



Shire of Collie Bushfire Risk Management Plan

2017 – 2022

Office of Bushfire Risk Management reviewed Bushfire Risk Management Plan on XX Month 20XX

BRM Plan adopted by Shire of Collie at Ordinary Council meeting on XX Month 20XX

1. Introduction	6
1.1 Background	6
1.2 Aim and Objectives	6
1.3 Legislation, Policy and Standards.....	6
1.3.1 Legislation	6
1.3.2 Policies, Guidelines and Standards	7
1.3.3 Other Related Documents	7
2. The Risk Management Process	8
2.1 Roles and Responsibilities.....	8
2.2 Communication & Consultation.....	9
3. Establishing the Context	10
3.1 Description of the Local Government and Community Context	10
3.1.1 Strategic and Corporate Framework Strategic and Corporate Framework	10
3.1.2 Location, Boundaries and Tenure	11
3.1.3 Population and Demographics.....	12
3.1.4 Economic Activities and Industry.....	14
3.2 Description of the Environment and Bushfire Context.....	30
3.2.1 Topography and Landscape Features	30
3.2.2 Climate and Bushfire Season	31
3.2.3 Vegetation.....	33
3.2.4 Bushfire Frequency and Causes of Ignition.....	33
4. Asset Identification and Risk Assessment.....	35
4.1 Planning Areas	35
4.1.1 Priorities for Asset Identification and Assessment	35
4.2 Asset Identification	35
4.3 Assessment of Bushfire Risk	37
4.3.1 Likelihood Assessment.....	37
4.3.2 Consequence Assessment.....	38
4.3.3 Assessment of Environmental Assets	40
4.3.4 Local Government Asset Risk Summary.....	41
5. Risk Evaluation	42
5.1 Evaluating Bushfire risk.....	42
5.2 Treatment Priorities.....	42
5.3 Risk Acceptability	42
6. Risk Treatment.....	44
6.1 Local Government-Wide Controls.....	44

Appendix 4	Asset-Specific Treatment Strategies	Appendix 4
6.2	Asset-Specific Treatment Strategies	44
6.3	Determining the Treatment Schedule	45
7.	Monitoring and Review.....	46
7.1	Review.....	46
7.2	Monitoring	46
7.3	Reporting.....	46
8.	Glossary.....	47
9.	Common Abbreviations	51
	Appendices.....	52
Appendix 1	Communication Strategy.....	53
Appendix 2	Planning Area Map.....	62
Appendix 3	Local Government-Wide Controls, Multi-Agency Treatment Work Plan	64

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Document Endorsements

The Shire of Collie Council endorses that the Bushfire Risk Management Plan (BRM Plan) has been reviewed and assessed by the Office of Bushfire Risk Management as compliant with the standard for bushfire risk management planning in Western Australia, the *Guidelines for Preparing a Bushfire Risk Management Plan*. The Shire of Collie is the owner of this document and may, as far as is reasonable and practical, manage the implementation of the BRM Plan and facilitate the implementation of bushfire risk management treatments by risk owners.

The Department of Fire and Emergency Services endorses the BRM Plan as compliant with State Government objectives and guidelines and has responsibility to provide support and fund all initiatives to facilitate the implementation the BRM Plan and facilitate the implementation of bushfire risk management treatments by risk owners. The Shire of Collie has no obligation to facilitate the implementation of the BRM Plan beyond what is supported and funded by the Department of Fire and Emergency Services.

Document Endorsements

Agency	Name & Title	Signature	Date
Shire of Collie	David Blurton, CEO		
Department of Fire & Emergency Services			
Department of Parks & Wildlife			

Office of Bushfire Risk Management Review

Review Date

Reference No.

Amendment List

Version	Date	Author	Section
1.0	18 July 2014	Pilot Project Officer	Draft Pilot
2.0	26 April 2016	Bushfire Risk Management Officer	Draft BRMP
3.0	5 April 2017	Bushfire Risk Planning Coordinator	Draft BRM Plan

Publication Information

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1.1 Background

Under the *State Hazard Plan for Fire (Westplan Fire)* an integrated Bushfire Risk Management Plan (BRM Plan) is to be developed for local government areas with significant bushfire risk. This BRM Plan has been prepared for the Shire of Collie in accordance with the requirements of *Westplan Fire* and the *Guidelines for Preparing a Bushfire Risk Management Plan (Guidelines)*. The risk management processes used to develop this BRM Plan are aligned to the key principles of *AS/NZS ISO 31000:2009 Risk management – Principles and guidelines (AS/NZS ISO 31000:2009)*, as described in the Second Edition of the *National Emergency Risk Assessment Guidelines (NERAG 2015)*. This approach is consistent with the policies of the State Emergency Management Committee, specifically the *State Emergency Management Policy 2.9 – Management of Emergency Risks*.

This BRM Plan is a strategic document that identifies assets at risk from bushfire and their priority for treatment. The Treatment Schedule sets out a broad program of coordinated multi-agency treatments to address risks identified in the BRM Plan. Government agencies and other land managers responsible for implementing treatments participate in developing the BRM Plan to ensure treatment strategies are collaborative and efficient, regardless of land tenure.

1.2 Aim and Objectives

The aim of the BRM Plan is to document a coordinated and efficient approach toward the identification, assessment and treatment of assets exposed to bushfire risk within the Shire of Collie.

The objective of the BRM Plan is to effectively manage bushfire risk within the Shire of Collie in order to protect people, assets and other things of local value. Specifically, the objectives of this BRM Plan are to:

- Guide and coordinate a tenure blind, multi-agency bushfire risk management program over a five year period;
- Document the process used to identify, analyse and evaluate risk, determine priorities and develop a plan to systematically treat risk;
- Facilitate the effective use of the financial and physical resources available for bushfire risk management activities;
- Integrate bushfire risk management into the business processes of local government, land owners and other agencies;
- Ensure there is integration between land owners and bushfire risk management programs and activities;
- Monitor and review the implementation of treatments to ensure treatment plans are adaptable and risk is managed at an acceptable level.

1.3 Legislation, Policy and Standards

The following legislation, policy and standards were considered to be applicable in the development and implementation of the BRM Plan.

1.3.1 Legislation

- Bush Fires Act 1954
- Emergency Management Act 2005

- Fire Brigades Act 1942
- Fire and Emergency Service Act 1998
- Conservation and Land Management Act 1984
- Environmental Protection Act 1986
- Environmental Protection and Biodiversity Conservation Act 1999
- Wildlife Conservation Act 1950
- Aboriginal Heritage Act 1972
- Metropolitan Water Supply, Sewerage and Drainage Act 1909
- Country Areas Water Supply Act 1947
- Building Act 2011
- Bush Fires Regulations 1954
- Emergency Management Regulations 2006
- Planning and Development (Local Planning Scheme) Regulations 2015
- Shire of Collie Local Law No 7 - Bushfires

1.3.2 Policies, Guidelines and Standards

- National Emergency Risk Assessment Guidelines (NERAG) (Second Edition 2015)
- State Emergency Management Policy 2.5 - Emergency Management in Local Government Districts
- State Emergency Management Policy 2.9 - Management of Emergency Risks
- State Hazard Plan for Fire (Westplan Fire)
- State Planning Policy 3.7: Planning in Bushfire Prone Areas
- State Planning Policy 3.4: Natural Hazards and Disasters
- Guidelines for Planning in Bushfire Prone Areas (2015)
- Western Australian Emergency Risk Management Guidelines (Emergency Management WA 2005)
- A Guide to the Use of Pesticides in Western Australia (Dept. of Health 2010)
- Guidelines for Plantation Fire Protection (DFES 2011)
- Firebreak Location, Construction and Maintenance Guidelines (DFES)
- Bushfire Risk Management Planning – Guidelines for preparing a Bushfire Risk Management Plan (2015)
- AS/NZS ISO 31000:2009 - Risk management – Principles and guidelines
- AS 3959-2009 Construction of buildings in bushfire-prone areas
- Building Protection Zone Standards (DFES)

1.3.3 Other Related Documents

- National Strategy for Disaster Resilience
- National Statement of Capability for Fire and Emergency Services (AFAC 2015)
- Public Service Circular No. 88 Use of Herbicides in Water Catchment Areas (Dept. of Health 2007)
- Code of Practice for Timber Plantations in Western Australia (Forest Products Commission 2006)
- Bushfire Risk Management Planning Handbook
- Bushfire Risk Management System (BRMS) User Guide

The risk management processes used to identify and address risk in this BRM Plan are aligned with the international standard for risk management, AS/NZS ISO 31000:2009, as described in NERAG (2015). This process is outlined in Figure 1 below.

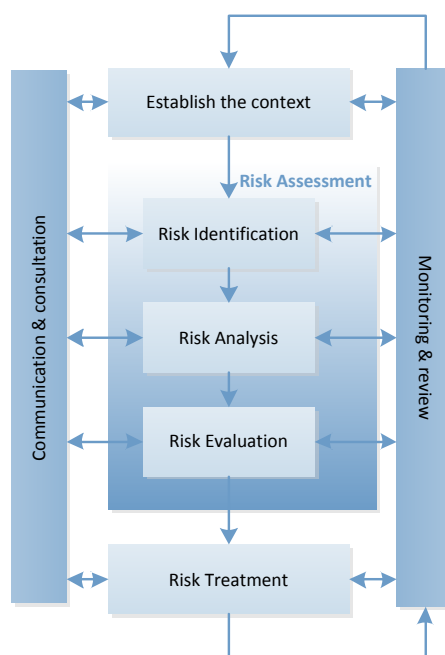


Figure 1 - An overview of the risk management process ¹

2.1 Roles and Responsibilities

Stakeholder Name*	Roles and Responsibilities
Local Government	<ul style="list-style-type: none"> • As custodian of the BRM Plan, coordination of the development and ongoing review of the integrated BRM Plan. • Negotiation of commitment from land owners to treat risks identified in the BRM Plan. • As treatment manager for Shire of Collie reserves, implementation of treatment strategies. • As part of the approval process, submission of the draft BRM Plan to the Office of Bushfire Risk Management (OBRM) to review it for consistency with the Guidelines. • As part of the approval process, submission of the final BRM Plan to Council for their endorsement and adoption. • Participation in the BRM Plan and process is dependent on continued state funding.
Department of Fire and Emergency Services (DFES)	<ul style="list-style-type: none"> • Participation in and contribution to the development and implementation of BRM Plans, as per their agency responsibilities as the Westplan Fire Hazard Management Agency. • Support to local government through expert knowledge and advice in relation to the identification, prevention and treatment of bushfire risk.

¹ Source: AS/NZS ISO 31000:2009, Figure 3, reproduced under SAI Global copyright Licence 1411-c083.

Stakeholder Name*	Roles and Responsibilities
	<ul style="list-style-type: none"> Facilitation of local government engagement with state and federal government agencies in the local planning process. Undertake treatment strategies, including prescribed burning on behalf of Department of Lands for Unmanaged Reserves and Unallocated Crown Land within gazetted town site boundaries. In accordance with Memorandums of Understanding and other agreements, implementation of treatment strategies for other landholders. Continued funding of the Bushfire Risk Planning Coordinators position or similar within the Shire of Collie.
Office of Bushfire Risk Management (OBRM)	<ul style="list-style-type: none"> Under the OBRM Charter, to ensure bushfire risk is managed in accordance with AS/NZS ISO 31000 and reporting on the state of bushfire risk across Western Australia. Review BRM Plans for consistency with the Guidelines prior to final endorsement by Council. Action unresolvable risks sent from the Shire of Collie
Department of Parks and Wildlife (P&W)	<ul style="list-style-type: none"> Participation in and contribution to the development and implementation of BRM Plans. Providing advice for the identification of environmental assets that are vulnerable to fire and planning appropriate treatment strategies for their protection. As treatment manager, implementation of treatment strategies on department managed land and for Unmanaged Reserves and Unallocated Crown Land outside gazetted town site boundaries. In accordance with Memorandums of Understanding and other agreements, implementation of treatment strategies for other landholders.
Other State and Federal Government Agencies	<ul style="list-style-type: none"> Assist the local government by providing information about their assets and current risk treatment programs. Participation in and contribution to the development and implementation of BRM Plans. As treatment manager, implementation of treatment strategies.
Public Utilities	<ul style="list-style-type: none"> Assist the local government by providing information about their assets and current risk treatment programs. Participation in and contribution to the development and implementation of BRM Plans. As treatment manager, implementation of treatment strategies.
Corporations and Private Land Owners	<ul style="list-style-type: none"> As treatment manager, implementation of treatment strategies.

Table 1 – Roles and Responsibilities

2.2 Communication & Consultation

As indicated in Figure 1, communication and consultation throughout the risk management process is fundamental to the preparation of an effective BRM Plan. To ensure appropriate and effective communication occurred with relevant stakeholders in the development of the BRM Plan, a Communication Strategy was prepared. The strategy is provided at Appendix 1.

3. Establishing the Context

3.1 Description of the Local Government and Community Context

The Shire of Collie is located in the south west of Western Australia approximately 200 kilometres from the City of Perth and 60 kilometres from the City of Bunbury. Key settlements within the Shire of Collie are Ewington, Allanson, Cardiff, Buckingham, Collie-Burn, Shotts, Mungalup, Worsley and Preston Road.

The first inhabitants of the Collie area were the west Bibbulmun people. James Stirling and William Preston were the first Europeans to explore the area in 1829.²

In 1961 the district was reconstituted as the Shire of Collie following the enactment of the Local Government Act 1960.⁴

3.1.1 Strategic and Corporate Framework Strategic and Corporate Framework

The Shire's *Community Strategic Plan 2013-22* was adopted in 2013 and represents the Shire's new approach to planning for the Shire's future. It builds on its past strategic planning work, addresses the challenges ahead and sets out what actions will take in the next 8 years to work towards achieving the community's vision '*a vibrant, growing and sustainable community where people live, visit and invest.*'

Strategic Drivers³

- Sustainability of major industries
- Industrial diversification
- Government policy on SuperTowns
- Population
- Tourism opportunities
- Technology developments
- Service industry
- Lifestyle

Community safety is embedded within the Shire's Community Strategic Plan and listed under Strategy 1.5.2 '*A Safe Community – Support emergency and fire management planning, preparedness, response and recovery arrangements.*'

Corporate Business Plan⁴

The Shires Corporate Business Plan is 4 year rolling plan established for 2012/13-2016/17 period. The Corporate Business Plan addresses all of the Shire's operations including services, assets (capital works and ongoing operating) and projects. It also identifies how the Shire's operations link to the Strategic Community Plan.

