



# Bushfire Risk Management Plan 2024 - 2026



Office of Bushfire Risk Management

Bushfire Risk Management Plan endorsed XX Month 20XX

Shire of Chittering Bushfire Risk Management Plan (BRM Plan) approval XX Month 20XX

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## Document Control

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## Document Endorsements

This Bushfire Risk Management Plan has been endorsed by the Office of Bushfire Risk Management as consistent with the standards detailed in the Guidelines for Preparing a Bushfire Risk Management Plan 2023.

The approval of the Bushfire Risk Management Plan by the Shire of Chittering signifies support of the plan’s implementation and commitment to working with risk owners to manage bushfire risk. Approval does not signify acceptance of responsibility for risk, treatments or outcomes on land that is not managed by the Shire of Chittering.

| Local Government    | Representative        | Signature | Date |
|---------------------|-----------------------|-----------|------|
| Shire of Chittering | CEO, Melinda Prinsloo |           |      |

## Publication Information

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## ACKNOWLEDGEMENT OF COUNTRY

*The Shire of Chittering wish to acknowledge the traditional custodians of the land within the Shire of Chittering, the Yued and Whadjuk peoples. We would like to pay respect to the Elders of the Nyoongar nation, past and present, who have walked and cared for the land. We acknowledge and respect their continuing culture, and the contributions made to this region.*



# 1. INTRODUCTION

## 1.1. Background

This Bushfire Risk Management (BRM) Plan provides contextual information to inform a structured approach to identifying, assessing, prioritising, monitoring and treating bushfire risk. The BRM Plan has been prepared by the Shire of Chittering, encompasses all land within the Shire of Chittering and has been written on behalf of all stakeholders within that area. The BRM Plan is informed by consultation and communication with land and asset managers that has occurred throughout its development to ensure an informed and collaborative approach to managing bushfire risk.

The BRM Plan has been prepared with due consideration of the requirements stated in the *Guidelines for Preparing a Bushfire Risk Management Plan* (the Guidelines) published by the Office of Bushfire Risk Management (OBRM) including the principles described in *ISO 31000:2018 Risk Management*.

## 1.2. Objective of the Bushfire Risk Management planning program

The BRM planning program supports local governments to reduce the threat posed by bushfire. The Shire of Chittering BRM Plan will contribute to achieving the objective of the BRM program by:

- Guiding and coordinating a cross-tenure, multi-stakeholder approach to BRM planning.
- Facilitating the effective use of the financial and physical resources available for BRM activities.
- Supporting integration between risk owners, strategic objectives and tactical outcomes.
- Documenting processes used to monitor and review the implementation of treatments to ensure risk is managed to an acceptable level.

## 1.3. Legislation, policy and standards

Legislation, policy and standards that were applied in the development of this BRM Plan can be found in the *Bushfire Risk Management Planning Handbook – Appendix 1 – Summary of Related Legislation, Policy and Guidelines*.

Additional references relevant to the development and implementation of the BRM Plan are listed below:

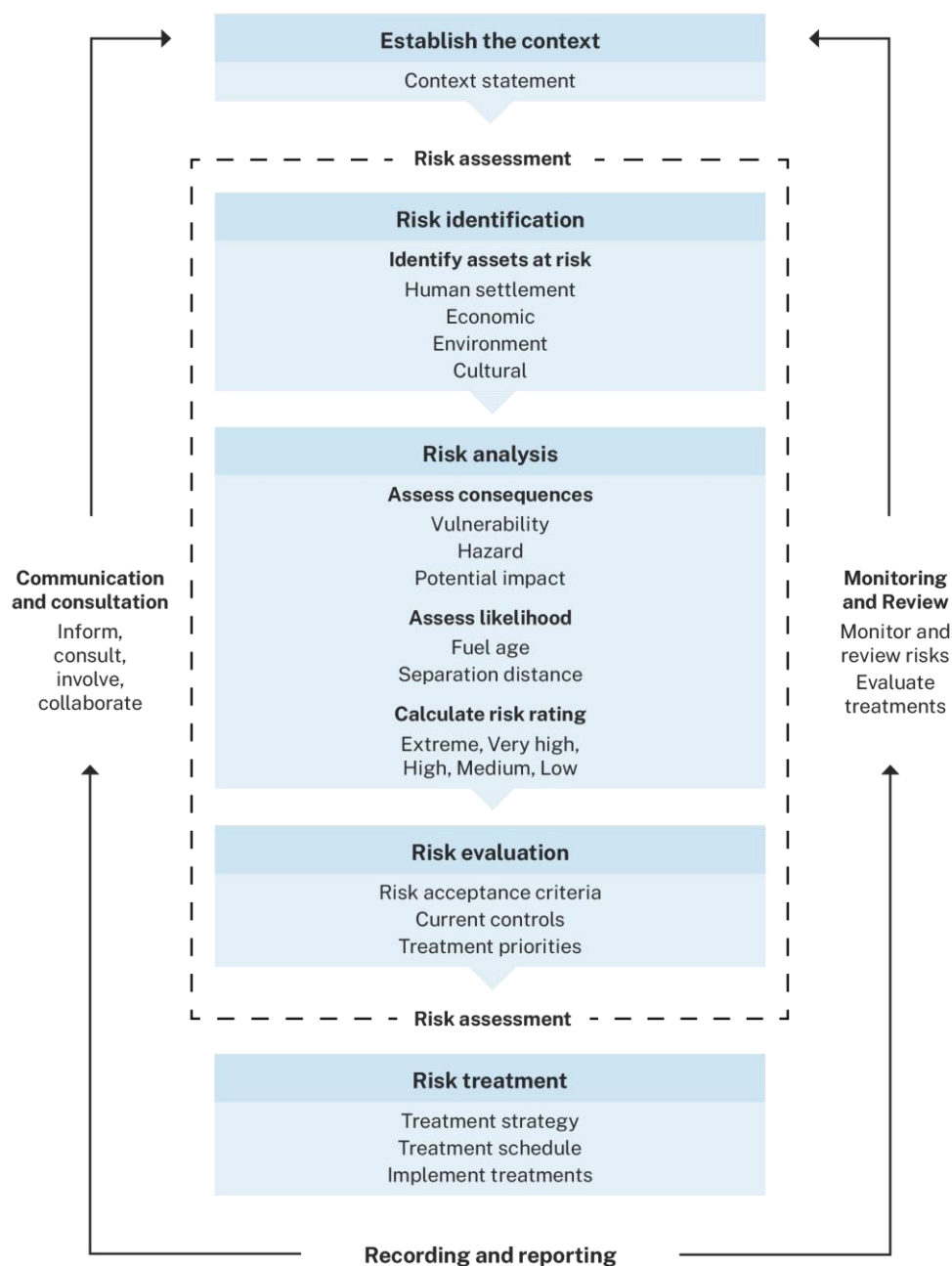
- Guide to Mechanical Bushfire Mitigation (DFES 2023)
- Shire of Chittering Firebreak and Bushfire Hazard Reduction Notice (Annual)
- Shire of Chittering Strategic Community Plan 2024-2034
- Shire of Chittering Corporate Business Plan 2024-2028
- Shire of Chittering Community Development Plan 2014-2024
- Shire of Chittering Local Biodiversity Strategy 2022
- Shire of Chittering Community Engagement Framework 2020
- Shire of Chittering Local Planning Strategy 2019
- Shire of Chittering Local Emergency Management Arrangements 2018
- Shire of Chittering Risk Management Policy 2023
- Shire of Chittering Verge Maintenance Policy 2022
- Shire of Chittering Bush Fire Control Policy 2021
- Shire of Chittering Firebreak and Property Inspection Strategy 2023
- Shire of Chittering Bush Reserves Risk Assessment 2014

## 2. THE RISK MANAGEMENT PROCESS

The BRM planning process is a cycle of understanding the context and assessing and treating risks (Figure 1). Each of these steps is informed by communication and consultation and supported by monitoring and review. The three products produced during the BRM planning process are the BRM Plan, Asset Risk Register and Treatment Schedule (Figure 1).

Further details on the guiding principles and process for the development of this plan can be found in Chapter 2 of the Guidelines.

Figure 1 The Bushfire Risk Management planning process



## 2.1. Roles and responsibilities

The roles and responsibilities of the key stakeholders involved in the development of the BRM Plan are outlined in Table 1.

Table 1 Roles and responsibilities in the Bushfire Risk Management (BRM) planning process

| Stakeholder*   | Roles and responsibilities   |
|--|--|
| <b>Local government</b>  | <ul style="list-style-type: none"><li>• Custodian of the BRM Plan.</li><li>• Coordinate the development and ongoing review of the BRM Plan.</li><li>• Undertake bushfire risk assessment of local government area.</li><li>• Submit the draft BRM Plan to OBRM for review and endorsement.</li><li>• Develop and implement a Treatment Schedule for local government managed land.</li><li>• Encourage risk owners to treat identified risks.</li></ul>  |
| <b>DFES</b>  | <ul style="list-style-type: none"><li>• Contribute to the development and implementation of the BRM Plan.</li><li>• Facilitate involvement of state and federal government agencies in the BRM planning process.</li><li>• Undertake treatments on Unmanaged Reserves and Unallocated Crown Land within gazetted town sites.</li><li>• By agreement, implement treatment strategies for other land managers.</li><li>• Endorse BRM Plans consistent with the Guidelines, BRM Program and dynamic risk environment.</li><li>• Administer the Mitigation Activity Fund Grants Program.</li></ul> |
| <b>Department of Biodiversity, Conservation and Attractions (DBCA)</b>       | <ul style="list-style-type: none"><li>• Contribute to the development of the BRM Plan.</li><li>• Implement their treatment program on DBCA managed land.</li><li>• Provide advice on environmental assets and appropriate treatment strategies for their protection.</li></ul>   |
| <b>Department of Planning, Lands and Heritage</b>                            | <ul style="list-style-type: none"><li>• Identify managed assets.</li><li>• Provide advice on management of Aboriginal Cultural Heritage.</li></ul>   |
| <b>Other State and Commonwealth Government agencies and public utilities</b> | <ul style="list-style-type: none"><li>• Identify managed assets.</li><li>• Provide advice on current risk treatment programs.</li><li>• Contribute to the development of BRM Plans.</li><li>• Undertake treatments on lands they manage.</li></ul>   |
| <b>Corporations and private landowners</b>                                   | <ul style="list-style-type: none"><li>• Identify managed assets.</li><li>• Provide advice on current risk treatment programs.</li><li>• Undertake treatments on lands they manage.</li></ul>   |

## 2.2. Communication and consultation

Communication and consultation are fundamental to the development, implementation and review of the BRM Plan. A Communication Plan describing communication with relevant stakeholders at each stage of the BRM planning process is at Appendix B – Communication Plan. A record of engagement with stakeholders is also maintained in the Shire of Chittering's communications log located at Appendix B – Communication Plan.

## 3. ESTABLISHING THE CONTEXT

### 3.1. Strategic and corporate framework

The BRM Plan has been developed to identify strategies to effectively plan for and mitigate the potential adverse effects of bushfire within the Shire. Responsibility for the BRM Plan process sits with the Shire of Chittering Chief Executive Officer (CEO) however, the management and implementation of the plan is the responsibility of the Executive Manager Development Services. The Shire of Chittering's responsibility is to facilitate the management and reduction of bushfire risk to the community as supported by the provision of this plan and through the effective engagement and involvement of relevant stakeholders.

The establishment of the BRM Plan will help inform the Chittering Bush Fire Advisory Committee (CBFAC) and Local Emergency Management Committee (LEMC) in relation to the current risk the community faces from the impact of bushfire. The BRM Plan will also support the emergency risk management process associated with the Local Emergency Management Arrangements (LEMA) to provide a treatment against the broader hazard, fire.

The BRM Plan plays an integral part of the Shire's Strategic Community Plan which had a minor review in 2024 and represents the Shire's approach to planning. It sets out the vision and aspirations for the community over a 10-year period, and strengthens the Shires capacity to achieve its overall vision - "Prosperous and diverse rural communities living in harmony with nature", through the following key Community Aspirations:

#### **Inclusive, Active, and Resilient Community.**

Achieving the aspiration of evolving into an inclusive, active, and resilient community where every member feels safe, valued, supported, and empowered to thrive requires a multifaceted approach that addresses various aspects of community life.

- 1.1 Cultural Diversity and Heritage
- 1.2 Safety and Well-Being
- 1.3 Social Services and Support Systems
- 1.4 Empowerment and Skill-Building
- 1.5 Resilience and Adaptability
- 1.6 Celebration of Achievements & Milestones

#### **Sustainable and Environmentally Responsible Future.**

Achieving a more sustainable and environmentally responsible future, while preserving natural resources and ecosystems for current and future generations, requires a concerted effort across multiple fronts.

- 2.1 Promoting Sustainable Practices
- 2.2 Conservation and Preservation
- 2.3 Environmental Education and Awareness
- 2.4 Resource Management & Planning
- 2.5 Conservation and Habitat Preservation

### **Balance Between Development and Conservation.**

Achieving a balance between development and conservation, while simultaneously enhancing infrastructure, town aesthetics, and recreational opportunities, requires a thoughtful and integrated approach that considers the needs of both present and future generations.

- 3.1 Integrated Planning & Design
- 3.2 Smart Growth and Sustainability Development
- 3.3 Infrastructure Investment & Enhancement
- 3.4 Country Charm & Rural Design
- 3.5 Recreation Opportunities for All

### **Stimulate Sustainable Economic Growth.**

Achieving the goal of stimulating sustainable economic growth, promoting local businesses and employment opportunities, and enhancing the Shire's appeal as a destination for visitors and tourists requires a comprehensive and collaborative approach.

- 4.1 Support Local Businesses
- 4.2 Investing in Tourism Infrastructure
- 4.3 Promoting Tourism
- 4.4 Encouraging Sustainable Business Practices
- 4.5 Fostering Stakeholder Collaboration
- 4.6 Empowering Small Businesses
- 4.7 Enhancing Visitor Experience

### **Council Accountability and Transparency.**

Achieving the goal of strengthening the Council's commitment to accountability, transparency, and responsible financial management, while empowering residents and stakeholders to participate in the decision-making process and shape the future direction of the Shire, requires a multifaceted and collaborative approach.

- 5.1 Enhancing Accountability & Transparency
- 5.2 Responsible Financial Management
- 5.3 Community Engagement and Participation
- 5.4 Building Trust & Transparency
- 5.5 Collaborative Decision-Making
- 5.6 Continuous Improvement & Evaluation

The outcomes identified within the BRM Plan, along with the objectives outlined within the Shire's Strategic Community Plan, Corporate Plan, Local Planning Strategy, and the Local Biodiversity Strategy, will help guide future planning within the Shire and assist in prioritising mitigation works to ensure a safer community.

### 3.2. Land use and tenure

The Shire comprises the localities of Bindoon, Lower Chittering, Mooliabeenee, Muchea, Chittering, and Wannamal. Much of the tenure within the Shire is private property making up 94% of the Shire and comprises residential and small semi-rural lifestyle lots up to larger horticultural and agricultural farming properties (Figure 2). Table 2 below outlines the breakdown of key land managers and area percentage within the Shire.

There are some challenges in addressing bushfire risk on such a large expanse of private property due to the reliance on property owners managing risk on their own land. The enforcement and education of the *Bush Fires Act 1954* can assist to a degree however, this also requires adequate resources within the Shire to monitor and implement across 3065 individual privately owned properties.

