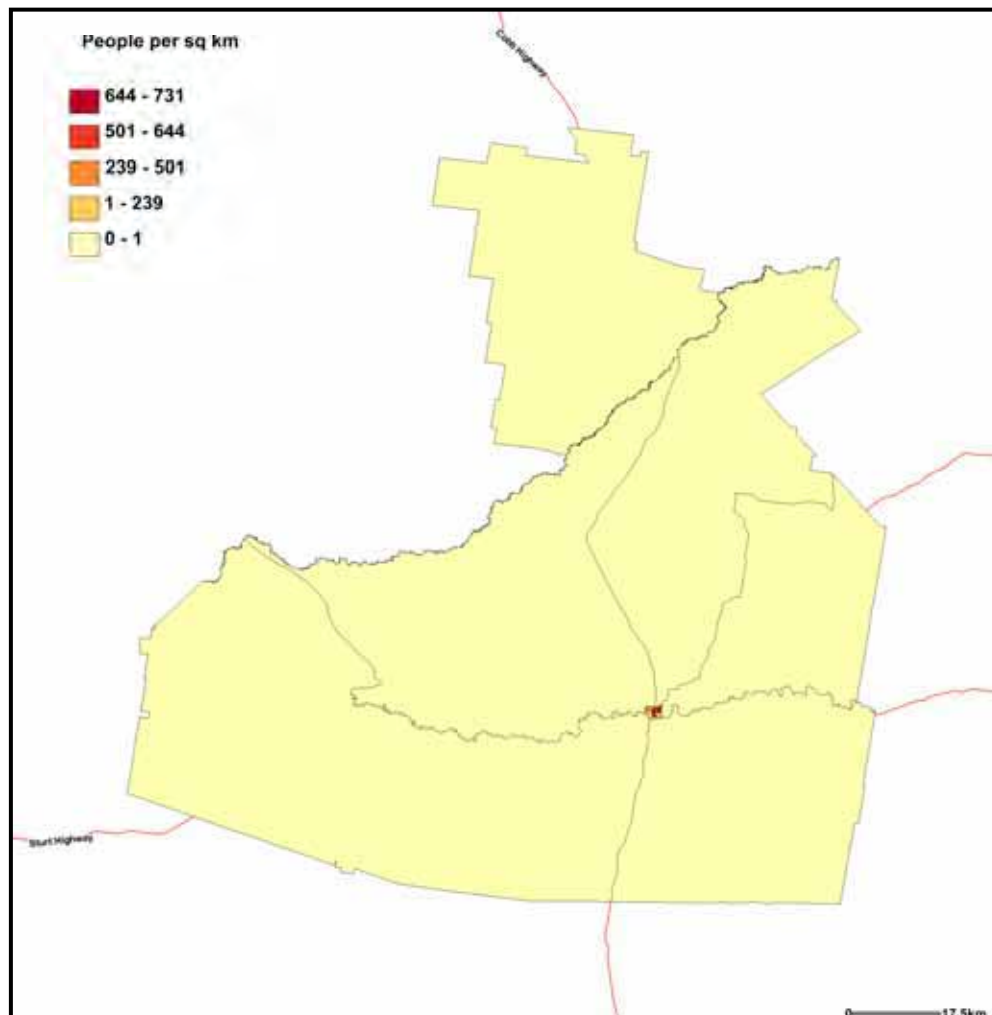
4.1.3 Population Density

The population of the Hay LGA is depicted in Figure 4 is concentrated within the Hay township with the outlying rural areas having a very low population density of zero to 1 persons per square kilometre. This contrasts with the more closely settled regional service area of Griffith for example, which has a rural density of up to 240 persons per square kilometre.

The small number of people present within the rural area of Hay LGA illustrates the importance of the Hay township for the survival of the shire as a whole.



Figure 4: Population Density Hay LGA 2006



4.1.4 Housing and Occupancy Rate

The 2006 census identified the total number of dwellings within the Hay LGA as 1,603 with 1,346 being the total number of occupied private dwellings.

Occupancy rate is the average number of persons per dwelling which equates to the ratio of the number of occupied dwellings in an area to the population of the area. Table 3 shows that the occupancy rate of total occupied dwellings for the Hay LGA has been decreasing from 3.34 persons in 1976 to 2.51 persons in 2006. This reduction in occupancy rate is commensurate with national and state trends with the NSW occupancy rate being 2.53 in 2006 and expected to fall to 2.38 by 2036 (DOP, 2008).

The on-going reduction in the occupancy rate indicates the population will continue to need more dwellings if the population remained static. Given the decline in population depicted in Table 2 will be offset to some extent by the declining occupancy rate.



Irrespective of other considerations, the trend for a reducing occupancy rate generates the demand for more dwellings even in a community with a static population.

Given that the population is predicted to decline in Table 2 this demand could potentially be offset.

Table 3: Change in Occupancy Rate for Total Occupied Dwellings – Hay LGA 1976 – 2006

	1976	1981	1986	1991	1996	2001	2006
Hay LGA population	3,862	3,949	3,896	3,808	3,822	3,562	3,383
Total number of occupied dwellings	1,156	1,225	1,323	1,379	1,420	1,346	1,346
Total number of dwellings	1,287	1,311	1,466	1,542	1,581	1,607	1,603
Occupancy rate	3.34	3.22	2.94	2.76	2.69	2.65	2.51

4.2 Employment and Industry

In the 2006 Census, the most common industries of employment for persons aged 15 years and over usually resident in Hay LGA were:

- Sheep, beef cattle and grain farming - 17.8%
- School education - 6.2%
- State Government administration - 4.4%
- Mushroom and vegetable growing - 4.3%
- Local Government administration - 3.9%

Table 4 shows that agriculture has remained the largest employer since 1996. The largest increase in employment over the period 2001 to 2006 was in health care/social assistance services and the public administration and safety sectors.

Table 4: Industry of Employment – Hay LGA 1996 – 2006

Industry of Employment	1996	2001	2006
Agriculture, Forest and Fishing	32%	29%	27%
Mining	0%	0%	0%
Manufacturing	3%	4%	3%
Electricity, gas, water and waste services	1%	1%	1%
Construction	5%	5%	4%
Wholesale trade	3%	4%	3%
Retail trade	9%	12%	10%
Accommodation and food services	9%	8%	9%
Transport, postal and warehousing	3%	3%	4%
Information media and telecommunications	1%	1%	1%



Industry of Employment	1996	2001	2006
Financial and insurance services	2%	1%	1%
Rental, hiring and real estate services	1%	1%	1%
Professional, scientific and technical services	2%	3%	2%
Administrative and support services	1%	2%	2%
Public administration and safety	9%	8%	10%
Education and training	7%	6%	7%
Health care and social assistance	6%	6%	8%
Arts and recreation services	0%	0%	1%
Other services	2%	3%	3%
Inadequately described/not stated	4%	4%	4%

4.2.1 Employment Trends

The 2006 census identified the Hay unemployment rate to be 4.4% with over 27% of the labour force employed in part-time work. This reliance on part-time work is consistent with national trends

4.2.2 Income Levels

Median income levels for the Hay community appear to be below national levels with individual median income identified in the 2006 census as \$404/week compared to \$486/week nationally. The Hay LGA median weekly household income of \$741/week is just 70% of the national median household income of \$1,027/week.

4.3 Education and Health

4.3.1 Education

In 2006 the majority (38%) of persons attending an educational institution in Hay LGA were infants or in primary school.

There were 26% of persons attending secondary school, with 6% attending technical or further education institutions such as TAFE.

Only 2% of persons within Hay LGA were attending university or other tertiary institutions.





The following education facilities are available within the Hay LGA:

- St Mary's Primary School;
- Hay Public School;
- Booligal Primary School;
- Hay War Memorial High School; and
- Hay School of the Air.

St Mary's Primary School was established in 1883 as a co-educational primary school from Kindergarten to Year 6. The school is part of the Diocese of Wilcannia-Forbes. In 2004 the school had an enrolment of 102 students.

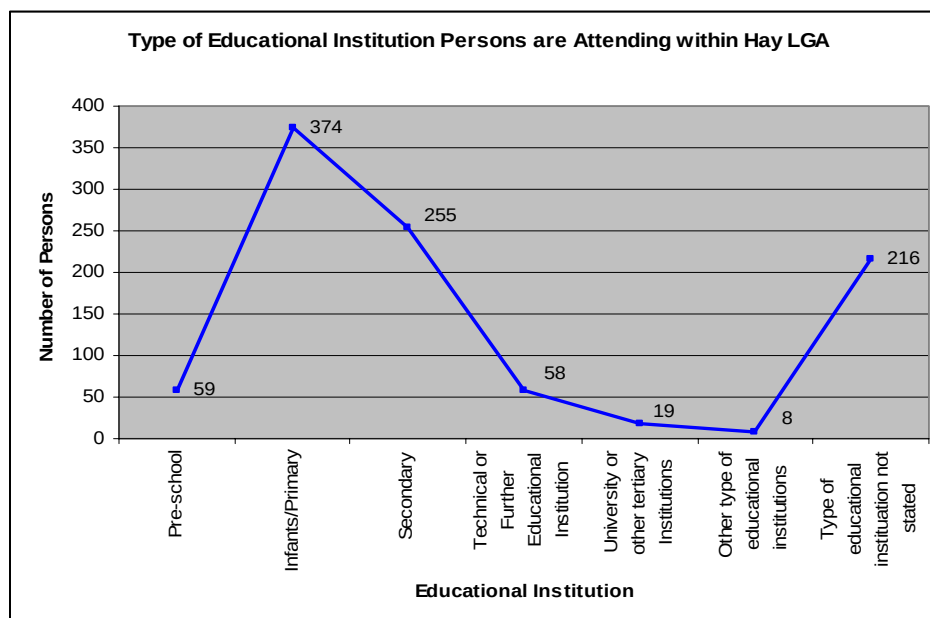
Hay Public School currently has enrolment of 293 students from Kindergarten to Year 6.

Hay War Memorial High School was established in 1923 as a co-educational comprehensive high school. The number of students currently enrolled is 254.

Hay High School of the air offers satellite learning for remote students via their computer provided by the Department of Education and Training. A number of field services are provided to supplement a written correspondence course.

Cloughton House Student Hostel has enabled weekly boarding for rural and remote students in Hay. The closure of Cloughton House in 2008 has adversely impacted education accessibility to rural and remote students, including those from north of the shire near Booligal.

Table 5: Education institutions attended by residents of the Hay LGA





4.3.2 Health

The Greater Southern Area Health Service GSAHS was constituted on 1 January, 2005 and covers 166,000 km² and has a population catchment of 468,000 persons, including 38 LGA's. The area is divided into 3 health sectors. These are Central, Eastern and Western sectors. The GSAHS provides an extensive range of primary and secondary specialist services. In addition to direct clinical services the GSAHS provides a broad range of home and community based services as well as public health, illness prevention and health promotion services.

The Murrumbidgee Health Service Cluster (MHSC) is one of ten clusters that form the GSAHS. The MHSC includes the local government area of Griffith, Hay, Carrathool and Murrumbidgee. The MHSC covers an area of 35,400km².

Hay LGA is centrally located in the geographic western sector cluster. Hay, together with Hillston appears to be most geographically isolated of the western cluster population centres.

Hay Hospital has been designated as a "Community Non Acute" Level 1 facility.

There is a Community Health Centre within the town and Public Dental Health Services are provided.

Hay Hospital has 12 medical beds and 16 State funded "other" beds, 28 Department of Health Reporting System (DOHRS) beds). As well, three other (non-DOHRS) beds are provided with the Emergency Department, giving a total 31 beds.

Other health services indicated on Councils 2004-2009 social and Community Plan include:

- Two doctors;
- A dentist who visits occasionally;
- Haydays Retirement Hostel for the Elderly (24 beds);
- A chiropractor who visits once a month;
- A naturopath;
- Three masseurs;
- A private physiotherapist;
- An optometrist, visiting on a fortnightly basis; and
- A psychologist by referral:

The local Community Health Services include:

Staff:

- Child and Family Nurse/Registered Nurse Immuniser/Asthma Educator;
- District Nurse/Centre Manager;
- Health Education Officer;





Visiting Services:

- Women's Health Clinic;
- Diabetic Educator once a month;
- Dietician 3 Wednesdays of the month;
- Audiometrist 1 day a month;
- Speech Pathologist every 3 months;
- Mental Health Service;
- ACAT (Aged Care Assessment Team):
- Occupational Therapist;
- Dental Clinic (for under 18 yr olds);
- Sexual Assault worker;
- Sexual Health;
- Drug and Alcohol worker;
- Aboriginal Health Education;

Support Services:

- Home Care;
- Meals on Wheels;
- Respite Care;
- Home Maintenance;
- Shopmates;
- Cancer Patients Assist Society; and
- Australian Breast Feeding Association.

Services are operated as follows:

- Child and Family Health – 5 days/week;
- Community/domiciliary nursing – 5 days/week;
- Day Care Services – 2 to 5 days/week;
- General Community Health – 5 days/week; and
- Health Promotion – 5 days/week.





The Griffith Base Hospital Dental Clinic offers both child and adult dental services and caters for eligible clients across Murrumbidgee Health Service (MHS).

All children under 18 years of age undertaking fulltime education with a Medicare card can access the Child Dental Service.

Evidence is available linking the health and well-being of individuals and communities with socio-economic factors. Communities such as Hay indicated poorer health outcomes when compared to NSW state averages (see Section 4.4.1).

Table 6: Western Sector LGA Demographic and Health Indicators Table

LGA	ERP Jun-07	Index SE disadvantage	Cancer incidence	Hospitalisations for ASC	Illness attributable to smoking
Wakool	4416	997	17.0	N/A	120
Berrigan	8446	980	22.7	195	170
Corowa	11,434	977	30.3	110	130
Deniliquin	7,673	950	32.2	170	155
Griffith	24,937	983	17.2	155	110
Hay	3,476	944	22.8	180	220
Carrathool	2,915	986	16.0	210	175
Jerilderie	1,677	997	19.4	155	120
Leeton	11,683	969	19.5	120	135
Murrumbidgee	2,571	952	19.5	155	190
Narrandera	6,166	932	31.1	205	255
Urana	1,286	945	28.2	N/A	180
Murray	6,841	990	19.5	110	90
Conargo	1,736	1,062	6.8	55	70
Total pop	95,357	NSW = 1,000			

(Source: GSAHS Western Sector Information (Staffnet))

4.3.2.1 Health Transport

Patient transport vehicles are located in Griffith, Hay and Hillston and provide transport between these centres. These centres also have access to helipad and airport facilities for emergency transport services.

Hay has access to the NSW Ambulance Service.

The Child Flight Newborn and paediatric Emergency Transport System (NETS) and the NSW Air Ambulance provide air services as required to the region.





Community Health provides transport for people to attend clinics, medical and health related appointment.

The Murrumbidgee Division of General Practice operates the Hay GP Clinic. Public medical imaging services are also provided at Hay.

GSAHS (2007) indicates that by 2011 Hay will require eight community aged care places, 20 low care and 16 high care places – unfortunately no projections have been prepared over this. However, because the over 70 age group in the shire is expected to double from 340 in 2001 to 640 in 2031 these places are expected to substantially increase.

GSAHS (2007) have proposed a strategy to promote the further evolution of the Hay Hospital and Health Services to a MPS by integrating the services from the Hayday Hostel.

4.4 Key Indicators and Trends

A number of indicators exist which can be used to assess how well the Hay community might respond to future change. The ABS has constructed four Socio Economic Indexes for Areas (SEIFA) from the Census of Population and Housing.

Each index summarises a different aspect of the socio-economic conditions of the Australian population using a combination of variables from the Census. These indexes can be analysed to determine relative advantage and disadvantage of LGA's across Australia.

4.4.1 SEIFA

The Index of Relative Socio-Economic Advantage and Disadvantage contains 21 measures including low and high income, internet connection, occupation and education.

The Index of Relative Socio-Economic Disadvantage (2006) includes variables that reflect or measure relative disadvantage. The variables include low income, low education attainment, high unemployment and people with low skilled occupations – all factors likely to influence how a community copes with changing circumstances (ABS2001b).

The Australian benchmark is set at 1,000, where lower values indicate lower socio-economic status (NSW Department of Health 2006) and potentially indicating less relative capacity for community resilience in adverse socio-economic situations.

Across Australia 18% of NSW LGA's are represented in Decile 1 (the most advantaged) with most being in the Sydney area with Mosman and Ku-ring-ai scoring highest.

Across the region, Wagga Wagga and Albury scored well in Decile 7 and Griffith in Decile 6 indicating strong community capacity.

Hay at 943.51, scored in Decile 3 along with Narrandera, below Leeton (Decile 5) and Murrumbidgee (Decile 4).

The lowest score within NSW was Brewarrina on 7654.57 (Decile 1).

The scoring indicates that Hay is relatively disadvantaged in respect to 70% of other NSW LGA's which may impact on community capacity and resilience.



The Index of Education and Occupation (EDUOCC) Score by Local Government Area, NSW, 2006 for Hay was 937.93 EDUOCC scores ranged from 877.98 in the Cessnock LGA to 1,216.76 in North Sydney LGA (Hoist, 2006)

Socio-economic disadvantage is associated with a higher prevalence of health risk factors and higher rates of hospitalisations, deaths and other adverse health outcomes. The scoring for Hay is slightly above that of Griffith and although below the accepted national benchmark is not too bad relative to other inland LGA's.

4.5 Tourism

This profile has been sourced from Tourism NSW website, LGA profile and based on a three or four year average to June 2007.

The average visitor (domestic overnight) stays per night in Hay is 1.7 with a total spend averaging \$166.00. This figure is less than one third of the state and national average. However the number of tourism businesses within Hay is similar to the national and state average (51) as well the number of small businesses. Hay is unique in the number of micro businesses with one to four employees which at 45 is significantly above the national (22) and state (29) averages.

Typically, 62% of visitors to Hay come from interstate, with significantly less number of visitors from intrastate. Adelaide is a significant market for visitors, in view of Hay's location on the junction of the Sturt, Cobb and mid-Western Highways,

The purpose of visits is similar to state averages in respect to holidays/leisure, but significantly less in terms of family/friend visits (nexus with activities) with a significant "other" contribution possibly business related in view of Hay's strategic location between Sydney and Adelaide.

Motel occupation rates are similar to state averages but caravan park, caravan and camping accommodation demand is almost three times the national and state averages;. Visitors have a significant reliance on the motor car. From a review of the "Riverina" visitor profile it is likely that most visitors comprise a typical "wanderer" mindset with no major time constraints. This presents an opportunity to capture these visitors for longer stays.

The primary desired activity involved eating out, which was similar to state average but 40% of visitors enjoyed just walking and driving around which is significantly higher than state (27) and national average (28).

Most visits involved 1 to 2 nights only and were part of multiple stopovers.





4.6 Population Projections

Table 7 shows the population change for the Hay LGA from 1976 to 2006

Using the depreciation formula and substituting fp for future value and pp for present value where:

$$\begin{aligned} fp &= pp(1-r)^n & fp &= \text{future population} \\ fp/pp &= (1-r)^n & pp &= \text{present population} \\ (fp/pp)^{1/n} &= 1-r & r &= \text{negative population growth rate} \\ & & & \text{expressed as a decimal} \\ r &= (fp/pp)^{1/n} - 1 & n &= \text{number of years} \end{aligned}$$

growth rate over the period can be calculated.

Over the thirty year period from 1976, the rate of growth was -13.21% and the average annual rate of population change for the Hay LGA was -15.97 persons or -0.44%.

Table 7: Population Change – 1976 – 2006

	Year						
	1976	1981	1986	1991	1996	2001	2006
Population	3,862	3,949	3,896	3,808	3,822	3,562	3,383
Intercensal Change		87	-53	-88	14	-260	-179
1976-2006 Growth rate			-13.21				
Annual Average Percentage Change				-0.4			

Using the known recorded population from 1976 until 2006 and the annual percentage change as a benchmark, the predicted population of Hay LGA to 2041 can be calculated as shown in Table 8.



**Table 8: Predicted Population Hay LGA 2006-2041¹**

Year	Projected Population	Annual Percentage Growth Rate
1976	3,862	-0.4%
2006	3,383	
2011	3,309	
2016	3,237	
2021	3,166	
2026	3,097	
2031	3,030	
2036	2,963	
2041	2,899	

These projections are more optimistic than other projections prepared over recent times. For instance, in 2004 NSW DOP (DIPNR 2004) predicted that Hay would have the third highest population decline of all the 15 LGA's within the Murrumbidgee Statistical Division by 2031 with a predicted average annual population loss of 0.9%. One year later, in their 2005 population projections NSW DOP (2006) estimated the Hay LGA population to 2031 as declining to 2930 persons at an average annual population loss of between -0.8 to 0.6%.

These population projections are shown in Table 9 and compared to the projections using the recorded 2006 population and actual rate of change from 1976 to 2006.

Table 9: Estimated Resident Population Hay LGA – 2006 – 2041

	2001	2006	2011	2016	2021	2026	2031	2036	2041
Projected population (3)		3,383	3,309	3,237	3,166	3,097	3,030	2,963	2,899
Projected population (2)	3,600	3,441	3,289	3,143	3,005	2,872	2,745	2,623 (4)	2,508 (4)
Projected population (1)		3,460	3,340	3,230	3,130	3,030	2,930	2,830 (4)	2,730 (4)

Notes

- (1) Based on Table 11.1 NSW Statistical Local Area Population projections 2001-2031, 2004 release average annual growth -0.9%.
- (2) Based on Table 11.1 NSW Statistical Local Area Population projections 2001-2031, 2004 release average annual growth -0.9%.
- (3) Based on actual growth between 1976-2006 and recorded 2006 census population.
- (4) Projections extended by author for report comparison purposes.

These projections suggest that the population of the Hay LGA is predicted to decline over the planning horizon of this study from a recorded population of 3,383 persons in 2006 to between 2,900 to 2,500 persons in year 2,041.

¹ Based on actual Growth Rate 1976-2006.



4.7 Development Trends

Development trends can be analysed to determine the level of development that has occurred in the Hay LGA in the past and identify likely future trends.

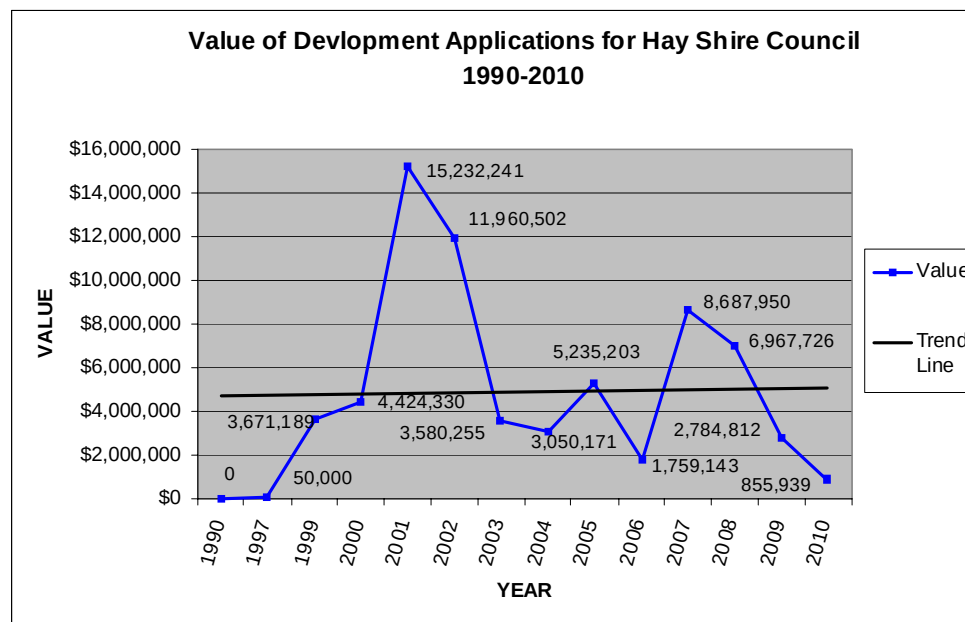
Figure 6 shows that 2001 had the highest number of development applications lodged with Hay Shire Council over the period, whereby 2001 comprised 22% of the total value for all applications lodged over the ten year period from 1990 to 2010.

Figure 5 shows considerable yearly fluctuations in the value of development applications lodged with 2002 and 2007 being significant years.

Despite these yearly fluctuations, the 1990 to 2009 trend line shows that the value of development applications lodged within the Hay LGA is slightly increasing.

Figure 6 shows that the average annual number of development applications lodged with Council over the 20 year period is 74 and the main type of application lodged was for minor development such as the construction of carports, garages and sheds.

Figure 5: Value of Development Applications Lodged - Hay Shire Council - 1990 to 2010





4.9 Key Findings

The key findings presented in the socio-economic context are:

- Hay LGA has socio-economic characteristics which suggest that on average the community is not as well placed as other NSW LGA communities to remain resilient when adversely impacted;
- The Hay LGA population is expected to decline to a mid range forecast of 2,700 persons over the thirty year planning horizon of this study to 2041;
- Occupancy rate of Hay LGA is expected to further reduce to 2.38 by 2038 commensurate with state trends;
- The median age of residents within the Hay LGA is expected to be around 49 years of age by 2031 and older by 2041;
- A quarter of the regional population will be over 65 years of age, with the Hay LGA almost doubling the over 70 2001 population by 2031;
- Development rates in Hay LGA are strongly influenced by rainfall patterns and agricultural production levels with significant fluctuation potential between 'good and bad' years;
- In Hay LGA the agricultural and tourism sectors are key drivers of economic development; and
- There is potential to capture "wanderers" and increase the average number of overnight stays through strategic development of tourist facilities.





Figure 6: Number of Development Application - Hay Shire Council - 1990 to 2009

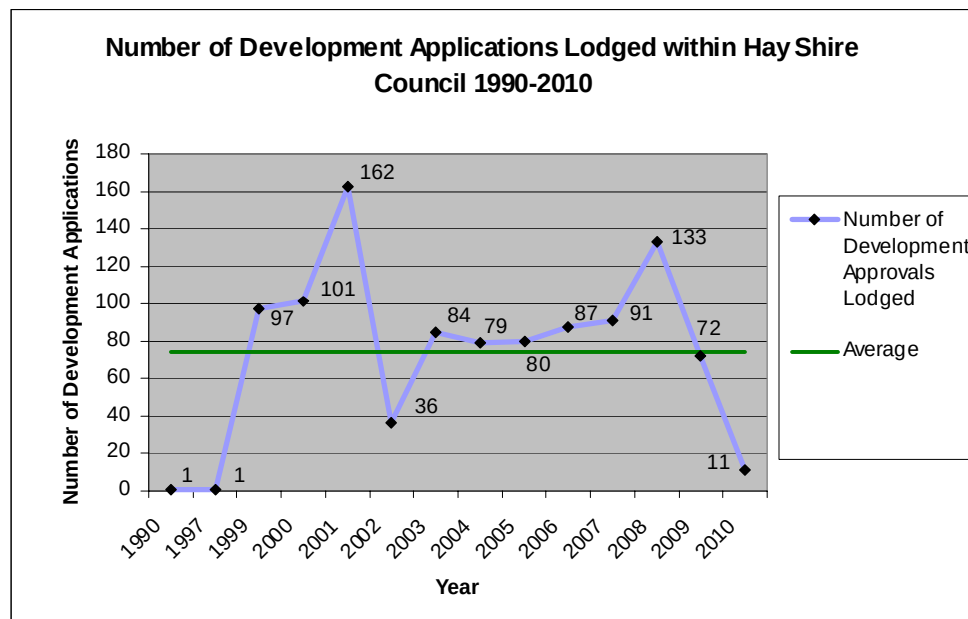
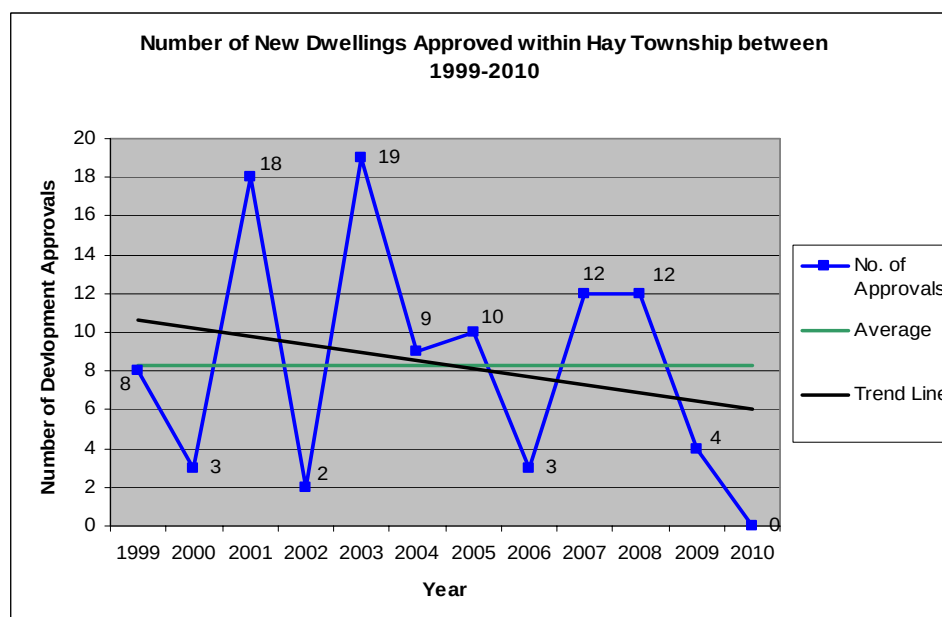


Figure 6 shows similar yearly fluctuations with 2001 and 2003 seeing the most new dwellings approved within Hay LGA over the period. However, the trend line shows this activity reducing over the period. The average number of development applications approved for new dwellings over the 10 year period was 8.3.

The rural villages of Maude and Booligal had a total of 4 development applications that were approved between 1999 and 2010.

Figure 7: Number of New Dwellings Approved Hay Township 1999 to 2009



Note: The above graph depicts the number of development approvals for new dwellings approved throughout 1999 – 2010. "New dwellings" include residential houses, units, villas, granny flats and transportable homes

**Table 10: Number of Lots Created in Hay LGA By Land Use Category - 1999 to 2009**

Subdivision Development Category	Number of Lots Created														
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average	Highest	Lowest
Residential	6	5	10	2	4	26		7	4	7	4		7.5	26	2
Commercial		3			2	2	2	2	10	12			4.4	12	2
Industrial									7				N/A	N/A	N/A
Rural	4	5			6	2	10	2	6		2		4.6	10	2
Other					7	2				2	4		3.7	7	2

Table 10 shows that most of the residential subdivision has occurred within the Hay township. In the last ten years there has been one major subdivision of 26 lots which occurred in the north eastern sector.

The majority of all new lots created over the last 10 years have been residential lots located in the northern sector of the Hay township.

Commercial subdivision has been skewed throughout the Hay township over the past ten years. In 2007, ten new lots were created, the majority being in the north western sector. In 2008 12 new commercial lots were created, these were located on the Cobb Highway and included a motel.

There has been little industrial subdivision occurring within Hay over the last ten years with the exception of 2007 where 7 new lots were created in the north western sector.

The majority of rural subdivisions since 1999 have occurred to the west of Hay township with 2005 a significant year for rural subdivision, comparatively.

4.8 Other Drivers

4.8.1 Climate

Climate appears to be a significant driver impacting on shire development trends. To understand the relationship between climate and development it is necessary to consider historical rainfall trends and understand the key rainfall windows impacting agricultural production.

Table 11 depicts the mean annual rainfall for Hay over the period 1877 to 2008 as 363.4mm.

Section X of this report has discussed agricultural drivers and trends and it has been stated that Hay LGA agricultural production has historically been dependent on receiving good rains in autumn and follow up rains in spring.

Table 11 shows that 2001 and 2003 were generally good years for agricultural production with total annual rainfall commensurate with historical trends and good rains in autumn and the following spring. 2005 and 2007 were sub optimal years with below average rainfall in autumn impacting on production levels.

Figure 5, Figure 6 and Figure 7 show that development rates follow a pattern which can potentially be related to agricultural production levels.

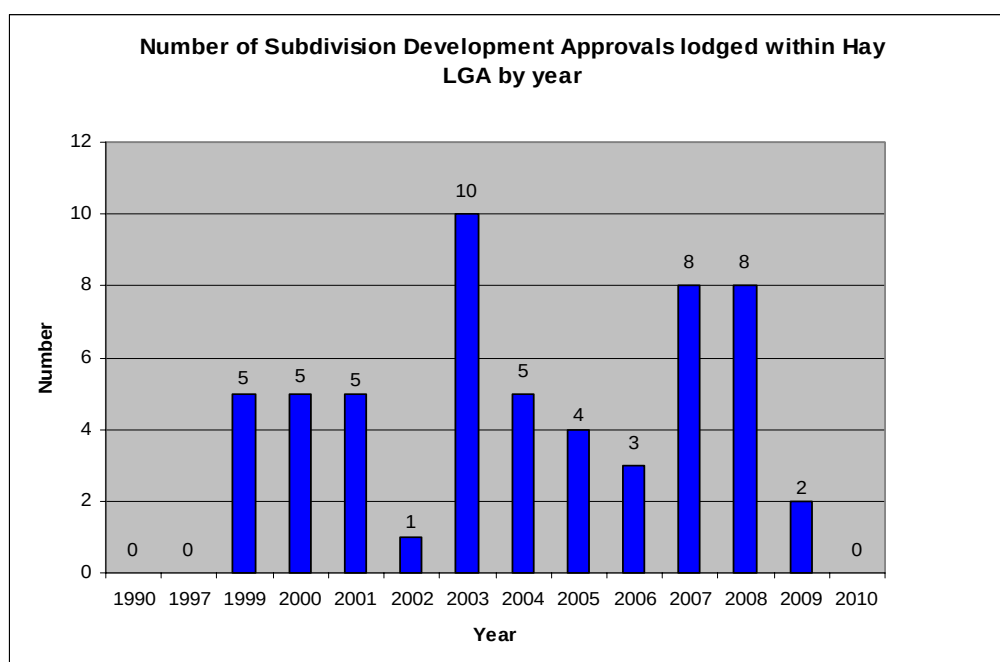


For instance in 2001 and 2003 the number of development applications for new dwellings peaked and in 2006 (a poor year for agricultural production) the rate plummeted. A similar trend can be seen in Figure 5 which shows the value and number of development applications lodged and in Figure 7 in respect to subdivisions in 2003. 2002 was a poor year for rainfall and agricultural production and most indicators showed reduced development activity for that year.

Table 11: Mean Annual Monthly Rainfall Hay 1997 to 2008 in Comparison to Selected Years

Statistics	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Annual
Mean Rainfall (mm)	27.2	27.3	28.7	28.1	34.7	36.1	31.0	32.0	31.5	35.1	24.9	26.8	363.4
1997	22.0	4.6	12.6	1.2	31.8	23.2	5.8	36.0	52.6	20.2	16.8	29.0	255.8
1998	30.0	23.2	0.2	42.0	28.8	23.8	56.0	22.8	82.8	24.0	44.8	10.4	388.8
1999	81.2	5.0	182.0	5.8	36.4	33.0	40.6	43.3	21.3	111.0	24.4	110.0	694.4
2000	4.8	64.6	24.8	36.3	47.1	30.2	43.2	39.5	38.6	26.7	24.8	1.8	382.4
2001	55.7	16.6	25.2	7.2	15.4	20.6	33.7	31.8	33.2	55.0	3.4	2.6	300.4
2002	24.6	38.1	19.2	7.2	23.1	23.3	6.6	16.8	18.2	1.7	4.0	1.6	184.4
2003	9.4	43.2	0.0	76.5	24.8	18.3	53.3	65.2	10.2	43.3	24.3	28.0	396.5
2004	12.5	1.0	0.4	0.0	16.5	37.4	30.3	38.4	13.7	4.0	55.6	71.2	281.0
2005	19.4	51.4	2.8	3.5	2.4	61.0	41.8	52.2	52.5	59.9	23.2	13.2	383.3
2006	9.0	3.6	6.2	10.8	3.4	30.4	51.9	3.5	16.5	0.0	21.8	16.0	173.1
2007	31.9	8.5	19.9	22.4	38.9	20.0	29.4	1.7	1.8	1.0	70.4	95.2	341.1
2008	44.9	7.3	6.4	22.0	11.4	12.2	16.2	18.6	19.0	7.0	37.8	43.6	246.4

Figure 8: Number of Development Approvals for Subdivision - Hay Shire Council - 1990 to 2009



ANNEXURE 2

PRIORITISED ISSUES



PRIORITISED ISSUES			
	ECONOMIC PROSPERITY	ECOLOGICAL INTEGRITY	SOCIAL CAPITAL & COMMUNITY
Need lifestyle blocks close to town - Not causing rural fragmentation	x	x	x
Need to protect and manage primary production.	x	x	x
Need passive interpretative signs of National Park resources display in town - river location?	x	x	x
Transport loads to double/triple by 2020 - 4000 adt Hay mainstreet impacted as a major transport route.	x	x	x
There is plenty of irrigation development in the shire but the potential is limited by water availability.	x	x	x
There is a high demand for lifestyle blocks along the river, but the majority of land along the river in the shire is tightly held by a few corporates. Opportunities for development and growth, such as Swan Hill and Mildura should be explored.	x	x	x
Saleyards on western side of town create some local issues with dust. Local agents have recently installed an improved water system to try and keep the dust down. Cost of replacing sheepyards would be in the order of \$6M.	x	x	x
They have recently, with support from Waters for Rivers, piped a stock and domestic system throughout the PID. This system is currently delivering water at above specified capacity and has the potential to increase its capacity if the area grows.	x	x	x
There are a range of recreational and ascetic opportunities associated with the river that need to be promoted and developed.	x	x	x
Major environmental issues identified were vegetation decline and loss of biodiversity, overgrazing and declining water quality.	x	x	x
The important environmental values of Hay are the river, the saltbush plains that are iconic to the area and an issue with environmental weeds.	x	x	x
Possible environmental constraints include feedlots, intensive agriculture and future lots sizes and water access.	x	x	x
The environmental values that should be protected are the riverine forests, saltbush shrublands, the natural grasslands, the wetlands which include aboriginal sites.	x	x	x
Key environmental issues that should be addressed when planning for Hay's future include maintaining water quality, noise pollution and air quality, traffic through the centre of town, maintaining enough water for the future.	x	x	x
Council should promote development of its river assets. For example Sandy Point Reserve should be developed for recreation and tourist facilities eg. Restaurant and tourist business.	x	x	x
Should be no "free campsites" on the river as it encourages vandalism and competes with caravan parks.	x	x	x
Pond in Hay Park is a feature and should be improved as a visitor attraction.	x	x	x
Heavy traffic through main street is not avoidable.	x	x	x
Leonard Street provides closest opportunity for town centre link to the river.	x	x	x
Flood prone land incorrect as flooding occurs east of Hay, north and back around. Need to check mapping.	x	x	x
Sandy Creek too busy for recreation - need other areas (reserved) with boat ramps for lifestyle lots close to town.	x	x	x

	ECONOMIC PROSPERITY	ECOLOGICAL INTEGRITY	SOCIAL CAPITAL & COMMUNITY
Will the separation of water entitlements from the land threaten the agricultural viability of land and not the land size?	x	x	x
Have the flood prone lands/floodways been mapped accurately? (East and West Hay).	x	x	x
Houses and commercial developments not be in the floodway ie Is 1 in 20 year level adequate protection?	x	x	x
Flood behaviour locally give plenty of warning for evacuation - would a 1 in 100 year level be adequate?	x	x	x
Placing houses on riparian land will impact on zones by removal of bushfire hazards.	x	x	x
The rural lands 1(a) on the western side of the Shire to the boundary with Balranald Shire/Wakool Shire have been zoned as "Environmental Sensitive Lands" when in fact it may well be "flood liable lands". The impact is that the rural use is restrictive in C1 18 of the Hay LEP and feedlots are prohibited. Under cl 19 of the LEP flood liable lands do not have the same prohibition on feedlots. This may be a mistake and needs reclassification.	x	x	x
The land to the west of the urban area has several saleyards nearby. It is unusual for buffer zones to be given to avoid odour, dust and noside complaints from nearby residents.	x	x	x
436 Moppett Street - 3 x houses zoned recreation. It is Councils intention to acquire otherwise rezone to residential.	x	x	x
Riparian water access rights prohibit riparian subdivision.	x	x	x
Need to justify location and size of river lifestyle lots.	x	x	x
Need lifestyle lots close to town, along the river and fully serviced.	x	x	x
Lack of Water impacts tourism and recreational fishing and bird-watching opportunities.	x	x	x
River flow below Condobolin to cease from 31 October, 2009, presenting implication to communities/rural land holders relying on stock and domestic supplies.	x	x	x
Socio-economic impacts of decision involving river flow - lowland communities disadvantaged.	x	x	x
Water trading has social and economic implications to village communities.	x	x	x
Sale of permanent licences taking water out of the area including those of adjoining areas affecting the shire.	x	x	x
Booligal could provide opportunities for those wanting a rural escape.	x	x	x
River reserve campsite needed over 2ha to support tourism.	x	x	x
Loss of rateable income, local employment and impacts on Booligal created by conversion of local farms eg Booligal Station into National Parks.	x	x	x
Water licences are being sold permanently out of the area.	x	x	x
Identified ecosystem health of Murrumbidgee River as very poor with Hydrology (Poor - mod), Fish (extremely poor), Macroinvertebrates (Poor). The audit will be expanded to include additional themes of vegetation and morphology. The LUS should recommend innovative ways to improve river health within the Hay LGA.	x	x	x
Tourism is likely to be a major contributor to local growth.	x		x
Need availability of Industrial land, not just near the railways.	x		x
Need large residential blocks.	x		x

	ECONOMIC PROSPERITY	ECOLOGICAL INTEGRITY	SOCIAL CAPITAL & COMMUNITY
Flooding, bushfire and other hazards should be appropriately managed and prevent land use conflict.	x		x
Heritage is important and should be promoted. Hay has important cultural heritage sites.	x		x
Population decline trends won't prevent DOP approving land release opportunities.	x		x
Need adequate supply of jobs in right location	x		x
Need wide housing choice.	x		x
Need transport hub.	x		x
Need aged care facilities.	x		x
Although the Hay business and retail centre outlets service the community well. Most people travel to larger regional centres on a regular basis for higher order goods or for other reasons such as to access health services.	x		x
There are a large number of small holdings in the PID.	x		x
Livestock numbers in the shire are down to only 30% of what they were 10 years ago.	x		x
Town is suffering because of the drought. There are many rural landholders who wish to get out but are finding it difficult to sell. The town is resilient and will bounce back.	x		x
Tourism is undervalued and provides a significant contribution to the town.	x		x
There is a high demand for lifestyle river blocks, but few available, and a good demand for hobby farm lots.	x		x
There is a need for industrial land. A good site would be adjacent to the airport, which Council already owns and has town water and electricity, (not sewerage).	x		x
Drought has been tough, but farm businesses have been sustaining themselves. Larger impact has been on the town with the lack of demand for contractors, impact on retail stores, etc. In some respects pressures on farmers have been eased by lower interest rates, reducing input costs and high livestock prices.	x		x
The new LEP has to be flexible. There were mistakes with zonings within the last LEP. Tourism needs to be promoted in the planning instrument.	x		x
There has been an increase in passive recreation including, camping and caravan day trips. Hay is considered a viably stopping place because it offers cheaper accommodation.	x		x
Hay main street draws visitors. Visitors enjoy walking through the main street and reading from the plaques situated on the occasional buildings. This sought of thing should be promoted. There is a need to maintain street widths in future town expansion.	x		x
Tourism needs to be actively promoted in Hay and there is a need for more advertising of the range of passive recreational opportunities including related events such as caravan shows. Tourism sites are located throughout the Hay Shire Council area.	x		x
The Hay main street needs to be carefully designed in the future to maintain the special elements and attributes that make Hay special. There is a danger in adopting themes that are used and represented along the total main street as done in other towns. Hay main street diversity of buildings should be maintained into the future as uniformity can impact on the ability of Hay to promote itself as a special place.	x		x

	ECONOMIC PROSPERITY	ECOLOGICAL INTEGRITY	SOCIAL CAPITAL & COMMUNITY
There is a need to promote gateways into the town to route visitors into the town centre and to the main facilities. There is also a need to design gateways appropriately so they are attractive and enticing. There is a typical visitor/ tourist to Hay which can be described as a grey nomad who utilises campers, caravans etc	x		x
The Hay community are a helpful community. Farm stays, agribusiness tourism is a tourism opportunity that could be better promoted.	x		x
National Parks will be open and accessible in 12 months and they will be an attractive option for day trippers which could be included within the tourism loop.	x		x
Many visitors come to Hay because they are researching their family history. More tourist car spaces might be required into the future.	x		x
Need a billboard over the bridge to draw people into the Hay town centre. That billboard should be very attractive and include an attractive picture to generate interest and enthusiasm.	x		x
The current characteristics of Hay are special and what makes this place special should not be compromised with future development	x		x
There is more opportunity to promote community events. The range of community events include the Mini Festival, the Booligal Sheep Races, the Spring Market at Bishops Lodge, fishing competitions, Shear Outback, June weekend bowls tournament and tennis tournament etc. There is an exodus of young families from town due to the impact associated with the drought.	x		x
People are leaving their homes on stations which are then left empty due to the impact of the drought.	x		x
There is a need to create more employment opportunities for young people in Hay.	x		x
There needs to be an opportunity to allow more than one building or dwelling on a farm, there also needs to be policies to promote younger families to stay on the family farm.	x		x
The unattractiveness of the area to the south of the river, as you come into town. It is believed that this doesn't draw tourists in because of its appearance.	x		x
Lack of things to do after youths complete school - no jobs, no prospects.	x		x
Community and Council need to be proactive in promoting employment opportunities for aboriginal youth.	x		x
Hay Plains Day Care Centre and Hay Pre School (2 Pre schools) provide a good service but there is a need for after school care and occasional care.	x		x
Decline in high school enrolments (trend) currently at 240 students and would cater to a maximum of 400 students.	x		x
Rural communities need flexibility and to promote a new model to provide education opportunities requiring co-operation between DET, TAFE and Council.	x		x
Difficulty maintaining teachers within the school and Primary school. There is a decline in numbers as approximately 46 families, in the last 12 months, have left the district due to the drought.	x		x

	ECONOMIC PROSPERITY	ECOLOGICAL INTEGRITY	SOCIAL CAPITAL & COMMUNITY
It is hard to obtain and retain doctors within Hay/ and staff for the hospital.	x		x
There is a possible need for a fitness centre.	x		x
Lions park is utilised by visitors and community as it is situated on the Highway and is an attractive space with water, BBQ facilities, it is highly visible to tourists.	x		x
Good idea to provide for trailer and caravan parking in car parks.	x		x
Promote antique events.	x		x
Need a bike trail around linking each of the 5 museums and "Bushies Bend" (Long Paddock, Shear Outback, Bishops Lodge to sandy Point to Bushies Bend to Main Street).	x		x
Mountain bike riding is fastest growing sport and should be promoted in hay. Particularly in view of the number of Winnebago's with bikes on the back.	x		x
Tourist circuit is needed to be formalised to Hay attractions.	x		x
Isolation means Hay business community have a "captive audience".	x		x
South Hay is considered too far by some residents.	x		x
24 hour fuel stop - good for community and visitors.	x		x
Large itinerant community.	x		x
Cloughton House, previous hostel closed down which impacts on rural students access to education.	x		x
Need a kiosk in main street.	x		x
Drought significantly impacted the town and current conditions do not reflect Hay's productivity and resource potential.	x		x
Hay is easy to get around.	x		x
Not a culturally diverse town which impacts on the exchange opportunities offered and services to attract visitors and population.	x		x
Shopping facilities are fine.	x		x
Beautiful homesteads on farms have been left empty as residents, workers and businesses leave the town.	x		x
Lack of secondary interest other than agriculture within the town, which allows the town to be heavily affected by drought.	x		x
Staff retainment within the local hospital is an issue.	x		x
The Arts and Cultural significance of the town aren't really well presented within the town, or advertised.	x		x
Suggestion that a proper kiosk for street stalls be implemented into plan and it would be a good idea and promote tourism and economic growth.	x		x
Upgrade/establishment of a primitive camping area with tables, chairs and a fireplace.	x		x

	ECONOMIC PROSPERITY	ECOLOGICAL INTEGRITY	SOCIAL CAPITAL & COMMUNITY
Areas that council could improve in the area of economic development if funding events in both Hay town and villages and events and away. They could do this by providing a bus from Hay to community events and local villages (ie Booligal sheep races). In relation to infrastructure roads into the villages need to be upgraded (eg Gunbar road - Council needs to look into external funding with other shires ie Carrathool).	x		x
Tourist brochures need to promote recreational opportunities and park locations.	x		x
Limited new jobs available (current appreciation that jobs are for life so skill sets are defined);	x		x
Greater marketing for 'after-hours' visitor activities is needed i.e. bowls, golf, tennis, kids activities;	x		x
Tourist visitation seems to be up on previous years; heritage walk signage is good;	x		x
All town entrances need iconic "welcome" signs and all old and date related "tidy town" signage removed;	x		x
Need better id marketing for Hay.	x		x
Corner Mid-Western Highway and Cobb Highway is an accident blackspot.	x		x
Labour supply for transport industry is poor, particularly trade qualified diesel mechanics; Some onsite servicing of trucks but mostly specialist work done in Denni or Griffith;	x		x
Echuca and Griffith are the closest rail heads but not used as a freight transport node.	x		x
Heavy transport only occurs via road.	x		x
Need a dedicated industrial area with zoned land ready and available for development.	x		x
There is a need for local trade business to have dedicated sheds and storage areas.	x		x
Land supply seems to lead demand in attracting new industry;	x		x
Art group of locals (20 members with tutors) need a gallery in the main street and for it to be promoted for tourism.	x		x
Shear outback could be better promoted. For example more concerts/multi-use opportunities.	x		x
Entranceways into Hay are needed - attractive stimulating visitors entrance and showcasing Hay.	x		x
Niche industry or education/training opportunities for children leaving school with some employment prospects - to retain youth.	x		x
Industry needed at South Hay Airport - not railway land in Murray Street as they won't sell the land.	x		x
Hay has rural workers all year round and require affordable housing and services.	x		x
Rural Large Holdings - 1500ha dwelling entitlement is restrictive.	x		x
Is it necessary to set a large holding size for a dwelling entitlement?	x		x
Let market forces determine the viability of holding sizes?	x		x
With no water allocations/federal grants to remove farmers off farms/climate change impacts - What can rural land be used for?	x		x

	ECONOMIC PROSPERITY	ECOLOGICAL INTEGRITY	SOCIAL CAPITAL & COMMUNITY
Will dwelling entitlements actually threaten the viability of agriculture? ie increasing land value by breaking up holdings and increase ratable capacity affect the nearby genuine farmer?	x		x
Not permitting any housing in the riparian zones and bushfire hazard zones will lead to conflicts with the aspirations of property owners for a river frontage.	x		x
Why such a high dwelling entitlement (1500ha) when it is being used for horticulture use?	x		x
What was the justification when all of the existing parcels that had dwelling on them well below that size (ie 3.5ha to 20+ha).	x		x
Only HPID irrigated lands was excluded from Rural Large Holdings when there were other small holding private irrigated lands nearby?	x		x
Should Rural Large Holdings zone in South Hay be reviewed for Rural Small Holdings, Special Uses and industrial?	x		x
Hay PID has expanded its customer base taking over the Kangaroo Pump Association and now has piped reticulation into other small holding areas to the north and west.	x		x
The current 1(c)zone allows for a subdivision size of 2ha for a dwelling entitlement. This allotment size is very questionable for rural production and could only seem to be sustaining "rural residential" lifestyle.	x		x
There is a need to review the minimum holding size (dwelling entitlement) to a larger size to sustain horticulture/agriculture production. What size?	x		x
Lands north and east of the Hay urban area should be in the main be seen to retain the horticultural production as rural small holdings.	x		x
Certain rural lands on the east and Mid Western Highway and west are "non conforming" and should be transferred to more appropriate urban zones.	x		x
Is there a need for industrial land to be zoned Urban on Cobb Highway (near the airport) or east on the Mid Western Highway and what are the infrastructure needs?	x		x
"Sewer treatment station requires replacement/upgrading."	x		x
No restrictions should apply to rural subdivisions and dwellings.	x		x
Hobby farmers are good land managers hence no interface conflict issues.	x		x
Servicing costs of industrial land - prohibitive to have available now.	x		x
Need jobs to retain population	x		x
Council should invest in social/country infrastructure eg Health/Sport/Tourism	x		x
Lack of tradesmen locally.	x		x
Less people on farms.	x		x
Ageing farmers	x		x
School numbers are reducing.	x		x
Farmstays should be promoted.	x		x
Need to expand the urban boundary in every direction.	x		x

	ECONOMIC PROSPERITY	ECOLOGICAL INTEGRITY	SOCIAL CAPITAL & COMMUNITY
Less number of people on farms and ageing community impacts service provision.	x		x
Different opinions exist amongst residents about whether there is a future for the village.	x		x
Affordable housing should be promoted in Maude.	x		x
Lack of tourist signage.	x		x
Poor mobile phone coverage.	x		x
Lifestyle lots - minimum lot sizes are restrictive.	x		x
Loss of Claughton House impacts in that Hay Local High School not accessible due to loss of weekly boarding ie kids need private board.	x		x
Itinerant housing on farm accommodation is available, but unlikely to meet OH&S requirements - impacts on shearing.	x		x
Community website is required to promote local tourism, events etc.	x		x
Absentee landholders don't put back into the local community	x		x
Need for tourism signage.	x		x
Condition of local roads has implications for tourism, school excursions, contractors etc.	x		x
Community feels that there was no strong expectation of future growth, but rather maintaining current level of population.	x		x
Many empty farm houses (2nd/3rd) always, while main farmhouse still occupied.	x		x
No out of school hours care available in Hay impacts on employment opportunities.	x		x
Lack of local contractors.	x		x
The irrigation district is located upon prior streams which are well drained and as a result there are no issues with water table, though conveyance losses have been a problem. Stock and domestic system also has outlets for rural fire service.	x	x	
Development along the river needs to be mediated and there needs to be a gap between subdivisions and the river to allow the river riparian areas to remain healthy.	x	x	
Rezoning or having detailed look at the flood prone land to give people a better idea of where they can build.	x	x	
The general feel around Hay is there is room for expansion however, we need to be aware of the environmentally sensitive areas and stay clear of them.	x	x	
Pollution runoff from vegetables grown near the river just out of town	x	x	
Camping sites should not be available on tourist tracks near the river - public risk, fire hazard.	x	x	
Mapping of environmentally sensitive areas incorrect - relating to wetlands - inundation and sheet/wind erosion of soils. This occurs along the ridges in a /// pattern. Needs groundtruthing. Miles Boak from DECC has been advised of this.	x	x	
Lifestyle blocks don't need to be serviced - can have rain water tanks.	x	x	

