

Dubbo Mining Areas Land Use Strategy 2015



VISION

Mining and related activity in the Dubbo Local Government Area is supported and managed to maximise growth and to not impact our scarce water resources whilst achieving an appropriate balance with other land uses.

Council acknowledges the assistance of the NSW Government in the preparation of the Strategy.

CONTENTS

PART ONE: MINING IN DUBBO AND THE ORANA REGION

- 1.0 Introduction
- 1.1 Relationship to other Plans
- 1.2 Industry Snapshot
- 1.3 Coal Seam Gas Exploration
- 1.4 Consideration of Mining and Extractive Industries Development
- 1.5 Future Growth Scenario Snapshot
- 1.6 The Legislative, Approvals and Policy Context of Mining
- 1.7 The Importance of our Environment
- 1.8 The Importance of Agriculture
- 1.9 The Importance of Water

PART TWO: STRATEGY

- 2.0 Strategic Vision and Framework
- 2.1 Strategy One: Agriculture and Mining
- 2.2 Strategy Two: Housing the Community
- 2.3 Strategy Three: The Natural Environment and Mining
- 2.4 Strategy Four: Infrastructure
- 2.5 Strategy Five: Social Health and Well Being
- 2.6 Strategy Six: Economic Well Being
- 2.7 Strategy Seven: Coal Seam Gas

CONTEXT

1.0 Introduction

Mining is a key growth industry in Western NSW. As the largest city in Western NSW, Dubbo is well situated to take advantage of the growth and development of the mining and mining support industries and provide a broad range of community, industry and business services including construction, light manufacturing, education, health, technology, transport and professional services.

The Dubbo Local Government Area is geographically situated at the heart of significant opportunities for mining projects and has a number of mines either approved or under consideration within three (3) hours of Dubbo. Figure 1 shows the significant number of mining projects in operation or under consideration in Dubbo and the Orana Region.

This Strategy promotes growth in the mining and mining technology and services industry. The Strategy also aims to ensure the impacts of mining are adequately managed to maintain the unique quality of life residents enjoy and the environmental values of the Dubbo Local Government Area.

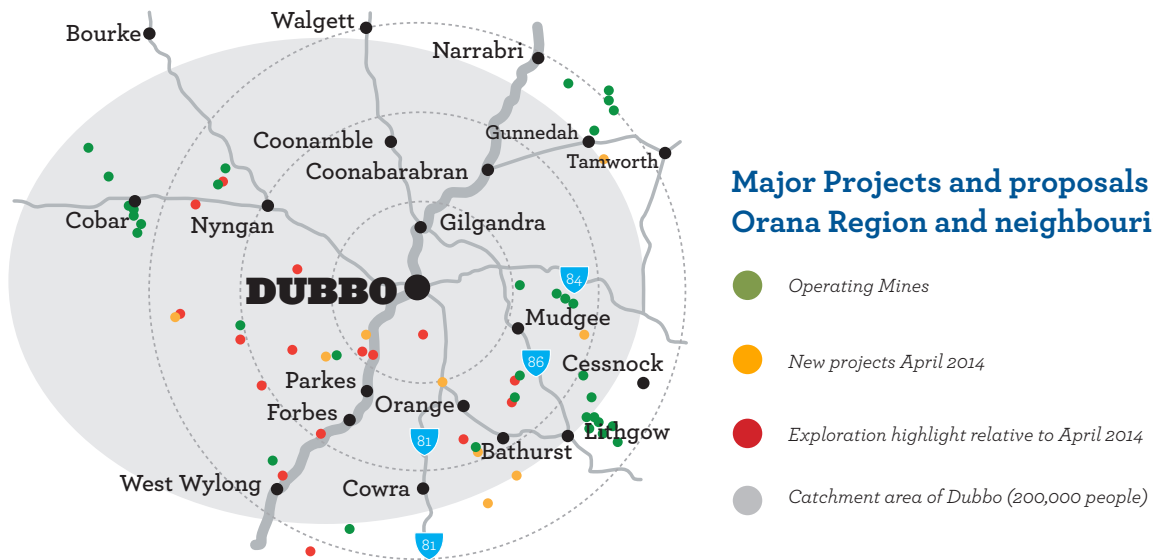
Development of the mining industry as a key economic driver for the region will significantly boost business opportunities

and investment and contribute to a sustainable local economy. This Strategy aims to develop Dubbo as a major mining service centre, supporting the long term growth and development of the industry in the Orana region and across Western NSW.

Dubbo as a major service centre to western New South Wales is characterised by its capacity to provide a range of community, industry and business services to the region, taking advantage of its strategic location. Dubbo is situated at the intersection of the Golden Highway, the Newell Highway and the Mitchell Highway. Dubbo is also situated at the intersection of the main western railway, the Dubbo- Werris Creek and Dubbo-Coonamble lines. These linkages combined with the continuing strength of the Dubbo City Regional Airport, which provides 142 Regular Public Transport Flights a week to and from Sydney and Broken Hill (carrying a total of 186,203 passengers in the 2013/2014 Financial Year) provide the capacity for regional industry development and growth.

In supporting long term relationships between sustainable mining and the growth and development of the City, Dubbo will need to build on these strengths and ensure:

- Quality affordable housing is available
 - Our unique water resources including the Macquarie River and the Talbragar River are protected and enhanced
 - Our underground water resources are protected and enhanced
 - Good infrastructure: industrial land, roads, energy, water and community facilities
 - Productive agricultural lands are protected and enhanced
- A supportive regulatory environment for development
 - Strong linkages to key markets and ports (road, rail, air)
 - Quality health and community services for all residents
 - Global standard IT and telecommunications
 - Access to education and training opportunities for all residents
 - Strong long-term cooperative relationships between government, mining and mining services companies and the Dubbo community including the agricultural community.



Major Projects and proposals in the Orana Region and neighbouring LGA's

Figure 1 Major Projects and Proposals in the Orana Region and Neighbouring LGA's

1.1 Relationship to other plans

The importance of both mining and agricultural activities as key drivers for growth in our region is recognised by the Dubbo 2036 Community Strategic Plan. The Plan identifies the requirement for strategic planning to attract, promote and manage the sustainable development of mining and mining services activity in the Dubbo Local Government Area (LGA) and the wider Orana Region.

The Industry Growth Initiative forms the principal strategic framework which aims to promote the role of Dubbo as a major regional mining services centre providing access to the land, personnel and resources necessary to support the mining and mining services industry in the Orana Region and beyond.

The Initiative consists of a coordinated set of documents, as follows:

1. Industry Vision Statement: Dubbo Australia’s next Mining Service Centre

Identifies the characteristics of successful mining service centres and the attributes required to ensure sustainable long term growth and development of the mining and mining services industry in Dubbo and the Orana Region.

2. Dubbo Mining Areas Land Use Strategy:

Defines the role of Dubbo as a major regional mining services centre, ensuring the provision of access to the land, personnel and resources necessary to support the mining and mining services industry in the Orana Region.

3. Industry Development Strategy and Action Plan (Mining Equipment, Technology and Services – METS)

Addresses key economic development issues and challenges associated with the growth of the mining and mining services industry in the region and defines strategies for the promotion and the development of METS industry activity in the Dubbo Local Government Area (LGA) and the wider Orana Region aligned with relevant actions.

4. Dubbo City Infrastructure Services Impacts Model:

An interactive tool developed to quantify the social, economic and infrastructure demands of potential development within the region to model impacts for infrastructure and community planning.



Figure 2 Dubbo Mining and Mining Services Industry Growth Initiative Framework

Industry growth and development is supported by the NSW Government Strategic Business Plan, NSW 2021. The Plan supports an increase of 30 per cent in the value of both primary industries and mining production by 2020, an increase in the share of jobs in regional NSW, an increase in the population of regional NSW, the protection of strategic agricultural land and improved agricultural productivity.

The Orana Regional Action Plan has identified mining as the principal driving force behind current and future economic growth. The Plan has also identified strategies to promote the industry including the New Frontiers Program to stimulate mineral and petroleum investment and development of a regional taskforce of leaders to report to government on actions that could maximise the net social and employment benefits from mining growth.

1.2 Industry Snapshot

Dubbo is located at the centre of considerable mining activity, both in terms of production, development and exploration. In 2013, there were 55 major mining projects in production or in the advanced stages of development within the Orana region.

Within 200 km of Dubbo there are world class Gold and Copper deposits, in the Cadia valley (near Orange) and North Parkes districts. Smaller deposits occur at Cargo and Copper Hill and Cowal. Cobar is situated around 3 hours west of Dubbo and has a range of rich metallic deposits including Gold, Silver, Zinc and Lead. Exploration has revealed there are significant untapped reserves of these minerals throughout the Cobar Basin, contributing to the long-term viability of the region as a centre for mining activity in NSW.

Mining and mining support exploration activities represent the largest economic activity by far in the Orana Region

contributing an estimated \$1.1bn (or 14%) of the total \$8.3bn in gross regional economic output. In 2013, 1196 local residents were employed in the industry and 245 local businesses were directly supported by the industry, highlighting the existing capability of the industry within the region.

The information in Table 1 below identifies the position of Dubbo as the gateway to western New South Wales and the diversity and depth of its commercial offering is attractive to mining companies and indicates significant opportunity for continuing economic growth with the development of the industry in the region.