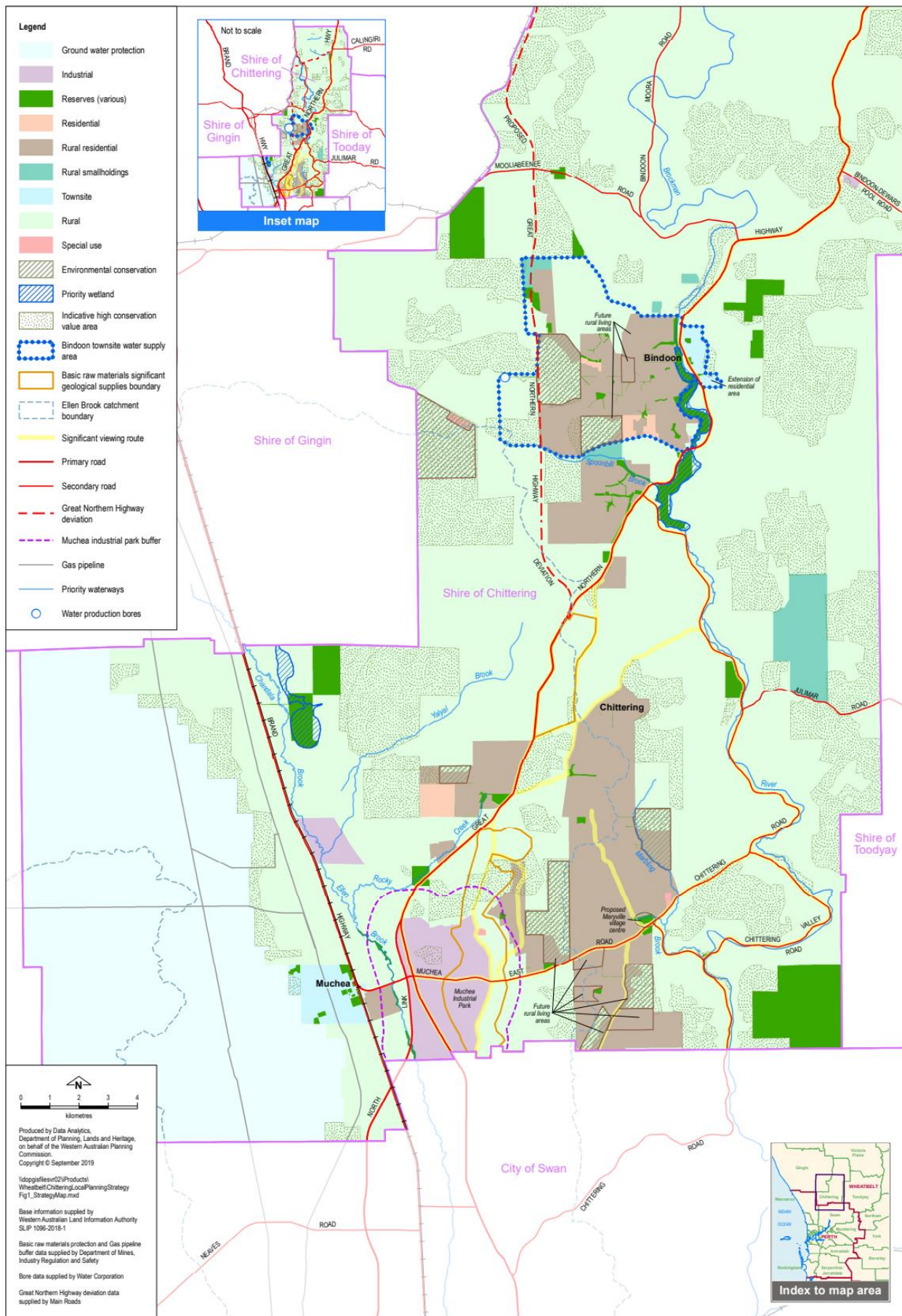
The involvement of private property owners through community engagement avenues is a continual process and a priority within the Shire as detailed in 3.11.6 Community Engagement. The aim is to educate and inform community members and promote proactive measures to address bushfire risk. The majority of private properties contain residential dwellings and outbuildings, with many of the larger horticultural and agricultural properties also housing machinery sheds with a vast amount of high value equipment.

The Shire has management responsibility over a number of reserves which are included in the Shire of Chittering Bush Reserves Risk Assessment 2014. These reserves are managed with mitigation treatments as identified through the BRM planning process. Similarly, the Department of Biodiversity, Conservation and Attractions (DBCA) maintains an ongoing mitigation program for land under their management.

Table 2 – Summary of land management responsibilities within the Shire of Chittering

| Land Manager   | Hectares   | Local Government Area (%) |
|--|------------|---------------------------|
| Shire of Chittering                                      | 4208.66    | 3.3                       |
| Private  | 114,726.99 | 94                        |
| Department of Biodiversity, Conservation and Attractions | 2891.17    | 2.3                       |
| Forest Products Commission                               | 418        | 0.3                       |
| Australian Defence Force                                 | 158.59     | 0.1                       |
| Main Roads Western Australia                             | 3.66       | 0.003                     |
| Arc Infrastructure                                       | 1.23       | 0.001                     |
| Total  | 121,990.3  | 100%                      |

Source: Shire of Chittering

Figure 2 Land use in Shire of Chittering<sup>1</sup>

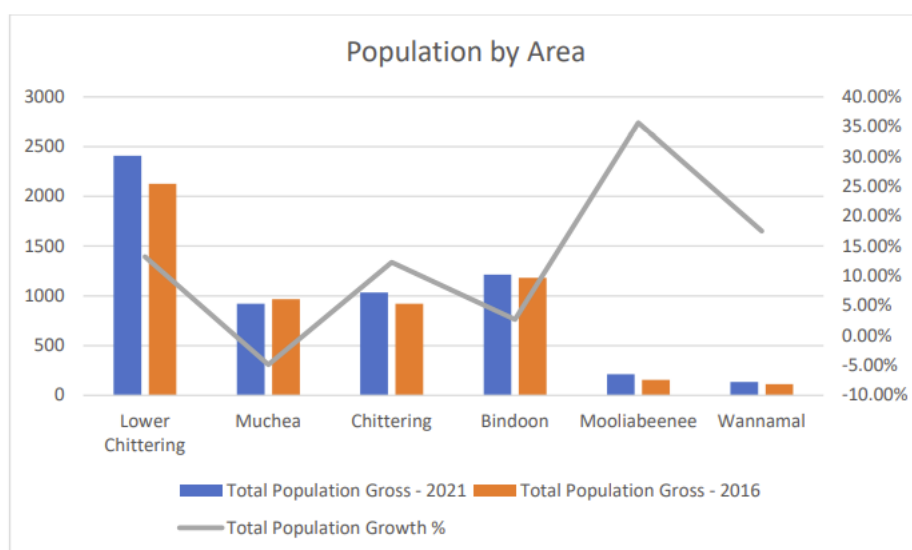
<sup>1</sup> Shire of Chittering Local Planning Strategy 2019

### 3.3. Community demographics and values

The Shire has approximately 5,930 people residing in the area represented in Figure 3. The majority of people live in Lower Chittering (2,408 people), followed by Bindoon (1,215 people) and Chittering (1,034 people).

Over the past five years, the largest growth in number of people has been in Lower Chittering, where now over 40% of the shire's population reside. It is expected to see Lower Chittering and Bindoon continue to grow, however due to the Wildflower Ridge Estate in Chittering – located in a semi-rural landscape, this area is set to have large growth over the coming five years. WA Tomorrow is predicting 7,570 people will be living in the Shire by 2026.

Figure 3 Population by area within Shire of Chittering<sup>2</sup>



The Shire has an aging community with 17% of the population over the age of 65.<sup>3</sup> The vulnerability of these residents increases as they age in terms of mobility and other faculties that may diminish or fail. Additional support is often required whether that be through family or friends assisting with fire season preparation or in times of emergency. The latter can often put a lot of pressure and anxiety on those involved ensuring evacuation facilities are suitable and appropriate medical facilities are available. Promoting community resilience, such as the use of phone trees, provides a network of community support for those who require it, particularly the aging community.

In a Shire of Chittering services satisfaction and importance survey conducted in 2022, 95% percent of the community indicated fire prevention was an important or vital service; and 90% of the community also regard volunteer bush fire brigades as an important or vital service.

The main language spoken at home is English with 99.67% of the population only speaking English or speaks English well/very well. For many of the remaining, English is the second language.<sup>4</sup>

Over recent years residents purchasing property in Chittering are seeking a semi-rural community lifestyle with pristine natural environment whilst still maintaining an expectation to have access to services and facilities equivalent to the metropolitan area. An ever-increasing number of people are commuting to Perth for work and there is a high level of absentee landowners who perhaps are in a transition, gradually relocating from metro to country or establishing a retirement hideaway. This

<sup>2</sup> Australian Bureau of Statistics 2021 Census

<sup>3</sup> Australian Bureau of Statistics 2021 Census

<sup>4</sup> Australian Bureau of Statistics 2021 Census

absenteeism can often cause difficulty in communicating important bushfire related messages or gaining interest from them to be engaged within the community.

Through living and working in a rural environment, most long-term residents of the Shire are acutely aware of the threat from bushfire with most having experienced and possibly fought a bushfire directly or at least been deeply concerned as a bushfire passed close by. The on-going community and historical association with bushfire and the availability of information through modern communication sources means residents are connected and increasingly more bushfire informed than ever before.

Many agricultural properties are self-sufficient, to some extent, being equipped with their own firefighting equipment and appliances, and as with most rural communities, an atmosphere of neighbour helping neighbour exists with extensive phone trees and social media being used to keep each other informed of potential risk, direct threat and actions being carried out or required.

Preparedness is obvious on many rural properties with low fuel protection zones and firefighting measures in place surrounding assets and dwellings for immediate use when required. The Shire of Chittering administration office, social media platforms and library together with its local Bush Fire Brigades are an information source for all residents and property owners.

High population growth rates in Lower Chittering and Bindoon see new people moving to the Shire with less awareness of bushfire risk, this presents the challenge of having to constantly address community education needs regards bushfire related matters. Many property owners in these areas have not experienced a bushfire and their level of knowledge, experience, preparedness, ability and resilience is less known but community education measures are being taken to address this, including bushfire ready newsletters; development of educational resources; and a welcome letter for new property owners that provide bushfire related information and key contacts.

### **3.4. Cultural heritage**

Noongar people are the traditional owners of the south-west region of Western Australia and have a profound physical and spiritual connection with their boodjar (land/country). Noongar heritage provides an essential emotional, physical and spiritual link to their traditions, culture, practices and identity; therefore the protection of Noongar heritage is important.<sup>5</sup>

The Shire of Chittering is located on the ancient country of the Whadjuk and Yued Noongar people. Whadjuk Traditional Owners cover the southern third of the Shire and Yued Traditional Owners cover the remaining northern portion (Figure 4). The traditional knowledge held by the Whadjuk and Yued people is valuable in enhancing contemporary land management practices.

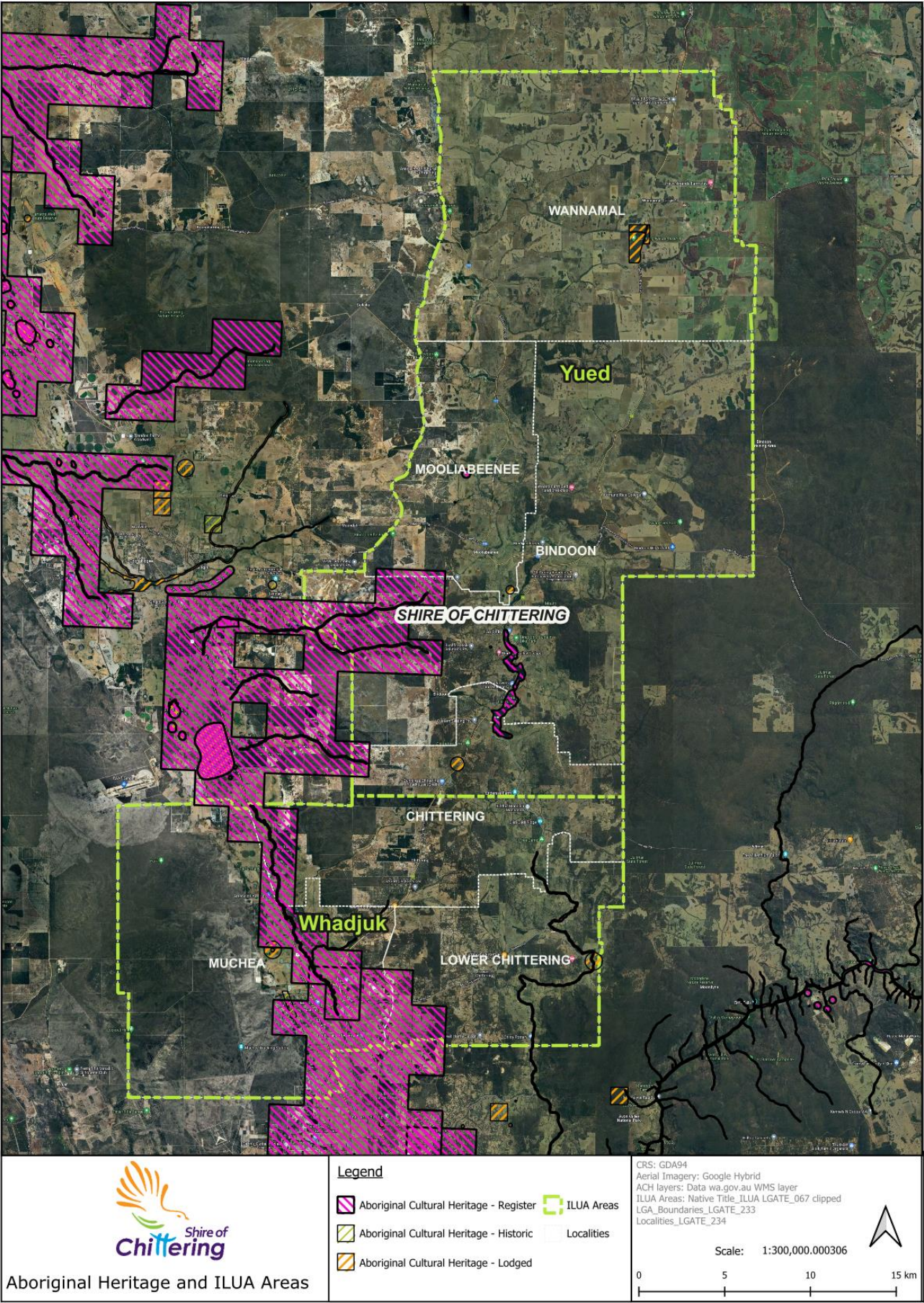
Within the Shire, ten registered sites are protected under the *Aboriginal Heritage Act 1972* with a further thirteen sites lodged for assessment however, it is likely that other Aboriginal sites exist that are currently not recorded (Figure 4). The significance of these sites relates primarily to the chain of water sources and camp sites across the landscape used on their travels, and their associated dream time stories of the area. The types of places recorded in the Aboriginal Cultural Heritage Inquiry System (ACHIS) include artefacts/scatters; camps; creation/dreaming; landscape features; water sources; hunting; plant resource; burial; and meeting place.<sup>6</sup> Extracts from the ACHIS detailing registered and lodged sites can be found in Appendix C – Aboriginal Cultural Heritage.

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<sup>5</sup> DBCA Forest Management Plan 2024-2033

<sup>6</sup> Aboriginal Cultural Heritage Inquiry System 22/03/2024

Figure 4 Aboriginal Heritage and ILUA Areas



The Shire is working towards engaging with the relevant elders from the Yued and Whadjuk people to bring an increased awareness and participation in relation to planning and implementing bushfire mitigation activities to ensure no harm will occur to Aboriginal cultural heritage sites. This engagement is in its early stages, with attempts still occurring to identify the most appropriate Traditional Owner contacts. Much of the local history specific to Chittering is still to be discovered. Building relationships with the traditional owners is important and will assist in learning more about the Shire's Aboriginal heritage significance, it will also enable open efficient communication during bushfire response to further protect areas of importance.

Furthermore, the registered historic Chittering Brook Road Board Office located on Teatree Road holds significance to the local community as it represents the early growth and prosperity of Chittering and the surrounding districts in the 1920's<sup>7</sup>. There are also a number of other buildings of importance in close proximity including the stone built Holy Trinity Anglican Church and the Bindoon and District Historical Museum. These assets are provided with adequate separation distances and maintained by the Shire to reduce the potential impact of fire. Further north in the Shire is the Edmund Rice College which was founded in 1938. The land was originally donated by Mrs. Catherine Musk to be used as a farm school, and still today is a central educational facility for local and boarding children from years 7 to 12.<sup>8</sup> Ongoing communication between the Shire and Edmund Rice College occurs to ensure adequate mitigation is planned and implemented to protect this facility.

### 3.5. Economic activities and industry

The Shire's economy is based on three prominent industries – agriculture, mining and construction, with emerging industries including transport and logistics, and tourism, see

Table 3 for full breakdown of industries<sup>9</sup>.

Table 3 Number of employed people by industry

| Industry  | No of people employed |
|---|-----------------------|
| Agriculture, Forestry and Fishing               | 249                   |
| Mining  | 316                   |
| Manufacturing                                   | 169                   |
| Electricity, Gas, Water and Waste Services      | 41                    |
| Construction                                    | 375                   |
| Wholesale Trade                                 | 100                   |
| Retail Trade                                    | 201                   |
| Accommodation and Food Services                 | 92                    |
| Transport, Postal and Warehousing               | 136                   |
| Information Media and Telecommunications        | 6                     |
| Financial and Insurance Services                | 42                    |
| Rental, Hiring and Real Estate Services         | 29                    |
| Professional, Scientific and Technical Services | 128                   |
| Administrative and Support Services             | 68                    |
| Public Administration and Safety                | 179                   |
| Education and Training                          | 208                   |
| Health Care and Social Assistance               | 248                   |
| Arts and Recreation Services                    | 42                    |
| Other Services                                  | 122                   |
| Inadequately described/Not stated               | 148                   |
| <b>TOTAL</b>                                    | <b>2,893</b>          |

<sup>7</sup> Heritage Council of WA – Places Database

<sup>8</sup> Edmund Rice College – [erc.wa.edu.au/discover/history](http://erc.wa.edu.au/discover/history)

<sup>9</sup> Australian Bureau of Statistics 2021 Census

Chittering is host to broad acre farms in the north with wheat, beef and sheep production, and boutique horticulture in the south supplying citrus, vineyard, vegetable and honey products. On the whole the agriculture industry provides 19.9% of Chittering's Gross Regional Product (GRP) and employs just under a quarter of the shire's workforce<sup>10</sup>. The saleyard at the Muchea Livestock Centre is a key economic resource for farmers within and surrounding the Shire to facilitate livestock sales.