	ECONOMIC PROSPERITY	ECOLOGICAL INTEGRITY	SOCIAL CAPITAL & COMMUNITY
The subdivision process for the HPID is very unusual in that a resubdivision has to go through the Lands Department for environmental assessment and suitability of irrigated land use. This requires duplication of subdivision procedures to the owner - why? infers there is a anomaly with the State Government accepting the current LEP dwelling entitlement provision.	x	x	
Pollard Street - 5 x private residential properties zoned for public open space - admittedly in the floodplain, but is it the Council's intention to acquire these properties (otherwise rezone)?	x	x	
Fishing should be promoted as a tourism generator.	x	x	
By piping the Wah Wah scheme - losing important habitats.	x	x	
Potential loop - tourism roads between Booligal and Yanga National Parks.	x		
Retain village zones - need detailed DCP.	x		
Proposed acquisition of land - railways.	x		
5 highways near Hay.	x		
MI doesn't want to have to lodge a DA and obtain approval for carrying out typical day to day activities. Infrastructure SEPP may need to be modified to include MI as a public authority or alternatively a local clause?	x		
A lot of land for sale in the Shire, but not a lot of land selling suggesting properties are overpriced.	x		
The Hay PID has 87 customers covering an area of 4,000ha.	x		
In any car parking facility there needs to be adequate attention given to spaces to accommodate vehicles as well as campervans and trailers.	x		
Extend Hay to the south so that it would become more noticeable from the Highway and draw people in.	x		
There is a lack of pre-school and childcare facilities in the villages.	x		
Hay Park is a fantastic recreational complex for a multitude of user groups including:league, soccer, netball, touch, fitness, little athletics. It is a district facility, however there are pedestrian and vehicular conflicts and poor illumination at night.	x		
No secondary industry. Town relies heavily on agricultural production.	x		
Freight cost for goods is major issue.	x		
Lettuce growing seems to be a highly intensive ag industry and also melons and onions;	x		
One Tree Hotel could be promoted for benefit of South Hay.	x		
More lifestyle blocks needed.	x		
Need industry not based on agriculture.	x		
The assessment criteria as to what constitutes a viable agricultural holding.	x		
Rural smallholdings- current controls: The current 1(c) zone encompasses most of the HPID but does not include all irrigated lands/horticulture.	x		
Environmental law can prevail over town planning law where rural industries can be challenged- need for buffers.	x		

	ECONOMIC PROSPERITY	ECOLOGICAL INTEGRITY	SOCIAL CAPITAL & COMMUNITY
Rural 1(a) land south of Sturt Hwy (east) to be rezoned to rural small holdings - used for intensive horticultural and irrigation.	x		
Need to remove Hursley Street, industrial zone.	x		
Alter Murray Street residential and business zones from Lots Part 5&&, 14 DP 812034 railway goods yards to industrial zone.	x		
Change residential zoning on land bounded by Witcombe, Archer, Lang and Moama Streets, South Hay to industrial.	x		
Rezone rural 1(a) zone between Sidonia Road and Railway line (including railway line) to Industrial.	x		
Rezone rural 1(a) zone bounded by Wharf and Bourke Streets to Railway Line and Travelling stock route to Industrial.	x		
Rezone rural 1(a) zone south of the Sturt Hwy (west) to industrial zone.	x		
Rezone rural 1(a) zone west of the Cobb Hwy (aerodrome land) to industrial.	x		
If rural/residential is required it will need to be converted into extension of the urban area, where and what infrastructure will be required?	x		
Industrial Land (Brewery, Harrison and Hursley Streets) presumably to avoid possible flood inundation and contamination - now the Rosser Subdivision, should be converted to residential.	x		
Solling Street - 4 lots not zoned - should be commercial.	x		
Bowling Club Murray and Lachland Streets zoned special uses - should be zoned to commercial.	x		
Railway track west of Cobb Highway is zoned commercial - should be rezoned to industrial and the railway station to special use.	x		
Prime agricultural land protection not an issue for Hay LGA.	x		
Industries are reluctant to come to Hay due to distance and isolation.	x		
Rural lot sizes should facilitate intensive agricultural development.	x		
Tourism is a significant pathway to future growth and prosperity.	x		
Hay is not isolated-only 1.5 hours away from Griffith need to remarket ourselves.	x		
Land north of railway land could be used for industrial purposes.	x		
Need a manufacturing base.	x		
Need service industry precinct with highway frontage, near railway and aerodrome.	x		
30 years supply of vacant lots for industrial development, preferably 2ha lot size.	x		
Industries reluctant to relocate due to distance and isolation.	x		
Potential for farmstay opportunities.	x		
Drought impacting on production levels (30% stocking rate currently) and creates uncertainty for the future.	x		

	ECONOMIC PROSPERITY	ECOLOGICAL INTEGRITY	SOCIAL CAPITAL & COMMUNITY
Booligal sheep races draws in 500 people, mainly tourist, once a year from Carrathoo and Echuca (buses).	x		
Not much corporate ownership of farms, some irrigation bores around.	x		
Rural workers have migrated into mining industry that will affect drought recovery.	x		
Drought has been restraining farmers performance. Most bank clients in the shire are pastoralists and have really destocked. Businesses typically have low operational costs and the pastoral country is very responsive to good seasons so expect client to recover once drought breaks. Biggest constraint will be accessing replacement stock at a suitable price.	x		
Changes in markets has seen a shift over years from pastures towards higher value crops when there are large areas of irrigation laying idle.	x		
Preserving the character of hay is very important to the Hay community.		x	x
The dual water system that exists in hay using high quality water for houses and semi-treated water for gardens needs to be better signposted. Apparently there are taps in gardens in Hay with semi-treated water that tourists fill up their drinking bottles with. This promotes a health risk.		x	x
Some members of the community feel the lifestyle blocks should not be along the river as it will loose environmental values.		x	x
Future planning should include blocks that are small enough so that people do not have their one horse or one cow and it leads to degradation of the land in such a small area.		x	x
Areas that the community feel should be reserved include the river and the sandy corners in the river. Also Bungy Creek and Booligal Wetland and lignum wetlands, the river through Booligal and the weir which are major recreation areas in town.		x	x
The industrial zones area around the railway which apparently is a bit of an eyesore, compared to the beautiful railway building and the belief that some of these zones should be changed and it should be revegetated.		x	x
Skateboard park sited and approved on land at Sandy Point with no community consultation or consultation with HLALC.		x	x
Need a Community Boat Shed at Sandy Point.		x	x
River is important to community and needs to be promoted for community use whilst protecting its values.		x	x
The issues relating to the village include a lack of water from the river. In relation to the needs and wants of the village: Toilet maintenance and upgrade; Rubbish collection and the clean up of the local tip;		x	x
Macgregor Street - Council lot not zoned - should be recreation.		x	x
"Hay Shire Council is the only council in NSW to require consultation with the LALC". DECC would support sensitive landscapes as an environmentally sensitive overlay in LEP if LALC and DOP would agree ... conflict with standard instrument?		x	x
Illegal buildings on river.		x	x
Weir requires better camping and picnic facilities.		x	x

	ECONOMIC PROSPERITY	ECOLOGICAL INTEGRITY	SOCIAL CAPITAL & COMMUNITY
Lack of Council maintenance and street beautification.		x	x
Poor drainage in village.		x	x
School requires access to household water for toilet flushing, watering etc.		x	x
Rely on Griffith & Wagga - Daily trips for health services			x
There could be a gap between the young and old in terms of the demographic characteristics of the community which might need a planning response. There is an aging community in Hay and there are concerns with the adequacy of facilities for seniors.			x
The lack of truck parking - it was suggested that truck parking areas be created to keep the trucks from parking in the main street. The area suggested for this was near the power substation just out of town.			x
CMA do not liaise with local aboriginal community when planning or conducting projects. They use staff from out of town (eg Wagga).			x
Most likely aboriginal artefacts, burials, hearths and scar trees and the most concern is for burials.			x
Future urban development/town expansion needs to consider "sensitive landscapes" this is an issue mainly south of the town but also anywhere where there is a river, a wetland or prior streams.			x
Recognition of aboriginal cultural heritage should be embraced by the whole community.			x
Urgently need a youth worker to engage with youth "on the street".			x
Need more diversity - recreational opportunities for 0-5 age groups.			x
Urgent need for "parenting" courses, particularly for young mothers.			x
Generally transport is not an issue in Hay and bus services are good.			x
The hospital has adequate land to cater for any required seniors/ aged care facilities.			x
There is a need to provide seniors housing on the river, possibly near the new car park.			x
There are a lack of volunteers with in the Hay community, more volunteers are needed for organisations such as Girl Guides, so that they are able to undertake more outdoor activities such as camping canoeing and snow trips. There is currently no authorised person to provide outdoor activities in the Girl Guides group, so all activites in Hay must be indoors.			x
The hospital provides emergency support and there is the Hay Days Aged Care Facility and another Aged Care facility that is attached to the Hospital.			x
There is a lack of availability for seniors housing.			x
Hay Park Community Building is underutilised because it is not situated on an oval.			x
Need toilets adjacent to netball courts.			x
Aussie rules access to Hay park needs to be changed. Access should be off Moppett Street and Morgan Street closed.			x

	ECONOMIC PROSPERITY	ECOLOGICAL INTEGRITY	SOCIAL CAPITAL & COMMUNITY
Lack of facilities for young children in Hay Park (eg climbing facilities for under 5's group.			x
Need to provide a safe children's play area in Hay Park which should be fenced with visibility and safe pedestrian routes.			x
Families use Hay Park and Lions Park because of the facilities (BBQ etc)			x
Not enough opportunities for kids who are not sports orientated.			x
Skate Park should have been sited at Hay Park.			x
Tourists utilise toilets at Hay Swimming Pool.			x
Gopher access along main street needs to be managed to avoid pedestrian conflict.			x
Hay Airport is valuable for frequent ambulance, bank and charter flights. No commercial flights although large aeroplane (Dash8) has utilised the facility in the past (firefighting). Two aerial spray companies based at the airport.			x
No ready access from airport to town. No taxi service available, just a hire car.			x
South Hay need pedestrian walkways.			x
Hay is a good place to live because it is safe, has a low crime rate and the community band together.			x
Hay needs to encourage more opportunities for social exchange apart from sport.			x
Community nurse caters for "townies" and with other disadvantaged people.			x
Youth worker needed to help youth who fall below the cracks.			x
Hay has good community spirit			x
Hay does not celebrate its cultural heritage.			x
Need barriers and fencing in Hay Park.			x
Cannot staff hospital.			x
South West Arts could do more.			x
No Dentist.			x
Need more doctors.			x
Needs to be more leisure opportunities for those not into sport.			x
The general standard of teaching has dropped.			x
Lack of tertiary education opportunities within Hay Shire resulting in young people leaving the area after finishing school.			x
The footpaths with Hay generally good, however, the areas around the park aren't safe enough for children.			x
Netball courts need maintenance - "its an accident waiting to happen".			x
Generally the community feels that there is enough community halls within the villages and enough housing opportunities and retirement villages within the area.			x
No town water supply;			x
Maintenance and upgrade of local community buildings such as halls and playgrounds;			x
A bike park is needed for the kids as part of the skate park.			x
Free camping sites are great and should be promoted.			x

	ECONOMIC PROSPERITY	ECOLOGICAL INTEGRITY	SOCIAL CAPITAL & COMMUNITY
Need to facilitate bus transport to Deniliquin			x
There is a need for a local TAFE (have to go to Deni or Griffith); RCC does basic pre-TAFE training and development.			x
There is a high local need for computer tech ed;			x
Urban accessibility of town centre for tourists needs improving;			x
Road network is generally in good condition.			x
School bus pick-up and drop-off points are good.			x
Traffic signage is good.			x
Truck parking in and around Hay is good.			x
South Hay Trucking and transport infrastructure is good but there is reduced air quality from heavy vehicles and dust.			x
Charter buses are only for sport or history tours; through buses are Australian Pacific, AAT Kings, Premier Coach Lines and Scenic Tours.			x
Cycleways and pathways seem to be good.			x
South Hay needs to be promoted more and designed to encourage visitors to enter Hay.			x
Tourism is not as well promoted as it could be. Need to use Victorian "methods" as a mode for best practice.			x
Hay has lots of things for lads to do if they are sports orientated.			x
Farmers selling farms to retire - want to live on lifestyle blocks close to town.			x
Land north of Lang Street, South Hay has "existing use" and virtually developed as residential and should be removed from rural 1(a) zoning.			x
The land of the showground, RTA and Hurst (both sides of Sidonia Road and Cobb Highway be included as Special Use, Industrial and Urban Zones.			x
Land south of the Sturt Highway should be included in the urban zones for those properties fronting the Highway including the Shear Outback property.			x
The Golf Course and Aerodrome should be removed from the rural zone.			x
The statewide template will impose pressure to conform to the standard clauses. It has been predictable that the Planning Department will only permit in exceptional circumstances special clauses.			x
Expansion in this area should be rural small holdings rather than rural residential.			x
Urban Zones: Under the new state government templates "Rural/Residential" is not seen as a "rural" zone. It is classed as "Urban - Large Lot Residential". The size of the dwelling entitlement is critical to ensure buffer zones can be achieved to avoid conflict with rural activities.			x
There are at least 15 categories of zones that could apply in comparison with the 5 under the current LEP and 7 under the DCP for urban areas.			x
South Hay 2(a) Zone - intended to be single residential occupancies - no flats. Better to convert to the general 2(b) zone for Hay - not so restrictive.			x

	ECONOMIC PROSPERITY	ECOLOGICAL INTEGRITY	SOCIAL CAPITAL & COMMUNITY
Residential site (west - Palmer & Lang Street) not zoned.			x
Cloughton House zoned special uses - residential subdivision approved by council should be rezoned to residential.			x
Haydays corner of Murray and Coke Streets is zoned commercial and is "non conforming use". Rezoning to special use or residential required.			x
Hay Hospital in future should be based around a multi purpose service (MPS) model			x
Health funding is an issue			x
Health care provided in homes for as long as possible through community and agency partnership programs			x
Government looking at a co-operative innovative approach to future health care in terms of service delivery.			x
Hay LGA should facilitate integrated health service delivery			x
Less institutional reliance or aged care with services being delivered to keep the aged in their homes for longer			x
Less time for aged in acute care beds now last 6 months of life or average instead of last 2 years of life			x
Optimise partnerships and state and federal funding opportunities to facilitate services for the aged.			x
GSAHS (2007) predicts that the persons aged 70 years and older in Hay LGA will almost double from 340 in 2001 to 640 in 2031.			x
New bridge crossing is required to re route heavy vehicles.			x
Inadequate facilities for young people.			x
Need more community improvement programs			x
Closure of Cloughton House impacts rural students access to local education.			x
Need aged care accommodation near the hospital.			x
Require a footpath between the hotel and village store.			x
Reticulated system for school needed.			x
No childcare facilities although weekly playgroup at Community Hall.			x
Community Hall has a 60km catchment and requires upgrading (owned by the community, important for playgroup/childcare up to 100km).			x
Mail only available Monday, Wednesday and Friday.			x
Mail organisation and delivery to residents through Post Office currently not always reliable.			x
Applied for heart start defibrillator.			x
No school bus.			x
Need to groundtruth environmentally sensitive land		x	
Forest lands zoned appropriately and TSR not to exclude timber harvesting		x	
No land classification, land capability or land suitability maps have been made of the region. Only broad map of relevance is Geomorphic Map of Riverine Plain of South Eastern Australia by Butler et al of which Andrew is trying to source a copy of.		x	

	ECONOMIC PROSPERITY	ECOLOGICAL INTEGRITY	SOCIAL CAPITAL & COMMUNITY
The river is very important to Hay as it acts as a vegetation corridor with different types of vegetation and also allows native animal access to water and farm wetlands.		x	
Important areas to be reserved include wetland areas mainly black box depressions, 16 mile gums as an iconic area, sandhills and riparian areas.		x	
Another measure that Council needs to endorse is the protection of the plains wanderer when they are looking at development for the future of Hay. They need to make sure they stay clear of the vegetation communities that support the plains wanderer.		x	
Major enviromental issues in Hay include declining water quality, pollution runoff, storm drainage runoff, blue green algae in weir pool.		x	
Protection of the diversity of woodland birds along the river, which is a very valuable asset . It was mentioned that Council could adopt a planning strategy which includes plants that these birds favour.		x	
Council needs to promote and facilitate improved pedestrian and bike access as a loop to the various museums and special places (eg Sandy Point/river).		x	
Need to promote "waterwise" urban design.		x	
"Bushfire prone land follows the river, shire can be managed by following planning guidelines."		x	
Hay has strong clubs and hotels (financially supported) % ratebase		x	
Need to promote solar energy.		x	
Draft LEP process based on "old" process - not gateway			
Use Forbes, Lachlan & Warren U & R LUS as "models" for Hay			
There are a significant number of subdivisions along Sturt Highway east of Hay.			
Land and residential properties in Shire are overpriced. Plenty of properties for sale but not very many selling.			
The streetscapes of Hay are valuable elements and themes that should be promoted in urban design.			
Tourist tracks need to be better defined.			
Hay community is well serviced with sports including Australian Rules, Rugby League, soccer, netball, tennis, karate, fitness, gymnastics, pony club and cricket.			
Fitness area unsatisfactory under the Aussie Rules Clubhouse.			
The DCP for Hay was "pseudo" zoning approach to address potential problems with conflicting uses. The new LEP templates are required to all zoning in the LEP. A DCP can only be for development standards and not zonings.			
In addition there are a number of anomalies in the DCP zonings.			
Bishops Lodge - should all the frontage to Sturt Highway be zoned special purpose? (Community and Operational Land).			
Randall Street - 2 x residential properties not zoned.			

	ECONOMIC PROSPERITY	ECOLOGICAL INTEGRITY	SOCIAL CAPITAL & COMMUNITY
Cnr Moppett and Pine Street - Catholic church zoned recreation - may be a future development constraint - could be residential or special use.			
Leonard Street and Pine Streets (NE Cnr) 8 x freehold houses zoned Special uses should be rezoned to residential/commercial.			
Commerical zones under the new LEP template are either "Local Centre" (dedicated commercial limited residence) or "Mixed Use" commercial and residential.			
The minimum subdivision size for strata or community title is too high (550m2) should be reduced to 230m2 or Floor Space Ratio (FSR) for multi storey or "mixed development".			
LEP inflexible.			
Retail/community services - OK.			
Professional services - out sourced- Professionals do service Hay.			
No dentist, no x-rays, no obstetrics			
Water x markets			
Less people on farms			

ANNEXURE 3

SPECIFIC PLANNING ISSUES

SPECIFIC PLANNING ISSUES		
	GOVERNANCE/ INSTITUTIONAL	PLANNING RESPONSE
Need lifestyle blocks close to town - Not causing rural fragmentation	x	x
Need availability of Industrial land, not just near the railways	x	x
Need large residential blocks	x	x
Flooding, bushfire and other hazards should be appropriately managed and prevent land use conflict	x	x
Heritage is important and should be promoted. Hay has important cultural heritage sites	x	x
Population decline trends won't prevent DOP approving land release opportunities	x	x
Need adequate supply of jobs in right location	x	x
Need transport hub	x	x
Need aged care facilities	x	x
Transport loads to double/triple by 2020 - 4000 adt Hay mainstreet impacted as a major transport route	x	x
Draft LEP process based on "old" process - not gateway	x	x
Retain village zones - need detailed DCP	x	x
Use Forbes, Lachlan & Warren U & R LUS as "models" for Hay	x	x
Need to groundtruth environmentally sensitive land	x	x
5 highways near Hay	x	x
MI doesn't want to have to lodge a DA and obtain approval for carrying out typical day to day activities. Infrastructure SEPP may need to be modified to include MI as a public authority or alternatively a local clause?	x	x
No land classification, land capability or land suitability maps have been made of the region. Only broad map of relevance is Geomorphic Map of Riverine Plain of South Eastern Australia by Butler et al of which Andrew is trying to source a copy of.	x	x
A lot of land for sale in the Shire, but not a lot of land selling suggesting properties are overpriced.	x	x
There is a high demand for lifestyle blocks along the river, but the majority of land along the river in the shire is tightly held by a few corporates. Opportunities for development and growth, such as Swan Hill and Mildura should be explored.	x	x
Saleyards on western side of town create some local issues with dust. Local agents have recently installed an improved water system to try and keep the dust down. Cost of replacing sheepyards would be in the order of \$6M.	x	x

	GOVERNANCE/ INSTITUTIONAL	PLANNING RESPONSE
Land and residential properties in Shire are overpriced. Plenty of properties for sale but not very many selling.	x	x
There is a need for industrial land. A good site would be adjacent to the airport, which Council already owns and has town water and electricity, (not sewerage).	x	x
Hay main street draws visitors. Visitors enjoy walking through the main street and reading from the plaques situated on the occasional buildings. This sought of thing should be promoted. There is a need to maintain street widths in future town expansion.	x	x
Tourism needs to be actively promoted in Hay and there is a need for more advertising of the range of passive recreational opportunities including related events such as caravan shows. Tourism sites are located throughout the Hay Shire Council area	x	x
The Hay main street needs to be carefully designed in the future to maintain the special elements and attributes that make Hay special. There is a danger in adopting themes that are used and represented along the total main street as done in other towns. Hay main street diversity of buildings should be maintained into the future as uniformity can impact on the ability of Hay to promote itself as a special place.	x	x
There is a need to promote gateways into the town to route visitors into the town centre and to the main facilities. There is also a need to design gateways appropriately so they are attractive and enticing. There is a typical visitor/ tourist to Hay which can be described as a grey nomad who utilises campers, caravans etc	x	x
The Hay community are a helpful community. Farm stays, agribusiness tourism is a tourism opportunity that could be better promoted.	x	x
Many visitors come to Hay because they are researching their family history. More tourist car spaces might be required into the future.	x	x
In any car parking facility there needs to be adequate attention given to spaces to accommodate vehicles as well as campervans and trailers.	x	x
The streetscapes of Hay are valuable elements and themes that should be promoted in urban design.	x	x
There are a range of recreational and ascetic opportunities associated with the river that need to be promoted and developed	x	x
There could be a gap between the young and old in terms of the demographic characteristics of the community which might need a planning response. There is an aging community in Hay and there are concerns with the adequacy of facilities for seniors.	x	x
There is a need to create more employment opportunities for young people in Hay	x	x
There needs to be an opportunity to allow more than one building o	x	x
The important environmental values of Hay are the river, the saltbush plains that are iconic to the area and an issue with environmental weeds.	x	x

	GOVERNANCE/ INSTITUTIONAL	PLANNING RESPONSE
Preserving the character of hay is very important to the Hay community.	x	x
The river is very important to Hay as it acts as a vegetation corridor with different types of vegetation and also allows native animal access to water and farm wetlands.	x	x
Rezoning or having detailed look at the flood prone land to give people a better idea of where they can build.	x	x
The dual water system that exists in hay using high quality water for houses and semi-treated water for gardens needs to be better signposted. Apparently there are taps in gardens in Hay with semi-treated water that tourists fill up their drinking bottles with. This promotes a health risk.	x	x
Pollution runoff from vegetables grown near the river just out of town	x	x
The environmental values that should be protected are the riverine forests, saltbush shrublands, the natural grasslands, the wetlands which include aboriginal sites.	x	x
Extend Hay to the south so that it would become more noticeable from the Highway and draw people in.	x	x
The lack of truck parking - it was suggested that truck parking areas be created to keep the trucks from parking in the main street. The area suggested for this was near the power substation just out of town.	x	x
Lack of things to do after youths complete school - no jobs, no prospects.	x	x
Urgently need a youth worker to engage with youth "on the street".	x	x
Community and Council need to be proactive in promoting employment opportunities for aboriginal youth.	x	x
Urgent need for "parenting" courses, particularly for young mothers.	x	x
Rural communities need flexibility and to promote a new model to provide education opportunities requiring co-operation between DET, TAFE and Council.	x	x
There is a need to provide seniors housing on the river, possibly near the new car park.	x	x
There is a lack of pre-school and childcare facilities in the villages.	x	x
Council needs to promote and facilitate improved pedestrian and bike access as a loop to the various museums and special places (eg Sandy Point/river).	x	x
Hay Park is a fantastic recreational complex for a multitude of user groups including: league, soccer, netball, touch, fitness, little athletics. It is a district facility, however there are pedestrian and vehicular conflicts and poor illumination at night.	x	x

	GOVERNANCE/ INSTITUTIONAL	PLANNING RESPONSE
Hay Park Community Building is underutilised because it is not situated on an oval.	x	x
Aussie rules access to Hay park needs to be changed. Access should be off Moppett Street and Morgan Street closed.	x	x
Lack of facilities for young children in Hay Park (eg climbing facilities for under 5's group.	x	x
Need to provide a safe children's play area in Hay Park which should be fenced with visibility and safe pedestrian routes.	x	x
Skate Park should have been sited at Hay Park.	x	x
Good idea to provide for trailer and caravan parking in car parks.	x	x
Heavy traffic through main street is not avoidable.	x	x
Gopher access along main street needs to be managed to avoid pedestrian conflict.	x	x
Need a Community Boat Shed at Sandy Point.	x	x
Hay needs to encourage more opportunities for social exchange apart from sport.	x	x
Community nurse caters for "townies" and with other disadvantaged people.	x	x
Youth worker needed to help youth who fall below the cracks.	x	x
Cannot staff hospital.	x	x
No Dentist.	x	x
Need more doctors.	x	x
Beautiful homesteads on farms have been left empty as residents, workers and businesses leave the town.	x	x
The Arts and Clutural significance of the town aren't really well presented within the town, or advertised.	x	x
The general standard of teaching has dropped.	x	x
The footpaths with Hay generally good, however, the areas around the park aren't safe enough for children.	x	x
Netball courts need maintenance - "its an accident waiting to happen".	x	x
Maintenance and upgrade of local community buildings such as halls and playgrounds;	x	x
Areas that council could improve in the area of economic development if funding events in both Hay town and villages and events and away. They could do this by providing a bus from Hay to community events and local villages (ie Booligal sheep races). In relation to infrastructure roads into the villages need to be upgraded (eg Gunbar road - Council needs to look into external funding with other shires ie Carrathool).	x	x

	GOVERNANCE/ INSTITUTIONAL	PLANNING RESPONSE
	x	x
Tourism is not as well promoted as it could be. Need to use Victorian "methods" as a mode for best practice.	x	x
Entranceways into Hay are needed - attractive stimulating visitors entrance and showcasing Hay.	x	x
More lifestyle blocks needed.	x	x
Sandy Creek too busy for recreation - need other areas (reserved) with boat ramps for lifestyle lots close to town.	x	x
Let market forces determine the viability of holding sizes?	x	x
Rural smallholdings- current controls: The current 1(c) zone encompasses most of the HPID but does not include all irrigated lands/horticulture.	x	x
Government looking at a co-operative innovative approach to future health care in terms of service delivery.	x	x
Hay LGA should facilitate integrated health service delivery	x	x
Less institutional reliance or aged care with services being delivered to keep the aged in their homes for longer	x	x
Less time for aged in acute care beds now last 6 months of life or average instead of last 2 years of life	x	x
Optimise partnerships and state and federal funding opportunities to facilitate services for the aged.	x	x
Need lifestyle lots close to town, along the river and fully serviced.	x	x
River flow below Condobolin to cease from 31 October, 2009, presenting implication to communities/rural land holders relying on stock and domestic supplies.	x	x
Socio-economic impacts of decision involving river flow - lowland communities disadvantaged.	x	x
Water trading has social and economic implications to village communities.	x	x
Lifestyle lots - minimum lot sizes are restrictive.	x	x
Sale of permanent licences taking water out of the area including those of adjoining areas affecting the shire.	x	x
Loss of rateable income, local employment and impacts on Booligal created by conversion of local farms eg Booligal Station into National Parks.	x	x

	GOVERNANCE/ INSTITUTIONAL	PLANNING RESPONSE
Identified ecosystem health of Murrumbidgee River as very poor with Hydrology (Poor - mod), Fish (extremely poor), Macroinvertebrates (Poor). The audit will be expanded to include additional themes of vegetation and morphology. The LUS should recommend innovative ways to improve river health within the Hay LGA.	x	x
Need to protect and manage primary production	x	
Need passive interpretative signs of National Park resources display in town - river location?	x	
The irrigation district is located upon prior streams which are well drained and as a result there are no issues with water table, though conveyance losses have been a problem. Stock and domestic system also has outlets for rural fire service.	x	
The new LEP has to be flexible. There were mistakes with zonings within the last LEP. Tourism needs to be promoted in the planning instrument.	x	
National Parks will be open and accessible in 12 months and they will be an attractive option for day trippers which could be included within the tourism loop.	x	
Key environmental issues that should be addressed when planning for Hay's future include maintaining water quality, noise pollution and air quality, traffic through the centre of town, maintaining enough water for the future.	x	
Protection of the diversity of woodland birds along the river, which is a very valuable asset. It was mentioned that Council could adopt a planning strategy which includes plants that these birds favour.	x	
Skateboard park sited and approved on land at Sandy Point with no community consultation or consultation with HLALC.	x	
CMA do not liaise with local aboriginal community when planning or conducting projects. They use staff from out of town (eg Wagga).	x	
Difficulty maintaining teachers within the school and Primary school. There is a decline in numbers as approximately 46 families, in the last 12 months, have left the district due to the drought.	x	
South West Arts could do more.	x	
Prime agricultural land protection not an issue for Hay LGA	x	
Hay Hospital in future should be based around a multi purpose service (MPS) model	x	
Health funding is an issue	x	
Health care provided in homes for as long as possible through community and agency partnership programs	x	
Need to promote solar energy.	x	

	GOVERNANCE/ INSTITUTIONAL	PLANNING RESPONSE
Water licences are being sold permanently out of the area.	x	
Need wide housing choice		x
Rely on Griffith & Wagga - Daily trips for health services		x
Although the Hay business and retail centre outlets service the community well. Most people travel to larger regional centres on a regular basis for higher order goods or for other reasons such as to access health services.		x
Proposed acquisition of land - railways		x
Forest lands zoned appropriately and TSR not to exclude timber harvesting		x
There are a large number of small holdings in the PID.		x
There is plenty of irrigation development in the shire but the potential is limited by water availability.		x
There are a significant number of subdivisions along Sturt Highway east of Hay.		x
Tourism is undervalued and provides a significant contribution to the town.		x
There is a high demand for lifestyle river blocks, but few available, and a good demand for hobby farm lots.		x
There has been an increase in passive recreation including, camping and caravan day trips. Hay is considered a viably stopping place because it offers cheaper accommodation.		x
Need a billboard over the bridge to draw people into the Hay town centre. That billboard should be very attractive and include an attractive picture to generate interest and enthusiasm.		x
The current characteristics of Hay are special and what makes this place special should not be compromised with future development		x
There is more opportunity to promote community events. The range of community events include the Mini Festival, the Booligal Sheep Races, the Spring Market at Bishops Lodge, fishing competitions, Shear Outback, June weekend bowls tournament and tennis tournament etc. There is an exodus of young families from town due to the impact associated with the drought.		x
Development along the river needs to be mediated and there needs to be a gap between subdivisions and the river to allow the river riparian areas to remain healthy.		x
Another measure that Council needs to endorse is the protection of the plains wanderer when they are looking at development for the future of Hay. They need to make sure they stay clear of the vegetation communities that support the plains wanderer.		x

	GOVERNANCE/ INSTITUTIONAL	PLANNING RESPONSE
The general feel around Hay is there is room for expansion however, we need to be aware of the enviromentally sensitive areas and stay clear of them.		x
Possible environmental constraints include feedlots, intensive agriculture and future lots sizes and water access.		x
Major enviromental issues in Hay include declining water quality, pollution runoff, storm drainage runoff, blue green algae in weir pool		x
Future planning should include blocks that are small enough so that people do not have their one horse or one cow and it leads to degradation of the land in such a small area.		x
Areas that the community feel should be reserved include the river and the sandy corners in the river. Also Bungy Creek and Booligal Wetland and lignum wetlands, the river through Booligal and the weir which are major recreation areas in town.		x
The industrial zones area around the railway which apparently is a bit of an eyesore, compared to the beautiful railway building and the belief that some of these zones should be changed and it should be revegetated.		x
The unattraditiveness of the area to the south of the river, as you come into town. It is believed that this doesn't draw tourists in because of its appearance.		x
Most likely aboriginal artefacts, burials, hearths and scar trees and the most concern is for burials.		x
Future urban development/town expansion needs to consider "sensitive landscapes" this is an issue mainly south of the town but also anywhere where there is a river, a wetland or prior streams.		x
Council should promote development of its river assets. For example Sandy Point Reserve should be developed for recreation and tourist facilities eg. Restaurant and tourist business.		x
Should be no "free campsites" on the river as it encourages vandalism and competes with caravan parks.		x
Need more diversity - recreational opportunities for 0-5 age groups.		x
Hay Plains Day Care Centre and Hay Pre School (2 Pre schools) provide a good service but there is a need for after school care and occasional care.		x
Decline in high school enrolments (trend) currently at 240 students and would cater to a maximum of 400 students.		x
There are a lack of volunteers with in the Hay community, more volunteers are needed for organisations such as Girl Guides, so that they are able to undertake more outdoor activities such as camping canoeing and snow trips. There is currently no authorised person to provide outdoor activities in the Girl Guides group, so all activites in Hay must be indoors.		x

	GOVERNANCE/ INSTITUTIONAL	PLANNING RESPONSE
It is hard to obtain and retain doctors within Hay/ and staff for the hospital.		x
There is a lack of availability for seniors housing.		x
Camping sites should not be available on tourist tracks near the river - public risk, fire hazard.		x
Tourist tracks need to be better defined.		x
There is a possible need for a fitness centre.		x
Need toilets adjacent to netball courts.		x
Fitness area unsatisfactory under the Aussie Rules Clubhouse.		x
Pond in Hay Park is a feature and should be improved as a visitor attraction.		x
Not enough opportunities for kids who are not sports orientated.		x
Tourists utilise toilets at Hay Swimming Pool.		x
River is important to community and needs to be promoted for community use whilst protecting its values.		x
Leonard Street provides closest opportunity for town centre link to the river.		x
Promote antique events.		x
South Hay need pedestrian walkways.		x
Need a bike trail around linking each of the 5 museums and "Bushies Bend" (Long Paddock, Shear Outback, Bishops Lodge to sandy Point to Bushies Bend to Main Street).		x
Mountain bike riding is fastest growing sport and should be promoted in hay. Particularly in view of the number of Winnebago's with bikes on the back.		x
Tourist circuit is needed to be formalised to Hay attractions.		x
South Hay is considered too far by some residents.		x
24 hour fuel stop - good for community and visitors.		x
Hay does not celebrate it cultural heritage.		x
Need to promote "waterwise" urban design.		x
Need a kiosk in main street.		x
Need barriers and fencing in Hay Park.		x
Drought significantly impacted the town and current conditions do not reflect Hay's productivity and resource potential.		x
No secondary industry. Town relies heavily on agricultural production.		x
Needs to be more leisure opportunities for those not into sport.		x

	GOVERNANCE/ INSTITUTIONAL	PLANNING RESPONSE
Lack of secondary interest other than agriculture within the town, which allows the town to be heavily affected by drought.		x
Staff retainment within the local hospital is an issue.		x
Lack of tertiary education opportunities within Hay Shire resulting in young people leaving the area after finishing school.		x
Suggestion that a proper kiosk for street stalls be implemented into plan and it would be a good idea and promote tourism and economic growth.		x
The issues relating to the village include a lack of water from the river. In relation to the needs and wants of the village: Toilet maintenance and upgrade; Rubbish collection and the clean up of the local tip;		x
No town water supply;		x
Upgrade/establishment of a primitive camping area with tables, chairs and a fireplace;		x
Shear outback could be better promoted. For example more concerts/multi-use opportunities.		x
South Hay needs to be promoted more and designed to encourage visitors to enter Hay.		x
One Tree Hotel could be promoted for benefit of South Hay.		x
Mapping of environmentally sensitive areas incorrect - relating to wetlands - inundation and sheet/wind erosion of soils. This occurs along the ridges in a /// pattern. Needs groundtruthing. Miles Boak from DECC has been advised of this.		x
Flood prone land incorrect as flooding occurs east of Hay, north and back around. Need to check mapping.		x
Farmers selling farms to retire - want to live on lifestyle blocks close to town.		x
Need industry not based on agriculture.		x
Niche industry or education/training opportunities for children leaving school with some employment prospects - to retain youth.		x
Industry needed at South Hay Airport - not railway land in Murray Street as they won't sell the land.		x
With no water allocations/federal grants to remove farmers off farms/climate change impacts - What can rural land be used for?		x
Will dwelling entitlements actually threaten the viability of agriculture? Is increasing land value by breaking up holdings and increase rateable capacity affect the nearby genuine farmer?		x

	GOVERNANCE/ INSTITUTIONAL	PLANNING RESPONSE
Have the flood prone lands/floodways been mapped accurately? (East and West Hay)		x
Not permitting any housing in the riparian zones and bushfire hazard zones will lead to conflicts with the aspirations of property owners for a river frontage.		x
Houses and commercial developments not be in the floodway ie Is 1 in 20 year level adequate protection?		x
Flood behaviour locally give plenty of warning for evacuation - would a 1 in 100 year level be adequate?		x
Placing houses on riparian land will impact on zones by removal of bushfire hazards.		x
The rural lands 1(a) on the western side of the Shire to the boundary with Balranald Shire/Wakool Shire have been zoned as "Environmental Sensitive Lands" when in fact it may well be "flood liable lands". The impact is that the rural use is restrictive in C1 18 of the Hay LEP and feedlots are prohibited. Under cl 19 of the LEP flood liable lands do not have the same prohibition on feedlots. This may be a mistake and needs reclassification.		x
Land north of Lang Street, South Hay has "existing use" and virtually developed as residential and should be removed from rural 1(a) zoning.		x
The land of the showground, RTA and Hurst (both sides of Sidonia Road and Cobb Highway be included as Special Use, Industrial and Urban Zones.		x
Land south of the Sturt Highway should be included in the urban zones for those properties fronting the Highway including the Shear Outback property.		x
The Golf Course and Aerodrome should be removed from the rural zone.		x
The subdivision process for the HPID is very unusual in that a resubdivision has to go through the Lands Department for environmental assessment and suitability of irrigated land use. This requires duplication of subdivision procedures to the owner - why? infers there is a anomaly with the State Government accepting the current LEP dwelling entitlement provision.		x
The land to the west of the urban area has several saleyards nearby. It is unusual for buffer zones to be given to avoid odour, dust and noside complaints from nearby residents.		x
Expansion in this area should be rural small holdings rather than rural residential.		x
There is a need to review the minimum holding size (dwelling entitlement) to a larger size to sustain horticulture/agriculture production. What size?		x
Environmental law can prevail over town planning law where rural industries can be challenged- need for buffers.		x

	GOVERNANCE/ INSTITUTIONAL	PLANNING RESPONSE
Lands north and east of the Hay urban area should be in the main be seen to retain the horticultural production as rural small holdings.		x
Certain rural lands on the east and Mid Western Highway and west are "non conforming" and should be transferred to more appropriate urban zones.		x
Rural 1(a) land south of Sturt Hwy (east) to be rezoned to rural small holdings - used for intensive horticultural and irrigation.		x
Need to remove Hursley Street, industrial zone.		x
Alter Murray Street residential and business zones from Lots Part 5&6, 14 DP 812034 railway goods yards to industrial zone.		x
Change residential zoning on land bounded by Witcombe, Archer, Lang and Moama Streets, South Hay to industrial.		x
Rezone rural 1(a) zone between Sidonia Road and Railway line (including railway line) to Industrial.		x
Rezone rural 1(a) zone bounded by Wharf and Bourke Streets to Railway Line and Travelling stock route to Industrial.		x
Rezone rural 1(a) zone south of the Sturt Hwy (west) to industrial zone.		x
Rezone rural 1(a) zone west of the Cobb Hwy (aerodrome land) to industrial.		x
Urban Zones: Under the new state government templates "Rural/Residential" is not seen as a "rural" zone. It is classed as "Urban - Large Lot Residential". The size of the dwelling entitlement is critical to ensure buffer zones can be achieved to avoid conflict with rural activities.		x
There are at least 15 categories of zones that could apply in comparison with the 5 under the current LEP and 7 under the DCP for urban areas.		x
The DCP for Hay was "pseudo" zoning approach to address potential problems with conflicting uses. The new LEP templates are required to all zoning in the LEP. A DCP can only be for development standards and not zonings.		x
If rural/residential is required it will need to be converted into extension of the urban area, where and what infrastructure will be required?		x
Is there a need for industrial land to be zoned Urban on Cobb Highway (near the airport) or east on the Mid Western Highway and what are the infrastructure needs?		x

	GOVERNANCE/ INSTITUTIONAL	PLANNING RESPONSE
In addition there are a number of anomalies in the DCP zonings.		x
Industrial Land (Brewery, Harrison and Hursley Streets) presumably to avoid possible flood inundation and contamination - now the Rosser Subdivision, should be converted to residential.		x
South Hay 2(a) Zone - intended to be single residential occupancies - no flats. Better to convert to the general 2(b) zone for Hay - not so restrictive.		x
Residential site (west - Palmer & Lang Street) not zoned.		x
Bishops Lodge - should all the frontage to Sturt Highway be zoned special purpose? (Community and Operational Land).		x
Pollard Street - 5 x private residential properties zoned for public open space - admittedly in the floodplain, but is it the Council's intention to acquire these properties (otherwise rezone)?		x
Randall Street - 2 x residential properties not zoned.		x
Solling Street - 4 lots not zoned - should be commercial.		x
Macgregor Street - Council lot not zoned - should be recreation.		x
Cnr Moppett and Pine Street - Catholic church zoned recreation - may be a future development constraint - could be residential or special use.		x
436 Moppett Street - 3 x houses zoned recreation. It is Council's intention to acquire otherwise rezone to residential.		x
Cloughton House zoned special uses - residential subdivision approved by council should be rezoned to residential.		x
Leonard Street and Pine Streets (NE Cnr) 8 x freehold houses zoned Special uses should be rezoned to residential/commercial.		x
Bowling Club Murray and Lachland Streets zoned special uses - should be zoned to commercial.		x
Railway track west of Cobb Highway is zoned commercial - should be rezoned to industrial and the railway station to special use.		x
Haydays corner of Murray and Coke Streets is zoned commercial and is "non conforming use". Rezoning to special use or residential required.		x
Commercial zones under the new LEP template are either "Local Centre" (dedicated commercial limited residence) or "Mixed Use" commercial and residential.		x

	GOVERNANCE/ INSTITUTIONAL	PLANNING RESPONSE
The minimum subdivision size for strata or community title is too high (550m ²) should be reduced to 230m ² or Floor Space Ratio (FSR) for multi storey or "mixed development".		x
"Hay Shire Council is the only council in NSW to require consultation with the LALC". DECC would support sensitive landscapes as an environmentally sensitive overlay in LEP if LALC and DOP would agree ... conflict with standard instrument?		x
"Bushfire prone land follows the river, shire can be managed by following planning guidelines."		x
"Sewer treatment station requires replacement/upgrading."		x
No restrictions should apply to rural subdivisions and dwellings.		x
Hobby farmers are good land managers hence no interface conflict issues		x
LEP inflexible.		x
GSAHS (2007) predicts that the persons aged 70 years and older in Hay LGA will almost double from 340 in 2001 to 640 in 2031.		x
Riparian water access rights prohibit riparian subdivision.		x
Need to justify location and size of river lifestyle lots.		x
Rural lot sizes should facilitate intensive agricultural development.		x
Inadequate facilities for young people		x
Need more community improvement programs		x
Council should invest in social/country infrastructure eg Health/Sport/Tourism		x
Less people on farms		x
Land north of railway land could be used for industrial purposes.		x
Farmstays should be promoted		x
Need to expand the urban boundary in every direction.		x
Need aged care accommodation near the hospital.		x
Need service industry precinct with highway frontage, near railway and aerodrome.		x
30 years supply of vacant lots for industrial development, preferably 2ha lot size.		x
Less number of people on farms and ageing community impacts service provision.		x
Different opinions exist amongst residents about whether there is a future for the village;		x

	GOVERNANCE/ INSTITUTIONAL	PLANNING RESPONSE
Lack of Water impacts tourism and recreational fishing and bird-watching opportunities;		x
Affordable housing should be promoted in Maude.		x
Poor drainage in village.		x
Require a footpath between the hotel and village store.		x
School requires access to household water for toilet flushing, watering etc.		x
Booligal could provide opportunities for those wanting a rural escape.		x
Community Hall has a 60km catchment and requires upgrading (owned by the community, important for playgroup/childcare up to 100km).		x
River reserve campsite needed over 2ha to support tourism.		x
Need for tourism signage.		x
Condition of local roads has implications for tourism, school excursions, contractors etc.		x
Community feels that there was no strong expectation of future growth, but rather maintaining current level of population.		x
No out of school hours care available in Hay impacts on employment opportunities.		x
Predictive Model (Pardoe & Martin) useful tool subject to consultation requirements		x
Potential loop - tourism roads between Booligal & Yanga National Parks		
Tourism is likely to be a major contributor to local growth		
Livestock numbers in the shire are down to only 30% of what they were 10 years ago.		
Town is suffering because of the drought. There are many rural landholders who wish to get out but are finding it difficult to sell. The town is resilient and will bounce back.		
Drought has been tough, but farm businesses have been sustaining themselves. Larger impact has been on the town with the lack of demand for contractors, impact on retail stores, etc. In some respects pressures on farmers have been eased by lower interest rates, reducing input costs and high livestock prices.		
The Hay PID has 87 customers covering an area of 4,000ha.		
They have recently, with support from Waters for Rivers, piped a stock and domestic system throughout the PID. This system is currently delivering water at above specified capacity and has the potential to increase its capacity if the area grows.		

	GOVERNANCE/ INSTITUTIONAL	PLANNING RESPONSE
People are leaving their homes on stations which are then left empty due to the impact of the drought.		
Major environmental issues identified were vegetation decline and loss of biodiversity, overgrazing and declining water quality		
Important areas to be reserved include wetland areas mainly black box depressions, 16 mile gums as an iconic area, sandhills and riparian areas.		
Some members of the community feel the lifestyle blocks should not be along the river as it will loose environmental values.		
Recognition of aboriginal cultural heritage should be embraced by the whole community.		
Generally transport is not an issue in Hay and bus services are good.		
The hospital has adequate land to cater for any required seniors/ aged care facilities.		
The hospital provides emergency support and there is the Hay Days Aged Care Facility and another Aged Care facility that is attached to the Hospital.		
Hay community is well serviced with sports including Australian Rules, Rugby League, soccer, netball, tennis, karate, fitness, gymnastics, pony club and cricket.		
Families use Hay Park and Lions Park because of the facilities (BBQ etc)		
Lions park is utilised by visitors and community as it is situated on the Highway and is an attractive space with water, BBQ facilities, it is highly visible to tourists.		
Hay Airport is valuable for frequent ambulance, bank and charter flights. No commercial flights although large aeroplane (Dash8) has utilised the facility in the past (firefighting). Two aerial spray companies based at the airport.		
No ready access from airport to town. No taxi service available, just a hire car.		
Hay is a good place to live because it is safe, has a low crime rate and the community band together.		
Isolation means Hay business community have a "captive audience".		
Hay has good community spirit		
Large itinerant community.		
Cloughton House, previous hostel closed down which impacts on rural students access to education.		

	GOVERNANCE/ INSTITUTIONAL	PLANNING RESPONSE
Hay is easy to get around.		
Not a culturally diverse town which impacts on the exchange opportunities offered and services to attract visitors and population.		
Shopping facilities are fine.		
Generally the community feels that there is enough community halls within the villages and enough housing opportunities and retirement villages within the area.		
A bike park is needed for the kids as part of the skate park.		
Free camping sites are great and should be promoted.		
Tourist brochures need to promote recreational opportunities and park locations.		
Need to facilitate bus transport to Deniliquin		
There is a need for a local TAFE (have to go to Deni or Griffith); RCC does basic pre-TAFE training and dev;		
There is a high local need for computer tech ed;		
Limited new jobs available (current appreciation that jobs are for life so skill sets are defined);		
Greater marketing for 'after-hours' visitor activities is needed i.e. bowls, golf, tennis, kids activities;		
Tourist visitation seems to be up on previous years; heritage walk signage is good;		
All town entrances need iconic "welcome" signs and all old and date related "tidy town" signage removed;		
Need better id marketing for Hay		
Freight cost for goods is major issue;		
Urban accessibility of town centre for tourists needs improving;		
Corner Mid-Western Highway and Cobb Highway is an accident blackspot		
Road network is generally in good condition		
School bus pick-up and drop-off points are good.		
Traffic signage is good.		
Truck parking in and around Hay is good.		
South Hay Trucking and transport infrastructure is good but there is reduced air quality from heavy vehicles and dust.		
Labour supply for transport industry is poor, particularly trade qualified diesel mechanics; Some onsite servicing of trucks but mostly specialist work done in Deni or Griffith;		

	GOVERNANCE/ INSTITUTIONAL	PLANNING RESPONSE
Echuca and Griffith are the closest rail heads but not used as a freight transport node;		
Heavy transport only occurs via road		
Lettuce growing seems to be a highly intensive ag industry and also melons and onions;		
Charter buses are only for sport or history tours; through buses are Australian Pacific, AAT Kings, Premier Coach Lines and Scenic Tours;		
Need a dedicated industrial area with zoned land ready and available for development;		
There is a need for local trade business to have dedicated sheds and storage areas;		
Land supply seems to lead demand in attracting new industry;		
cycleways and pathways seem to be good;		
Art group of locals (20 members with tutors) need a gallery in the main street and for it to be promoted for tourism		
Hay has lots of things for lads to do if they are sports orientated.		
Lifestyle blocks don't need to be serviced - can have rain water tanks.		
Hay has rural workers all year round and require affordable housing and services.		
Rural Large Holdings - 1500ha dwelling entitlement is restrictive.		
Is it necessary to set a large holding size for a dwelling entitlement?		
Will the separation of water entitlements from the land threaten the agricultural viability of land and not the land size?		
Why such a high dwelling entitlement (1500ha) when it is being used for horticulture use?		
What was the justification when all of the existing parcels that had dwelling on them well below that size (ie 3.5ha to 20+ha).		
Only HPID irrigated lands was excluded from Rural Large Holdings when there were other small holding private irrigated lands nearby?		
Should Rural Large Holdings zone in South Hay be reviewed for Rural Small Holdings, Special Uses and industrial?		
Hay PID has expanded its customer base taking over the Kangaroo Pump Association and now has piped reticulation into other small holding areas to the north and west.		

	GOVERNANCE/ INSTITUTIONAL	PLANNING RESPONSE
The statewide template will impose pressure to conform to the standard clauses. It has been predictable that the Planning Department will only permit in exceptional circumstances special clauses.		
The assessment criteria as to what constitutes a viable agricultural holding.		
The current 1(c)zone allows for a subdivision size of 2ha for a dwelling entitlement. This allotment size is very questionable for rural production and could only seem to be sustaining "rural residential" lifestyle.		
New bridge crossing is required to re route heavy vehicles.		
Industries are reluctant to come to Hay due to distance and isolation.		
Servicing costs of industrial land - prohibitive to have available now.		
Need jobs to retain population		
Tourism is a significant pathway to future growth and prosperity.		
Hay has strong clubs and hotels (financially supported) % ratebase		
Lack of tradesmen locally		
Closure of Claughton House impacts rural students access to local education.		
Hay is not isolated-only 1.5 hours away from Griffith need to remarket ourselves.		
Ageing farmers		
School numbers are reducing.		
Need a manufacturing base.		
Industries reluctant to relocate due to distance and isolation.		
Illegal buildings on river.		
Weir requires better camping and picnic facilities.		
Lack of tourist signage.		
Lack of Council maintenance and street beautification.		
Poor mobile phone coverage.		
Fishing should be promoted as a tourism generator.		
Reticulated system for school needed.		
No childcare facilities although weekly playgroup at Community Hall.		

	GOVERNANCE/ INSTITUTIONAL	PLANNING RESPONSE
Loss of Claughton House impacts in that Hay Local High School not accessible due to loss of weekly boarding ie kids need private board.		
Itinerant housing on farm accommodation is available, but unlikely to meet OH&S requirements - impacts on shearing.		
Community website is required to promote local tourism, events etc.		
Absentee landholders don't put back into the local community		
Potential for farmstay opportunities.		
Drought impacting on production levels (30% stocking rate currently) and creates uncertainty for the future.		
Booligal sheep races draws in 500 people, mainly tourist, once a year from Carrathoo and Echuca (buses)		
Not much corporate ownership of farms, some irrigation bores around.		
By piping the Wah Wah scheme - losing important habitats.		
Many empty farm houses (2nd/3rd) always, while main farmhouse still occupied.		
Mail only available Monday, Wednesday and Friday		
Mail organisation and delivery to residents through Post Office currently not always reliable.		
Applied for heart start defibrillator.		
Rural workers have migrated into mining industry that will affect drought recovery.		
Lack of local contractors.		
No school bus.		
Drought has been restraining farmers performance. Most bank clients in the shire are pastoralists and have really destocked. Businesses typically have low operational costs and the pastoral country is very responsive to good seasons so expect client to recover once drought breaks. Biggest constraint will be accessing replacement stock at a suitable price.		
Changes in markets has seen a shift over years from pastures towards higher value crops when there are large areas of irrigation laying idle.		