Challenges Facing the Shire

The critical challenges affecting the Shire have been identified through community engagement and the Strategic Community planning process. The Shire of Collie faces a variety of challenges as it develops over the next 10 years. These are identified as:

- Dependence on resource-based regional economic growth
- Uncertainty surrounding the coal mining and power generation industries
- Difficulties attracting and retaining labour to the area
- The provision and coordination of a comprehensive range of relevant government and non-government organisation services

³ Shire of Collie Strategic Community Plan 2013-2022

⁴ Shire of Collie Corporate Business Plan 2012/13-2016-17

- Appendix 4
- Shift work and rosters that impact on civic or community engagement, volunteering and sporting community
 - Economic development and, in particular, the development of a more balanced economy with diversity and choice in employment
 - Increasing the engagement of youth through a range of programs and services
 - Social and economic issues connected with drive in drive out (DIDO) and population transience
 - Perception of Collie from outside of the community
 - Ensuring a balanced housing stock attractive to current and potential residents
 - Ensuring that major industry within the community engages effectively and contributes equitably to the community

Priority Projects⁵

The Shire is actively planning for and advocating for funding for several significant projects. These priority projects have been identified to improve the quality of services in the Shire and include:

- Collie River Revitalisation
- Collie CBD Revitalisation
- Development of the Collie Motorplex facility
- Ongoing development of the Collie Mine Workers Memorial Pool
- Wilson Park Urban Renewal
- Relocation of Municipal Works Depot

As per Local Government Integrated Planning Regulations, the Council is due for a major review of its Community Strategic Plan and Corporate Business Plan. This is scheduled to occur prior to 30 June 2017, and will include a review of the Council's vision, objectives and strategies for the next 10 years.

Development Services

The Shire of Collie is listed in SEMC Policy 3.2 Emergency Risk Management Planning and Prevention Procedure 1 – Emergency Risk Management Planning as a Local Government that requires a hazard specific plan for bushfire. The BRM Plan is used to assist and advise the yearly review of the LEMC bushfire management plan and report to LEMC, BFAC and Captains meetings of local hazards and mitigation issues. The BRPC prioritises treatments for the upcoming fire season according to risk ratings gained through the Bushfire Risk Management System and available resources in conjunction with the Captains meetings and reports these findings to BFAC.

The BRPC reports directly to the Director of Development Services and liaises with the Shire's Works Department, Planning and Community Engagement Officers on related matters and mitigation planning. The BRPC works closely with the Community Emergency Services Officer to assist and advise on bushfire risk and related matters and procure grants from external sources for mitigation purposes.

3.1.2 Location, Boundaries and Tenure

Shire of Collie is located 200 kilometres South of the Perth CBD and 58 kilometres from the Bunbury CBD. The Shire of Collie shares its boundaries with the local government districts of Dardanup, Harvey, Boddington, Williams, West Arthur, Boyup Brook and Donnybrook-Balingup.

The Shire of Collie is approximately 80% dominated by state forest and national park, which represents a significant risk to the community and state.

⁵ Shire of Collie Corporate Business Plan 2012/13-2016-17

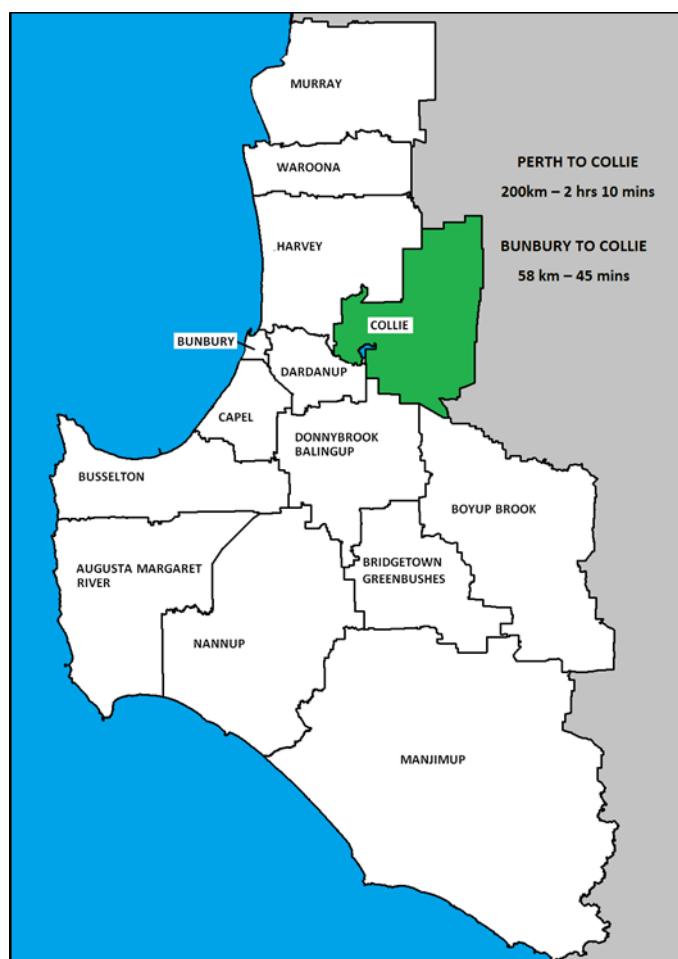


Figure 2 - Location of the Shire of Collie (Source: Shire of Collie)

The BRM Plan considers that the land tenure in some areas of the Shire of Collie creates difficulties in the management of bushfire risk. This is related to the challenges of:

- Inconsistent management of fuel across tenures, and
- Unclear management responsibility mostly associated with land vested in other government agencies that have limited land management capability.

Land Manager/Agency	% of Plan Area
Local Government	0.4
Private	17.8
Department of Parks and Wildlife	78.8
Department of Lands	0.3
Other	2.7
Total	100

Table 2 – Overview of Land Tenure and Management within the BRM Plan Area (Source: Landgate)

3.1.3 Population and Demographics

The population of the Shire of Collie in 2013 is 9,692⁶ with the vast majority (82%) living within the Collie town site. The majority of the remaining 18% of population are spread between the smaller

⁶ ABS Collie (S) (LGA)

Communities of Allanson, Preston Settlement, Collie-Burn, Cardiff, Mungilup and Worsley. The population of the Shire of Collie is expected to grow to up to 15,500 people at a steady pace of 0.5% per annum over the next 20 years. To accommodate this growth, a Growth Plan has been developed to support community development and create jobs and new investment opportunities. In 2012, Collie has recently expended \$11 million funding under the SuperTowns program to revitalise the central business district, which is expected to provide a catalyst for further investment and development in the town.⁷



Figure 3 – Central Park funded from SuperTowns, Collie (Source: Geoff Klem)

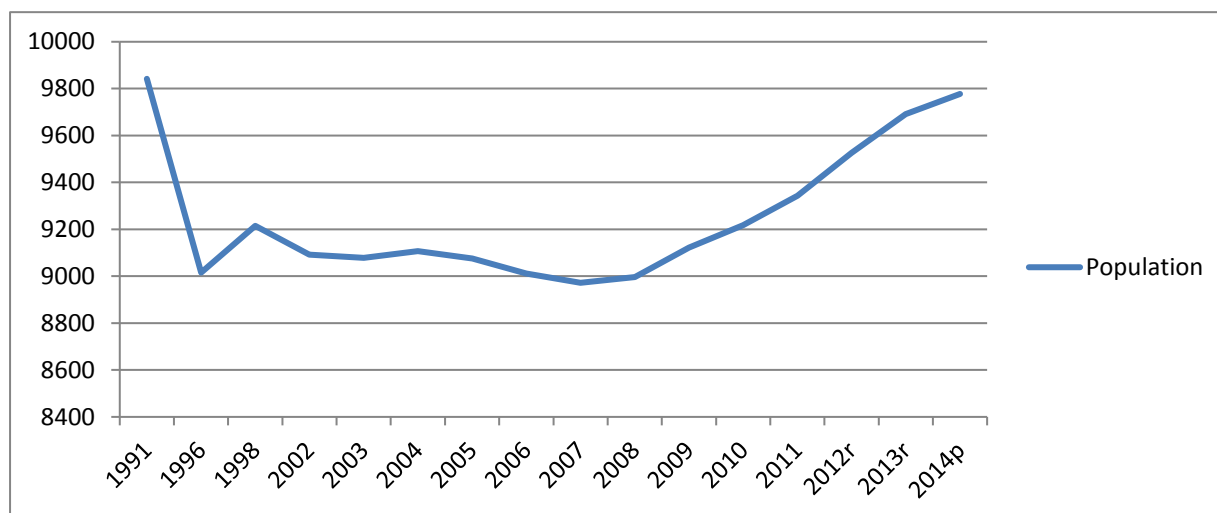
The community of Collie have experience with large fires, the most recent example being the Minnipup Fire of 2016 in which a small section of the town was evacuated and Rural Urban Interface assessments were carried out in the settlement of Allanson, in preparation for the fires expected spread to this area. During this fire, it was found that much of the population was unprepared to defend and it would be too dangerous in many cases to send fire fighters to defend a large proportion of these assets. Also, due to the size of the town and the larger population, evacuation would be difficult especially of the more vulnerable people.

People	Collie (S)	%	Western Australia	%	Australia	%
Total	9,127	--	2,239,170	--	21,507,717	--
Male	4,906	53.8	1,126,178	50.3	10,634,013	49.4
Female	4,221	46.2	1,112,992	49.7	10,873,704	50.6
Aboriginal and Torres Strait Islander people	285	3.1	69,664	3.1	548,369	2.5

In the 2011 Census, there were 9,127 people in Collie (S) (Local Government Areas) of these 53.8% were male and 46.2% were female. Aboriginal and Torres Strait Islander people made up 3.1% of the population.

Table 3 – Shire of Collie Population (Source: ABS)

⁷ South West Development Commission Supertowns fact sheet
<http://www.swdc.wa.gov.au/media/152584/supertownsfactsheet-collie.pdf>



Note: Estimates are final for 2004 to 2011, revised (r) for 2012 and 2013, and preliminary (p) for 2014.

Figure 4 – Shire of Collie Population Graph (Source: ABS)

Dwelling type	Collie (S)	%	Western Australia	%	Australia	%
Occupied private dwellings	3,277	86.5	794,159	87.9	7,760,320	89.3
Unoccupied private dwellings	510	13.5	109,328	12.1	934,470	10.7

In Collie (S) (Local Government Areas), 86.5% of private dwellings were occupied and 13.5% were unoccupied.

Table 4 – Shire of Collie Dwelling Type (Source: ABS)

Dwelling structure	Collie (S)	%	Western Australia	%	Australia	%
<i>Occupied private dwellings</i>						
Separate house	3,072	93.7	638,768	80.4	5,864,574	75.6
Semi-detached, row or terrace house, townhouse etc	81	2.5	84,333	10.6	765,980	9.9
Flat, unit or apartment	82	2.5	62,990	7.9	1,056,237	13.6
Other dwelling	42	1.3	7,380	0.9	66,666	0.9

Of occupied private dwellings in Collie (S) (Local Government Areas), 93.7% were separate houses, 2.5% were semi-detached, row or terrace houses, townhouses, etc 2.5% were flats, units or apartments and 1.3% were other dwellings.

Table 5 – Shire of Collie Dwelling Structure Figures (Source: ABS)

3.1.4 Economic Activities and Industry

The Shire of Collie's estimated Gross Regional Product (GRP) has grown steadily by an average of 14.2% per annum since 2006-07 to over \$2 billion in 2010-11. Overall, 90% of the Shire of Collie's industry value add is generated by mining, electricity, manufacturing and construction types of activities, making Collie a mining and industrial focussed region with little diversification. Local industry is also required to service the growing population in the Shire of Collie, providing services such as education, retail and health care. Collie benefits from significant competitive advantages and opportunities, which could underpin strong economic and population growth over the next 20

years. In particular, the concentration of major mining, metal manufacturing and electricity generation, relative proximity to Bunbury and the associated Port and a diversity of outdoor and water sport attractions in the surrounding area, present opportunities to leverage external growth drivers and build greater local economic diversification.⁸

Therefore a significant focus of the BRM Plan is to minimise the effects of bushfire to operations and utilities through a holistic approach of memorandums of understanding between the industry stakeholders across the Shire, emergency services and local government in order to ensure business continuity and mitigation planning. This also includes road transport and electricity supply continuity.

The Shire of Collie's strategic planning process identified the requirement to encourage industrial development for future growth within Collie.

The Re-imagining Collie process has also identified areas of opportunity for the community in non-traditional industries such as tourism, agriculture and aged care.

The largest threat to economic activities and industries within the Shire is from bushfire causing business continuity issues in the form of loss of power, water and staff access to 24 hour sites for shift change overs. If bushfires were to occur in some areas around industries and resources, they may be forced to cease production for the duration of the emergency.

The following is the list of major industries within Collie:

Coal Mines

Coal was discovered in the early 1880's in Collie and coal fields were developed in the late 1890's. Today Collie is the centre of coal mining in Western Australia, providing the State's entire coal supplies from two major mines, with three coal fired power stations providing power for the State electricity grid.



Figure 5 - Coal Mining (Source: <http://www.collierivervalley.com.au>)

⁸ Collie SuperTown Combined Report South West Development Commission April 2012

Muja Coal Mine is located 18 kilometres south east of Collie and one of the largest open cut mines in the world producing around 1.5 to 1.8 million tonnes of coal per annum. Thermal coal is primarily used for steam raising to produce electricity. Muja South is a proposed new mine site immediately south and east of the existing Muja Mine. Currently, the project is being readied for environmental assessment, beginning with referral to the West Australian Environmental Protection Authority⁹.

Premier Coal Mine is located near Muja Power station, Premier Coal mine produces around 4 million tonnes of coal a year from the Collie Coal Basin. Premier Coal mine mainly provides coal supply to the Muja Power station which supplies approximately 40% of WA's electricity requirements.



Figure 6 - Premier and Muja Coal Mine (Source: Google Earth)



Figure 7 - Ewington Coal Mine 1 & 2 (Source: Google Earth)

⁹ www.griffincoal.com.au/operations-projects

Electricity Generation

There are three key electricity generation plants within the Shire of Collie. These are Muja Power Station, Collie Power Station and Blue Waters Power Station. Muja Power Station is significant state asset.