Summer fires have previously occurred and developed into large bush and crop fires fanned by strong winds which have burnt through and destroyed thousands of hectares. These fires can have a significant impact on individual and the collective agricultural business turnover, affecting employment and the local economy, as normal seasonal agricultural and flow on activities are interrupted. Crops may be destroyed by direct flame contact, radiant heat or contaminated by smoke contact in the case of viticulture. Livestock, kilometres of fencing, and equipment may also be destroyed, and main roads freight and access routes may be out of action for weeks, impacting residents, communities and industry further up the line.

Land management activities associated with agricultural farming including stubble burning can escape and have the potential to cause significant impact if not conducted properly.

A large proportion of agricultural businesses and residential assets are combined on the same land tenure and are faced with the same bushfire risks presented by the combination of summer maturing grassland style crops and native bushland. The entire Shire of Chittering has been assessed as Bushfire Prone meaning any structures built prior to 2016 may not be built to the requirements of AS3959-2018 Construction of buildings in bushfire prone areas, unless retrofitted with compliant materials.

Mining (mineral sands) and extractive industry provides 15.5% of Chittering's GRP and 6.8% of jobs in the region, whilst Construction follows closely behind with 15.4% of GRP and 14.2% of the workforce<sup>11</sup>.

Generally, these two industries will require land to be cleared and thus reduce the volume of vegetation in an immediate area however, infrastructure is often situated in isolated locations bringing about a level of vulnerability from the risk of ember attack, radiant heat and access / egress limitations causing disruption to operations in the event of a fire. The storage of highly flammable fuels and chemicals for mining operations also increases the risk to workers, emergency service responders and the environment when impacted by bushfire.

Transport and logistics is a rapidly growing industry following the completion of new road networks including the Tonkin Highway extension and upgrade of the Perth-Darwin Highway. These road networks are relied upon to transport freight and other industry-related material throughout the state. Road closures caused by bushfire can have flow on production delays for local, regional and state based industry.

The opening of the Muchea Industrial Park brings an influx of workers, vehicles and the storage of fuels and other highly flammable chemicals. The park is situated adjacent to broad acre farms containing pasture which has the potential to carry fire close to infrastructure. As all development in this area is recent, it is subject to the requirements of AS3959-2018 Construction of buildings in bushfire prone areas during the planning phase and should be built to withstand the appropriate level of fire impact.

Tourism is another industry on the rise in Chittering with over a quarter of Chittering's young adults (28%) employed in this sector. Chittering's proximity to the metropolitan area with the Tonkin Highways extension entices visitors to the area to enjoy the native wildlife and scenic landscapes Chittering has to offer, together with the fresh produce from the local businesses. The recent opening of the Bindoon Mountain Bike Park is attracting a new demographic to the area and is hoping to increase the number of visitors to the region. The number of short stay accommodation is also on the rise to cater for an increase in visitors, but with this comes added complexities from a bushfire and evacuation perspective.

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<sup>10</sup> Shire of Chittering – Economic Development Strategy 2021-2031

<sup>11</sup> Australian Bureau of Statistics 2021 Census

As with any impact from bushfire, tourism is one of the first to be impacted. People are excluded from the impact area and if the damage is severe enough, this impact could be for an extended period often having an effect on the livelihoods of locals who rely on tourism to keep them afloat.

There are a number of measures being taken to reduce bushfire risk across the shire across all industries which range from fire prevention and mitigation activities, education and community engagement, stakeholder engagement and regulatory enforcement. Further information on these measures can be found in section 3.11 Current bushfire risk management controls.

### **3.6. Topography and landscape features**

The Shire of Chittering has diverse geographic areas including the Swan Coastal Plain, the Darling Scarp and the Dandaragan Plateau (Figure 8). Lower Chittering is historically renowned for its scenic beauty having steep slopes dropping to scenic meandering rivers. The Bindoon countryside is also undulating with rolling hills and a patch work of agricultural and native vegetated areas. The steep slopes and rolling hills in these areas provide for faster moving fires up slope together with access limitations for firefighters. The rivers and creeks provide wicks (Figure 5) for fire to travel through heavy riparian vegetation into townsites and pose environmental concerns with the likelihood of peat and risk of acid sulfate soils.

The Dandaragan Plateau landform is fragmented by rural living precincts and major highways. The arable land is generally of poor quality and mainly used for grazing and isolated pockets of horticulture. There are extensive areas of remnant native vegetation which allow fire to travel close to residential and commercial assets.

The Northern Broad Agricultural Area, covering the area of the Shire north from Mooliabeenee and Bindoon Dewars Pool Roads is mainly used for horticulture as productive soils and moderate water supply are available in the area. Crops are harvested later in the year and as they mature into summer, present a significant bushfire risk. The undulating landscape, large crop sizes and open countryside allow for fast moving wind driven grass fires to escalate quickly.<sup>12</sup>

The Bindoon town site was historically positioned adjacent to the Lake Needoonga water source which is also a part of the Perth water catchment system. The vegetation surrounding Lake Needoonga may, under the right conditions, present a bushfire risk to the Bindoon town site.

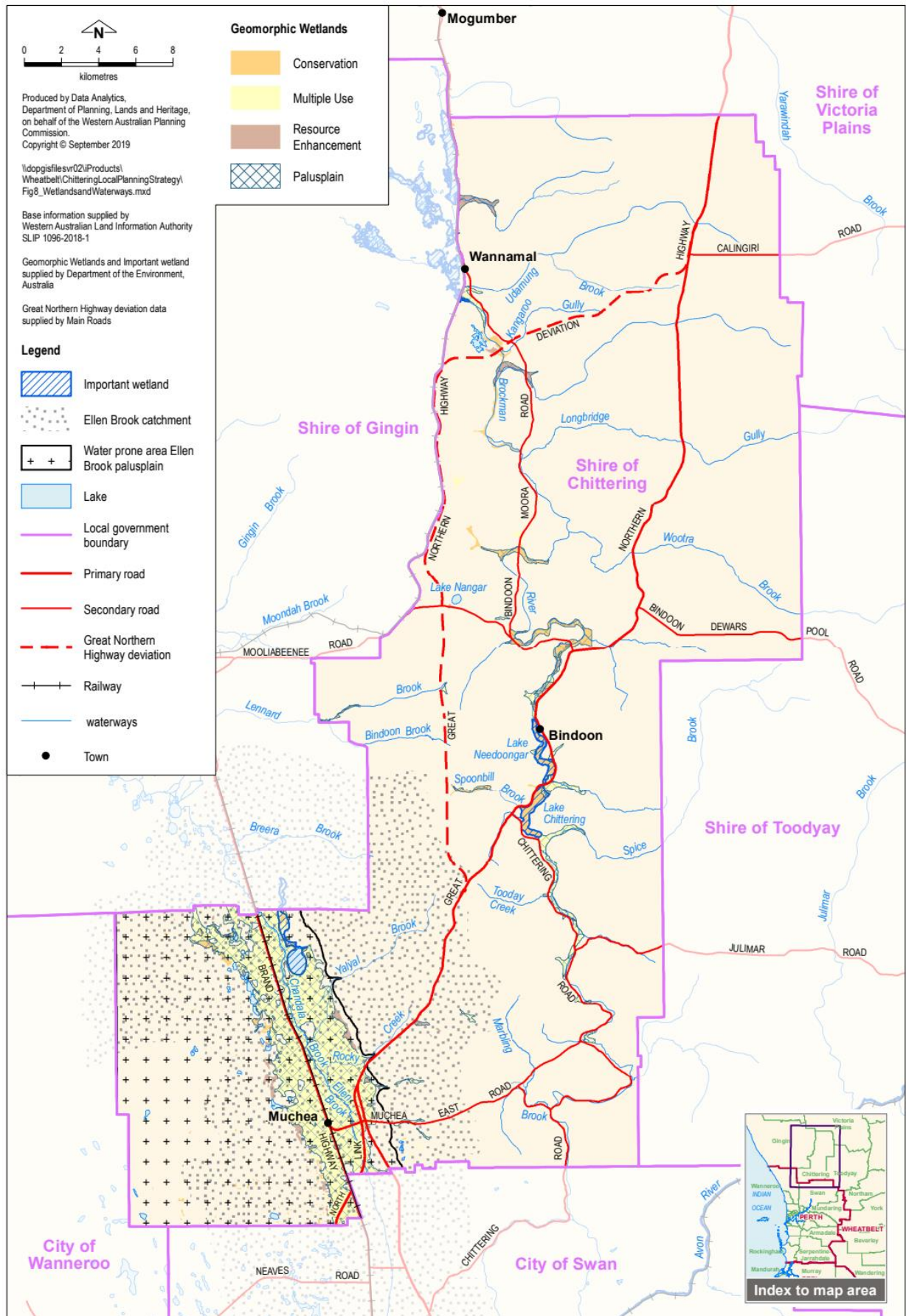
The Chittering Valley landform follows the Brockman River from Bindoon to the southern boundary of the shire and includes areas of steep gradients covered by remnant native vegetation with interspersed grazing and horticulture activities. The diverse terrain can have a dramatic effect on fire behaviour. The gullies and valleys can alter wind flow, establishing localised wind directions and conditions making fire behaviour and direction difficult to predict and respond to. This area is predominantly private property and the steep terrain can present access issues when fires occur. Where possible the majority of private property owners, in complying with the Shire Firebreak Notice and providing adequate firebreaks to their property, have alleviated access issues to some degree.

The Ellen Brook Pallus Plain within the Swan Coastal Plain is an environmentally sensitive area located west of the Gingin Fault. The Muchea town site is located in the south-west corner of the area and is susceptible to the passage of bushfires emanating from neighbouring Banksia Woodlands driven by afternoon southerly through to westerly prevailing winds. Topography in this area has little effect on bushfire behaviour and the woodland is under a management plan which includes an extensive firebreak network and mosaic prescribed burning plan.

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<sup>12</sup> Parks & Wildlife Northern Forest Region Management Plan 1997

Figure 5 Wetlands and waterways providing potential fire wicks



### 3.7. Climate and weather

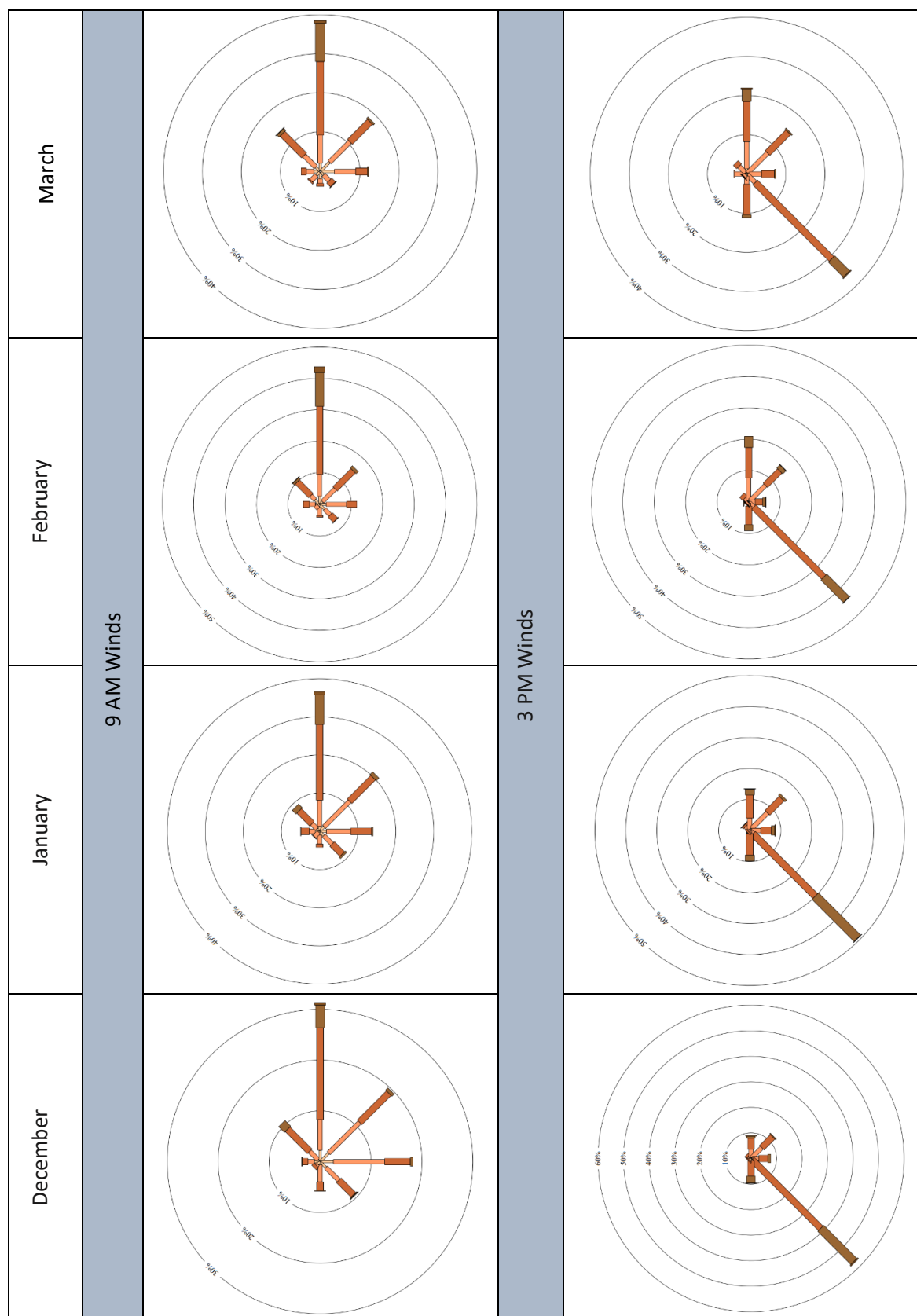
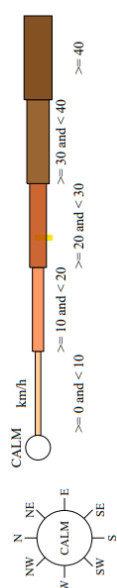
The Shire of Chittering experiences a Mediterranean climate with cool wet winters and warm dry summers. Rainfall largely occurs from late autumn through to spring with an average annual rainfall of 628.3mm.<sup>13</sup> This rainfall supports substantial vegetation growth during the winter and spring months which dries during late spring and into summer. The combination of prevailing winds during the warmer months, (predominantly morning easterly winds followed by afternoon west/south westerly winds) and desiccated vegetation increases bushfire risk. The bushfire season is generally considered to be from October through to April and while prescribed burning usually occurs from April through to October, mechanical and chemical treatments are more conducive to implementing at relatively short notice across much of the year. All treatment implementation is subject to seasonal weather conditions and planning is important to ensure appropriate treatments are scheduled to maximise the benefit of the treatment while not causing additional risk in doing so.

The Shire is subject to seasonal climatic variables and weather conditions including periods where lack of winter rainfall may constitute drought conditions. Irregular summer storms emanating mostly from tropical cyclones in the north of the State may produce dry lightning and high winds in the outer metropolitan area, increasing the potential risk of wildfires and erratic fire behaviour in the area. The climatic data depicted in Table 4 and Table 5, and supported by Figure 6 and Figure 7 highlight the elevated temperatures, low relative humidity and strength in the prevailing winds during the summer months that create an elevated fire risk for the Shire.