ANNEXURE 4

AGENCY REQUIREMENTS



AGENCY CONSULTATION ISSUES			
AGENCY	DATE	ISSUE	RESPONSE
Department of Planning	14/10/2009	Need to consider draft guideline for preparing landuse strategies once it is available.	N/A
		25-30 year planning horizon for residential, rural lifestyle settlement and commercial retail, industrial and tourism development supply.	Chapter 16
		Zone 10 -15 years supply.	Chapter 16
		Land supply and demand analysis is required for all land uses.	Chapters 7 and 16
		LUS to provide a staging plan for land release.	Staging Plan to be provided in Chapter 16
		Noise/amenity to consider transport routes and corridors. Need to consider EPA Environmental Criteria for Road Traffic Noise Guidelines and NSW Industrial Noise Policy.	Chapter 9 (add air quality to biophysical)
		Spatial representation of existing landuse required in the LUS to establish the context for planning.	Chapter 3
		LUS identify and locate important infrastructure which should be afforded protection via buffers eg aerodrome, saleyards, railway station, sensitive receivers.	Chapter 9
		LUS determine infrastructure and servicing program (utilities and social facilities).	Chapters 13 and 14
		Consultation with service providers required.	Chapter 9
		Funding plan for service upgrades is required in LUS.	Chapter 13
		Capability of existing services and sustainability of future supplies for eg effluent disposal systems and riparian groundwater services and consider conjunctive water management and sustainable yield.	Chapter 15
		Consider farm dams policy and implications to minimum lot sizes.	Chapter 16.2
		Consider existing and future water needs, sustainability of the water source, opportunities for centralised systems in LUS.	Chapter 15
		Consider NSW Groundwater Quality Protection Policy in LUS in respect to potential contamination and extraction.	Chapter 9.3
		FPL to be determined in LUS (Flood plan Development Manual)	Chapter 9.1
		PMF to be considered in LUS and use in siting and developing emergency response facilities and critical infrastructure.	Chapter 9.1
		Mapping of:	Chapter 9.1
		* Frequency of inundation;	Chapter 9.1
		* Hydraulic function (floodways);	Chapter 9.1
		* Flood storage areas;	Chapter 9.1
		* Flood fringe areas;	Chapter 9.1
		* Flood hazard;	Chapter 9.1
		is required on GIS in LUS.	Chapter 9.1
		LUS to confirm and provide evidence that existing levee is capable of protecting new release areas.	Chapter 9.1
		Environmental constraints mapping should be based on attributes and standards with context explained and justified.	Chapter 6
		LUS to address intensification of landuse and development along riparian zones, impact on ecosystem and ecological values and impacts of increasing riparian access rights.	Chapter 9.3
		LUS should explain areas which are unsuitable for their existing land use.	Chapter 7
		Irrigation land to be analysed in terms of existing location zone and future use in RLS.	Chapter 8
		RLUS to review 2ha minimum lot size of Hay PIA.	Chapter 8?
		RLUS recommend options for identifying land suitable for primary production and rural living Examination of whether establishment of agricultural use is required prior to future DA approval for dwellings.	Chapter 16.2
		RLUS contain a holding size analysis x ownership x % of total area.	Chapter 16.2
		RLUS to identify intensive agriculture and rural lifestyle areas and recommendations for future management.	Chapter 8
		RLS to identify areas of fragmentation as options for future rural lifestyle areas.	Chapter 8
		RLS to include management criteria for interface conflict.	Chapter 16.2
		LUS to consider Council desirability of retaining a village zone and DCP - while permitting flexibility in Maude and Booligal villages. Notwithstanding industrial and large lot residential and should be directed to their own zones.	Chapter 16
		LUS to consider conflict between saleyards and adjoining residential development. A buffer has been established around the saleyards which should be retained or alternatively appropriate landuse indicated	Chapter 16
		LUS should protect the defined town centre as commercial land and major commercial use restricted to this core and not adjacent areas.	Chapter 7
		LUS should consider SEPP 55 and contaminated land.	Chapter 9
		LUS should consider management of riparian zones within an urban and rural context and objectives of the State Rivers and Estuaries Policy, NSW Biodiversity Strategy and Native Vegetation Act 1997.	Chapter 15
		LUS to consider a riparian access buffer to ensure no additional basic riparian water rights are created if development in proximity to riparian zones are recommended	Chapter 15
		LUS consider ageing population and future needs as a significant issues:	Chapters 4 & 14
		* New Seniors Living Development around the hospital;	Chapter 16
		* Identify other potentially suitable land, mobility and access, safety and security;	Chapter 14
		Buffers need to be addressed for each natural resource with a focus on groundwater surface water, remnant vegetation, riparian corridors, noise and odour and considered in LUS;	Chapter 15
		Another S62 consultation round is required once draft SI LEP is prepared;	Consultation Stage 2 draft LEP
		PFM would be useful ;	Issues Paper and agency meeting

AGENCY CONSULTATION ISSUES			
AGENCY	DATE	ISSUE	RESPONSE
Heritage Council of NSW	1/09/2009	LUS to include an assessment of heritage assets throughout Hay LGA - include natural areas and places of aboriginal, historic or archeological significance.	Chapter 14.6
		LUS to check State Heritage Inventory for protected items as well as consult lists of NSW National Parks and Wildlife Service, National Trust and Australian Heritage Commission.	Chapter 14.6
		Non-Aboriginal heritage items should be identified by field survey with a statement of significance and an assessment of impact on heritage significance, plus recommended protection policies.	Unfunded
		Survey of sites of significance to be undertaken in consultation with the aboriginal community as part of LUS.	Chapter 14.6
		Survey of significance existing or potential cultural landscape, conservation areas, views and vistas is required covering all major themes and landuse and management and zoning recommendations.	Unfunded
		Potential rezoning sites should be assessed for the potential existence of heritage assets.	Chapter 16
Murrumbidgee Irrigation	16/09/2009	Previous heritage studies undertaken should be referred to in the Draft LEP.	Chapter 14
		Murrumbidgee Irrigation is not included in the definition of public authority. This means that all work undertaken by Irrigation Corporations may require development consent from the local council which is not acceptable to Murrumbidgee Irrigation. The landuse study need to consider this as an issue and determine an appropriate resolution.	Chapter 13
Department of State and Regional Development	20/08/2009	At this stage the department has no comments to make, but would like to be referred the Draft LEP once the plan is prepared and maps are available for comment at that stage.	N/A
John Williams PM, Member for Murray Darling	24/08/2009	Not able to attend the Workshop.	N/A
NSW Rural Fire Service	25/08/2009		
		The land use study is to consider the areas that are mapped as bushfire prone land on Hay Bush Fire Land Map. The LEP may need to consider local provisions including the consideration of bush fire provision under direction 19 Planning for Bush Fire Protection. It is recommended that the landuse study consider the recommendation for a local policy or guideline in respect to bush fire protection measures that takes strategic approach to the planning of residential areas. LUS Landuse and Recommendations are to consider the hazard and risk prevented by bush fire and the exclusion of development in certain areas as an option and environment and access constraints cannot be overcome.	Chapter 9
Department of Industry and Investment (Formally NSW DPI)	26/08/2009	The LUS must spatially identify cores resources within the LEP and consider a clear vision for the protection of primary industries and resources. The LEP should plan and secure access to primary industry resources, allow the development of land consistent with land capability, protect productive capacity, improve water quality, protect and enhance the natural aquatic environment and the ability of ecological processes to function and reduce landuse conflict.	Resources in constraints mapping Chapter 14
		The LUS should identify aquatic areas that are required to be protected as aquatic habitats and threatened aquatic species, mineral resources, agricultural resources and forestry resources. The LUS to consider the availability of extraction resources to meet future needs. This should include the small quarries and burrow pits that extract sand for construction purposes with the most important resources of sand developed south of Hay airport in alluvial deposits and large sand sheets available in origin. As well parts of the western side of the Hay LGA have been explored for mineral sands by Alluca Resources Limited. The LUS to consider that the location of mineral deposit cannot always be predicted and therefore while known resources should be identified and protected, the LEP should ensure that future access to land for mineral exploration is able to be maintained.	Mapping in Constraints and opportunities
		The LUS to ensure that operating mines and quarries are identified and protected for sterilisation or hinderance from incompatible adjacent development, known resources and areas as identified of high mineral potential should not be sterilised and access to land for mineral exploration and possible development should be maintained over much of the planning area as possible. The LUS should consider the minerals and energy divisional CD "NSW Coastal Quaternary Geology Data Package. SEPP Mining Petroleum Production and Extractive Industry 2007 should be considered in the LUS process. The LUS to consider the direct and indirect impacts of development associated with aquatic habitats. Recommend zoning expansive water bodies for example bays, lakes estuaries and identifying all significant water bodies including rivers and creeks and sensitive waterways with an overlay over the top of the underlying zone. The waterway overlay is to highlight the fact that there are sensitive areas and that high performance standards in relation to water quality and aquatic habitats might be required for development.	Chapters 9 and 11
		The LUS to consider key fish habitats. Waterway zones should determine the types of development for the permitted or not permitted over waterways.	Chapter 6
		Removal or relocation of LWD should be designated development with consent in zones W1 and W2 because it is a key threatening process.	Draft LEP and Chapter 16
		Sensitive water overlay should also be applied to areas that have been zoned waterways, and inclusion of the generic waterway clause in the LEP. The LEP should include two advisory notes to remind Council staff developers and advisers that work within streams and water bodies may require a permit or concurrence from the NSW DPI even though the works may or may not require development consent from the Council. These notes should be included on the map that shows sensitive waterway overlay as well as after the relevant clause in the written document. It is recommended that key fish habitat and adjacent riparian buffers or setbacks be identified as environmental sensitive areas.	Draft LEP and Chapter 16
		The LEP should ensure that lateral and linear connectivity within and between aquatic habitats are maintained and obtain aquatic biodiversity and ecosystem functions. Waterway structures should require development consent.	Draft LEP
		Clause 32 of the LEP template, preservation of trees or vegetation should be included on the LEP and the Development Control Plan.	Chapters 8 & 16
		Aquatic vegetation should be protected. The LEP should avoid establishing zones where subdivisions permissible over land that includes major waterways or alternative the subdivision layout should avoid creating a multitude of lots with river frontage because of the creation of additional basic landholder rights under the provisions of the Water Management Act. The Rural Land Use Study should examine the two core issues for the sustainable development of agriculture including the protection of the land resource base and the minimisation of conflict. The Study should consider the value and total area of industry to Hay Shire, employment by sector, a snap shot of the major farming enterprises in the area and the distribution and size of holdings across the shire. Primary industry and resources need to be identified and protected. LEP should include primary protection and forestry zones where primary industry is best suited. Priority should be given to maintaining allotments in sizes that can support profitable and efficient enterprises typical of sustainable for each locality.	
		Extensive agriculture is required to be catered for in future development. Large buffer zones are generally required.	
		Fragmentation of rural land within primary industry zones should only occur where justified. Dwelling should only be approved on a day to day basis following substantial completion of agriculture or forestry infrastructure or development. Subdivision adjacent to waterways should be avoided so that no increase in basic riparian water rights and the level of extraction of surface water from natural watercourses. Separate provision need to relate to subdivision of agricultural land and dwellings to break the nexus between rural subdivision and residential development.	Chapter 16
		Minor boundary changes with minimal impact should be permissible. Agriculture operation should not be impacted by land use conflict. Concessional lot provision should be prohibited. Agricultural suitability mapping should not be used for property specific development controls. The LEP should consider the aspect of ancillary dwellings and whether they are appropriate or should be facilitated. Dwellings on the same title with shared access arrangements and close to the primary dwelling are encouraged. Temporary residents and detached duplexes should also be able to be considered. In more closely settled areas providing for a resident manager and visiting landowner is not appropriate or related to agricultural needs and should be provided only for dual occupancy provisions. Workers' dwellings should only be possible where the enterprise is profitable and future sub-division and potential conflict is minimised. Proposals should not be routinely referred to government agencies such as DII.	Draft LEP

AGENCY CONSULTATION ISSUES			
AGENCY	DATE	ISSUE	RESPONSE
		The Land Use Study should consider significant State Environmental Planning Policies such as Rural Lands, Policy for sustainable Agriculture and the Policy for Protection of Agricultural Land. If different minimal lot sizes are required for different areas and industries separate zones should be considered. The minimum lot size selected should retain the capacity for efficient production, minimise the risk of conflict, retain future development options and ensure that typical enterprises suitable for the location for profitable over a longer term. The RLUS require an analysis of part and current production and profitability performance of dominant industries, existing holding size and lot patterns, typical productive potential of the shire, the dominant and most suitable and foreseeable industries and the minimal area required for sustainable efficient and profitable production. The land for forestry is land already managed by forestry, land with existing forest, land that has the potential to forestry if trees are established. Interface Conflict is potentially created by the location of rural residential subdivisions adjoining or near investing potential forest areas. Chemical use might restrict forestry operations impacted by adjacent developments, and impact any noise and visual amenities. Forest generally perceived as having substantial bush fire risk and a risk to public safety and generate additional demand for upgrading for infrastructure such as roads. The strategy and LEP should recognise and support existing sustainably managed forestry, facilitate opportunities for additional forestry and recognise the contribution forestry can make to biodiversity conservation outcomes. The LEP should protect existing forest and provide potential future forest woodland areas. All lands managed by the Forestry should be zoned RU3. Development close to zone RU3 should require a suitable buffer.	Constraints Mapping Chapter 6
State Emergency Services	1/09/2009	The Land Use Study should consider flooding issues in accordance with the NSW Governments Flood Prone Land Policy as set out in the Flood Plain Development Manual 2005. Zoning should not enable development that will result in an intolerable increase in risk to life, health or property of people living on the flood plain. Risk assessment should consider the full range of flooding up to the probable maximum flood and not just concentrate on the 1% AEP flood. Risk assessment to consider flood warning and evacuation and emergency access and evacuation routes.	Chapter 9 Advisory and Chapter 14 Chapter 9
Land & Property Management Authority	30/09/2009	The LUS should consider potential zoning changes or land use changes impacting crown land and ensure previous consultation with the authority. Permissible uses should be in accordance with policy and plans and the principles of crown land management and outline in Section 11 of the Crown Lands Act 1989. The Land Use Study to consider the perpetual leases and the need for possible restrictions and preventing further subdivision as part of the land conversion process. Land Use Study should identify reserves and crown lands and ensure that they are appropriately zoned in accordance with Annexure B1 and B2 enclosed. The Land Use Study needs to consider multiple purpose reservations ensuring that zoning future zone accounts for the highest use for that reservation or dedication. Crown Land reserves the future public requirements to be zoned to allow the highest use available. Land Reserve for access should be zoned SP2 Infrastructure. Proposed land release areas or new zoning to allow subdivision where formed or unformed crown public roads exist will require the Council to accept transfer and control of the roads. Added protection zones and perimeter access roads required as bush fire protection measure should be site specific and located within the site and not on adjoining crown land. Essential public infrastructure required to support new subdivision areas should not be sited on crown public reserves unless it is in accordance with the declared public purpose. Proposed rezonings should not utilise crown land as buffers, for example bush fire hazard reduction zones, visual impact relief or open space. Crown land with potential urban use should be considered commensurate as private land and not necessarily be set aside for public purposes. Crown Lands to be considered in the plan to reflect the highest and best use where urban release areas are proposed adjacent to crown land the Department is to be consulted and the LUS consider the inclusion of the Crown Land within the rezoning proposals.	Consultation stage 2 draft SI LEP Mapping and Chapter 16 Advisory Advisory Advisory Chapter 16 Advisory Advisory Advisory Advisory Advisory

Hay Shire Community Survey
Quick statistics: Total records in survey: 261

(1aa) Hay Shire is a good place to live.

Answer	Count	Percentage
Strongly Agree (SA)	68	26.05%
Agree (A)	167	63.98%
Disagree (D)	14	5.36%
Strongly Disagree (SD)	4	1.53%
No answer	8	3.07%
Non completed	0	0.00%

(1ab) Hay Shire has a positive future.

Answer	Count	Percentage
Strongly Agree (SA)	17	6.51%
Agree (A)	99	37.93%
Disagree (D)	88	33.72%
Strongly Disagree (SD)	23	8.81%
No answer	34	13.03%
Non completed	0	0.00%

(1ac) People in Hay are satisfied with things as they are.

Answer	Count	Percentage
Strongly Agree (SA)	3	1.15%
Agree (A)	55	21.07%
Disagree (D)	138	52.87%
Strongly Disagree (SD)	44	16.86%
No answer	21	8.05%
Non completed	0	0.00%

(1ad) Residents have pride in their respective village.

Answer	Count	Percentage
Strongly Agree (SA)	52	19.92%
Agree (A)	175	67.05%
Disagree (D)	14	5.36%
Strongly Disagree (SD)	6	2.30%
No answer	14	5.36%
Non completed	0	0.00%

(1ae) Hay main street is attractive for visitors.

Answer	Count	Percentage
Strongly Agree (SA)	51	19.54%
Agree (A)	150	57.47%
Disagree (D)	36	13.79%
Strongly Disagree (SD)	13	4.98%
No answer	11	4.21%
Non completed	0	0.00%

(1af) People in Hay Shire work together to get things done for the community.

Answer	Count	Percentage
Strongly Agree (SA)	48	18.39%
Agree (A)	153	58.62%
Disagree (D)	35	13.41%
Strongly Disagree (SD)	10	3.83%
No answer	15	5.75%
Non completed	0	0.00%

(1ag) Your respective village is about the right size.

Answer	Count	Percentage
Strongly Agree (SA)	12	4.60%
Agree (A)	123	47.13%
Disagree (D)	67	25.67%
Strongly Disagree (SD)	21	8.05%
No answer	38	14.56%
Non completed	0	0.00%

(1ah) Transport is not a problem in Hay Shire.

Answer	Count	Percentage
Strongly Agree (SA)	4	1.53%
Agree (A)	45	17.24%
Disagree (D)	96	36.78%
Strongly Disagree (SD)	98	37.55%
No answer	18	6.90%
Non completed	0	0.00%

(1ai) Hay Shire is a good place to raise children.

Answer	Count	Percentage
Strongly Agree (SA)	74	28.35%
Agree (A)	158	60.54%
Disagree (D)	14	5.36%
Strongly Disagree (SD)	3	1.15%
No answer	12	4.60%
Non completed	0	0.00%

(1aj) People in Hay Shire have good access to education.

Answer	Count	Percentage
Strongly Agree (SA)	18	6.90%
Agree (A)	145	55.56%
Disagree (D)	64	24.52%
Strongly Disagree (SD)	20	7.66%
No answer	14	5.36%
Non completed	0	0.00%

(1ak) Facilities in Hay Shire are adequate for young people.

Answer	Count	Percentage
Strongly Agree (SA)	6	2.30%
Agree (A)	92	35.25%
Disagree (D)	100	38.31%
Strongly Disagree (SD)	37	14.18%
No answer	26	9.96%
Non completed	0	0.00%

(1al) Younger residents would like to stay in Hay Shire after completing their education.

Answer	Count	Percentage
Strongly Agree (SA)	11	4.21%
Agree (A)	65	24.90%
Disagree (D)	103	39.46%
Strongly Disagree (SD)	44	16.86%
No answer	38	14.56%
Non completed	0	0.00%

(1am) Younger residents are able to stay in Hay Shire after completing their education.

Answer	Count	Percentage
Strongly Agree (SA)	0	0.00%
Agree (A)	27	10.34%
Disagree (D)	135	51.72%
Strongly Disagree (SD)	75	28.74%
No answer	24	9.20%
Non completed	0	0.00%

(1an) Hay Shire is a good place for senior citizens to live.

Answer	Count	Percentage
Strongly Agree (SA)	48	18.39%
Agree (A)	157	60.15%
Disagree (D)	34	13.03%
Strongly Disagree (SD)	8	3.07%
No answer	14	5.36%
Non completed	0	0.00%

(1ao) Hay Shire provides adequate services for senior citizens.

Answer	Count	Percentage
Strongly Agree (SA)	38	14.56%
Agree (A)	119	45.59%
Disagree (D)	58	22.22%
Strongly Disagree (SD)	18	6.90%
No answer	28	10.73%
Non completed	0	0.00%

(1ap) There are sufficient welfare programs for people in need in the communities of the Shire.

Answer	Count	Percentage
Strongly Agree (SA)	13	4.98%
Agree (A)	122	46.74%
Disagree (D)	64	24.52%
Strongly Disagree (SD)	18	6.90%
No answer	44	16.86%
Non completed	0	0.00%

(1aq) There is an adequate mix of commercial and retail development in the Shire.

Answer	Count	Percentage
Strongly Agree (SA)	3	1.15%
Agree (A)	94	36.02%
Disagree (D)	109	41.76%
Strongly Disagree (SD)	34	13.03%
No answer	21	8.05%
Non completed	0	0.00%

(1ar) Hay Shire needs new community improvement programs.

Answer	Count	Percentage
Strongly Agree (SA)	58	22.22%
Agree (A)	136	52.11%
Disagree (D)	26	9.96%
Strongly Disagree (SD)	8	3.07%
No answer	33	12.64%
Non completed	0	0.00%

(1as) Hay Shire has good community leaders.

Answer	Count	Percentage
Strongly Agree (SA)	13	4.98%
Agree (A)	129	49.43%
Disagree (D)	65	24.90%
Strongly Disagree (SD)	26	9.96%
No answer	28	10.73%
Non completed	0	0.00%

(1at) There are many opportunities to belong to groups sharing similar interests in Hay Shire.

Answer	Count	Percentage
Strongly Agree (SA)	19	7.28%
Agree (A)	179	68.58%
Disagree (D)	32	12.26%
Strongly Disagree (SD)	2	0.77%
No answer	29	11.11%
Non completed	0	0.00%

(1au) Adequate resources are being used to develop new jobs in the community.

Answer	Count	Percentage
Strongly Agree (SA)	2	0.77%
Agree (A)	30	11.49%
Disagree (D)	132	50.57%
Strongly Disagree (SD)	54	20.69%
No answer	43	16.48%
Non completed	0	0.00%

(1av) Hay Shire Council actively promotes industrial development.

Answer	Count	Percentage
Strongly Agree (SA)	2	0.77%
Agree (A)	38	14.56%
Disagree (D)	107	41.00%
Strongly Disagree (SD)	75	28.74%
No answer	39	14.94%
Non completed	0	0.00%

(1aw) Residents of Hay Shire have a positive attitude towards attracting new business and industry.

Answer	Count	Percentage
Strongly Agree (SA)	18	6.90%
Agree (A)	97	37.16%
Disagree (D)	79	30.27%
Strongly Disagree (SD)	37	14.18%
No answer	30	11.49%
Non completed	0	0.00%

(1ax) Local businesses serve the needs of residents in Hay Shire.

Answer	Count	Percentage
Strongly Agree (SA)	10	3.83%
Agree (A)	154	59.00%
Disagree (D)	67	25.67%
Strongly Disagree (SD)	17	6.51%
No answer	13	4.98%
Non completed	0	0.00%

(1ay) Hay Shire Council should clearly define those parts of the villages where growth is permitted.

Answer	Count	Percentage
Strongly Agree (SA)	51	19.54%
Agree (A)	163	62.45%
Disagree (D)	12	4.60%
Strongly Disagree (SD)	3	1.15%
No answer	32	12.26%
Non completed	0	0.00%

(1az) Hay Shire Council should protect its agricultural lands from urban development.

Answer	Count	Percentage
Strongly Agree (SA)	37	14.18%
Agree (A)	114	43.68%
Disagree (D)	69	26.44%
Strongly Disagree (SD)	13	4.98%
No answer	28	10.73%
Non completed	0	0.00%

(1ba) Hay Shire Council may need to restrict farming practices when they are a nuisance to nearby community residents.

Answer	Count	Percentage
Strongly Agree (SA)	15	5.75%
Agree (A)	104	39.85%
Disagree (D)	87	33.33%
Strongly Disagree (SD)	33	12.64%
No answer	22	8.43%
Non completed	0	0.00%

(1bb) Hay Shire Council should separate agricultural land use from village developments.

Answer	Count	Percentage
Strongly Agree (SA)	21	8.05%
Agree (A)	145	55.56%
Disagree (D)	54	20.69%
Strongly Disagree (SD)	10	3.83%
No answer	31	11.88%
Non completed	0	0.00%

(1bc) There are good public parks in Hay Shire for children and families.

Answer	Count	Percentage
Strongly Agree (SA)	88	33.72%
Agree (A)	150	57.47%
Disagree (D)	10	3.83%
Strongly Disagree (SD)	5	1.92%
No answer	8	3.07%
Non completed	0	0.00%

(1bd) Tourism is significant to the growth of Hay Shire.

Answer	Count	Percentage
Strongly Agree (SA)	115	44.06%
Agree (A)	108	41.38%
Disagree (D)	22	8.43%
Strongly Disagree (SD)	6	2.30%
No answer	10	3.83%
Non completed	0	0.00%

2. How much new growth/development do you feel is desirable for the Hay Shire?

Answer	Count	Percentage
A great deal (a)	148	56.70%
A moderate amount (b)	79	30.27%
A little (c)	9	3.45%
None (d)	3	1.15%
No answer	3	1.15%
Non completed	19	7.28%

3. How often do you shop out of the Hay Shire?

Answer	Count	Percentage
Weekly (a)	24	9.20%
Fortnightly (b)	23	8.81%
Monthly (c)	65	24.90%
Quarterly (d)	90	34.48%
Yearly (e)	23	8.81%
Never (f)	14	5.36%
No answer	3	1.15%
Non completed	19	7.28%

4. What are the 3 best things about living in the Hay Shire?

Answer	Count	Percentage
Well serviced business, retail and industrial sector (a)	35	13.41%
Being a safe and crime free community (b)	136	52.11%
Friendly people and a sense of community (c)	202	77.39%
The river environment (d)	145	55.56%
Proximity to National Parks (e)	6	2.30%
Agricultural production (f)	33	12.64%
The rural environment (g)	73	27.97%
Community activities and events (h)	52	19.92%
Other	6	2.30%

5. What are the 3 worst things about living in the Hay Shire?

Answer	Count	Percentage
Distance to regional shopping centres and facilities (a)	85	32.57%
Lack of cultural diversity (b)	11	4.21%
Social isolation (c)	29	11.11%
Limited shopping (d)	56	21.46%
Lack of health services (e)	188	72.03%
Lack of recreational opportunities (f)	7	2.68%
Not many events and festivals (g)	13	4.98%
Lack of entertainment facilities (h)	27	10.34%
Lack of arts and cultural activities (i)	7	2.68%
Lack of restaurants (j)	11	4.21%
Limited educational opportunities (k)	62	23.75%
Limited employment opportunities (l)	166	63.60%
Other	26	9.96%

6 . What are the 3 priorities that should be resolved in future planning for the Hay Shire community?

Answer	Count	Percentage
More lifestyle blocks (4,000m ² /2ha) (a)	24	9.20%
More intensive rural agricultural blocks for irrigated farming (20ha – 50ha) (b)	12	4.60%
Affordable housing (c)	30	11.49%
More residential land in town (d)	9	3.45%
More commercial land (e)	13	4.98%
More industrial land (f)	39	14.94%
Improved streetscape and public places (g)	23	8.81%
More social and recreational opportunities (h)	16	6.15%
Improved educational opportunities (i)	58	22.22%

Improved employment opportunities (j)	133	50.96%
Improved health care services (k)	184	70.50%
Improved aged care facilities (l)	43	16.48%
Improved transport and tourist facilities (m)	64	24.52%
Improved public housing facilities (n)	9	3.45%
Improved range of professional services (eg solicitors, accountants, etc) (o)	8	3.07%
Community facilities. (p)	6	2.30%
Other	20	7.66%

6a. If you selected community facilities above please state what below.

Answer	5	1.92%

7 . Are you currently a home owner/landholder?

Answer	Count	Percentage
Yes (Y)	204	78.16%
No (N)	34	13.03%
No answer	4	1.53%
Non completed	19	7.28%

8. Where do you currently live?

Answer	Count	Percentage
Hay township (a)	200	76.63%
Maude village (b)	5	1.92%
Booligal village (c)	0	0.00%
Shire rural area (d)	30	11.49%
Other	2	0.77%
No answer	4	1.53%
Non completed	20	7.66%

9. In what situation do you currently live?

Answer	Count	Percentage
A single dwelling in a village or on a town block (a)	166	63.60%
In a flat/unit/townhouse (b)	17	6.51%
On a lifestyle block (c)	20	7.66%
On a commercial farm (d)	23	8.81%
Other	10	.83%
No answer	4	1.53%
Non completed	21	8.05%

10. Where would you like to live in 5 - 10 years time?

Answer	Count	Percentage
Hay township (a)	168	64.37%
Maude village (b)	4	1.53%
Booligal village (c)	0	0.00%
Shire rural area (d)	47	18.01%
Not in Hay Shire (e)	19	7.28%
No answer	4	1.53%
Non completed	19	7.28%

11 . In what situation would you like to live in 5 - 10 years time?

Answer	Count	Percentage
A single dwelling in a village or on a town block (a)	129 4	9.43%
In a flat/unit/townhouse (b)	15	5.75%
On a lifestyle block (c)	63	24.14%
On a commercial farm (d)	17	6.51%
Other	10	3.83%
No answer	4	1.53%
Non completed	23	8.81%

11a. If you answered "On a lifestyle block" for Question 11 above, what sort of lifestyle block would you prefer?

Answer	Count	Percentage
Close to the town of Hay (a)	16	6.13%
Close to the village of Booligal (b)	0	0.00%
Close to the village of Maude (c)	0	0.00%
Close to the river (d)	24	9.20%
Close to National Parks (e)	0	0.00%
On a dryland block (f)	0	0.00%
On an irrigated block (g)	3	1.15%
Close to a main sealed road (h)	3	1.15%
On a fully serviced block ie gas/town water/electricity/phone (i)	16	6.13%
On a partially serviced block ie no gas or town water access (j)	1	0.38%
Other	0	0.00%
No answer	179	68.58%
Non completed	19	7.28%

11b.

Answer	Count	Percentage
Lot size 2ha – 5ha (a)	24	9.20%
Lot size 5ha – 20ha (b)	22	8.43%
Lot size 20ha – 50ha (c)	8	3.07%
Lot size 50ha – 200ha (d)	5	1.92%
Lot size 200ha – 500ha (e)	0	0.00%
Other	1	0.38%
No answer	179	68.58%
Non completed	22	8.43%

12 . Are you over 18?

Answer	Count	Percentage
Yes (Y)	236	90.42%
No (N)	2	0.77%
No answer	4	1.53%
Non completed	19	7.28%

13. Are you Aboriginal or a Torres Strait Islander?

Answer	Count	Percentage
Yes (Y)	0	0.00%
No (N)	238	91.19%
No answer	4	1.53%
Non completed	19	7.28%

15. Are there any other comments you would like to make?

Answer	60	22.99%
No answer	201	77.01%
Non completed	0	0.00%

ANNEXURE 5

COMMUNITY SURVEY AND STATISTICAL SUMMARY RESULTS

ANNEXURE 6

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AGENCY CONSULTATION ISSUES			
AGENCY	DATE	ISSUE	ADDRESSED
Department of Planning	14/10/2009	Need to consider draft guideline for preparing landuse strategies once it is available	Not Available
		25-30 year planning horizon for residential, rural lifestyle settlement and commercial retail, industrial and tourism development supply Zone 10-15 years supply Land supply and demand analysis is required for all landuses LUS to provide a staging plan for land release	Section 14;
		Noise/amenity to consider transport routes and corridors. Need to consider EPA Environmental Criteria for Road Traffic Noise Guidelines and NSW Industrial Noise Policy	Sections 9 & 13
		Spatial representation of existing landuse required in the LUS to establish the context for planning	Section 7
		LUS identify and locate important infrastructure which should be afforded protection via buffers eg aerodrome, saleyards, railway station, sensitive receivers	Section 7
		LUS determine infrastructure and servicing program (utilities and social facilities) Consultation with service providers required Funding plan for service upgrades is required in LUS Capability of existing services and sustainability of future supplies for eg effluent disposal systems and riparian groundwater services and consider conjunctive water management and sustainable yield	Sections 9 & 10
		Consider farm dams policy and implications to minimum lot sizes	Section 14
		Consider existing and future water needs, sustainability of the water source, opportunities for centralised systems in LUS Consider NSW Groundwater Quality Protection Policy in LUS in respect to potential contamination and extraction	Section 6
		FPL to be determined in LUS (Flood plan Development Manual) PMF to be considered in LUS and use in siting and developing emergency response facilities and critical infrastructure	Section 10
		Mapping of: * Frequency of inundation * Hydraulic function (floodways) * Flood storage areas * Flood fringe areas * Flood hazard is required on GIS in LUS	Outside Project Scope
		LUS to confirm and provide evidence that existing levee is capable of protecting new release areas	Sections 10 & 14; Levee would need to be extended
		Environmental constraints mapping should be based on attributes and standards with context explained and justified	Sections 10 & 14
		LUS to address intensification of landuse and development along riparian zones, impact on ecosystem and ecological values and impacts of increasing riparian access rights	Sections 6, 10,11,13 & 14
		LUS should explain areas which are unsuitable for their existing landuse	Sections 6 & 14
		Irrigation land to be analysed in terms of existing location zone and future use in RLUS	Sections 8,10,12 & 14
		RLUS to review 2ha minimum lot size of Hay PIA	Sections 8 & 14
		RLUS recommend options for identifying land suitable for primary production and rural living. Examination of whether establishment of agricultural use is required prior to future DA approval for dwellings	Sections 8 & 14
		RLUS contain a holding size analysis x ownership x % of total area	Section 8
		RLUS to identify intensive agriculture and rural lifestyle areas and recommendations for future management	Sections 8 & 14
		RLUS to identify areas of fragmentation as options for future rural lifestyle areas	Sections 8,12 & 14

AGENCY CONSULTATION ISSUES			
AGENCY	DATE	ISSUE	ADDRESSED
		RLUS to include management criteria for interface conflict	Sections 13 & 14
		ULS to consider Council desirability of retaining a village zone and DCP - while permitting flexibility in Maude and Booligal villages. Notwithstanding industrial and large lot residential and should be directed to their own zones	Sections 13 & 14
		ULS to consider conflict between saleyards and adjoining residential development. A buffer has been established around the saleyards which should be retained or alternatively appropriate landuse indicated	Sections 10,13 & 14
		LUS should protect the defined town centre as commercial land and major commercial use restricted to this core and not adjacent areas	Sections 12,13 & 14
		LUS should consider SEPP 55 and contaminated land	Sections 5,10,13 & 14
		LUS should consider management of riparian zones within an urban and rural context and objectives of the State Rivers and Estuaries Policy, NSW Biodiversity Strategy and Native Vegetation Act 1997	Sections 5, 6, 10, 11, 13 & 14
		LUS to consider a riparian access buffer to ensure no additional basic riparian water rights are created if development in proximity to riparian zones are recommended	Sections 13 & 14
		LUS consider ageing population and future needs as a significant issue * New Seniors Living Development around the hospital * Identify other potentially suitable land, mobility and access, safety and security	Sections 3,4,13 & 14
		Buffers need to be addressed for each natural resource with a focus on groundwater surface water, remnant vegetation, riparian corridors, noise and odour and considered in LUS	Sections 6,10,13 & 14
		Another S62 consultation round is required once draft SI LEP is prepared	Once draft SI LEP is prepared
		PFM would be useful	3rd December 2009
Heritage Council of NSW	1/9/2009	LUS to include an assessment of heritage assets throughout Hay LGA - include natural areas and places of aboriginal, historic or archeological significance	Section 6
		LUS to check State Heritage Inventory for protected items as well as consult lists of NSW National Parks and Wildlife Service, National Trust and Australian Heritage Commission	Section 6
		Non-Aboriginal heritage items should be identified by field survey with a statement of significance and an assessment of impact on heritage significance, plus recommended protection policies	Survey outside Project scope
		Survey of sites of significance to be undertaken in consultation with the aboriginal community as part of LUS	Survey outside Project scope
		Survey of significance existing or potential cultural landscape, conservation areas, views and vistas is required covering all major themes and landuse and management and zoning recommendations	Sections 6, 13 & 14; Survey outside Project scope
		Potential rezoning sites should be assessed for the potential existence of heritage assets	Section 14 (Survey outside Project scope)
		Previous heritage studies undertaken should be referred to in the Draft LEP	N/A
Murrumbidgee Irrigation	16/9/2009	Murrumbidgee Irrigation is not included in the definition of public authority. This means that all work undertaken by Irrigation Corporations may require development consent from the local council which is not acceptable to Murrumbidgee Irrigation. An appropriate resolution is required in the drafting of the draft SI LEP.	To be discussed with DoP and considered in draft SI LEP

AGENCY CONSULTATION ISSUES			
AGENCY	DATE	ISSUE	ADDRESSED
Department of State and Regional Development	20/8/2009	At this stage the department has no comments to make, but would like to be referred the Draft LEP once the plan is prepared and maps are available for comment at that stage.	Another consultation round upon exhibition of draft SI LEP
John Williams PM, Member for Murray Darling	24/8/2009	Not able to attend the Workshop	N/A
NSW Rural Fire Service	25/8/2009	The landuse study is to consider the areas that are mapped as bushfire prone land on Hay Bush Fire Land Map. The LEP may need to consider local provisions including the consideration of bush fire provision under direction 19 Planning for Bush Fire Protection. It is recommended that the landuse study consider the recommendation for a local policy or guideline in respect to bush fire protection measures that takes strategic approach to the planning of residential areas. LUS Landuse and Recommendations are to consider the hazard and risk prevented by bush fire and the exclusion of development in certain areas as an option and environment and access constraints cannot be overcome.	Sections 5, 6, 10, 13 & 14. Management provisions to be considered in future DCP, subject to scope.
Department of Industry and Investment (Formally NSW DPI)	26/8/2009	The LUS must spatially identify cores resources within the LEP and consider a clear vision for the protection of primary industries and resources. The LEP should plan and secure access to primary industry resources, allow the development of land consistent with land capability, protect productive capacity, improve water quality, protect and enhance the natural aquatic environment and the ability of ecological processes to function and reduce landuse conflict.	Sections 6, 8, 10, 12, 13 & 14
		The LUS should identify aquatic areas that are required to be protected as aquatic habitats and threatened aquatic species, mineral resources, agricultural resources and forestry resources. The LUS to consider the availability of extraction resources to meet future needs. This should include the small quarries and burrow pits that extract sand for construction purposes with the most important resources of sand developed south of Hay airport in alluvial deposits and large sand sheets available in origin. As well parts of the western side of the Hay LGA have been explored for mineral sands by Alluca Resources Limited. The LUS to consider that the location of mineral deposit cannot always be predicted and therefore while known resources should be identified and protected, the LEP should ensure that future access to land for mineral exploration is able to be maintained.	Sections 6, 8, 10, 12, 13 & 14
		The LUS to ensure that operating mines and quarries are identified and protected for sterilisation or hinderance from incompatible adjacent development, known resources and areas as identified of high mineral potential should not be sterilised and access to land for mineral exploration and possible development should be maintained over much of the planning area as possible. The LUS should consider the minerals and energy divisional CD "NSW Coastal Quaternary Geology Data Package. SEPP Mining Petroleum Production and Extractive Industry 2007 should be considered in the LUS process. The LUS to consider the direct and indirect impacts of development associated with aquatic habitats. Recommend zoning expansive water bodies for example bays, lakes estuaries and identifying all significant water bodies including rivers and creeks and sensitive waterways with an overlay over the top of the underlying zone. The waterway overlay is to highlight the fact that there are sensitive areas and that high performance standards in relation to water quality and aquatic habitats might be required for development.	Sections 6, 10,12,13 & 14
		The LUS to consider key fish habitats. Waterway zones should determine the types of development to be permitted or not permitted over waterways.	Section 6
		Removal or relocation of LWD should be designated development with consent in zones W1 and W2 because it is a key threatening process.	To be considered in draft SI LEP
		Sensitive water overlay should also be applied to areas that have been zoned waterways, and inclusion of the generic waterway clause in the LEP. The LEP should include two advisory notes to remind Council staff developers and advisers that work within streams and water bodies may require a permit or concurrence from the NSW DPI even though the works may or may not require development consent from the Council. These notes should be included on the map that shows sensitive waterway overlay as well as after the relevant clause in the written document. It is recommended that key fish habitat and adjacent riparian buffers or setbacks be identified as environmental sensitive areas.	Section 10 and to be considered in draft SI LEP

AGENCY CONSULTATION ISSUES			
AGENCY	DATE	ISSUE	ADDRESSED
		The LEP should ensure that lateral and linear connectivity within and between aquatic habitats are maintained and obtain aquatic biodiversity and ecosystem functions. Waterway structures should require development consent.	To be considered in draft SI LEP
		Clause 32 of the LEP template, preservation of trees or vegetation should be included on the LEP and the Development Control Plan.	To be considered in draft SI LEP
		Aquatic vegetation should be protected. The LEP should avoid establishing zones which promote subdivisions over waterways or avoid the creation of additional riparian rights. The RLUS should examine the two core issues for the sustainable development of agriculture including the protection of the land resource base and the minimisation of conflict. The Study should consider the value and total area of industry to Hay Shire, employment by sector, a snap shot of the major farming enterprises in the area and the distribution and size of holdings across the shire. Primary industry and resources need to be identified and protected. LEP should include primary protection and forestry zones where primary industry is best suited. Priority should be given to maintaining allotments in sizes that can support profitable and efficient enterprises typical of sustainable for each locality. Extensive agriculture is required to be catered for in future development. Large buffer zones are generally required.	Sections 6,8,10,13,14
		Fragmentation of rural land within primary industry zones should only occur where justified. Dwelling should only be approved on a day to day basis following substantial completion of agriculture or forestry infrastructure or development. Subdivision adjacent to waterways should be avoided so that no increase in basic riparian water rights and the level of extraction of surface water from natural watercourses. Separate provision need to relate to subdivision of agricultural land and dwellings to break the nexus between rural subdivision and residential development.	Sections 8,10,13,14
		Minor boundary adjustments should be allowed and avoidance of land use conflict. Concessional lots should be prohibited. The LEP should consider the need for ancillary dwellings and workers dwellings and their location. Temporary residents and secondary dwellings should also be able to be considered. Workers dwellings are acceptable only for a viable enterprise and where land use conflict is mitigated. Proposals should not be routinely referred to government agencies such as DIL. The LUS should consider significant SEPPs such as Rural Lands, Policy for Sustainable Agriculture and the Policy for Protection of Agricultural Land. Different minimum lots sizes for enterprises may need different zones. Minimum lot size should be justified and sustainable. The RLUS require an analysis of part and current production and profitability performance of dominant industries, existing holding size and lot patterns, typical productive potential of the shire, the dominant and most suitable and foreseeable industries and the minimal area required for sustainable efficient and profitable production.	Sections 8,13,14
		The land for forestry is land already managed by forestry, land with existing forest, land that has the potential to forestry if trees are established. Interface Conflict is potentially created by the location of rural residential subdivisions adjoining or near investing potential forest areas. Chemical use might restrict forestry operations impacted by adjacent developments, and impact any noise and visual amenities. Forest generally perceived as having substantial bush fire risk and a risk to public safety and generate additional demand for upgrading for infrastructure such as roads. The strategy and LEP should recognise and support existing sustainably managed forestry, facilitate opportunities for additional forestry and recognise the contribution forestry can make to biodiversity conservation outcomes. The LEP should protect existing forest and provide potential future forest woodland areas. All lands managed by the Forestry should be zoned RU3. Development close to zone RU3 should require a suitable buffer	Section 10 & 13
State Emergency Services	1/9/2009	The Land Use Study should consider flooding issues in accordance with the NSW Governments Flood Prone Land Policy as set out in the Flood Plain Development Manual 2005.	Section 10
		Zoning should not enable development that will result in an intolerable increase in risk to life, health or property of people living on the flood plain.	Section 10 & 12
		Risk assessment should consider the full range of flooding up to the probable maximum flood and not just concentrate on the 1% AEP flood. Risk assessment to consider flood warning and evacuation and emergency access and evacuation routes.	Sections 10 & 12
Land & Property Management Authority	30/9/2009	The LUS should consider potential zoning changes or land use changes impacting crown land and ensure previous consultation with the authority.	Sections 6 & 12
		Permissible uses should be in accordance with policy and plans and the principles of crown land management and outline in Section 11 of the Crown Lands Act 1989. The Land Use Study to consider the perpetual leases and the need for possible restrictions and preventing further subdivision as part of the land conversion process. Land Use Study should identify reserves and crown lands and ensure that they are appropriately zoned in accordance with Annexure B1 and B2 enclosed	Sections 6,8,10,12
		The Land Use Study needs to consider multiple purpose reservations ensuring that zoning future zone accounts for the highest use for that reservation or dedication.	Sections 6,8,10,12

AGENCY CONSULTATION ISSUES			
AGENCY	DATE	ISSUE	ADDRESSED
		Crown Land reserves the future public requirements to be zoned to allow the highest use available.	Sections 6,8,10,12
		Land Reserve for access should be zoned SP2 Infrastructure.	Sections 6,8,10,12
		Proposed land release areas or new zoning to allow subdivision where formed or unformed crown public roads exist will require the Council to accept transfer and control of the roads.	Sections 6,7,9,13,14
		Added protection zones and perimeter access roads required as bush fire protection measure should be site specific and located within the site and not on adjoining crown land.	Sections 6,7,9,13,14
		Essential public infrastructure required to support new subdivision areas should not be sited on crown public reserves unless it is in accordance with the declared public purpose	Sections 6,7,9,13,14
		Proposed rezonings should not utilise crown land as buffers, for example bush fire hazard reduction zones, visual impact relief or open space.	Sections 6,7,9,13,14
		Crown land with potential urban use should be considered commensurate as private land and not necessarily be set aside for public purposes.	Sections 6,7,9,13,14
		Crown Lands to be considered in the plan to reflect the highest and best use where urban release areas are proposed adjacent to crown land the Department is to be consulted and the LUS consider the inclusion of the Crown Land within the rezoning proposals.	Sections 6,7,9,13,14
DECCW	27/1/2010	Need to maintain existing heritage and environmental conservation measures	Sections 6 & 15
		SI LEP to contain a biodiversity overlay and draft clause	Section 15
		DECCW wetlands layer includes Lowbidgee Floodplain	Section 6
		Aboriginal cultural heritage significant and retention of measures to protect sites recommended. Pardoe and Martin (2001) valuable reference	Sections 6 & 15
		Rural residential development within 2km to reticulated sewer to be connected to schemes.	Sections 9 & 14
		Areas connected to reticulated water should be connected to reticulated sewerage scheme	Sections 9 & 14
		On site sewage management scheme selected should be based on land capability/suitability and sensitivity of receiving waters.	Sections 9 & 14
		Suitable separation distances(buffers) between industry and and sensitive receptors/land uses to be considered at the strategic planning stage.	Sections 9, 10, 13 14, 15
		Rural residential development to be located away from offensive industries due to potential noise, dust and odour impacts and to have adequate facilities for disposal of household wastes	Section 14
		Consider opportunities to promote waterway health	Section 14
		Clause 28 of Hay LEP 1998 provides a basic development buffer to large watercourses and a similar provision to be considered in the draft SI LEP (200m buffer)	Future SI draft LEP
		Proposed development areas to consider potentially contaminated land and suitability for proposed landuse	Sections 10 & 14
		Proposed development areas to be directed away from environmentally sensitive areas.	Sections 6, 10, 13, 14, 15
		DECCW standard flooding clause to be conatined within future SI LEP and flood prone land to be protected from development.	GIS mapping data to be provided by HSC of floodways, flood storage areas and flood fringe areas. FPLs to also be provided for future draft SI LEP. Currently this is outside project scope.
		Groundwater areas to be considered and appropriately managed through land	Sections 6, 14, 15
		DECCW datasets to be referenced and considered	Sections 6, 10, 14, 15

ISSUES IDENTIFIED THROUGH COMMUNITY ENGAGEMENT

Issue	Where Addressed in Report
Need lifestyle blocks close to town - Not causing rural fragmentation.	Ss 3.4; 11.2; 11.4; 11.8.3; 13.1.9 14.4; 14.4.1; 14.5; 14.5.1; 14.5.2; 14.5.3
There is a high demand for lifestyle blocks along the river, but the majority of land along the river in the shire is tightly held by a few corporates. Opportunities for development and growth, such as Swan Hill and Mildura should be explored.	See Above
Need to protect and manage primary production.	Ss 5.3.2; 5.3.3; 5.4; 8.2; 8.9.1; 10.1; 11.8.3; 13.0; 13.1; 13.1.1; 13.1.4; 13.1.5; 13.2.7; 14.4; 14.4.1; 14.5.1
Need passive interpretative signs of National Park resources display in town - river location?	Ss 4.9; 7.1.1.1; 13.1.11; 13.2.2; 13.2.6; 13.2.10; 13.2.13.
Transport loads to double/triple by 2020 - 4000 adt Hay mainstreet impacted as a major transport route.	Ss 7.1.1.2; 7.1.3.2; 13.1.8; 13.2.8;
There is plenty of irrigation development in the shire but the potential is limited by water availability.	Ss 4.9; 6.6.1; 6.6.2; 8.2; 8.2; 8.3; 8.4.2; 8.5; 8.6; 8.9; 8.9.1; 10.1; 10.5; 12.1.1; 14.1.4; 14.4.1.
Saleyards on western side of town create some local issues with dust. Local agents have recently installed an improved water system to try and keep the dust down. Cost of replacing sheepyards would be in the order of \$6M.	Ss 9.8; 10.8; 13.2.3
They have recently, with support from Waters for Rivers, piped a stock and domestic system throughout the PID. This system is currently delivering water at above specified capacity and has the potential to increase its capacity if the area grows.	Ss 14.5.3; 6.6.2; 9.2.3; 14.5.3
There are a range of recreational and aescetic opportunities associated with the river that need to be promoted and developed.	Ss 3.2; 3.3.1; 6.14.2; 10.5; 11.8.2; 13.1.2; 13.1.6; 13.1.7; 13.1.9; 13.2.9; 14.5.2.
Major environmental issues identified were vegetation decline and loss of biodiversity, overgrazing and declining water quality.	Ss 6.6.1; 6.6.3; 6.7; 6.8; 6.9.1; 6.10; 6.12; 10.5; 11.8.3; 12.1.1; 12.5; 13.1.4; 13.1.9; 13.2.6; 14.5; 14.5.2; 14.5.3; 14.5.4; 14.5.5.
The important environmental values of Hay are the river, the saltbush plains that are iconic to the area and an issue with environmental weeds.	Ss 5.4; 6.6.1; 6.9.1; 6.12; 6.14.1; 6.14.2; 10.5; 11.1; 11.2; 11.6; 11.8.2; 12.5; 13; 14.5.5
The environmental values that should be protected are the riverine forests, saltbush shrublands, the natural grasslands, the wetlands which include aboriginal sites.	See above; and s 10.6
Possible environmental constraints include feedlots, intensive agriculture and future lots sizes and water access.	Ss 5.2.2; 5.4; 6.6.3; 8.8; 10; 13.1.9; 14.4.1; 14.5.1; 14.5.2.
Key environmental issues that should be addressed when planning for Hay's future include maintaining water quality, noise pollution and air quality, traffic through the centre of town, maintaining enough water for the future.	Ss 6.6.1; 6.6.2; 6.6.3; 6.14.2; 7.1.3.2; 10.5; 12.5; 13.1.4; 13.2.3; 13.2.14.
Council should promote development of its river assets. For example Sandy Point Reserve should be developed for recreation and tourist facilities eg. Restaurant and tourist business.	Ss 13.1.2; 13.1.6; 13.1.11; 13.2.9; 13.2.11; 13.2.14.
Should be no "free campsites" on the river as it encourages vandalism and competes with caravan parks.	Ss 13.1.2; 13.2.6.
Pond in Hay Park is a feature and should be improved as a visitor attraction.	s 13.2.9
Heavy traffic through main street is not avoidable.	s 13.2.8
Leonard Street provides closest opportunity for town centre link to the river.	s13.2.9
Flood prone land incorrect as flooding occurs east of Hay, north and back around. Need to check mapping.	s10.2

ISSUES IDENTIFIED THROUGH COMMUNITY ENGAGEMENT

Issue	Where Addressed in Report
Sandy Creek too busy for recreation - need other areas (reserved) with boat ramps for lifestyle lots close to town.	s 13.2.9
Will the separation of water entitlements from the land threaten the agricultural viability of land and not the land size?	s 8.4.2
Have the flood prone lands/floodways been mapped accurately? (East and West Hay).	s10.2
Houses and commercial developments not be in the floodway ie Is 1 in 20 year level adequate protection?	s10.2
Flood behaviour locally give plenty of warning for evacuation - would a 1 in 100 year level be adequate?	s10.2
Placing houses on riparian land will impact on zones by removal of bushfire hazards.	Ss 10.3 and 14.5
The rural lands 1(a) on the western side of the Shire to the boundary with Balranald Shire/Wakool Shire have been zoned as "Environmental Sensitive Lands" when in fact it may well be "flood liable lands". The impact is that the rural use is restrictive	Ss 10.2 and 10.5
The land to the west of the urban area has several saleyards nearby. It is unusual for buffer zones to be given to avoid odour, dust and noise complaints from nearby residents.	Ss 7.1.3.2; 10.8; 13.1.5; 13.2.3.
436 Moppett Street - 3 x houses zoned recreation. It is Councils intention to acquire otherwise rezone to residential.	Ss 7.1 and S 15
Riparian water access rights prohibit riparian subdivision.	Ss 14.5.2 and 14.5.3
Need to justify location and size of river lifestyle lots.	s 14.5
Need lifestyle lots close to town, along the river and fully serviced.	s 14.5
Lack of water impacts tourism and recreational fishing and bird-watching opportunities.	Ss 6.6.2;12.2; 13.1.4; 13.2.5; 13.2.6; 14.5.2; 14.5.3;
River flow below Condobolin to cease from 31 October, 2009, presenting implication to communities/rural land holders relying on stock and domestic supplies.	Ss 6.6.2 and 11.5.2.
Socio-economic impacts of decision involving river flow - lowland communities disadvantaged.	s 6.6.2.; 7.3; 11.5.2.
Water trading has social and economic implications to village communities.	Ss 8.2; 8.9; 8.4.2, 12.1.1; 13.2.7
Sale of permanent licences taking water out of the area including those of adjoining areas affecting the shire.	See above
Booligal could provide opportunities for those wanting a rural escape.	Ss 12.2; 13.1.2; 13.1.4; 13.2.5; 14.3.
River reserve campsite needed over 2ha to support tourism.	Ss 13.1.2, 13.2.6.
Loss of rateable income, local employment and impacts on Booligal created by conversion of local farms eg Booligal Station into National Parks.	Ss 11.5.2
Water licences are being sold permanently out of the area.	s 8.2
Identified ecosystem health of Murrumbidgee River as very poor with Hydrology (Poor - mod), Fish (extremely poor), Macroinvertebrates (Poor). The audit will be expanded to include additional themes of vegetation and morphology.	Ss 5.2.2; 6.6.1; 6.2 ;10.5
The streetscapes of Hay are valuable elements and themes that should be promoted in urban design.	Ss 7.1.1.2; 13.1; 13.1.7; 13.1.11; 13.2.2; 13.2.3; 13.2.9; 13.2.10; 13.2.14.
Tourist tracks need to be better defined.	Ss 4.9; 9.1.5; 11.8.3; 14.1.4.
Tourism is likely to be a major contributor to local growth.	Ss 12.1; 13.
Need availability of Industrial land, not just near the railways.	Ss 7.1.3; 14.1.5.