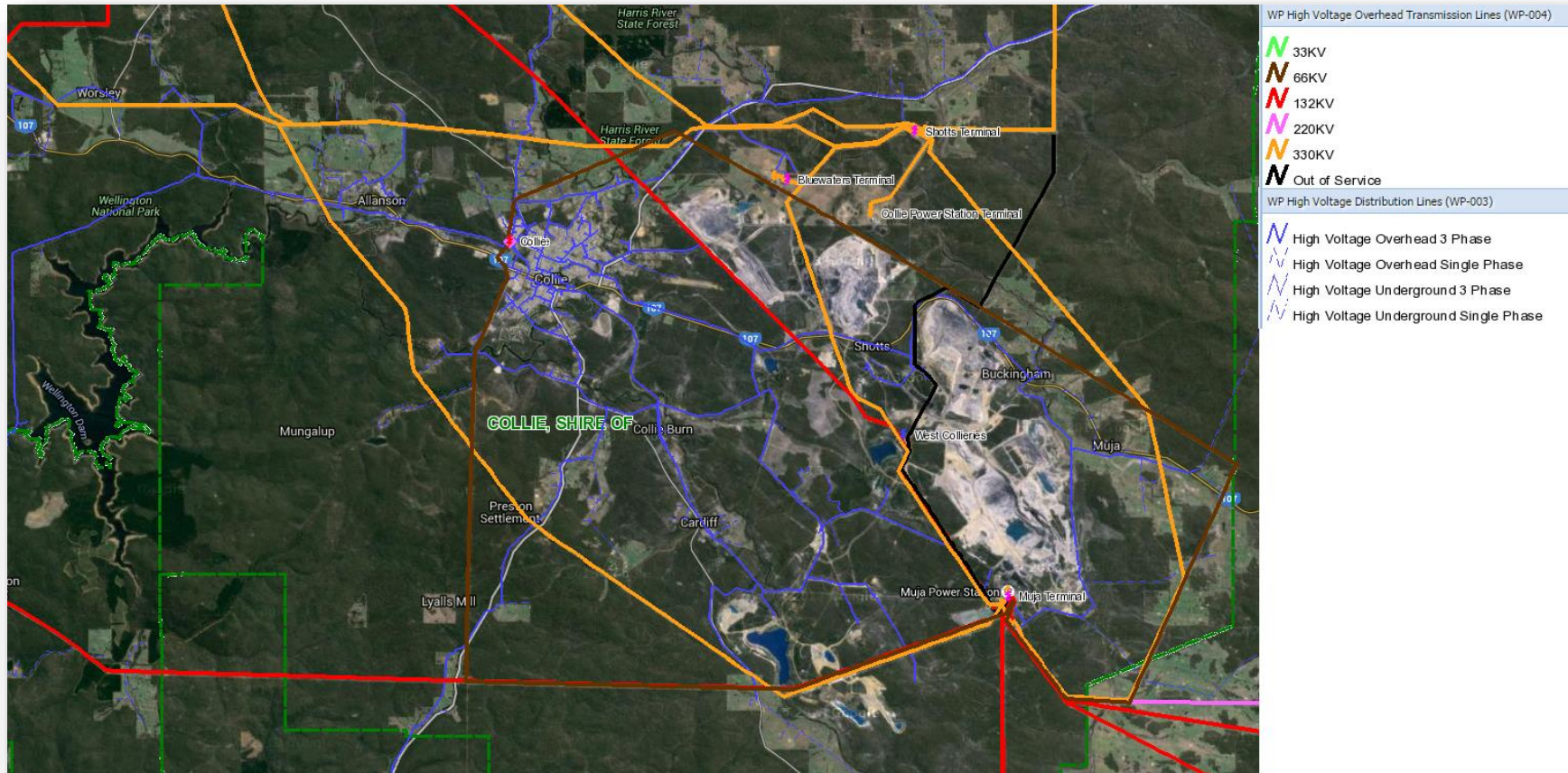


Figure 8 - Electricity Generation (Source: Western Power)

Muja Power Station

Located 22 kilometres east of Collie near the Collie coal fields, Muja Power Station is Synergy's biggest power station producing 1094MW of electricity. Muja Power Station requires a constant supply of coal and water to generate electricity 24 hours a day¹⁰.



Figure 9 - Muja Power Station (Source: Google Earth)

Collie Power Station

Like Muja Power Station, Collie Power Station also utilises coal from the Collie coal fields. Collie Power Station is capable of producing up to 340MW of electricity for the South West Interconnected System (SWIS) network¹¹.



Figure 10 - Collie Power Station (Source: Google Earth)

¹⁰ www.synergy.net.au/Our-energy/Electricity/Electricity-generation/Power-stations

¹¹ www.synergy.net.au/Our-energy/Electricity/Electricity-generation/Power-stations

Bluewaters Power Station

The Bluewaters Power Station is the first privately owned, coal fired power station in Western Australia. The plant has the capacity to generate 416 Megawatts of electricity.



Figure 11 - Bluewaters Power Station (Source: Google Earth)

Worsley Refinery

The Worsley Refinery is located 15 km north west of the Collie town site. Red bauxite is transported from Boddington bauxite mine located 50 km north of the refinery via an overland conveyor system. The Worsley refinery is the largest manufacturing business within the Shire.



Figure 12 - Worsley Refinery (Source: Google Earth)

Collie Water Scheme

Approximately 75% of the Collie town site receives a water supply from the Great Southern Town Water Supply (GSTWS) scheme from the Harris Dam, located 10 km north of the town site, as its principle source. The current capacity of Harris Dam as at November 2016 was approximately 22 gigalitres.¹² Three off takes from the GSTWS main pipeline on the north side of the town site provide direct supply to the reticulation system. Supply to the off takes is maintained by gravity flow from West Bingham tank (9 megalitres) 16 km east of town when the pumps at Harris Dam are not operating. Approximately 25% of the town independently obtains gravity water supply from Mungalup Dam (0.68 gigalitres) which is about 8km south west of town.¹³

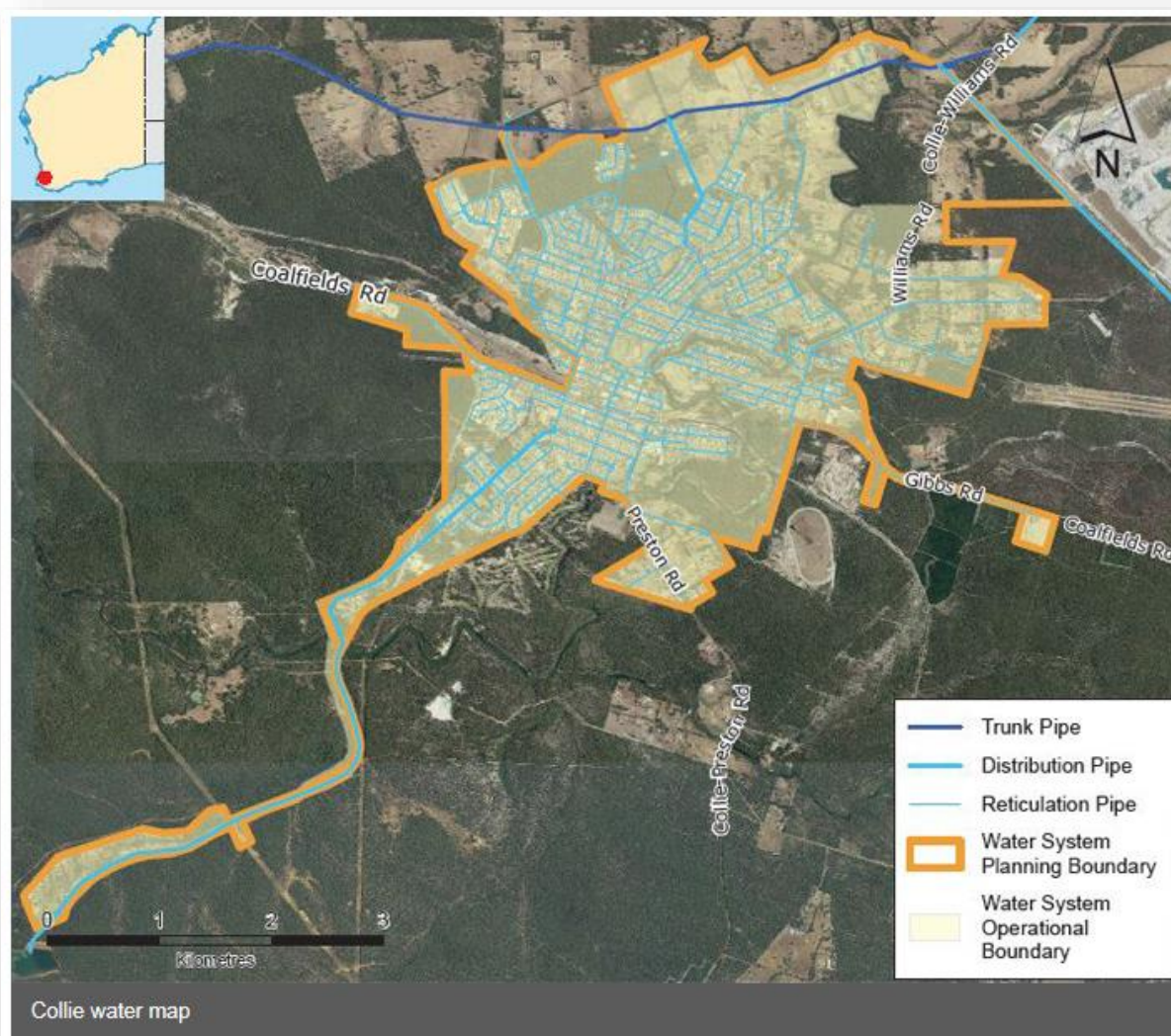


Figure 13 - Collie Water Scheme (Source: Water Corporation)

¹² <https://www.watercorporation.com.au/water-supply-and-services/rainfall-and-dams/dam-levels/dam-levels-individual>

¹³ <http://www.watercorporation.com.au/water-supply-and-services/solutions-to-regional-water-supply/regional-water-and-wastewater-schemes/collie-water-scheme-summary#>

Collie Wastewater Scheme

The Collie town site sewer district is currently serviced by 13 wastewater pump stations, including one private pump station. The flow from the sewer district is pumped to the Collie Wastewater Treatment Plant (WWTP) by the Crampton Street pump station and the Medic Street pump station. The Collie WWTP consists of a Sequence Batch Reactor (SBR) plant that is licensed to treat up to 2,200 kilolitres of waste per day. Treated wastewater is tertiary treated and discharged to a channel at the headwaters of Lyalls Brook.¹⁴

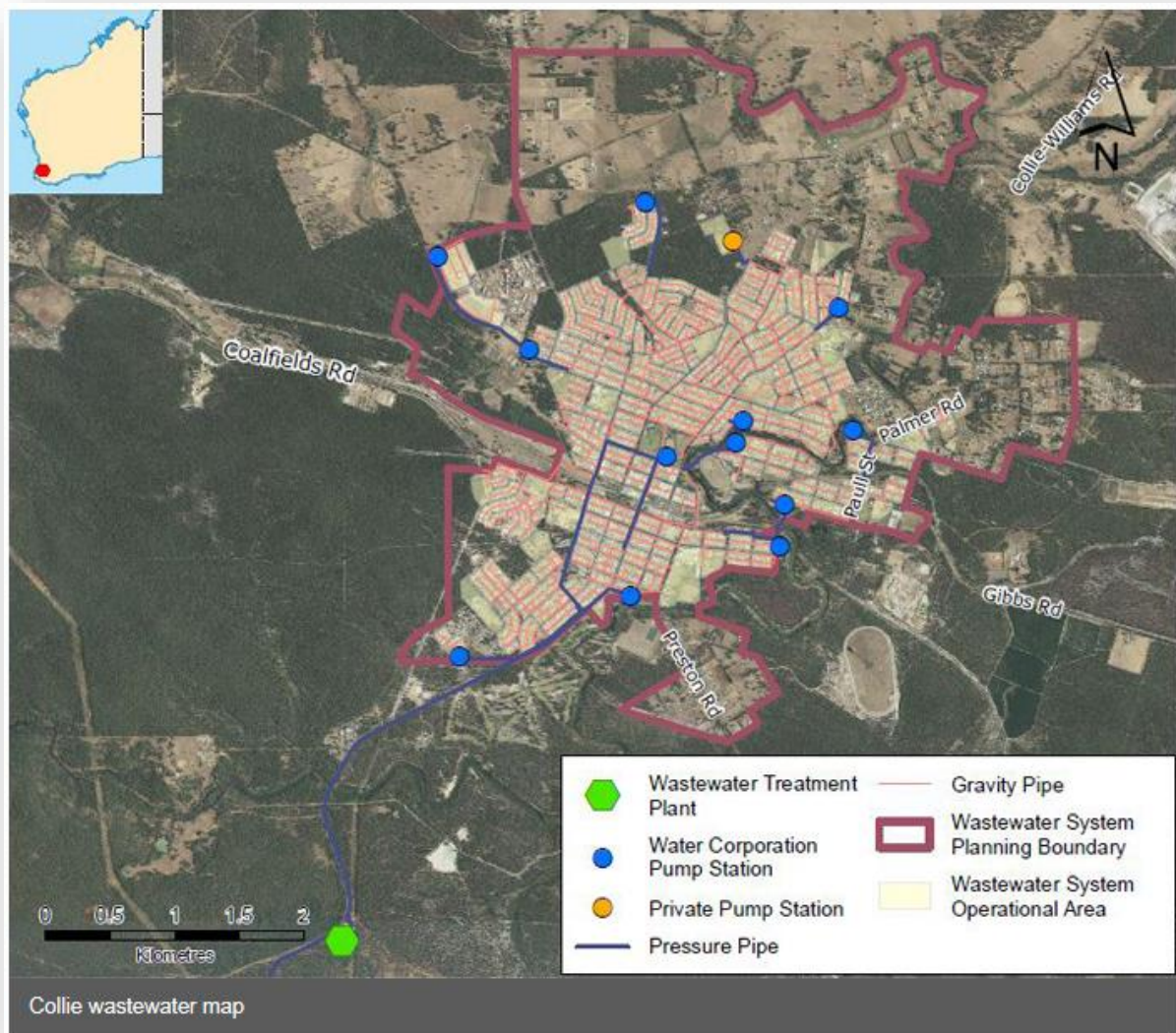


Figure 14 - Collie Waste Water Scheme (Source: Water Corporation)

¹⁴ <http://www.watercorporation.com.au/water-supply-and-services/solutions-to-regional-water-supply/regional-water-and-wastewater-schemes/collie-wastewater-scheme-summary>

Wellington Dam

Wellington Dam is the second largest surface water catchment in Western Australia (behind the Ord River Dam). It is the largest catchment in the south-west of the state at 2,509 km² (excluding Harris Dam catchment as Harris Dam seldom overflows). Originally constructed in 1933, and enlarged in 1956, Wellington Dam was upgraded in 2012 to meet current Australian engineering standards, and holds 185 billion litres when full.¹⁵

Climate change impacts of reduced rainfall, and corresponding reduction in mean annual inflow, has seen Wellington Dam catchment inflows fall from a long term average of 124 billion litres per year (based on 1975 to 1999 data) to 78 billion litres per year (based on 2001 to 2012 data). Using modelling based on CSIRO's predicted median rainfall reductions, it is estimated that the average Wellington Dam inflow could further reduce to 52 billion litres in 2030 and 28 billion litres in 2060.