Table 4 Average Summer Climate Data (Gingin Aero Club) 1996-2024

| Month           | Mean Maximum Temperature | Decile 9 Maximum Temperature | Maximum Temperature | Mean 3pm Relative Humidity | Mean Monthly Rainfall (mm) | Mean 3pm Wind Speed |
|-----------------|--------------------------|------------------------------|---------------------|----------------------------|----------------------------|---------------------|
| <b>December</b> | 31.0°C                   | 38.8°C                       | 45.3°C              | 35 %                       | 9.2                        | 25.9 km/h           |
| <b>January</b>  | 33.3°C                   | 39.7°C                       | 44.5°C              | 33 %                       | 14.1                       | 25.5 km/h           |
| <b>February</b> | 33.3°C                   | 39.5°C                       | 46.3°C              | 33 %                       | 14.0                       | 24.3 km/h           |
| <b>March</b>    | 30.8°C                   | 36.9°C                       | 43.0°C              | 35 %                       | 18.1                       | 22.4 km/h           |

<sup>13</sup> Bureau of Meteorology (Gingin Aero Weather Station) average rainfall 1996-2024

Table 5 Gingin Aero 9am and 3pm fire season wind roses, average speed and direction<sup>14</sup>

<sup>14</sup> Bureau of Meteorology Climate Statistics 1 May 1996 to 11 Aug 2023

Figure 6 Gingin Aero Mean Maximum Temperature<sup>15</sup>

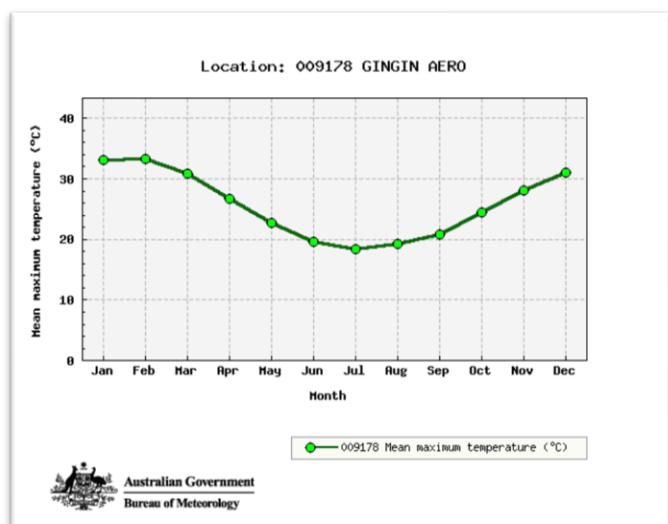
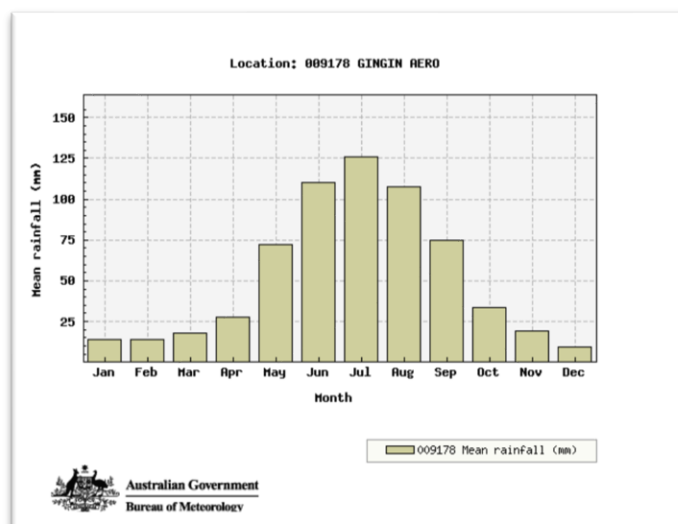


Figure 7 Gingin Aero Mean Rainfall<sup>16</sup>



### 3.8. Vegetation and fuel

Native vegetation within the Shire reflects the distribution of landforms and associated soils, described as vegetation complexes. At a regional scale, the Shire lies within three major biogeographic sub-regions, or geographic regions known as the Swan Coastal Plain, Dandaragan Plateau, and Darling Scarp (Northern Jarrah Forrest), where a unique mosaic of landforms, soils and other conditions define the vegetation communities and associated ecosystems within these parts (Figure 8).<sup>17</sup>

The Swan Coastal Plain typically represented by Banksia Woodlands, interspersed with the presence of Jarrah (*Eucalyptus marginata*) and Marri (*Corymbia calophylla*), possess vegetation through the full stratum of fuel (vegetation) layers. Fuels within these areas can vary from low and open to tall and closed with highly flammable species including Grasstrees (*Xanthorrhoea preissii*), Parrot bush (*Banksia sessilis*) and Zamia (*Macrozamia reidleyi*). Due to the aerated fine fuels of the near surface and elevated vegetation, fire behaviour can change rapidly causing elevated rates of spread and fire intensity.

Vegetation along the Darling Scarp varies from low open woodlands consisting predominantly of Wandoo (*Eucalyptus wandoo*), Jarrah, Marri and Paperbark Wandoo (*Eucalyptus accedend*). Vegetation across the Scarp tends to be low and open with a buildup of surface and near surface vegetation the primary fuel for fire in this area. Due to the elevation and undulating nature of the Scarp, this area is subject to the influence of wind which can have a rapid and direct impact on fire behaviour.

The Dandaragan Plateau, a sub-region of the Swan Coastal Plain, runs through the centre portion of the Shire and is situated parallel to the foothills of the Darling Scarp. The Plateau is characterised by Banksia Woodlands, Jarrah-Marri woodlands, Marri woodlands, and by scrub-heaths on lateritic pavement and gravelly sandplains. Similarly with the vegetation of the Swan Coastal Plain, the Plateau contains aerated fine fuels which have the potential to heavily influence fire behaviour.

In the northern part of the shire, where the plateau meets the scarp, bushland patches consist of Wandoo and York gum (*Eucalyptus loxophleba*) with mid understorey vegetation of Rock Sheoak (*Allocasuarina heugeliana*) and Jam Wattle (*Acacia acuminata*) which contribute to surface fuel build up.

Riparian areas along the waterways are vegetated and consist of Flooded Gum (*Eucalyptus rudis*) and melaleuca species including Stout Paperbark (*Melaleuca preissiana*) and Swamp Paperbark

<sup>15</sup> Bureau of Meteorology (Gingin Aero Weather Station) Statistic data

<sup>16</sup> Bureau of Meteorology (Gingin Aero Weather Station) Statistic data

<sup>17</sup> Shire of Chittering – Local Biodiversity Strategy 2022

(*Melaleuca raphilophylla*). These waterways can present as corridors and at risk of carrying fire some distance east west across the northern area and through farmland. The areas surrounding wetlands are typically difficult to access and pose the added complexity of peat soils. With the current drying climate, there is an increased risk of subterranean fires impacting these sensitive ecosystems which have proven to require protracted management to extinguish.

Woodland and forest fuel loads have been recorded in the range of 20 to 35 tonnes per hectare<sup>18</sup> presenting a significant bushfire risk if left unmanaged. Ideally fuel loads should be maintained below 8 tonnes per hectare to provide best opportunity to manage wildfires<sup>19</sup>.

Broad acre cropping across northern areas of the Shire identifies as grassland and when matured during the summer months, presents a 4.5 tonnes per hectare fuel load<sup>20</sup> which remains a high fire threat until reduced upon harvest however, the remaining stubble will still carry fire between crops, bushland and assets. To address the remnant fire risk, property owners are required to maintain firebreaks from 16<sup>th</sup> October through till 31<sup>st</sup> May of the following year. There is also an additional requirement for large farming properties to maintain strategic breaks to cells of no greater than 120 hectares. As a means to further reduce the risk of bushfire, some farmers will conduct stubble burns, although this practice is not as prevalent as it once was. A more common technique is to till the stubble into the soil to replenish vegetative nutrients back into the ground for the following cropping season, this eliminates the residual stubble and subsequent fire risk. There are also a number of farmers that place stock on their land to consume the remaining stubble.

As depicted in Figure 8, remnant vegetation is scattered across the Shire with agricultural farming intermixed. The risk of bushfire impacting assets across the Shire is a very real threat, due to much of the population residing in the semi-rural landscape amongst the native vegetation and rolling plains that attracted them to area. Although the requirement for an Asset Protection Zone (APZ) is within the Bushfire Hazard Reduction Notice, this only requires a managed 20 metre separation to the nearest vegetation. There are a significant amount of dwellings that were constructed prior to the requirement for assessment against AS3959-2018 Construction of Buildings in Bushfire Prone Areas, and as such may not be built to a standard to endure the impact of fire to the same degree as recently constructed dwellings. The proximity of vegetation to assets varies between semi-rural estates and across the general landscape, with differing vegetation types providing surface and aerated fuels that will contribute to fire behaviour and intensity. As such, it would be anticipated much of the rural and semi-rural population would be subject to the potential for radiant heat impact and ember attack in a bushfire event.

The Muchea town site located in the south-west corner of the Shire, is particularly susceptible to the passage of bushfires emanating from the neighbouring expanse of Banksia Woodlands. Semi-rural properties on the western boundary of the Muchea town site abut the unoccupied land which is owned by the Australian Defence Force. There is currently a bushfire mitigation plan in place which includes maintaining a network of extra wide firebreaks and a mosaic planned burning program. Residents within Muchea are aware of their bushfire risk and the real potential for properties to be impacted during a wildfire, as such most property owners take appropriate measures to prepare themselves prior to each fire season.

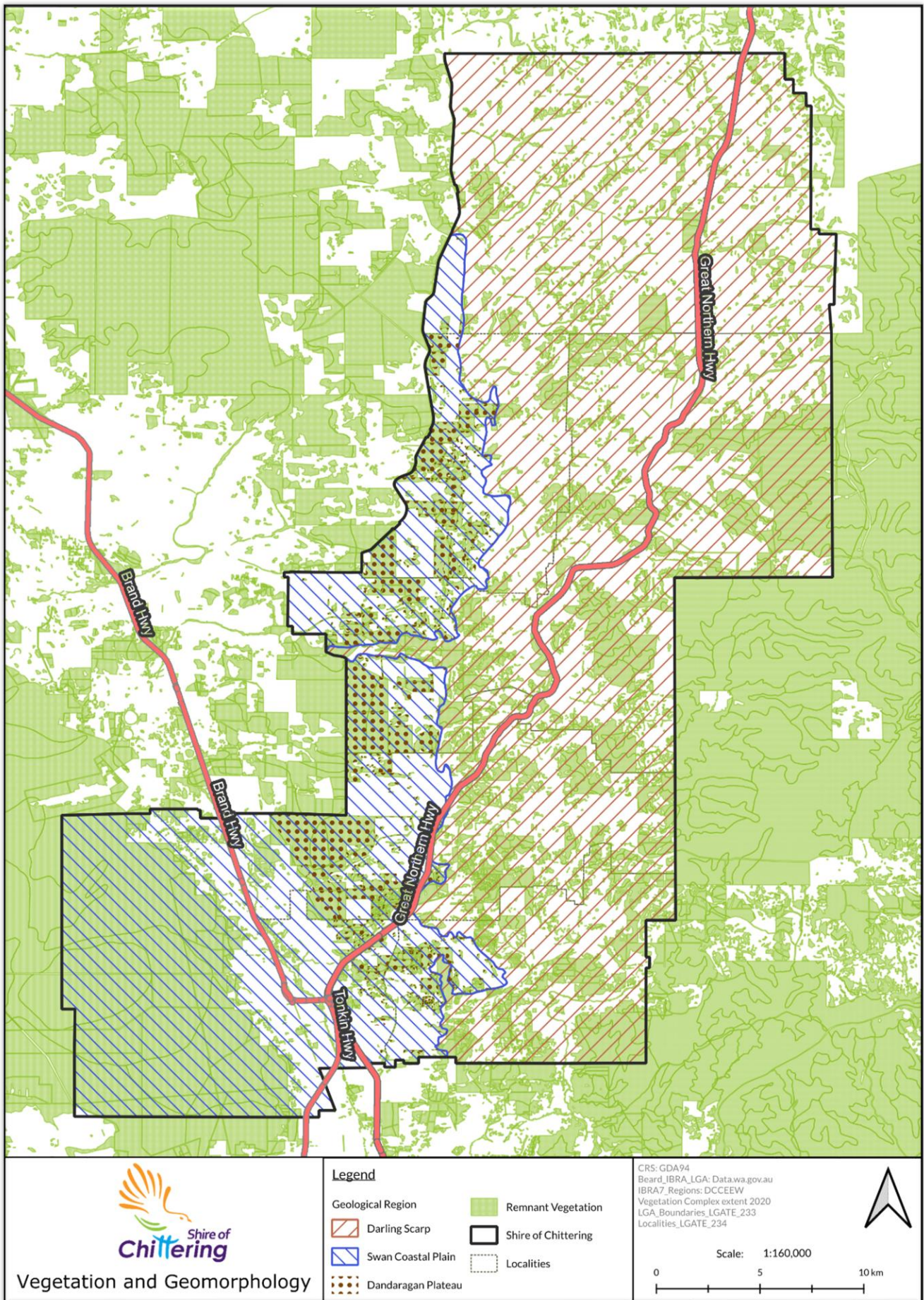
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<sup>18</sup> Dewars Pool Road Burn Risk Assessment, Sept 2020

<sup>19</sup> Forest Fire Management in Western Australia - R.J. Underwood and P.E. Christensen - pg.18

<sup>20</sup> AS3959:2018 - Table B3 Vegetation Classification and Fuel Loads

Figure 8 Shire of Chittering Vegetation and Geomorphology



### 3.9. Important species and communities

The Shire of Chittering's Local Biodiversity Strategy 2022 assists with the integration of biodiversity conservation considerations into the land use planning system and local government operational business. The Shire of Chittering's commitment to the protection of the natural environment and biodiversity is embedded in the objectives of its strategic community plan and the aims of its local planning scheme.<sup>21</sup> This document identifies the High Value Conservation Areas to be protected and are rated as very good to good condition. Many of these areas consist of vegetation complexes identified as representing less than 30% of its type in Chittering.

The Shire provides important habitat for a number of rare and threatened species and ecological communities at both a state and federal level, including Carnaby's Black Cockatoo (*Zanda latirostris*), Banksia woodlands, and many other flora and fauna species (Figure 9). A list of the threatened ecological communities; threatened flora; and threatened fauna found within the Shire of Chittering are outlined in Appendix D – Threatened Species and Communities.

A large portion of the Shire contains Banksia Woodlands which are listed as a threatened ecological community at both a state and federal level. These woodlands are complex ecosystems which in some ways are delicate in nature. Banksias are relatively hardy to fire however, due to their shallow root systems, will benefit from autumn prescribed burns allowing follow up winter rains to replenish the soil and reduce shock caused by fire and heat. If fire is introduced to Banksia woodlands too frequently this can alter the Banksias ability to mature sufficiently to produce a viable seed bed. It can also kill young Banksias all resulting in a change to the vegetation structure. It is recommended Banksia's are not burnt any sooner than 14 years but ideally closer 20 years.

Many Banksia woodlands are home to a variety of orchid species which are sensitive to fire. As orchids are tuberous species, they lay dormant under the soil surface for much of the year and sprout above the surface to flower which often coincides with optimal burning windows. To ensure the longevity of the orchid species it is important to schedule burns when orchids are dormant or make every effort to exclude them from the burn area.

Species such as parrot bush (*Banksia sessilis*) are not a threatened flora species however, they are an important food source for the threatened Carnaby's Black Cockatoo (*Calyptorhynchus latirostris*). Parrot bush is a prickly upright shrub that grows up to 4-5 metres and is a common species along road reserves in the Shire adding a significant fuel load in some areas. It is important when managing vegetation such as parrot bush that there is balance to reducing bushfire risk while maintaining biodiversity values for long term sustainability. Similarly, large Wandoo trees often provide nesting hollows for Carnaby's Black Cockatoos and other species of bird, so it is important to protect these trees during mitigation activities.

The Shire has several Nationally Significant Wetlands under the Environmental Protection and Biodiversity Conservation Act 1999 – Chandala Swamp, Chittering-Needonga Lakes, and the Wannamal Lake System. While the Wannamal Lake system isn't technically in the Shire of Chittering it sits on the boundary with the Shire of Gingin. The water run-off into the lake system comes from the catchments within the Shire of Chittering as does the fire risk potential into the system particularly under a dry north easterly wind.

In addition, the Western swamp tortoise (*Pseudemydura umbrina*) is listed as endangered under the Commonwealth's Environment Protection and Biodiversity Conservation Act 1999. Their location within the Mogumber Lake Wannamal Nature Reserve has been identified as requiring identification and protection.<sup>22</sup> Measures to protect the western swamp tortoise are considered to reduce the impact of fire and potential loss of habitat from fires starting within the Shire. It is acknowledged that what happens in Chittering has a great influence on the habitat of the Wannamal Lake System.