Orana LGAs	Regional Mining Output	Direct Employees	Salaries	Local Purchases	Total Direct Spending	Number of Businesses
	\$m		\$m	\$m	\$m	
Bogan	263.8	145	17.1	7.4	24.51	1
Bourke	6.9	16	1.9	0	1.888	0
Brewarrina	0.0	0	0.0	0	0	0
Cobar	805.4	707	83.4	0.4	83.826	6
Coonamble	0.0	0	0.0	0	0	0
Dubbo	45.5	164	19.4	42.3	61.652	189
Gilgandra	0.0	5	0.6	0.1	0.69	1
Narromine	0.0	37	4.4	0.5	4.866	20
Walgett	2.7	48	5.7	0.3	5.964	1
Warren	7.0	4	0.5	0.3	0.772	2
Warrumbungle	0.0	34	4.0	2.3	6.312	7
Wellington		36	4.2	1.1	5.348	18
Total Region	1131.2	1196	141.1	54.7	195.828	245

Table 1 Economic Contribution of Mining – Orana (NSW Minerals Council, 2013)

NSW Government Trade and Investment prepared a mineral resource audit of the Dubbo Local Government Area in June 2014. Figure 4 provided overleaf shows the location and extent of operating mineral resource industries and the location of known resource deposits. However, it should be noted that Figure 4 does not show the location of Coal Seam Gas resources in the Dubbo Local Government Area.

While mining is a key economic driver for the region, the Orana Regional economy is broad based. Other sectors like Agriculture, Construction and Manufacturing contribute similarly to the overall health of the economy (12% and 11% of total regional output respectively), as shown in Figure 3 below.

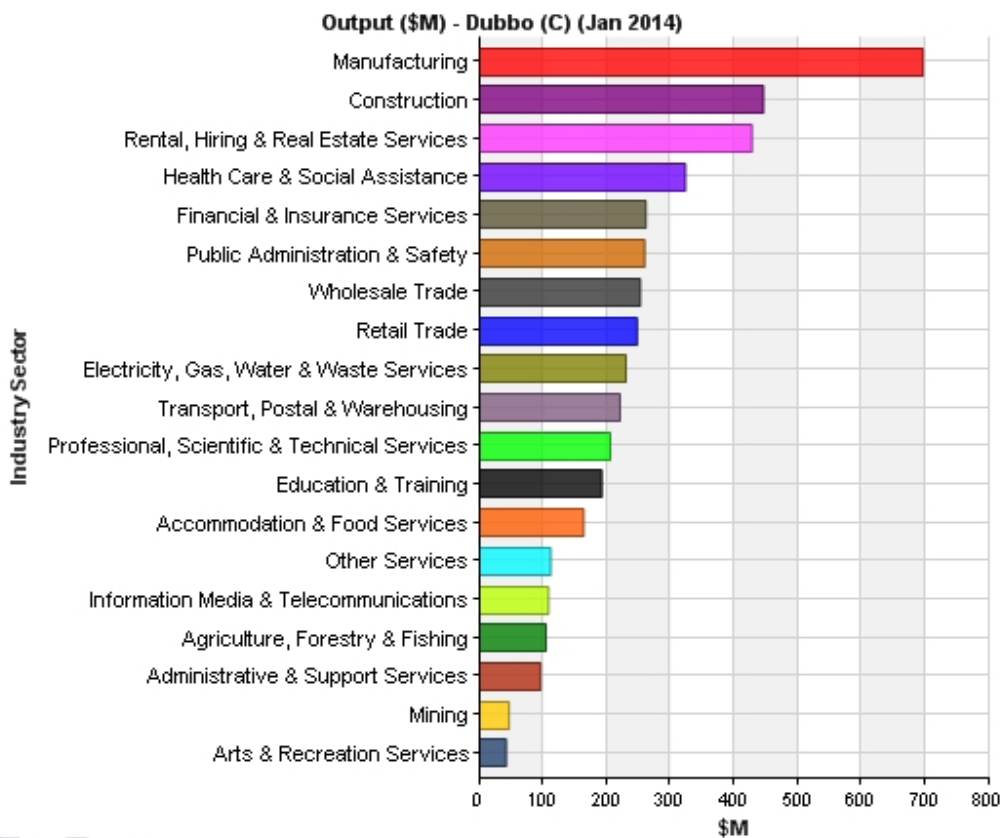


Figure 3 Industry output Dubbo (Australian Bureau of Statistics, 2013)

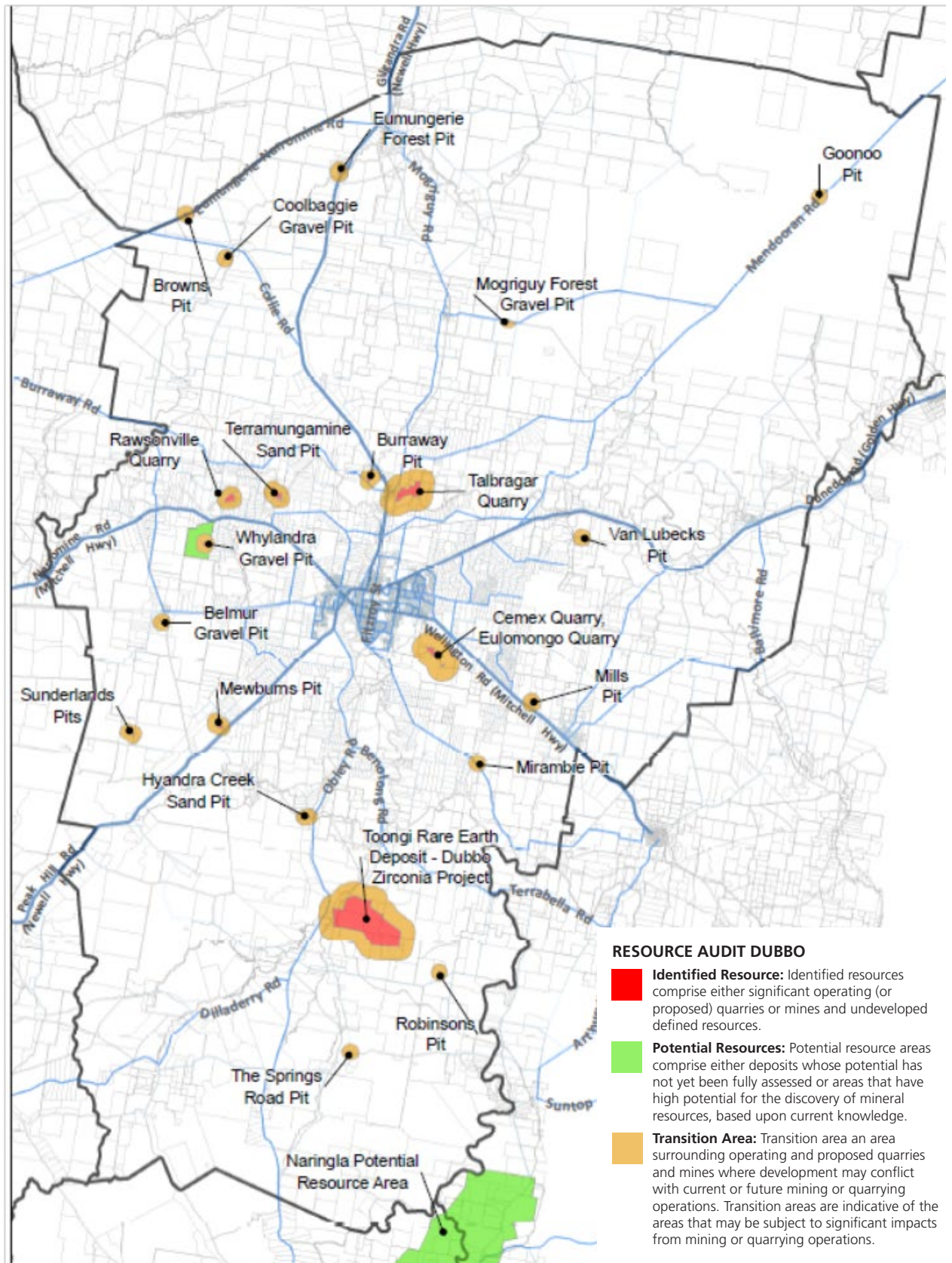


Figure 4 Mineral Resource Audit of the Dubbo Local Government Area prepared by NSW Government Trade and Investment, June 2014

The information in these materials is protected by copyright, and is confidential until the time that Department of Planning & Environment publishes that information. The recipient is not permitted to use, disclose or reproduce the information in these materials except for land use and planning purposes. Any unauthorised use, copying or reproduction without obtaining the relevant permissions from the Department will constitute an infringement of copyright.

The information contained in this publication is based on knowledge and understanding at time of writing (insert date). The Department excludes all liability for the accuracy or completeness of the information, or for any injury, loss, or damage whatsoever (including without limitation liability for negligence and consequential losses) suffered by any person acting, or purporting to act, in reliance upon anything contained herein. Users rely on and use this information at their own risk.

This information has been prepared by NSW Trade & Investment, Regional Infrastructure and Services and the State of New South Wales (Department) to provide information to local councils about the location and status of State and regionally significant mineral, energy and extractive resources as part of its legislative obligations under 117(2) of the Environmental Planning and Assessment Act 1979.

1.3 Coal Seam Gas Exploration

Coal Seam Gas (CSG) is a natural gas found in coal deposits. The coal and gas are formed from plant matter under pressure over many millions of years. Coal seam gas is used in the same way as any other form of natural gas for cooking and heating as well as in industrial processes and electricity generation.

Both Conventional Gas resources and Coal Seam Gas resources are found in a number of locations throughout Australia. Figure 5 provided below details the location of gas resources in Australia.

Coal Seam Gas is sourced from underground coal seams where the gas bonds to the surface of coal particles. Coal seams are generally filled with water and it is the pressure of the water that keeps the gas as a thin film on the surface of the coal. Coal seams that can produce Coal Seam Gas to an

economic level are ordinarily situated between 200 metres and one (1) kilometre below the surface.