Figure 15 - Wellington Dam (Source: Water Corporation)

¹⁵ <http://www.watercorporation.com.au/-/media/files/residential/water-supply-and-services/water-forever-south-west/fact-sheet-wellington-dam-water-forever-sw.pdf>

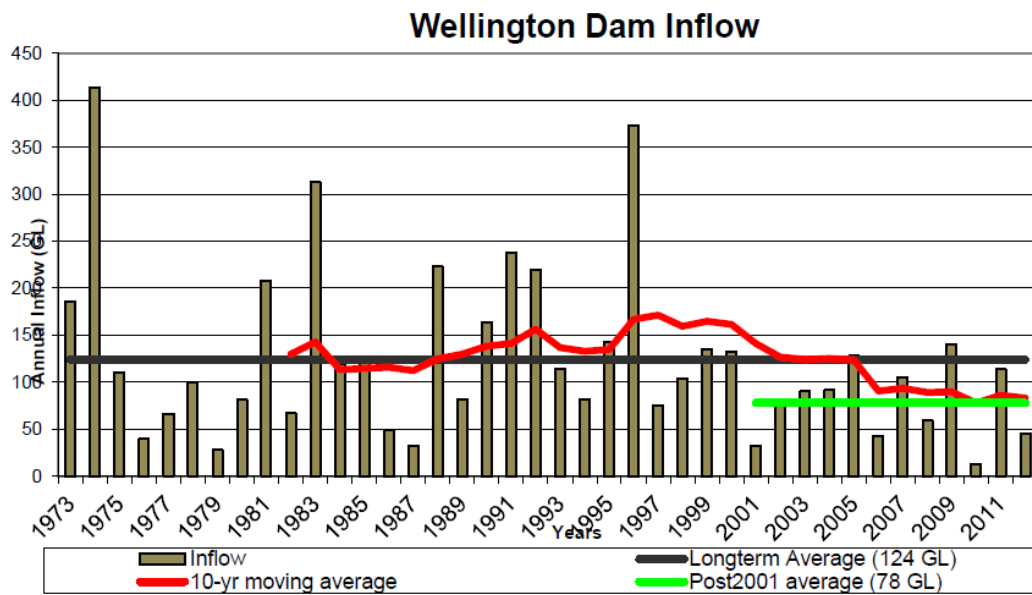


Figure 16 - Wellington Dam Inflows (Source: Water Corporation)

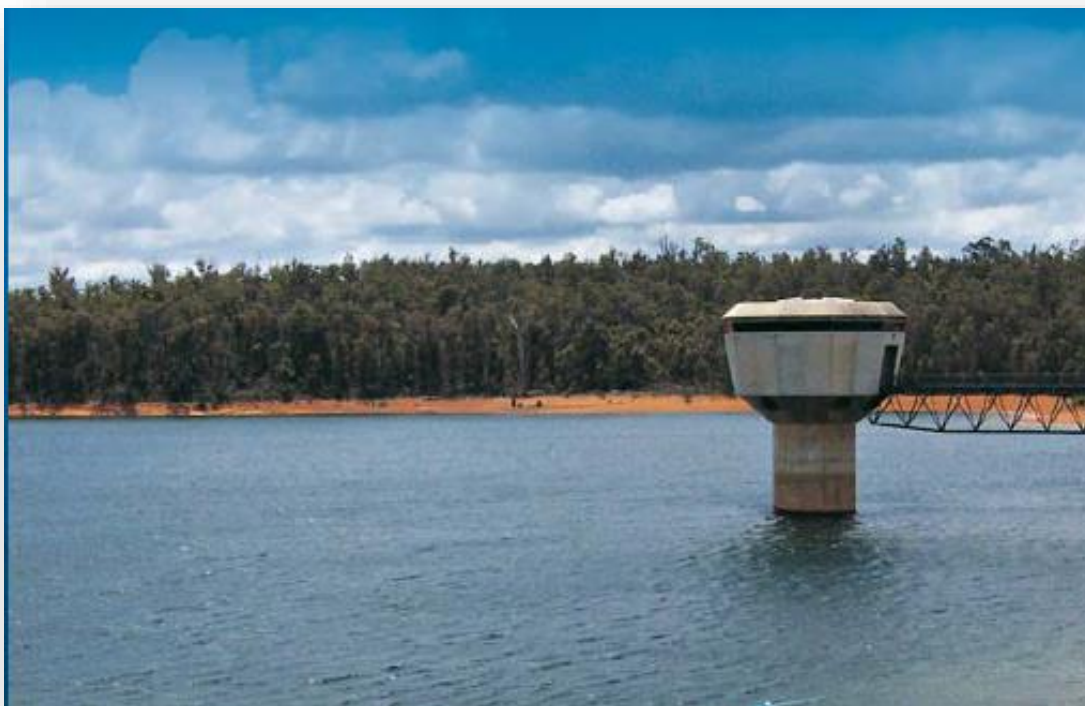


Figure 17 - Harris River Dam (Source: Water Corporation)

Harris Dam

Harris Dam, located 10 km north of Collie, also supplies water to more than 35 towns in the Great Southern area of Western Australia through the Great Southern Towns Water Supply Scheme (GSTWSS). In total, more than 40,000 people are supplied with their drinking water through the GSTWSS.

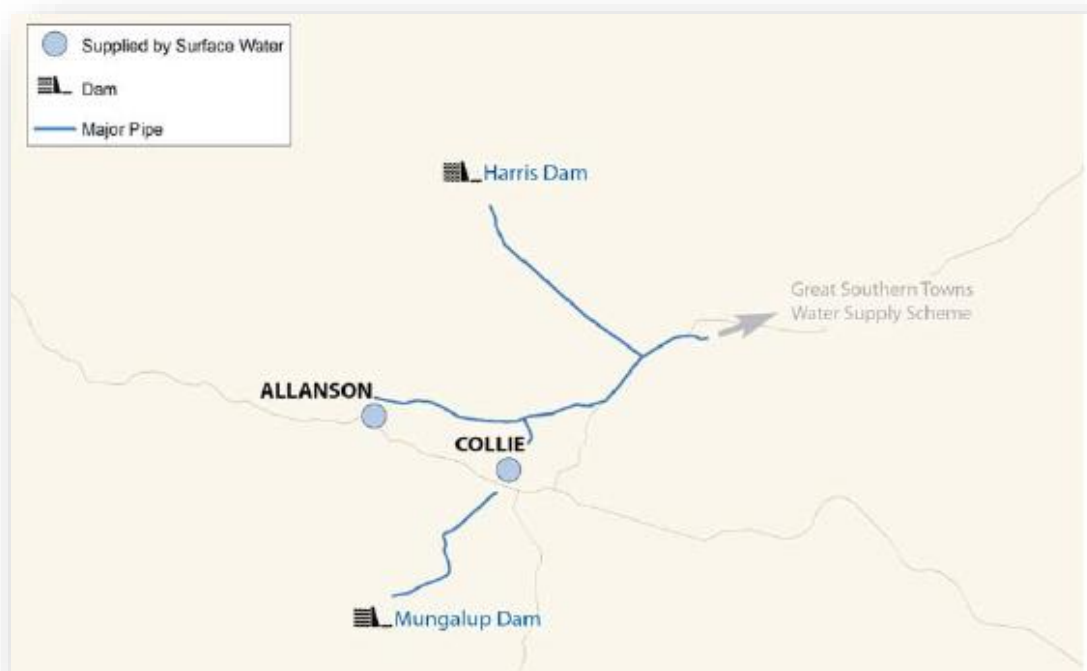


Figure 18 - Great Southern Water Supply Scheme (Source: Water Corporation)

Great Southern Towns Water Supply Scheme

There is more than sufficient capacity in Harris Dam to meet Collie's long-term water demand. Even allowing for additional growth in the GSTWSS and further climate reductions in inflow, additional water is not likely to be required before 2030.

However, like other surface water schemes, a series of dry winters will put the scheme at risk of having insufficient water. The record breaking dry years of 2010 and 2012 highlighted this vulnerability although the recent 2013 winter rainfall has restored the dam to safe storage levels.¹⁶

¹⁶ Water Corporation Report 'Water Forever: South West' <http://www.watercorporation.com.au/-/media/files/residential/water-supply-and-services/water-forever-south-west/water-forever-south-west-final-report.pdf>

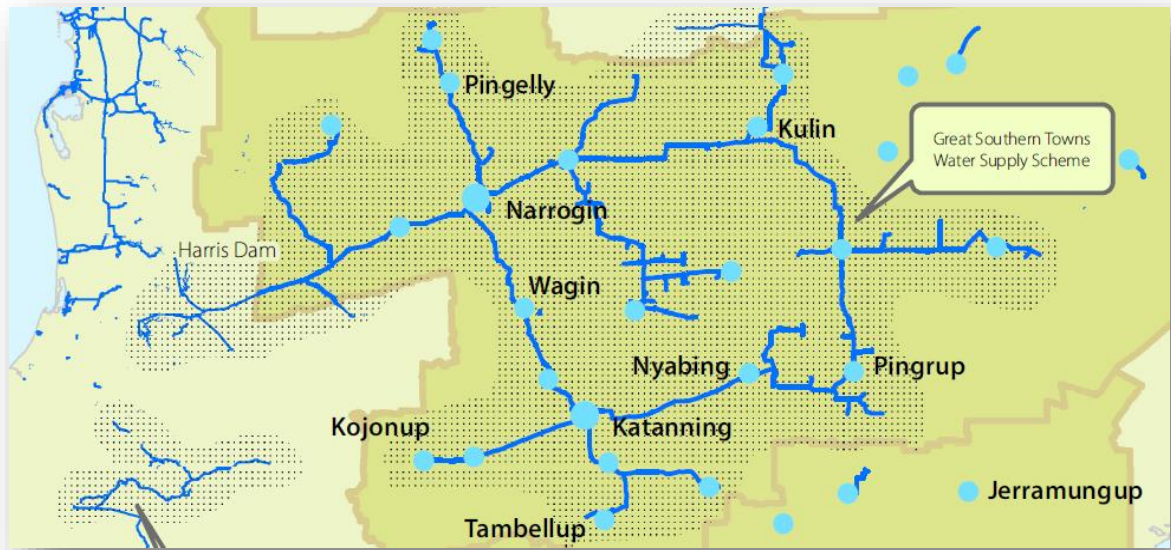


Figure 19 - Great Southern Town Water Supply (Source: Water Corporation¹⁷)

¹⁷ <https://www.watercorporation.com.au/-/media/files/teachers/posters/great-southern-water-supply-map.pdf>

Western Power

Western Power is a Western Australian State Government owned corporation with the purpose of connecting people with electricity in a way that is safe, reliable and affordable.¹⁹

The Western Power Network forms the vast majority of the South West Interconnected Network (SWIN) or part of the network component of the South West Interconnected System (SWIN). The Western Power Network (network or system) transports energy from generators to customers and comprises a large number of physical assets such as towers, poles, conductors and transformers²⁰. Unlike all other major urban areas of Australia which are covered by a series of interconnected networks known as the National Electricity Market (NEM), the SWIN is an isolated, self-contained network. This means that the electricity needs of consumers within the SWIS must at all times be delivered by the SWIN itself without any outside support or back up.²¹

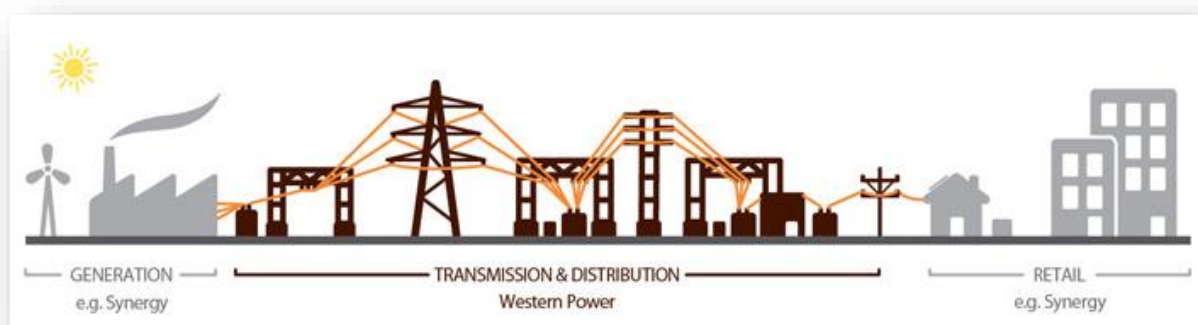


Figure 21 - Electricity Network (Source: Western Power)

The infrastructure particularly in the semi-rural and rural areas is predominantly of an overhead construction consisting of bare conductors supported by wooden poles and towers crossing farmland, bush and vegetated areas. This type of construction carries an inherent public safety; bushfire and environmental impact risk.²²

¹⁹ http://www.westernpower.com.au/corporate-information-about-us.html#our_network

²⁰ Western Power Bushfire Management Plan, http://www.westernpower.com.au/documents/bushfire_management_plan.pdf

²¹ http://www.westernpower.com.au/corporate-information-about-us.html#our_network

²² Western Power Bushfire Management Plan, http://www.westernpower.com.au/documents/bushfire_management_plan.pdf