The presence of Dieback (*Phytophthora cinnamomi*) in three of the Shire reserves requires management and hygiene controls to ensure the spread is minimised particularly during mitigation

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<sup>21</sup> Shire of Chittering – Local Biodiversity Strategy 2022

<sup>22</sup> Shire of Chittering Local Planning Strategy

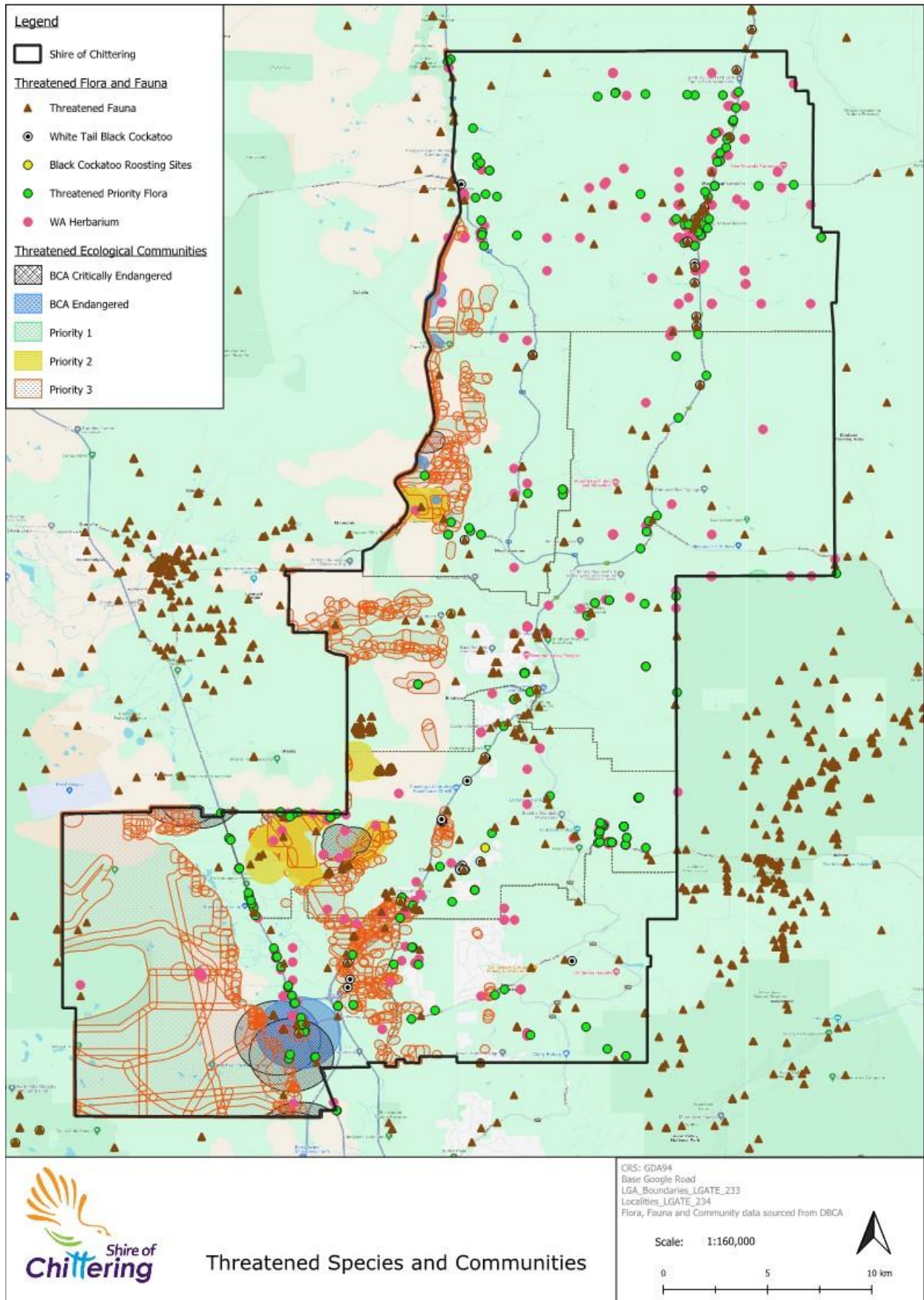
activities and fire response. Banksias, eucalypts and grasstrees are at risk to the disease with approximately 56% of all threatened flora considered susceptible to Dieback.<sup>23</sup>

Ongoing support and assistance from the Chittering Landcare Centre ensure appropriate measures are taken to protect and preserve the valuable species and communities found within the Shire.

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<sup>23</sup> <https://www.dbca.wa.gov.au/management/threat-management/plant-diseases/phytophthora-dieback>

Figure 9 Threatened species and communities



### 3.10. Historical bushfire occurrence

Data collated by the Department of Fire and Emergency Services indicates over a ten-year period from 2013/2014 through to 2023/2024 there have been 363 bushfires in the Shire of Chittering (Table 6).

Further analysis of the data revealed 297 of the bushfires were 1 hectare or less in size and 70 of these were planned burn off fires.

The most common bushfires aside from planned burns over the ten-year period were unreported (64) or suspicious/deliberate (38). These statistics along with several of the other categories highlights the need for further education and community information to increase the awareness and importance around being bushfire ready and how to conduct pile burns safely.

Table 6 Shire of Chittering bushfire ignitions 2013/2014 - 2023/2024<sup>24</sup>

|   | 2013/2014 | 2014/2015 | 2015/2016 | 2016/2017 | 2017/2018 | 2018/2019 | 2019/2020 | 2020/2021 | 2021/2022 | 2022/2023 | 2023/2024 | Total      |
|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|
| <b>Total Number of Bushfires:</b>   | <b>23</b> | <b>52</b> | <b>30</b> | <b>39</b> | <b>23</b> | <b>33</b> | <b>38</b> | <b>22</b> | <b>18</b> | <b>32</b> | <b>53</b> | <b>363</b> |
| Burn off fires  | 5         | 11        | 4         | 15        | 6         | 8         | 18        | 3         | 1         | 9         | 3         | 83         |
| Unreported  | 3         | 5         | 6         | 4         | 1         | 4         | 6         | 6         | 4         | 6         | 19        | 64         |
| Suspicious/Deliberate   | 2         | 9         | 2         | 2         | 4         | 6         | 4         | 5         | 1         | 1         | 2         | 38         |
| Weather Conditions - Lightning  | 3         | 3         | 2         | 1         | 2         | 5         | 0         | 1         | 1         | 3         | 8         | 29         |
| Vehicles (incl. Farming Equipment/Activities)                               | 0         | 1         | 2         | 2         | 3         | 3         | 1         | 0         | 5         | 2         | 4         | 23         |
| Reignition of previous fire   | 1         | 2         | 3         | 3         | 0         | 4         | 1         | 1         | 2         | 2         | 3         | 22         |
| Undetermined  | 3         | 4         | 5         | 1         | 2         | 0         | 0         | 1         | 1         | 1         | 1         | 19         |
| Power lines   | 2         | 3         | 1         | 4         | 1         | 1         | 0         | 1         | 1         | 1         | 3         | 18         |
| Weather Conditions (High winds, natural combustion etc. Excludes Lightning) | 0         | 1         | 3         | 3         | 0         | 0         | 2         | 1         | 0         | 1         | 3         | 14         |
| Cigarette   | 1         | 3         | 1         | 2         | 1         | 0         | 2         | 0         | 0         | 0         | 0         | 10         |
| Equipment - Mechanical or electrical fault                                  | 2         | 2         | 0         | 0         | 0         | 1         | 0         | 0         | 0         | 1         | 2         | 8          |
| Other open flames or fire   | 0         | 3         | 0         | 0         | 1         | 1         | 1         | 0         | 0         | 0         | 0         | 6          |
| Sleeping/Alcohol/Drugs/Physical-Mental impairment                           | 0         | 0         | 1         | 0         | 0         | 0         | 1         | 0         | 1         | 3         | 0         | 6          |
| Human Error (Left on, knock over, unattended etc.)                          | 0         | 1         | 0         | 1         | 1         | 0         | 0         | 1         | 0         | 0         | 0         | 4          |
| Hot works (grinding, cutting, drilling etc..)                               | 0         | 0         | 0         | 1         | 0         | 0         | 0         | 0         | 0         | 1         | 2         | 4          |
| Children misadventure   | 1         | 1         | 0         | 0         | 0         | 0         | 1         | 0         | 0         | 0         | 0         | 3          |
| Equipment - Operational deficiency  | 0         | 2         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 1         | 0         | 3          |
| Improper Fuelling/Cleaning/Storage/Use of material ignited                  | 0         | 0         | 0         | 0         | 1         | 0         | 0         | 0         | 0         | 0         | 2         | 3          |
| Campfires/bonfires/outdoor cooking  | 0         | 0         | 0         | 0         | 0         | 0         | 1         | 1         | 0         | 0         | 0         | 2          |
| Electrical distribution (excl. power lines)                                 | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 1         | 0         | 0         | 1         | 2          |
| Indoor Appliances - cause unknown   | 0         | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 1          |
| Yard maintenance, hand held equipment                                       | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 1         | 0         | 0         | 1          |

<sup>24</sup> LG Bushfire Report 26/04/24– Department of Fire and Emergency Services

The most recent fire of significance the shire encountered occurred on 13 January 2024 which took six days to bring under control and a further 36 days of mop up to render the area safe. A total area of 2,866 hectares were burnt and 3 outbuildings were destroyed. A number of lessons learnt from an incident management and operational perspective were identified during and following this incident (Table 7) with suitable actions for improvement being implemented within the shire.

Table 7 Teatree Road Bushfire Lessons Learnt

| Shire of Chittering Teatree Road Fire 13 January 2024 |   |
|---|---|
| Lessons Learnt  |   |
| 1.  | The importance of a backup power supply and emergency communication plans                 |
| 2.  | Require additional skilled and trained staff for various roles during emergencies.        |
| 3.  | The need for an Animal Welfare Plan   |
| 4.  | Ensure water sources are located as close as possible to sectors for a quicker turnaround |
| 5.  | Improve hazard separation zones for firefighters particularly along road verges           |
| 6.  | Embed a local FCO in RUI task forces for local knowledge                                  |
| 7.  | Bindoon VBFB requires an upgrade to facilitate large incidents                            |

### 3.11. Current bushfire risk management controls

#### 3.11.1 Map of bushfire prone areas and planning requirements

The map of bushfire prone areas as released by the Department of Fire and Emergency Services (DFES), covers the entire area of the Shire of Chittering meaning any development requires an assessment against State Planning Policy 3.7 - Planning in Bushfire Prone Areas, and AS3959-2018, Construction of buildings in bushfire prone areas.

The Shire of Chittering has been engaged in identifying established sub-division developments affected by previous planning decisions which are no longer in line with modern bushfire risk management principles. The Subdivision Critical Links Project sets out to ensure all established and planned residential sub-divisions are provided with 2-way access. Figure below indicates the planned link roads to facilitate emergency access/egress. Over the coming years these gravel emergency access ways (EAW) will be integrated into the bitumen road network.

Although the threat of bushfire remains a constant risk during the summer months and a frightening experience for the community when one occurs, these measures in conjunction with the Firebreak and Bushfire Hazard Reduction Notice compliance and enforcement; public education and engagement; and the bushfire risk management planning process, will provide the foundation for enhanced bushfire risk reduction and protection for current and future human settlement developments and other assets within the Shire of Chittering.

0 1 2 3 4  
Kilometers

Produced by Data Analytics,  
Department of Planning, Lands and Heritage,  
on behalf of the Western Australian Planning  
Commission.  
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Wheatbelt\Chittering\LocalPlanningStrategy\  
Fig4\_BushfireRiskManagement.mxd

Base information supplied by  
Western Australian Land Information Authority  
SLIP 1096-2018-1

2017 and 2018 aerial imagery supplied by  
Western Australian Land Information Authority  
(Scale 1:25,000; positional accuracy +/- 1m/5m)

Water infrastructure data supplied by  
Water Corporation

Great Northern Highway deviation data  
supplied by Main Roads

**Legend**

- Future development area
- Local government boundary
- Great Northern Highway deviation
- Existing
- Future bushfire access requirements
- Existing
- Hydrant
- Town

**Shire of Chittering**

**Shire of Swan**

**Inset**

**Index to map area**

### 3.11.2 Bushfires Act 1954 Section 33 notices

The Shire's Firebreak and Bushfire Hazard Reduction Notice is reviewed annually to ensure it is kept up to date with contemporary bush fire management practices, including measures provided by the Western Australian Planning Commission's Guidelines for Planning in Bushfire Prone Areas.

The notice requires landowners to implement and maintain a range of mitigation requirements between 16 October and 31 May each year. Inspections to ensure compliance with the notice are completed prior to December and followed up with enforcement measures for properties that do not comply. Ongoing monitoring occurs through till the end of May each year.

In accordance with the Shire's Firebreak and Property Inspection Strategy 2023, a systematic approach is applied to maximise the compliance and preparedness of properties prior to the bush fire season. Properties that were non-compliant in the previous year or areas which are difficult to implement due to terrain or environmental sensitivities are assessed in the first instance with the remaining properties assessed thereafter. At the completion of each inspection period a review and debrief of the process occurs with improvements identified for the following year's inspection process.

### 3.11.3 Restricted and Prohibited Burning

The Shire of Chittering implements restricted and prohibited burning periods in consultation with stakeholders including DFES. The Shire's restricted and prohibited burning times are listed in Table 8.

Table 8 Restricted and Prohibited Burning Times

| Restricted Burning Times                  |
|---|
| October 1st until November 30th           |
| April 1st until May 31st                  |
| Prohibited Burning Times                  |
| December 1st until March 31 <sup>st</sup> |

### 3.11.4 Australian Fire Danger Rating System (AFDRS) triggers and thresholds for fire restrictions

There are six weather stations situated across the Shire that are referenced during the high threat period to assist in determining if a Harvest Vehicle Movement Ban (HVMB) is required. Calculations are conducted and when two of the six weather stations indicate a Fire Danger Index (FDI) of 40 or higher, then a HVMB is declared across the whole Shire. This decision triggers various community and stakeholder notifications including an email to approximately 100 stakeholders; an SMS to 2023 community members; ABC radio notifications; updates to Emergency WA; and posts on other social media platforms.

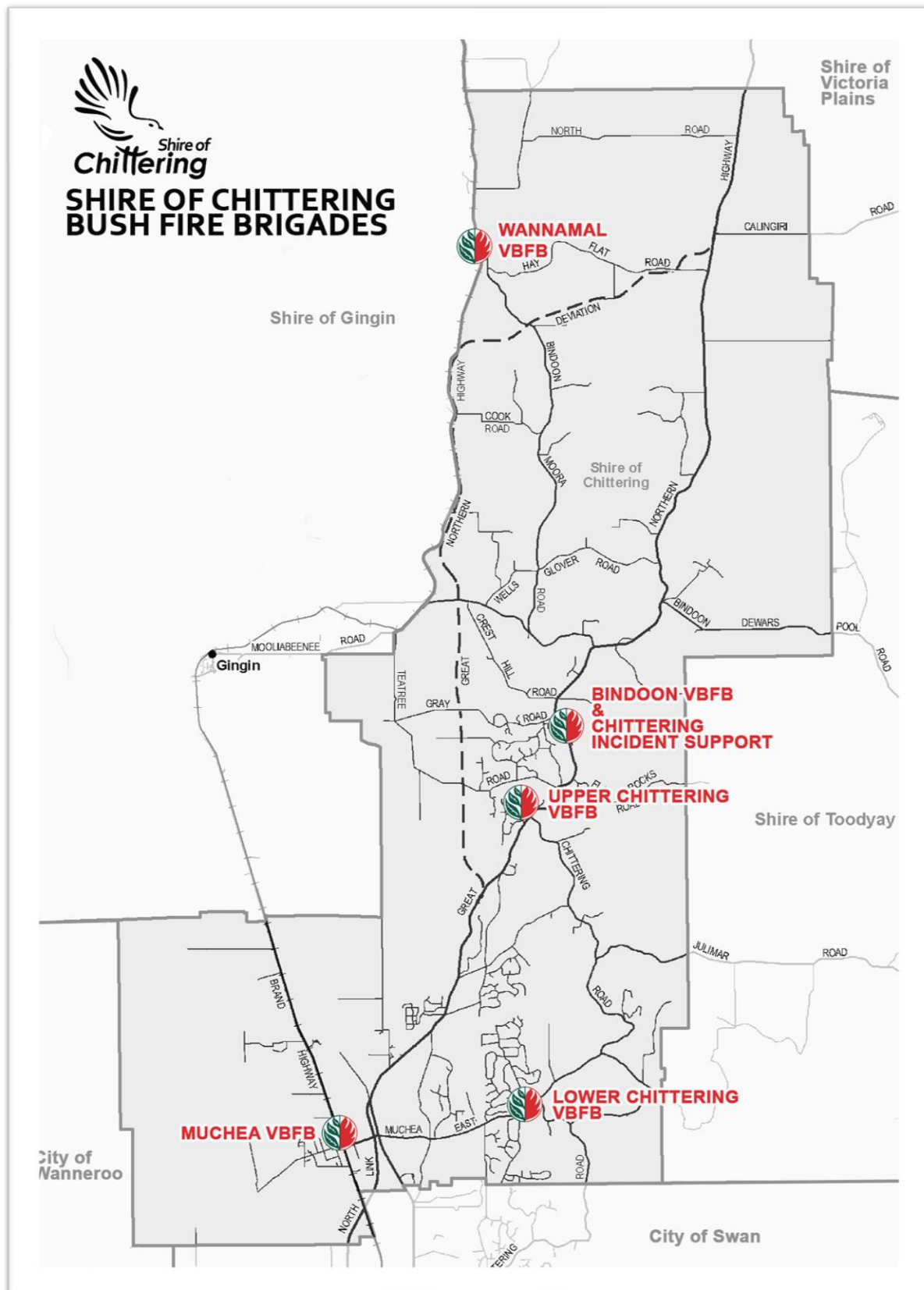
During the restricted burning period if the Fire Danger Rating (FDR) is High, this is a trigger that requires all valid permits to burn to be cancelled for a 24-hour period.