ISSUES IDENTIFIED THROUGH COMMUNITY ENGAGEMENT	
Issue	Where Addressed in Report
Need large residential blocks.	Ss 5.3.3; 5.4; 13.1; 13.1.2; 13.2.1.
Flooding, bushfire and other hazards should be appropriately managed and prevent land use conflict.	Ss 10; 13.1.2; 14.5.5
Heritage is important and should be promoted. Hay has important cultural heritage sites.	Ss 6.14; 12.5; 13.1
Population decline trends won't prevent DOP approving land release opportunities.	s 14
Need adequate supply of jobs in right location	Ss 12.1.1; 13.1.10; 14.1.5.
Need wide housing choice.	Ss 5.4; 11.8.3; 13.1; 13.1.2.
Need transport hub.	s 13.1.2
Need aged care facilities.	Ss 4.3; 13.1.2; 13.2.1; 14.1.4.1
Although the Hay business and retail centre outlets service the community well. Most people travel to larger regional centres on a regular basis for higher order goods or for other reasons such as to access health services.	Ss 12.1.1; 4.3.2.
There are a large number of small holdings in the PID.	Ss 6.6.2; 9.2.3; 14.5.3.
Livestock numbers in the shire are down to only 30% of what they were 10 years ago.	Ss 8.1; 8.4.4
Town is suffering because of the drought. There are many rural landholders who wish to get out but are finding it difficult to sell. The town is resilient and will bounce back.	Ss 8; 12.1.1; 13.2.7
Tourism is undervalued and provides a significant contribution to the town.	Ss 12; 13
There is a high demand for lifestyle river blocks, but few available, and a good demand for hobby farm lots.	S 14.5
There is a need for industrial land. A good site would be adjacent to the airport, which Council already owns and has town water and electricity, (not sewerage).	S 14.1.5
Drought has been tough, but farm businesses have been sustaining themselves. Larger impact has been on the town with the lack of demand for contractors, impact on retail stores, etc. In some respects pressures on farmers have been eased by lower interest	Ss 8; 12.1.1
The new LEP has to be flexible. There were mistakes with zonings within the last LEP. Tourism needs to be promoted in the planning instrument.	Ss 7.1.1.2; 13
There has been an increase in passive recreation including, camping and caravan day trips. Hay is considered a viable stopping place because it offers cheaper accommodation.	Ss 4.5; 9.1.1; 13.1; 13.1.2; 13.2.9;
Hay main street draws visitors. Visitors enjoy walking through the main street and reading from the plaques situated on the buildings. This sort of thing should be promoted. There is a need to maintain street widths in future town expansion	Ss 3.3.1; 4.5; 13.2.1; 13.2.6;
Tourism needs to be actively promoted in Hay and there is a need for more advertising of the range of passive recreational opportunities including related events such as caravan shows. Tourism sites are located throughout the Hay Shire Council area.	Ss 7.1.1.2; 13.2.6; 13.2.9; 13.2.10;
The Hay main street needs to be carefully designed in the future to maintain the special elements and attributes that make Hay special. There is a danger in adopting themes that are used and represented along the total main street as done in other towns.	Ss 7.1.1.2; 13.1; 13.1.7; 13.1.11; 13.2.2; 13.2.3; 13.2.9; 13.2.10; 13.2.14.
There is a need to promote gateways into the town to route visitors into the town centre and to the main facilities. There is also a need to design gateways appropriately so they are attractive and enticing. There is a typical visitor/tourist to Hay	See above few items

ISSUES IDENTIFIED THROUGH COMMUNITY ENGAGEMENT

Issue	Where Addressed in Report
The Hay community are a helpful community. Farm stays, agribusiness tourism is a tourism opportunity that could be better promoted.	Ss 11.1; 11.6; 11.8.2; 13.
National Parks will be open and accessible in 12 months and they will be an attractive option for day trippers which could be included within the tourism loop.	S 13.
Many visitors come to Hay because they are researching their family history. More tourist car spaces might be required into the future.	S 13.2.6.
Need a billboard over the bridge to draw people into the Hay town centre. That billboard should be very attractive and include an attractive picture to generate interest and enthusiasm.	Ss 4.9; 13.2.6.
The current characteristics of Hay are special and what makes this place special should not be compromised with future development	Ss 11 & 13.
There is more opportunity to promote community events. The range of community events include the Mini Festival, the Booligal Sheep Races, the Spring Market at Bishops Lodge, fishing competitions, Shear Outback, June weekend bowls tournament and tennis to	Ss 3.3.3; 7.3; 13.2.11
People are leaving their homes on stations which are then left empty due to the impact of the drought.	Ss 3.4; 4.6; 14.5.2; 14.5.3
Beautiful homesteads on farms have been left empty as residents, workers and businesses leave the town.	See above
There is a need to create more employment opportunities for young people in Hay.	Ss 4.2; 11.8.3; 12.1.1;
There needs to be an opportunity to allow more than one building or dwelling on a farm, there also needs to be policies to promote younger families to stay on the family farm.	Ss 4.1.4; 4.6; 8; 14.5.3
The unattractiveness of the area to the south of the river, as you come into town. It is believed that this doesn't draw tourists in because of its appearance.	Ss 13.1.7; 13.1.11; 13.2.6.
Lack of things to do after youths complete school - no jobs, no prospects.	Ss 11; 12.2; 12.5; 13.1.11; 13.2.9.
Community and Council need to be proactive in promoting employment opportunities for aboriginal youth.	Ss 11; 12; 13.
Hay Plains Day Care Centre and Hay Pre School (2 Pre schools) provide a good service but there is a need for after school care and occasional care.	Ss 7.1.4.1; 11; 13.1.6; 13.1.11; 13.2.12; 13.2.13.
Decline in high school enrolments (trend) currently at 240 students and would cater to a maximum of 400 students.	Ss 3.4; 13.2.12.
Rural communities need flexibility and to promote a new model to provide education opportunities requiring co-operation between DET, TAFE and Council.	Ss 13.1.11; 13.2.12;
Difficulty maintaining teachers within the school and Primary school. There is a decline in numbers as approximately 46 families, in the last 12 months, have left the district due to the drought.	See above few items
It is hard to obtain and retain doctors and staff within Hay and for the hospital.	Ss 4.3; 11.8.3; 12.1.1
Staff retainment within the local hospital is an issue.	See above
There is a possible need for a fitness centre.	Ss 11; 12.2
Lions park is utilised by visitors and community as it is situated on the Highway and is an attractive space with water, BBQ facilities, it is highly visible to tourists.	S 13.2.9
Good idea to provide for trailer and caravan parking in car parks.	S 13.2.6.
Promote antique events.	Ss 13.2.9; 13.2.11

ISSUES IDENTIFIED THROUGH COMMUNITY ENGAGEMENT

Issue	Where Addressed in Report
Need a bike trail around linking each of the 5 museums and "Bushies Bend" (Long Paddock, Shear Outback, Bishops Lodge to sandy Point to Bushies Bend to Main Street).	Ss 11.8.3; 13.1.4; 13.1.11; 13.2.13
Mountain bike riding is fastest growing sport and should be promoted in Hay. Particularly in view of the number of Winnebago's with bikes on the back.	See above few items
Tourist circuit is needed to be formalised to Hay attractions.	S 13.2.6.
Isolation means Hay business community have a "captive audience".	Ss 13; 14.
South Hay is considered too far by some residents.	Ss 11; 12; 13.
24 hour fuel stop - good for community and visitors.	Ss 7.1; 7.1.2.1; 13.1.11
Large itinerant community.	S 7.1.1.2
Cloughton House, previous hostel closed down which impacts on rural students access to education.	S 13.2.12
Need a kiosk in main street.	Ss 13.2.2; 13.2.11; 13.2.13;
Suggestion that a proper kiosk for street stalls be implemented into plan and it would be a good idea and promote tourism and economic growth.	See above
Drought significantly impacted the town and current conditions do not reflect Hay's productivity and resource potential.	Ss 8; 12.1.1; 13.2.7
Hay is easy to get around.	Ss 13.2.8; 13.2.13
Not a culturally diverse town which impacts on the exchange opportunities offered and services to attract visitors and population.	Ss 4; 13.1.6; 13.2.9; 13.2.10
Shopping facilities are fine.	Ss 7.1.2.1; 12.1.1
Lack of secondary interest other than agriculture within the town, which allows the town to be heavily affected by drought.	Ss 11.8.3; 12; 13.1.1; 13.1.2;13.2.3;
The arts and cultural significance of the town aren't really well presented within the town, or advertised.	S 13.2.10; 13.2.11;
Upgrade/establishment of a primitive camping area with tables, chairs and a fireplace.	Ss 13.2.6; 13.2.9;
Areas that council could improve in the area of economic development is funding events in both the Hay town and the villages. They could do this by providing a bus from Hay to community events and local villages (ie Booligal sheep races).	Ss 13.2.6; 13.2.8; 13.2.11
Tourist brochures need to promote recreational opportunities and park locations.	Ss 13.1.2; 13.2.6; 13.2.9
Greater marketing for 'after-hours' visitor activities is needed i.e. bowls, golf, tennis, kids activities;	See above
Need better ID marketing for Hay.	See above
All town entrances need iconic "welcome" signs and all old and dated related "tidy town" signage removed;	Ss 4.9; 13.1.11; 13.2.2; 13.2.10; 13.2.13;
Tourist visitation seems to be up on previous years; heritage walk signage is good;	See above few items
Limited new jobs available (current appreciation that jobs are for life so skill sets are defined);	Ss 11.8.3; 12.5;14.1.5;
Corner Mid-Western Highway and Cobb Highway is an accident blackspot.	Ss 7.1.3.2; 13.1.8; 13.2.3; 13.2.8
Labour supply for transport industry is poor, particularly trade qualified diesel mechanics;Some onsite servicing of trucks but mostly specialist work done in Deniliquin or Griffith;	Ss 7.1.3.2; 11.8.3; 13
Echuca and Griffith are the closest rail heads but not used as a freight transport node.	Ss 9.1.6; 12.1.1; 14.1.1; 14.1.5;
Heavy transport only occurs via road.	See above
Need a dedicated industrial area with zoned land ready and available for development.	Ss 13; 14.

ISSUES IDENTIFIED THROUGH COMMUNITY ENGAGEMENT

Issue	Where Addressed in Report
There is a need for local trade business to have dedicated sheds and storage areas.	See above
Land supply seems to lead demand in attracting new industry;	Ss 7.1.1.2.; 14.1.5
Art group of locals (20 members with tutors) need a gallery in the main street and for it to be promoted for tourism.	Ss 3.3.3; 7.3; 13.2.10; 13.2.11;
Shear outback could be better promoted. For example more concerts/multi-use opportunities.	Ss 13.1.2; 13.1.4; 13.2.6
Entranceways into Hay are needed - attractive stimulating visitors entrance and showcasing Hay.	Ss 7.1.1.2; 13.1; 13.1.7; 13.1.11; 13.2.2; 13.2.3; 13.2.9; 13.2.10; 13.2.14.
Niche industry or education/training opportunities for children leaving school with some employment prospects - to retain youth.	S 13
Industry needed at South Hay Airport - not railway land in Murray Street as they won't sell the land.	Ss 11; 12; 13; 14
Hay has rural workers all year round and require affordable housing and services.	Ss 7.1.1.2; 13.1.2; 13.2.1; 13.2.5;
Rural Large Holdings - 1500ha dwelling entitlement is restrictive.	Ss 8; 14
Why such a high dwelling entitlement (1500ha) when it is being used for horticulture use?	See above
Is it necessary to set a large holding size for a dwelling entitlement?	See above
Let market forces determine the viability of holding sizes?	See above
With no water allocations/federal grants to remove farmers off farms/climate change impacts - What can rural land be used for?	See above
Will dwelling entitlements actually threaten the viability of agriculture? ie increasing land value by breaking up holdings and increase rateable capacity affect the nearby genuine farmer?	See above
What was the justification when all of the existing parcels that had dwelling on them well below that size (ie 3.5ha to 20+ha).	See above
Only HPID irrigated lands was excluded from Rural Large Holdings when there were other small holding private irrigated lands nearby?	See above
Should Rural Large Holdings zone in South Hay be reviewed for Rural Small Holdings, Special Uses and industrial?	See above
There is a need to review the minimum holding size (dwelling entitlement) to a larger size to sustain horticulture/agriculture production. What size?	See above
The current 1(c)zone allows for a subdivision size of 2ha for a dwelling entitlement. This allotment size is very questionable for rural production and could only seem to be sustaining "rural residential" lifestyle.	See above
Hay PID has expanded its customer base taking over the Kangaroo Pump Association and now has piped reticulation into other small holding areas to the north and west.	See above
Not permitting any housing in the riparian zones and bushfire hazard zones will lead to conflicts with the aspirations of property owners for a river frontage.	S 14
Lands north and east of the Hay urban area should be in the main be seen to retain the horticultural production as rural small holdings.	Ss 6.3; 8; 14
Certain rural lands on the east and Mid Western Highway and west are "non conforming" and should be transferred to more appropriate urban zones.	S 15; 13.2.4
Is there a need for industrial land to be zoned Urban on Cobb Highway (near the airport) or east on the Mid Western Highway and what are the infrastructure needs?	Part C and Part F
"Sewer treatment station requires replacement/upgrading."	Ss 9; 7; 10.2.3
No restrictions should apply to rural subdivisions and dwellings.	Ss8;14.4

ISSUES IDENTIFIED THROUGH COMMUNITY ENGAGEMENT	
Issue	Where Addressed in Report
Hobby farmers are good land managers hence no interface conflict issues.	S 14.5
Servicing costs of industrial land - prohibitive to have available now.	Ss 7.1.3.1; 13.1.2; 14.1.5
Need jobs to retain population	Ss 4; 3.4; 11.8.3; 12.1.1
Council should invest in social/country infrastructure eg. Health/Sport/Tourism	Ss 11.2; 12; 14.5.3; Part C
Lack of tradesmen locally.	Ss 13.1.2; 14.1.5
Less people on farms.	Ss 4; 8
Ageing farmers	ss 3.4; 4.1.2; 8
School numbers are reducing.	s 13.2.13
Farmstays should be promoted.	Ss13.1.2; 13.2.6
Need to expand the urban boundary in every direction.	Parts C; E ; F
Less number of people on farms and ageing community impacts service provision.	S 4.1.2
Different opinions exist amongst residents about whether there is a future for the village.	Ss 11.5; 12.2;
Affordable housing should be promoted in Maude.	S 13.1.2
Poor mobile phone coverage.	S 7.1.1.2
Lifestyle lots - minimum lot sizes are restrictive.	Ss 14.4
Loss of Claughton House impacts in that Hay Local High School not accessible due to loss of weekly boarding ie kids need private board.	Ss 3.4; 4.3.1; 13.2.12
Itinerant housing on farm accommodation is available, but unlikely to meet OH&S requirements - impacts on shearing.	S 7.1.1.2
Community website is required to promote local tourism, events etc.	Ss 11.4; 12.1; 13.
Absentee landholders don't put back into the local community	S 8.2
Need for tourism signage.	Ss 4.9; 7; 13
Condition of local roads has implications for tourism, school excursions, contractors etc.	Ss 3.3.1; 9.1.3; 9.1.4
Community feels that there was no strong expectation of future growth, but rather maintaining current level of population.	S 11.8.3
Many empty farm houses (2nd/3rd) always, while main farmhouse still occupied.	Ss 3.4; 4.6; 14.5.2; 14.5.3
No out of school hours care available in Hay impacts on employment opportunities.	S 13.1.2
Lack of local contractors.	Ss 8.2; 14.1.5
LEP inflexible.	S 5.4; 6.14.2; 8; 13.2.3
Retail/community services - OK.	Ss 7.1.2.1; 11.8.1;12; 13.1.2; 13.2.2
Professional services - out sourced- Professionals do service Hay.	S 11
The irrigation district is located upon prior streams which are well drained and as a result there are no issues with water table, though conveyance losses have been a problem. Stock and domestic system also has outlets for rural fire service.	S 6; Part C
Development along the river needs to be mediated and there needs to be a gap between subdivisions and the river to allow the river riparian areas to remain healthy.	S 10; Part F
Rezoning or having detailed look at the flood prone land to give people a better idea of where they can build.	S 10

ISSUES IDENTIFIED THROUGH COMMUNITY ENGAGEMENT

Issue	Where Addressed in Report
The general feel around Hay is there is room for expansion however, we need to be aware of the environmentally sensitive areas and stay clear of them.	S 10; Part F
Pollution runoff from vegetables grown near the river just out of town	Ss 6.6; 10.5
Camping sites should not be available on tourist tracks near the river - public risk, fire hazard.	Ss 4.5; 13.2.6
Mapping of environmentally sensitive areas incorrect - relating to wetlands - inundation and sheet/wind erosion of soils. This occurs along the ridges in a /// pattern. Needs groundtruthing. Miles Boak from DECC has been advised of this.	Ss 2.3; 6.7; 10.1; 10.5
Lifestyle blocks don't need to be serviced - can have rain water tanks.	S 14.5
The subdivision process for the HPID is very unusual in that every subdivision has to go through the Lands Department for environmental assessment and suitability of irrigated land use. This requires duplication of subdivision procedures to the owner	S 13.1.11
Pollard Street - 5 x private residential properties zoned for public open space - admittedly in the floodplain, but is it the Council's intention to acquire these properties (otherwise rezone)?	S 15
Fishing should be promoted as a tourism generator.	S 7.1.5.1
By piping the Wah Wah scheme - losing important habitats.	S 6.6.1
Potential loop - tourism roads between Booligal and Yanga National Parks.	S 13
Retain village zones - need detailed DCP.	S 15
Proposed acquisition of land - railways.	S 14.1.1
5 highways near Hay.	Ss 3.3.1; 4.5; 7.1
MI doesn't want to have to lodge a DA and obtain approval for carrying out typical day to day activities. Infrastructure SEPP may need to be modified to include MI as a public authority or alternatively a local clause?	To be considered in draft SI LEP
A lot of land for sale in the Shire, but not a lot of land selling suggesting properties are overpriced.	S 14.1.3
The Hay PID has 87 customers covering an area of 4,000ha.	S 14.5.3
In any car parking facility there needs to be adequate attention given to spaces to accommodate vehicles as well as campervans and trailers.	S 13.2.6.
Extend Hay to the south so that it would become more noticeable from the Highway and draw people in.	S 14
There is a lack of pre-school and childcare facilities in the villages.	Ss 7.1.4.1; 13.2.12
Hay Park is a fantastic recreational complex for a multitude of user groups including: league, soccer, netball, touch, fitness, little athletics. It is a district facility, however there are pedestrian and vehicular conflicts and poor illumination at night	S 13.2.8
No secondary industry. Town relies heavily on agricultural production.	S 11.8.3
Freight cost for goods is major issue.	Ss 5.4; 12.1.1
Lettuce growing seems to be a highly intensive ag industry and also melons and onions;	S 8.3
One Tree Hotel could be promoted for benefit of South Hay.	s 11.8.3
More lifestyle blocks needed.	S 14.5
Need industry not based on agriculture.	S 11.8.3
The assessment criteria as to what constitutes a viable agricultural holding ?.	Ss 8; 12

ISSUES IDENTIFIED THROUGH COMMUNITY ENGAGEMENT

Issue	Where Addressed in Report
Rural smallholdings- current controls: The current 1(c) zone encompasses most of the HPID but does not include all irrigated lands/horticulture.	S 14.5
Environmental law can prevail over town planning law where rural industries can be challenged- need for buffers.	Ss 10.8; 13.1.5
Rural 1(a) land south of Sturt Hwy (east) to be rezoned to rural small holdings - used for intensive horticulture and irrigation.	S 15
Need to remove Hursley Street, industrial zone.	Ss 13.2.3; 15
Alter Murray Street residential and business zones from Lots Part 5&&, 14 DP 812034 railway goods yards to industrial zone.	Ss 14; 15
Change residential zoning on land bounded by Witcombe, Archer, Lang and Moama Streets, South Hay to industrial.	Ss 14;15
Rezone rural 1(a) zone between Sidonia Road and Railway line (including railway line) to Industrial.	Ss 14;15
Rezone rural 1(a) zone bounded by Wharf and Bourke Streets to Railway Line and Travelling stock route to Industrial.	Ss 14;15
Rezone rural 1(a) zone south of the Sturt Hwy (west) to industrial zone.	Ss 14;15
Rezone rural 1(a) zone west of the Cobb Hwy (aerodrome land) to industrial.	Ss 14;15
If rural/residential is required it will need to be converted into extension of the urban area, where and what infrastructure will be required?	S 14
Industrial Land (Brewery, Harrison and Hursley Streets) presumably to avoid possible flood inundation and contamination - now the Rosser Subdivision, should be converted to residential.	S 15
Solling Street - 4 lots not zoned - should be commercial.	Ss 14; 15
Bowling Club Murray and Lachlan Streets zoned special uses - should be zoned to commercial.	S 15
Railway track west of Cobb Highway is zoned commercial - should be rezoned to industrial and the railway station to special use.	S 9.1.6
Prime agricultural land protection not an issue for Hay LGA.	Ss 5; 8; 10.1
Industries are reluctant to come to Hay due to distance and isolation.	Ss 11; 12; 13.2.3
Rural lot sizes should facilitate intensive agricultural development.	Ss 5.3.2; 14.4; 8.2; 8.9.1; 13.1.9; 14.4.1
Tourism is a significant pathway to future growth and prosperity.	S 11.8.3
Hay is not isolated-only 1.5 hours away from Griffith need to remarket ourselves.	S 12.1.1
Land north of railway land could be used for industrial purposes.	S 14.1.5
Need a manufacturing base.	S 11.8.3
Need service industry precinct with highway frontage, near railway and aerodrome.	S 14
30 years supply of vacant lots for industrial development, preferably 2ha lot size.	Ss 4.7; 7; 14
Industries reluctant to relocate due to distance and isolation.	Ss 11, 12,13
Potential for farmstay opportunities.	Ss13.1.2; 13.2.6
Drought impacting on production levels (30% stocking rate currently) and creates uncertainty for the future.	Ss 6.6.3; 8
Booligal sheep races draws in 500 people, mainly tourist, once a year from Carrathool and Echuca (buses).	S 3.3.1
Not much corporate ownership of farms, some irrigation bores around.	Ss 14.4.1; 6.6.1

ISSUES IDENTIFIED THROUGH COMMUNITY ENGAGEMENT	
Issue	Where Addressed in Report
Rural workers have migrated into mining industry that will affect drought recovery.	S 12.1.1
Drought has been restraining farmers performance. Most bank clients in the shire are pastoralists and have really destocked. Businesses typically have low operational costs and the pastoral country is very responsive to good seasons	Ss 8; 12.1.1
Changes in markets has seen a shift over years from pastures towards higher value crops when there are large areas of irrigation laying idle.	Ss 6.5; 8; 12.1.1; 14.5.3
Preserving the character of hay is very important to the Hay community.	S 4.9
The dual water system that exists in hay using high quality water for houses and semi-treated water for gardens needs to be better signposted. Apparently there are taps in gardens in Hay with semi-treated water that tourists fill up their drinking bottle	S 9
Some members of the community feel the lifestyle blocks should not be along the river as it will loose environmental values.	Ss 13.1.9; 14.3
Future planning should include blocks that are small enough so that people do not have their one horse or one cow and it leads to degradation of the land in such a small area.	Ss 8; 14.4
Areas that the community feel should be reserved include the river and the sandy corners in the river. Also Bungah Creek and Booligal Wetland and lignum wetlands, the river through Booligal and the weir which are major recreation areas in town.	S 15
The industrial zones area around the railway which apparently is a bit of an eyesore, compared to the beautiful railway building and the belief that some of these zones should be changed and it should be revegetated.	S 14.1.5
Skateboard park sited and approved on land at Sandy Point with no community consultation or consultation with HLALC.	S 6.14
Need a Community Boat Shed at Sandy Point.	S 13.2.9
River is important to community and needs to be promoted for community use whilst protecting its values.	S 13
The issues relating to the village include a lack of water from the river. In relation to the needs and wants of the village: Toilet maintenance and upgrade; Rubbish collection and the clean up of the local tip;	S 6.6.2; 12.2
Macgregor Street - Council lot not zoned - should be recreation.	S 15
"Hay Shire Council is the only council in NSW to require consultation with the LALC". DECC would support sensitive landscapes as an environmentally sensitive overlay in LEP if LALC and DOP would agree ... conflict with standard instrument?	S 6.14
Illegal buildings on river.	S 13.1.11
Weir requires better camping and picnic facilities.	S 13.2.9
Lack of Council maintenance and street beautification.	Ss 9.1.4; 13.1.7; 13.1.8;
Poor drainage in village.	Ss 9.4; 3.3.2; 7.2
School requires access to household water for toilet flushing, watering etc.	S s 7.3; 13.2.5;
Rely on Griffith & Wagga - Daily trips for health services	S 4.3.2
There could be a gap between the young and old in terms of the demographic characteristics of the community which might need a planning response. There is an aging community in Hay and there are concerns with the adequacy of facilities for seniors.	Ss 4; 7.1.1.1; 13

ISSUES IDENTIFIED THROUGH COMMUNITY ENGAGEMENT	
Issue	Where Addressed in Report
The lack of truck parking - it was suggested that truck parking areas be created to keep the trucks from parking in the main street. The area suggested for this was near the power substation just out of town.	S 7.1.3.2.
CMA do not liaise with local aboriginal community when planning or conducting projects. They use staff from out of town (eg Wagga).	S 13.1.20
Most likely aboriginal artefacts, burials, hearths and scar trees and the most concern is for burials.	S 6.14
Future urban development/town expansion needs to consider "sensitive landscapes" this is an issue mainly south of the town but also anywhere where there is a river, a wetland or prior streams.	Ss 10; 11; 13; 14
Recognition of aboriginal cultural heritage should be embraced by the whole community.	Ss 6; 12.1.1; 13
Urgently need a youth worker to engage with youth "on the street".	S 13.2.12
Need more diversity - recreational opportunities for 0-5 age groups.	S 13.2.9
Urgent need for "parenting" courses, particularly for young mothers.	S 13.2.12
Generally transport is not an issue in Hay and bus services are good.	S 9.1.1
The hospital has adequate land to cater for any required seniors/ aged care facilities.	S 13.1.2
There is a need to provide seniors housing on the river, possibly near the new car park.	S 13.2.15
There are a lack of volunteers with in the Hay community, more volunteers are needed for organisations such as Girl Guides, so that they are able to undertake more outdoor activities such as camping canoeing and snow trips.	S 13
The hospital provides emergency support and there is the Hay Days Aged Care Facility and another Aged Care facility that is attached to the Hospital.	S 13.1.2
There is a lack of availability for seniors housing.	S 13
Hay Park Community Building is underutilised because it is not situated on an oval.	S 13.2.9
Need toilets adjacent to netball courts.	S 13.2.9
Aussie rules access to Hay park needs to be changed. Access should be off Moppett Street and Morgan Street closed.	S 13.2.11
Lack of facilities for young children in Hay Park (eg climbing facilities for under 5's group.	S 13.2.11
Need to provide a safe children's play area in Hay Park which should be fenced with visibility and safe pedestrian routes.	S 13.2.9'
Families use Hay Park and Lions Park because of the facilities (BBQ etc)	S 13
Not enough opportunities for kids who are not sports orientated.	S 13.2.11
Skate Park should have been sited at Hay Park.	S 13
Tourists utilise toilets at Hay Swimming Pool.	S 13
Gopher access along main street needs to be managed to avoid pedestrian conflict.	S 13
Hay Airport is valuable for frequent ambulance, bank and charter flights. No commercial flights although large aeroplane (Dash8) has utilised the facility in the past (firefighting). Two aerial spray companies based at the airport.	Ss 4.3.2; 5.4; 9.1.2
No ready access from airport to town. No taxi service available, just a hire car.	S 9.1.1
South Hay need pedestrian walkways.	Ss 9.1.5; 13
Hay is a good place to live because it is safe, has a low crime rate and the community band together.	S 11.8.2

ISSUES IDENTIFIED THROUGH COMMUNITY ENGAGEMENT

Issue	Where Addressed in Report
Hay needs to encourage more opportunities for social exchange apart from sport.	Ss 13.2.9; 13.2.11
Community nurse caters for "townies" and with other disadvantaged people.	S 4.3.2
Youth worker needed to help youth who fall below the cracks.	S 13.2.12
Hay has good community spirit	Ss 11.8.2; 13
Hay does not celebrate its cultural heritage.	S 13
Need barriers and fencing in Hay Park.	Ss 13.2.9; 13.2.11
Cannot staff hospital.	Ss 4.3.2; 13
South West Arts could do more.	S 13.2.11
No Dentist.	Ss 4.3.2; 13
Need more doctors.	Ss 4.3.2; 13
The general standard of teaching has dropped.	S 13.2.12
Lack of tertiary education opportunities within Hay Shire resulting in young people leaving the area after finishing school.	S 13.2.12
The footpaths within Hay generally good, however, the areas around the park aren't safe enough for children.	Ss 11.8.2; 13
Netball courts need maintenance - "its an accident waiting to happen".	S 13
Generally the community feels that there is enough community halls within the villages and enough housing opportunities and retirement villages within the area.	S 13
Maintenance and upgrade of local community buildings such as halls and playgrounds;	S 13
A bike park is needed for the kids as part of the skate park.	S 13
Free camping sites are great and should be promoted.	Ss 4.5; 13.2.6; 13.2.9
Need to facilitate bus transport to Deniliquin	S 9.1.7
There is a need for a local TAFE (have to go to Deni or Griffith); RCC does basic pre-TAFE training and development.	S 4.3.1 (not really addressed)
There is a high local need for computer tech ed;	S 13
Urban accessibility of town centre for tourists needs improving;	S 13
Road network is generally in good condition.	S 9.1.4
School bus pick-up and drop-off points are good.	S 9.1.1
Traffic signage is good.	S 13
Truck parking in and around Hay is good.	S 13
South Hay Trucking and transport infrastructure is good but there is reduced air quality from heavy vehicles and dust.	Ss 12.5; 13
Charter buses are only for sport or history tours; through buses are Australian Pacific, AAT Kings, Premier Coach Lines and Scenic Tours.	S 9.1.7
Cycleways and pathways seem to be good.	Ss 7.1.1.2; 9.1.5; 13.1.7; 13.2.8
South Hay needs to be promoted more and designed to encourage visitors to enter Hay.	Ss 3.3.1; 13.2.6
Tourism is not as well promoted as it could be. Need to use Victorian "methods" as a mode for best practice.	Ss 7.1.1.3; 12.1.1.; 13.1.7; 13.2.9; 4.5
Hay has lots of things for lads to do if they are sports orientated.	S 13.2.11
Farmers selling farms to retire - want to live on lifestyle blocks close to town.	Ss 3.4; 11.2; 11.4; 11.8.3; 13.1.9 14.4; 14.4.1; 14.5; 14.5.1; 14.5.2; 14.5.3

ISSUES IDENTIFIED THROUGH COMMUNITY ENGAGEMENT	
Issue	Where Addressed in Report
Land north of Lang Street, South Hay has "existing use" and virtually developed as residential and should be removed from rural 1(a) zoning.	S 15
The land of the showground, RTA and Hurst (both sides of Sidonia Road and Cobb Highway) be included as Special Use, Industrial and Urban Zones.	S 15
Land south of the Sturt Highway should be included in the urban zones for those properties fronting the Highway including the Shear Outback property.	S 15
The Golf Course and Aerodrome should be removed from the rural zone.	S 15
The statewide template will impose pressure to conform to the standard clauses. It has been predictable that the Planning Department will only permit in exceptional circumstances special clauses.	To be addressed in draft SI LEP
Urban Zones: Under the new state government templates "Rural/Residential" is not seen as a "rural" zone. It is classed as "Urban - Large Lot Residential". The size of the dwelling entitlement is critical to ensure buffer zones can be achieved to avoid co	Ss 5.4: 7.1; 13.2.4; 14.1.5; 14.4.1 14.5.3
There are at least 15 categories of zones that could apply in comparison with the 5 under the current LEP and 7 under the DCP for urban areas.	To be addressed in draft SI LEP
South Hay 2(a) Zone - intended to be single residential occupancies - no flats. Better to convert to the general 2(b) zone for Hay - not so restrictive.	S15
Residential site (west - Palmer & Lang Street) not zoned.	S15
Claughton House zoned special uses - residential subdivision approved by council should be rezoned to residential.	S15
Haydays corner of Murray and Coke Streets is zoned commercial and is "non conforming use". Rezoning to special use or residential required.	S15
Hay Hospital in future should be based around a multi purpose service (MPS) model	S 4.3.2
Health funding is an issue	Ss 11.8.3; 13.1.3; 13.2.8; 13.1.10
Health care provided in homes for as long as possible through community and agency partnership programs	S 13.2.1; 13.1.10
Government looking at a co-operative innovative approach to future health care in terms of service delivery.	Ss 11.8.3; 13.1
Hay LGA should facilitate integrated health service delivery	Ss 11.8.3; 13.1
Less institutional reliance or aged care with services being delivered to keep the aged in their homes for longer	S 13.1.2
Less time for aged in acute care beds now last 6 months of life or average instead of last 2 years of life	S 4.3; 13
Optimise partnerships and state and federal funding opportunities to facilitate services for the aged.	S 4; 7.1.1.1; 11.8.3;
GSAHS (2007) predicts that the persons aged 70 years and older in Hay LGA will almost double from 340 in 2001 to 640 in 2031.	Ss 4.1.2; 13.1.2
New bridge crossing is required to re route heavy vehicles.	S 13.2.8
Inadequate facilities for young people.	S 12.2
Need more community improvement programs	Ss 7.1.1.2; 12.2; 13.1.2; 13.1.3;
Closure of Claughton House impacts rural students access to local education.	S 13.2.12
Need aged care accommodation near the hospital.	S 7.1.1.1
Require a footpath between the hotel and village store.	S 13.
Reticulated system for school needed.	S 13
No childcare facilities although weekly playgroup at Community Hall.	S 13.2.12
Community Hall has a 60km catchment and requires upgrading (owned by the community, important for playgroup/childcare up to 100km).	S 13.2.5

ISSUES IDENTIFIED THROUGH COMMUNITY ENGAGEMENT

Issue	Where Addressed in Report
Hay community is well serviced with sports including Australian Rules, Rugby League, soccer, netball, tennis, karate, fitness, gymnastics, pony club and cricket.	S 13
The minimum subdivision size for strata or community title is too high (550m2) should be reduced to 230m2 or Floor Space Ratio (FSR) for multi storey or "mixed development".	To be addressed in draft SI LEP
No dentist, no x-rays, no obstetrics	S 4.3.2
Forest lands zoned appropriately and TSR not to exclude timber harvesting	Ss 6.8; 15
No land classification, land capability or land suitability maps have been made of the region. Only broad map of relevance is Geomorphic Map of Riverine Plain of South Eastern Australia by Butler et al of which Andrew is trying to source a copy of.	Ss 2.4; 10.5
The river is very important to Hay as it acts as a vegetation corridor with different types of vegetation and also allows native animal access to water and farm wetlands.	Ss 10.5; 6.12; 6.14.1; 8.2; 13.1.4; 14.5.5; Sec 5; Sec 6
Important areas to be reserved include wetland areas mainly black box depressions, 16 mile gums as an iconic area, sandhills and riparian areas.	Ss 9; 15
Another measure that Council needs to endorse is the protection of the plains wanderer when they are looking at development for the future of Hay. They need to make sure they stay clear of the vegetation communities that support the plains wanderer.	S 6.9.2
Major enviromental issues in Hay include declining water quality, pollution runoff, storm drainage runoff, blue green algae in weir pool.	S 6
Protection of the diversity of woodland birds along the river, which is a very valuable asset . It was mentioned that Council could adopt a planning strategy which includes plants that these birds favour.	S 6
Council needs to promote and facilitate improved pedestrian and bike access as a loop to the various museums and special places (eg Sandy Point/river).	Ss 9.1.5; 13.2.8; 13.2.1
Need to promote "waterwise" urban design.	S 13
"Bushfire prone land follows the river, shire can be managed by following planning guidelines."	Ss 5.4; 6.6.1; 10.3; 13.1.9; 14.5.2
Need to promote solar energy.	Ss 8.2; 12.0; 14.5.3 (does not really refer to solar)
There are a significant number of subdivisions along Sturt Highway east of Hay.	Ss 7.1.2.1; 14.1.3; 14.1.5
Land and residential properties in Shire are overpriced. Plenty of properties for sale but not very many selling.	Ss 4.7; 7.1.1.1; 14.1.2; 14.1.4; 14.1.5; 14.5.3; (14.1.3(refers to price)
The DCP for Hay was "pseudo" zoning approach to address potential problems with conflicting uses. The new LEP templates are required to all zoning in the LEP. A DCP can only be for development standards and not zonings.	Ss 3.3.1; 4.7; 7.1; 10.2; 14.1.1; 14.1.3; 14.1.5
In addition there are a number of anomalies in the DCP zonings.	As above
Bishops Lodge - should all the frontage to Sturt Highway be zoned special purpose? (Community and Operational Land).	S 15
Randall Street - 2 x residential properties not zoned.	S 15
Cnr Moppett and Pine Street - Catholic church zoned recreation - may be a future development constraint - could be residential or special use.	S 15
Leonard Street and Pine Streets (NE Cnr) 8 x freehold houses zoned Special uses should be rezoned to residential/commercial.	Ss 3.2; 15

ISSUES IDENTIFIED THROUGH COMMUNITY ENGAGEMENT	
Issue	Where Addressed in Report
Commerical zones under the new LEP template are either "Local Centre" (dedicated commercial limited residence) or "Mixed Use" commercial and residential.	Ss 13.2.4; 14.; 15

ANNEXURE 19.0

S62 Letter

6 August 2009

Dear Sir/Madam

Re: Decision to Prepare a S1 Draft Local Environment Plan – Hay Shire Council Section 62 Consultation

Hay Shire Council resolved at its meeting of 27 May 2008 to prepare a Standard Instrument Draft Local Environmental Plan for the Hay Local Government Area.

S62 of the Environmental Planning and Assessment Act (Savings Provisions) requires Council to consult with relevant agencies and authorities regarding the proposed draft plan. In view of this resolution, you are requested to advise the Council of any agency requirements for consideration or inclusion within the draft plan.

Should you wish, you may contact Council's consultants Booth Associates' Project Manager, Mrs Kelly Tyson to discuss your requirements by telephoning 02 6964 9911 during business hours.

Alternatively, you may wish to meet with Booth Associates to discuss aspects relevant to the draft plan.

It would be appreciated if you could provide any comments or agency requirements in writing to Hay Shire Council at the address above with a copy to Booth Associates within three (3) weeks of the date of this letter.

Booth Associates
Agribusiness & Environmental Consultants
PO Box 1458
GRIFFITH NSW 2680

Thank you for your assistance.

Yours Sincerely

Alan Dwyer
GENERAL MANAGER

Title	Company Name	Address Line 1	City	State	ZIP Code
Catchment Co-	Murrumbidgee Catchment Management Authority	126 Lachlan Street	HAY	NSW	2711
	Murrumbidgee Catchment Management Authority	PO Box 156	LEETON	NSW	2705
	Murrumbidgee CMA	PO Box 5224	WAGGA WAGGA	NSW	2650
	Department of Primary Industries	Locked Bag 21	ORANGE	NSW	2130
	Department of Primary Industries	PO Box 21	CRONULLA	NSW	2230
	Department of Primary Industries	PO Box 100	BEECROFT	NSW2119	
	Department of Primary Industries	Hunter Regional Mall Centre		NSW	2310
	Department of Education and Training	GPO Box 33	SYDNEY	NSW	2001
	Department of Education and Training	Level 4, 76 Morgan Street	WAGGA WAGGA	NSW	2650
	Tourism NSW	GPO Box 7050	SYDNEY	NSW	2011
	Tourism NSW	PO Box 79	WEST WYALONG	NSW	2651
	Civil Aviation Safety Authority	GPO Box 2005	CANBERRA	ACT	2601
	Department of Water & Energy	PO Box 1128	LEETON	NSW	2705
	Department of Transport and Infrastructure	PO Box 2460	WAGGA WAGGA	NSW	2650
	Department of Lands	PO Box 1030	GRIFFITH	NSW	2680
	Department of Lands	PO Box 60	WAGGA WAGGA	NSW	2650
	Department of Community Services	PO Box 1595	GRIFFITH	NSW	2680
	Department of Community Services	PO Box 176	WAGGA WAGGA	NSW	2650
	Department of Housing	Locked Bag 4001	ASHFIELD	NSW	1800
	Department of Housing	Unit 1, 180 Yambil Street	GRIFFITH	NSW	2680
	NSW Department of Heritage	Locked Bag 5020	PARRAMATTA	NSW	2124
	Department of State & Regional Development	PO Box 3415	ALBURY	NSW	2640
	Department of Planning	PO Box 58	DUBBO	NSW	2830
	NSW Lachlan CMA	2 Sheriff Street	FORBES	NSW	2871
	Department of Health	Locked Bag 961	NORTH SYDNEY	NSW	2059
	Griffith Community Health Service	39 Yambil Street	GRIFFITH	NSW	2680
	NSW Ambulance	Locked Bag 106	ROZELLE	NSW	3039
	Hay Ambulance	Murray Street	HAY	NSW	2711
	Roads & Traffic Authority	1 Fox Street	WAGGA WAGGA	NSW	2650
	Department of Environment and Climate Change	PO Box 397	GRIFFITH	NSW	2680
	Department of Environment and Climate Change	PO Box 5336	WAGGA WAGGA	NSW	2650
	State Emergency Service	PO Box 6126	WOLLONGONG	NSW	2500

Title	Company Name	Address Line 1	City	State	ZIP Code
	State Emergency Service	PO Box 25	HAY	NSW	2711
	Murrumbidgee Irrigation	PO box 519	LEETON	NSW	2705
	Murray-Darling Basin Authority	PO Box 1801	CANBERRA CITY	ACT	2601
	State Water	PO Box 103	HAY	NSW	2711
	NSW Rural Fire Brigade Services	Locked Bag 17	GRANVILLE	NSW	2142
	NSW Rural Fire Brigade Services	Dunera Way	HAY	NSW	2711

ANNEXURE 20.0
Agency Responses



Department of State and
Regional Development

7 AUG 2009

48 Fitzmaurice Street
PO Box 1156
Wagga Wagga NSW 2650
T: +61 2 6921 6422
F: +61 2 6921 0780

20 August 2009

Allen Dwyer
General Manager
Hay Shire Council
PO Box 141
HAY NSW 2711

COPY

Dear Mr Dwyer

**Re: Decision to Prepare a S1 Draft Local Environmental Plan – Hay Shire
Council Section 62 Consultation**

Industry and Investment NSW (formerly Department of State and Regional
Development) have no comment at this stage however we would like to receive a
copy of the completed version and retain the right to comment during the period it is
on display.

Yours sincerely

JANE BARNES
Business Development Officer

cc Booth Associates
Agribusiness & Environmental Consultants
PO Box 1458
GRIFFITH NSW 2680



➔ www.business.nsw.gov.au

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Albury • Armidale • Broken Hill • Coffs Harbour
Dubbo • Gosford • Goulburn • Grafton
Lismore • Newcastle • Orange • Parramatta
Port Macquarie • Sydney • Tamworth
Tweed Heads • Wagga Wagga • Wollongong



Tuesday, 1 September 2009

Mrs Kelly Tyson
Project Manager
Booth Associates
PO Box 1458
Griffith NSW 2680

RECEIVED
0 SEP 2009

State Headquarters
Level 3, 6-8 Regent Street
Wollongong NSW 2500
PO Box 6126
Wollongong NSW 2500
Phone: (02) 4251 6111
Fax: (02) 4251 6620

Dear Mrs Tyson,

Draft LEP - Hay Shire Council Section 62 Consultation

Thank you for the opportunity to comment at an early stage of the LEP process on behalf of the NSW State Emergency Service (SES).

The SES recommends that Council consider flooding issues in the LEP process in accordance with the requirements of NSW Government's Flood Prone Land Policy as set out in the Floodplain Development Manual, 2005 (the Manual) and relevant planning directions under the EP&A Act. The floodplain risk management issues which are of concern to the SES are addressed in the Manual. The following list highlights some issues which the Service considers to be of particular importance.

- Zoning should not enable development that will result in an intolerable increase in risk to life, health or property of people living on the floodplain;
- Risk assessment should consider the full range of flooding, including events up to the Probable Maximum Flood (PMF) and not focus only on the 1% AEP flood;
- Risk assessment should have particular regard to flood warning and evacuation demand on existing and future access/egress routes. Consideration should also be given to the impacts of localised flooding on evacuation routes.
- Future development should not unreasonably increase the demand on SES and other emergency service resources;
- In the context of future development, self evacuation of the community should be achievable and in a manner which is consistent with the SES's principles for evacuation.
- Future development must not conflict with the SES's flood response and evacuation strategy for the existing community;
- Evacuation must not require people to drive through flood water;
- Development strategies relying on deliberate isolation or sheltering in buildings surrounded by flood water are not equivalent, in risk management terms, to evacuation;

- Development strategies relying on an assumption that mass rescue may be possible where evacuation either fails or is not implemented are not acceptable to the SES; and
- As articulated in the Manual, the SES is opposed to the imposition of development consent conditions requiring private flood evacuation plans rather than the application of sound landuse planning and flood risk management.

Thank you for the opportunity to comment and if you have any further questions please do not hesitate to contact me on (02) 4251 6111.

Yours sincerely



Belinda Davies
Acting Manager Planning
NSW State Emergency Service

CC:; SES Region Controller, Murrumbidgee



Industry & Investment

Trim Ref: OUT09/11447

26 August 2009

HAY SHIRE COUNCIL

01 SEP 2009

TRIM NO 109/2598

Mr A Dwyer
General Manager
Hay Shire Council
P O Box 14
HAY NSW 2711

Dear Mr Dwyer

Section 62 Consultation regarding the preparation of an LEP for Hay Shire Council

Thank you for your letter dated 6 August 2009 notifying the Department of Industry & Investment (formerly NSW DPI) of Council's intention to draft a new Local Environmental Plan for the Hay Shire LGA. The Department welcomes the opportunity to comment at this stage and would like to continue to work with Council over coming months to ensure the best plan for the LGA is endorsed and gazetted.

The retention of opportunities for sustainable primary industries (agriculture, forestry, minerals and fisheries) requires commitment to a clear and consistent vision for primary industries and rural areas and the spatial identification of core resources within the LEP. The Department therefore wishes to ensure that the LEP:

- Plans for and secures access to primary industry resources;
- Allows for land to be developed in a manner consistent with its inherent capability;
- Protects the productive capacity of land to support primary industries;
- Protects and improves water quality in adjacent and downstream waterways including the estuaries for the benefit of the commercial and recreational fishing industries, aquaculture, agriculture and rural communities and industries;
- Protects and enhances the natural aquatic environment and the ability of ecological processes to operate in a natural way to help maintain fish populations and recover threatened fish species;
- Reduces the risk of land use conflicts.

The Department notes that the Minister for Planning has gazetted a standard LEP template for use across NSW. This template is supported by DII and our input and advice is based on the assumption that Hay Shire Council will be using it as the basis for this new LEP. We expect that zones will be used according to their stated objectives in the LEP template.

The Department has 4 main areas of interest with respect to Land Use Planning:

1. Fisheries and aquaculture including aquatic habitat protection and threatened aquatic species
2. Agriculture

Yanco Agricultural Institute
PMB, Yanco NSW 2703
Tel: 02 6951 2641 Fax: 02 6951 2746
ABN ## ### ###
www.industry.nsw.gov.au

3. Mineral resources
4. Forestry

DII has responsibility for the management of threatened species, populations and communities of fish and aquatic invertebrates under the provisions of the *Fisheries Management Act 1994*. As a result of recent amendments to the Act, LEPs, or parts of LEPs, can now be "**biodiversity certified**" by the Minister for Primary Industries (in addition to certification under the *Threatened Species Conservation Act*). The Department is currently developing guidelines for Councils that wish to seek biodiversity certification for their LGA or parts of the LGA zoned for substantial land use change in the near future such as urban expansion areas. These guidelines should be available later this year and Council will be notified once they are available. Attachments A to E provide advice on relevant legislation, policies and information sources in relation to each of these main areas of interest. For general enquiries please contact myself. For specific enquiries related to the main areas of interest, please contact the person nominated in the relevant section.

Yours sincerely,



David Davis
Resource Management Officer

ATTACHMENT A MINERAL RESOURCES

The Industry & Investment NSW – Minerals & Energy Division has stewardship of the mineral resources of NSW on behalf of the community. Some mineral resources such as construction materials (eg, construction sand and coarse aggregate) are not minerals under the *Mining Act (1992)* or *Petroleum (Onshore) Act (1991)*, but are included in the Division's accepted role of assessing mineral resources and providing advice as to their sustainable development and management.

Council should give appropriate attention to the importance of mineral and energy resources to the community, state and nation and the planning actions needed to ensure that the community gets optimum benefits from mineral exploration and development. Council should be aware of the benefits to regional and local communities from exploration expenditure, and of the potential boost to local economies should exploration be successful and mining ensue.

Council should also be aware of the need to ensure that adequate supplies of construction materials are available locally to meet foreseeable future needs. Although these resources are low unit cost materials, they are nonetheless essential for the development and maintenance of roads, buildings and other infrastructure. If construction materials have to be obtained from further afield, the additional transport costs incurred will inevitably be borne by the community.

Local Mineral Resources Profile

The Shire of Hay is situated on an almost flat surface consisting of numerous alluvial flood plains and minor aeolian (wind-driven) sand dunes of the Riverine Plain. This region forms the eastern side of the Murray Basin, which is a large sedimentary basin of Tertiary age that covers an area of almost 300,000 square kilometres across New South Wales, Victoria and South Australia.

Hay Shire has small quarries and borrow pits that extract sand for construction purposes from various places. The most important resources of sand are developed south of Hay airport in alluvial deposits and large sand sheets of aeolian origin. The total amount of sand being extracted is unknown. Parts of the western side of Hay LGA are being explored for mineral sands (rutile, zircon and ilmenite) by Iluka resources Limited.

Recommended Strategies

The most significant aspect of mineral resource evaluation and development from a land use planning viewpoint is that **the locations of minable deposits cannot always be predicted**. This makes it imperative that known resources should be protected from sterilisation by inappropriate zoning or development, and that access to land for mineral exploration should be maintained over as much of the planning area as possible. Another important aspect is that although mining is a temporary land use, it is inherently incompatible with some other land uses such as residential or rural residential development (unless these activities postdate mining and rehabilitation), but is not necessarily incompatible with a wide range of other land uses such as agriculture or industrial development.

It is recommended that Council adopt the following strategies regarding mineral resources in its planning.

1. **Operating mines and quarries should be protected from sterilisation or hindrance by encroachment of incompatible adjacent development.**
2. **Known resources and areas of identified high mineral potential should not be unnecessarily sterilised by inappropriate zoning or development.**
3. **Access to land for mineral exploration and possible development should be maintained over as much of the planning area as possible.**

These strategies require the Industry & Investment NSW – Minerals & Energy Division to provide Council with adequate information on the location of known and potential mineral resources. The Division has commenced a state-wide mineral resource audit which includes the Hay LGA. Accordingly, an inventory of known mineral resources and areas

of potential will be made available to Council in the near future. The Minerals & Energy Division also has available on CD the "NSW coastal Quaternary geology data package" which contains geology (bedrock, recent sediments, alluvium and beach deposits), mineral deposits and section 117 notifications (current to 2003) in a seamless GIS format.

A new State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007 was gazetted in February 2007. It supersedes and combines SEPP No. 37 (Continued Mining and Extractive Industries), and SEPP No. 45 (Mining Permissibility) into one consistent set of rules. The SEPP also introduces new provisions to improve and facilitate the sustainable management of the State's mineral, petroleum and extractive resources.