Western Power Fire Risk Zones

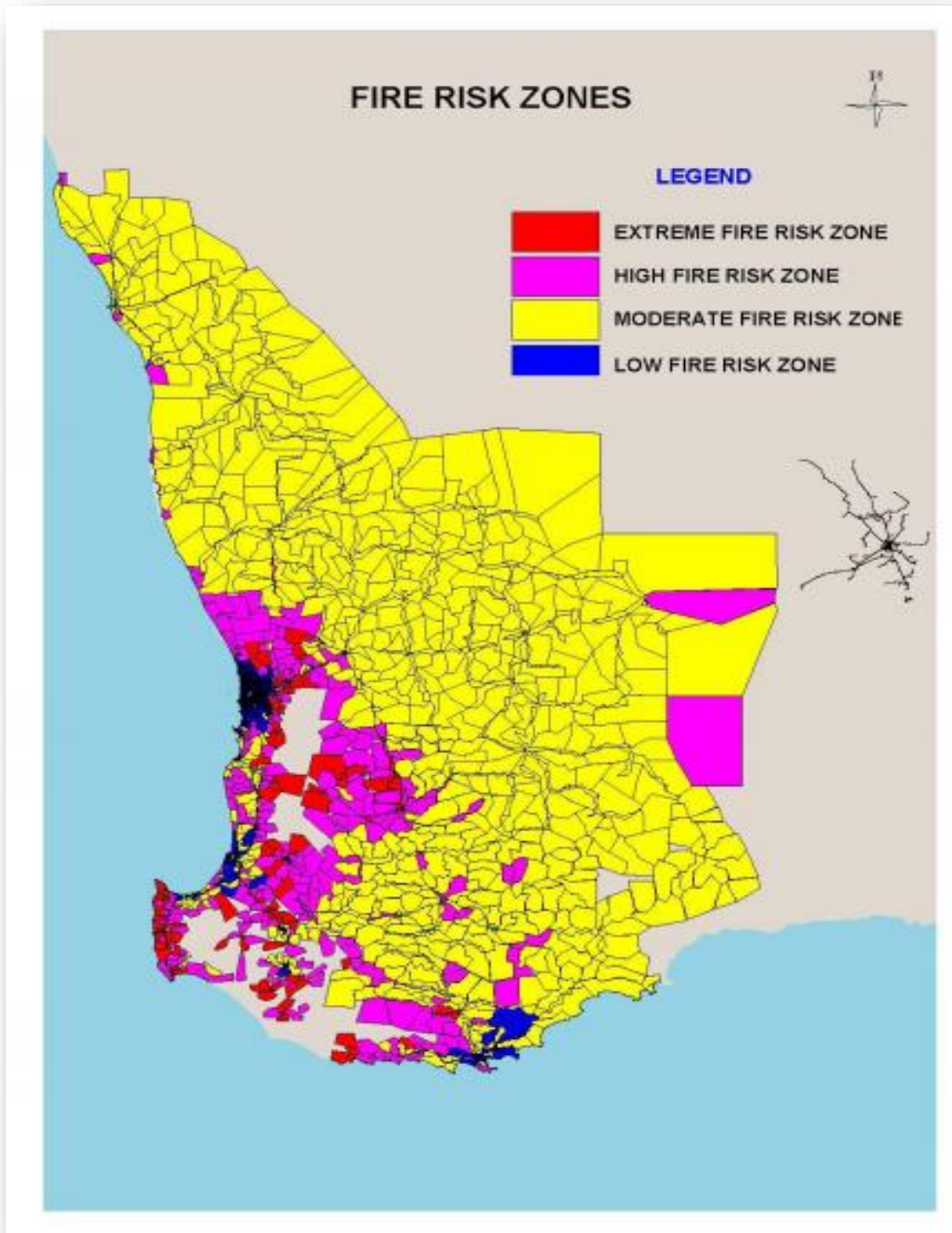


Figure 22 - Electricity Network – Fire Risk Zones (Source: Western Power)

3.2 Description of the Environment and Bushfire Context

3.2.1 Topography and Landscape Features

The Collie Basin forms a North Westerly trending valley in the Darling Plateau, having a maximum length of 27 km and a maximum width of approximately 13 km. The topographical gradient is towards the northwest with elevations ranging from 250 m AHD (Australian Height Datum) along the South Western and South Eastern margins of the basin to 160 m AHD in the northwest.

The hills of the Darling Range surrounding the basin reach an elevation of approximately 350 m AHD. The surface of the basin is gently undulating with wide flat valleys and ridges having smooth rising flanks, except where they are laterite capped and form escarpments. The low-lying areas generally have wetlands that include streams, creeks and swamps. Some abandoned open-cut mines have been used to form lakes such as Lake Kepawari and Black Diamond. Slopes are generally gentle and rarely exceed 30 degrees.

Soils are typically gravel or sands. Sandy soils dry rapidly and increase fire risk by drying surface fuels.

This landscape and topography combines to create difficult terrain, in most cases, to fight fires effectively and in a timely manner, means that heavy machinery such as bull dozers is quite often the only reliable means of managing fires. Due to the steep nature of the landscape, fire behaviour is difficult to predict, and subsequently manage, and therefore presents many challenges. With this in mind it is critical to manage fuel loads at low levels to reduce the intensity of bushfires. Add to this the frustrations created with the inability to clear and perform mechanical thinning due to much of the private and state held land being in catchment zones.

Furthermore, with state forest covering approximately 80% of the Shire and in most cases on the rural properties the private residences directly abut these forests. Regardless of the contingencies/mitigation put in place by land owners the bushfire risk to many of these properties will remain at the same level as pre-treatment.

This results in a greatly increased risk of bushfire within the Shire of Collie that is not able to be mitigated by the efforts of private land holders.



Figure 23 – North West View of Collie Basin (Source: Google Earth)

3.2.2 Climate and Bushfire Season

The Shire of Collie experiences a Mediterranean climate with hot summers and mild, wet winters.

Typical weather patterns for the area during the summer period are the development of coastal low pressure troughs featuring atmospheric instability, hot gusty north westerly winds with possible thunderstorms. The passage of the trough inland is followed by the establishment of a high pressure system yielding moderate easterly or south easterly winds with stable atmospheric conditions that typically last for a few days until the reestablishment of the trough off the west coast.

Climatic data provides an indication of fuel availability for bushfires throughout the year but in particular during the fire season and is used to calculate the Grassland Fire Danger Index (GFDI), Forest Fire Danger Index (FFDI) and therefore the associated likely fire behaviour.

The fire season is typically from November through to April. This statement is supported by the fact that the Shire of Collie has their “Restricted Burning” Times,

- 2nd November to 14th December: Restricted (permits required)

- 15th December to 14th March: Prohibited
- 15th March to 31st May: Restricted (permits required)
- 1st June to 1st November Unrestricted

Note: The above dates can be adjusted to suit the changing weather conditions.

A summary of climatic conditions for the Shire of Collie is provided in Table 2 for a typical fire season during the months of (December to March).

Temperature

Month	Av. Temp (3pm)	Av. RH (3pm)	Av. Monthly Rainfall Total (mm)	Av. Windspeed 3pm (km/hr)	Wind Direction at 3pm (% of obs >15%)
December	28.2	35.6	10.6	12.5	W(20%), NW (19%), SE (16%)
January	30.5	33.8	17.9	12.7	NW(18%), SE(17%), NW(16%)
February	30.7	34.5	5.4	13.3	SE(22%), e(17%), NW(16%)
March	28.6	36.4	13.7	11.9	SE(20%), NW (18%)
Average	29.5	35.1	11.9	12.6	

Table 6 – Summary of climatic variables (Collie East) (Source: Bureau of Meteorology)

Rainfall

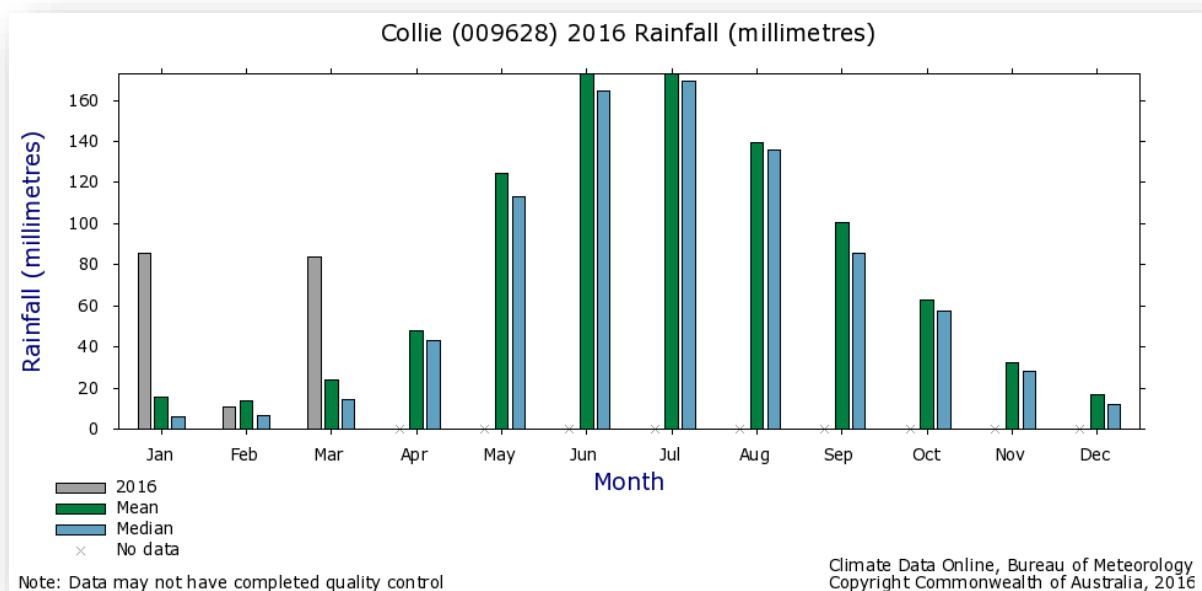


Figure 24 – Shire of Collie Mean, Median and 2016 Rainfall (Source: Bureau of Meteorology)
Shire of Collie Rainfall/Climate Statistics

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Average high(C)	30.5	30.1	27.3	23.1	18.9	16.3	15.1	16.3	18.1	20.7	24.8	28.3	22.5
Average	13.2	13.1	11.5	8.7	6.3	5.0	4.2	4.5	5.8	7.4	9.7	11.7	8.4

high(C)													
Average precipitation (mm)	14.8	14.2	23.6	48.2	125.9	180.3	179.4	140.6	99.9	64.5	32.1	16.0	939.5
Average rainy days	1.7	1.9	2.8	5.5	10.2	13.4	14.5	13.2	11.0	8.3	4.9	2.7	90.1

Table 7 - Rainfall Statistics (Source: Climate statistics for Collie, Bureau of Meteorology. August 2011)

*Note due to some rainfall observations not being taken between 2011 and 2016 the rainfall observations up until 2011 are statistically reliable.

3.2.3 Vegetation

Broad vegetation types found within the Shire of Collie are identified in **Table 8**. These provide an overview of the major fuels that will influence fire behaviour in the region and to evaluate potential rates of spread and spotting under 95th percentile weather conditions. With dense vegetation across a large proportion of the Shire, fires here have more potential to burn intensely.

Vegetation within forested areas of the Shire of Collie is predominantly Medium Forest, Jarrah-Marri of the West Darling 3 Association in the northern half of the Shire and Medium Forest, Jarrah-Marri of the Bridgetown 3 Association in the South. In the North Eastern and Eastern portions of the Shire the forest is interspersed with areas of Shrub land Tree-Heath and Paperbark over Teatree thickets and on the Western Boundary are small pockets of Medium Woodland; Jarrah, Marri and Blackbutt and Fringing Woodland; Jarrah, Marri, Rudis and Peppermint.

Vegetation Community	Area (ha)	% of Forest Area	Bushfire Predictive Model
Medium forest; jarrah-marri	158,800.60	93.4	Vesta
Medium woodland; jarrah, marri & Blackbutt	1,167.60	0.7	Vesta
Medium woodland-fringing; jarrah, marri, Eucalyptus rudis & Agonis flexuosa	1436.4	0.8	Vesta
Shrub land tree-heath; paperbark over tea tree thickets	8,680.80	5.1	Mallee-Heath
TOTAL	170,085	100	

Table 8 – Major Regional State Forest Vegetation (Source: DPaW Pre-European vegetation, IBRA Thackery & Cresswell 1995)

Areas of the Shire of Collie are cleared of forest and are predominantly agricultural grassland pastures with smaller areas of *Pinus radiata* or *Eucalyptus globulus* plantation. Agricultural lands are predominantly grazed with minimal cropping. Grazing in the district occurs such that the majority of grassland areas in the shire are considered to be eaten out by February.

Management considerations must be taken into account for the diverse vegetation types and complexities that may develop when considering bushfire mitigation strategies.

3.2.4 Bushfire Frequency and Causes of Ignition

The Fire season runs from October to May and peaks between December and March. Over 50 fires each year are attended to in the Shire of Collie by DPAW, bushfire volunteers and Volunteer Fire and Rescue.

Information received from DPaW suggests an average rate of ignition of bushfires, in their reserves over a thirteen-year period, to be around 72 incidents per year. The Data used for analysis is from DPaW records due to 80% of tenure in the Shire being state forest and therefore giving a far greater overall picture.

In the period 31 December 2011 to 30 December 2012 there were 68 incidents of bushfire in DPaW reserves. Current data suggests that there is no appreciable increase in the frequency of bushfires over the last period of measurement.

Other factors to be considered include:

- Fuels are highly flammable Jarrah-Marri forest interspersed with pockets of cleared agricultural land;
- Leading cause is deliberate (approx. 40%); followed by lightning (12%); accidental (12%); unknown (20%); other (14%) - 2010 figures from DPaW; and
- Trends in causes and locations of ignitions have been related to some arson activity. These are reported to the Police. It is noted that in early 2014 Police apprehended one individual who was found guilty of arson.

4. Asset Identification and Risk Assessment

4.1 Planning Areas

The Shire of Collie has been divided into six areas. Collie Town, Allanson Town, Worsley, Harris River, Buckingham and Preston Road. Attached at **Appendix 2** are 2 maps showing the boundaries of the planning areas identified within the Shire of Collie.

4.1.1 Priorities for Asset Identification and Assessment

The *Planning Area Assessment Tool* was applied to each planning area to determine the priorities for asset identification and assessment. Using the tool, each planning area was rated against six risk factors, with the highest scoring planning area being the first priority for asset identification and risk assessment.

Assets were identified and assessed in each planning area, based on the results of the planning area assessment outlined in the following table.

Risk Factor	Collie Town	Allanson Town	Worsley	Harris River	Buckingham	Preston Road
1. Percentage of LG population in Planning Area	Extreme	Medium	Low	Low	Low	Low
2. Fuel Structures	High	Very High	Extreme	Extreme	Extreme	Extreme
3. Assets	Very High	Medium	Very High	Extreme	Extreme	Low
4. Rural Urban Interface	High	Very High	Extreme	Extreme	Extreme	Extreme
5. Suppression response times	Low	Low	High	High	High	High
6. Suppression strategies	Low	Low	High	Very High	Very High	High
TOTAL	560	300	420	460	460	360
PRIORITY	1	6	4	3	2	5

Table 9 – Planning Area Assessment Summary

4.2 Asset Identification

Asset identification and risk assessment has been conducted at the local level using the methodology described in the Guidelines. Identified assets have been mapped, recorded and assessed in the Bushfire Risk Management System (BRMS). Identified assets are categorised into the following subcategories:

Asset Category	Asset Subcategories
Human Settlement	<ul style="list-style-type: none"> • Residential areas Rural urban interface areas and rural properties. • Places of temporary occupation Commercial, mining and industrial areas located away from towns and population centres (that is, not adjoining residential areas). • Special risk and critical facilities Hospitals, nursing homes, schools and childcare facilities, tourist accommodation and facilities, prison and detention centres, government administration centres and depots, incident control centres, designated evacuation centres, police, fire and emergency services.
Economic	<ul style="list-style-type: none"> • Agricultural Pasture, grazing, livestock, crops, viticulture, horticulture and other farming infrastructure. • Commercial and industrial Major industry, waste treatment plants, mines, mills and processing and manufacturing facilities and cottage industry. • Critical infrastructure Power lines and substations, water and gas pipelines, telecommunications infrastructure, railways, bridges, port facilities and waste water treatments plants. • Tourist and recreational Tourist attractions and recreational sites that generate significant tourism and/or employment within the local area. • Commercial forests and plantations • Drinking water catchments
Environmental	<ul style="list-style-type: none"> • Protected Rare and threatened flora and fauna, ecological communities and wetlands. • Priority Fire sensitive species and ecological communities. • Locally important Nature conservation and research sites, habitats, species and communities, areas of visual amenity.
Cultural	<ul style="list-style-type: none"> • Aboriginal heritage Places of indigenous significance. • Recognised heritage Assets afforded legislative protection through identification by the National Trust, State Heritage List or Local Planning Scheme Heritage List. • Local heritage Assets identified in a Municipal Heritage Inventory or by the community. • Other Other assets of cultural value, for example community centres and recreation facilities.