The level of gas that can be produced from a coal seam depends on the thickness of the coal, gas content, permeability and the depth of the coal seam. In high quality CSG deposits the cleats or fractures in the coal bed are permeable enough to allow gas and water to flow freely through them. Water is a by-product of the gas collection process. Coal seams generally contain more brackish (salty) groundwater than aquifers that are usually used for agriculture. It is for this reason that careful consideration of the impacts on aquifers and water resources must be undertaken in the consideration of any proposals for Coal Seam Gas extraction.

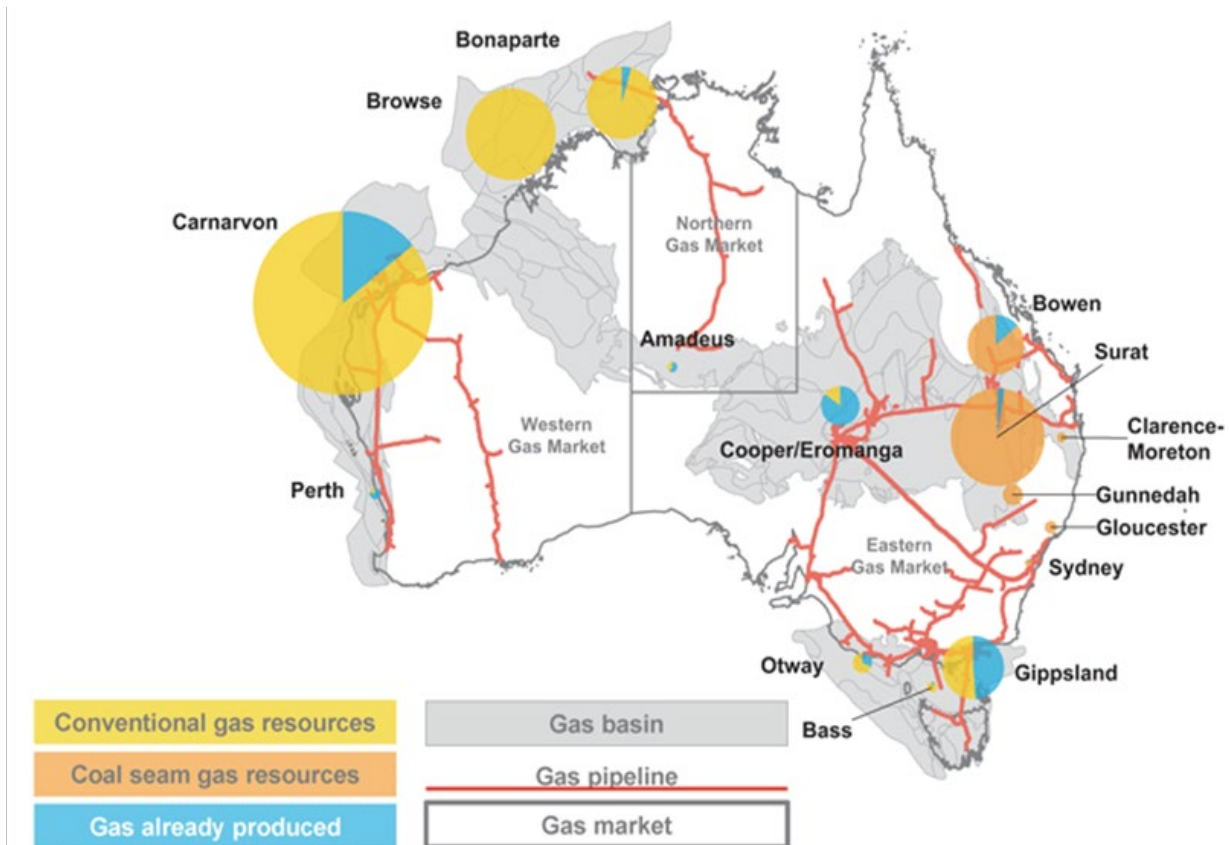


Figure 5 Location of gas resources in Australia (Source: Parliament of Australia 2013)

At the current time NSW has 114 Coal Seam Gas wells (at AGL's Camden Project) producing commercial quantities of Gas (of which 89-96 are producing at any one time). A number of areas are under active exploration throughout the State and in particular areas in the north and north-west with their connection to the Gunnedah and Surat Basins. However, a number of exploration licenses have been issued in the north-west and in sections of the Orana Region.

Figure 6 provided below shows the location of Coal Seam Gas Exploration licenses that are currently active over the north-west and the Orana Region. Of particular relevance to the Dubbo Local Government Area is PEL 433 currently held by Santos NSW Pty Ltd and includes land covered by the Goonoo National Park/State Conservation Area. PEL 433 was due to expire in February 2015.

NSW Petroleum Titles - March 2015

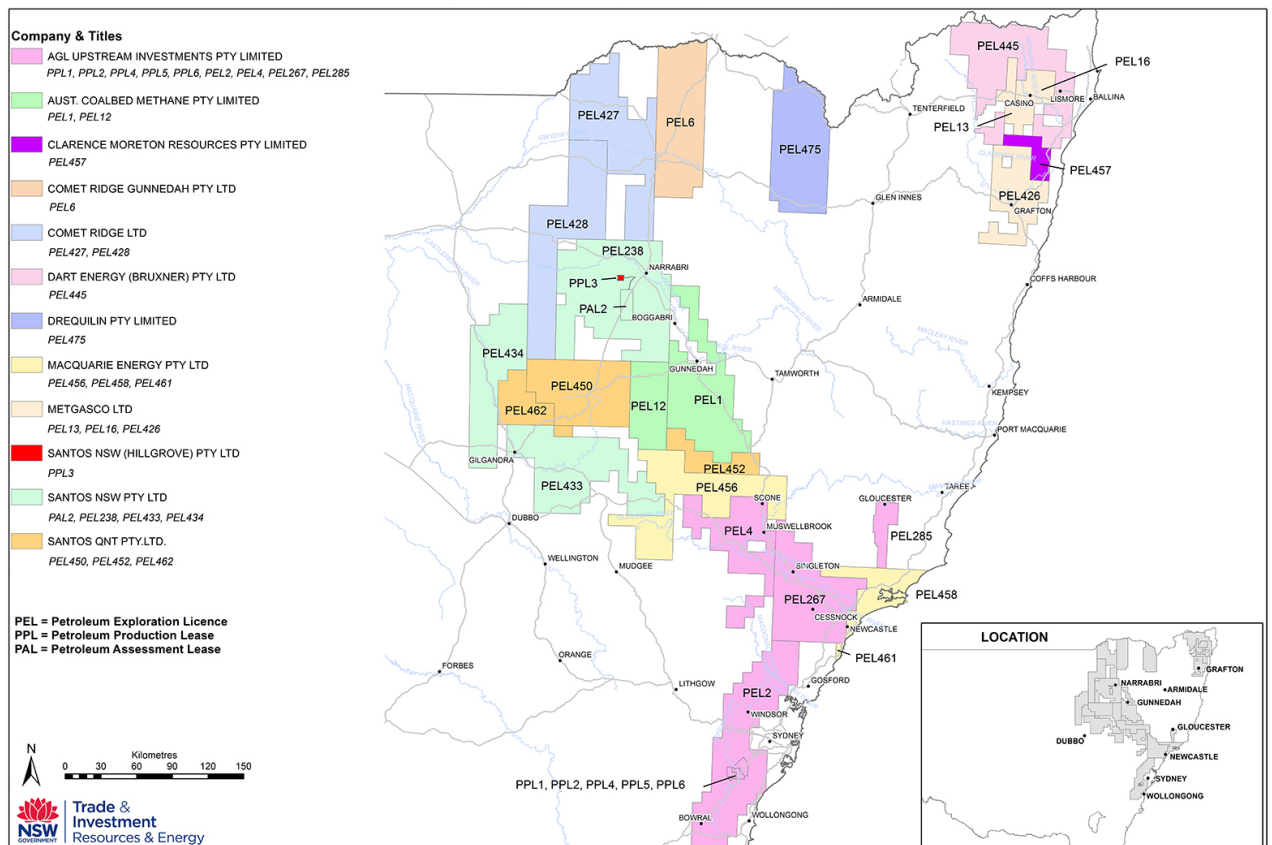


Figure 6 Coal Seam Gas Exploration Licenses

The information in these materials is protected by copyright, and is confidential until the time that Department of Planning & Environment publishes that information. The recipient is not permitted to use, disclose or reproduce the information in these materials except for land use and planning purposes. Any unauthorised use, copying or reproduction without obtaining the relevant permissions from the Department will constitute an infringement of copyright.

The information contained in this publication is based on knowledge and understanding at time of writing (insert date). The Department excludes all liability for the accuracy or completeness of the information, or for any injury, loss, or damage whatsoever (including without limitation liability for negligence and consequential losses) suffered by any person acting, or purporting to act, in reliance upon anything contained herein. Users rely on and use this information at their own risk.

This information has been prepared by NSW Trade & Investment, Regional Infrastructure and Services and the State of New South Wales (Department) to provide information to local councils about the location and status of State and regionally significant mineral, energy and extractive resources as part of its legislative obligations under 117(2) of the Environmental Planning and Assessment Act 1979.

1.4 The Legislative Context of Mining

The overall assessment and consideration of mining and extractive industries development is a complicated process involving a range of State and Federal Government assessment systems all aimed at ensuring the impacts of a proposal can be managed and will not result in environmental harm that will impact the quality of life of future generations.