Under the provisions of the SEPP, underground mining may be undertaken, with development consent, on any land. Open cut mining, petroleum production and extractive industry may be undertaken with development consent on land subject to pre-existing mining or petroleum production leases, or where development for the purposes of agriculture or industry may be carried out. Although the SEPP will prevail to the extent of any inconsistency with an LEP, DPI considers that these provisions should be reflected in LEPS so that the permissibility of mining, petroleum production and extractive industry can be readily ascertained from a single planning instrument without having to also refer to the SEPP or have prior knowledge of its provisions.

Additional Information

The Minerals & Energy Division can supply Council with GIS data showing geology, the location of mineral deposits, quarry sites and Section 117 notifications, and the location of current exploration and mining titles. The Division also has a range of data available on line through our primary website address at:
<http://www.industry.nsw.gov.au>

This site hosts a range of data to enable research into exploration, land use and general geoscience topics. Three useful applications are also available online. **MinView** allows users to interactively display and query current and historical exploration tenement information. **TAS Map** permits the search, display and download of up to date NSW mineral, coal and petroleum titles maps and related information. **DIGS**® is an interactive searchable database of exploration and geoscience information that is in the public domain.

Key Contacts:

The Minerals & Energy Division welcomes the opportunity to work with Council on land use issues within the Shire. Should you wish to discuss any of the general matters mentioned above please contact Iain Paterson on (02) 4931 6704 or at iain.paterson@industry.nsw.gov.au, or at the following address:

Iain Paterson
Minerals and Land Use Assessment Branch
Industry & Investment NSW
PO Box 344
Hunter Region Mail Centre, NSW, 2310

ATTACHMENT B AQUATIC HABITAT PROTECTION AND THREATENED AQUATIC SPECIES

General

Aquatic habitats (eg creeks, rivers, streams, lakes, lagoons, billabongs, estuaries, bays, inlets etc) are assets to the local community. Not only do they contribute to the cultural and environmental well being of regions, they also contribute to the regional economy through industry (eg fishing, aquaculture) and fishing tourism. Their conservation helps ensure the region's economy is sustained into the future.

Aquatic habitats are often subject to development pressure for water access, recreational use, residential, agricultural and industrial development. However, very few are recognised and incorporated into LEPs to ensure that consistent environmental assessment and development controls apply in these areas.

LEPs play a major role in managing new and expanded developments. Developments can affect aquatic habitats:

- **Directly** and/or
- **Indirectly** and
- During the **construction** phase and/or
- During the **operational** phase.

Indirect impacts upon aquatic habitats caused by water quality decline (eg from soil exposure and stormwater discharge from upstream developments) are of equal or greater threat as direct impacts due to the footprint of the development impinging upon aquatic habitats.

Zoning restrictions can largely eliminate **direct** impacts, but other mechanisms (such as conditions placed upon development consents to prepare, implement and audit Water Quality Management Plans) will be required to deal with **indirect** impacts.

The Department recommends the inclusion of provisions that contribute to the conservation of aquatic ecosystems by addressing **both** these pathways (direct/indirect) and phases (construction/operation).

The planning approach outlined below is based on the concept of zoning expansive waterbodies (bays, lakes, estuaries etc) as well as identifying all significant waterbodies including rivers and creeks as "sensitive waterways" with an overlay or hatching over the top of the underlying zone including those that may already be zoned "Waterway".

Waterway zones will determine the types of developments that are permitted/not permitted within waterways whereas the purpose of the sensitive waterway overlay is not to specify which developments are permitted/not permitted, but to highlight the fact that there is some additional sensitivity associated with the environment in that area and higher performance standards in relation to water quality and aquatic habitats are required for developments which are permitted.

Protection and Management of Key Fish Habitats

1. DII is currently preparing maps of "key fish habitats" to assist Councils with the preparation of their LEPs. The aim of the maps is to highlight those habitats that are of most importance for protection and conservation to sustain fish populations. To arrange access to Key Fish Habitat maps for the Hay Shire LGA please contact Luke Pearce 02 6947 4188.
2. Broad expanses of "key fish habitats" (such as lakes) should be included in either zone W1 Natural Waterways or zone W2 Recreational Waterways. Wetlands of

National Significance and Ramsar wetlands should be included in zone E2 Environmental Conservation. DII is available to work with Council to help determine the most appropriate zoning category.

- a. The edge of the zone should extend to the top-of-bank for non-tidal creeks, streams, rivers, lagoons, billabongs etc.
 - b. Different zones could apply to different parts of a large waterway. For example, zone W3 Working Waterways should only be applied to those parts of the waterway where existing shipping and maritime related services are already established or to enable a small increase in extent or consolidation to satisfy predicted demand. The remainder of the waterway should be zoned W1 or W2.
 - c. Waterway zones will determine the types of developments that are permitted/not permitted over waterways. Developments that do not have some clear requirement to be associated with the waterway should be included in the "Prohibited" category. Future developments that have no alternatives for being sited elsewhere (eg roads and other public utilities inevitably have to cross streams sooner or later) or are consistent with the zoning (eg environmental restoration works) can be included in the "development with consent" category.
 - d. Waterfront structures such as jetties, seawalls, pontoons, boat ramps and moorings should be designated "Prohibited development" within zone W1 but designated "Development with Consent" in zones W2 and W3.
 - e. "Removal or relocation of large woody debris (desnagging)" should be designated "Development with Consent" in zones W1 and W2 in recognition of the fact that it is listed as a key threatening process.
3. Linear "key fish habitats" such as rivers and creeks should not be zoned "Waterway" as such but should be identified on a "Sensitive Waterway" overlay map.
- a. The Sensitive Waterway overlay should also be applied to waterbodies that have been zoned "Waterway". The purpose of the Sensitive Waterway Overlay is not to specify which developments are permitted/not permitted, but to highlight the fact that there is some additional sensitivity associated with the area and higher performance standards in relation to water quality and aquatic habitats are required for developments which are permitted without consent or permitted with consent.
 - b. A generic clause relating to the Sensitive Waterway map has been developed and is available from DPI and/or DoP. It requires that development applications for proposals within the mapped waterway or within 40m of the mapped waterway be accompanied by an assessment of the likely impacts upon important aquatic and riparian constraints and values including bank stability, instream and riparian habitat, fish passage, public access and water quality. If impacts are likely to be significant the development can only be approved if the proposal is consistent with the objectives of the clause, it has been designed to minimise impacts and offsets are put in place.
4. To help avoid inadvertent breaches of legislation, and facilitate the Integrated Development provisions of the *EP&A Act*, the LEP should also include two "Advisory Notes" (i.e. non legal clauses) to remind Council staff, developers and their advisors, that works within streams and waterbodies may require a permit or concurrence from the NSW DPI **even though the works may or may not require development consent from Council** and/or require more detailed environmental assessment. DPI recommends that such notes be included on the map that shows the Sensitive Waterway overlay as well as after the relevant clause of the written document.

Suggested wording for such notes is:

Advisory Note: (1) Excavation of material from the bed or banks of a waterbody, (2) depositing any sand, soil, rock, rubble or other material on the bed of a waterbody, (3) constructing a structure (weir, dam, causeway etc) within a waterbody such that the flow of water or the free passage of fish may be obstructed, or (4) extracting water from the waterway may require a permit in accordance with the provisions of the Water Management Act, Rivers and Foreshores Improvement Act or the Fisheries Management Act. Please check with the Department of Water and Energy and the Department of Primary Industries.

Advisory Note: "Degradation of native riparian vegetation along NSW waterways", "Removal of large woody debris (snags)" and "Installation and operation of instream structures and other mechanisms that alter natural flow regimes of rivers and streams" are listed as Key Threatening Processes under the provisions of the Fisheries Management Act. Careful consideration of the appropriateness of a development proposal that will contribute to a loss or decline in native riparian vegetation, involve the removal of snags or involve the installation or change in operation of an instream structure is required. If the area is habitat for a threatened species, population or community of fish, then a "significant impact" is likely to be the conclusion of the 7 part test and a Species Impact Statement will be required.

Environmentally Sensitive Areas

1. Due to the sensitive nature and connectivity of aquatic habitats it is recommended that all key fish habitats and adjacent riparian buffers or setbacks (i.e. all that land identified as "Sensitive Waterway") regardless of whether it has been developed and regardless of its zoning should be identified as "environmentally sensitive areas" (as per Clause 18 of LEP template). This will ensure that no exempt or complying development is allowed to occur in these areas and that there is adequate environmental assessment of potential impacts of development on these habitats.

Fish Passage

1. Fish need to move within waterways and overland to wetlands and floodplains during flood events in order to breed, recruit to new areas and to access habitat for different life cycle stages. LEPs should ensure that **lateral** and **longitudinal** connectivity within and between aquatic habitats is maintained to sustain aquatic biodiversity and ecosystem function.
2. **Lateral** connectivity refers to maintaining the links between in-stream habitats and adjacent floodplain and wetland habitats during flooding events. Barriers such as flood levees, roads across floodplains and block banks can restrict the ability of fish to move between these habitat areas. Floodplains and wetlands are also important spawning habitats for several native fish species during flood conditions.
3. **Longitudinal** connectivity refers to the movement of fish upstream and downstream and between freshwater and saltwater areas. Barriers such as poorly designed road crossings, weirs, dams, floodgates and other man-made structures can limit the ability for fish to move within and between habitats to access food, shelter to breed and to avoid/escape poor habitat conditions. Connectivity is also important to maintain natural flow conditions and to improve water quality.
4. Inclusion of a Sensitive Waterways overlay map and the relevant clause as outlined in dot point 3 above will help prevent inappropriate fragmentation of fish migration pathways. Roads are the most significant factor in fragmentation of fish migration pathways and given their potential for more general adverse environmental impacts (especially vegetation clearing and soil erosion) should not be included in the "Development without consent" category in the land use table for any zone.
6. Waterway structures including weirs, dams, causeways, road crossings, floodgates etc should not be included in the "Exempt Development" or "Complying Development" Schedules or "Development without Consent" Categories for any waterway zoning or any zoning that includes significant waterways. All such structures should require development consent.

Protection of Aquatic Vegetation

1. Riparian and in-stream aquatic vegetation are important components of healthy fish habitats. They play a key role in regulating water quality (e.g. water temperature, nutrient absorption, trapping silt from entering waterways etc.) and provide sources of food and shelter for a range of aquatic fauna, including native fish.
2. DII recommends that Clause 32 of the LEP Template - Preservation of Trees or Vegetation be included and the Development Control Plan (DCP) which prescribes the "species or kinds of trees or other vegetation" that the Clause applies to, should specifically include emergent and submerged aquatic vegetation in freshwater, estuarine & marine waterways and riparian vegetation (other than recognised weeds).

Land Subdivision and Basic Landholder Rights

1. Subdivision of land fronting freshwater waterways creates additional Basic Landholder Rights under the provisions of the *Water Management Act*. This contributes to greater water extraction from streams. The LEP should avoid establishing zones where subdivision is permissible over land that includes major waterways, in particular those delineated as "key fish habitats". If that is not possible, the subdivision layout should avoid creating a multitude of lots with stream frontage.

Aquaculture

The NSW Department of Primary Industries (DPI) is responsible for the promotion of a viable and environmentally sustainable aquaculture industry. An aquaculture permit issued under section 144 of the *Fisheries Management Act 1994* is required by DPI to authorise commercial aquaculture.

The NSW government has prepared Sustainable Aquaculture Strategies for land-based and edible oyster aquaculture. The strategies include identification of appropriate aquaculture sites and a simplified approvals process. They are gazetted under *State Environmental Planning Policy (SEPP) – 62 Sustainable Aquaculture*.

Sustainable Aquaculture Strategies also include best practice guidelines based on ESD principals. These are gazetted as Aquaculture Industry Development Plan's under the *Fisheries Management Act 1994*. The strategies address issues such as business planning, species selection, site selection, planning and design and water quality guidelines.

Land-based Aquaculture

There are a number of Sustainable Aquaculture Strategies for various areas of NSW; the North Coast and Hunter and Central Coast. A whole of state land-based strategy is being developed. This state-wide strategy will also address intensive and extensive aquaculture (intensive, feeding eg. silver perch farm - extensive, non feeding eg. yabbies in an irrigation storage).

In combination with performance provisions in the Aquaculture Industry Development Plan, SEPP-62 clarifies that aquaculture is permissible in certain areas and identifies the level of environmental assessment required for land-based proposals. Land-based aquaculture proponents utilise the Project Profile Analysis matrix in the strategy to determine whether an SEE or EIS is required to accompany a Development Application.

The contact person for matters relating to aquatic habitat protection and threatened species is Luke Pearce 02 6947 4188.

ATTACHMENT C. AGRICULTURE

Overview of Agriculture in the LGA

Agriculture is a valuable industry in Hay Shire LGA and contributes significantly to the regional and State economy..

Agriculture is a dynamic and changing business with the potential for ongoing sustained development and growth which also provides opportunity for other forms of rural development such as tourism and energy development.

The two core issues for the sustainable development of agriculture are the protection of the land resource base and the minimisation of conflict.

In undertaking a landuse strategy the following should be examined:

- The value and total area of industry in the LGA;
- Employment by the sector;
- Snapshot of the major farming enterprises in the area; and
- Distribution and size of holdings across the LGA.

Planning for Agriculture

There are significant benefits to the community if agricultural industries are effectively planned for. These include:

- equitable access to finite resources in line with the principles for Ecologically Sustainable Development;
- sustainable development opportunities and the ability to adjust to future changes;
- a clear stable operating environment which encourages investment in agriculture and fosters more sustainable development;
- reduced potential for land use conflict; and
- retention of a critical mass of land and agricultural businesses to sustain key support industries, infrastructure and rural communities;

The following land use planning principles will assist in delivering the above benefits:

Resource recognition

- Resources of particular value for primary industries need to be identified and protected from urban and other non-rural based dependent land uses.
- LEPs should contain zones based on areas where primary industries are best suited such as Primary Production and Forestry zones. Within these zones the relevant primary industries should be identified as a priority land use.
- The broader values of resource lands in providing environmental services should also be recognised and reflected in planning strategies and instruments.

Encouraging sustainable development

- Within areas of importance for agriculture, priority should be given to maintaining allotments in sizes that can support profitable and efficient enterprises that are typical and sustainable for each locality and which retain future development options and diversity.
- Intensive forms of agriculture should be catered for in the planning process if justified in a strategic analysis. Determining allotment sizes for sustainable development of these industries requires careful consideration of potential environmental impacts as well as return on capital invested. Large buffer zones are usually required.
- The fragmentation of lands within primary industry zones should only occur where fully justified including demonstration of a net benefit to sustainable, profitable agriculture industries. House construction should only be approved on a staged

basis following demonstration of substantial completion of agricultural or forestry infrastructure or development.

- Rural subdivision adjacent to waterways should be avoided to ensure there is no net increase in basic riparian water rights and the level of extraction of surface water from natural watercourses.
- Provisions for the subdivision of agricultural land should be separate from those for housing entitlements (breaking the nexus between rural subdivision and residential development). Minor boundary changes that do not increase the potential for future dwellings or result in lots significantly smaller than the minimum lot size should occur through a deregulated, streamlined low-cost process which achieves an efficient size, layout and production of farms.
- Agriculture operations and access to resources should not be adversely affected or limited by land use conflict resulting from poorly planned urban encroachment.
- Concessional lot provisions are not supported in primary industry zones.
- Planning and development provisions should not include criteria that lead to the inappropriate use of agricultural suitability mapping for property specific assessment and development control.
- The strategic process should identify whether there is a need for ancillary dwelling opportunities to support agricultural and forestry industries in the area. This should clearly be linked to productive capacity and aimed at minimising the potential for future subdivision and conflict. Dwellings on the same title, with shared access points and with reasonable proximity to the primary dwelling are encouraged. Temporary residences and detached duplexes can also be considered.
- In more closely settled areas providing for a resident manager and visiting land owner is not related to agricultural needs and should be provided for by Dual Occupancy provisions or other residential strategies as outlined above. Where rural workers dwelling provisions are deemed necessary, the enterprise must be profitable and the potential for future subdivision and conflict minimised. Clear guidelines should be developed to prevent the referral of routine proposals and applications to agencies such as DII.

Additional Information

The importance of land use planning for profitable and sustainable agriculture is recognised in key state government policies and guidelines. Policies of particular relevance include:

- State Environmental Planning Policy (Rural Lands) 2008
- Policy for Sustainable Agriculture in NSW 1998 (NSW Government, 1998)
- Policy for the Protection of Agricultural Land (NSW DPI, 2004)

These policies highlight issues which are critical for protecting and promoting agriculture and the natural resource base on which it depends.

The Rural Lands SEPP identifies the range of matters that should be considered when preparing an LEP in a rural area. Particularly the LEP for land within a rural zone then it needs to be consistent with the rural planning principles. The SEPP also introduces rural subdivision principles which need to be considered when council is reviewing its minimum lot sizes in a rural zone.

The Department's Policy for Protection of Agricultural Land (2004) identifies strategies which deliver the Policy for Sustainable Agriculture through maintaining the availability of land for agriculture, avoiding unnecessary limitations on the use of that land, and promoting sustainable agricultural enterprises.

The NSW Premier endorsed report prepared by the NSW Sustainable Agriculture Review Group on the implementation of the Policy for Sustainable Agriculture in NSW also has recommendations on major LEP provisions for sustainable agriculture.

These policies and associated guidelines are available at <http://www.agric.nsw.gov.au/reader/landuseplanning>.

Additional related policies and best practice guidelines which should be considered during the development of local environmental studies and planning strategies are listed in Attachment E.

Information on Agricultural Production

The Australian Bureau of Statistics (ABS) figures provide the best official indication of the value and overview of agricultural and forestry industries in a region or local area. The ABS should be contacted if Council wishes to obtain this type of data. The Livestock Health & Pest Authority may also be able to provide data on the number of landholders and livestock held within the sub region and recent trends.

Other data sources include the Australian Bureau of Agriculture and Resource Economics (ABARE) and the Bureau of Rural Sciences (BRS)' studies of trends in rural and regional areas. Regional development bodies and the University of New England or CSIRO may also have additional regionally specific studies or reports about emerging trends in primary industries.

Settlement issues in rural areas

Housing density needs to be managed, particularly in primary industry zones to maintain access to finite resources and to allow for efficient production and sustainable agricultural and forestry development.

A minimum lot size to attract a dwelling entitlement is an easy planning tool to implement and is effective in achieving the protection of the land resource for agriculture and forests if determined appropriately. If different minimum lot sizes are required for different areas and industries, separate zones should be considered. The minimum lot size selected should retain the capacity for efficient production, minimise the risk of conflict, retain future development options and ensure that typical enterprises suitable for that location are profitable over the longer term. This requires analysis of:

- past and current production and profitability performance of dominant industries,
- existing holding size and lot patterns,
- typical productive potential of the shire,
- the dominant most suitable and foreseeable industries, and
- the minimum area required for sustainable, efficient profitable production.

Contacts - David Davis – Resource Management Officer, Yanco (02 6951 2750)

ATTACHMENT D. FORESTRY

1. Forestry warrants recognition

Forestry may be seen as a minor element in some local government areas, particularly where its economic contribution and employment level is dwarfed by agriculture and mining. As a result, it can easily be missed in strategic planning and LEPs, or simply lumped into the 'agriculture' class. However, forestry is important at regional scale and should be treated separately to (or as a specific subset of) agriculture. This would benefit the strategic planning and LEP because forestry is not affected by droughts, so it can provide an income stream when other agricultural income is limited.

Forestry is a land use with potential for expansion in the future, in native forest and in plantations.

Forestry is broader than State forest and Forests NSW. It includes circumstances such as where:

- Timber production is the primary focus of management;
- Management targets both timber and other outputs (eg environmental services, agricultural production, salinity control, carbon sequestration, explicit natural resource conservation);
- Production of niche timber products as an adjunct to the dominant land management.

Suitable land includes:

- Land already managed for forestry. This includes State forest, some 'Crown-timber land' (Forests NSW administers the Crown's timber interest thereon), and some private lands;
- Land with existing forest (be it mature trees, or regeneration) that could be managed for forestry;
- Land that has potential for forestry if trees are established there.

2. Biodiversity conservation

Areas managed sustainably for forestry make a significant contribution to conservation of biodiversity by forming part of the habitat mosaic across the landscape. Formal conservation reserves of themselves are quite inadequate to conserve the region's biodiversity. The State forest and conservation reserve areas together form a framework that broader conservation strategies can build on, such as through work by Catchment Management Authorities.

Specific Issues

Approval of land uses that are not compatible with forestry leads to potential conflict of interests. An example is rural residential subdivisions adjoining or near existing or potential forestry areas. Issues typically arise through a combination of the number and proximity of residences to forestry.

3. Restriction of operations by the proximity of neighbours

Chemicals. Chemicals used (in accord with the relevant safety provisions) in forestry include herbicide, fertiliser (mainly in plantations), pesticide and predator baits. Chemical use may be limited where stock or pets thought to be sensitive to some chemicals (eg horses, alpacas) may come into contact with chemicals. This risk increases with increased number and proximity of neighbours, as does the effort in dealing with neighbours about proposed chemical use.

Distance limits. Some forestry operations are limited or excluded within specified distances of a residence. Examples include operation of aircraft (eg 100m if applying fertiliser and 150m if applying herbicide, which may disrupt approaches and exits from aerial runs and turning of aircraft) and wood chipping (500m). Residential sub-division could limit or preclude operations.

4. Air, noise and visual amenity

People choosing to reside close to forest may expect the clear air, visual amenity, peace and quiet to persist. Alteration of the air, view and peace may be contentious for them – even if temporary. Close neighbours are more likely to be disturbed.

Recreation. Some forest uses may impinge on close neighbours wanting peace, such as hunting (on State forest this is authorised by the Game Council, not Forests NSW) and motor bike riding.

Operations. Hazard reduction burns generate smoke. Road works generate traffic, noise and dust. Logging generates noise, dust and visual impacts from chainsaw/machine operation (fall, process, forward and load logs) and trucks (haulage). Plantation harvest can occur over extended hours (eg 24 hours a day, 7 days a week), with many truck movements daily (eg on unsealed road).

5. Bush fires and fire fighting

Forests are generally perceived as having substantial bushfire risk. Fire fighting is complicated where there are more residences close to forest. Fire control options are constrained, and effort is diverted from fighting the fire to protecting the residences. As the number of people living close to forest increases, so the risk of bushfires of human origin increases, including intentional and accidental sources. This is always an issue, but particularly so for high value forest such as pine plantation, or fire sensitive native forest, such as alpine ash, white cypress and river red gum.

6. Public safety

Increased close population will increase recreation pressure on State forests, leading to increased exposure to the hazards inherent in forest operations. Risk of injury at logging sites is managed. However, road users face risks – haulage can raise dust along roads reducing visibility for other traffic, and the road surface condition might not be consistently suitable for 2WD use. The condition of forest roads can vary in space and time. Road users must share roads with gravel/log trucks. Whilst the risk to road users is low, increasing the number of people using the forest roads increases the exposure to risk.

7. Road usage (recreation and property access)

Many State forest roads are single lane with low speed rating. Forest roads are generally maintained as required to support forestry activities, and to a standard suitable for those forest management activities. Forest roads thus may not be kept trafficable, on an on-going basis, for 2WD or 4WD access. Forest roads may be closed or restricted, such as when harvesting is active on or near them. Users may with little notice be inconvenienced by operational restrictions, washouts, road surface deterioration, fallen trees or branches. Sub-division adjacent to State forest increases the likely pressure from locals for improved maintenance and standards of forest roads.

8. Forestry development opportunities

The break-up of rural holdings into smaller residential allotments may limit further forestry development opportunities by:

- Precluding the availability of areas of sufficient size to have good economies of scale,
- Limiting the management options close to those allotments, and

- Raising the price of land as a result of the potential subdivision across the landscape.

Discussion

a) Expectations

Many issues emerge from expectations. Some people may expect State forest roads will be kept available for public use and property access, and maintained to perceived RTA/Council standards. Some may expect compensation for damage to vehicles that resulted from poor forest road condition. Some may expect the visual amenity of a forest area will remain unchanged. Some people expect freedom from noise, smoke and dust. Once residents are in place, the legal legitimacy of operations often becomes secondary to the forces of public pressure.

Encroachment of rural development close to State forests makes it increasingly difficult to manage community expectations, and increases the likelihood of Forests NSW adopting sub-optimal management, reducing economic outcomes and potentially with some operations curtailed.

b) Negotiation of agreeable outcomes

Whilst revised operational parameters can usually be negotiated with neighbours, this is much easier with a small number of neighbours. Increasing populations adjacent to or near State forests make negotiation of agreeable outcomes much more difficult and less likely to be achieved. This is particularly so given the perceived "demographics" of the small rural property resident close to forest (who may expect visual amenity, peace and quiet and being largely un-reliant on primary production from that land) compared to the larger holding resident (assumed to be further from the forest, being reliant on primary production) – this is a coarse generalisation, but serves to highlight the nature of the issue.

Negotiated outcomes, such as smaller windows of operating time, typically increase operation costs, and may be problematic in fire season when operations are limited during the day due to high fire danger levels. With residences close to the forest boundary, and surrounding the forest, opportunities to undertake activities with favourable wind direction are severely limited.

c) The way forward

The potential interaction of forestry with neighbours is manageable where compatible adjoining uses persist, such as broad-acre agriculture, wind-farming, mining and the like. Where non-compatible uses adjoin, the forest owner may need to (a) buy/lease land around the forests or (b) avoid the offending activities near the boundaries. It is better to preclude non-compatible land use than expect forest owners to buffer forestry impacts as a result of non-compatible development.

At the broad level, the strategy and LEP should:

- Recognise and support existing sustainably managed forestry;
- Recognise and encourage or facilitate opportunities for additional forestry;
- Recognise the contribution forestry can make to regional biodiversity conservation.

Specific initiatives should "protect" existing forest, and provide for potential future forest / woodland (eg areas planted for commercial forest, agroforestry, carbon sink, salinity control, etc):

- Forests NSW has statutory responsibilities, under the *Forestry Act, 1916*, for the management of State forests and Timber Reserves, and for the protection of the State's interest in timber resources on other Crown-timber lands, which include vacant Crown land, and many categories of leases and reserves. Councils should apply the appropriate zoning to these lands so that forestry is permitted and activities authorised under the *Forestry Act, 1916*, are permitted without consent.

- Allow rural residential subdivision in a planned way that protects rural industry and minimises fragmentation and the need for additional infrastructure.
- Recognise all lands managed for forestry as zone RU3.
- Ensure development close to zone RU3 maintains a suitable buffer, by exclusion of such development or suitable minimum criteria (allotment size, distance of residence from zone).
- Avoid approvals which require State forest roads as the primary access to property.
- Plan and maintain the road infrastructure so it is safe for potential uses. For example, where roads likely to be used for log haulage are likely to be used by residents as a result of a proposed subdivision, ensure road standards are compatible with usage by log trucks and local traffic (eg school bus).

Contacts – Gary Rodda, Regional Manager Western (03 5881 9956).

ATTACHMENT E - PLANNING FOR SUSTAINABLE PRIMARY INDUSTRIES

POLICIES AND GUIDELINES.

Policies & Guidelines
• <i>SEPP 62 Sustainable Aquaculture</i>
• <i>SEPP 30 Cattle Feedlots</i>
• Policy for Sustainable Agriculture in New South Wales (NSW Government, 1998)
• Protection of Agricultural Land Policy (NSW DPI, 2004)
• Policy and Guidelines for Fish Friendly Waterway Crossings (Fishnote) (www.fisheries.nsw.gov.au/aquatic_habitats/aquatic_habitats/policies_and_plans)
• Policy & Guidelines - Aquatic Habitat Management and Fish Conservation 1999 (www.fisheries.nsw.gov.au/aquatic_habitats/aquatic_habitats/policy_and_guidelines)
• NSW Industrial Noise Policy (NSW EPA, 1999)
• NSW DPI and Land Use Planning (www.agric.nsw.gov.au/reader/landuseplanning/nsw-ag-landuse-planning.htm)
• How NSW DPI is involved in Land Use Planning and farm subdivision - (www.agric.nsw.gov.au/reader/landuseplanning/how-nsw-ag-involved-landuse-planning.htm)
• Sustainable Urban Settlement: Guidelines for Regional NSW (planning NSW 2000)
• Guidelines on Rural Settlement on the Nth Coast of NSW (DUAP 1995)
• Can I build a rural worker's dwelling? Local government guidelines for landholders (NSW Ag., 1998)
• Buffers planning for Sustainable Agriculture (NSW DPI - Rik Whitehead, 2004) (www.agric.nsw.gov.au/reader/landuseplanning/buffers-sustainable-agric.htm)

MURRUMBIDGEE IRRIGATION

ABN 39 084 943 037

www.mirrigration.com.au

RECEIVED

11 SEP 2009



Griffith
Rob Kelly

Mrs Kelly Tyson
Senior Environmental Consultant
Booth & Associates
PO Box 1458
GRIFFITH NSW 2680

Dear Kelly

Hay Local Environment Plan (LEP) Review

Thank for your letter dated 13 August in relation to the Review of the Hay LEP.

Murrumbidgee Irrigations (MI) main interest in the review relates to the current conditions applying to 'public utility undertakings'.

The new standard template does not include provisions that have been contained in previous/current LEPs excluding 'public utility undertakings' from requiring development consent to carry out certain developments. In the LGA's in which MI operates we are defined as a "public authority" for the purpose of the provision which allows us to undertake certain works without development consent. These works are consistent with MI's core business of the provision of water supply and drainage services.

It is my understanding that these provisions have now been moved into the Infrastructure SEPP and MI is not included in the definition of "public authority"

In essence what this means is that all works undertaken by IC's will require development consent from the local council. Obviously, this is not acceptable.

When the Department of Planning (DoP) was contacted over this issue they were unaware of the implications removing this clause would have on IC's. They assumed we were listed as a public authority under the Infrastructure SEPP. However, they are supportive in finding a solution. This issue has also been raised with the General Manager, Allan Dwyer at a meeting held with Hay Shire Council earlier this year.

Dunn Avenue, P.O. Box 519
LEETON NSW 2705
Telephone: (02) 6953 0100 Fax: (02) 6953 0197

Research Station Road, P.O. Box 492
GRIFFITH NSW 2680
Telephone: (02) 6962 0200 Fax: (02) 6962 0209

MI has since raised the issue with the Director General of the Department of Planning, Mr Sam Haddad and he was supportive of finding a solution. However, to date the situation has not been resolved and the DoP are still working on a solution.

Therefore, MI would like to raise its concerns at the removal of provision for public utility undertakings as it applies to Irrigation Corporations and request that during the process of reviewing the Hay LEP this issue is raised with the DoP in order for an appropriate solution to be developed.

If you have any questions or require further information please do not hesitate to contact me on 6962 0200 or 0409 535 274.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Robert Kelly', written in a cursive style.

Robert Kelly

Executive Manager, Environment

16 September 2009

John WILLIAMS MP
Member for Murray-Darling



Hay Shire / PM

24 August 2009

RECEIVED
20 AUG 2009

Ms Kelly Tyson
Senior Environmental Consultant
Booth Associates
PO Box 1458
GRIFFITH NSW 2680

Dear Ms Tyson

Thank you for your letter dated 13 August 2009 regarding the Local Environmental Plan for Hay Shire Council.

I have provided John with a copy of your letter for his information. Mr Williams will be unable to participate in your workshops on 1 and 2 September 2009 as Parliament is sitting.

Yours sincerely

Maree Flagg
Electorate Officer to
JOHN WILLIAMS MP
MEMBER FOR MURRAY-DARLING

PLEASE REPLY TO DENILQUIN OFFICE

1/142 Argent Street
BROKEN HILL NSW 2880
Telephone: 08 8087 3315
Facsimile: 08 8087 1796



Email: murraydarling@parliament.nsw.gov.au

228 Cressy Street
DENILQUIN NSW 2710
Telephone: 03 5881 7034
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NSW GOVERNMENT
Department of Planning

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Mr Allen Dwyer
Hay Shire Council
PO Box 141
HAY NSW 2711

Contact: Anna Patton
Phone: 02 6841 2180
Fax: 02 6884 8483
Email: anna.patton@planning.nsw.gov.au

Our ref: Q08/00003-1
Your ref: G:09/
File: Hay s62 response

Dear Mr Dwyer,

Hay LEP Review - Agency consultation

I refer to your letter dated on 6 August 2009 seeking the Department's comments and/or requirements for the draft principal local environmental plan (LEP) to be prepared for Hay Shire.

The Department commends Council for progressing the Hay LEP Review project which has been part funded under Round 5 of the Planning Reform Funding programme. The project represents a significant opportunity for Council in partnership with its community and the State Government to plan for the sustainable future of the Hay Shire.

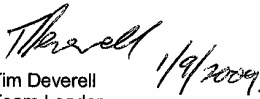
The Department notes that the draft Land Use Strategy is at commencement stage with preparation of the draft LEP to follow its completion. In this respect, the Department has provided comments relating to the Land Use Strategy component of the project only, as it is understood that further government agency consultation will occur once a draft LEP instrument is available.

A detailed list of comments for Councils consideration is provided at Attachment 1. In addition, the Regional Office of the Department is preparing an informal draft guideline for councils to consider when undertaking a Land Use Strategy. The draft guideline will provide a summary of tasks including data sources to be undertaken when preparing a Land Use Strategy for an entire local government area. The document shall be forwarded once available.

The Department wishes you every success in undertaking this important project and looks forward to being an active participant in the project.

Should you require any information or have any enquiries please do not hesitate to contact Anna Patton at the Department's Western Region Office in Dubbo on 02 6841 2180.

Yours sincerely


Tim Deverell
Team Leader
Western Region

Attachment 1
Comments for Hay LEP Review project

Life of Land Use Strategy

The Land Use Strategy (LUS) should plan for at least 25-30 years supply of suitable land for residential and rural lifestyle settlement as well as commercial, retail, industrial and tourism development. A local environmental plan should zone 10-15 years supply of suitable land for each of the above land uses. To achieve an appropriate land supply for the life of the Strategic Land Use Plan, a land supply and demand analysis for all land uses covered by the strategy and a demographic profile and population projections summary is necessary.

Staging of land release

Staging of land identified for release is an important component of the LUS as it ensures that land is released in a timely and orderly manner with clear consideration of issues such as servicing and meeting demand, whilst avoiding artificially inflating or deflating the property market. Given that the LUS will plan for release areas needed beyond that zoned in the LEP, the LUS should incorporate an appropriate staging plan.

Existing environment

Noise/Amenity - consider transport routes/corridors (road, rail and air). These will require management. Consider the EPA *Environmental Criteria for Road Traffic Noise* Guidelines and the *NSW Industrial Noise Policy*.

Land Use Survey

A spatial (mapped) representation of existing land uses should be developed to provide context in the LUS. The survey can be used to apply the standard instrument zones correctly and it is also important for the land supply analysis. The land use survey should identify locations of important infrastructure, which should be afforded protection now via buffers, e.g. aerodrome, saleyards, railway station, sensitive receivers etc.

Infrastructure and Services

Areas proposed for future development must be located on land capable of logical and efficient servicing with due regard to environmental limitations.

In identifying future release areas, the Land Use Strategy will need to determine how the land will be serviced, whether it is via reticulated town water and sewer networks or alternative methods such as bores/tanks/dams and effluent disposal systems.

A servicing and infrastructure program summary for the supply of utilities and social facilities is needed over the life of the strategy. If the provision of any of the facilities or services is the responsibility of another agency council should consult with the relevant service provider(s) to determine expected timing of the necessary infrastructure, e.g. Council should consider whether the "social infrastructure" e.g. schools, hospitals is adequate?

If additional upgrades to current sewer and water supply services are necessary to service the proposed sites, an indication of how Council intends to achieve funding for the upgrading of servicing and infrastructure for future development should be provided.

Water supply

The LUS must consider the capability of existing services to cater for the increased demand and pressure placed on the systems from future development if town connections are being proposed. Alternatively, the capability of the land for other sustainable and secure supplies if

town connections are not proposed, e.g. are alternate on-site water supplies available, sustainable and secure.

Following, if ground or surface water is proposed, consider the potential for contamination of groundwater from effluent disposal systems on the subject land, and the potential conflict between current surface and groundwater users (e.g. irrigated agriculture) and future settlement areas. Further, consider groundwater availability, security, quality and sustainable yields should groundwater be determined to be the means by which to service future development areas.

This approach will need to consider the potential impacts of increased sourcing of water from ground or surface sources. Stock and domestic users have a basic right under the Water Management Act 2000 for accessing water via installation of a bore to access groundwater or pumping from a creek/river. In addition, the Farm Dams Policy (former DNR/DWE) will need consideration if adopting this approach given that the provisions of this policy will affect recommendations for potential minimum lot sizes.

Issues to be considered include,

- The actual water needs – potable and non-potable (recreational, livestock & landscaping and fire-fighting needs).
- The actual water source – tanks, dams, rivers/streams, groundwater or water recycling.
- Opportunities for centralised reticulation systems.
- The environmentally sensitive area mapping (available from DECCW) for waterways and groundwater will be of assistance to determine the location of high groundwater vulnerability.

The section 117 direction 3.1 *Residential Zones* requires the consideration of the provision of adequate services and that any inconsistency must be justified by a Land Use Strategy.

Effluent Disposal

Consideration of the *NSW Groundwater Quality Protection Policy* is recommended.

Flooding

Given the issue of flooding affecting Hay and surrounds, section 117 direction 4.3 *Flood Prone Land* provides direction to Councils when preparing draft LEPs which recommend intensification of land subject to flooding.

Information in relation to the flood planning level (FPL) adopted by the Hay Flood Study is needed once available. The *Guideline on development controls on low risk areas—Floodplain Development Manual* confirms that, unless there are exceptional circumstances, councils should adopt the 100-year flood as the FPL for residential development other than sensitive land uses such as Seniors Living (Department of Planning Circular PS 07-003). In addition, the frequency of inundation, hydraulic function (floodways in which floodwaters are conveyed, flood storage areas where flood waters are temporarily stored during flood events, and flood fringe areas) and flood hazard (a minimum of two categories, high and low) should be shown spatially on an appropriate map.

It is known that a levee has been built to protect the town of Hay. Council should confirm and provide evidence that the existing levee is adequate to protect the town of Hay for the 1:100 year flood event if it will be used to justify the suitability of new release areas currently protected by the levee.

Information regarding the Probable Maximum Flood (PMF) is also needed in accordance with the *Floodplain Development Manual 2005* - consideration should be given to using the PMF as the Flood Planning Level when siting and developing emergency response facilities such as

police stations, hospitals, SES headquarters, and critical infrastructure, such as major telephone exchanges.

Environmental constraints

The selection of candidate areas should be based upon a series of parameters which provide a clear method of selecting or eliminating sites based upon their individual attributes. The process should be transparent and should include an assessment of constraints which is best represented through a spatial mapping exercise. To aid in the selection of sites, the following should be considered:

- The parameters of each exclusion/constraint category listed (such as flood prone land for example) should be explained and mapped. These categories should provide a clear guide as to which factors would make a particular site suitable or unsuitable. Simply naming a category is not sufficient to explain its application. Where possible, there should be a clear link to numerical standards, such as in the case of flood prone land excluding sites within the 1 in 100 year flood level.
- Each candidate site recommended for development should comply with the nominated exclusion or inclusion categories and it should be shown through a map, how the constraints relate to the subject sites. I.e. overlay the constraints mapping with the candidate sites so it is clear why that site has been chosen or excluded.
- The following examples are given of the constraints Council may consider as part of this exercise: biodiversity, contaminated lands – POEO scheduled premises, salinity (if applicable), bushfire, location of mineral resources, mineral exploration areas, stressed groundwater aquifers, surface and groundwater availability (if proposing any release areas which will not be provided with town services), land capability, agricultural land suitability, land degradation, vegetation, heritage (Indigenous and European);
- The selection of sites should also be accompanied by a detailed discussion to demonstrate why areas identified have been chosen in preference to alternative sites which may be available and consistent with the nominated site selection criteria. This may take into account other factors such as existing land fragmentation, availability of services or proximity to town centres.
- The issue of the intensification of land use and development along Rivers and their tributaries for large lot residential purposes need to be addressed. Whilst acknowledgement is made that sites along the river are attractive for settlement, the protection of river and riparian ecosystems and the cumulative impacts of increasing riparian access rights to water for stock and domestic use is an issue that should be factored in the decision making. A general principal is to avoid increasing demand for riparian water access.
- Council may determine that some land is deemed 'unsuitable' for its existing land use zoning and provide a clear explanation of why this is the case and how it could be managed in the future.

Primary Production

It is understood that land under irrigation is located both within the current 1(c) Rural Small Holdings zone and the 1(a) General Rural zone in the existing LEP which needs analysis in the Land Use Strategy. It is also understood that the current 1(c) Rural Small Holdings Zone was applied over the Hay Private Irrigation Area and currently retains a minimum lot size of 2ha which will be reviewed as part of this project.

Subsequently, the Land Use Strategy should recommend options for identifying land suitable for primary production and land suitable for rural living. To prevent valuable primary production land (especially intensive plant agriculture) being developed for lifestyle purposes, the Land Use Strategy may recommend that for DA decisions in relation to intensive agriculture and dwellings, that the intensive agricultural use should be established prior to gaining consent for the dwelling.

Council should prepare a holding size analysis to determine holding size patterns across the LGA. The analysis will show the range of allotment/holding (by ownership) sizes; number in each range and percentage of total area (e.g. 20 x 1500ha allotments, making up 5% of total LGA area and/or by zone).

Rural settlement

The application of the current 1(c) Rural Small Holdings Zone needs review to identify areas currently under intensive agricultural production as distinct from rural living/lifestyle areas. The land use survey should make subsequent recommendations for future management under the new draft LEP.

Identify existing areas of fragmentation in the rural areas which may be considered for candidate areas to be formalised into rural lifestyle areas.

Management of the interface between rural lifestyle areas and village/intensive agricultural/primary production/ other land uses should be identified after more rigorous evaluation and may include buffers. e.g. application of pesticides (aerial and ground), noise, traffic, odour, feral animal baiting etc.

Urban zones

Discussions with Council have confirmed a desire to retain a village zone over the town of Hay and the villages of Booligal and Maude to retain flexibility to provide for future development in the Shire. However, specific land use zones (residential, commercial, special use, open space etc.) should be identified in a new Development Control Plan which will indicate preferred allocation of land uses within the village zone together with additional more specific guidelines and controls for certain types of development.

Notwithstanding the above, Council has indicated, with the Department's support, that industrial and large lot residential land uses should be directed into their own separate zones given that these uses will often be incompatible with land uses supported in village zones and need separate management to avoid land use conflict.

Industrial land

Previous discussions with Council have indicated existing land use conflict issues between the private saleyards located proximate to residential areas. To alleviate these issues, a buffer has been established around the saleyards which should remain or a compatible land use proposed on this land, i.e. light industrial (good neighbour), rural, open space etc.

Commercial land

It is evident that Hay has a well defined town centre which should be protected and consolidated for commercial uses. Given that Council intends to retain a village zone over their existing urban areas, the Department would strongly support consideration in the LUS of the need to consolidate and protect the existing town centre of Hay and, that all major commercial development should be undertaken within the confines or adjacent to the existing centre.

Further, Council should consider identifying options for retaining existing and potential retail development in the town centre of Hay in a future Development Control Plan.

Contaminated Lands

Consideration must be given to SEPP 55 – Remediation of Land. In this regard, the Land Use Strategy should have regard for all of the known previous land uses and any potential contamination sources arising from these activities.

Riparian management and wetlands

Management of riparian zones within an urban and rural context needs to consider the objectives of the State Rivers and Estuaries Policy with consideration of the NSW Biodiversity Strategy and the Native Vegetation Conservation Act 1997. Constructed wetlands and natural wetlands require similar management in terms of policy requirements and can be achieved by adhering to the objectives of the NSW Wetlands Policy.

Management of riparian areas and wetlands will have an associated effect of protecting native vegetation, prevent bank disturbance and importantly, prevent future allotments being created which will gain basic riparian water rights.

If the LUS identifies suitable land for future development in proximity to rivers or other waterbodies, a riparian access buffer must be considered to ensure no additional basic riparian water rights are created.

Ageing population

To adapt to changing demographics in the Shire, land use planning needs to consider the needs of an ageing population as a major issue. In this respect, the LUS should identify the demographics of the ageing population in the Hay Shire to determine how the Shire can cater for their needs and adapt existing structures and services to be accessible to and inclusive of older people with varying needs and capacities. Considerations for the ageing population should include:

- o It is understood that the current retirement village in Hay is at capacity, however, Council have indicated that there is sufficient land available around the hospital to allow a new Seniors Living development.
- o The LUS may identify areas suitable for other forms of senior living.
- o Affordable and appropriate housing options close to town centres, support facilities, and in locations which are effectively serviced by public transport.
- o Opportunities for walking, bicycling, or other forms of physical activity
- o Mobility and access issues
- o Safety and security concerns

Buffers/Land use conflict

As a general comment, buffers are a critical component in facilitating appropriate outcomes for natural resources and minimising land use conflict between non-compatible uses. These need to be addressed for each natural resource with particular focus on groundwater, surface water, remnant vegetation, riparian corridors, noise and odour, with appropriate consideration of the potential impact of development. Land use conflict can be minimised through the appropriate use of buffers with appropriate design and management.

Government agencies

In accordance with the Memorandum of Understanding (MOU) between the Department and Council, government agency consultation should occur throughout the process to ensure those agencies have an opportunity to raise issues and provide relevant information to the project. It is noted that Council has commenced section 62 consultation (under the Environmental Planning and Assessment Act 1979) at this stage. However, the government agencies should be given another opportunity to provide comments once a draft LEP instrument is available. This consultation should be identified in the community and agency consultation plan under preparation, which must be signed off by the project Steering Committee.

As discussed with Council previously, the Department is supportive of an initial Planning Focus Meeting (PFM) being held with relevant government agencies at this stage to engage them in the process, establish contacts and gain their assistance in building the outcomes and recommendations in the Land Use Strategy which are consistent with the State government policy and legislative framework. As also discussed, the Department is happy to offer its assistance to organise this meeting.

HAY SHIRE COUNCIL

07 SEP 2009

TRIM NO 109/2563

Contact: Cathy Colville
Telephone: 02 9873 8588
Catherine.colville@planning.nsw.gov.au
File: H98/00083/002
Our Ref: HRL55310
Your Ref: G:09/

The General Manager
Hay Shire Council
PO Box 141
HAY NSW 2711

Dear Sir/Madam

Re: Draft Hay Local Environmental Plan – Standard Instrument – s.62 Consultation

Thank you for notifying the NSW Heritage Council of Council's intention to prepare a Draft LEP for the Hay Shire based on the Standard Instrument. The correspondence was received on 10th August, 2009.

The Heritage Branch reviewed the relevant documentation at s.54 stage of the plan process and provided the following advice to the Western Region Office of the Department of Planning on 15th July, 2008 in regard to the preparation of the draft plan.

It is noted that the draft Plan will be prepared in accordance with the Standard Instrument for LEPs. The inclusion of the heritage provisions within the Standard Instrument is supported.

It was also noted that Hay Shire Council intends to undertake a Rural/Urban Land Use Study to inform the content of the new comprehensive Plan. This was supported and it was recommended that where time and budget allocation allows, the following assessments are made:

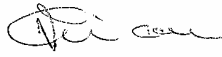
- An assessment of heritage assets throughout the study area. This assessment should include natural areas and places of Aboriginal, historic or archaeological significance.
- The Heritage Council maintains the State Heritage Inventory which lists some items protected under the Heritage Act, 1977 and other statutory instruments. This register can be accessed through the Heritage Branch home page on the internet (<http://www.heritage.nsw.gov.au>), or can be searched by Heritage Branch staff by request. Lists maintained by the NSW National Parks and Wildlife Service, the National Trust, and the Australian Heritage Commission should also be consulted in order to identify any identified items of heritage significance in the area. Please be aware, however, that these lists are constantly evolving and that items with potential heritage significance may not yet be listed.
- If one has not been undertaken to date, non-Aboriginal heritage items within the area should ideally be identified by field survey. This should include any buildings, works, relics (including relics underwater), gardens, landscapes, views, trees or places of non-

Aboriginal heritage significance. A statement of significance and an assessment of the impact of the proposal on the heritage significance of these items should be undertaken. Any policies/measures to conserve their heritage significance should be identified. This assessment should be undertaken in accordance with the guidelines in the NSW Heritage Manual. The field survey and assessment should be undertaken by a qualified practitioner/consultant with historic sites experience. The Heritage Branch can provide a list of suitable consultants.

- A survey of sites and places of significance to Aboriginal people should be undertaken in consultation with the Aboriginal community. For guidelines regarding the assessment of Aboriginal sites, please contact the NSW National Parks and Wildlife Service on (02) 9585 6444.
- A survey of significant existing or potential cultural landscapes, conservation areas, views and vistas should be undertaken within the study area covering all major historical land uses and themes. This should be supplemented by appropriate boundary definition and identification of appropriate zoning recommendations to conserve significant land uses so that future development and infrastructure can be integrated without conflicts arising at later stages. Issues such as whether subdivision is desirable, viability of property sizes, minimum lot sizes, retention of productive agricultural land, rural and residential uses, and development in the vicinity of heritage items or areas should be identified. Possible land use conflicts should be clearly identified, and mitigation strategies, appropriate zoning and other controls formulated (such as Environmental (Scenic or Cultural Landscape) Protection or similar).
- Any areas or sites proposed to be re-zoned should be assessed for the potential existence of heritage assets. As mentioned above, Council should ensure that any rezoning will permit uses that are compatible with any heritage significant site or item and that the rezoning will allow for the continued use and conservation of the heritage item in an appropriate manner. Identified significant views, vistas, cultural landscapes and settings should also be maintained and conserved when planning for new development areas.

All existing heritage items and conservation areas listed under the provisions of the current Hay LEP 1998 (as amended) should be included in the draft Plan. Further, any draft heritage items and the recommendations of any recent heritage studies undertaken by Council should also be incorporated into the draft LEP.

I trust this information is of assistance. Please call Cathy Colville on 9873 8588 if you have any further enquiries in this matter.

 1/09/09

Vincent Sicari
Manager
Conservation Team
Heritage Branch
Department of Planning



Land and Property
Management Authority

The General Manager
Hay Shire Council
PO Box 141
Hay NSW 2711

01 OCT 2009

Cnr Johnston & Tarcutta Streets
PO Box 60 Wagga Wagga 2650
Telephone: (02) 6937 2713
Facsimile: (02) 6921 1851
www.lands.nsw.gov.au

Our Ref:
Contact Officer: Shona Cowley
Telephone: (02) 6937 2713
Email: shona.cowley@lands.nsw.gov.au

CC – Kelly Tyson, Booth Associates
Agribusiness & Environmental Consultants

30 September 2009

Section 62 Consultation
Hay Shire Local Environmental Plan

Dear Sir / Madam,

Land and Property Management Authority provides the following information and comments to assist Council in preparing its draft Local Environmental Plan and ensure that Council takes into account the Department's interest in managing the Crown Estate under its control within your Local Government Area.

The Authority reserves the right to make further comments and submissions when the "draft" Plan is further developed and when it is placed on public exhibition.

Administrative Details.

- The Authority should be consulted on the creation of any new zonings or alterations to existing zonings affecting Crown Land before Council submits its draft plan to the Department of Planning for a Section 65 certificate.
- The permissible uses proposed in the "draft" LEP should be in accordance with policies and plans and in particular the principles of Crown Land Management as outlined in Section 11 of the Crown Lands Act 1989.
- Where the proposed zoning affects perpetual leases, Council should be aware that these lands may also be subject to applications to convert to freehold title. In these circumstances, Council should note that for any lease over 5000m² and not zoned residential, the land will have a restriction placed on title preventing further subdivision as part of the conversion process. Any inquiries regarding potential future subdivisions of that type of land should be referred to the Department in the first instance.

Zonings Applying to Reserves and Dedicated Crown Lands.

1. To help Council with appropriate zonings over Crown land, the attached Annexure "B1" and "B2" is enclosed. The Annexure outlines the preferred zonings of the current public purposes declared for the purposes of Sections 80 and 87 of the Crown Lands Act 1989.
2. Crown land reserved with multiple purpose reservations or dedications should be zoned to allow the highest use for that reservation / dedication.
3. **Crown land reserved for future public requirements should be zoned to allow the highest use available.**
4. Land reserved for access be zoned SP2 Infrastructure. If other zonings are placed over such areas, the zoning should allow roads and utility installations to be permitted.

Increased Demand / Additional Uses of Crown Land.

1. Any proposal to rezone land to permit new subdivision area/s or land release areas where Crown Public road/s (formed or unformed) will be required to provide access, Council must accept transfer of control of such roads before approving any such proposal, regardless of the number of lots to be serviced.
2. Any proposal to rezone land that presently relies on Crown Public road/s for access into the zone that permit a more intensive land use, Council must accept transfer of control of such roads before approving any such proposal to further develop the land.
3. Asset Protection Zones (APZ's) and perimeter access roads that are required as part of any Bushfire protection scheme in any new subdivision/s, must be located within the property of the private subdivision land and not on any adjoining Crown land.
4. Any proposed new subdivision area/s where essential public infrastructure (e.g., stormwater drainage channels, pipes or other utilities) is required to service that new subdivision should not propose to utilise any Crown public reserve/s for that purpose where such facilities do not accord with the declared public purpose.
5. Any proposed rezoning should not utilise Crown land as buffer areas for example bush fire hazard reduction zones, visual impact relief and or open space to serve additional demands.
6. Urban zones (residential, commercial or industrial) should not be given to freehold lands at the expense of Crown land with potential urban use, e.g. Crown land with potential urban use should not be used as a public recreation or green space offset to intensified development on nearby freehold lands.

Commercial Development Opportunities.

- a) Crown reserves that have the potential to be developed outside their current purpose (e.g. have commercial opportunities) be favourably reviewed in any rezoning proposals if the rezoning proposed is similar to existing zoning in the area to reflect highest and best use.
- b) If there are any areas of Crown land adjacent to proposed urban release areas, advice should be sought from the Department in the first instance as to whether it is appropriate for Crown land to be included in any proposed rezoning proposal.