Table 10 – Asset Categories and Subcategories

Currently there is no confirmed environmental assets on Shire land or any other land not administered by DPaW. Hence these have not been included in the BRMS due to the sensitive nature of exact locations and the existence of adequate protection/management procedures already in place within DPaW and further the cost of access to this data is prohibitive for a regional shire.

In regard to local heritage assets, there is currently a review due to be concluded late 2017 of local heritage value within the Shire. Until this is completed these assets have been purposely withheld from the project, except where they fall within the Bushfire Prone Mapping and are listed on a previous version of the Shire's Municipal Heritage Inventory. The Bushfire Prone Mapping indicates any areas within 100m of forest and are considered to be at risk from bushfire.

Aboriginal Heritage Sites have not been included in the BRMP Plan due to cultural sensitivities. Hazard mitigation by prescribed burning of these sites has not been identified as a major issue. After consultation with the local elder's mechanical works may be permitted subject to indigenous observers being on site.

4.3 Assessment of Bushfire Risk

Risk assessments have been undertaken for each asset or group of assets identified using the methodology described in the Guidelines.

The percentage of assets within the Shire of Collie in each asset category at the time of BRM Plan endorsement is shown in the following table.

Asset category	Proportion of identified assets
Human Settlement	59.5%
Environmental	0%
Cultural	7.5%
Economic	33%

Table 11 – Asset Category Proportions

4.3.1 Likelihood Assessment

Likelihood is described as the chance of a bushfire igniting, spreading and reaching an asset. The approach used to determine the likelihood rating is **the same for each asset category**: Human Settlement, Economic, Environmental and Cultural.

There are four possible likelihood ratings: almost certain, likely, possible, and unlikely.

Likelihood Rating	Description
Almost Certain (Sure to Happen)	<ul style="list-style-type: none"> Is expected to occur in most circumstances; High level of recorded incidents and/or strong anecdotal evidence; and/or; Strong likelihood the event will recur; and/or; Great opportunity, reason or means to occur; May occur more than once in 5 years.
Likely (Probable)	<ul style="list-style-type: none"> Regular recorded incidents and strong anecdotal evidence; and /or; Considerable opportunity, reason or means to occur; May occur at least once in 5 years.
Possible (feasible but < probable)	<ul style="list-style-type: none"> Should occur at some stage; and/or; Few, infrequent, random recorded incidents or little anecdotal evidence; and/or; Some opportunity, reason or means to occur.
Unlikely (Improbable, not likely)	<ul style="list-style-type: none"> Would only occur under exceptional circumstances.

Table 12 – Likelihood Ratings

4.3.2 Consequence Assessment

Consequence is described as the outcome or impact of a bushfire event. The approach used to determine the consequence rating is **different for each asset category**: Human Settlement, Economic, Environmental and Cultural.

There are four possible consequence ratings: minor, moderate, major and catastrophic.

Consequence Rating	Descriptions
Minor	<ul style="list-style-type: none"> No fatalities. Near misses or minor injuries with first aid treatment possibly required. No persons are displaced. Little or no personal support (physical, mental, emotional) required. Inconsequential or no damage to an asset, with little or no specific recovery efforts required beyond the immediate clean-up. Inconsequential or no disruption to community. Inconsequential short-term failure of infrastructure or service delivery. (Repairs occur within 1 week, service outages last less than 24 hours.) Inconsequential or no financial loss. Government sector losses managed within standard financial provisions. Inconsequential business disruptions.
Moderate	<ul style="list-style-type: none"> Isolated cases of serious injuries, but no fatalities. Some hospitalisation required, managed within normal operating capacity of health services. Isolated cases of displaced persons who return within 24 hours. Personal support satisfied through local arrangements. Localised damage to assets that is rectified by routine arrangements.

Consequence Rating	Descriptions
	<ul style="list-style-type: none"> • Community functioning as normal with some inconvenience. • Isolated cases of short to mid-term failure of infrastructure and disruption to service delivery. (Repairs occur within 1 week to 2 months, service outages last less than 1 week.) • Local economy impacted with additional financial support required to recover. Government sector losses require activation of reserves to cover loss. Disruptions to businesses lead to isolated cases of loss of employment or business failure. • Isolated cases of damage to environmental or cultural assets, one-off recovery efforts required, but with no long term effects to asset.
Major	<ul style="list-style-type: none"> • Isolated cases of fatalities. • Multiple cases of serious injuries. Significant hospitalisation required, leading to health services being overstretched. • Large number of persons displaced (more than 24 hours duration). • Significant resources required for personal support. • Significant damage to assets, with ongoing recovery efforts and external resources required. • Community only partially functioning. Widespread inconvenience, with some services unavailable. • Mid to long-term failure of significant infrastructure and service delivery affecting large parts of the community. Initial external support required. (Repairs occur within 2 to 6 months, service outages last less than a month.) • Local or regional economy impacted for a significant period of time with significant financial assistance required. Significant disruptions across industry sectors leading to multiple business failures or loss of employment. • Significant damage to environmental or cultural assets that require major rehabilitation or recovery efforts. • Localised extinction of native species. This may range from loss of a single population to loss of all of the species within the BRM Plan area (for a species which occupies a greater range than just the BRM Plan area).
Catastrophic	<ul style="list-style-type: none"> • Multiple cases of fatalities. • Extensive number of severe injuries. • Extended and large number requiring hospitalisation, leading to health services being unable to cope. • Extensive displacement of persons for extended duration. • Extensive resources required for personal support. • Extensive damage to assets that will require significant ongoing recovery efforts and extensive external resources. • Community unable to function without significant support.

Consequence Rating	Descriptions
	<ul style="list-style-type: none"> • Long-term failure of significant infrastructure and service delivery affecting all parts of the community. Ongoing external support required. (Repairs will take longer than 6 months, service outages last more than 1 month.) • Regional or State economy impacted for an extended period of time with significant financial assistance required. Significant disruptions across industry sectors leading to widespread business failures or loss of employment. • Permanent damage to environmental or cultural assets. • Extinction of a native species in nature. This category is most relevant to species that are restricted to the BRM Plan area, or also occur in adjoining areas and are likely to be impacted upon by the same fire event. 'In nature' means wild specimens and does not include flora or fauna bred or kept in captivity.

Table 13 – Consequence Ratings

The methodology used to determine the consequence rating for each asset category is based on the following:

- **Consequence Rating - Human Settlement Assets**

The outcome or impact of a bushfire event on the asset, or a group of assets, measured by the threat posed by the hazard vegetation and the vulnerability of the asset.

- **Consequence Rating - Economic Assets**

The outcome or impact of a bushfire event on the asset, or a group of assets, measured by the level of economic impact and the recovery costs.

- **Consequence Rating - Environmental Assets**

The outcome or impact of a bushfire event on the asset, or a group of assets, measured by the vulnerability of the asset and the potential impact of a bushfire or fire regime.

- **Consequence Rating - Cultural Assets**

The outcome or impact of a bushfire event on the asset, or a group of assets, measured by the threat posed by the hazard vegetation and the vulnerability of the asset.

4.3.3 Assessment of Environmental Assets

Using available biological information and fire history data, environmental assets with a known minimum fire threshold were assessed to determine if they were at risk from bushfire, within the five year life of the BRM Plan. Environmental assets that would not be adversely impacted by bushfire within the five year period have not been included and assessed in the BRM Plan. The negative impact of a fire on these assets (within the period of this BRM Plan) was determined to be minimal, and may even be of benefit to the asset and surrounding habitat.

4.3.4 Local Government Asset Risk Summary

A risk profile for the local government is provided in the summary table below. This table shows the proportion of assets at risk from bushfire in each risk category at the time the BRM Plan was endorsed.

Risk Rating Asset Category	Low	Medium	High	Very High	Extreme
Human Settlement	13.5% (50)	6.5% (24)	9.7% (36)	15.6% (58)	12.1% (45)
Economic	4% (15)	9.9% (37)	10.2% (38)	2.7% (10)	8.4% (31)
Environmental	0%	0%	0%	0%	0%
Cultural	4% (15)	0.6% (2)	0.6% (2)	1.1% (4)	1.1% (4)

Table 14 – Local Government Asset Risk Summary

5. Risk Evaluation

5.1 Evaluating Bushfire risk

The risk rating for each asset has been assessed against the likelihood and consequence descriptions to ensure:

- The rating for each asset reflects the relative seriousness of the bushfire risk to the asset;
- Likelihood and consequence ratings assigned to each asset are appropriate; and
- Local issues have been considered.

5.2 Treatment Priorities

The treatment priority for each asset has been automatically assigned by BRMS, based on the asset's risk rating. Table 10 shows how likelihood and consequence combine to give the risk rating and subsequent treatment priority for an asset.

Consequence Likelihood	Minor	Moderate	Major	Catastrophic
Almost certain	3D (High)	2C (Very High)	1C (Extreme)	1A (Extreme)
Likely	4C (Medium)	3A (High)	2A (Very High)	1B (Extreme)
Possible	5A (Low)	4A (Medium)	3B (High)	2B (Very High)
Unlikely	5C (Low)	5B (Low)	4B (Medium)	3C (High)

Table 15 – Treatment Priorities

5.3 Risk Acceptability

Risks below a certain level were not considered to require specific treatment during the life of this BRM Plan. They will be managed by routine local government wide controls and monitored for any significant change in risk.

In most circumstances risk acceptability and treatment will be determined by the land owner, in collaboration with local government and fire agencies. However, as a general rule, the following courses of action have been adopted for each risk rating. These risks are not transferable to the Shire of Collie and all risks and required treatments remain the responsibility of the land holder. The Shire of Collie offers only advice and recommendations and the continued provision of this advice is subject to the ongoing Department of Fire and Emergency Services funding a full-time Bushfire Risk Planning Coordinator or similar position for the Shire of Collie.

Risk Rating	Criteria for Acceptance of Risk	Recommended Course of Action
Extreme (Priorities 1A, 1B, 1C)	Only acceptable with excellent controls. Urgent treatment action is required. Treatment plans to be explored and recommended. Highest level of authority notified. Actions may require state or federal funding.	Routine controls are not enough to adequately manage the risk. Immediate attention required as a priority. Specific action is required in first year of BRM Plan. Continuous monitoring required. Report of unresolved risks to be supplied to the Department of Fire and Emergency Services.
Very High (Priorities 2A, 2B, 2C)	Only acceptable with excellent controls. Treatment action is recommended. Senior Shire officer's and council notified.	Routine controls are not enough to adequately manage the risk. Specific action will be required during the period covered by the BRM Plan. Quarterly monitoring may be required.
High (Priorities 3A, 3B, 3C, 3D)	Only acceptable with adequate controls. Treatment action may be required.	Specific action may be required. Risk may be managed with routine controls and/or specific procedures and is subject to annual monitoring.
Medium (Priorities 4A, 4B, 4C)	Acceptable with adequate controls. Treatment action is not required but risk must be monitored.	Specific action may not be required. Risk may be managed with routine controls and/or procedures and monitored as required throughout the life of the BRM Plan.
Low (Priorities 5A, 5B, 5C)	Risk acceptable with adequate controls, managed by routine procedures or controls and subject to monitoring. Treatment is not required.	The need for specific action is unlikely. Risk will be managed with routine controls or procedures and monitored as required.

Table 16 – Criteria for Acceptance of Risk and Course of Action

6. Risk Treatment

The purpose of risk treatment is to reduce the likelihood of a bushfire occurring and/or the potential impact of a bushfire on the community, economy and environment. This is achieved by implementing treatments that modify the characteristics of the hazard, the community or the environment.

There are many strategies available to treat bushfire risk. The treatment strategy (or combination of treatment strategies) selected will depend on the level of risk and the type of asset being treated. Not all treatment strategies will be suitable in every circumstance.

6.1 Local Government-Wide Controls

Local government-wide controls are activities that reduce the overall bushfire risk within the Shire of Collie. These types of treatments are not linked to specific assets, and are applied across all or part of the local government as part of normal business or due to legislative requirements. The following controls are currently in place across the Shire of Collie:

- *Bush Fires Act 1954* Section 33 notices, including applicable fuel management requirements, firebreak standards and annual enforcement programs;
- Declaration and management of Prohibited Burn Times, Restricted Burn Times and Total Fire Bans for the local government;
- Public education campaigns and the use of P&W and DFES state-wide programs, tailored to suit local needs;
- State-wide arson prevention programs developed in conjunction with WA Police and DFES;
- State planning framework and local planning schemes, implementation of appropriate land subdivision and building standards in line with DFES, Department of Planning and Building Commission policies and standards;
- Monitoring performance against the BRM Plan and reporting annually to the local government council and OBRM; and
- Other practices and programs undertaken by local government or state agencies that contribute to bushfire risk management within the local government, including controls in place under state government policies, agreements or memorandums of understanding.

A multi-agency work plan has been developed and is attached at Appendix 3. The plan details work to be undertaken as a part of normal business, to improve current controls or to implement new controls to better manage bushfire risk across the local government.

6.2 Asset-Specific Treatment Strategies

Asset-specific treatments are implemented to protect an individual asset or group of assets, identified and assessed in the BRM Plan as being at risk from bushfire. There are six asset specific treatment strategies:

- **Fuel management** - Treatment reduces or modifies the bushfire fuel through manual, mechanical, chemical and prescribed burning methods;
- **Ignition management** - Treatment aims to reduce potential human and infrastructure sources of ignition in the landscape;

- **Preparedness** - Treatments aim to improve access and water supply arrangements to assist fire fighting operations;
- **Planning** - Treatments focus on developing plans to improve the ability of fire fighters and the community to respond to bushfire;
- **Community Engagement** - Treatments seek to build relationships, raise awareness and change the behaviour of people exposed to bushfire risk; and
- **Other** - Local government-wide controls, such as community education campaigns and planning policies, will be used to manage the risk. Asset-specific treatment is not required or not possible in these circumstances.