Dubbo City Council has carefully considered the potential impacts of Coal Seam Gas exploration and production on the unique environmental characteristics of the Dubbo Local Government Area.

The following provides Council's specific adopted position in relation to Coal Seam Gas exploration and production:

That in the consideration and assessment of any application to develop Coal Seam Gas production, Council applies the key principles outlined in the CSG Position paper, namely:

- a) The primacy of the protection of the groundwater and surface water resources to the future of Dubbo and its agricultural hinterland are maintained.*
- b) In accordance with the NSW Local Government Act, 1993 and the Environmental Planning and Assessment Act, 1979, the principles of Ecologically Sustainable Development and the Precautionary Principle are applied in any assessment.*
- c) That Council requires full and satisfactory identification of all potential costs and impacts on the community resulting from any proposed development.*
- d) That Council should receive appropriate resourcing and support to manage and mitigate identified impacts of any development.*
- e) That Council support the call by the Association of Mining Related Councils (AMRC) for further research into CSG be undertaken by NSW State Government as a matter of priority.*

1.5 Future Growth Scenario Snapshot

The focus of new mining investment and activity is likely to shift from coal exploitation in the Sydney and Hunter coalfields to coal seam gas and other minerals mining opportunities in the West and North West regions of the state. The Orana region is ideally placed to take advantage of this shift, and Dubbo is well placed to play a prominent role as a centre of support to these activities.

By 2036, the mining industry contribution to a regional economy is likely to double, and the position of the mining and CSG extraction industries as the major industry sector within the Orana Region is likely to become more pronounced. This presents significant opportunities to further expand the role and value of Dubbo to the Mining Industry in Western NSW.

Figure 7 shows the indicative extent of current mining exploration licences across the Orana region, and the predominance of metallic's and industrial mineral in the Lachlan Orogen.

An assessment of which of these exploration activities are likely to result in production suggests the most likely projects to enter the approvals and development phase over the next three years will provide (Table 2).

Region/LGA	Ore Prod.	Timing	Comm.	Jobs	CAPEX
			\$m	\$m	\$m
Orana					
Bourke	5 Mtpa	Long Term	Iron	80	\$80
Cobar	5 Mtpa	Long Term	Iron	80	\$80
Cobar	0.35 Mtpa	Short Term	Gold, base metals	100	\$40
Cobar	0.3 Mtpa	Medium Term	Gold, base metals	80	\$35
Far West					
Broken Hill	1.5 Mtpa	Medium Term	Silver, Lead, Zinc	80	\$30
Unincorpor'd	1.5 Mtpa	Long Term	Cobalt	80	\$50
Total				500	\$315

Table 2 Exploration Activities Likely for Production to 2017(NSW Trade and Investment, 2014)

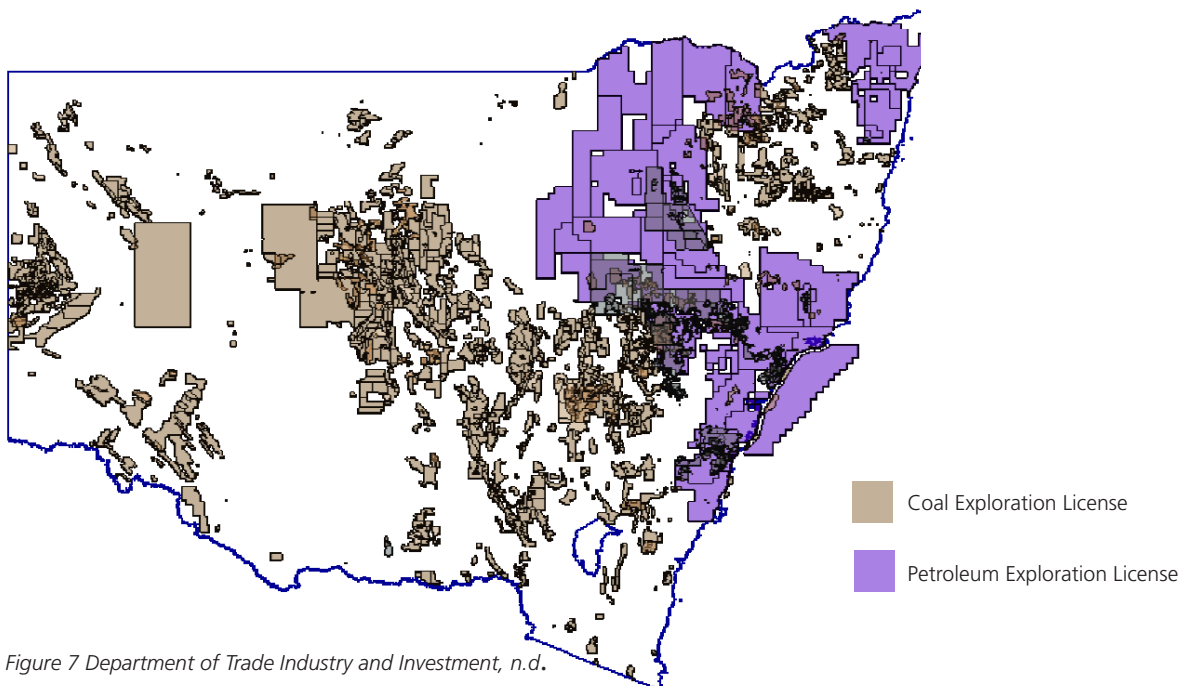


Figure 7 Department of Trade Industry and Investment, n.d.

1.6 The Legislative, Approvals and Policy Context of Mining

The Mining Act, 1992 is the central piece of Legislation, which regulates and guides a number of aspects of the mining industry in New South Wales.

The Mining Act provides requirements for the discovery and development of mineral resources, the management of mining activities, the rights of landowners and the rehabilitation of mining sites and other associated items. This includes the granting of permits for exploration and mining and the associated processes of how permit applications are assessed and considered.

The Mining Act has the following objectives:

“The objectives of the Mining Act are to encourage and facilitate the discovery and development of mineral resources in New South Wales, having regard to the need to encourage ecologically sustainable development, and in particular:

- (a) to recognise and foster the significant social and economic benefits to New South Wales that result from the efficient development of mineral resources, and
- (b) to provide an integrated framework for the effective regulation of authorisations for prospecting and mining operations, and

(c) to provide a framework for compensation to landholders for loss or damage resulting from such operations, and

(d) to ensure an appropriate return to the State from mineral resources, and

(e) to require the payment of security to provide for the rehabilitation of mine sites, and

(f) to ensure effective rehabilitation of disturbed land and water, and

(g) to ensure mineral resources are identified and developed in ways that minimise impacts on the environment.”

The Mining Act has a unique relationship with a range of other Legislation governing mining exploration activities, the planning assessment of mining projects and the operations of mining activities including the management of environmental impacts.

Figure 9 shows the unique relationship of the Mining Act with a range of other associated Acts governing issues of water management, threatened species, heritage, planning, National Parks, fisheries and roads:

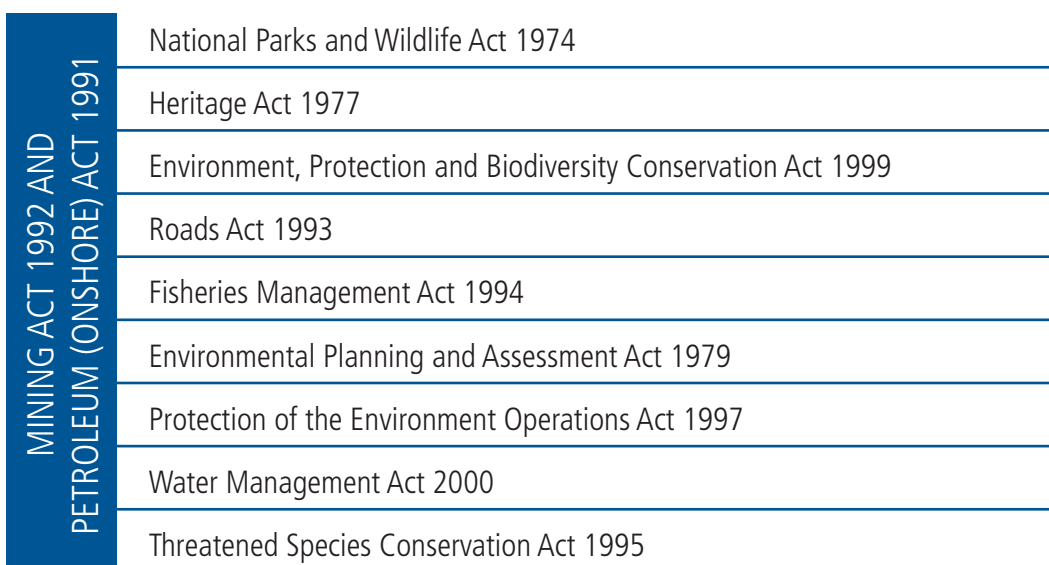


Figure 9 Mining Act, 1992 and Petroleum (onshore) Act, 1991 and their relationship with associated Legislation

The Petroleum (Onshore) Act, 1991, is the central piece of Legislation which regulates and guides a number of aspects of the petroleum (and gas) industry in New South Wales. Please note that petroleum resources include both conventional petroleum and coal seam gas resources.

The Petroleum (Onshore) Act 1991 provides requirements for the discovery and development of onshore petroleum resources, the management of petroleum production activities, the rights of landowners and the rehabilitation of

petroleum production sites and other associated items. This includes the granting of permits for petroleum exploration and petroleum production and the associated processes of how permit applications are assessed and considered.