Land and Property Management Authority is willing to further assist Council in the development of its draft LEP and to clarify the Authority's interests and role in managing Crown Lands. The Authority looks forward to working with Council to achieve an outcome that protects the Crown Lands interests so as to be able

to achieve benefits for the local and the broader community. In addition, the Authority **may be** able to provide spatial and other data information that may assist in resolving any information gaps and or conflicts in respect to proposed amendments.

Please contact the undersigned should you require any further information.

Yours sincerely

A handwritten signature in black ink, appearing to read 'SCW', with a stylized flourish at the end.

Shona Cowley
Team Leader West
Land Management
South Region

Our reference: FIL 09/11421
Contact : Miles Book 6229 7093
27 January 2010

The General Manager
Hay Shire Council
PO Box 141
Hay NSW 2711

Dear Allen,

Thank you for the opportunity to comment on Council's proposed new Local Environmental Plan (LEP). The existing Hay LEP 1998 has a number of environmental and heritage protection measures that currently provide a base level of protection for the Hay Local Government Area (LGA). As a minimum these controls should be maintained in the new LEP and where appropriate improved to be consistent with the standard instrument and modern environmental planning protection measures.

The new LEP will be a comprehensive plan and as such will require an appropriate planning proposal as per the new provisions of the Environmental Planning and Assessment Act 1979 and associated Regulations in regards to Plan Making. Following the Planning Focus Meeting and Mapping Meeting held at Hay 3 December 2009, I advise the following information for inclusion in the new LEP and for Council consideration:

Biodiversity + Vegetation

Across the Hay LGA, there is a variety of native vegetation. Much of what remains is of high conservation significance and important habitat for threatened species and communities.

The Shire contains important remnant patches of native grassland Rosewood (*Alectryon oleifolius* subsp. *canescens*) and Belah (*Casuarina pauper*), Pine (*Callitris*) woodland on sandhills, Black Bluebush (*Maireana pyramidata*) and Old man Saltbush (*Atriplex nummularia*) shrublands, and Mallee and *Acacia melvillei* woodlands. These remnants are important habitat of threatened species such as Plains Wanderer, Grey-crowned Babbler, Major Mitchell's Cockatoo, Painted Honeyeater and Bush Stone-curlew.

DECC considers that the new Hay shire-wide LEP should contain a biodiversity overlay, that would complement overlays for land and water resources. Many Shires within the Murray and Murrumbidgee catchments are incorporating these overlays into their LEPs.



Practice Note and explanations on implementing the biodiversity overlay are available on the link as per details below. A draft clause, which has been approved by officers of the Dept. of Planning for inclusion within LEPs, is included in the Practice Note.

This is titled *Practice Note for using spatial Information in Local Environmental Plans to protect and manage Environmentally Sensitive Lands* for the Murray-Murrumbidgee Region which is available at

<http://www.environment.nsw.gov.au/resources/biodiversity/09353PNforESI.pdf>

Basically the layer identifies to Council those parts of Hay Shire that are considered to have biodiversity significance. The clause requires that if Council receives a development application from an area covered by the biodiversity layer, then Council staff can only issue consent if they are satisfied that the development will not impact on the biodiversity values, or if impacts are unavoidable that they have been minimised and any adverse effects have been offset.

I have also included in a draft biodiversity layer for Hay Shire. DECC would like to further develop this layer in conjunction with Council and provide advice about what features occur at a particular location. For instance, it does not prohibit "feedlots" like the current Environmentally Sensitive Lands clause. I also enclose a copy of the Environmentally Sensitive Areas – Land Overlay and Water overlay maps.

Wetlands

The Lowbidgee floodplain (part of which is in the west of the Shire) supports a diverse range of vegetation, including River Red Gum forest, Black Box woodland, Lignum shrubland, and Cumbungi reedbeds. The Lowbidgee floodplain includes some of the most important wetland habitat (217,000 ha) in NSW. In good years, during extensive monitoring using aerial surveys across half the continent, the Lowbidgee wetlands were consistently among the three most important wetlands in eastern Australia over more than an eleven year period. They regularly supported more than 50,000 waterbirds and sometimes more than 100,000. The wetlands are important habitat of several threatened species including the Southern Bell Frog, Australasian Bittern, Freckled Duck and Blue-billed Duck. The area is a particularly significant breeding habitat for egrets and ibis. Other important wetlands in the Shire include the Lachlan /Booligal system.

River Red Gum Forests and the lignum and associated wetlands in the Lowbidgee are degrading because they are not receiving sufficient water flows.

The DECCW layer reflects the protected and recently cleared land so is more accurate than the current LEP Environmentally Sensitive Lands layer.

Aboriginal Cultural Heritage

Aboriginal cultural heritage and its assessment is a sensitive issue in Hay Shire. Potential archaeological sites are given strong recognition within the current LEP. DECCW understands that the Hay LALC strongly supports the retention of these provisions and we are supportive of this position. It is understood that the standard instrument may not support the direct transfer of these provisions to the new LEP, however Council should

investigate options such as a local provision, in consultation with DECCW and other relevant State Government Agencies, in retaining such requirements for the new LEP.

For your information the following provide a valuable set of data and references within Hay LGA:

Pardoe, C. and S. Martin. 2001. *Murrumbidgee Province Aboriginal Cultural Heritage Study. Aboriginal Cultural Heritage Regional Studies*. Report to NSW National Parks & Wildlife Service & Aboriginal communities of the region.

Treatment and Disposal of Domestic Sewage

DECC considers that rural residential areas within 2 kilometres of a reticulated sewage scheme should be connected to that scheme, in accordance with the NSW Health Department guidelines. Similarly, any area connected to a reticulated water supply should be connected to a reticulated sewerage system.

Where connection to any one of the above is not feasible, considerable care should be taken in the selection of any on-site sewage treatment scheme. Any scheme should be selected on the suitability of the site, taking into account important environmental factors such as local climate, rainfall patterns, slope, soil types and depth, groundwater regime and sensitivity of receiving waters such as rivers, creeks and lakes. Treated effluent may only be discharged to waters provided effluent treatment involves reducing nutrient levels to meet DECC's requirements and other effluent utilisation systems are both economically and environmentally not feasible. Given the need for tertiary treatment such an option would require a significant investment in plant and ongoing operations. Licence fees may also incorporate a load-based component commensurate with the discharge.

DECC does not consider appropriate the development of sites in either drainage depressions or with poor or shallow soils, unless reasonable means of preventing groundwater contamination or off-site nutrient transport are demonstrated.

Buffer Zones

Buffer zones are a very important component of any planning process. There have been many examples in the past where inappropriate planning decisions have not incorporated buffer zones and so impacted on the community and industry alike. Many of these land use conflicts have absorbed significant resources from both local Councils and the DECC. In many cases the establishment of industrial and residential development in close proximity has led to an intractable problem where a significant impost is placed on industry to control impacts and the residential amenity is compromised even with best control practices by industry.

Consequently the DECC considers that suitable separation distances should be established at the planning stage particularly between sensitive land uses and industry.

Agricultural/Industry Activities

The rezoning of lands from rural to rural residential should consider the impacts and distance between the proposed rezoning and any existing or proposed offensive industry such as piggeries, feedlots and others such as motor sport venues, rifle/pistol shooting clubs, quarries and landfill sites. Impacts such as noise, dust and odours are difficult to control after the event. In many instances these impacts cannot be eliminated without closure or relocation of the industry. Therefore the strategy should consider adjacent existing activities and zonings to any proposed areas to ensure conflicts do not occur. Similarly the encroachment of industry toward existing residential development should be subject to the same considerations.

Presently DECCW licences two feedlots, the Council water and sewer treatment plants and the Rice Sheds on the Deniliquin Road. Increase in development potential in the vicinity of these existing developments or any potentially offensive industry/development should be avoided.

Waste Disposal

Council should ensure that rural residential developments are provided with adequate facilities for disposal of household wastes. On-site disposal of household wastes has in the past resulted in poor practices. This has given rise to potential risk to surface and groundwater. The provision of transfer stations or convenient access to Council regulated landfills should be considered.

Considering the community's values for waterways

The Government's endorsed *NSW Water Quality Objectives* include recognition of community values such as aquatic ecosystem protection, drinking water supply, recreation, agricultural use and growing of aquatic foods. They provide a link between the community's values and goals for waterways and nationally endorsed technical guidelines for assessing water quality and aquatic health (The ANZECC 2000 guidelines)

DEC has also recently published guidance on how strategic planning can contribute to waterway health and this should be reflected in the draft LEP. This guidance addresses how the overall land-use planning process can contribute to waterway health, complementing and linking to the more specific guidelines of the *Managing Urban Stormwater* series. The Water Quality Objectives and the guidance can be found at

www.environment.nsw.gov.au/ieo.

A booklet which outlines how water quality objectives can be incorporated into strategic planning can be found at

<http://www.environment.nsw.gov.au/water/planningusingwqos.htm>

DECC requests that the draft LEP emphasise the importance of ensuring that all development (whatever its type or location) is planned to ensure that downstream impacts are assessed and managed so as to positively contribute to achieving the Water Quality Objectives.

Clause 28 of the existing Hay LEP 1998 provides a basic development buffer to larger watercourses which is supported by the DECC. It is recommended that similar restrictions be utilised in the new LEP.

Contaminated Lands

Council should ensure that land proposed for development complies with the guidance provided in the documents "Managing Land Contamination – Planning Guidelines and SEPP 55 – Remediation of Land". If the land or land in the vicinity is likely to be associated with activities listed in Table 1 of the SEPP, Council should provide information and assessment to show the land is or will be suitable for the proposed use.

The *Contaminated Land Management (CLM) Act 1997* sets out the various roles and a responsibility when contamination is present and presents a significant risk of harm to human health and the environment. The EPA has released "Guidelines on Significant Risk of Harm from Contaminated Land and the Duty to Report" and copies have been forwarded to Councils to assist them in considering potential contaminated land matters.

Town Expansions – Re-zonings.

Where any new zones, expansion of existing zones, additional development potential for urban expansion and the like are proposed, such options should be justified in terms of need for such expansion, shall be directed away from environmentally sensitive lands, such as those already mentioned earlier within this advice, and should be accompanied by suitable studies demonstrating the environmental values are being maintained and protected. The DECCW would not support urban expansion into environmentally sensitive areas where alternative non sensitive locations are possible and suitable.

Flooding

The Council should consider any expansion or rezonings in regards to flooding or whether the subject land is likely to be flood prone. DECCW has provided Council with the Hay Town Levies Hydraulic Assessment (May 2009) prepared by WMA Water and anticipates the public exhibition of the Murrumbidgee River Hay to Maude Floodplain Management Plan (Draft) within the next few months. These documents should form part of the Council's planning proposal and guide future development issues in regards to potential for flooding.

Additionally, DECCW's standard clause for flooding should be included in the new LEP. This is provided in Attachment 2.

Groundwater

Groundwater issues should be included in the planning proposal along with any proposed management measures. For further groundwater issues, the new NSW Office of Water should be consulted.

General

Data which is behind the attachments and other DECCW information has been previously supplied to Council. This data should greatly assist Council preparing its new LEP. Please contact Manager, Spatial Services Unit Callan Pearson (02 6024 8858) in the Albury Office in regards to technical information in regards to the data. Alternatively, Sandy Grant in the Wagga Office (02 69329115) may be able to assist with such technical or data issues.

I wish Council well on its path to a new LEP and offer the DECCW's staff and resources to assist Council in achieving a robust and modern planning instrument. If you would like to discuss the above matters please contact Conservation Planning Officer, Mr Miles Boak on 02 6229 7095.

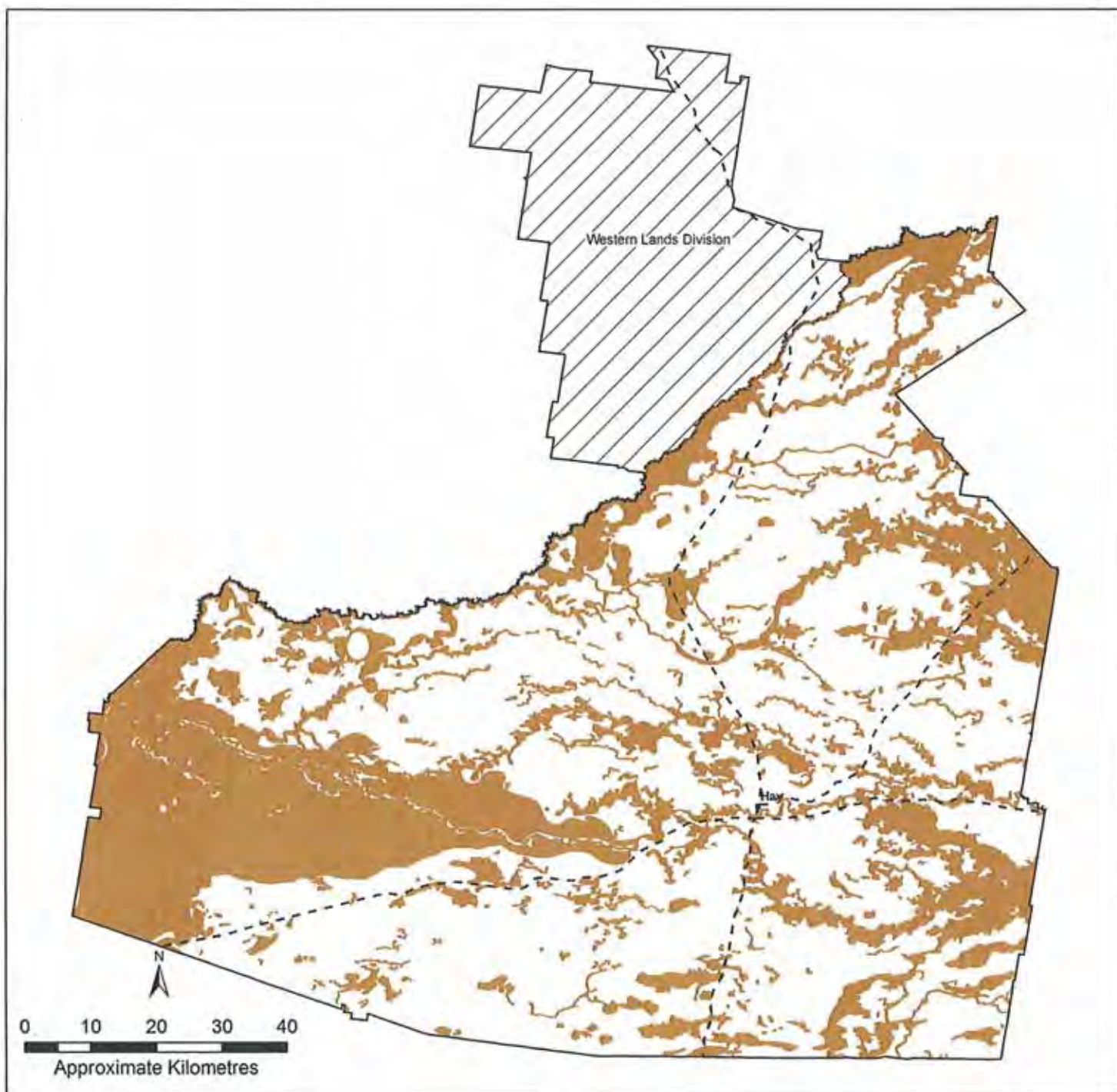
Yours sincerely

Miles Boak 1 FEB 2010
 for **MICHAEL HOOD**
Manager Planning and Aboriginal Heritage (South)
Climate Change and Environmental Protection

cc.
 Booth Associates
 Agribusiness & Environmental Consultants
 PO Box 1458
 GRIFFITH NSW 2680

Enc.
Environmentally Sensitive Areas – Land Overlay, Water Overlay, Biodiversity Overlay

DECCW's standard clause for flooding



HAY LGA

Environmentally Sensitive Areas - Land Overlay

This land use decision making tool is based on information produced by the Department's of Water and Energy & Environment and Climate Change and does not represent other NSW Government agency information.

This information should be used as a guide only and scale must be taken into consideration when used with cadastral information.

Legend

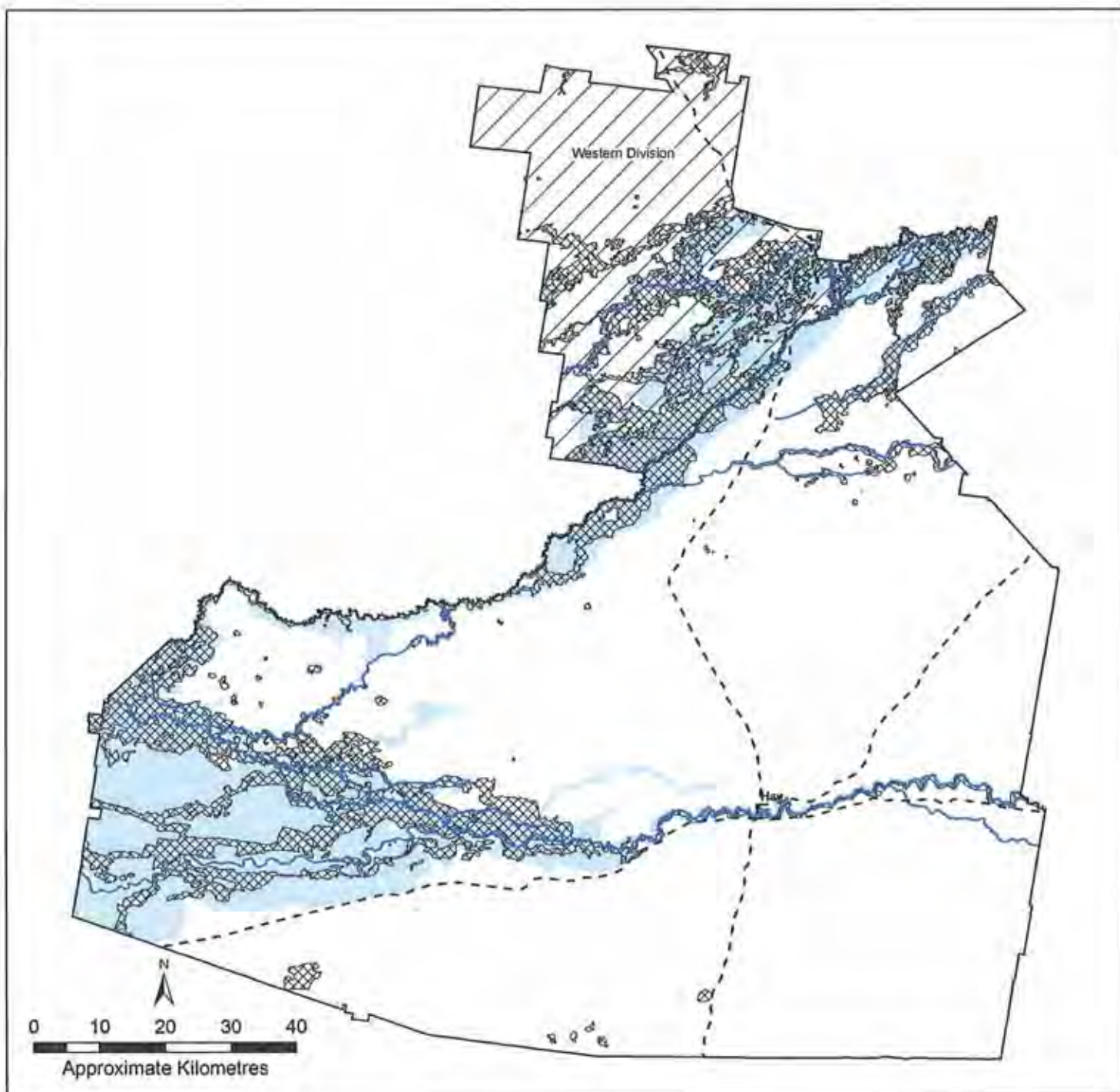
- Local Government Boundary
- Environmentally Sensitive Areas-Land subject to one or more of the following: steep slopes, shallow soils, salinity, temporary or permanent inundation, high proportion of rock outcrop, high dispersability & erosion potential.
- NSW Highway
- Town

Environmentally Sensitive Areas Land Overlay Data

Data Source	Data Codes
Vulnerable Land-Steep land over 18° slope	
Land Capability	Classes 6, 7, 8
Riverine Soils	Generally not suitable for intensification of landuse (category only)
Salt Outbreaks	All codes

DISCLAIMER

The Department's of Water and Energy & Environment and Climate Change and/or contributors accept no responsibility for the result of action taken or decisions made on the basis of the information contained herein or for errors, omissions or inaccuracies presented here. While all care is taken to ensure a high degree of accuracy, users are invited to notify of any discrepancies.



HAY LGA

Environmentally Sensitive Areas - Water Overlay

This land use decision making tool is based on information produced by the Department's of Water and Energy & Environment and Climate Change and does not represent other NSW Government agency information.

This information should be used as a guide only and scale must be taken into consideration when used with cadastral information.

Legend

- Local Government Boundary
- Sensitive Waterways (Major freshwater habitats -40m buffer either side for bed & bank stability; protection of riparian vegetation & connectivity of habitat)
- Wetland
- High & moderately high groundwater vulnerability
- NSW Highway
- Town

Environmentally Sensitive Areas Water Overlay Data

Data Source	Data Codes
Vulnerable Riparian Areas	All codes + 40m buffer either side of high bank
Groundwater vulnerability	High and Moderately High
Kingsford Wetlands Data	

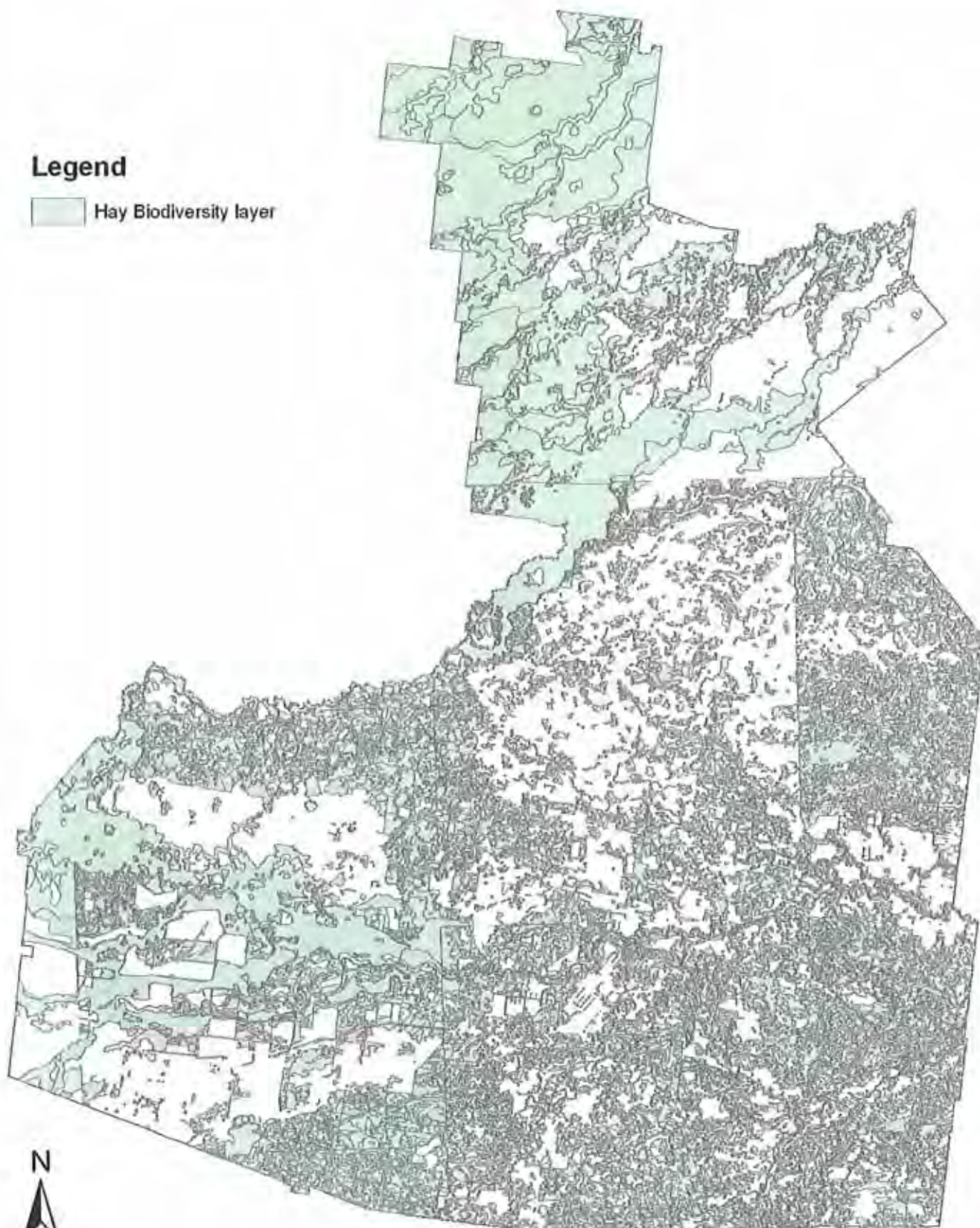
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The Department's of Water and Energy & Environment and Climate Change and/or contributors accept no responsibility for the result of action taken or decisions made on the basis of the information contained herein or for errors, omissions or inaccuracies presented here. While all care is taken to ensure a high degree of accuracy, users are invited to notify of any discrepancies.

Environmentally Sensitive Land (Biodiversity) in Hay Shire

Legend

 Hay Biodiversity layer



Notes for Data for Preparation of LEP for Hay Shire- Environmentally Sensitive Land Overlay

I refer to your request for the biodiversity data to be provided digitally in a form that can be installed on Council's GIS system. Enclosed is the spatial information on disk. Council has already entered into a data licence agreement for this information.

The Department of Environment and Climate Change (DECC) in conjunction with Department of Water and Energy (DWE) indicated that it would be seeking to have Environmentally Sensitive Land (ESL) clauses and accompanying maps considered as part of the LEP planning review. As discussed the existing ESL clause in the current plan is outdated in that it includes prohibitions and referral provisions that are not allowed in the standard LEP template. The s117 Directions for LEPs require that adequate environmental provisions are included. If ESL overlays are not to be used then environmental zones would be the next option.

Every endeavour has been made to base the mapping on the best available information and a large proportion of the mapping was ground observed and can be changed if discrepancies are detected in the future. I would appreciate any comment on the accuracy of the overlay. In particular if you could provide feedback on the boundaries of mapped areas and any amendments considered necessary.

As previously indicated the biodiversity layer is an amalgamation of the most up to date vegetation mapping and environmental data layers. It includes areas that have high biodiversity values and does not include all existing native vegetation. The layer does not preclude development. Rather, it acts as a flag for biodiversity values that may exist at a site and that these potential values should be validated prior to any development approval. If the values are verified then impact should preferably be avoided and at the very least minimised and mitigated.

The biodiversity layer was created by including;

1. Mapped Endangered Ecological Communities
2. Mapped EPBC Endangered Ecological Communities
3. Preliminary listed Endangered Ecological Communities
4. Depleted or overcleared vegetation communities and landscapes
5. Wetlands as identified by Kingsford R. T., Brandis K., Thomas R., Crighton P., Knowles E., and Gale E. (2003) *The Distribution of Wetlands in NSW*, Department of Environment and Conservation.
6. Information based on research from Department of Environment and Climate Change staff and environmental consultants operating in the Western Riverina have identified areas in the Hay Shire with high biodiversity importance. These include particularly high quality native vegetation remnants and known and important threatened species habitat

If you would like to discuss this mapping could you please contact Miles Boak on 62297095.

The Department of Environment and Conservation NSW is now known as
the Department of Environment and Climate Change NSW

Flood Prone Land

- 1) The objectives of this clause are:
 - a) to maintain or enhance the existing flood regime and flow conveyance capacity; and
 - b) to enable safe occupation and evacuation (where necessary) of flood prone land; and
 - c) to avoid significant adverse impacts upon flood behaviour; and
 - d) to avoid significant adverse effects on the environment that would cause avoidable erosion, siltation, destruction of riparian vegetation or a reduction in the stability of the river bank/watercourse; and
 - e) to limit uses to those compatible with flow conveyance function and flood hazard.
- 2) This clause applies to land council considers to be flood prone.
- 3) Development consent is required for the following purposes on land to which this clause applies:
 - a) filling and earthworks;
 - b) the erection of a building;
 - c) the carrying out of a work;
 - d) flood mitigation works (other than those carried out by or on behalf of a public authority).
- 4) Development consent under subclause (3) must not be granted unless the council is satisfied that:
 - a) the proposal is consistent with any relevant floodplain risk management plan; and
 - b) the applicant demonstrates to the satisfaction of council that:
 - i) the proposal will enable safe occupation and evacuation (where necessary) of the land including avoiding significant additional burden upon emergency services during floods; and
 - ii) infrastructure essential in emergency response and recovery from floods servicing the proposal is capable of fulfilling these roles; and
 - iii) the proposal will satisfy the objectives considering long term changes effecting flood behaviour including climate change; and
 - iv) where council considers the land is likely to be within the flood planning area, the proposal:
 - (1) will maintain or improve the existing flood regime and flow conveyance capacity; and
 - (2) is compatible with the flow of floodwaters; and
 - (3) is compatible with the flood hazard; and
 - (4) is able to withstand the forces imposed by floodwaters, including the effects of buoyancy; and
 - (5) will not adversely alter flow behaviour, flow distributions, flood levels, and flood velocities or flood hazard to the detriment of other properties, other development or the floodplain environment; and
 - (6) will not significantly detrimentally affect the environment or cause avoidable erosion, siltation, destruction of riparian vegetation or a reduction in the stability of the river bank/watercourse; and
 - (7) will not result in unsustainable social and economic outcomes to the development itself and to any flood affected or general community as a consequence of flooding.

Notes: Definitions including "flood planning area", "flood planning level", "flood prone land" are to have the same meaning as in the manual relating to the management of flood liable land as notified in the Gazetted by the Minister of Planning under s733 of the Local Government Act.

All communications to be addressed to:

Head Office
NSW Rural Fire Service
Locked Mail Bag 17
Granville NSW 2142

Telephone: (02) 8741 5555

Head Office
NSW Rural Fire Service
15 Carter Street
Homebush Bay NSW 2127

Facsimile: (02) 8741 5550



The General Manager
Hay Shire Council
PO Box 141
Hay NSW 2711

Attention: Allen Dwyer

HAY SHIRE COUNCIL

01 SEP 2009

TRIM NO 109/2595

Your Ref: G:09

Our Ref: LEP/0063
HQ09/0647

25 August 2009

Dear Mr Dwyer,

Re: Draft Local Environmental Plan – Hay Shire Council.

I refer to your letter dated 6 August 2009 seeking our advice in accordance with Section 62 of the *Environmental Planning & Assessment Act 1979* for the above Local Environmental Plan (LEP).

The NSW Rural Fire Service (RFS) notes that significant parts of Hay Local Government Area are mapped as bush fire prone on the Hay Bush Fire Prone Land Map.

Council should be aware that the Model LEP Template does not include any specific provisions relating to bushfire protection, but that the *Rural Fires Act 1997*, the *Rural Fires Regulation 2002* and the *Environmental Planning and Assessment Act 1979* contain bushfire provisions.

In addition to the requirements of the Model LEP, Councils may include local provisions that address issues that are relevant to their areas (including directions under Section 117 of the *Environmental Planning & Assessment Act 1979*). This includes the consideration of bush fire provisions under Direction 19 – Planning for Bushfire Protection.

To achieve this, the RFS suggests that Council prepare a local policy/guideline in respect to bush fire protection measures that takes a strategic approach to the planning of residential areas. Council can take a strategic approach to bushfire protection by considering zoning land to reflect the hazard/risk posed to the proposed land use (for example zoning land for Special Fire Protection Purpose developments in areas at a lower risk of bush fire). Exclusion of development in certain areas is an option where the risk from bushfire is high and environmental and access constraints cannot be easily overcome.

◆ Rural Fire Service Advisory Council

◆ Bush Fire Co-ordinating Committee

For any enquiries regarding this correspondence please contact Danielle Meggos.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Nika Fomin', with a stylized flourish at the end.

Nika Fomin
Team Leader,
Development Assessment and Planning

CC: Booth Associates

ANNEXURE 21.0

Invitation to Attend Workshop



Agribusiness &
Environmental Consultants

PO Box 1458
Level 1, 61-63 Yambil St
Griffith NSW 2680

Ph: (02) 6964 9911
Fx: (02) 6964 5440

admin@boothassociates.com.au
www.boothassociates.com.au

ABN: 79 095 414 065

13 August 2009

The Manager
Hay Plains Holiday Park
4 Naylor Street
HAY NSW 2711

Dear Sir/Madam

RE: PREPARATION OF LOCAL ENVIRONMENTAL PLAN FOR HAY SHIRE

Hay Shire Council has engaged Booth Associates to prepare urban and rural planning studies, a rural settlement strategy and a local environmental plan for the Shire.

As a Key Stakeholder in this process, we would like to give you the opportunity to help us identify issues or concerns which should be considered in planning for the Hay community over the next 30 years.

Any comments you have would therefore be appreciated. This could be in writing, preferably within three weeks of the date of this letter. Alternatively you may wish to ring the project team and communicate your ideas, or if preferred a meeting can be arranged at a mutually convenient time and place.

Please contact our office for a confidential discussion if this is preferred. The project team may decide to contact you directly in relation to this option. Alternatively, you may wish to participate at a series of informal workshops, scheduled for 20 and 21 August, 2009 and 1 and 2 September, 2009. The following issues are proposed to be discussed:

1. Tourism and economic development;
2. Industry, transport and infrastructure;
3. Retail, commercial development and town centre;
4. Housing, land supply and demand;
5. Education;
6. Health;
7. Sport and recreation;
8. Community, arts and leisure;
9. Aboriginal and cultural heritage;
10. Environment and streetscape;
11. Agricultural and rural issues; and
12. Seniors and youth; access and equity.

Please contact our office to register your interest in attending any of these sessions.

A questionnaire has been attached which highlights the sorts of issues which the project team is interested in.

As well a community survey has been prepared and residents of Hay Shire are encouraged to complete this and return it to our office or drop it into the local council for collection.

Thank you for your assistance in this matter.

Yours sincerely

A handwritten signature in dark ink, appearing to read 'Kelly Tyson', written in a cursive style.

Kelly Tyson
Senior Environmental Consultant

ANNEXURE 22.0

Outcomes from Village Meetings

MAUDE COMMUNITY MEETING

Meeting held on 21 October 2009 - 11:00 am – 1:00pm at Maude Community Hall

Name	Organisation/Address	Phone No.
Michael Ryan	Booth Associates	69649911
Kelly Tyson	Booth Associates	69649911
James Laycock	Blueprint Planning and Development/Booth Associates	
Chris Neilson	Booth Associates	69649911
Jess Giannitsopoulos	Booth Associates	69649911
Allen Dwyer	HSC – General Manager	
Bill Moore	HSC - Engineer	
Mick Rutledge	HSC - Mayor	
No village attendees		
Villagers interviewed:		
Kathryn Miller	Proprietor Maude PO and village store	
John & Lyn Riley	Maude Hotel	
Mick Mason	Hotel patron	
Paul Azzopardi	Resident	
Elaine Hudson	Resident	
Angela Luxford (not interviewed)	Resident	

ISSUES RAISED

- The village of Maude was once a vibrant community: (booklet info to be added here)
- Currently residents are divided as to whether there is a future for the village of Maude. The drought has impacted significantly and the lack of flows has impacted on recreational opportunities such as fishing and bird watching.
- There are approximately 35 permanent residents including a small number of dependant children.
- Community facilities include the local hotel which provides “Donga” and caravan accommodation, the village store/post office and the community hall.
- Across from the Weir is a public reserve which contains rudimentary picnic facilities adjacent to the billabong and non-irrigated town oval and BMX track and 2 tennis courts.
- Mail is available three days per week.
- Previously Maude had a gaol, a central school and village sporting competition (eg cricket). Ravensworth used to employ over 200 people – now 12 – 13.
- It has been suggested that a significant part of the population are welfare dependant and that there is interest in people relocating to Maude from outlying rural areas such as Oxley if housing was more affordable.
- No tourist signage in Maude advertising Weir picnic sites and biodiversity values (eg Southern Bell Frog habitat);
- Lack of council maintenance of village eg street beautification and maintenance, lawn cutting, tree lopping, waste removal;
- Poor village drainage;
- No village footpath between the hotel and the Post office/store.
- Dial up internet only and satellite TV;
- Poor mobile phone coverage;

- Residents travel to Swan Hill, Griffith and Deniliquin for health services;
- Lack of dental services although school service is provided;
- Council owns medical centre land and three houses to support health services;
- Households take rubbish to the local Maude tip (is there a transfer station?)
- Fishing is a primary tourist generator, which should be promoted;
- Weir, Billabong. Just received 10ML of environmental water as a habitat for the Endangered Southern Bell Frog;
- Old WC – drop pit on the river;
- Hay Shire Council needs to properly maintain Maude and not see it degenerate into a shanty town;
- Hotel hours flexible dependant on patronage – main social hub;
- Playgroup once a week at village hall;
- Billabong proposed to develop as a fish hatchery for cod, yellow belly and catfish – (James McGuire DECC – contact re Environmental Water Lagoon Fish Stocking Project);
- Water can only be pumped out of river for fire and water trees. The local oval is watered only when water is available;
- Weir maintained by Department once a month. Has potential for reserve to be developed as a local and visitor recreational/tourist biodiversity site.
- Bird watchers visit lagoon;
- Mostly long-term residents;
- House sale bought \$50,000 3 years ago – now for sale at double the price.

BOOLIGAL COMMUNITY MEETING

Meeting held on 22 October 2009 - 11:15am – 12:30pm

Attendees:

Name	Organisation/Address	Phone No.
Michael Ryan	Booth Associates	69649911
Kelly Tyson	Booth Associates	69649911
James Laycock	Blueprint Planning and Development/Booth Associates	
Chris Neilson	Booth Associates	69649911
Jess Giannitsopoulos	Booth Associates	69649911
Sandra Ireson	Belmont, Booligal	69938119
Alison Crossley	Toms Lake, Booligal	69938114
Matt Ireson	Belmont, Booligal	69938119
Catherine Drady	2 Harvey Street, Booligal	69938382
Bill Sheaffe	Councillor	
Allen Dwyer	HSC – General Manager	
Bill Moore	HSC - Engineer	
Mick Rutledge	HSC - Mayor	
Apologies		
Ali & Hugh McLean	Greenvale, Booligal	
Debbie Robinson	Booligal Hotel, Booligal	
Michael & Belinda Booth	Riverlea, Booligal	

Booligal is important as a hub for the local community.

Local events:

- Booligal sheep races;
- Yearly cricket day;
- Weekly tennis;
- Lachlan CMA carp cull;
- 3 day Campdraft, Wallaby cattleyards;
- Shooting Competition.

Important local assets:

- Local public school (10 students) – including tennis court;
- Catholic church – monthly service;
- St Albans Anglican Church (1898) – 3 monthly service (irregular)(Heritage listed);
- Fire shed;
- Duke of Edinburgh Hotel;
- Shop/Post office;
- Community Hall;
- Local rubbish tip;
- Playground/park/oval;
- Pistol shooting range;

Village permanent population of 25. This hasn't changed much over the last 40 years but Booligal rural area has been impacted by population loss although not much change to rural structure (holding sizes).

Currently the school has 10 students and will increase to 13 in 2010. The school is currently unlikely to cease operation within the next 8 years.

The village is an important social hub for the village residents and rural community as it offers social exchange opportunities via recreation (eg. Tennis courts, oval, playground) and social interaction (community hall/playgroup and local hotel).

Although the local store closed down last year which adversely impacted the town, the hotel has taken up the Australia Post license and sells basic goods including emergency fuel.

ISSUES RAISED

- School requires access to household water for toilet flushing, watering etc. The council indicated that a bore would be sunk within the next month;
- The school would like reticulated system to be supplied from the bore;
- River flow below Condobolin would cease from 31 October 2009. This presents major implications to communities and rural land holders relying on stock and domestic supplies.
- Socio-economic impacts of decision involving river flow not well considered. For example, lowland communities disadvantaged, while upstream communities made more secure;
- Water trading has social and economic implications to village communities;
- Lifestyle lots minimum lot size are restrictive;
- Sale of permanent licences taking water out of the areas including those of adjoining area affecting the shire;
- Booligal could provide opportunities for those wanting a rural escape;
- No childcare facilities although mobile weekly playgroup at Community Hall;
- Loss of Cloughton House impacts in that Hay Local High School not accessible due to loss of weekly boarding ie. Kids need private board.
- Itinerant housing on farm accommodation is available, but unlikely to meet OH&S requirements – impacts on shearing;
- Hall needs improvement (owned by the community important for playgroup/childcare up to 100km);
- Community Hall has a 60km catchment and require upgrading;
- Community website is required to promote local tourism, events etc.
- River reserve campsite needed over 2ha to support tourism;
- Loss of rateable income, local employment and impacts on Booligal created by conversion of local farms eg Booligal Station into National Parks;
- Absentee landholders don't put back into the local economy;
- There was potential for farm-stay opportunities;
- Need for tourism signage;
- Condition of local roads has implications for tourism, school excursions, contractors etc.
- Community felt that there was no strong expectation of future growth but rather maintaining current level of population;
- Drought impacting on production levels (30% stocking rate currently) and creates uncertainty for the future;
- Booligal sheep races draws in 500 people, mainly tourists, once a year from Carrathool and Echuca (buses).
- Not much corporate ownership of farms, some irrigation bores around;
- By piping the Wah Wah scheme – losing important habitats;

- Many empty farm houses (2nd/3rd) always, while main farm house still occupied;
- No out of school hours care available in Hay impacts on employments opportunities;
- Mail available Monday, Wednesday and Friday;
- Mail organisation and delivery to residents through Post Office currently not always reliable;
- Applied for heart start defibrillator
- Rural workers have migrated into mining industry that will affect drought recovery;
- Lack of childcare and out of school care a problem for potential labour force;
- Lack of local contractors however, some willing to travel;
- No school bus.

PLANNING OBSERVATIONS

1. Need to promote village pride through improved town lot maintenance;
2. Upgrading required for community hall;
3. Tourist signage is required and camping facilities;

ANNEXURE 23.0

Agenda – Community Workshop

Agenda
Hay Community Workshop,
Hay, Venue to be determined
7pm-9pm 24th September 2009

*Are you concerned about lifestyle opportunities or industrial developed sites? Do you want to see Hay develop and grow? What do you think the planning priorities should be?
Come along and have your say!*

7pm Introduction by Mayor, Michael Rutledge

7:15pm Session 1

- Pressures
- Needs and wants
- Opportunities
- Potential for growth

8:30pm Session 2

- Values and Vision 2040
- Community Sustainability and Growth Management Principles
 - o Economic Prosperity
 - o Community Capacity and Community Resilience
 - o Ecological Integrity

9:00pm End

Note: It is expected that this public meeting will predominately deal with the aspects identified in Session 1.

Session 2 is likely to be just a quick confirmation of the matters raised in session 1 as well as an opportunity to highlight any values, vision and growth management principles which have been identified by the community.

Agenda
Hay Village Meeting
Maude Pub 24th September
Booligal Pub 25th September
11am-1pm

*Is your village big enough? Are there services that should be provided?
What are the opportunities and priorities?
Come along and have your say!*

11am Introduction by Mayor, Michael Rutledge

11:15am

- Pressures
- Needs and wants
- Opportunities
- Potential for growth

12:15pm Future Vision 2040

1.00pm End

For all meetings

Booth Associates Attendees:

Facilitator Michael Ryan

James Laycock and Kelly Tyson

ANNEXURE 24.0
Workshop Outcomes

HAY VISION AND VALUES WORKSHOP

Meeting held at Hay Services Club on 21 October, 2009.

Attendees:

Name	Organisation/Address	Phone No.
Michael Ryan	Booth Associates	69649911
Kelly Tyson	Booth Associates	69649911
James Laycock	Blueprint Planning and Development/Booth Associates	
Chris Neilson	Booth Associates	69649911
Jess Giannitsopoulos	Booth Associates	69649911
Zelda Rutledge		
Allen Dwyer	Hay Shire Council – GM	
Mick Rutledge	Hay Shire Council – Mayor	
EJ Gibson	Koringal , Hay	6993 1239
Ross Headon	Aroona, Hay	69932085
Louise Fraser		69930656

VISION

- Biodiversity;
- Renewable energy, solar etc;
- Strong tourism;
- Population growth;
- Current values/assets;
- Manage optimized growth and social issues.

VALUES

- Safe;
- Friendly;
- River asset
- Pride – looks prosperous;
- Vibrant;
- Nice main street presentation;
- Resilience;
- Community capacity to band together and solve issues;
- Welcoming community;
- Agricultural productivity – water (irrigation).

OPPORTUNITIES

- Agricultural – new systems – adjust stocking rates;
- Ability to adjust internal structure;
- Off-farm income;

- Manufacturing industry?
- Solar energy;
- Provide social opportunities for young people;
- Tourism (Farm Stop)
- Need Second River crossing, to divert trucks around town;
- Retain growth;
- Expand urban boundary (in every direction);
- Near hospital;
- Urban development on farmland;
- Southside Hay on southside of highway;
- Industry – service industry precinct:
 - o Highway frontage;
 - o Railway, west & south Hay;
 - o Aerodrome – north of railway line west depot.
- Strength core commercial precinct;
- Vacant lots – 30 years supply available;
- Future industrial development – rezone;
- North of Hay lifestyle lots – most potential;
- 2ha lots;
- 1(c)/1(a) boundaries expanded;
- River development;
- Land north of old railway line could be used for industrial land.

ISSUES

- Transport – daily taxi /truck service – HACC available;
- Positive future?
- Young people facilities?
- School numbers;
- Need for community improvement programs;
- Need for new jobs;
- Open space OK?
- Tourism significant – promote;
- Health services;
- Lifestyle lots:
 - o River
 - o Close to town;
 - o Fully serviced lot.
- Resilience and community capacity;
- Council investment in social/community infrastructure, eg. Health, sport, tourism.
- Strong clubs and pubs (financially supported) % ratebase;

- Lack of tradesmen eg. Builders, apprenticeships;
- Cloughton House – closure of school boarding facilities;
- Isolation? (No, only 1.5 hours);
- Retail/commercial services – OK;
- Professional services – outlying – travel to Hay;
- Access OK through internet;
- Well serviced;
- No dentist, no x-rays, no obstetrician;
- Water and markets;
- Less people on farms;
- Ageing farmers;
- Growth issue;
- New bridge;
- Transport corridors;
- Industries reluctant to come too far;
- Servicing costs – industrial developed land prohibitive;
- Rezoning of industrial land for potential demand;
- Water, power, road;
- Access to River and lack of supply;
- Illegal building;
- Location and justification of river lots – minimum size;
- Interface conflict;
- Cluster development on river;
- Intensive agriculture – lot sizes;
- Closure of School Boarding facility at Cloughton House – reduce access to local high school for remote students.