6.3 Determining the Treatment Schedule

Efforts will be made to finalise the Treatment Schedule within six months of this BRM Plan being endorsed by Council and OBRM. The Treatment Schedule will be developed in broad consultation with land owners and other stakeholders. The development of the treatment schedule is subject to funding of the Bushfire Risk Planning Coordinator's full-time position or similar exclusively for the Shire of Collie.

Land owners are ultimately responsible for treatments implemented on their own land. This includes any costs associated with the treatment and obtaining the relevant approvals, permits or licences to undertake an activity. Where agreed, another agency may manage a treatment on behalf of a land owner. However, the onus is still on the land owner to ensure treatments detailed in this BRM Plan are completed.

7. Monitoring and Review

Monitoring and review processes are in place to ensure that the BRM Plan remains current and valid. These processes are detailed below to ensure outcomes are achieved in accordance with the *Communication Strategy* and *Treatment Schedule*.

7.1 Review

A comprehensive review of this BRM Plan will be undertaken at least once every five years, from the date of council endorsement. Significant circumstances that may warrant an earlier review of the BRM Plan include:

- Changes to the BRM Plan area, organisational responsibilities or legislation;
- Changes to the bushfire risk profile of the area; or
- Following a major fire event.

7.2 Monitoring

BRMS will be used to monitor the risk ratings for each asset identified in the BRM Plan and record the treatments implemented. Risk ratings are reviewed on a regular basis. New assets will be added to the *Asset Risk Register* when they are identified.

7.3 Reporting

The BRMP Plan will be presented annually to the Bushfire Advisory Committee and Local Emergency Management Committee with a report on progress and hazard mitigation activities. These committees will then make a recommendation to Council on the annual progress reports. Council will then consider the committee recommendations before submitting a report to OBRM.

The Shire of Collie will submit an annual report to OBRM each year summarising progress made towards implementation of the BRM Plan, for as long as funding is available.

8. Glossary

Asset	A term used to describe anything of value that may be adversely impacted by bushfire. This may include residential houses, infrastructure, commercial, agriculture, industry, environmental, cultural and heritage sites.
Asset Category	There are four categories that classify the type of asset – Human Settlement, Economic, Environmental and Cultural.
Asset Owner	The owner, occupier or custodian of the asset itself. Note: this may differ from the owner of the land the asset is located on, for example a communication tower located on leased land or private property.
Asset Register	A component within the Bushfire Risk Management System used to record the details of assets identified in the Bushfire Risk Management Plan.
Asset Risk Register	A report produced within the Bushfire Risk Management System that details the consequence, likelihood, risk rating and treatment priority for each asset identified in the Bushfire Risk Management Plan.
Bushfire	Unplanned vegetation fire. A generic term which includes grass fires, forest fires and scrub fires both with and without a suppression objective. ²³
Bushfire Management Plan	A document that sets out short, medium and long term bushfire risk management strategies for the life of a development. ²⁴
Bushfire risk management	A systematic process to coordinate, direct and control activities relating to bushfire risk with the aim of limiting the adverse effects of bushfire on the community.
Bushfire Threat	The threat posed by the hazard vegetation, based on the vegetation category, slope and separation distance.
Consequence	The outcome or impact of a bushfire event.
Draft Bushfire Risk Management Plan	The finalised draft Bushfire Risk Management Plan (BRM Plan) is submitted to the OBRM for review. Once the OBRM review is complete, the BRM Plan is called the 'Final BRM Plan' and can be progressed to local government council for endorsement.

²³ Australasian Fire and Emergency Service Authorities Council 2012, *AFAC Bushfire Glossary*, AFAC Limited, East Melbourne.

²⁴ Western Australian Planning Commission 2015, *State Planning Policy 3.7: Planning in Bushfire Prone Areas*, WAPC, Perth.

Emergency Risk Management Plan	A document (developed under State Emergency Management Policy 3.2 Emergency Risk Management Planning and Prevention Procedure 1 – Emergency Risk Management Planning) that describes how an organisation(s) intends to undertake the activities of emergency risk management based on minimising risk. These plans help inform the ongoing development of Local Emergency Management Arrangements (LEMA) and Westplans.
Geographic Information System (GIS)	A data base technology, linking any aspect of land-related information to its precise geographic location. ²⁵
Geographic Information System (GIS) Map	The mapping component of the Bushfire Risk Management System. Assets, treatments and other associated information is spatially identified, displayed and recorded within the GIS Map.
Land Owner	The owner of the land, as listed on the Certificate of Title; or leaser under a registered lease agreement; or other entity that has a vested responsibility to manage the land.
Likelihood	The chance of something occurring. In this instance, the chance of a bushfire igniting, spreading and reaching the asset.
Locality	The officially recognised boundaries of suburbs (in cities and larger towns) and localities (outside cities and larger towns).
Planning Area	A geographic area determine by the local government which is used to provide a suitable scale for risk assessment and stakeholder engagement.
Priority	See Treatment Priority.
Recovery Cost	The capacity of an asset to recover from the impacts of a bushfire.
Responsible Person	The person responsible for planning, coordinating, implementing, evaluating and reporting on a risk treatment.
Risk acceptance	The informed decision to accept a risk, based on the knowledge gained during the risk assessment process.
Risk analysis	The application of consequence and likelihood to an event in order to determine the level of risk.

²⁵ Landgate 2015, *Glossary of terms*, Landgate, Perth

Risk assessment	The systematic process of identifying, analysing and evaluating risk.
Risk evaluation	The process of comparing the outcomes of risk analysis to the risk criteria in order to determine whether a risk is acceptable or tolerable.
Risk identification	The process of recognising, identifying and describing risks.
Risk Manager	The organisation or individual responsible for managing a risk identified in the Bushfire Risk Management Plan; including review, monitoring and reporting.
Risk Register	A component within the Bushfire Risk Management System used to record, review and monitor risk assessments and treatments associated with assets recorded in the Bushfire Risk Management Plan.
Risk treatment	A process to select and implement appropriate measures undertaken to modify risk.
Rural	Any area where in residences and other developments are scattered and intermingled with forest, range, or farm land and native vegetation or cultivated crops. ²⁶
Rural Urban Interface (RUI)	The line or area where structures and other human development adjoin or overlap with undeveloped bushland. ²⁷
Slope	The angle of the ground's surface measured from the horizontal.
Tenure Blind	An approach where multiple land parcels are consider as a whole, regardless of individual ownership or management arrangements.
Treatment	An activity undertaken to modify risk, for example a prescribed burn.
Treatment Objective	The specific aim to be achieved or action to be undertaken, in order to complete the treatment. Treatment objectives should be specific and measurable.
Treatment Manager	The organisation, or individual, responsible for all aspects of a treatment listed in the Treatment Schedule of the Bushfire Risk Management Plan, including coordinating or undertaking work, monitoring, reviewing and

²⁶ Australasian Fire and Emergency Service Authorities Council 2012, *AFAC Bushfire Glossary*, AFAC Limited, East Melbourne

²⁷ Australasian Fire and Emergency Service Authorities Council 2012, *AFAC Bushfire Glossary*, AFAC Limited, East Melbourne

reporting.

Treatment Priority	The order, importance or urgency for allocation of funding, resources and opportunity to treatments associated with a particular asset. The treatment priority is based on an asset's risk rating.
Treatment Schedule	A report produced within the Bushfire Risk Management System that details the treatment priority of each asset identified in the Bushfire Risk Management Plan and the treatments scheduled.
Treatment Strategy	The broad approach that will be used to modify risk, for example fuel management.
Treatment Type	The specific treatment activity that will be implemented to modify risk, for example a prescribed burn.
Vulnerability	The susceptibility of an asset to the impacts of bushfire.

9. Common Abbreviations

APZ	Asset Protection Zone
BRMP	Bushfire Risk Management Planning
BRMS	Bushfire Risk Management System
CALD	Culturally and Linguistically Diverse
DEMC	District Emergency Management Committee
DFES	Department of Fire and Emergency Services
ERMP	Emergency Risk Management Plan
FFDI	Forest Fire Danger Index
FMP	Fire Management Plan
GFDI	Grassland Fire Danger Index
GIS	Geographic Information System
HSZ	Hazard Separation Zone
JAFFA	Juvenile and Family Fire Awareness
LEMA	Local Emergency Management Arrangements
LEMC	Local Emergency Management Committee
LG	Local Government
LMZ	Land Management Zone
OBRM	Office of Bushfire Risk Management
P&W	Parks and Wildlife (Department of)
SEMC	State Emergency Management Committee
SLIP	Shared Land Information Platform
WAPC	Western Australian Planning Commission

Appendices

Appendix 1 Communication Strategy



Shire of Collie Bushfire Risk Management Planning Communication Strategy

Version: 1.0

Commencement Date: XXXXXXXX

Document Control

Document Name		Current Version	
Document Owner	Shire of Collie CEO	Issue Date	DD/MM/YYYY
Document Location	Shire of Collie	Next Review Date	DD/MM/YYYY

Related Documents

Title	Version	Date
Shire of Collie Bushfire Risk Management Plan		
		<i>Add as required.</i>

Document History

Version	Date	Author	Section
1.0	XXXXXX	XXXXX	XXXXX

Document Approvals

Role	Name Title, Organisation	Signature	Date
CEO	Shire of Collie		
Director of Development Services	Shire of Collie		
Bushfire Risk Planning Coordinator	Shire of Collie		
Superintendent Bushfire Risk Management	Department of Fire & Emergency Services		

Distribution List

Position and/or Title	Organisation
Shire of Collie Councillors	Shire of Collie
Chief Executive Officer	Shire of Collie
Director of Development Services	Shire of Collie
Bushfire Risk Planning Coordinator	Shire of Collie

Superintendent Bushfire Risk Management	Department of Fire & Emergency Services
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Amendment List

<i>Add as required.</i>

1 INTRODUCTION

A Bushfire Risk Management Plan (BRM Plan) is a strategic document that outlines the approach to the identification, assessment and treatment of assets exposed to bushfire risk within the Shire of Collie. This Communication Strategy accompanies the BRM Plan for the Shire of Collie. It documents the communication objectives for the BRM Plan, roles and responsibilities for communication, key stakeholders, target audiences and key messages at each project stage, communication risks and strategies for their management, and communication monitoring and evaluation procedures.

2 COMMUNICATIONS OVERVIEW

Communication Objectives

The communication objectives for the development, implementation and review of the BRM Plan for the Shire of Collie are as follows:

1. Key stakeholders understand the purpose of the BRM Plan and their role in the bushfire risk management planning process.
2. Stakeholders who are essential to the bushfire risk management planning process, or can supply required information, are identified and engaged in a timely and effective manner.
3. Relevant stakeholders are involved in decisions regarding risk acceptability and treatment.
4. Key stakeholders engage in the review of the BRM Plan as per the schedule in place for the local government area.
5. The community and other stakeholders engage with the bushfire risk management planning process and as a result are better informed about bushfire risk and understand their responsibilities to address bushfire risk on their own land.

Communication Roles and Responsibilities

The Shire of Collie is responsible for the development, implementation and review of the Communication Strategy. Key stakeholders support local government by participating in the development and implementation of the Communications Strategy as appropriate. An overview of communication roles and responsibilities follows:

Role	Responsibility
Shire of Collie, CEO	Responsible for endorsement of the BRM Plan Communications Strategy
Shire of Collie Bushfire Risk Management Planning Coordinator	Operational-level communication between the Shire, stakeholders and the Department of Fire and Emergency Services
Shire of Collie public relations/media representative	External communication with the local government area

Key Stakeholders for Communication

The following table identifies key stakeholders in bushfire risk management planning. These are stakeholders that are identified as having a significant role or interest in the planning process or are likely to be significantly impacted by the outcomes.

Stakeholder Group or Organisation	Role/Interest in the project	Impacted by the Project Outcomes (High, Med, Low, not at all)	Level of Engagement
Shire of Collie	Significant Role in plan Project Owner	High	Empower
DFES	Significant Role in plan Supportive, advisory	High	Collaborate
Community	Beneficiary	High	Empower
Private Land Holders	Significant Role in plan	High	Empower
Department of Aboriginal Affairs	Heritage sites	Medium	Consult
Main Roads Western Australia	Roads, verges, bridges	High	Involve
Western Power	Power transmission lines	High	Involve
Water Corporation	Water transmission lines and pump infrastructure	High	Involve
Griffin Coal	Coal mines (two) and associated infrastructure	High	Involve
Premier Coal	Coal mine and associated infrastructure	High	Involve
Brookfield Rail	Rail lines and reserves	High	Involve
Public Transport Authority	Rail lines and reserves	High	Involve
Department of Parks and Wildlife	Significant Role in plan Reserve management	High	Collaborate

Department of Water	River reserve management	High	Involve
Telstra	Did not wish to participate	High	Involve
Optus	Did not wish to participate	High	Involve
Vodaphone	Did not wish to participate	High	Involve
South 32	Alumina refinery, conveyor and private forested land	High	Involve
Bluewaters	Privately owned power station and bore fields	High	Involve
Synergy	Two power stations and water supply from bore fields and Harris Dam	High	Involve
J & P Metals	Disused plant	Medium	Involve
Bunbury Fibre	Several plantations throughout Shire	High	Involve
Forest Products Commission	Several plantations throughout Shire	High	Involve
WAPRES	Several plantations throughout Shire	High	Involve
Department of Minerals and Energy	Mineral leases and mine safety	High	Inform
Department of Education	Several primary schools and district high school	High	Collaborate
Motoring South West	Large motor sports complex	High	Involve