All proposals for mining exploration licenses are determined under the Mining Act and are not considered under the provisions of the Environmental Planning and Assessment Act, 1979. Figure 10 provided below details the process for the granting of a mining exploration license:

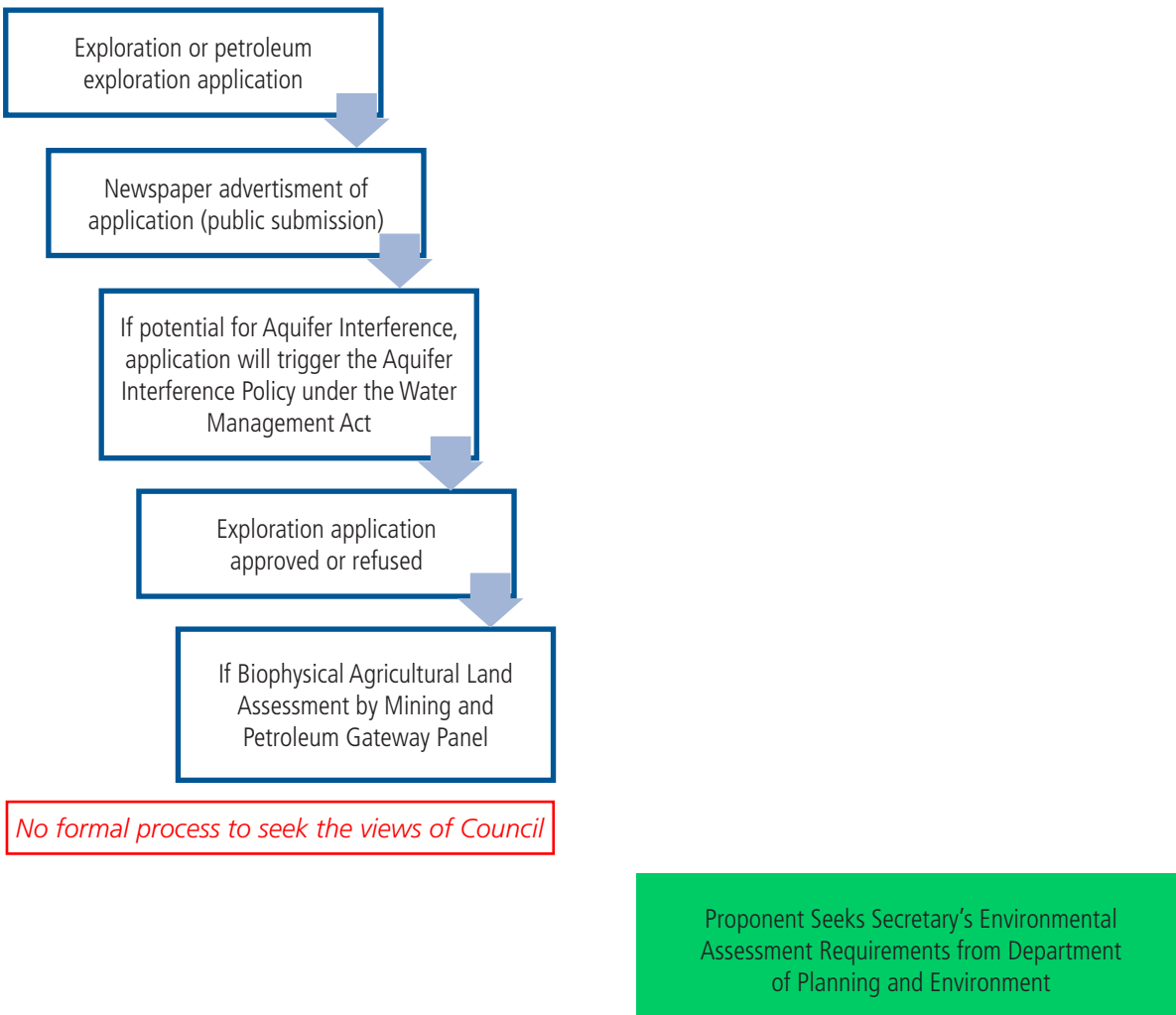


Figure 10 Mining Act, 1992 (As Amended) Exploration Assessment System

Environmental Planning and Assessment Act, 1979

The Environmental Planning and Assessment Act, 1979 is the main legislation that guides planning, development and environmental conservation in NSW. The Act has a number of separate components relating to various aspects of the NSW Planning System.

Environmental Planning and Assessment Regulation, 2000

The Environmental Planning and Assessment Regulation, 2000 further augments the requirements of the Environmental Planning and Assessment Act, 1979.

In relation to mining, the Regulation specifies development proposals classified as Designated Development and provides the form, content and process requirements for the preparation of Environmental Impact Statements for development under Part 5 of the Act.

Both the Environmental Planning and Assessment Act, 1979 and the Environmental Planning and Assessment Regulation, 2000 have an intrinsic relationship with a range of subsidiary Policies, which are constituted pursuant to the provisions of the Legislation. At the current time there are a total of 43 State Environmental Planning Policies that have the effect of regulating development on a specific site through to regulation of issues of state significance.



Figure 11 Environmental Planning and Assessment Act, 1979 and its relationship with applicable State Environmental Planning Policies.

1.7 The Importance of our Environment

Our Environment

The Dubbo LGA is home to 58 threatened fauna species, 11 threatened flora species and seven (7) Endangered Ecological Communities (EEC's) including the Inland Grey Box Woodland and the Grassy Box Gum Woodland.

The NSW Office of Environment and Heritage threatened species database indicates that the number of listed State Threatened species in the Dubbo area continues to rise. Only 38% of native vegetation / animal habitat remain in the catchment. However, this is not evenly distributed with vegetation patches often too small to accommodate viable populations of plants and animals.

The importance of this issue at local, state and national levels is highlighted by the NSW Threatened Species Conservation (TSC) Act 1995 and subsequently the Australian Government's Environment, Protection and Biodiversity Conservation (EPBC) Act 1999. This legislation is aimed at managing threatened species and ecological communities.

Biodiversity is an important indicator of total catchment health and plays an important part in sustaining Dubbo's living environment, improving aesthetics and providing recreational opportunities.

Biodiversity loss is a serious environmental issue both in the Dubbo LGA and on an international scale. Biodiversity loss is accelerating at an alarming rate. Losses to biodiversity can directly relate to economic losses, particularly to those industries that rely on natural resources provided by biodiversity such as fisheries, forestry, agriculture and tourism.

Our Water Resources

Our waterways are an important asset to the Dubbo Local Government Area as they provide for the following:

- Water for drinking and industry;
- Transport and store water, drain land and carry flood waters;
- Are a significant part of Aboriginal and other Australian heritage;
- Provide opportunities for recreation, tourism and community activities;

- Provide distinctive landscape features and aesthetic values; and
- Support biodiversity and provide habitat for flora and fauna, including threatened species.

Over the past two centuries land clearing, farming practices, unsustainable water usage and industrial business practices have contributed to the degradation of the health of our waterways. Signs of this decline in the health of our waterways include the loss of biodiversity, toxic algal blooms, declining water quality and increased salinity and sedimentation. In turn this impacts the health of our rivers, creeks and wetlands.

The main sources of potable water supply for Dubbo include the Macquarie River (typically 70%) and bore water (typically 30%). There has been a general decreasing trend in household water use in Dubbo since 2008 likely to be, at least in part, a response to increased rainfall. Dubbo City Council has also seen a steady decrease in Council water use over the last four (4) years through improved water management practices, such as intelligent irrigation of council parks and recreational facilities.

Water pollution commonly occurs as a result of substances such as sediment, organic matter, chemicals, litter and fertilisers being washed down stormwater drains and street gutters. Pollution may also enter our waterways directly from a number of sources such as agricultural or industrial runoff, boats leaking oil and dumping of rubbish. Many of the streams in the Central West region have experienced high E.coli readings, an indicator of faecal contamination, and high concentrations of nitrogen and phosphorus since 2008 which have implications for drinking and recreational water. Waterways within the Central West, including the Macquarie River, have also seen an increase in salinity levels since 2008.

1.8 The Importance of Agriculture

Traditionally, the predominant land use in the Dubbo Local Government Area has been agriculture. Dubbo largely owes its growth and development to providing support and support services to the agriculture sector. Agriculture employs 2.83% of the Dubbo workforce and the agriculture, forestry and mining industries have an overall annual output of \$103.990m.

Farming activities in the Dubbo Local Government Area have a broad interest from the community in respect to the quality of rural commodities, the state of natural resources and a general thirst for knowledge of the products we consume.

The farming sector in the Dubbo Local Government Area and across the Orana Region is faced with increased pressures including:

- Urbanisation and the demand for rural residential or lifestyle opportunities;
- The loss of prime agricultural land through inappropriate lot size restrictions and the resultant uncertainty provided to the agricultural industry;
- Significant fluctuation in commodity prices in Australia and on the world stage;
- The impacts of climate change and the resultant impact on traditional farming practices;

New Mining activity in the Dubbo region will need to occur in the context of neighbouring pre-existing economic land uses. Proposals for new mining projects, particularly coal and coal seam gas extraction projects have attracted significant publicity and public opposition in NSW in recent years, due to widespread concerns about the impacts of certain methods of extraction (open cut mining, coal seam gas “fracking”) on the surrounding environment and ground water resource.

It will be important to ensure that sustainable mining in this context can be achieved. Sustainable mining can be defined as mining and mineral development meeting the demands of a growing population whilst maintaining a healthy environment and economy for present and future generations.