ANNEXURE 25.0

Stakeholder Participants

	Stakeholder name	From	Meeting etc
1	Larry Carey	Forests NSW	Phone call
2	Robb Kelly	MI	Phone call
3	Andrew Shipp	DPI	Meeting with MGR 28/8/2009
4	Darren Tapper	Landmark Hay	Meeting with MGR 28/8/2009
5	Ian MacLeod	Real Estate Agent Hay	Meeting with MGR 28/8/2009
6	Stuart Gannon	WBC Manager, Hay	Meeting with MGR 28/8/2009
7	James Bissett	Hay PID	Meeting with MGR 28/8/2009
8	Mark Dowling	Hay Gaol	Tourism/Econ Dev. Meeting 20/8/2009
9	Mick Beckwith		Tourism/Econ Dev. Meeting 20/8/2009
10	Paul McInnes	NPWS	Enviro/Tourism/Econ Dev. Meetings 20/8/2009
11	Janet Lowe	Hay Tourism Advisory Centre	Tourism/Econ Dev. Meeting 20/8/2009
12	Nerida Reid	Landcare/Bishops Lodge	Tourism/Econ Dev. Meeting 20/8/2009
13	Airlie Circuit	2 Hay FM	Tourism/Econ Dev./Comm. Arts and Leisure Meetings 20/8/2009
14	Duncan Fraser	Shear Outback	Tourism/Econ Dev. Meeting 20/8/2009
15	Deb Base	MCMA	Enviro meeting 20/8/2009
16	Ian Woods	HLALC & Nari Nari	Aborig. & Cultural Heritage Meeting 20/8/2009
17	Damien Kennedy	HLALC & Nari Nari	Aborig. & Cultural Heritage Meeting 20/8/2009
18	Jamie Woods	HLALC & Nari Nari	Aborig. & Cultural Heritage Meeting 20/8/2009
19	Jermaine Dixon	HLALC & Nari Nari	Aborig. & Cultural Heritage Meeting 20/8/2009
20	Loretta Cooper	Save the Children PI/group	Senior/Youth/Access Equity Meeting 20/8/2009
21	Ray Billing	HWMHS – Principal	Senior/Youth/Access Equity Meeting 20/8/2009
22	Shirley Hatek	Hay Guides	Senior/Youth/Access Equity Meeting 20/8/2009
23	Jill Chapman	Hay Netball	Sport & Rec. Meeting 20/08/2009
24	James Hill	Hay Aero Club	Sport & Rec. Meeting 20/08/2009
25	Lloyd Jones	Cricket Club	Sport & Rec. Meeting 20/08/2009
26	Keith Brown	RSL	Sport & Rec. Meeting 20/08/2009
27	Ernie Donohue	RSL	Sport & Rec. Meeting 20/08/2009
28	Pat Woods	Lions	Sport & Rec. Meeting 20/08/2009

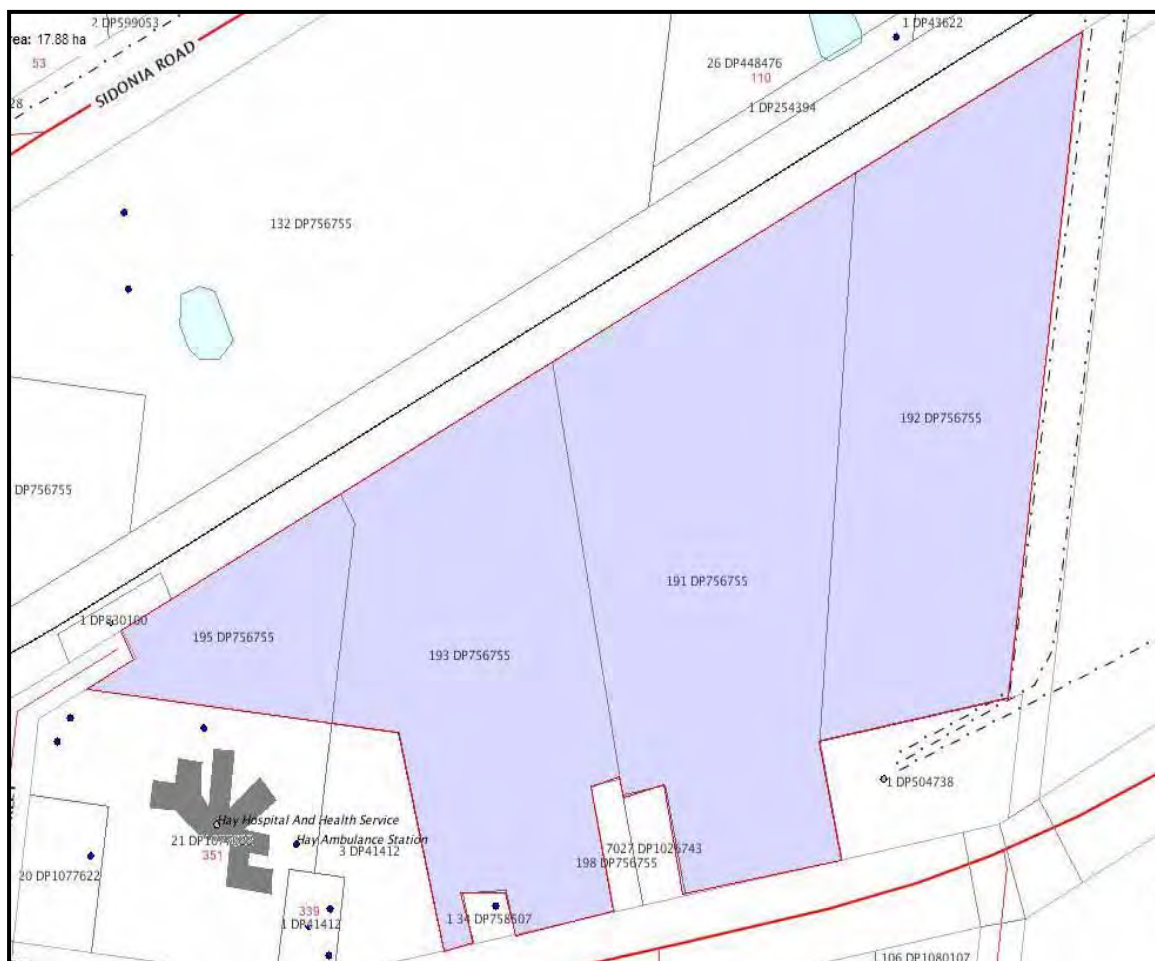
	Stakeholder name	From	Meeting etc
29	Bev Wilson	Lions	Sport & Rec. Meeting 20/08/2009
30	David Robinson	CBA Hay	Meeting with MGR 27/08/2009
31	Nick Maynard	Hay Water Users	Meeting with MGR 22/10/2009
32	Booligal Sheep Races Committee		Hay Community Survey
33	Vanessa	Riverina Community College	Retail/Cultural Dev Meeting with JL 1/9/2009
34	Greg	ACGI Consulting	Retail/Cultural Dev Meeting with JL 1/9/2009
35	David	Councillor	Retail/Cultural Dev Meeting with JL 1/9/2009
36	Kevin	Purtills Coaches	Industry/Trans/Infrastructure Meeting with JL 1/9/2009
37	Winsom	Hay Art	Tourism/ Retail/Cultural Dev Meeting with JL 1/9/2009
38	Bob Barton		Notes re LEP Anomalies & Issues
39	Miles Boak	DECC	Phone call KLT 8/9/2009
40	Peter	Dyers Bus Service	Industry/Trans/Infrastructure Meeting with JL 1/9/2009
41	Jason Wall	RFS Hay	Phone call KLT 8/9/2009
42	Paul Josling		Meeting with KLT 8/9/2009
43	Zelda Rutledge		Visions and Values Workshop 21/10/2009
44	Allen Dwyer	GM HSC	Visions and Values Workshop 21/10/2009
45	Mick Rutledge	Councillor	Visions and Values Workshop 21/10/2009
46	EJ Gibson		Visions and Values Workshop 21/10/2009
47	Ross Headon		Visions and Values Workshop 21/10/2009
48	Louise Fraser		Visions and Values Workshop 21/10/2009
49	Kathryn Miller	Maude PO/shop proprietor	Maude Community Meeting 21/10/2009
50	John & Lyn Riley	Maude Hotel	Maude Community Meeting 21/10/2009
51	Mick Mason	Maude Hotel patron	Maude Community Meeting 21/10/2009
52	Paul Azzopardi	Maude Resident	Maude Community Meeting 21/10/2009
53	Elaine Hudson	Maude Resident	Maude Community Meeting 21/10/2009
54	Sandra Ireson	Belmont, Booligal	Booligal Community Meeting 22/10/2009
55	Alison Crosley	Toms Lake, Booligal	Booligal Community Meeting 22/10/2009
56	Matt Ireson	Belmont, Booligal	Booligal Community Meeting 22/10/2009
57	Catherine Drady	Booligal resident	Booligal Community Meeting 22/10/2009

	Stakeholder name	From	Meeting etc
58	Bill Sheafe	HSC Councillor	Booligal Community Meeting 22/10/2009
59	Bill Moore	HSC Engineer	Booligal Community Meeting 22/10/2009
60	Bob Neumyer	GSAHS	Phone call KLT 26/10/2009
61	John Clark	Hay	Phone call KLT 26/10/2009

ANNEXURE 26.0

Residential Land Suitability Options

Option 1: Railway lands north of Murray Street
Lots 7 & 14 DP 812034



Option 3: Land east of Burke Street

Lot 2 DP 448476; Lots 135, 200 & 201 DP 756755; part Lot 4 DP 448476



Option 4: Land south of Sturt Hwy, South Hay

Lot 7002 DP 1026024; Lots 1-6, Sec 14, DP 758508; Lot 1 DP 1128992; Lot 1 DP 252475; Lots 94, 117-119, 142-144, 146, 148, & 149 DP 756756; Lot 161 DP 257046



Option 5: Land south of Cadell St
Lot 222 DP 819305; part Lot 211 DP 756755

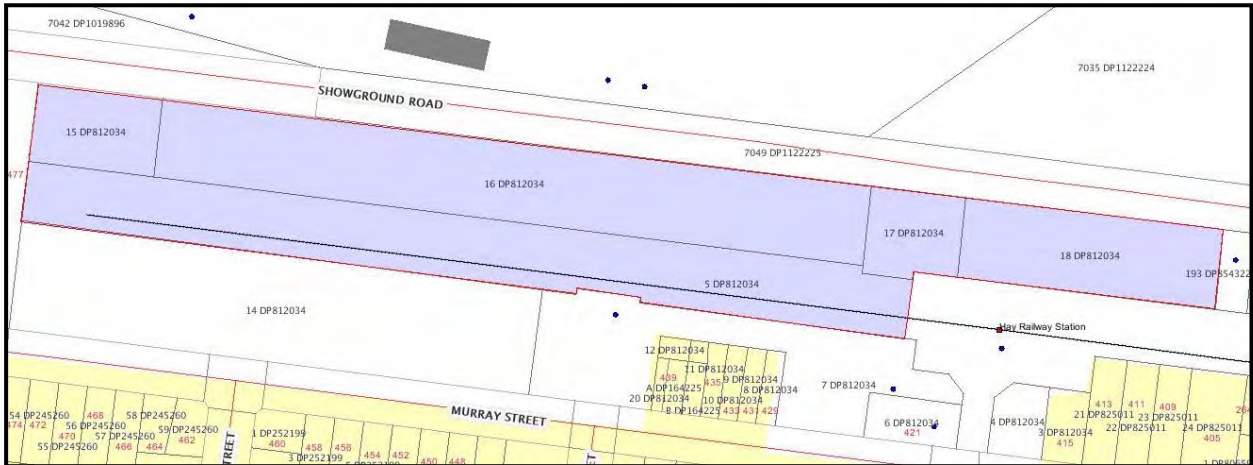


ANNEXURE 27.0

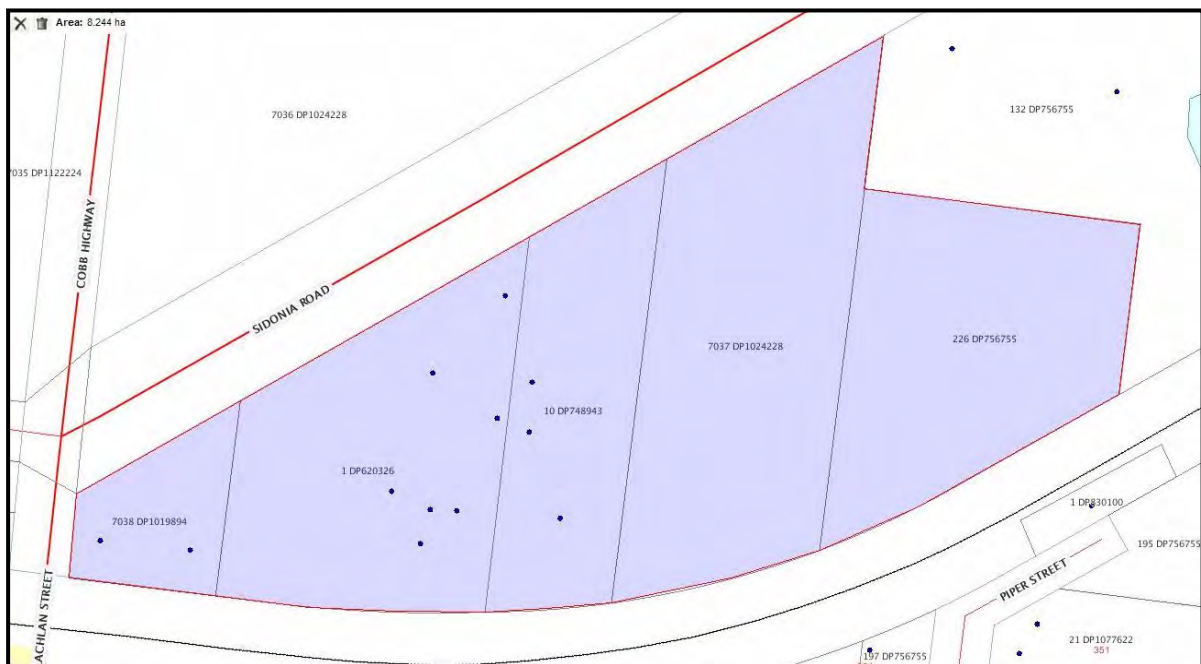
Industrial Suitability Options

Industrial Land Suitability Matrix:

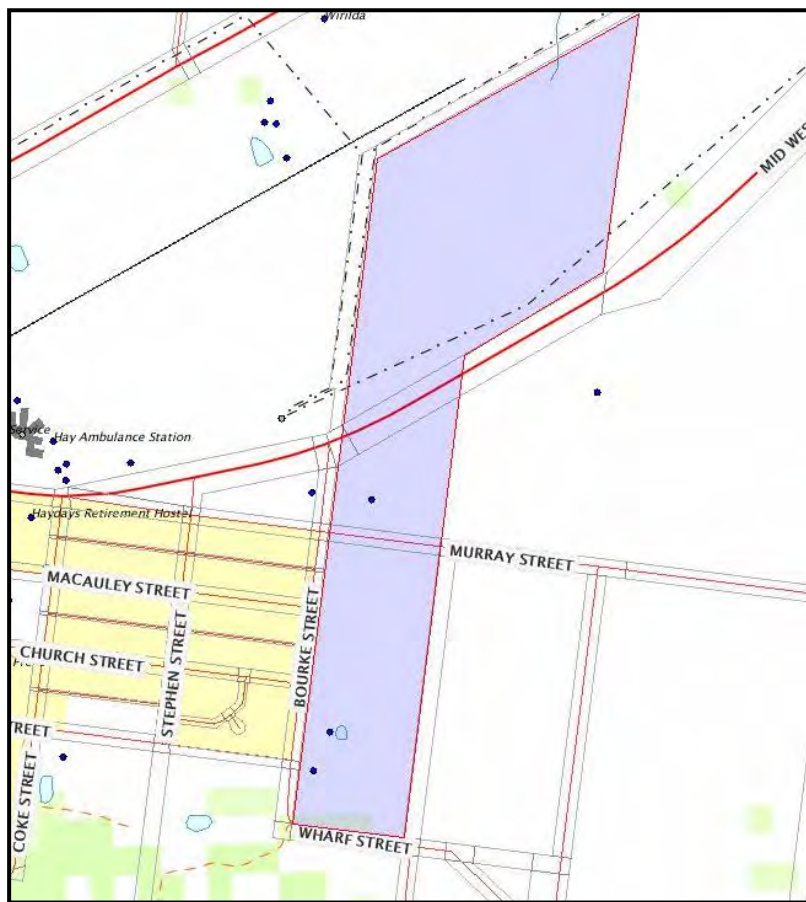
Option 1: Disused railways lands, Showground Rd



Option 2: RTA depot land and surrounds, Sidonia Rd



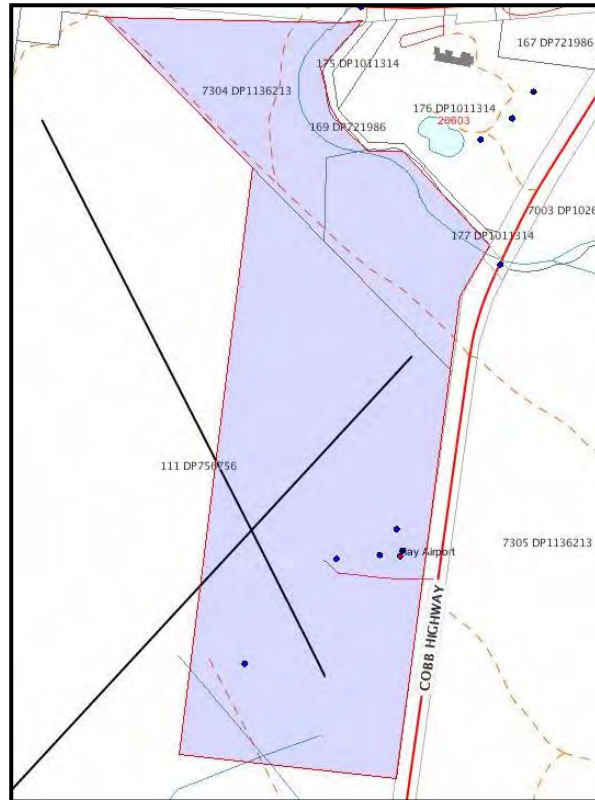
Option 3: Riverina Poly Irrigation land and surrounds, Mid Western Hwy and Bourke St
Lots 10 & 11 DP 823018; Lot 2 DP 448476



Option 4: Handford Earthmoving land and surrounds, Archer St
Lots 1-4 DP 745298; Lots 5-6 DP 60303; Lot 1 DP 243209; Lots 1-6 & 9-12, Sec 13 DP 758508; Lots 81-82 DP 880102; Lot 1 DP 197393; Lot 1 DP 197399

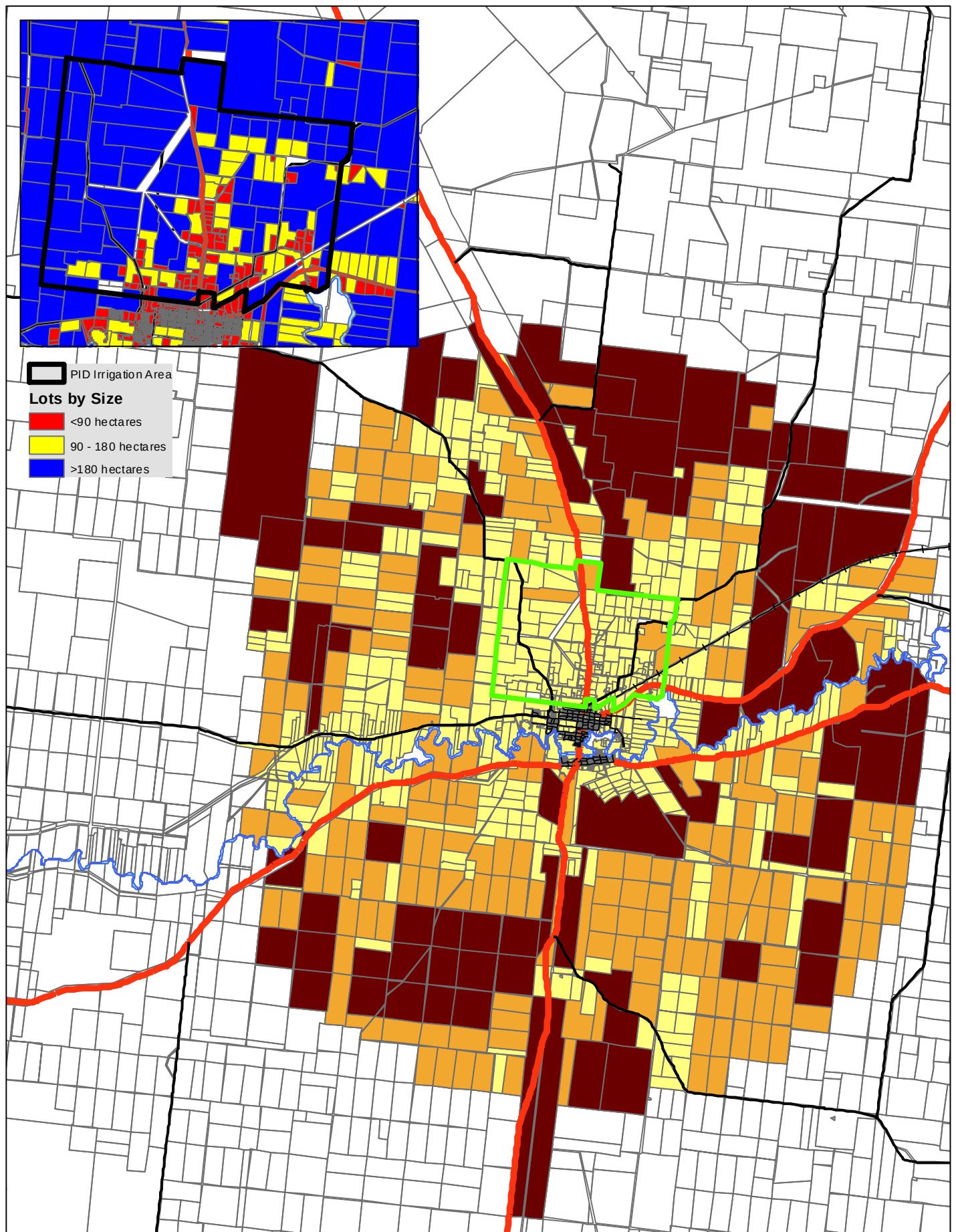


Option 5: Hay Airport land and surrounds, Sturt Hwy and Cobb Hwy
Lot 11 (part) DP 756756; Lot 7304 DP 1136213; Lot 177 DP 1011314

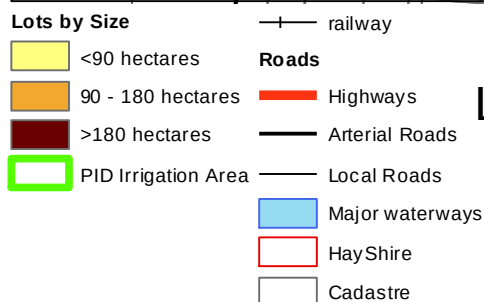


ANNEXURE 28.0

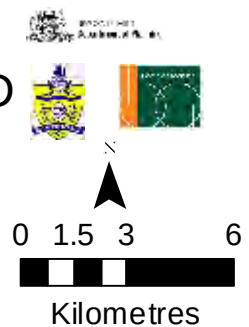
Recommended Minimum Lot Size

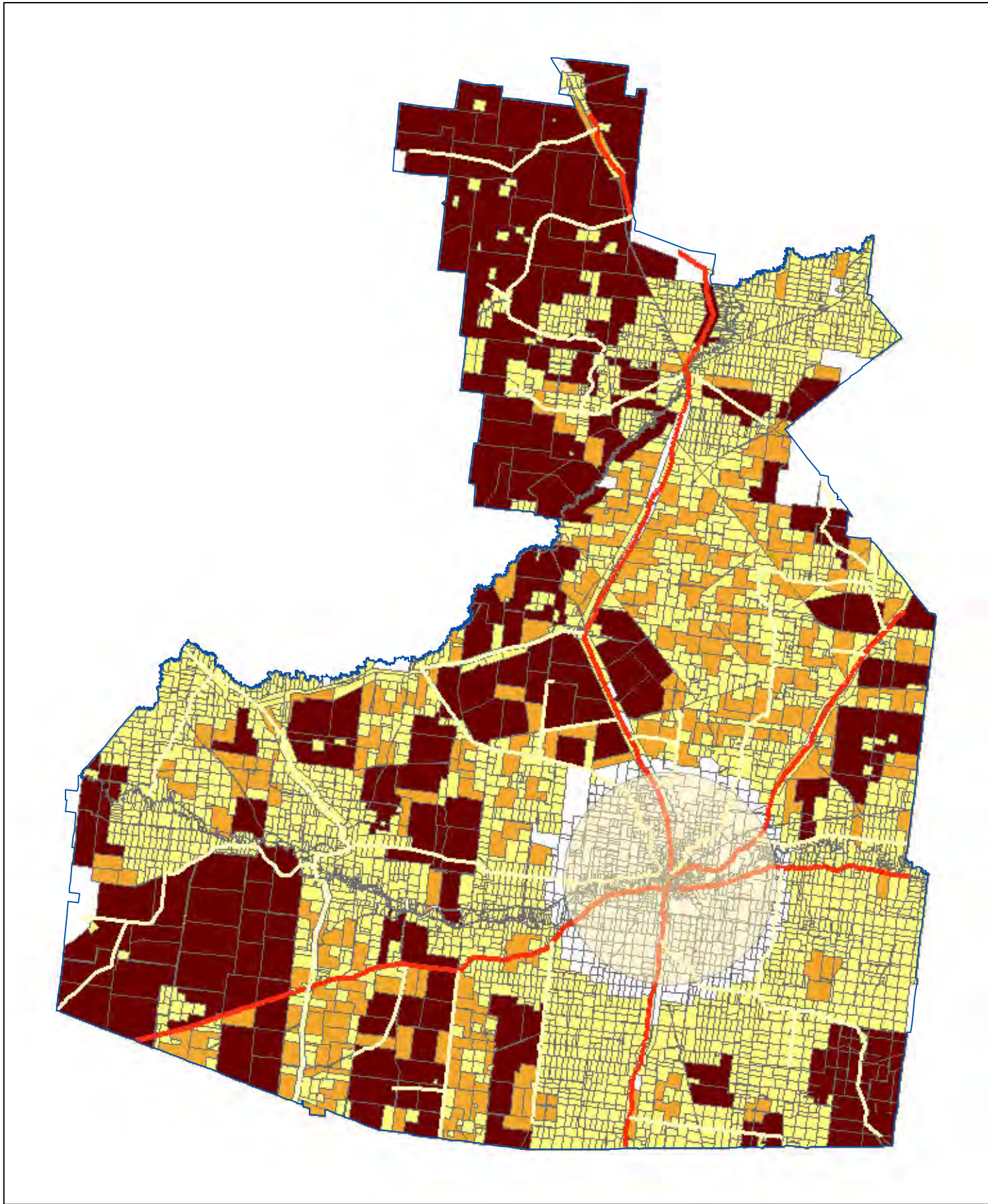


Lots by Size within 15km Hay CBD



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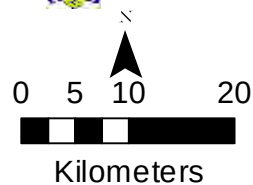
Lots by Size

Area

- <600 hectares
- 600 - 1,200 hectares
- >1,200 hectares
- Exclusion area - 15km buffer of Hay CBD

- Highways
- Arterial Roads
- Cadastre
- Hay LGA

Lots by Size within 15km Hay CBD



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ANNEXURE 29.0

Rural Small Holding Data

Dwelling Per Lot									
CADID	CONTROLLIN	PLANOID	PLANNUMBER	PLANLABEL	ITSLOTID	LOTNUMBER	SECTIONNUM	PLANLOTARE	Number of Dwellings
100186459	FREEHOLD	374863	756755	DP756755	2570548	132		0	1
103586759	FREEHOLD	492699	648174	DP648174	2149121	52		0	1
103586880	FREEHOLD	374863	756755	DP756755	2570537	51		0	1
103586894	FREEHOLD	316023	225	DP225	403838	16		0	1
103586900	FREEHOLD	316023	225	DP225	3030593	24		0	1
103586915	FREEHOLD	316023	225	DP225	403841	41		0	1
103587265	FREEHOLD	198950	836749	DP836749	2915782	1		0	1
103587320	UNKNOWN	140370	756799	DP756799	3095528	35		0	1
103595623	FREEHOLD	257447	11163	DP11163	684769	76		0	1
103595693	FREEHOLD	316001	448476	DP448476	1948237	81		0	1
103595695	FREEHOLD	316001	448476	DP448476	1948235	79		0	1
103595699	FREEHOLD	316001	448476	DP448476	1948230	74		0	1
103595700	DEPARTMENT OF LANDS (CROWN)	316001	448476	DP448476	1948243	88		0	1
103595703	FREEHOLD	332903	785530	DP785530	2665201	912		0	1
103595705	FREEHOLD	332903	785530	DP785530	2665200	911		0	1
103595715	FREEHOLD	316001	448476	DP448476	1948275	132		0	1
103595717	FREEHOLD	316001	448476	DP448476	1948233	77		0	1
103595725	DEPARTMENT OF LANDS (CROWN)	316001	448476	DP448476	1948212	44		0	1
103595726	FREEHOLD	351831	449472	DP449472	1948900	50		0	1
103595729	DEPARTMENT OF LANDS (CROWN)	316001	448476	DP448476	1948219	52		0	1
103595730	FREEHOLD	316001	448476	DP448476	1948217	49		0	1
103595743	FREEHOLD	316001	448476	DP448476	1948201	26		0	1
103595744	FREEHOLD	257447	11163	DP11163	684798	121		0	1
103595750	DEPARTMENT OF LANDS (CROWN)	316001	448476	DP448476	1948200	24		0	1
103595753	FREEHOLD	316001	448476	DP448476	1948198	21		0	1
103595764	DEPARTMENT OF LANDS (CROWN)	316001	448476	DP448476	1948205	36		0	1
103595769	FREEHOLD	332904	599053	DP599053	2094333	1		0	1
103595771	FREEHOLD	316001	448476	DP448476	1948208	39		0	1
103595772	DEPARTMENT OF LANDS (CROWN)	316001	448476	DP448476	1948206	37		0	1
103595773	FREEHOLD	316001	448476	DP448476	1948204	35		0	1
103595774	FREEHOLD	316001	448476	DP448476	1948202	33		0	1
103595775	FREEHOLD	316001	448476	DP448476	1948203	34		0	1
103595778	FREEHOLD	610210	31449	DP31449	1046156	71		0	1
103595788	FREEHOLD	610210	31449	DP31449	1046153	68		0	2
103595796	FREEHOLD	610210	31449	DP31449	1046154	69		0	1
103595797	DEPARTMENT OF LANDS (CROWN)	316001	448476	DP448476	1948195	18		0	2

[illegible]

ANNEXURE 30.0

Aboriginal Sites Decision Support Tool

ASDST

Aboriginal Sites Decision Support Tool

State-wide product outline and technical summary.

Mal Ridges.

Regional Assessment Unit
Culture and Heritage Division

November 2009

Department of Environment & Climate Change NSW



1 ASDST background.

The ASDST has been developed to meet a critical need in regional planning: whole-of-landscape data describing regional Aboriginal site issues. It is well recognised that Aboriginal sites occur over the entire landscape¹, however the focus on 'sites' in the AHIMS database means that due to varying recording intensity, large parts of the landscape have little or no data describing Aboriginal site heritage value. The core models of the ASDST provide an approach to filling in these data gaps. An additional need is for an analytical approach that can meet the need of incorporating Aboriginal site heritage information into regional planning. The ASDST meets this need by utilising analysis describing accumulated impacts, gap analysis, representativeness and conservation priority. By combining datasets and an analytical approach, the ASDST provides a basis for contextualising site assessment at the regional level.

The ASDST tool has been used on a number of projects at various scales across NSW (see ASDST projects at August 2009 in Section 5). These projects have included application of the tool to park management, regulation, and natural resource and cultural heritage management. Within projects ASDST has supported broad landscape contextualisation, survey strategies, and priority setting. Product manipulation has also been driven direct involvement with local Aboriginal community organisations (eg Hay LALC on RERP), DECCW projects (eg JALI community for assessing lands owned by the LALC) and external organisations (Glen Innes LALC for developing their business plan)

The ASDST is referred to in the following DECCW guidelines, plans and other documents:

- Guidelines for DECC staff involved in science projects
- Draft DECCW Aboriginal Regional Assessment (ARA) Guidelines
- Approved ARA delivery plan for CHD Aboriginal Operations

2 State-wide ASDST products.

The ASDST is composed of an integrated suite of spatial GIS layers used to provide context for decision making at the landscape scale about Aboriginal sites in NSW. The collection of GIS layers are organised around six key products:

1. Pre1750 (original) models.
2. Current models
3. Feature landscape regionalisation
4. Combined accumulated impacts
5. Combined model reliability
6. Combined survey priority.

The pre1750 (1) and current models (2) products are each comprised of 10 raster (grid) GIS layers, each representing different feature types. DECCW maintains the Aboriginal Heritage Information Management System (AHIMS) (DECCW 2009), which includes a register of Aboriginal sites recorded in the state. Each site is recorded, at a minimum, with a presence or absence of 19 feature types (see Table 1). A single 'site' may have multiple feature types present (eg a rock art site may have features of art, stone artefacts, axe grinding grooves and potential archaeological deposit). There is considerable geographic variation in the

¹ This is recognised in archaeology (Foley, R. 1981. A model of regional archaeological structure. *Proceedings of the Prehistoric Society* 47, 1-17.) and regional cultural heritage studies (Guillfoyle, D. 2006. *Aboriginal Cultural Heritage Regional Studies: an illustrative approach*. Sydney: Department of Environment & Conservation.)

distribution of different features and the nature of threats they experience. For instance shell middens are associated with the exploitation of marine resources along the coast and tend to be impacted most by urban expansion, whereas open site hearths are primarily recorded in the western part of the state due to the preserving semi-arid conditions and tend to be affected most by soil erosion brought on by over grazing. Following Kvamme (2006, 24), splitting the products into feature types therefore permits the landscape distribution and nature of impacts of each feature to be modelled separately, leading to a more specific product. The last three products (4,5, & 6) are single grid layers which are derivatives of the Pre1750 and current products.

The following feature types form the pre1750 and current model suites:

1. All feature types combined (ALL)
2. Stone artefacts (AFT)
3. Rock art (ART)
4. Burials (BUR)
5. Earth mounds (ETM)
6. Grinding grooves (GDG)
7. Hearths (HTH)
8. Shell middens (SHL)
9. Stone quarries (STQ)
10. Scarred trees (TRE)

Each product (and individual feature products) is a raster GIS layer. Raster GIS layers describe a feature that varies continuously over a landscape, and is represented by cells (like pixels in a digital photograph) that represent a part of the landscape as a square. The square in the ASDST products represents 1 Ha on the landscape. Raster GIS layers are different to GIS shapefiles that represent features on a landscape as points, lines or polygons. Raster GIS layers have a regularly spaced arrangement of cells that cover the whole landscape. Each cell is attributed with a number indicating the relative value of what the layer is describing at that place. For the ASDST products, this may be the relative likelihood of a site feature, relative survey priority or the relative reliability of the model.

The current set of state-wide products have been developed to meet the needs of regional planning. For this reason they are design to be used at scales of 1:100,000 and above. Application at finer scales is possible, but it should be borne in mind that the datasets used to derive the products were themselves derived at a scale of 1:100,000 or coarser, and therefore the inaccuracies of those layers at finer scales will be carried through to the ASDST products.

As a constantly evolving tool, all ASDST products have developed and changed over time. They are periodically reviewed as new data becomes available, parameters are assessed, models are progressively better validated and modelling approaches are refined. For this reason, all products have a version number attached, and for any analysis, mapping or reporting that is performed with the layers, the version that was used should be specified. The current version of all products is version 7 (as of Feb. 2009).

Whilst the initial focus has been on deriving state-wide models to form a baseline for regional planning, the overall approach to model generation and product development can be applied at any scale providing there is sufficient and appropriate data. Figure 1 outlines a schematic of how the various components (data, GIS layers and tools/algorithms) have been combined to generate to current set of state-wide ASDST products. However through substituting data from different scales, the same suite of products may be derived to meet the needs of different planning scales. In this way, the ASDST should be considered as just a not a static product of state-wide models, but is designed to be a flexible system that can be adapted to meet the needs of individual projects and assessments.

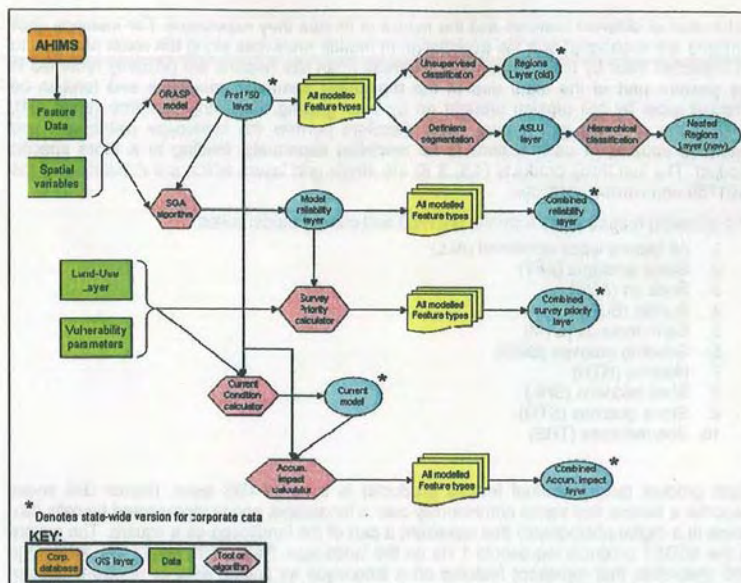


Figure 1. ASDST product derivation diagram.

3 Product descriptions.

3.1 Pre1750 models.

The pre1750 models are a set of raster GIS layers describing the relative likelihood of Aboriginal site features occurring across the landscape. They have been derived using AHIMS data, and a set of spatial variables (see Table 1) describing the landscape as it is estimated to have been prior to European settlement.

The pre1750 models do not take into account the level of destruction of sites in the intervening period (for instance from agriculture, mining or urbanisation); nor the detectability of different site features (ie whether locating them would require excavation), or natural conditions that may lead to the lack of a feature being preserved. They are therefore not meant to convey where sites are likely to be in the present landscape or how easily they could be located. When interpreting the pre1750 models, the level of impact in the current landscape should be evaluated by comparing them to the corresponding current extent models (see below).

What the pre1750 models do describe is the relative likelihood of finding a particular type of Aboriginal site feature in the Pre1750 landscape (eg scarred tree or stone artefact). They are therefore a baseline for site potential in the landscape. The legend for each layer is scaled from white (low likelihood) to black (high likelihood), see Section 6 for example maps of products. When looking at any pre1750 layer, the darker it is, the higher the likelihood that that feature could be found there 200 years ago, according to the predictions made by the model.

It is important to keep in mind when looking at how dark an area of the layer is, that the darkness is a relative quality. Black does not guarantee that that feature would have occurred there, or would still be there today. It represents an area where the model predicts that likelihood of that feature is highest relative to all over areas of the landscape. Similarly, white areas do not indicate an absolute absence of that feature, but the lowest likelihood that was resolved by the model.

The models are not calibrated to the absolute presence or absence of site features in terms of probability, but instead describe relative likelihood as it changes over the landscape.

The relative nature of the likelihood values of the model also extends to what its cell value's likelihood is measured relative to. Thus:

The likelihood at any given cell is relative to all over cells in the layer (ie the rest of NSW)

When looking at any of the models, it should be kept in mind that relative likelihood is relative to the entire extent of the layer. A further complication with the relative nature of the likelihood measure is that it is not directly comparable between site features. So for instance, although one area might indicate high modelled likelihood for both stone quarries and artefacts, that does not mean they are both equally likely to occur in terms of the probability of finding them. In this example, the absolute probability of locating quarries is still less because they are generally less frequently observed than stone artefacts. Thus:

The relative likelihood between different site features is not directly comparable in absolute probability terms.

Table 1. Variables used to derive models.

Variable	AFT	ART	BUR	ETM	GDG	HTH	SHL	STQ	TRE
Aspect		X			X			X	
Coast Proximity							X	X	X
Terrain Curvature	X	X	X	X	X	X	X	X	X
Easting/northing				X			X		
Elevation	X		X	X		X	X	X	X
Geology		X			X			X	
Landscape Inter-visibility ¹		X							
Pre1750 vegetation	X			X		X			X
Proximity to lakes	X		X	X		X	X	X	X
Proximity to quarry geology	X								
Proximity to rivers				X		X			
Proximity to streamline weighted by stream order	X	X	X	X	X	X	X		X
Proximity to streamlines	X	X	X	X	X	X	X		X
Proximity to wetland edge	X		X	X		X	X		X
Rainfall	X					X			X
Ruggedness	X		X	X		X	X	X	X
Slope	X	X	X		X	X	X	X	X
Soils	X	X	X	X	X	X	X	X	X
Temperature	X								X
Wetlands	X		X	X		X	X	X	X

¹ This variable identifies prominent (highly visible) parts of the landscape such as peaks and ridgelines

3.2 Current models.

In contrast to the pre1750 models, the current models are modifications of the pre1750 models so that they reflect a more realistic likelihood of finding site features in the present-day landscape. These layers do this by utilising tenure, native vegetation extent, land-use mapping and mining history (eg sand-mining) to place parameters upon the likely survival rates of different features under different types of land-use and land condition. Parameters used for this project were derived through a series of expert workshops (Ecological 2006). Tenure is used to provide an idea for how long parts of the landscape have been managed for conservation (eg as a National Park); native vegetation extent is used to identify those areas of the landscape that have been subjected to clearing; land-use mapping indicates how land is currently used (ie cropping, grazing, roads or urban); and mining reveals what parts of the landscape have been irretrievably altered because of mining (eg even tho it might now be in a National Park and covered in native vegetation).

The current models take into account estimated historical impacts on Aboriginal features to describe their potential occurrence in the present-day landscape.

The caveats described in the previous section for interpreting likelihood for the pre1750 layers also apply to interpreting the current models. However, the relative likelihood in the current models takes into account the relative chance of a feature to survive under different land-use conditions in the landscape. It does this by reducing the relative likelihood values depending on the level of impact a land-use probably has on a feature. So for example, a cleared landscape would be expected to reduce the likelihood of scarred trees to almost zero; whereas the likelihood of stone artefacts surviving in the same landscape would be expected to remain almost as high as its original likelihood prior to the landscape being cleared. Similarly, a landscape that is regularly cropped and has been subjected to laser-levelling for irrigation has probably had a detrimental impact on features like earth mounds and hearths, whereas grinding grooves on rocky outcrops in the same environment might be expected to have a reasonably high likelihood of survival.

The current models are designed to be used in conjunction with the pre1750 models when interpreting the relative likelihood of a feature being present in a landscape. Similarly, the difference between the pre1750 model likelihood for a feature and its current likelihood, gives an indication of the level of impact on the feature in that part of the landscape. Ideally, by turning the current model on and off while looking at the pre1750 model will enable a visual assessment of the level of impact on that feature in that area of the landscape.

3.3 Aboriginal sites landscape regionalisation.

The Aboriginal sites landscape regionalisation is a single GIS layer produced by classifying the set of pre1750 models (in the same way as you would a satellite image). The nine pre1750 models (excluding the all features model), were put together as a stack of layers, and put through a classification algorithm that looks for groups of cells with similar levels of likelihood for a range of feature models. The result is a set of 24 regions (the 25th represents lakes and water) that break up the landscape into areas where a similar suite of features are likely to occur. For instance, one region covers the Sydney sandstone basin, and is dominated by the occurrence of rock art sites and grinding grooves. Similarly, another region running along the coastal strip is dominated by the occurrence of shell middens. Still another, in riparian areas in the west of the state, is dominated by the occurrence of scarred trees with mounds and hearths. See Table 2 for a breakdown of AHIMS data for each region defined in this product.

The Aboriginal landscape regionalisation divides the landscape into regions where it is predicted that a similar suite of site features will occur at relatively consistent likelihoods

In the landscape regionalisation layer, each colour (or region) represents a part of the landscape where a unique suite of features is likely to occur. Table 2 summarises the major (high likelihood) and minor (medium likelihood) site features predicted to occur within each region, together with the frequency of recorded features from AHIMS within each.

Table 2. % of AHIMS feature types within each feature landscape region.

Name	Major	Minor	Total	acc	arg	art	bur	clt	cmr	etm	fish	gdg	hab	hth	ocq	pad	shl	sta	stq	tre	wtr
Water			111	1	0	72	0	16	0	2	27	0	0	17	0	0	17	1	0	16	0
Western Plains	AFT, STA, STQ	CMR, GDG, TRE	124	2	0	87	4	3	0	1	2	0	3	3	2	0	2	2	4	2	16
Darling Plains	TRE	AFT, CMR, STQ	217	1	0	87	3	1	1	1	0	1	1	2	3	0	1	1	1	139	3
Riverine Plains	TRE, AFT	HTH, STQ, ETM	161	1	5	83	3	3	0	0	9	0	0	0	20	0	0	1	0	2	78
Murray Darling Depression Plains	AFT, STQ	HTH, ART, BUR	194	2	3	163	11	4	0	0	9	0	0	0	5	0	0	9	0	6	9
Channel & Mulga Slopes	AFT, STA	ART, TRE, STQ	379	11	2	231	25	7	0	3	1	1	3	6	2	1	6	0	57	8	30
Riverine Slopes	HTH, AFT	TRE, BUR, ETM	198	2	3	149	2	11	0	2	9	0	1	0	41	0	1	11	7	0	13
Riverine Outwash	HTH, TRE, AFT	ETM, BUR, STQ	657	0	21	220	3	28	0	0	95	0	0	0	233	0	7	18	0	3	215
Lower Darling slopes	HTH	AFT, BUR, ART, STQ	1323	4	5	485	13	30	0	2	29	0	4	12	783	0	4	31	10	9	32
Darling Riverine Slopes	TRE	AFT, BUR, HTH	395	5	1	120	6	12	0	2	1	0	11	0	9	0	0	2	0	3	245
Murray Darling Riparian	BUR, ETM, HTH	AFT, TRE	4274	28	20	2112	7	507	8	5	911	4	1	5	970	3	97	569	9	13	1184
Upper Murray Darling Riparian	TRE, AFT	BUR, HTH	755	3	1	276	6	38	0	3	30	0	2	0	69	0	3	8	4	2	380
Central Slopes & Plains	TRE, AFT	BUR, CMR	790	2	0	323	2	28	1	5	1	0	12	5	9	0	4	2	1	1	431
Central Slopes	TRE, AFT	BUR, STA, CMR	873	14	16	323	7	31	2	12	11	2	14	1	3	1	3	12	11	4	488
Eastern slopes	TRE, AFT	GDG, ART, STQ	1020	8	3	664	15	10	0	6	10	1	34	4	10	4	18	10	1	5	274
Eastern rocky slopes	AFT, STA	ART, CMR, TRE	1397	21	14	959	201	18	3	16	6	0	35	12	3	4	27	7	31	5	120
Eastern rocky uplands	AFT, CMR	TRE, ART, GDG, STA	1206	18	5	947	43	21	3	34	6	0	24	2	1	2	39	4	11	2	85
Rocky riparian	TRE, AFT, BUR	ART, BUR, GDG, TRE	2955	35	12	2351	115	49	5	48	4	0	80	12	4	2	50	3	81	4	222
Rocky rises	AFT, STQ	HTH, ETM, STQ	2140	21	6	1358	17	57	6	9	50	1	18	12	60	4	36	48	7	24	634
Eastern rocky fringes	AFT	TRE, ART	2099	30	6	1655	87	18	8	8	19	1	75	4	39	3	49	10	27	155	162
Sandstone complex	ART, AFT	TRE, GDG, BUR	5266	17	13	4429	63	39	2	29	23	1	124	5	9	3	145	22	21	11	544
Sandstone uplands	ART, AFT	GDG, TRE, STA	5827	14	8	2020	2543	12	0	7	72	2	1197	12	11	5	494	82	89	28	166
Eastern slopes & hinterland	ART, AFT	GDG, STA, CMR, TRE	2966	12	2	1886	713	5	0	6	23	0	351	4	23	1	83	24	34	3	88
Coastal fringe	SHL, AFT	GDG, BUR, SHL, STA, TRE	7439	29	3	4173	2164	40	2	33	181	0	959	54	5	12	367	188	119	40	204
		BUR, TRE, CMR, ART	8297	83	27	6379	727	183	8	79	2728	9	208	76	12	13	344	3069	35	48	342

acc = ceremony & dreaming, arg = resource gathering, art = rock art, bur = burials, clt = conflict, cmr = ceremonial rings, etm = earth mounds, fish = fish traps, gdg = grinding grooves, hab = habitation sites, hth = hearths, ocq = ochre quarries, pad = potential archaeological deposits, shl = shell middens, sta = stone arrangements, stq = stone quarries, tre = scarred trees, wtr = water features

3.4 Combined accumulated impacts.

The accumulated impacts layer is derived from the difference between the pre1750 models and the current models for each feature type, and then summed together. As such it reflects the combined impacts across all the nine features modelled. Areas that are high impact in the layer reflect areas where the majority of feature types have been heavily impacted. Areas where the combined impacts are low, reflect areas where the land-use has had only a minimum impact on the likely survival of features in that part of the landscape.

The combined accumulated impacts layer indicates the impacts of post-settlement land-use history on Aboriginal site features in the landscape

Areas where impacts are typically high include areas that have been mined, or dense urban areas, or areas that have been cleared and regularly cropped. Low impact areas tend to be places where land-use has had a minimal impact on the landscape, such as pristine environments within long-established National Parks or rangelands where the only agricultural activity has been grazing.

Areas where the accumulated (ie summed) impact has been low, can be interpreted as having a comparatively high chance of preserving features at or close to the relative likelihood indicated in the pre1750 models. Correspondingly, areas where the accumulated impacts are high have little chance of preserving Aboriginal site features, or if they do, they are likely to be in a high degraded state (ie mounds or middens within areas that are regularly cropped).

The accumulated impacts layer provides a landscape view of the level of impacts on Aboriginal site features, and can be useful in assessing the conservation significance of a site. For instance, a site that has been located within an area of the landscape that has experienced a high level of accumulated impacts could be considered as having higher conservation value because it is likely that many similar sites in that area have either been destroyed or highly impacted.

In contrast, areas where accumulated impacts are low (especially if they occur within a region of high accumulated impact), may be used as areas for ground assessment for the location of un-recorded sites as these areas may preserve the last examples of some features (or features in the best condition) in that area.

3.5 Combined model reliability.

The model reliability layer was derived from using the pre1750 model with a Survey Gap Analysis (SGA) algorithm (Manion & Ridges 2009). This algorithm looks at the areas where sites with a given feature type have been recorded in the landscape previously, combined with areas that have been surveyed, and looks to see how much of the landscape has been assessed through that recording and assessment history, taking into account the relative likelihood of the feature occurring through the landscape. The resulting layer is a guide to interpreting the overall reliability of the pre1750 models. Those areas which have been under-surveyed (high values in the reliability layer) are areas where the models are making predictions on the least amount of data, and therefore, are potentially the least reliable.

The combined reliability layer indicates those parts of the landscape that have been investigated the least. Areas with high values in this layer indicate where the predictions made by the model is based on the least amount of AHIMS data

When assessing how well the landscape has been surveyed, the SGA algorithm compares the AHIMS sample against the same variables that were used to derive the model (eg terrain,

proximity to water, soils, vegetation etc). The result of the algorithm is a layer that produces high values in areas where the landscape has been under-surveyed, and low values where the survey coverage has been more comprehensive. The process is applied to all feature types, and then combined by summing them all together.

3.6 Combined survey priority.

The survey priority layer is a derivation of the reliability layer, in that it combines the SGA result with the parameters used to derive the current extent models to produce a layer that takes into account impacts on that feature and the relative likelihood of that feature occurring across the landscape. The result identifies those areas of the landscape where there is a reasonable chance of that feature being preserved, along with areas which have been poorly covered by previous site recording or assessment. The final step is to combine the survey priority layers of all features into a single combined survey priority layer.

The combined survey priority layer defines survey priority as the combination of low model reliability, high modelled likelihood and low accumulated impacts.

The approach to interpreting the priority layer is to see it as a guide to areas that would most benefit from on-ground assessment when the objective is to identify areas that haven't been adequately investigated previously. Since the combined survey priority layer takes into account the relative likelihood of feature occurrence, and its potential survival, areas flagged as high survey priority can potentially be areas of the landscape where assessment may be most productive in terms of identifying new sites, and improving overall coverage of the landscape.

4 Technical summary.

For the purposes of effective regional conservation planning, just having some knowledge about where Aboriginal features are, or could be, in the landscape does not automatically provide a useful guide to where they are most appropriately conserved. Although some have argued that what is really required is a better understanding of archaeological meaning (Wheatley 2003), the emphasis placed in the approach adopted by the ASDST is landscape context as this is perhaps the area of greatest information gap in regional planning for cultural heritage. Thus the importance given to deriving similar kinds information products used in systematic conservation planning (Ferrier & Wintle 2009), in particular predictive models.

The ASDST state-wide Pre1750 models have been developed using international best-practice in archaeological predictive modelling and presence-only species modelling, including innovative developments in this field². The method has an established scientific credibility having been presented at academic conferences and published in peer-reviewed publications (see Section 8).

Since the model building exercise was to be for such a large area (800,000 km²), and based primarily on existing site data, it was logical to form a model using what has come to be called an 'inductive' or 'correlative' approach (Kohler & Parker 1986), or presence-only modelling in ecology (Zaniewski et al. 2002). However, this decision was largely determined by the scale and intended application of the project rather than any pre-conceived idea about how archaeological predictive models should be formed (cf. Canning 2005), and acknowledging that the artificial dichotomy between inductive and deductive approaches is generally unhelpful (Kvamme 2006, 13; Ridges 2006, 124). Indeed, the model building process involved elements of deductive approaches through the use expert opinion (cf. Pearce et al. 2001). Nonetheless, the use of inductive approaches has sparked considerable debate about methodology (Ebert 2000), which for the purposes of this discussion are addressed through the following issues:

1. statistical method (Woodman & Woodward 2002)
2. data quality (Kvamme 1988)
3. appropriate variables (Gaffney & van Leusen 1995)
4. validation (Verhagen 2007, 119)

4.1 Statistical method:

The statistical technique most commonly employed in inductive archaeological predictive modelling (APM) is logistic regression, with most discussion focusing on how to utilise it most appropriately (Warren & Asch 2000, 9; Woodman & Woodward 2002, 24). However, little of this discussion has incorporated advancements in technique employed in species modelling (Elith & Leathwick 2009; Scott et al. 2002), despite the statistical problem of modelling species being identical to modelling sites. There has been considerable effort in ecology to developing better methods to deal with most of the technical problems with presence only modelling (eg Scott et al. 2002), with many of these issues being the same as those identified in the APM literature (Ebert 2000; Wheatley 2003). The statistical approach adopted here was to use a non-parametric form of logistic regression called generalised additive modelling (GAM), as implemented in S-Plus with the GRASP tool (Lehmann et al. 2002). The significant advancement with GAM models is the relaxation of the linear requirement of fitted models, enabling more realistic curves to describe the relationship between dependent and independent variables (Ridges 2003, 104-108), an issue identified as hindering the use of

² An invitation to present the methodology to scholars at the University of Amsterdam during 2010 is recognition of the international interest in the methodology and approach. The Netherlands has gone the furthest of any country to incorporate site predictive modelling into cultural heritage management policy (see: van Leusen, M., J. Deeben, D. Hallewas, P. Zoetbrood, H. Kamermans & V. Verhagen. 2002. Predictive modelling for archaeological heritage management in the Netherlands. A baseline report.)

logistical regression in APM (Woodman & Woodward 2002, 24). The use of GAMs has been shown to perform strongly when compared to a variety of other statistical approaches in species modelling (Elith et al. 2006), substantiating its use in this project.

4.2 Data quality.

The AHIMS database holds information about approximately ~60,000 records (see Department of Environment and Conservation NSW 2006). However, site information in the database may be up to 50 years old, leading to a variety of potential errors such as positional and attribute accuracy. At the time of initial model development (January 2006) AHIMS contained 46,522 records (see Table 3 for a breakdown by feature type). Some of these records were eliminated because they either contained no spatial reference, or the spatial reference plotted outside the NSW boundary. Some of these were because they plotted in the ocean, others plotted in adjoining states. The total records plotting within the NSW boundary was 46,206. Of these, 44,569 contained features that were modelled. Data were also screened for attribute errors, such as sites incorrectly labelled as ART instead of AFT (due to data entry errors). Data screening was not exhaustive given the size of the database, but is under regular review as errors in the data become apparent.

Table 3 Breakdown of feature frequencies modelled for the ASDST (at January 2006).

Feature	Records	Feature	Records
Stone artefacts (aft)	27,419	Hearths (hth)	1,431
Rock art (art)	6,459	Shell (middens) (shl)	3,397
Burials (bur)	1,078	Stone quarries (stq)	351
Earth Mounds (etm)	3,642	Scarred trees (tre)	5,259
Grinding grooves (gdg)	2,978		

4.3 Appropriate variables.

The variables used to form the Pre1750 model for each feature type are listed in Table 1 (see section 3.1). One of the critical areas of forming predictive models is the choice of variables (Ridges 2006). There has been sustained criticism of APM based on inductive models because of its reliance on environmental variables at the expense of variables describing social and cultural behaviour (Gaffney & van Leusen 1995; Wheatley 2003). Whilst the difficulty of defining appropriate cultural variables at the scale of this project is acknowledged, the need to do so was recognised. The models incorporate variables describing the inter-visibility of key parts of the landscape such as ridgelines and prominent peaks (following Llobera 2001). Inter-visibility was found to be a key factor influencing the occurrence of rock art sites.

A related point about the choice of variables is the method developed in this study for the inclusion of categorical variables for particular feature types. For feature types like rock art and grinding grooves, categorical variables such as geology were critical for describing their potential distribution across the landscape. In these cases key geology types could be identified as playing a key role (eg sandstone). However, for other categorical variables like soils and vegetation, whilst acknowledged as potentially key factors influencing the distribution of some feature types, the number of classes in these variables and the spatial bias in AHIMS data meant that a large proportion of classes had little or no AHIMS site data, hindering their effective use in model building. The solution to this problem was to transform state-wide soil and vegetation data into continuous data. For soils (see Figure 2) this was achieved through utilising continuous data describing the physical properties of soil

types (McKenzie et al. 2000) and for vegetation it was achieved using compositional data (Keith 2004) intersected with ecosystems (Mitchell 2002). The transformation of these categorical variables into continuous ones resulted in models that could deal with the spatial bias in AHIMS data much more effectively than in previous APM studies.



Figure 2. Map of soil data presented as a 3-band similarity model of physical properties. Similarity in colour in this map reflects similarity in the physical properties of those soils.

4.4 Validation.

A critical aspect of any model building exercise is validation. However, factors influencing the preservation of sites in the present landscape such as variability in original site distribution; taphonomic factors influencing site preservation; land-use history; and feature detectability (eg whether surface inspection or excavation is required to locate stone artefacts); all affect how and whether models can be effectively validated. It must therefore be recognised that validation requires a number of approaches and methods.

The GRASP tool used to generate the models enables an examination of variable contribution plots that quantify variable performance as individual variables, the drop in deviance explained if they are removed from the model, and their performance within the model in combination with the other selected variables (Lehmann et al. 2004, 42. See Figure 3). This tool, along with others in GRASP, allows a sophisticated comparison of variable combinations and an informed decision (incorporating review by archaeologists familiar with particular regions) about choice of variables and confirming that prediction from the models are sensible.

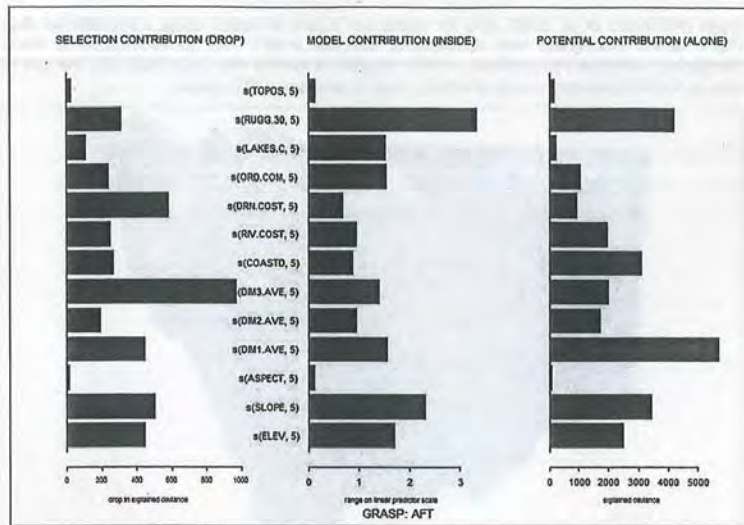


Figure 3. An example of a variable contribution plot generated by GRASP.