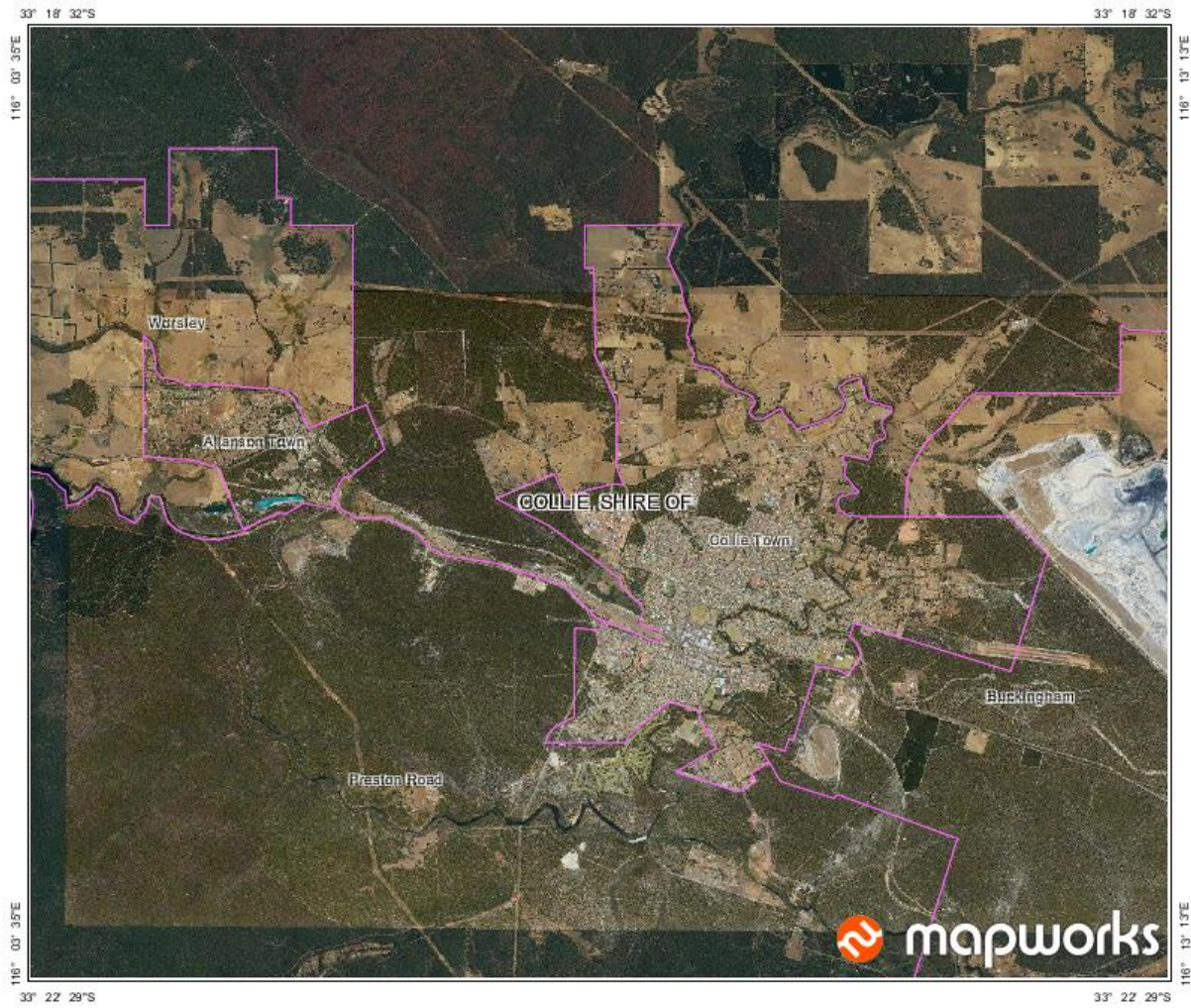
Communications Plan

Timing of Communication	Stakeholder (s)	Communication Objective(s)	Communication Method	Key Message or Purpose	Responsibility	Identified Risks to Communication	Strategy to Manage Risks	Monitoring and Evaluation Method
Development of the BRM Plan								
<i>What is the timeframe or date for this communication?</i>	<i>Who are stakeholders or target audience</i>	<i>Which communication objective(s) does this activity support or achieve?</i>	<i>How are you communicating (e.g. email, meetings) and how often? What resources are required?</i>	<i>What is the key message or purpose that needs to be understood?</i>	<i>Who is responsible for planning and undertaking the communication activity?</i>	<i>What could reduce the effectiveness of the communication?</i>	<i>What will be done to reduce the likelihood of this happening?</i>	<i>How will you know if your communication was successful?</i>
Life of plan	Shire of Collie CEO, Senior Leadership Team and Staff	All (1-5)	Emails Meetings (Quarterly) Shire Website and Intranet	Informed, consulted, accountable or responsible. Review and input into Plan.	BRPC or Director of Corporate & Community Services	Time constraints No clear message Incorrect audience	Careful planning and time management	Feedback, questions and level of support received
Life of plan	Bushfire Advisory Committee (BFAC)	All (1-6)	Meetings (Quarterly) Face to Face (presentations in council chambers)	Engaged in process of BRMP Treatment Schedule and Risk Analysis	BRPC and CESO	Plan not complete Treatments not negotiated Time constraints	Prepare presentation for each BFAC Give updates as required	Feedback, treatments negotiated and supported by committee.
Life of plan	FCO's, BFB Captains, VFRS	All (1-5)	Meetings organised with	Engaged in process of BRMP	BRPC	Time constraints	Careful planning and time management	Feedback, support for

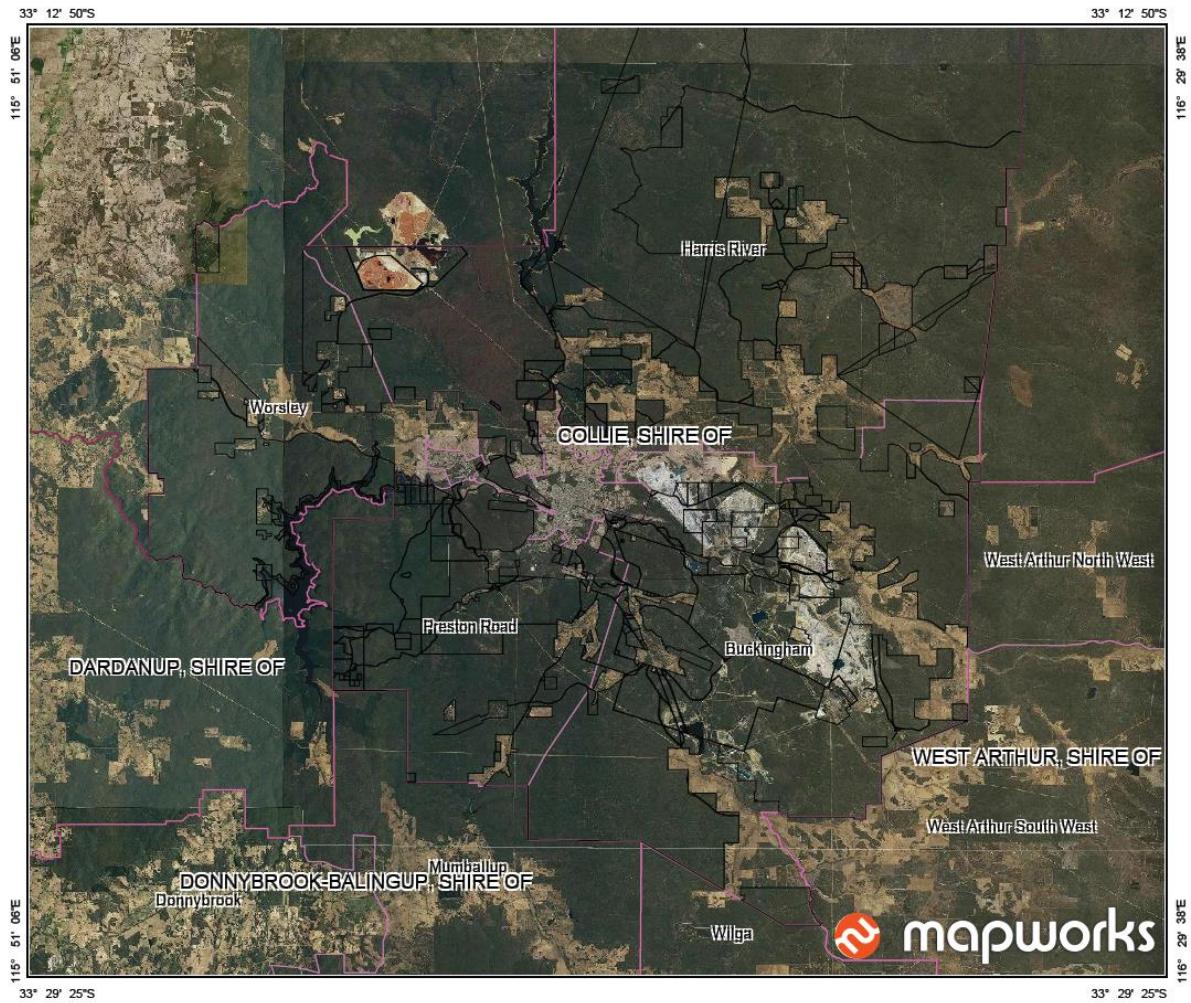
	Captains		Each brigade or as required	Identify Risk, and share information	CESO	No plan, unorganised Availability of volunteers	Express value of meeting	BRMP process Engaged
Life of plan	Home Owners Land Managers & Interest groups or businesses	1 & 2	Media (Newspaper) Shire Website Face to face meetings Community workshops and forums	Inform of the BRMP process Identify valued assets Identify existing controls	BRPC/BRMO	Media not reaching majority Workshops and forums could get abstracted by other agendas	Newspaper and website details Chair meetings with strict agenda and purpose	Engaged throughout process Feedback received Success of outcomes
Life of plan	State Agencies, Service providers and other Stakeholders (WP, WC, National Trust etc.)	All (1-5)	Emails Face to Face Meetings Telephone	Inform of BRMP process Identify assets at risk Identify existing controls/programs	BRPC/BRMO	Time constraints and travel Level of interest and engagements in process	Select appropriate channel of communication Prepare materials and good planning	High engagement and participation levels Good feedback and interest in program
Implementation of the BRM Plan								
Life of plan	Shire of Collie CEO, Senior Leadership Team and Staff	All (1-5)	Emails Meetings (Quarterly) Shire Website.	Informed, consulted, accountable or responsible. Review and input into Plan. Progress to plan	BRPC, or Director of Development Services	Time constraints Availability Lack of understanding Budget (for LG mitigation)	Careful planning and time management Clear purpose Clear communication and regular updates	Feedback, questions and level of support received

Life of Plan	Stakeholder group	All (1-5)	Emails Website Telephone	Informed, consulted, accountable or responsible. Review and input into Plan. Progress to plan	BRPC/BRMO	Availability Located out of local/district area Commitment lost	Well planned and executed sharing of information Negotiations conducted	Feedback and commitment received to implement agreed controls Highly engaged
Life of Plan	BFAC Meetings	All (1-5)	Meetings (Quarterly) Face to Face (presentations in council chambers)	Report on progress to plan Report issues/constraints	BRPC/BRMO	Poor communication from stakeholders and LG on completion of works	Collate data and report on success to plan Compliance to plan	Good feedback received on works FCO's pleased with work to date
Review of the BRM Plan								
Yearly (Shire) 5 Yearly (Shire, DFES and OBRM)	Shire of Collie CEO, Councillors and Staff OBRM, BRMO, BRMB, BRPC & LG Council	All (1-5)	Email Meetings	Review, Monitor and Reporting Endorse plan Compliance to plan and acceptance of risk	BRPC/BRMO	Poor reporting and recording of information Review not completed by BRMB and OBRM	BRPC & BRMO to record data and information appropriately Approved by BRMB and OBRM for LG	Feedback from Council received Work completed as a result of plan Good reporting
Quarterly	Shire of Collie	All (1-5)	Email	Report on actions and key performance indicators for BRMP process	BRPC	Objectives not clearly set out Key actions not identified	Discuss with Shire CEO and Director Clear objectives set	Good reporting and feedback from CEO and Director on work completed

Appendix 2 Planning Area Maps



Collie Town and Allanson Town Planning Areas



Shire of Collie Planning Areas

Appendix 3 Local Government-Wide Controls, Multi-Agency Treatment Work Plan

Control	Action or Activity Description	Lead Agency	Other Stakeholder(s)	Notes and Comments	
01	Shire of Collie, Local firebreak and hazard reduction laws (<i>Bushfires Act 1954</i>)	Annual Firebreak and Fuel Reduction Notice	Local Government	FCO's, brigades and land owners	Local law established to ensure land owners understand and comply to firebreak specifications as well as appropriately reducing fuel load and risk on their properties. Firebreak Notice reviewed annually. Rangers inspect compliance to the notice and fines apply if non-compliant.
02	Shire of Collie Prohibited and Restricted burn times (<i>Bushfires Act 1954</i>)	Annual Firebreak and Fuel Reduction Notice	Local Government	Chief BFCO, Rangers and the public.	Prohibited and restricted burn times are designed to reduce the risk during very high to catastrophic fire danger rating days. Notice reviewed annually and dates can be subject to change as required by the Chief and Deputy FCO's.
03	Shire of Collie mitigation works	The Shire's Parks and Gardens team has annual works programs to reduce fuel load and remove hazards.	Local Government	Public (reporting hazards and concern of risk). The Shire's Emergency Services Team.	Tracked through the Shire's <i>QGIS</i> mapping system, the Parks & Gardens team targets work on town sites with highest population and/or as identified by the BRM Plan process. Work includes, slashing, spraying, mulching, pruning and other mechanical treatments.
04	Shire of Collie, Burn Program (annual indicative plans)	Local Government has annual burn plans for Shire owned land or vested/managed reserves.	Local Government	DFES, P&W, Local brigades, Public	The BRPC of the Shire is tasked with Bushfire Mitigation on Shire reserves. Annual burn plans are available. The BRMP will now prioritise the reserves for hazard reduction burns. Shire BRPC is currently recording the information via <i>QGIS</i> .
05	Land sub-division & building (WAPC)	Requirement for estate, sub-division, and other Fire Management Plans	Local Government	Local Brigades, contractors and FCO's	Land developers are required to implement a Fire Management Plan to ensure risk is managed and other controls implemented and monitored on an annual basis.
06	Planning in Bushfire Prone Areas	Planning in bushfire prone areas. E.g. State Planning Policy 3.7 and standards.	WAPC	LG, DFES, P&W, land owners	Foundation for land use planning. Directs how land use should address bushfire risk management in WA. It aims to preserve life and reduce impact on property and infrastructure. The Shire aligns its policy and standards with SPP 3.7. BAL assessments are required.

Control	Action or Activity Description	Lead Agency	Other Stakeholder(s)	Notes and Comments	
07	State-wide arson prevention programs	Education and awareness campaigns exist across the state for arson.	WA Police	DFES, LG	Participation as required. The Shire participates in campaigns for arson prevention.
08	Bushfire Ready Groups	Public preparedness and education campaign	DFES	LG, local brigades	One bushfire ready facilitator is in the Shire. Working together with DFES and LG community engagement teams to better prepare the community for bushfire events. Street meets and phone trees have been implemented as a result as well as safe winter burn demonstrations and workshops.