To manage the increase in short term stay accommodation and events planned in the Shire, a requirement is imposed on applicants whereby an FDR value is applied as a trigger for the event to be cancelled due to bushfire risk. The FDR value is proportionate with the type of activity, number of people gathering and the potential risk.

### 3.11.5 Volunteer Bushfire Brigades

The Shire has six volunteer bushfire brigades (Figure 11) with 170 members that are the primary response to bushfire incidents within the Shire. These brigades are also proactive in community engagement activities such as local brigade events and Christmas activities, and bushfire risk reduction measures through prescribed burning.

Figure 11 Shire of Chittering Bushfire Brigade Locations



### 3.11.6 Community Engagement

Every quarter a bushfire ready newsletter is distributed to over 600 email contacts within the Shire as well as the Shire's social media pages, this includes information on property preparation, key emergency information links, volunteer recruitment and more.

Once per year a community preparedness session on all hazards is run in conjunction with the Red Cross. This event involves support agencies such as police, ambulance, SES and fire services, with the target audience varying each year including primary school children; teenagers; young families; or vulnerable groups.

The shire holds a Plants for Rural Properties program where 2500 trees are given away to 250 properties. The program promotes the planting of fire resilient vegetation endemic to the area and provides opportunity to discuss bushfire related property ownership matters with the Shire's Bushfire Risk Officer. Topics include fire breaks and hazard reduction notice; Burn Smart - winter burning; asset protection zones; property management for fire response; and the My Bushfire Plan app.

With the increase in families moving from the metropolitan area to a semi-rural lifestyle property, and typically having limited fire awareness, all new residents receive a personal invite to make an appointment with the Bushfire Risk Officer to visit their property and walk through bushfire safety topics as mentioned above.

### 3.11.7 Local Government Wide Controls

Local government-wide controls are activities that reduce the overall bushfire risk within the Shire of Chittering. 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.

A list of Local Government Wide Controls for reducing bushfire risk in Shire of Chittering is provided at Appendix A – Local government wide controls. This list includes the key agencies and types of bushfire related activities conducted within the Shire. As the Shire is 94% private property with a further 3.3% being Shire owned, much of the responsibility falls to the Shire to manage, promote and enforce provisions of the *Bush Fires Act 1954*. Other agencies including DBCA, Australian Defence Force and Arc Infrastructure have bushfire mitigation plans in place and carry out treatments on their tenure which assist in reducing risk from a tenure blind approach.

## 4. ASSET IDENTIFICATION AND RISK ASSESSMENT

Assets at risk from bushfire in Shire of Chittering are recorded in the *Asset Risk Register* in the BRMS. Assets are divided into four categories: human settlement, economic, climate, and cultural. Each asset has been assigned a bushfire risk rating between low and extreme based on the risk assessment methodology described in the Guidelines and Handbook.

### 4.1. Identifying and assessing systemic risk

Systemic risk refers to the potential impacts of a bushfire on interconnected systems and networks that sustain communities. It recognises that a single bushfire event can set off a chain reaction with impacts that extend beyond the fire's location. These may affect the social fabric, economy, and environment of the district and can persist long after the fire has been extinguished.

Systemic risk has not been considered in this Bushfire Risk Management Plan 2024-2026 however, planning for identifying and assessing systemic risk has commenced with an identified vulnerable community including the agricultural industry. An in-depth assessment will take place over the coming two years and be included in a subsequent review of the BRM Plan.

### 4.2. Local government asset risk profile

A summary of the risks assessed in Shire of Chittering is shown in Table 9. This table shows the proportion of assets at risk from bushfire in each risk category at the time the BRM Plan was endorsed. This table was correct as per 1 July 2024, but may become outdated as risks are treated or additional risks are identified and assessed. A report may be generated from the BRMS to provide the most current risk profile.

Table 9 - Local Government Asset Risk Summary

| Asset Category | Risk Rating      |       |        |        |           |
|----------------|------------------|-------|--------|--------|-----------|
|                |                  | Low   | Medium | High   | Very High |
|                |                  |       |        |        | Extreme   |
|                | Human Settlement | 3.92% | 11.27% | 33.82% | 13.07%    |
|                | Economic         | 6.54% | 4.25%  | 5.88%  | 2.78%     |
|                | Environmental    | 0.65% | 0.49%  | 3.10%  | 0.49%     |
|                | Cultural         | 0.16% | 0.00%  | 0.00%  | 0.33%     |
|                |                  | 0.00% |        |        |           |

## 5. RISK EVALUATION

### 5.1. Risk acceptance criteria

The acceptable level of risk for each asset category is shown in Table 10. A risk that is assessed as exceeding these limits will be considered for treatment.

Table 10 - Risk acceptance criteria for bushfire risk in Shire of Chittering

|                       | Asset category   |          |               |          |
|-----------------------|------------------|----------|---------------|----------|
|                       | Human settlement | Economic | Environmental | Cultural |
| Acceptable risk level | Medium           | Medium   | High          | High     |

Risks below the acceptable level do not require treatment during the life of this BRM Plan. They will be managed by routine Local Government Wide Controls and monitored to detect any increase in their risk rating.

### 5.2. Treatment priorities

The treatment priority for each asset is automatically assigned by BRMS, based on the asset's risk rating.

Table 11 shows how consequence and likelihood combine to give the risk rating and subsequent treatment priority for an asset. The treatment priority assigned in BRMS will help inform decision making for risk acceptability and development of the Treatment Strategy and schedule.

Table 11 - Treatment priorities

| Likelihood | Consequence    |                |                   |                   |                   |
|------------|----------------|----------------|-------------------|-------------------|-------------------|
|            |                | Minor          | Moderate          | Major             | Catastrophic      |
|            | Almost Certain | 3D<br>(High)   | 2C<br>(Very High) | 1C<br>(Extreme)   | 1A<br>(Extreme)   |
|            | Likely         | 4C<br>(Medium) | 3A<br>(High)      | 2A<br>(Very High) | 1B<br>(Extreme)   |
|            | Possible       | 5A<br>(Low)    | 4A<br>(Medium)    | 3B<br>(High)      | 2B<br>(Very High) |
|            | Unlikely       | 5C<br>(Low)    | 5B<br>(Low)       | 4B<br>(Medium)    | 3C<br>(High)      |

## 6. RISK TREATMENT

The purpose of risk treatment is to reduce the potential impact of 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 to make bushfires less likely or less harmful.

### 6.1. Treatment Strategy

The Treatment Strategy describes the overall approach to managing bushfire risk in the medium to long term in Shire of Chittering. The strategy is shaped by factors such as the distribution of risk in the landscape, the community's values and objectives, stakeholders' mitigation programs and constraints on treatment options. The Treatment strategy helps guide the development of integrated annual treatment schedules.

The Shire of Chittering Strategic Community Plan 2024 – 2034, together with the Corporate Business Plan 2024-2028, both outline a commitment to minimise potential risk and impacts through a significant investment to bushfire mitigation activities.

In aligning the Shire's strategic direction with addressing bushfire risk, the treatment focus areas detailed in Figure 12 have been developed to work in synergy for reducing the risk of bushfire impact on communities.

Figure 92 Treatment focus areas



The overall treatment strategy incorporates the above treatment focus areas to determine the appropriate type and frequency of treatment/s based on the terrain, vegetation, adjacent agricultural type (if applicable) and risk rating. Priority is given to extreme risk areas that have potential to impact human settlement assets including shire owned/managed nature reserves and road reserves. It is accepted that seasonal shifts and weather may dictate if treatments can occur as planned. Where treatments cannot take place due to circumstances beyond the treatment manager's control, alternative treatments will be identified according to risk rating. This may be within the human settlement category or selected from across all asset categories following consultation with relevant stakeholders.

Treatments are selected to support environmental considerations including threatened species and communities and to minimise negative effects such as erosion across the undulating terrain or potential spread of Dieback. Some treatments must be planned to suit conditions at certain times of the year, such as planned burns in Banksia woodlands to be scheduled in autumn to ensure the vegetation receives follow-up winter rains to avoid unnecessary loss of the threatened ecological community, due to their shallow root system. Consultation with the Chittering Landcare Centre will support the selection of appropriate treatments where required.

Where situations arise for combined treatments with adjacent landowners, these will be prioritised to maximise the opportunity for greater strategic risk reduction and cost savings.

The community values the natural landscape in which they live and they have highlighted their support for bushfire mitigation across the shire through the 2022 community survey. To facilitate every opportunity to carry out treatments and reduce the overall bushfire risk, the Shire will continue to request funding support through government and non-government grants.

Due to the large percentage of private property in the Shire, non-physical approaches are incorporated to address bushfire risk. This includes a varied community engagement program that promotes resilience and preparedness and compliments the physical on-ground treatments.

## **6.2. Treatment Schedule**

The Treatment Schedule is a list of bushfire risk treatments recorded in the BRMS. It is developed with regard to the outcome of the risk assessment process and Treatment Strategy and in consultation with stakeholders.

A treatment schedule for the Shire of Chittering covering a 12-month period has been entered to BRMS. This is a live document and will be regularly updated throughout the life of the BRM Plan.

Land managers are responsible for implementing agreed treatments 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 the treatment on behalf of a land manager.

## 7. MONITORING AND REVIEW

Monitoring and review processes are in place to ensure that the BRM Plan remains current and considers the best available information.

### 7.1. Monitoring and review

The Shire of Chittering will monitor the BRM Plan and BRMS data to identify any need for change. The Plan and BRMS data will be reviewed at least every two years to ensure they continue to reflect the local context, assets at risk, level of risk and treatment priorities.

### 7.2. Reporting

The Shire of Chittering CEO or their delegate will provide to OBRM the outcomes of biennial reviews of the BRM Plan. This is required to maintain OBRM endorsement of the Plan.

The Shire of Chittering will contribute information about their BRM Program to the annual OBRM *Fuel Management Activity Report*.

# GLOSSARY

|                                 |  |
|---------------------------------|--|
| <b>Asset</b>                    | Something of value that may be adversely impacted by bushfire. This may include residential houses, infrastructure, commercial, agriculture, industry, environmental, cultural and heritage sites. |
| <b>Asset category</b>           | There are four categories that classify the type of asset – Human Settlement, Economic, Environmental and Cultural.  |
| <b>Asset risk register</b>      | A component within the Bushfire Risk Management System (BRMS) used to record the consequence, likelihood, risk rating and treatment priority for each asset identified in the BRM Plan.            |
| <b>Bushfire</b>                 | Unplanned vegetation fire. A generic term which includes grass fires, forest fires and scrub fires both with and without a suppression objective.  |
| <b>Bushfire risk</b>            | The chance of a bushfire igniting, spreading and causing damage to the community or the assets they value.   |
| <b>Bushfire risk management</b> | 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.                             |
| <b>Consequence</b>              | The outcome or impact of a bushfire event.   |
| <b>Landowner</b>                | 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.                   |
| <b>Likelihood</b>               | The chance of something occurring. In this instance, it is the potential of a bushfire igniting, spreading and impacting on an asset.  |
| <b>Risk acceptance</b>          | The informed decision to accept a risk, based on the knowledge gained during the risk assessment process.  |
| <b>Risk analysis</b>            | The application of consequence and likelihood to an event to determine the level of risk.  |
| <b>Risk assessment</b>          | The systematic process of identifying, analysing and evaluating risk.  |
| <b>Risk evaluation</b>          | The process of comparing the outcomes of risk analysis to the risk criteria to determine whether a risk is acceptable or tolerable.  |
| <b>Risk identification</b>      | The process of recognising, identifying and describing risks.  |
| <b>Risk treatment</b>           | A process to select and implement appropriate measures undertaken to modify risk.  |

|                            |   |
|----------------------------|---|
| <b>Systemic risk</b>       | The impacts of bushfire on the interconnected systems and networks that support community function. It is a product of the disruption caused by fire to the community and its effects may be felt far from the direct impacts of the fire in both time and space. |
| <b>Treatment objective</b> | The aim to be achieved by the treatment. Treatment objectives should be specific and measurable.  |
| <b>Treatment priority</b>  | 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.  |
| <b>Treatment Schedule</b>  | A report produced within the BRMS that details the treatment priority of each asset identified in the BRM Plan and the treatments scheduled.  |
| <b>Treatment Strategy</b>  | The general approach that will be taken to managing bushfire risk, in consideration of the local government context and objectives.   |
| <b>Treatment type</b>      | The specific treatment activity that will be implemented to modify risk, for example a planned burn.  |

# COMMON ABBREVIATIONS

|                   |  |
|-------------------|--|
| <b>AFAC</b>       | Australasian Fire and Emergency Services Authorities Council |
| <b>BRM</b>        | Bushfire Risk Management                                     |
| <b>BRM Branch</b> | Bushfire Risk Management Branch (DFES)                       |
| <b>BRM Plan</b>   | Bushfire Risk Management Plan                                |
| <b>BRMS</b>       | Bushfire Risk Management System                              |
| <b>CBFAC</b>      | Chittering Bush Fire Advisory Committee                      |
| <b>DBCA</b>       | Department of Biodiversity, Conservation and Attractions     |
| <b>DFES</b>       | Department of Fire and Emergency Services                    |
| <b>DPLH</b>       | Department of Planning, Lands and Heritage                   |
| <b>LEMC</b>       | Local Emergency Management Committee                         |
| <b>OBRM</b>       | Office of Bushfire Risk Management (DFES)                    |
| <b>SEMC</b>       | State Emergency Management Committee                         |
| <b>TEC</b>        | Threatened Ecological Community                              |
| <b>UCL</b>        | Unallocated Crown Land                                       |
| <b>UMR</b>        | Unmanaged Reserve  |
| <b>WA</b>         | Western Australia  |

# APPENDICES

|                   |                                    |
|-------------------|------------------------------------|
| <b>Appendix A</b> | Local Government Wide Controls     |
| <b>Appendix B</b> | Communication Plan                 |
| <b>Appendix C</b> | Aboriginal Cultural Heritage       |
| <b>Appendix D</b> | Threatened Species and Communities |

## Appendix A – Local government wide controls

| Control |   | Action or activity description   | Lead agency         | Other stakeholder(s)  | Notes and comments   |
|---------|---|--|---------------------|---|--|
| 1       | Regulatory compliance                     | Enforcement of <i>Bush Fires Act 1954</i> Section 33.  | Shire of Chittering | DFES  | <p>Review and release the Firebreak and Bushfire Hazard Reduction Notice to all property owners annually.</p> <p>Compliance due by 16 October annually.</p> <p>Inspection and enforcement carried out on non-compliant properties to ensure requirements are met prior to the onset of the bushfire season.</p> <p>Annual review of Fire break and property inspection strategy, analysis of data and debrief to review learnings.</p>   |
| 2       | Burning and vehicle movement restrictions | Providing limitations under the <i>Bush Fires Act 1954</i> for approved burning times and vehicle movement for the local area. | Shire of Chittering | DFES  | <p>The Shire reviews local conditions and seasonal influences to determine if the documented restricted and prohibited burning times need to be adjusted to reduce the outbreak of fire.</p> <p>During periods of high threat the Shire has the ability to issue a harvest and vehicle movement ban to limit the chances of vehicle caused fires.</p> <p>The Shire appoints Fire Control Officers that enables permit issuing under certain conditions during restricted burning times.</p>  |
| 3       | Land use planning                         | Ensuring all new builds are assessed against State Planning Policy 3.7   | Shire of Chittering | DFES<br>DPLH<br>BAL Assessors   | As Shire of Chittering is entirely mapped as bushfire prone, all new builds as detailed in SPP 3.7 are assessed and construction requirements placed on each build appropriate to their level of risk.   |
| 4       | Community engagement and education        | Promoting bushfire preparedness, education and outlets for further information across the community.                           | Shire of Chittering | DFES<br>Community groups  | <p>Bushfire Risk Officers within the Shire provide ongoing liaison with property owners to educate community members on bushfires and how to prepare their properties.</p> <p>DFES Seasonal themes promoted over social media to engage the public and increase awareness.</p> <p>Bushfire Information and educational material located on the Shire website and bushfire ready newsletters circulated via email.</p> <p>New property owners receive a welcome pack providing important information about property preparedness and where to go for further information.</p>   |
| 5       | Fuel management                           | Reduction of fuels   | Shire of Chittering | DFES<br>DBCA<br>Arc Infrastructure<br>Western Power<br>Main Roads<br>ADF<br>Property Owners | <p>Shire of Chittering annual works program focused around mechanical and chemical treatments on Shire owned land.</p> <p>Shire Reserve management plans including rotational planned burns.</p> <p>The Shire sources grant funding through the MAF Grants to reduce fuels across the extreme, very high and high-risk areas under LG management.</p> <p>BFB’s engaged by private property for reducing fuels via prescribed burns</p> <p>Main Roads conducts mechanical and chemical treatments on the MRWA network.</p> <p>ADF have a contract in place with a burn contractor to manage fuel loads within ADF tenure.</p> |

|   |                          |   |                     |                                    |  |
|---|--------------------------|---|---------------------|------------------------------------|--|
|   |                          |   |                     | Chittering Landcare Group<br>BFB's | Annual vegetation management and asset maintenance conducted by Western Power.<br>Development of a Bushfire Risk Mitigation Plan by Arc Infrastructure to reduce risk along the rail corridor within priority townsites.   |
| 6 | Incident Response        | The Shire appoints Fire Control Officers and formed volunteer bush fire brigades that are resourced and supported to respond to bushfire emergencies. | Shire of Chittering | DFES                               | The Shire appoints Fire Control Officers and Deputy Chief FCO's.<br>All brigades are provided with the appropriate PPE, training, resources and equipment to be able to carry out their duties.<br>The Shire part funds a Community Emergency Services Manager role with DFES to provide guidance and support to FCO's and brigades. |
| 6 | Bushfire risk management | Develop, monitor, review and reporting of the BRM Plan  | Shire of Chittering | DBCA<br>DFES<br>SoC – CBFAC & LEMC | Updating risk assessments across tenure blind assets within BRMS to create awareness of Shire wide risk.<br>Reviewing the BRM Plan every two years for currency and areas for improvement.<br>Reporting updates on risk and treatments to DFES, LEMC and CBFAC.  |

## **Appendix B – Communication Plan**

This Communication Plan supports the development, implementation and review of the Shire of Chittering Bushfire Risk Management (BRM) Plan.