An additional validation approach is measuring the predictive performance of the models using independent data. The independent data used to test the ASDST models comes from AHIMS data recorded since model building began in 2006. In this time, approximately 4,000 sites have been added to the database. Whilst numerous, much of the new recording is influenced by the same biases in the model input data (namely impact assessment recording), and has not been targeted to test critical areas of the model. Nonetheless, the data can be used to measure the proportion of sites identified in medium to high likelihood classes, in this case showing that greater than 90% of AHIMS sites recorded with artefacts since 2006 were predicted to have medium to high likelihood by the model (see Figure 4).

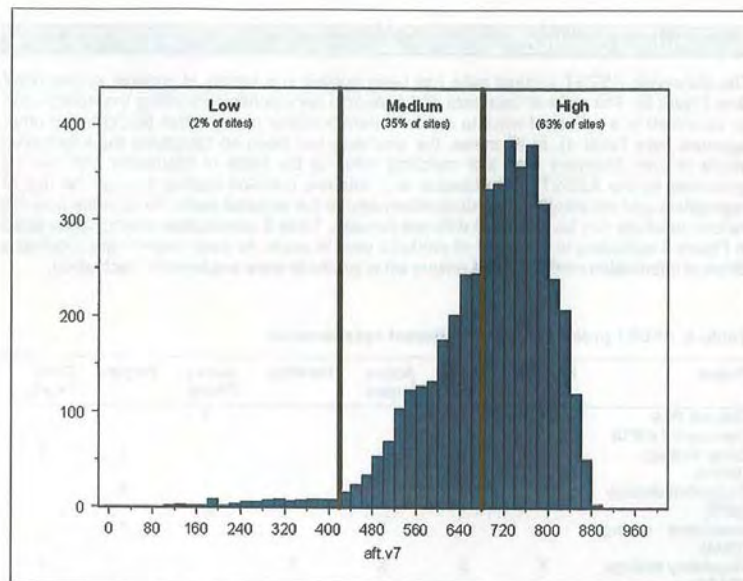


Figure 4. Predictive performance of the model measured against new AHIMS data.

However, despite various data-driven approaches to model evaluation, the best approach is to evaluate their performance in on the ground survey. The models have been subjected to a considerably amount of on-ground assessment, as is described in the following section.

5 Product application.

The state-wide ASDST product suite has been applied in a variety of projects across NSW (see Figure 5). The suite of data sets and analytical approaches comprising the ASDST can be combined in a variety of ways to meet different business needs within DECCW and other agencies (see Table 4). In all cases, the emphasis has been on identifying the information needs of each business area and matching these to the kinds of information that can be generated by the ASDST. The objective is to improve decision making through the use of appropriate and meaningful contextual information at the regional scale. To illustrate how the various products can be utilised in different projects, Table 5 summarises project types listed in Figure 5 according to the kinds of products used in each. As each project type required a different information profile, so to a unique set of products were employed in each study.

Table 4. ASDST products used in different assessments

Project	Pre1750	Current	Accum. Impact	Reliability	Survey Priority	Regions	Cons. Priority
National Park assessment (NPD)	X				X		
Cons. Strategy (EPRG)	X	X				X	X
Acquisition strategy (NPD)	X	X				X	
Investment strategy (CMA)			X			X	
Regulatory strategy (EPRG)	X	X	X	X			X
Assessment priority (C&HD)			X		X		X

To highlight these differences further, each project type is described in more detail:

- National Park assessment (NPD): the focus has tended to be on survey design in order to locate sites to incorporate into the park management plans. As the park landscapes were largely un-disturbed in most cases, the most important information was the pre1750 likelihood models, and the model of survey priority
- Conservation strategy (EPRG): such studies have identified priority areas for conservation and repair priorities for vegetation, and other areas that could be released for development. The role of the ASDST was to quantify existing impacts on sites in the region (using pre1750 & current products) and the representation of sites in protected areas in order to comparatively measure what would be lost in the areas released for development
- Acquisition strategy (NDP): focus has been upon identifying rural properties to prioritise for acquisition into the National Parks Estate if they came up for sale. The pre1750 and current models were used to quantify impacts on each site feature and set targets for representation, and the regions used to measure the gain in representation achieved by acquiring various properties
- Investment strategy (CMA): proposals received by the CMA for private property conservation are ranked according to the biodiversity gain they would contribute. Additionally proposals receive an additional score if they contain cultural outcome, with a higher score given to those cultural outcomes delivered in areas of high accumulated impact and vulnerable regions based on ASDST analysis
- Regulatory strategy (EPRG): the ASDST products were used to inform a strategy for new mining leases by showing what potentially occurred in the landscape (pre1750 models), level of impact (pre1750 & current models), where the greatest impacts

have been (accumulated impact) and where there were data gaps (reliability), which could then be combined into a conservation priority

- Assessment priority (C&HD): in order to narrow areas to survey, spatial analysis of accumulated impact and survey priority were used to identify assessment priority areas.

In each case, the application of the ASDST suite has been adapted to meet the needs of the project with the support of the Regional Assessment Unit (C&HD).

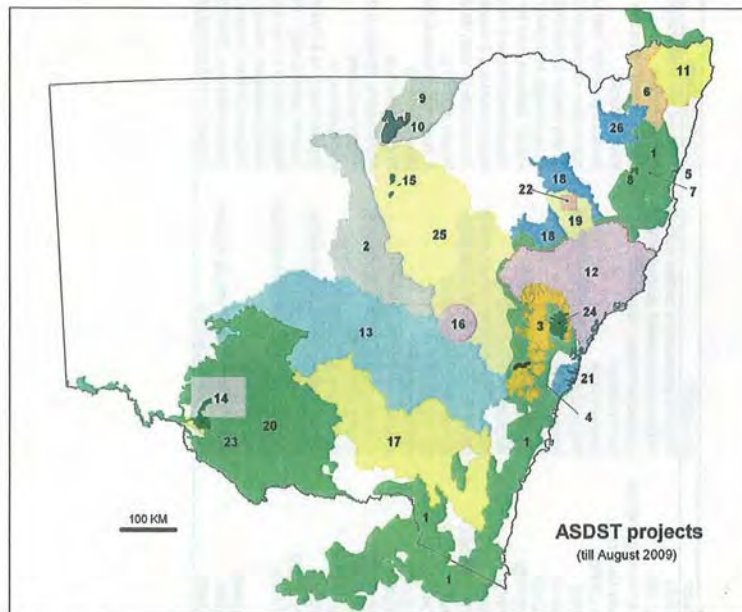


Figure 5. ASDST projects map.

Table 5. ASDST project listing.

ID	Project name	Project coordinator	Application	ASDST analysis	Report	Published
1	Alps to Atherton	Denis Byrne (CHD)	Regional assessment context setting	Regional site likelihood profiles		
2	Bogan River catchment	Jason Wilson (CHD)	Regional assessment context setting	Map production	X	X
3	Blue Mtns World Heritage Area	Blue Mtns World Heritage Institute	Regional assessment context setting	Custom model derivation		
4	6 Foot track assessment	Blue Mtns County Council	Cultural landscape description	Map production	X	
5	Bongil NP	Mark Cameron (EPRG)	Survey design	Combining ASDST with LIDAR		
6	Border Ranges Recovery Plan	Lyn Baker (EPRG)	Regional assessment context setting	Intersecting recovery areas with models		
7	Darkwood Addition to NE NP	Hilton Naden (CHD)	Survey design	Survey design & map production		
8	Cathedral Rock NP	Hilton Naden (CHD)	Survey design	Survey design and model validation		
9	DRP 2	Dave Robson (EPRG)	Reserve acquisition strategy	ASDST features used for C-Plan analysis	X	
10	OPA4	Rob Taylor (EPRG)	Regulatory context setting	Impact modelling and map production	In prep.	In prep.
11	Far North Coast Regional Strategy	Lyn Baker (EPRG)	Regional assessment context setting	Impact modelling & scenario evaluation		
12	HCR Investment strategy	Hunter Central Rivers CMA	Private property investment strategy	Accumulated impact modelling		
13	Lachlan CMA	Russell Hill (CMA)	Conservation priority areas	Priority modelling		
14	REPP	Gary Currey (CHD)	Survey design	Survey gap analysis modelling		
15	Macquarie Marshes	Damian Lucas (CHD)	Model evaluation	Map production		
16	Molong TSR's	Joedie Davis (CHD)	Assessment priority for TSR's	Priority modelling		
17	Murrumbidgee CMA	Greg Summerell (SSD)	Private property investment strategy	Accumulated impact modelling		
18	Namoi CMA	Shannon Taylor (CMA)	Priority AHIMS sites	Priority modelling		
19	Peel Water Sharing Plan	Daryl Albertson (EPRG)	Potential impact modelling	Model evaluation	X	
20	Riverina Red Gum	John Beattie (CHD)	Regional assessment context setting	Impact modelling & numerical reports		
21	Sydney Metro CMA	Tabitha Trimby (CMA)	Regionalisation for planning	Custom regionalisation derivation		
22	Moore Creek Valley	Simon Smith (EPRG)	Context setting for regulation decisions	Model evaluation + accumulated impacts	X	
23	Yargo NP	Hay Parks	Survey design	Model evaluation, survey gap analysis	X	
24	Yengo NP	Jan Wilson (Umwelt)	Survey design	Model evaluation, survey design		
25	Central West CMA	Central West CMA	Model development & priority mapping	Model evaluation, threat modelling		
26	Glen Innes LALC	Karen Potter (CHD)	Region context setting	Regional site likelihood profiles		

6 Product examples.

The following maps provide examples of ASDST products. The products shown are state-wide derived products, but displayed for the Upper Hunter area, as shown in Figure 6.



Figure 6. Upper Hunter Valley. LANDSAT with AHIMS sites containing stone artefacts (white dots)

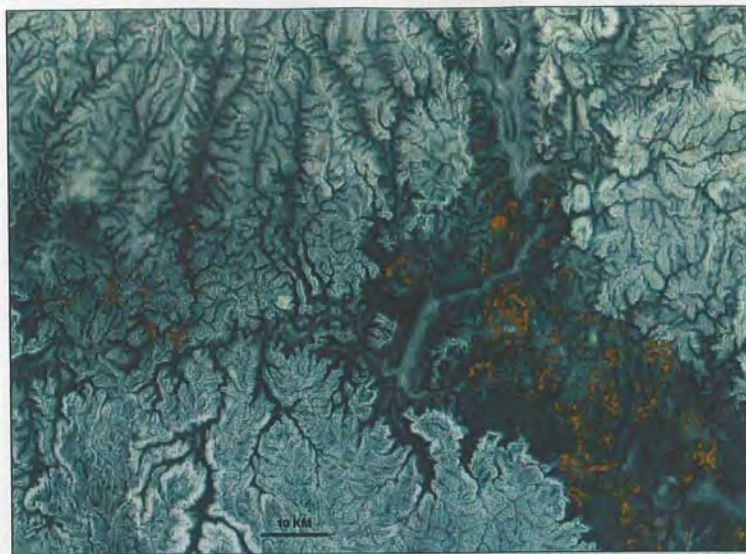


Figure 7. State-wide pre1750 stone artefact model. White - low likelihood, black = high likelihood. Red dots are AHIMS with stone artefacts.

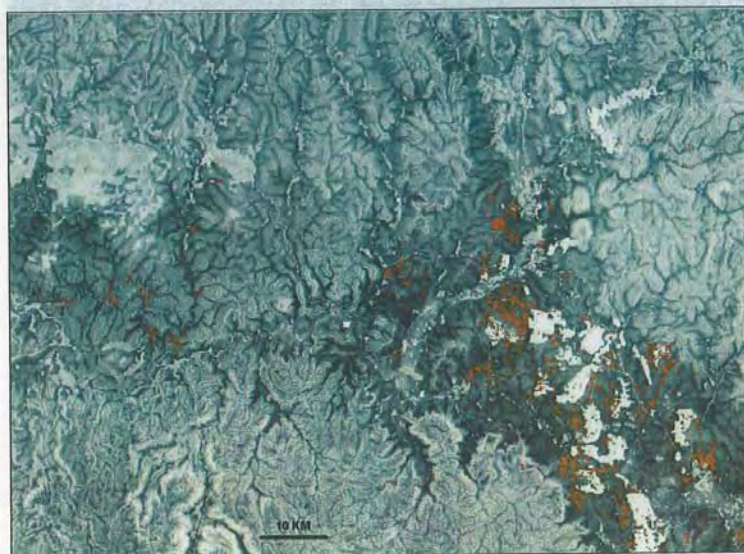


Figure 8. State-wide current stone artefact model. White - low likelihood, black = high likelihood. Red dots are AHIMS with stone artefacts.

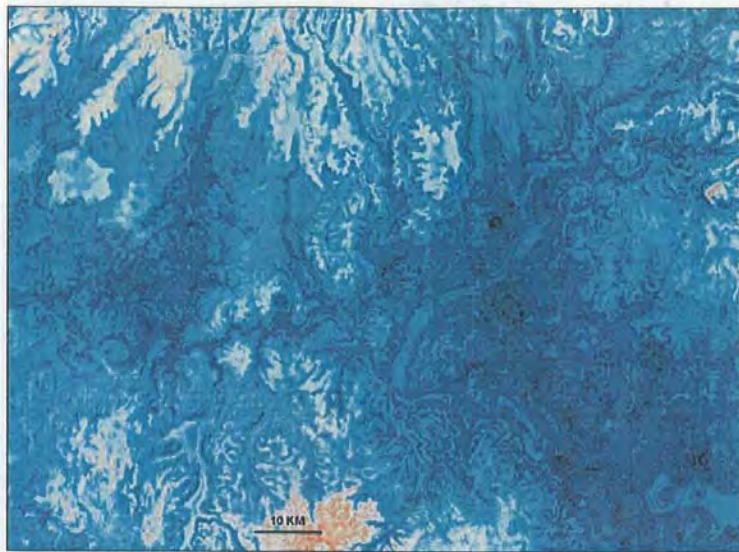


Figure 9. State-wide reliability model for stone artefacts. Dark blue = good reliability; white = medium reliability; red = low reliability. Black dots are AHIMS sites with stone artefacts.

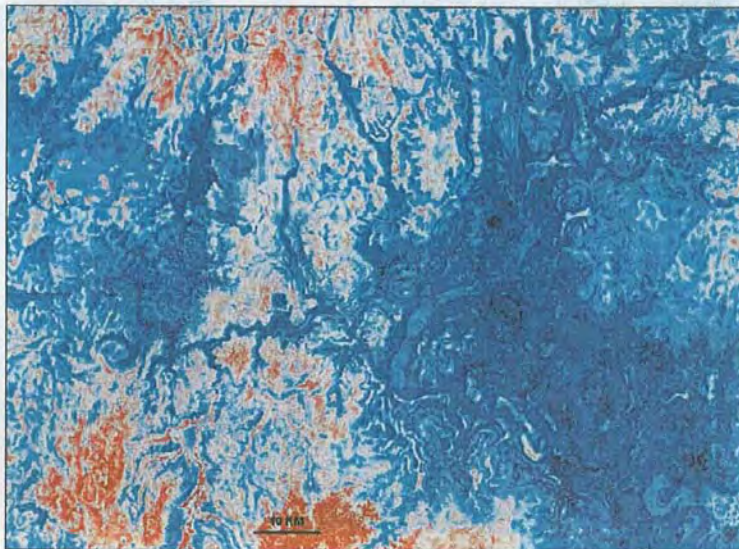


Figure 10. State-wide survey priority, summed across all feature types. Dark blue = low priority; white = medium priority; red = high priority. Black dots are AHIMS sites.

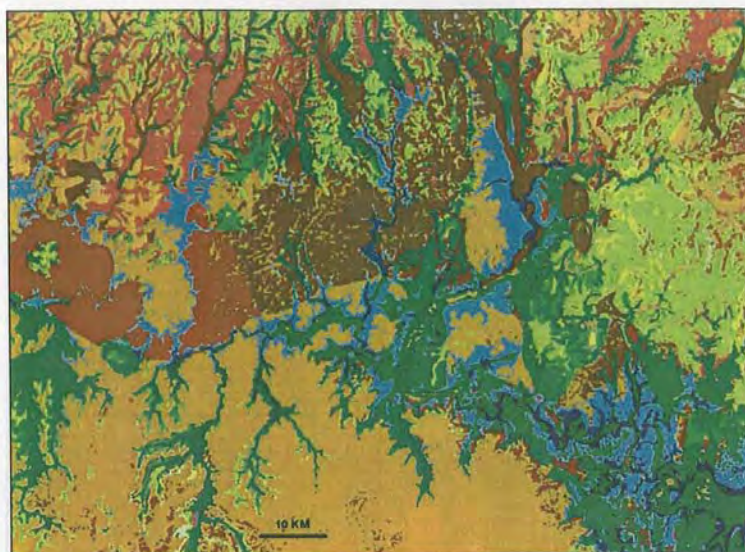


Figure 11. State-wide regionalisation. Each colour represents a unique profile of feature likelihoods.

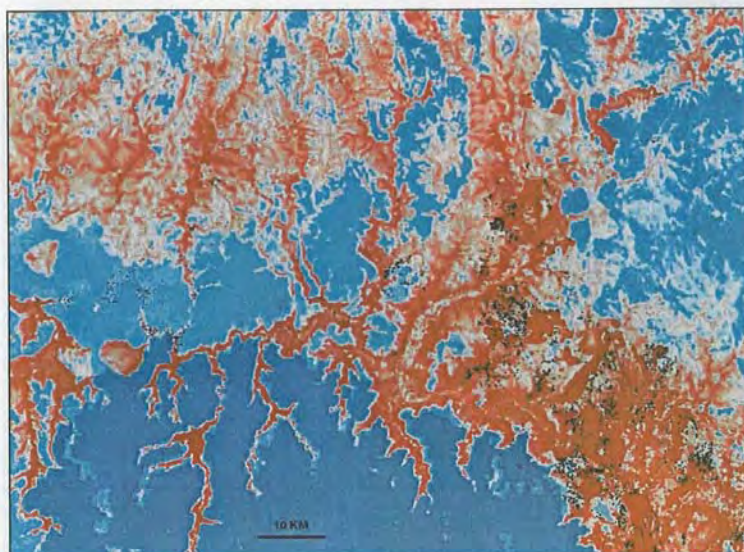


Figure 12. State-wide accumulated impacts, summed across all modelled feature types. Black dots are AHIMS sites.

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Pardee & Martin?

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Department of Environment, Climate Change and Water NSW

ASDST

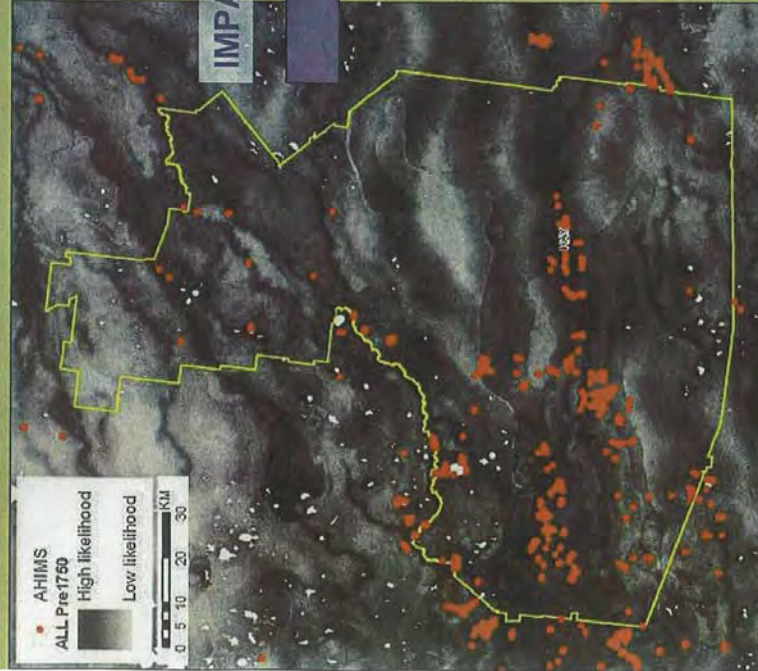
Aboriginal Sites Decision Support Tool



ASDST: regional context setting for Aboriginal site conservation planning

- The ASDST is a predictive modelling package developed by DECCW
- It is based on international best-practice in predictive modelling
- It covers all of NSW at a resolution of 1 Ha
- As well as predictive models, it includes other products to assist decision making:
 1. Pre1750 & current landscape models
 2. Cumulative impacts
 3. Survey priority
 4. Conservation priority
 5. Regionalisation

Pre1750 model:



Current model:



IMPACTS



The ASDST is not the only predictive modelling product available.

In comparison with the Pardoe / Martin model:

Pardoe / Martin:

- Based on detailed archaeological study (best available knowledge)
- Ground-truthed (Pardoe Martin & Martin PhD)
- Less sophisticated methodology (but still good)
- Input data sets: 1:50k - 1:250k

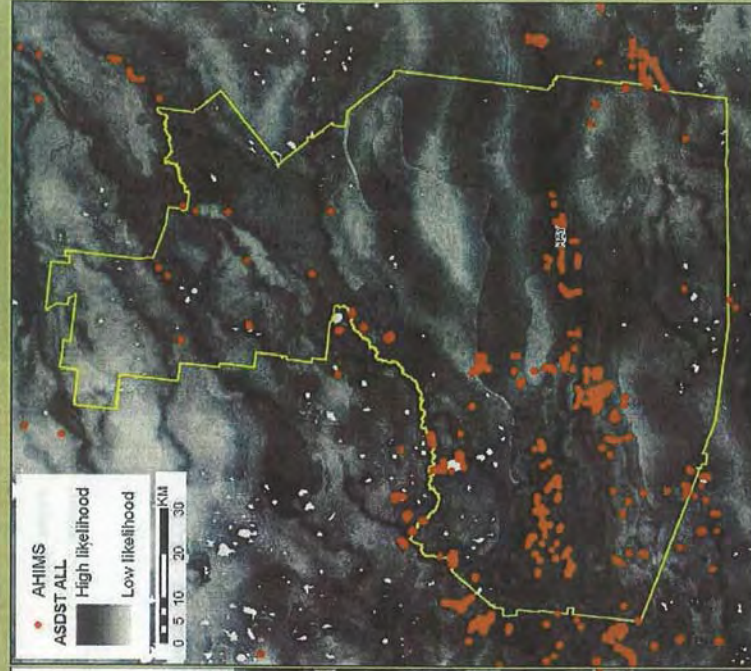
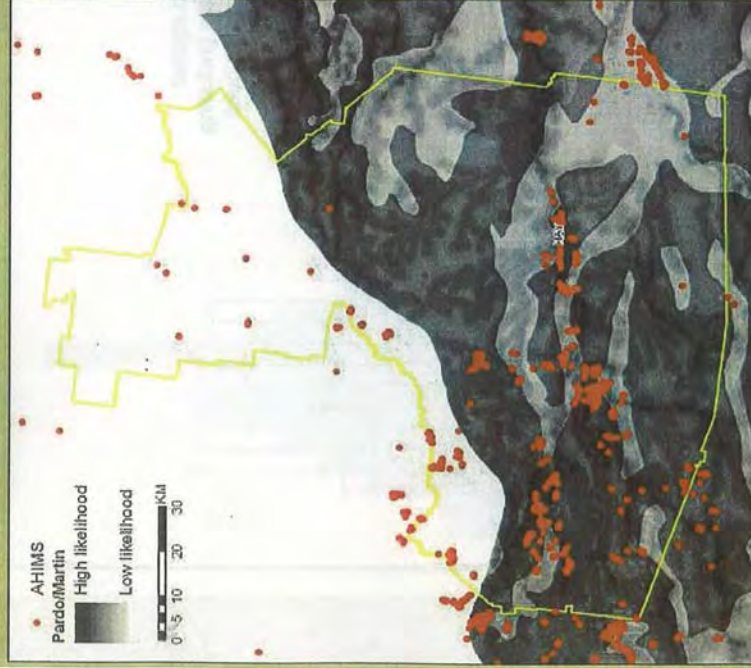
ASDST:

- Based on AHIMS data from all of NSW (less edge effects)
- Ground-truthed in RERP
- Methodology is best available
- Input datasets: 1:100k – 1:250k
- Wider range of variables

Comparison with Pardoe / Martin model:

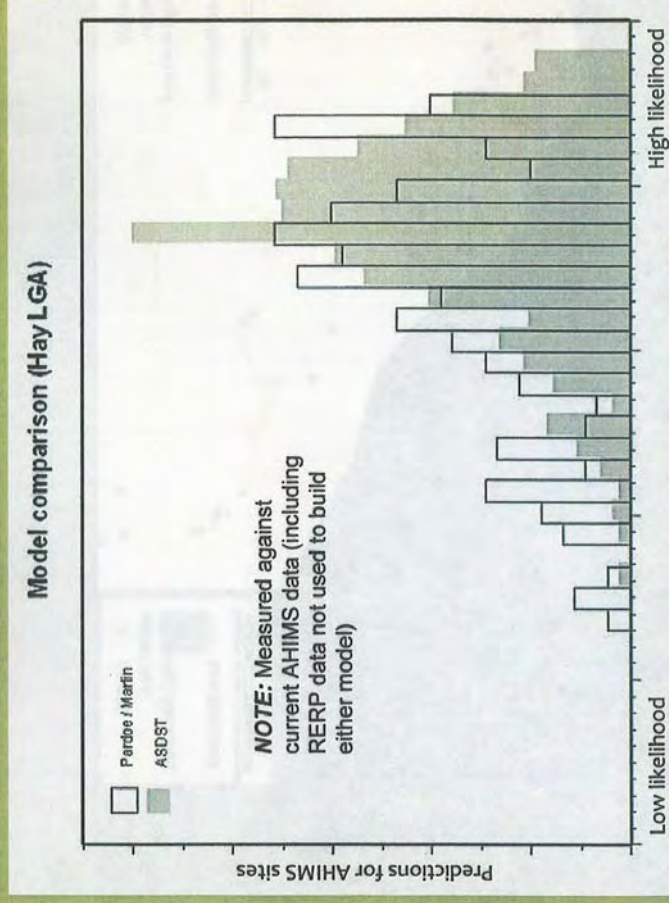
Pardoe/Martin:

ASDST:



Comparison with Pardoe / Martin model:

Predictive accuracy comparison:

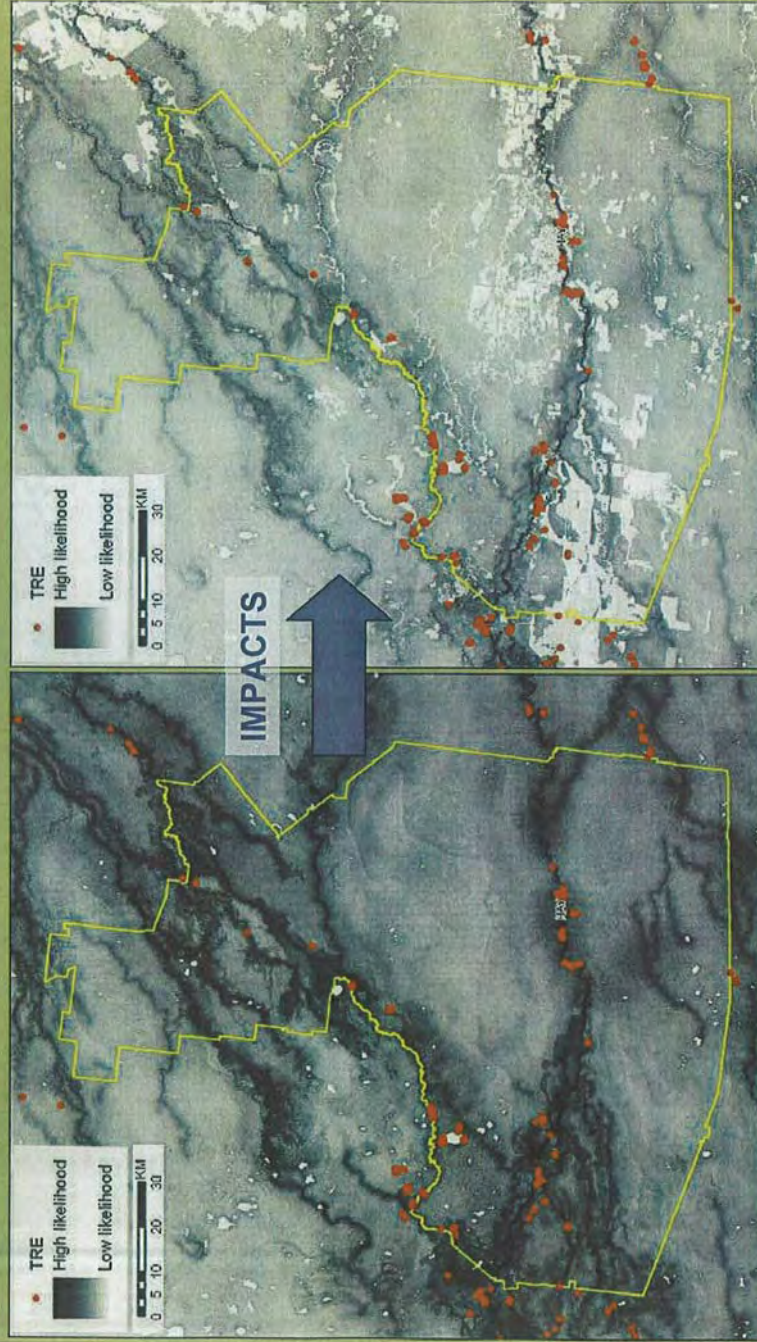


CONCLUSION: Both models perform well, predicting high likelihood for the majority of sites. The ASDST model performs slightly better (fewer sites with low likelihood)

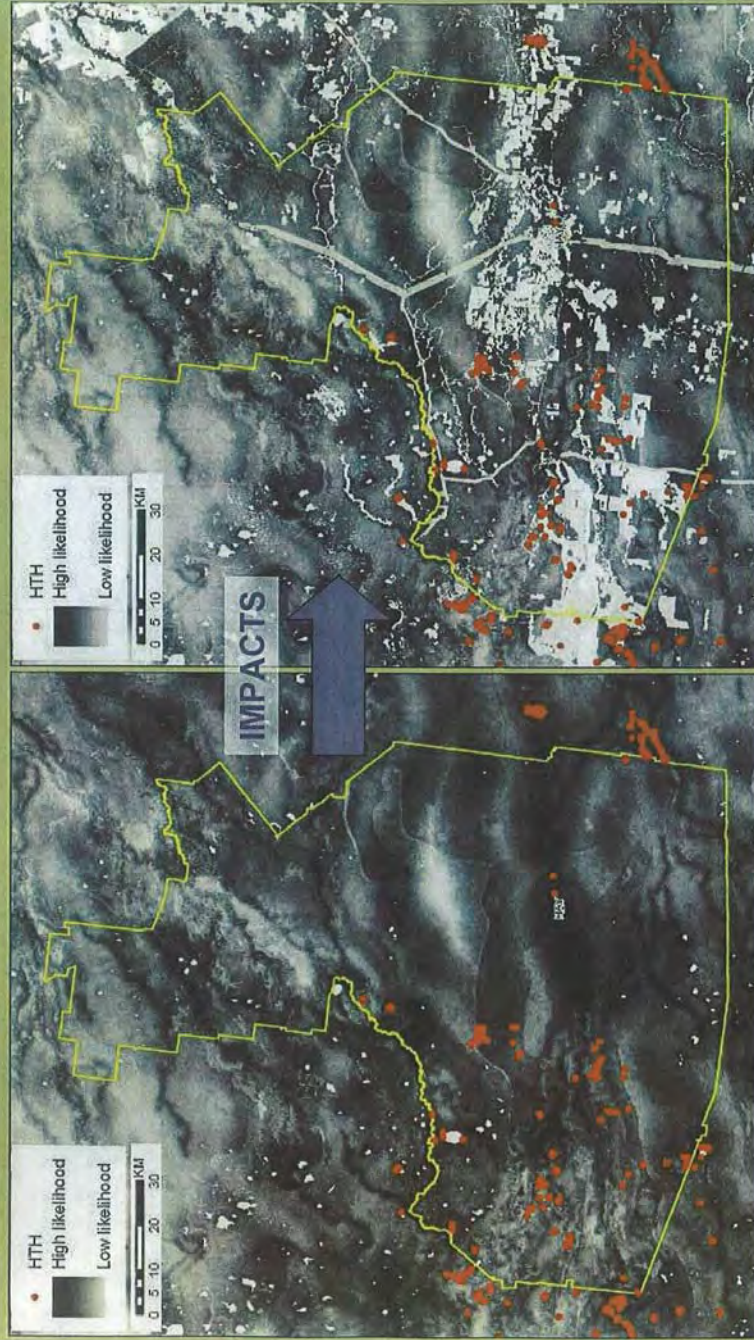
Why use the ASDST over Pardoe/Martin?

- Slightly better predictive accuracy
- Covers the whole Shire
- Separate models for each feature type (permitting impacts to be modelled for each separately)
- Pre1750 & current version of each feature model
- Cumulative impacts product
- Model reliability / survey priority product
- Conservation priority product
- Regionalisation product
- ASDST is supported with custom data processing: regional profiling to support context setting and planning

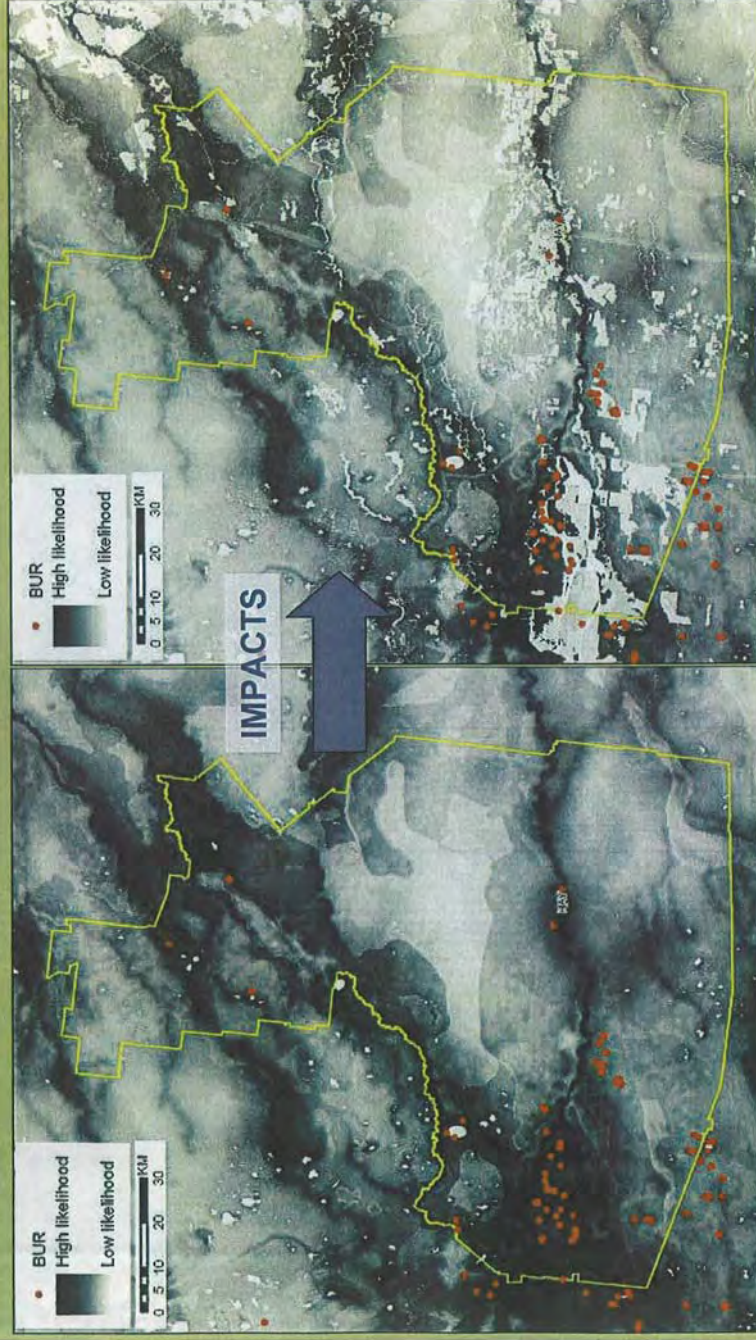
Separate models: scarred trees



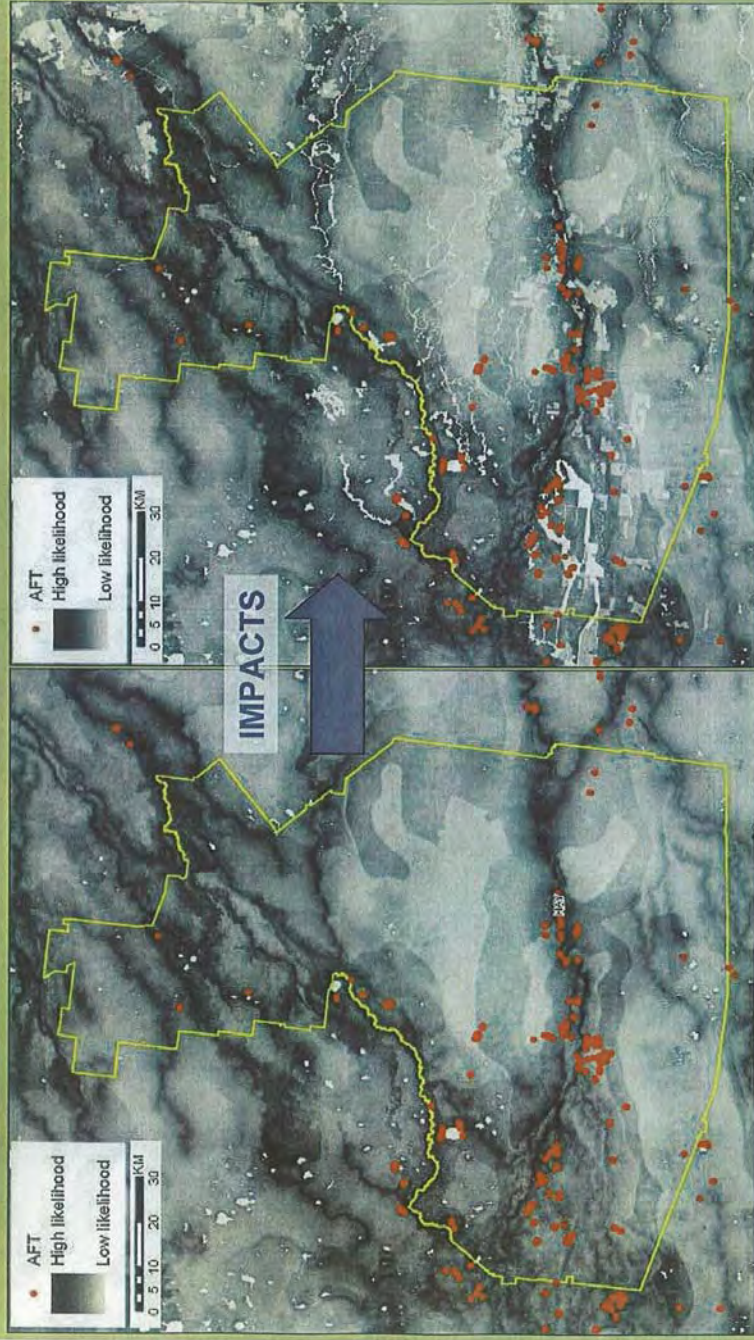
Separate models: hearths



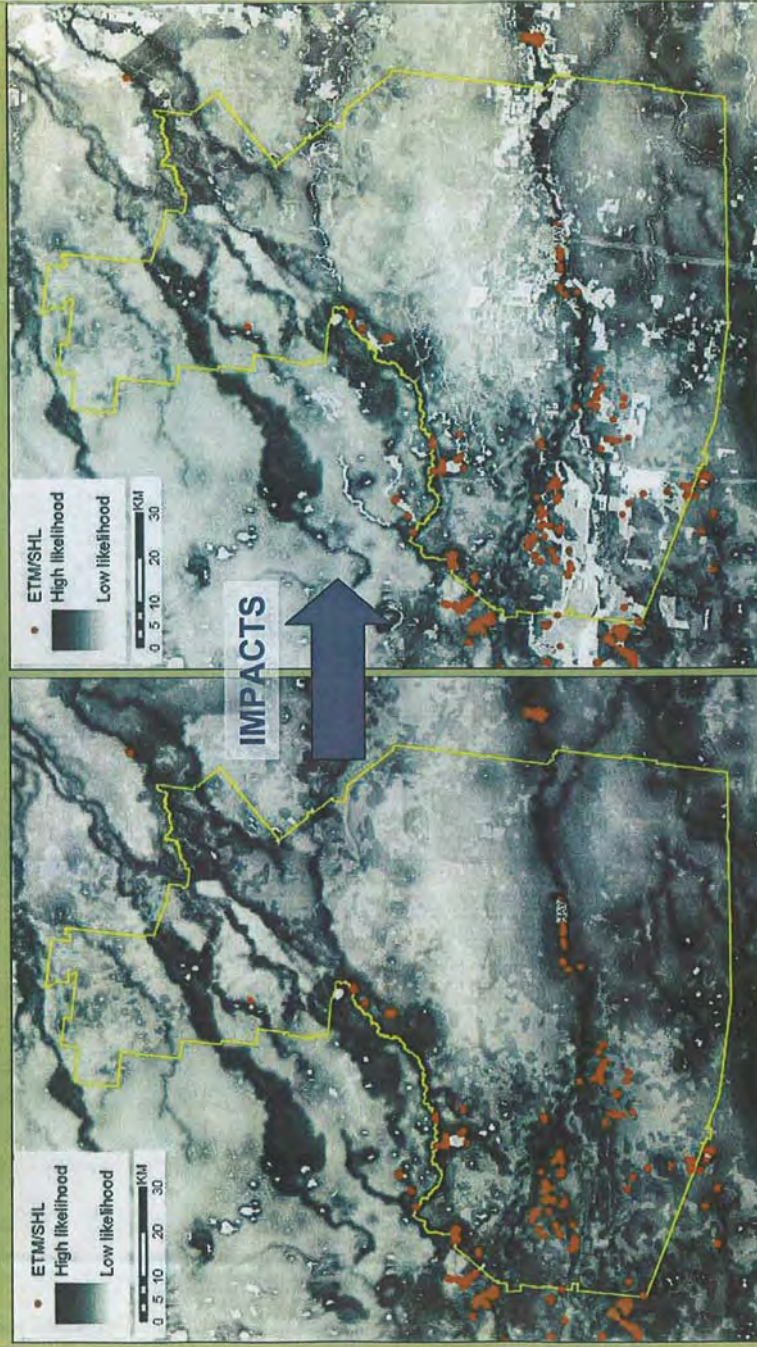
Separate models: burials



Separate models: artefacts



Separate models: mounds/shell

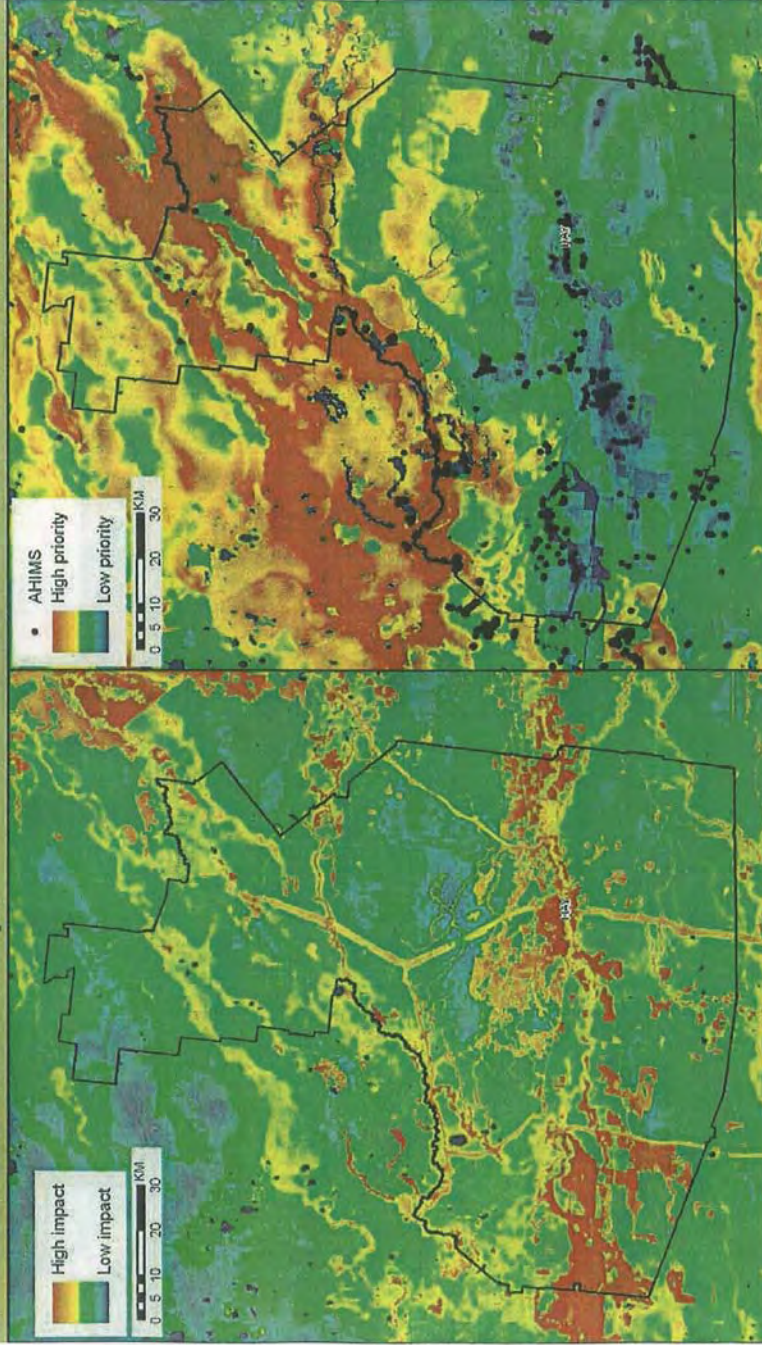


Extended products: accumulated impact & survey priority

Cumulative impacts

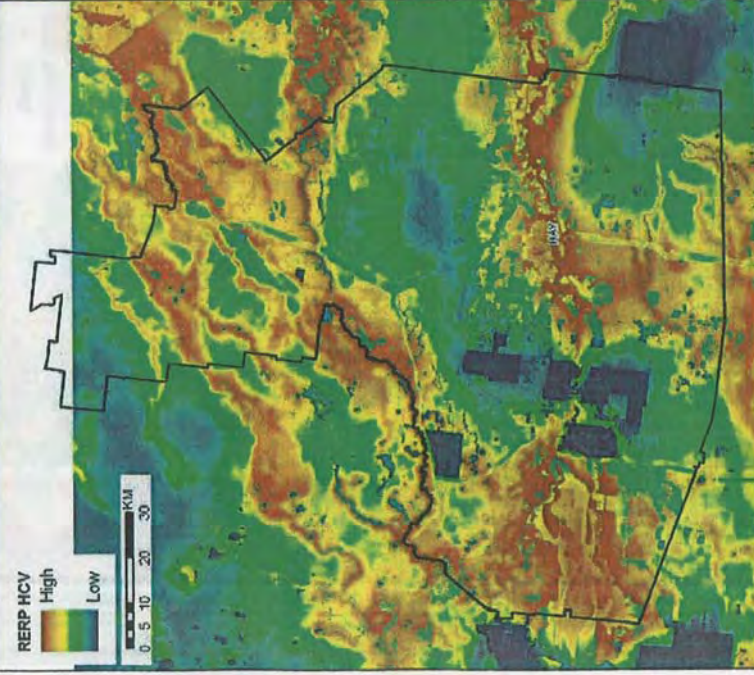


Survey priority (pre RERP)

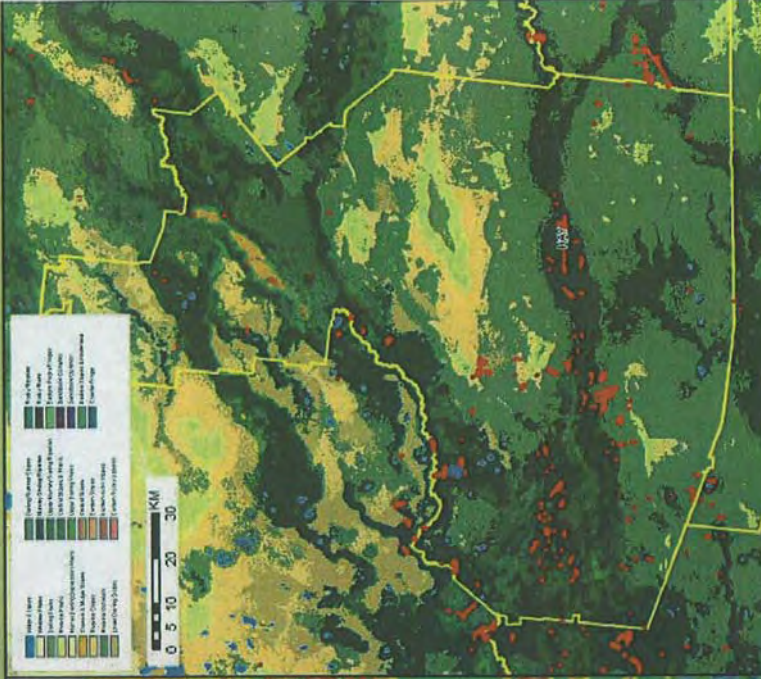


Extended products: HCV & regionalisation

RERP high conservation priority



Regionalisation



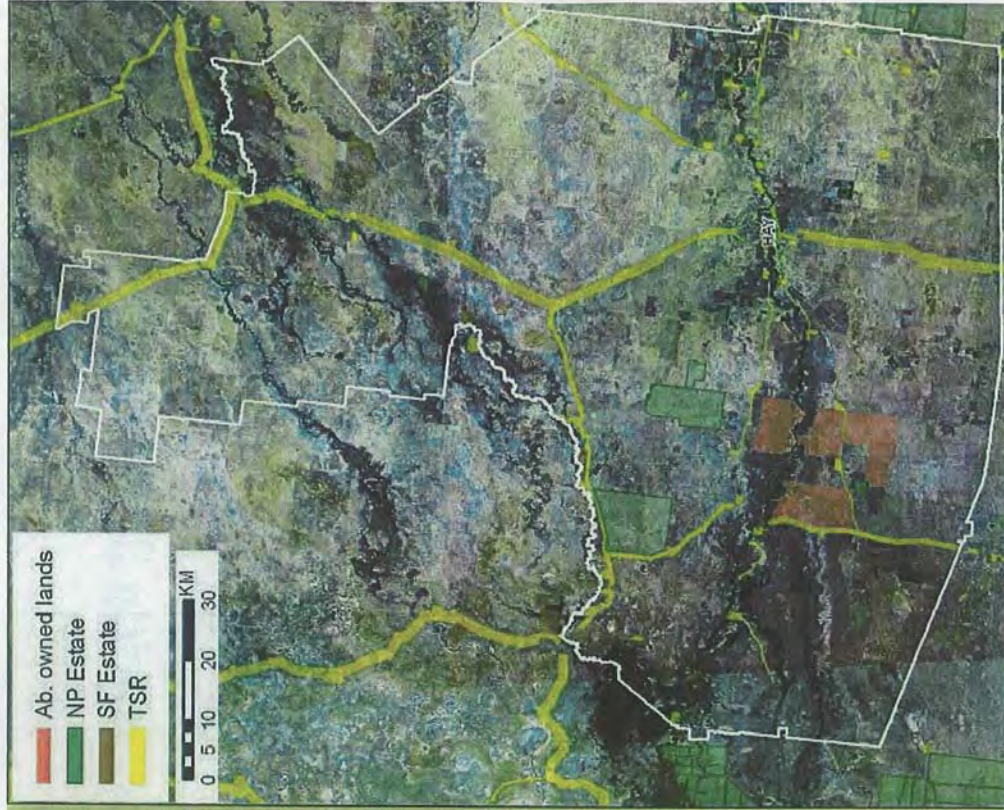
ASDST regional profiling:

AHIMS profile:

Feature	LGA	Prot	Prot %	Access	Access %
acd	7	3	42.9	3	42.9
arg	19	13	68.4	15	78.9
aft	209	20	9.6	25	12.0
art	2	1	50.0	1	50.0
bur	80	5	6.3	8	10.0
cmr	2	2	100.0	2	100.0
etm	278	53	19.1	64	23.0
gdg	4	0	0.0	0	0.0
hab	1	0	0.0	0	0.0
hth	154	42	27.3	55	35.7
pad	7	4	57.1	4	57.1
shl	102	7	6.9	13	12.7
sta	1	0	0.0	0	0.0
stq	2	0	0.0	0	0.0
tre	116	52	44.8	61	52.6
Total	648	171	26.4	204	31.5

ASDST profile:

Feature	Impact %	Prot %	Access %
Combined	22.2	2.6	5.9
Artefacts	16.4	2.9	7.3
Burials	23.7	3.1	7.4
Mounds/Shell	23.6	2.6	6.5
Hearths	24.9	2.5	4.9
Scarred trees	39.7	2.6	7.1



Potential Planning applications:

- Broad-scale mitigation planning (with careful consideration of models' scale)
- Placing land-use planning in the context of cumulative impacts on Aboriginal heritage
- Develop a high conservation value map based on models + other Aboriginal values (*with close collaboration with Hay LALC*)
- Develop site significance criteria based on regional profiling (to standardise existing site assessment processes)

Sensitive Landscapes ADST

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Project : Hay Shire Council LEP Review
Projection: GDA_94



-  Sensitive Landscapes ADST
-  Cadastre
-  Hay_LGA