Mapping Biophysical Strategic Agricultural Land

To help address the challenge of achieving balanced land use outcomes in the region, areas with particularly high agricultural values have been identified and mapped in consultation with key industry representatives and industry experts. These areas are referred to as strategic agricultural land. Strategic agricultural land is highly productive land that has both unique natural resource characteristics (such as soil and water resources) as well as socio-economic value (such as high productivity, infrastructure availability and access to markets). Based on this definition, two categories of strategic agricultural land have been identified: Biophysical Strategic Agricultural Land and Critical Industry Clusters.

Biophysical Strategic Agricultural Land is land with a rare combination of natural resources highly suitable for agriculture. These lands intrinsically have the best quality landforms, soil and water resources which are naturally capable of sustaining high levels of productivity and require minimal management practices to maintain this high quality. As these lands are rare, the NSW Government is putting mechanisms in place to protect these strategic land assets. Strategic agricultural land is identified according to the values and criteria in Table 4.

Value	Criteria
Biophysical Strategic Agricultural Land	<ul style="list-style-type: none"> • Land that falls under soil fertility classes ‘high’ or ‘moderately high’ under the Draft Inherent General Fertility of NSW (OEH), and • Land capability classes 1, 2 or 3 under the Land and Soil Capability Mapping of NSW (OEH), and • Reliable water or suitable quality, characterised by having rainfall of 350mm or more per annum (9 out of 10 years); or properties within 150m of a regulated river, or unregulated rivers where there are flows for at least 95% of the time (ie the 95th percentile flow of each month of the year is greater than zero) or 5th order and higher rivers; or groundwater aquifers (excluding miscellaneous alluvial aquifers, also known as small storage aquifers) which have a yield rate greater than 5L/s and total dissolved solids of less than 1,500mg/L. <p>Or</p> <ul style="list-style-type: none"> • Land that falls under soil fertility classes ‘moderate’ under the Draft Inherent General Fertility of NSW (OEH), and • Land capability classes 1 or 2 under the Land and Soil Capability Mapping of NSW (OEH), and • Reliable water of suitable quality, characterised by having rainfall of 350mm or more per annum (9 out of 10 years); or properties within 150m of a regulated river, or unregulated rivers where there are flows for at least 95% of the time (ie the 95th percentile flow of each month of the year is greater than zero) or 5th order and higher rivers; or groundwater aquifers (excluding miscellaneous alluvial aquifers, also known as small storage aquifers) which have a yield rate greater than 5L/s and total dissolved solids of less than 1,500mg/L.
Critical Industry Cluster	<ul style="list-style-type: none"> • Industry clusters that meet the following criteria: <ul style="list-style-type: none"> • There is a concentration of enterprises that provides clear development and marketing advantages and is based on an agricultural product; • The productive industries are interrelated; • It consists of a unique combination of factors such as location, infrastructure, heritage and natural resources; • It is of national and/ or international importance; • It is an iconic industry that contributes to the region’s identity; and • It is potentially substantially impacted by coal seam gas or mining proposals.

Table 4 Biophysical Strategic Agricultural Land Assessment Criteria Source; New England North West Strategic Regional Land Use Plan (NSW Government 2013)

In addition, In October 2013, the NSW Government prohibited coal seam gas activity in existing residential zones in all 152 local government areas in NSW. CSG exploration and extraction were also banned in 2km buffers around these zones.

The consequent exclusion zone map for the Dubbo Local Government Area including Biophysical Strategic Agricultural Land is provided in Figure 13 on the following page:

1.9 The Importance of Water

Dubbo is situated at the southern tip of the Great Artesian Basin and is home to an extensive network of rivers and streams and a significant number of underground aquifers that supply the City and its agricultural areas with a stable water supply. Figure 14 as provided below shows the location of Dubbo in relation to the Great Artesian Basin:



Figure 14 Great Artesian Basin, source Geoscience Australia

Dubbo is situated in the transition zone between the ranges and tablelands. Dubbo has a dryland climate with cold winters and hot summers with an average annual rainfall of 584mm with a summer dominant pattern. The City has an average summer maximum temperature of 33 degrees Celsius and an average winter minimum of 2.6 degrees Celsius.

The geology of the area is a mixture of flat lying sediments, intrusive units, tertiary basalts and quaternary alluvium with dominant soils include Euchrozems, Red Earths, Red Brown Earths, Red Podzolic Soils and Alluvial Soils. It is this geology and the location of the City adjacent to the Macquarie River and the Talbragar River that has allowed the City to grow utilising water resources contained in these rivers and the extensive network of alluvial aquifers.

The unique system of aquifers below the City has allowed Dubbo to grow to a major inland City in excess of 40,000 persons and has also allowed agricultural enterprises in the City to continue to prosper.

Reflecting the importance of the water assets of the City, the Dubbo Local Environmental Plan 2011 contains specific mapping of Groundwater Vulnerability. The Dubbo LEP 2011 also provides specific requirements for development proposals to not impact groundwater in these defined areas.

Figure 15 shows the extent of vulnerable groundwater resources in the Dubbo Local Government Area and its relationship with Biophysical Strategic Agricultural Land:

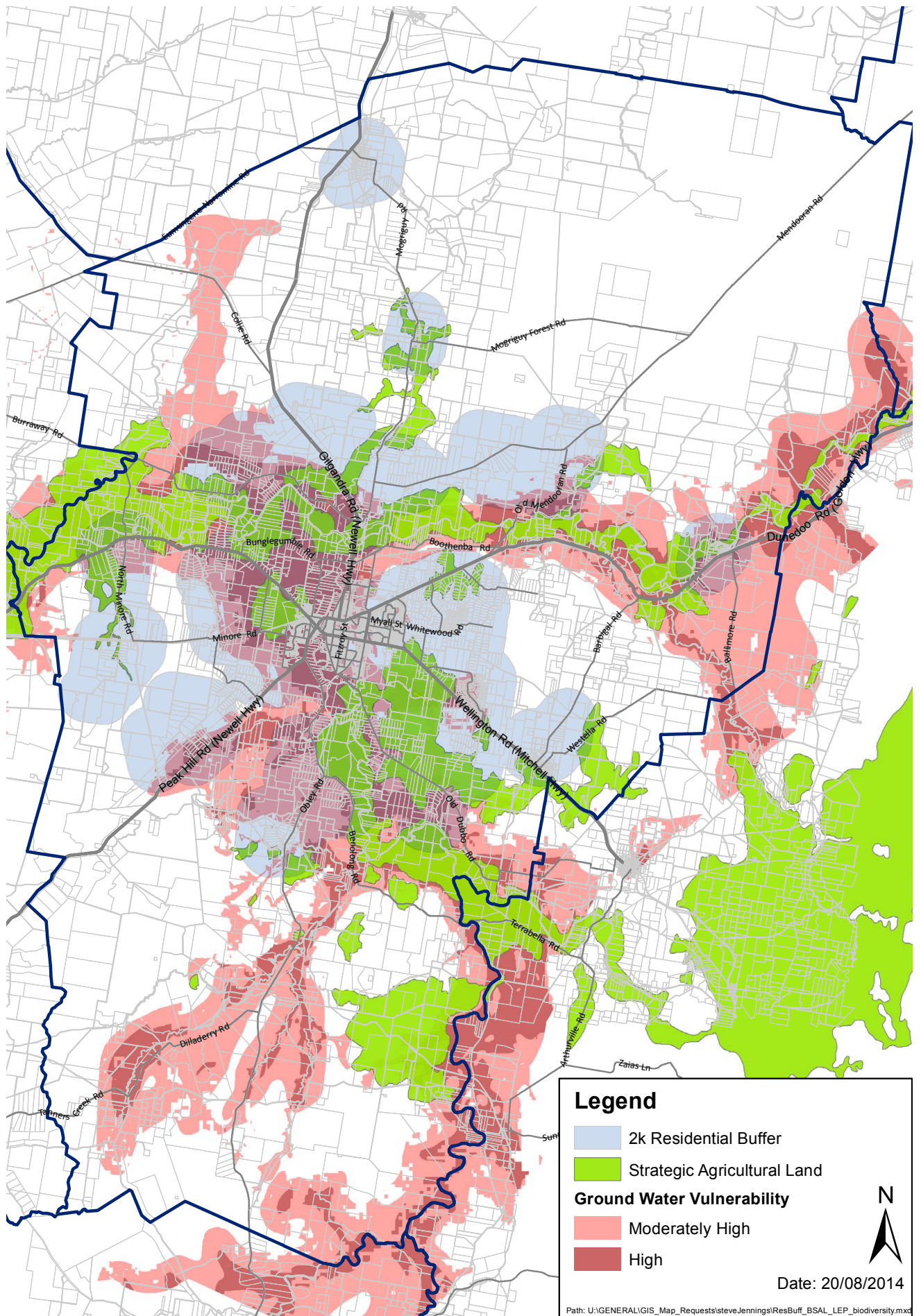


Figure 15 Groundwater Vulnerability Map Dubbo Local Environmental Plan 2011

This page has been left blank purposely



2.0 PART TWO STRATEGY

Strategic Vision

Mining and Mining Equipment, Technology and Services (METS) activity in the Dubbo Local Government Area is supported and managed to achieve an appropriate balance with other land uses.

Dubbo in 2036 will be the centre of sustainable mining services in Western NSW and will show case how sustainable agriculture and sustainable mining can co-exist. This will be undertaken whilst ensuring the City provides an overall environment and living standard that reflects its role as a large regional City and the capital of Western NSW.

Strategic Framework

The Strategy provides the core elements of strategic land use management and mining into a number of individual strategies and strategic outcomes reflecting the importance of effective land use management and development to manage the impacts of sustainable mining on the Dubbo Local Government Area.