### **Communication objectives**

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

1. Key stakeholders understand the purpose of the BRM Plan and their role in the BRM planning process.
2. Stakeholders who are essential to the BRM 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.
5. The community and other stakeholders engage with the BRM planning process and as a result are better informed about bushfire risk and understand their responsibilities to address bushfire risk on their own land.

### **Roles and responsibilities**

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

- CEO Shire of Chittering is responsible for requesting OBRM endorse the BRM Plan.
- Executive Manager Development Services, Shire of Chittering is responsible for monitoring and reporting on the BRM Plan and Communication Strategy.
- Communications Officer, Shire of Chittering is responsible for communication of the BRM Plan to the community.
- Bushfire Risk Officer, Shire of Chittering is responsible for communication between the local government and the Department of Fire and Emergency Services.

## Key Stakeholders for Communication

The following table identifies key stakeholders in BRM planning process, its implementation and review. 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                               | Role or interest   | Level of impact of outcomes | Level of engagement                      |
|---|--|-----------------------------|--|
| Local Government                          | Development / review of BRM Plan, Land managers                        | High                        | Consult, involve and inform              |
| Department of Fire and Emergency Services | Assist LG with development of BRM Plan, technical advice and expertise | High                        | Consult, collaborate, involve and inform |
| Parks and Wildlife                        | Asset and treatment identification, Land managers                      | High                        | Consult, involve and inform              |
| Service Providers                         | Asset and treatment identification, Land managers                      | Medium                      | Consult and inform                       |
| Land Managers                             | Asset / Land managers  | Medium                      | Consult, inform and empower              |
| Asset Owners                              | Landowners, potential impact to business, community members            | Medium                      | Consult, inform and empower              |
| Community and Interest Groups             | Provision of consultation and expert advice, Asset identification      | Low                         | Consult, inform and empower              |
| CBFAC and LEMC                            | Shire Committees   | Low                         | Consult, inform and empower              |

## Communications log

This Communications log captures the communications with key internal and external stakeholders that occurred during the development/review of the BRM Plan and associated Treatment Schedule.

| Timing of communication            | Stakeholders                                | Purpose   | Summary   | Communication method                        | Lesson Identified   | Follow up   |
|------------------------------------|---|---|---|---|---|---|
| When did this communication occur? | Who was the stakeholder or target audience? | What was the purpose of the communication?                                    | What topics were discussed?   | What communication method did you use?      | Were there any issues or lessons identified?  | Was there any follow up required?   |
| Review of the BRM Plan             |   |   |   |   |   |   |
| 17/10/2023                         | CBFAC                                       | Update report from Bushfire Risk Officer                                      | MAFGP 23/24 progress<br><br>Discuss BRMS priority treatments for 2024/25<br><br>BRMP development update | Verbal and visual face to face presentation | Quality feedback from FCO's on Critical Link Road Verges and improvements seen with PPFB compliance   | Set a plan to engage volunteer BFB's to support mitigation activities, may include weekends |
| 21/2/2024                          | LEMC  | Advise LEMC of pending work on new BRMP and stakeholder input with this group | Presentation of origin and purpose of the BRMP  | Verbal and visual face to face presentation | Concern over timing and capability of LG to deliver on BRMP. How to calculate Systemic RA.  | BRO to gain knowledge of systemic risk assessment evaluation                                |
| 26/3/2024                          | CBFAC                                       | Update report from Bushfire Risk Officer                                      | Presentation of origin and purpose of the BRMP and the work plan prior to submission                    | Verbal and visual face to face presentation | Mapping of critical Link Roads was well received.<br><br>Congratulations on the additional tanks and standard couplings provided and additional funding | What addition treatments can be created in BRMS to address evacuation routes                |

| Timing of communication | Stakeholders                       | Purpose   | Summary  | Communication method                                | Lesson Identified   | Follow up  |
|-------------------------|------------------------------------|---|--|---|---|--|
|                         |                                    |   |  |   | in line with our plan for 2024/25   |  |
| 15/5/2024               | Council briefing                   | Update report from Bushfire Risk Officer on BRMP                                  | Presentation of origin and purpose of the BRMP and the work plan required prior to submission                    | Verbal and visual face to face presentation         | Council would like to input more to the plan and suggested a workshop be held prior to final submission | Workshop to be held with Council 10 <sup>th</sup> July |
| 21/5/2024               | Community Development Team meeting | Identify any key changes or additions relevant for inclusion into the BRMP review | Changes to land use and economy within the Shire. Current and planned community education programs and material. | Face to face meeting                                | Engagement with the CDT is important to ensure bushfire topics are included in SoC community messaging. | Opportunity to provide comment to Rev A of the BRMP    |
| 31/5/2024               | Chittering Landcare Centre         | Consult and provide input for the BRMP review                                     | Key environmental sensitivities and vegetation information for the BRMP review                                   | Face to face meeting                                | Importance of engagement with Chittering Landcare Centre for BRMP input and treatment identification.   | Input into key areas within the BRMP review            |
| 11/6/2024               | CBFAC                              | Update report from Bushfire Risk Officer  | Workshop draft submission for  | Verbal and visual face to face with open questions. | Interest in systemic risk and considering long term health and  | Timelines for BRMP to align with review of             |

| Timing of communication | Stakeholders                  | Purpose                                  | Summary  | Communication method                               | Lesson Identified   | Follow up   |
|-------------------------|-------------------------------|--|--|--|---|---|
|                         |                               |  | further stakeholder input  | FCO's have email and sms topic threads             | economic aspects of a disaster on the community.                    | local laws and operating procedures. Assess if compliance of S33 notices is improving private property and community risk ratings |
| 10/7/2024               | Council Workshop              | Engagement of Stakeholders               | Workshop draft submission for further stakeholder knowledge and input                                      | Verbal and visual face to face with open questions | The value of the BRMP when it provides grant funding opportunities. | Consensus achieved with level of risk acceptability for inclusion into this plan.   |
| 1/8/2024                | Community user group meetings | Engagement of Stakeholders               | Presentation of origin and purpose of the BRMP and how they can be involved throughout its implementation? | Verbal and visual face to face with discussion     | TBD   | Continued engagement  |
| 28/8/2024               | LEMC                          | Update report from Bushfire Risk Officer | Inform LEMC of the update of the BRMP review particularly around critical link roads and systemic risk     | Verbal and visual face to face with open questions | TBD   | Continued engagement  |

## Communication Plan

This Communication Plan outlines the key communication initiatives that will be undertaken during the implementation of the BRM Plan.

| Timing of communication | Stakeholders                                       | Communication Objective(s) | Communication Method                       | Key Message or Purpose   | Responsibility   | Identified Risks to Communication                  | Strategy to Manage Risks  | Monitoring and Evaluation Method                    |
|-------------------------|--|----------------------------|--|--|--|--|---|---|
| 2024-2026               | Shire of Chittering Councillors and Executive Team | 1-5                        | Face to face meetings, emails, reports.    | Risk analysis and prioritised strategic treatments.                          | Shire of Chittering's Bushfire Risk Officer & Executive Manager Development Services | Information not up to date. Staff and Cr movement. | Clear communication and regular updates. Setting a clear purpose. | Feedback, questions, and level of support received. |
| 2024-2026               | Department of Fire and Emergency Services          | 1-5                        | Email, phone calls, face to face meetings. | Risk analysis and prioritised strategic treatments. Treatment notifications. | Bushfire Risk Officer – Shire of Chittering  | Information not up to date. Staff movement.        | Clear communication and regular updates. Setting a clear purpose. | Ongoing communication. Achievement of commitments.  |
| 2024-2026               | DBCA Parks and Wildlife                            | 1-5                        | Email, phone calls, face to face meetings. | Risk analysis and prioritised strategic treatments. Treatment notifications. | Bushfire Risk Officer – Shire of Chittering  | Information not up to date. Staff movement.        | Clear communication and regular updates. Setting a clear purpose. | Ongoing communication. Achievement of commitments.  |
| 2024-2026               | CBFAC / LEMC                                       | 1-5                        | Face to face meetings, provision of        | Risk analysis and prioritised strategic treatments.                          | Bushfire Risk Officer – Shire of Chittering  | Information not up to date. Time constraints.      | Clear communication and regular updates.                          | Ongoing communication. Achievement of commitments.  |

| Timing of communication | Stakeholders                         | Communication Objective(s) | Communication Method  | Key Message or Purpose  | Responsibility   | Identified Risks to Communication  | Strategy to Manage Risks   | Monitoring and Evaluation Method                   |
|-------------------------|--------------------------------------|----------------------------|---|---|--|--|--|--|
|                         |                                      |                            | reports or presentations.   |   |  |  | Setting a clear purpose.   |  |
| 2024-2026               | Private Landowners and Land Managers | 1-5                        | Social media, Shire website, face to face meetings, community workshops and forums. | Treatment schedule and risk analysis. Negotiation on treatments. Treatment notifications. | Shire of Chittering's Bushfire Risk Officer & Communications Officer | Information not up to date. Staff movement. Lack of buy-in from landowners/managers. Limited time and resources. | Well planned and executed sharing of timely and relevant information. Open conversations.                      | Ongoing communication. Achievement of commitments. |
| 2024-2026               | Asset Owners                         | 1-5                        | Face to face meetings, phone calls, emails.   | Empowerment through provision of risk analysis information.                               | Bushfire Risk Officer – Shire of Chittering                          | Information not up to date. Staff movement. Lack of buy-in from asset owners. Limited time and resources.        | Well planned and executed sharing of timely and relevant information. Open conversations with agreed outcomes. | Ongoing communication. Achievement of commitments. |
| 2024-2026               | Chittering Tourist and               | 1-5                        | Face to face meetings, phone calls, emails.   | Empowerment through provision of risk   | Shire of Chittering's Bushfire Risk Officer                          | Information not up to date. Staff movement.  | Well planned and executed sharing of   | Ongoing communication.                             |

| Timing of communication | Stakeholders         | Communication Objective(s) | Communication Method                       | Key Message or Purpose                              | Responsibility                              | Identified Risks to Communication  | Strategy to Manage Risks   | Monitoring and Evaluation Method                   |
|-------------------------|----------------------|----------------------------|--|---|---|--|--|--|
|                         | Business Association |                            |  | analysis information. Treatment notifications.      | & Communications Officer                    | Lack of buy-in from asset owners. Limited time and resources.  | timely and relevant information. Open conversations with agreed outcomes.                                      | Achievement of commitments.                        |
| 2024-2026               | Service Providers    | 1-5                        | Face to face meetings, phone calls, emails | Risk analysis and prioritised strategic treatments. | Bushfire Risk Officer – Shire of Chittering | Information not up to date. Staff movement. Lack of buy-in from service providers. Limited time and resources. | Well planned and executed sharing of timely and relevant information. Open conversations with agreed outcomes. | Ongoing communication. Achievement of commitments. |

## Appendix C – Aboriginal Cultural Heritage

Information extracted from Department of Planning Lands and Heritage, Aboriginal Cultural Heritage Inquiry System on 22 March 2024.

### Registered Sites



Department of Planning,  
Lands and Heritage

## Aboriginal Cultural Heritage Inquiry System

### List of Aboriginal Cultural Heritage (ACH) Register

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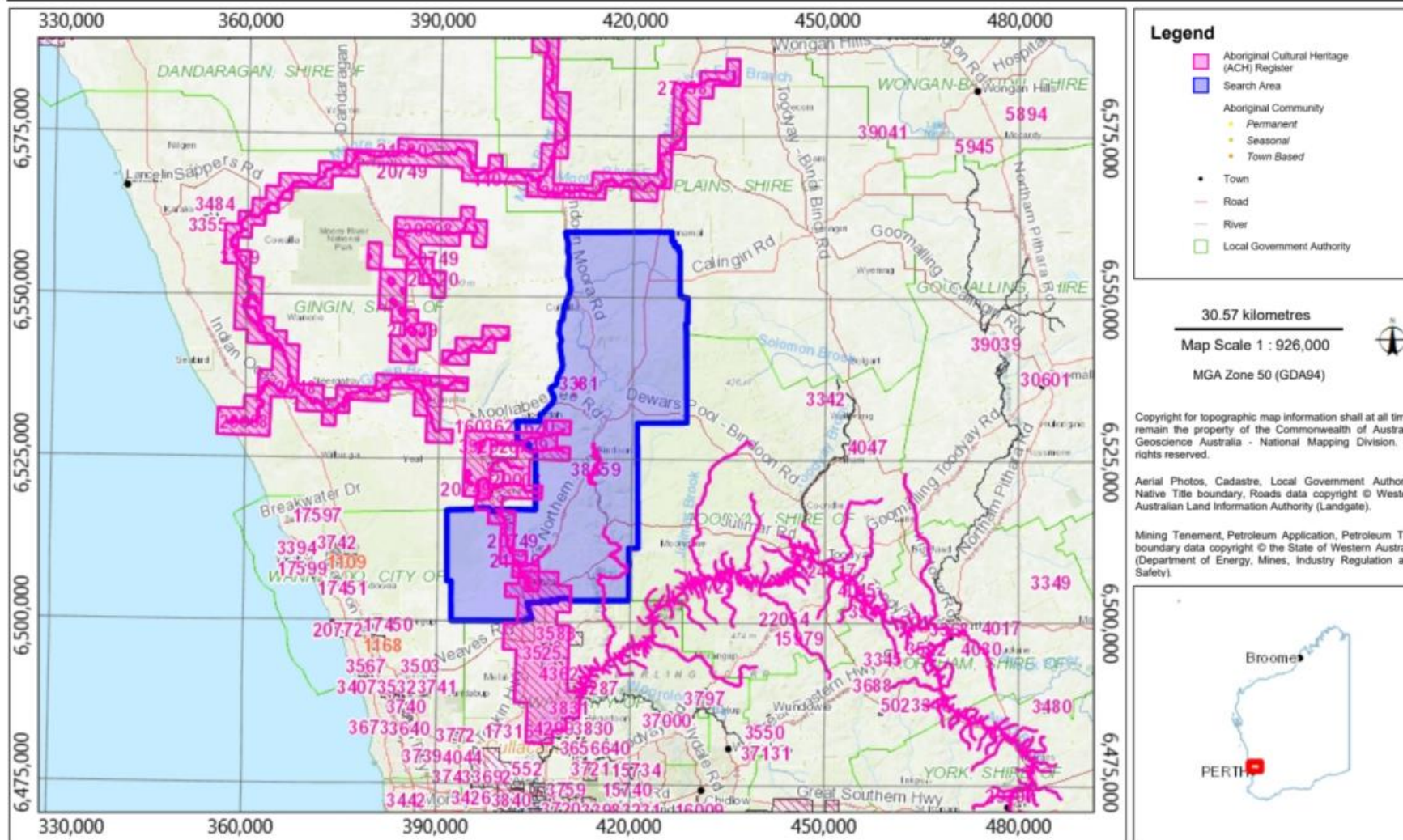
| ID    | Name  | Boundary Restricted | Boundary Reliable | Culturally Sensitive | Culturally Sensitive Nature         | Status   | Place Type   | Knowledge Holders                                      | Legacy ID |
|-------|---|---------------------|-------------------|----------------------|-------------------------------------|----------|--|--|-----------|
| 3381  | MOOLIABEENEE REED SITE.                                       | No                  | No                | No                   | No Gender / Initiation Restrictions | Register | Sub surface cultural material; Artefacts / Scatter; Camp                                     | *Registered Knowledge Holder names available from DPLH | S00068    |
| 3525  | ELLEN BROOK: UPPER SWAN                                       | Yes                 | Yes               | Yes                  | No Gender / Initiation Restrictions | Register | Creation / Dreaming Narrative  | *Registered Knowledge Holder names available from DPLH | S02516    |
| 3565  | ELLEN BROOK: MUCHEA 1.  | No                  | Yes               | No                   | No Gender / Initiation Restrictions | Register | Sub surface cultural material; Artefacts / Scatter   | *Registered Knowledge Holder names available from DPLH | S02468    |
| 3566  | ELLEN BROOK: MUCHEA 2.  | No                  | Yes               | No                   | No Gender / Initiation Restrictions | Register | Sub surface cultural material; Artefacts / Scatter   | *Registered Knowledge Holder names available from DPLH | S02469    |
| 15979 | AVON RIVER  | No                  | Yes               | No                   | No Gender / Initiation Restrictions | Register | Camp; Creation / Dreaming Narrative; Landscape / Seascape Feature; Other; Water Source       | *Registered Knowledge Holder names available from DPLH |           |
| 20008 | Gingin Brook Waggyt Site                                      | Yes                 | Yes               | Yes                  | No Gender / Initiation Restrictions | Register | Camp; Creation / Dreaming Narrative; Historical; Hunting Place; Plant Resource; Water Source | *Registered Knowledge Holder names available from DPLH |           |
| 20749 | MOORE RIVER WAUGAL  | No                  | Yes               | No                   | No Gender / Initiation Restrictions | Register | Creation / Dreaming Narrative  | *Registered Knowledge Holder names available from DPLH |           |
| 21620 | Chandala Brook<br>#Duplicate of ID 3525                       | No                  | Yes               | No                   | No Gender / Initiation Restrictions | Register | Creation / Dreaming Narrative  | *Registered Knowledge Holder names available from DPLH |           |
| 38659 | Needonga  | No                  | Yes               | No                   |                                     | Register | Creation / Dreaming Narrative; Water Source  | *Registered Knowledge Holder names available from DPLH |           |
| 38839 | Spring Valley Artefact Scatter (Main Roads ID: MR_YUE_18_001) | No                  | No                | No                   |                                     | Register | Artefacts / Scatter  | *Registered Knowledge Holder names available from DPLH |           |