The Strategies are as follows:

1. Agriculture and Mining

The agricultural productivity of the Dubbo Local Government Area is maintained and enhanced whilst supporting the development of a sustainable mining industry.

2. Housing the community

Council and the Dubbo Development Industry ensure that the housing needs of the Dubbo community are met through affordable housing and a variety of housing types and styles.

3. The Natural Environment and Mining

The unique environmental characteristics of the Dubbo Local Government Area are maintained and enhanced whilst providing opportunities for sustainable mining.

4. Infrastructure

Infrastructure meets the needs of an expanding population and a sustainable mining industry.

5. Social Health and Well Being

The social health and well being of the community is maintained and enhanced whilst ensuring the impacts of an increasing population are minimised.

6. Economic Prosperity

The continued prosperity of the Dubbo Local Government Area is enhanced through the provision of adequate lands to support commercial and industrial developments associated with the impacts of mining.

7. Coal Seam Gas

Coal Seam Gas development in the Dubbo Local Government Area is only undertaken if our unique water resources are protected and the integrity of our water supply is maintained.

2.1 Strategy one: Agriculture and Mining

The agricultural productivity of the Dubbo Local Government Area is maintained and enhanced whilst supporting the development of a sustainable mining industry.

Rationale

Dubbo largely owes its growth and development to providing support and support services to the agriculture sector. Traditionally, Dubbo has had a strong agricultural sector that has built the foundations of the City as it is today.

Agricultural activities in the Dubbo Local Government Area have a broad interest from the community in respect to the quality of rural commodities, the state of natural resources and a general thirst for knowledge of the products we consume.

The Dubbo Rural Areas Development Strategy was first prepared by Council in 1995 and has the role of guiding rural land use and to assist in the understanding of a range of issues impacting rural areas including environmental protection and enhancement, pressures of urbanisation, encouraging sustainable economic use of land for production purposes and the impacts of climate change and the relationship with agriculture.

The Dubbo Local Government Area has identified Biophysical Strategic Agricultural Lands, which reflect the agricultural suitability and overall capability of these lands. It will be important to ensure these lands are used carefully and are protected from the impacts of mining. However, the basis of the agricultural industry in Dubbo has a wider impact than the lands identified. Careful management of the balance

of the agricultural lands in the Dubbo Local Government Area with mining projects is required. This can only be achieved through effective stakeholder engagement and an understanding of the impacts and the benefits of sustainable mining concepts and practices. Agriculture and mining are industries that have the unique ability to co-exist in Dubbo. Mining in Dubbo currently consists of a number of hard rock and river sand quarries. However, Dubbo offers opportunities for a number of projects to be pursued either in the Dubbo Local Government Area or within a close proximity.

The opportunities offered by mining in the Dubbo area and beyond will provide both opportunities and challenges in sustainable mining co-existing with other productive uses such as agriculture. It will be important to ensure that mining projects are planned and undertaken collaboratively between stakeholders to ensure agriculture continues to co-exist next to mining projects. This is of particular relevance to Coal Seam Gas projects, which should only be pursued where there are no environmental impacts and any associated impacts to the productive use of agricultural lands.

Strategic Outcomes:

1.1	Council's land use strategies guide the location, type and use of agricultural land.
1.2	Strategic Agricultural Land and water resources are adequately protected and enhanced.
1.3	Security and clarity for agriculture and mining industries is provided.
1.4	The use of agricultural lands achieves a sustainable balance between conservation and production.
1.5	The relationship between sustainable mining and agriculture is built and encouraged.
1.6	Land use planning controls achieve protection of strategic agricultural lands.
1.7	Investigation of other agricultural lands is undertaken towards becoming further Strategic Agricultural Lands.
1.8	A position statement outlining Council's approach to the consideration of proposals for Coal Seam Gas production extraction is prepared, presented to Council, endorsed and promulgated.

2.2 Strategy two: Housing the Community

Council and the Dubbo Development Industry ensure that the housing needs of the Dubbo community are met through affordable housing and a variety of housing types and styles.

Rationale

Housing the Dubbo community into the future is a significant issue Council and the mining industry must carefully consider. Mining in the Dubbo Local Government Area has the potential to provide substantial direct and flow-on economic impacts to the local economy; however, these economic impacts must not be to the detriment of Dubbo residents in the pursuance of housing opportunities.

Dubbo has a significant amount of land available to house the community into the future. Land providing the capacity of some 7,000 lots and beyond is zoned for residential development in defined Residential Urban Release Areas in the City.

Issues of housing choice, housing flexibility and housing affordability are raised regularly by the Dubbo Development Industry in relation to ensuring all members of the Dubbo community have access to housing opportunities.

As a result of housing issues raised in the community, an independent review was undertaken of the supply and demand for residential housing in Dubbo and the status of the Dubbo Urban Areas Development Strategy. The Review found that Dubbo has an uneven distribution of income, which results in the provision of affordable rental accommodation being even more critical than the provision of affordable housing for purchase. The Review found that Forty six per cent (46%) of Dubbo households fall into the low to very low income bracket (below \$45,093 pa) and

will be unlikely to purchase a property without significant government assistance or subsidy. The Review found that increasing the supply of affordable rental accommodation provides the most immediate and effective means of relieving housing stress.

The Review provided Council with a range of options and initiatives in which to further pursue the provision of housing for the community, affordable housing, social housing and public housing. The review also highlighted that it is important for housing to be provided at a variety of points in the Dubbo Housing Market and also medium density housing is important in the offer of choice to achieve this outcome.

In ensuring there is an appropriate level and range of housing opportunities for the community, housing as a result of mining projects and mining services will be an important factor. A number of mines across Australia have provided purpose built mining camps to house workers associated with an individual project. Such camps may be considered appropriate in the delivery of temporary housing during the construction of a mine project; however, housing for permanent employees should be assimilated into existing residential neighbourhoods and once no longer required provide for legacy infrastructure which benefits the community.

Strategic Outcomes:

2.1	Council's Land Use Strategies guide the location and types of housing required in the community.
2.2	Council actively maintains a housing supply pipeline.
2.3	An Infrastructure and Services Impacts Model is developed and implemented to assist Council and the mining industry in the provision of housing as a result of mining proposals.
2.4	A diversity of housing types is encouraged.
2.5	Council develops a program of regular land and market monitoring measures and targets to assess changes in housing affordability, and provide a suite of policy options to relieve pressure in the market caused by any surge in mining activity.
2.6	Mining accommodation is integrated into existing residential areas and provides for ongoing sustainable permanent infrastructure.
2.7	Social housing providers are further encouraged in the delivery of social housing in the City.
2.8	Public and social housing is integrated into existing and planned residential areas.
2.9	Alternative schemes for the delivery of affordable housing are encouraged.
2.10	Council continues to lobby the State Government to resolve planning reform measures.
2.11	Incentives for the delivery of affordable housing are investigated.

2.3 Strategy three: The Natural Environment and Mining

The unique environmental characteristics of the Dubbo Local Government Area are maintained and enhanced whilst providing opportunities for sustainable mining.

Rationale

Dubbo has a unique climate that includes hot summers and a summer dominant rainfall pattern that has allowed our unique environment to prosper. As a result of this unique climate, vegetation is predominately open forest and woodland, which provides in excess of seven (7) Endangered Ecological Communities (EEC's), eleven (11) threatened plant and fifty eight (58) threatened animal species.

Dubbo is situated adjacent to the Macquarie River and is bound by the Talbragar River to the north. Both the Macquarie River and the Talbragar River provides expansive floodplains, especially to the north and the east, where areas of Dubbo are prone to the impacts of the 1 in 100 year flood event. An updated flood study for Dubbo has been completed and will form the basis for land use planning decisions in these areas of the City.

The process of climate change is a significant challenge facing Dubbo and the Central West of NSW. The main impacts of climate change are likely to be increased weather severity and variability, higher temperatures, higher evaporation, less average annual rainfall, loss in soil moisture and nutrient availability.

Dubbo's challenging climatic factors present a number of issues to sustaining an increasing resident population associated with a growing inland City. In particular, the availability of water for agriculture in the Dubbo Local Government Area and the issues this presents for food security and the retention of vegetation will continue to present environmental challenges to the future sustainable growth and development of the City.

Management of our unique environment in the pursuit of sustainable mining will guide environmental sustainability in the Dubbo Local Government Area. Sustainable mining practices need to ensure areas providing unique environmental characteristics are enhanced and are provided as features of a sustainable mining industry in the City.

Strategic Outcomes:

3.1	Targets for Increasing biodiversity in urban and rural open space areas are not compromised irrespective of any neighbouring mining development.
3.2	Land use planning controls maintain a common standard of protection for the environment across all industrial uses.
3.3	The integrity and quality of Endangered Ecological Communities is maintained, irrespective of mining development.
3.4	The Macquarie and Talbragar River Floodplains are managed from inappropriate development.
3.5	Biodiversity offsets in conjunction with mining activities are encouraged.
3.6	An environmental and open space corridor around the City is provided and maintained.
3.7	All practicable steps are taken to avoid pollution of surface or groundwater resources from mining or extractive industry activities.
3.8	The Aboriginal Cultural Heritage of Dubbo is maintained and enhanced.

2.4 Strategy four: Infrastructure

Infrastructure meets the needs of an expanding population and a sustainable mining industry.

Rationale

The future growth and development of Dubbo will be undertaken on a number of fronts including residential, mining, industrial, commercial and a range of other opportunities. The City has a range of utility and service infrastructure in place or planned to meet the needs of an expanding residential population with an additional 9,500 persons by 2036 and a range of other commercial and industrial development opportunities including mining projects both in Dubbo and with a support and services link to the City.

In 2011, the Dubbo Local Environmental Plan zoned large areas of land in the north- west, south- west and south- east Dubbo to accommodate some 7,000 residential allotments. On account of changing household structures, this amount of land has the potential to result in the development of some 6,000 dwellings.

The Dubbo City Infrastructure Strategies to 2036 and the Dubbo City Transportation Strategy to 2045 will facilitate the future growth and development of Dubbo and the timely provision of infrastructure to meet the demands of a growing regional City and any demands mining projects may place on infrastructure provision.

In particular, the Dubbo City Transportation Strategy to 2045 provides a number of central features including:

- Provision of a freightway ring road at various locations to ensure heavy vehicle and service vehicle traffic does not impact the local road network.
- Maintenance and development of the road infrastructure network to maintain access to the Dubbo Central Business District from all components of the City.
- The construction of additional bridges across the Macquarie River to facilitate access to a number of areas in the City.
- Provide a road network to facilitate access and movement through the south east residential area of the City.

Strategic Outcomes:

4.1	Dubbo is maintained as a "Ten (10) minute City".
4.2	The Dubbo City Council Road Transportation Strategy to 2045 is implemented.
4.3	The Dubbo City Council Infrastructure Strategy to 2036 is implemented.
4.4	Highway access from all City approaches is maintained and enhanced.
4.5	Options for funding the duplication of the LH Ford Bridge are investigated.
4.6	An Infrastructure and Services Impacts Model is developed and implemented to assist Council and the mining industry in the provision of infrastructure as a result of impacts from mining developments.
4.7	Any Voluntary Planning Agreement (VPA) negotiated for a mining development provides, at a minimum, financial and in-kind contributions equivalent to those normally levied under the relevant Developer Contribution Plans for industrial uses.
4.8	The development of A Masterplan for the Dubbo City Regional Airport to 2036 takes full account of mining industry requirements for business linkages and FIFO/FOFI arrangements.
4.9	Land use planning controls provide appropriately zoned land for infrastructure purposes.
4.10	The integrity and capacity of existing water supply systems and sewage systems for the city and its agricultural hinterland is maintained and enhanced, and any water requirements to support mining activity do not adversely impact on water security for the Dubbo LGA
4.11	Infrastructure is provided to service the defined Residential Urban Release Areas in good time to support any surge in residential development as a consequence of mining activity.

2.5 Strategy five: Social Health and Well Being

The social health and well being of the community is maintained and enhanced whilst ensuring the impacts of an increasing population are minimised.

Rationale

The overall social health and well being of the Dubbo population is an important indicator in the desirability of place and the importance of public open space and associated health infrastructure in the City.

The City provides an extensive open space network for residents and visitors including a total of 841 hectares of land zoned for public recreation purposes and a further 367 hectares of land zoned for private recreation purposes. Land provided for public recreation purposes also includes key infrastructure that attracts a variety of users from a number of age groups.

The population of Dubbo continues to age in accordance with national demographic trends. At the 2006 Census, the average age of the Dubbo population was 33 years. At the 2011 Census, the average age was 36 years. The average age of Dubbo residents is projected to further increase in coming years, with the proportion of people aged 60 and above

representing more than a quarter of the total population by 2031. An older society will have a greater demand on passive and informal recreation opportunities. However, in planning for an aging population, existing and future infrastructure must be augmented and enhanced to cater for the overall spectrum of the Dubbo population.

Mining activities will place further pressure on the social health and well being of Dubbo residents. The challenge will be in ensuring key infrastructure projects that add to the overall social health and well being of the Dubbo population continue to be delivered to meet the demands of a growing regional City. It will be important to ensure the Strategic Open Space Master Plan for the City is cognisant of a mining population consisting of permanent and part time residents.

Strategic Outcomes:

5.1	Council's Land Use Strategies and planning controls ensure the provision of land for recreational and institutional needs of all the community, including both resident and FIFO/DIDO worker population.
5.2	An Infrastructure and Services Impacts Model is developed and implemented to assist Council and the mining industry in the provision of recreational and institutional needs as a result of mining proposals.
5.3	Any Voluntary Planning Agreement takes full account of the impact on community facilities and services of the development of a mining project.

2.6 Strategy six: Economic Prosperity

The continued prosperity of the Dubbo Local Government Area is enhanced through the provision of adequate lands to support commercial and industrial developments associated with the impacts of mining.

Rationale

The strategic location of Dubbo as the capital of western New South Wales means that the City is ideally placed to supply key commercial and social services to a large catchment area extending west towards Broken Hill and south towards Condobolin. The significant economic and business function of Dubbo and its importance to the Orana Region and the western area of the State are reflected in the regional service catchment in excess of 120,000 persons and a total of 3,710 individual business activities existing in 2013.

The growth and development of the commercial areas of the City is guided by the Dubbo Commercial Areas Development Strategy, which was prepared by Council in 1996. The role of the Strategy is to provide land for commercial development opportunities reflecting the geographical location and functions Dubbo performs. The City has an identified commercial hierarchy, which includes the regional functions the Dubbo Central Business District provides at the core of the hierarchy. This is reflected in the Dubbo CBD providing a total of 92,664 square metres of retail shopfront floorspace and the City providing a total of 159,539 square metres of retail shopfront floorspace. The Dubbo Commercial Floorspace Inventory and Analysis prepared by Hill PDA (2014) found that on a base case population growth, the City has an undersupply of retail floorspace in the order of 18,010 square metres in 2013. This undersupply is projected to be 30,325 square metres by 2031. The major areas of undersupply include Department/ Discount Department Stores and Other Personal and Household Goods Retailing.

With the projected mining opportunities in the West and North West regions of the State, the industry contribution to the Dubbo economy and the likely associated flow on effects to associated business activities in the City will be considerable. It will be important to ensure that the City maintains an appropriate availability and balance of commercial lands to ensure a variety of business activities can be accommodated in the City. Reflecting the overall importance of the City in western NSW and the commercial function the City provides, a current and comprehensive Commercial Areas Development Strategy should be in place at all times.

In consideration of the commercial opportunities and the provision of land in the City, the associated provision of land for industrial development opportunities to suit the mining and mining services sector is also of importance. The City currently has extensive lands zoned to facilitate both light industrial and heavy industrial development. Land zoned for industrial development in the City is situated in four (4) Industrial Candidate Areas under the provisions of the Dubbo Industrial Areas Development Strategy, reflecting the focus and purpose of the area. Of the lands zoned for industrial purposes, a number of strategic parcels are either held in single ownership or have been subdivided into small allotments.

The availability of industrial land without topographical impediment and to suit a wide variety of business opportunities associated with mining and associated service industries should be provided in the City to meet future demands.

Strategic Outcomes:

6.1	Council's Land Use Strategies guide the location and provision of land for commercial and industrial activities in the City.
6.2	A new Commercial Areas Development Strategy is developed and implemented, with a focus on providing for growth in mining engineering, technology and services industries.
6.3	A review of the Industrial Areas Development Strategy is undertaken to ensure the City can meet the industrial land requirements of mining.
6.4	Industrial land is provided in the City to meet the requirements of mining and support industries.
6.5	A commercial land supply pipeline is prepared and maintained.
6.6	An industrial land supply pipeline is prepared and maintained.

2.7 Strategy seven: Coal Seam Gas

Coal Seam Gas development in the Dubbo Local Government Area is only undertaken if our unique water resources are protected and the integrity of our water supply is maintained.

Rationale

Coal seam gas (CSG) is a type of natural gas. It is composed predominantly of methane (CH₄), with minor amounts of carbon dioxide, nitrogen and inert gases. Natural gas can be broken into two categories: "conventional" (gas produced predominantly from porous and permeable sandstones) or "unconventional" (shale gas produced from deep brittle shales, tight gas produced from low permeability sands and coal seam gas produced from coals).

Unlike conventional gas (or oil) or tight gas, which generally exist in exploitable reservoirs, in the case of CSG coal is both the source and the reservoir, with the gas trapped in the coal seam.

The City is reliant on a stable water supply provided from the Macquarie River and also by an extensive network of aquifers situated below the City. The future growth and development of Dubbo as a major inland City is reliant upon access to quality water supply network. Coal Seam Gas development has the potential to impact the unique system of aquifers below the City.

It will be important to ensure that any proposals for Coal Seam Gas development in the Dubbo Local Government Area are carefully considered in accordance with the principles of Ecologically Sustainable Development, which includes the precautionary principle.

The NSW Chief Scientist released the final report in respect to Coal Seam Gas exploration and development on 30 September 2014. The report provided 16 key recommendations to government. The report also found that many of the technical challenges and risks posed by Coal Seam Gas development in Australia can generally be managed through careful designation of areas that may be appropriate for CSG extraction.

The identified strategic outcomes for CSG in the Dubbo LGA ensure that our unique environment continues to be protected and enhanced.

Strategic Outcomes:

7.1	Council lobbies the State Government to ensure opportunities are provided to comment on applications for Coal Seam Gas exploration in the Dubbo Local Government Area.
7.2	Any proposal for Coal Seam Gas extraction is considered by Council in accordance with the principles of Ecologically Sustainable Development including the Precautionary Principle.
7.3	The water quality of the Macquarie and Talbragar Rivers and associated tributaries is protected and enhanced.
7.4	The integrity and quality of the Dubbo City water supply network is maintained and enhanced.
7.5	The integrity and quality of underground aquifer systems is maintained and enhanced, irrespective of any CSG development or production activity.
7.6	Any proposals for Coal Seam Gas extraction are shown beyond doubt to not impact the integrity and quality of soils.