## Aboriginal Cultural Heritage Inquiry System

### Map of Aboriginal Cultural Heritage (ACH) Register

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## Lodged Sites



## Aboriginal Cultural Heritage Inquiry System

### List of Aboriginal Cultural Heritage (ACH) Lodged

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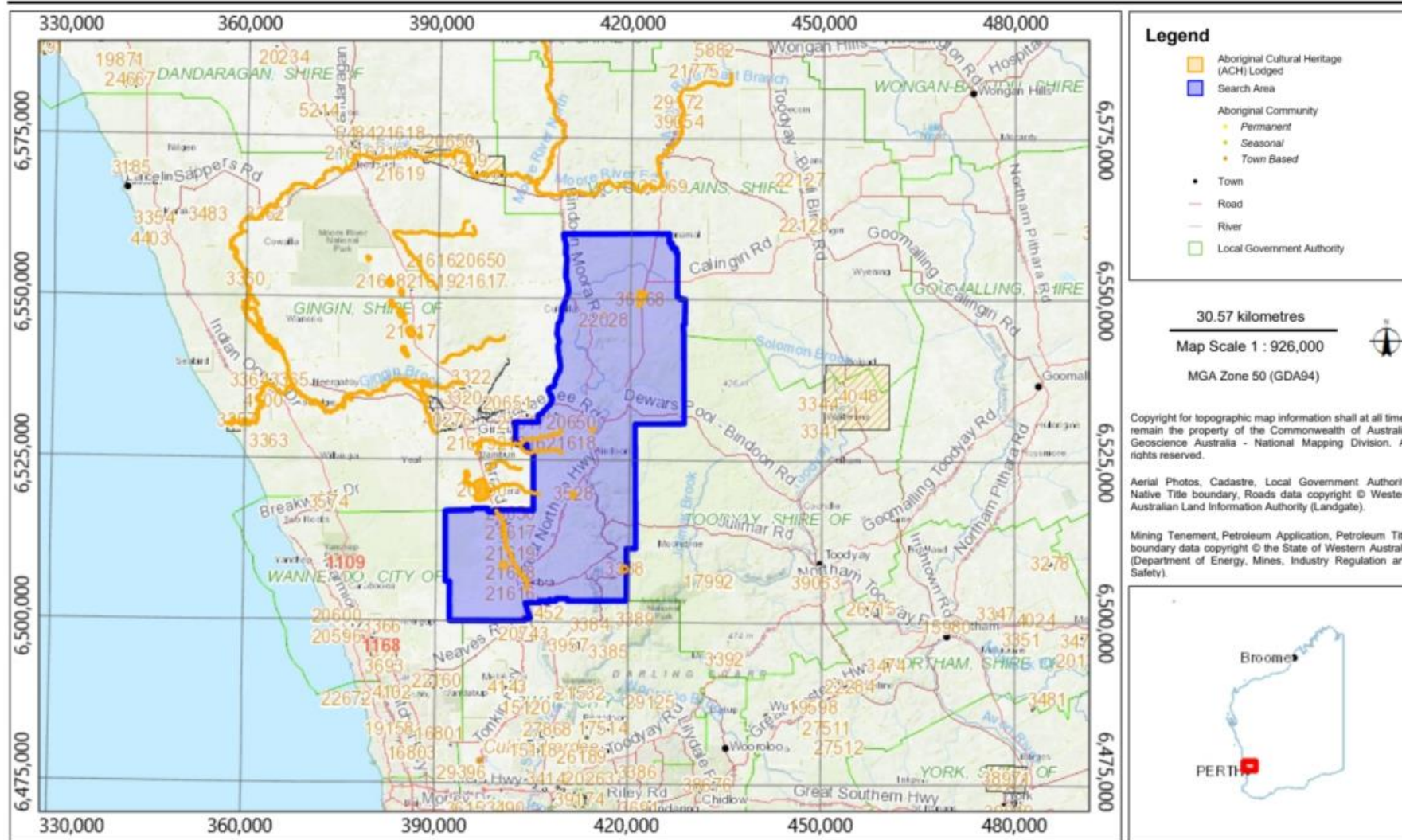
| ID    | Name                        | Boundary Restricted | Boundary Reliable | Culturally Sensitive | Culturally Sensitive Nature         | Status | Place Type   | Knowledge Holders                                      | Legacy ID |
|-------|-----------------------------|---------------------|-------------------|----------------------|-------------------------------------|--------|--|--|-----------|
| 3353  | BROCKMAN RIVER CREEK        | No                  | No                | No                   | No Gender / Initiation Restrictions | Lodged | Artefacts / Scatter  | *Registered Knowledge Holder names available from DPLH |           |
| 3388  | GAYAMIN POOL                | No                  | Yes               | No                   | No Gender / Initiation Restrictions | Lodged | Artefacts / Scatter  | *Registered Knowledge Holder names available from DPLH |           |
| 3422  | BINDOON HILL                | No                  | No                | No                   | No Gender / Initiation Restrictions | Lodged | Burial   | *Registered Knowledge Holder names available from DPLH |           |
| 3528  | BURROLOO WELL.              | No                  | No                | No                   | No Gender / Initiation Restrictions | Lodged | Artefacts / Scatter; Water Source  | *Registered Knowledge Holder names available from DPLH |           |
| 19182 | Muchea Pipeline Deviation 1 | No                  | Yes               | No                   | No Gender / Initiation Restrictions | Lodged | Creation / Dreaming Narrative; Other   | *Registered Knowledge Holder names available from DPLH |           |
| 20650 | Lennard Brook               | No                  | Yes               | No                   | No Gender / Initiation Restrictions | Lodged | Creation / Dreaming Narrative; Landscape / Seascape Feature; Other; Water Source | *Registered Knowledge Holder names available from DPLH |           |
| 21616 | Boonanarring Brook          | No                  | 805180000         | No                   | No Gender / Initiation Restrictions | Lodged | Creation / Dreaming Narrative  | *Registered Knowledge Holder names available from DPLH |           |
| 21617 | Wallerung Brook             | No                  | Yes               | No                   | No Gender / Initiation Restrictions | Lodged | Creation / Dreaming Narrative  | *Registered Knowledge Holder names available from DPLH |           |
| 21618 | Nullilla Brook              | No                  | 805180000         | No                   | No Gender / Initiation Restrictions | Lodged | Creation / Dreaming Narrative  | *Registered Knowledge Holder names available from DPLH |           |
| 21619 | Breera Brook                | No                  | 805180000         | No                   | No Gender / Initiation Restrictions | Lodged | Creation / Dreaming Narrative  | *Registered Knowledge Holder names available from DPLH |           |
| 22027 | Udumung Brook Artefact 1    | No                  | Yes               | No                   | No Gender / Initiation Restrictions | Lodged | Artefacts / Scatter  | *Registered Knowledge Holder names available from DPLH |           |
| 22028 | Udumung Brook Artefact 2    | No                  | Yes               | No                   | No Gender / Initiation Restrictions | Lodged | Artefacts / Scatter  | *Registered Knowledge Holder names available from DPLH |           |
| 36968 | Udumung Nature Reserve      | No                  | Yes               | No                   | No Gender / Initiation Restrictions | Lodged | Camp; Meeting Place  | *Registered Knowledge Holder names available from DPLH |           |



## Aboriginal Cultural Heritage Inquiry System

### Map of Aboriginal Cultural Heritage (ACH) Lodged

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## Appendix D – Threatened Species and Communities

### Conservation codes/status

T - Rare or likely to become extinct

X - Presumed extinct

IA - Protected under international agreement

S - Other specially protected fauna

1 - Priority 1

2 - Priority 2

3 - Priority 3

4 - Priority 4

5 - Priority 5

### Threatened Flora

Table 12 Shire of Chittering Threatened Flora - extract from Local Biodiversity Strategy 2022

| Name  | Family           | Conservation Code | Ranking |
|---|------------------|-------------------|---------|
| Acacia alata var. platyptera  | Fabaceae         | 4                 |         |
| Acacia anarthros  | Fabaceae         | 3                 |         |
| Acacia anomala  | Fabaceae         | T                 | VU      |
| Acacia browniana var. glaucescens   | Fabaceae         | 2                 |         |
| Acacia cummingiana  | Fabaceae         | 3                 |         |
| Acacia drummondii subsp. affinis  | Fabaceae         | 3                 |         |
| Acacia oncinophylla subsp. oncinophylla   | Fabaceae         | 3                 |         |
| Acacia pulchella var. reflexa acuminate<br>bracteole variant (R.J. Cumming 882) | Fabaceae         | 3                 |         |
| Adenanthos cygnorum subsp. chamaephyton   | Proteaceae       | 3                 |         |
| Allocasuarina ramosissima   | Casuarinaceae    | 3                 |         |
| Anigozanthos humilis subsp. chrysanthus   | Haemodoraceae    | 4                 |         |
| Asteridea gracilis  | Asteraceae       | 3                 |         |
| Asterolasia grandiflora   | Rutaceae         | 4                 |         |
| Calothamnus pachystachyus   | Myrtaceae        | 4                 |         |
| Caustis gigas   | Cyperaceae       | 2                 |         |
| Chamaescilla gibsonii   | Xanthorrhoeaceae | 3                 |         |

| Name   | Family       | Conservation Code | Ranking |
|--|--------------|-------------------|---------|
| Chamelaucium lullfitzii (N.G. Marchant 6)                      | Myrtaceae    | T                 | VU      |
| Conospermum densiflorum subsp. unicephalatum                   | Proteaceae   | T                 | EN      |
| Cyanicula ixioides subsp. candida                              | Orchidaceae  | 2                 |         |
| Cyathochaeta teretifolia                                       | Cyperaceae   | 3                 |         |
| Darwinia acerosa   | Myrtaceae    | T                 | EN      |
| Darwinia foetida   | Myrtaceae    | T                 | EN      |
| Darwinia sp. Bindoon (S.Patrick 281)                           | Myrtaceae    | P1                |         |
| Daviesia debilior subsp. sinuans                               | Fabaceae     | 3                 |         |
| Diuris drummondii  | Orchidaceae  | T                 |         |
| Drosera sewelliae  | Droseraceae  | 2                 |         |
| Eleocharis keigheryi   | Cyperaceae   | T                 | VU      |
| Eryngium pinnatifidum subsp. Umbraphilum (G.J. Keighery 13967) | Apiaceae     | 2                 |         |
| Eucalyptus exilis  | Myrtaceae    | 4                 |         |
| Gastrolobium crispatum   | Fabaceae     | 1                 |         |
| Gastrolobium nudum   | Fabaceae     | 2                 |         |
| Goodenia arthrotricha  | Goodeniaceae | T                 | EN      |
| Grevillea althoferorum subsp. fragilis                         | Proteaceae   | T                 | CR      |
| Grevillea bracteosa subsp. bracteosa                           | Proteaceae   | T                 |         |
| Grevillea candolleana  | Proteaceae   | 2                 |         |
| Grevillea corrugata  | Proteaceae   | T                 | VU      |
| Grevillea curviloba  | Proteaceae   | T                 |         |
| Grevillea drummondii   | Proteaceae   | 4                 |         |
| Grevillea florida  | Proteaceae   | 3                 |         |
| Grevillea synapheae subsp. latiloba                            | Proteaceae   | 1                 |         |
| Guichenotia tuberculata  | Malvaceae    | 3                 |         |
| Halgania corymbosa   | Boraginaceae | 3                 |         |
| Hibbertia glomerata subsp. ginginensis                         | Dilleniaceae | 2                 |         |
| Hibbertia miniata  | Dilleniaceae | 4                 |         |
| Hibbertia subglaba   | Dilleniaceae | 3                 |         |
| Hypocalymma sylvestre  | Myrtaceae    | T                 | EN      |

|   |                |   |    |
|---|----------------|---|----|
| <i>Hypolaena robusta</i>  | Restionaceae   | 4 |    |
| <i>Isotropis cuneifolia</i> subsp. <i>glabra</i>                              | Fabaceae       | 2 |    |
| <i>Lasiopetalum caroliae</i>  | Malvaceae      | 3 |    |
| <i>Leucopogon squarrosus</i> subsp. <i>trigynus</i>                           | Ericaceae      | 2 |    |
| <i>Millotia tenuifolia</i> var. <i>laevis</i>                                 | Asteraceae     | 2 |    |
| <i>Ornduffia submersa</i>   | Menyanthaceae  | 4 |    |
| <i>Oxymyrrhine coronata</i>   | Myrtaceae      | 4 |    |
| <i>Persoonia sulcata</i>  | Proteaceae     | 4 |    |
| <i>Platysace ramosissima</i>  | Apiaceae       | 3 |    |
| <i>Poranthera moorokatta</i>  | Phyllanthaceae | 2 |    |
| <i>Schoenus griffinianus</i>  | Cyperaceae     | 4 |    |
| <i>Senecio gilbertii</i>  | Asteraceae     | 1 |    |
| <i>Spirogardnera rubescens</i>  | Santalaceae    | T | VU |
| <i>Stylidium cymiferum</i>  | Stylidiaceae   | 3 |    |
| <i>Stylidium glabrifolium</i>   | Stylidiaceae   | 2 |    |
| <i>Stylidium sacculatum</i>   | Stylidiaceae   | 3 |    |
| <i>Stylidium semaphorum</i>   | Stylidiaceae   | T | CR |
| <i>Stylidium squamellosum</i>   | Stylidiaceae   | 2 |    |
| <i>Styphelia filifolia</i>  | Ericaceae      | 3 |    |
| <i>Synaphea grandis</i>   | Proteaceae     | 4 |    |
| <i>Synaphea panhesya</i>  | Proteaceae     | 1 |    |
| <i>Synaphea rangiferops</i>   | Proteaceae     | 2 |    |
| <i>Tetraria</i> sp. <i>Chandala</i> (G.J.Keighery 17055)                      | Cyperaceae     | 2 |    |
| <i>Thysanotus</i> sp. <i>Badgingarra</i> (E.A.Griffin 2511)                   | Asparagaceae   | 2 |    |
| <i>Tetradlea pilifera</i>   | Elaeocarpaceae | 3 |    |
| <i>Thelymitra stellata</i>  | Orchidaceae    | T | EN |
| <i>Thelymitra variegata</i>   | Orchidaceae    | 2 |    |
| <i>Verticordia lindleyi</i> subsp. <i>lindleyi</i>                            | Myrtaceae      | 4 |    |
| <i>Verticordia rutilastra</i>   | Myrtaceae      | 3 |    |
| <i>Verticordia serrata</i> var. <i>linearis</i>                               | Myrtaceae      | 3 |    |
| <i>Verticordia serrata</i> var. <i>Udumung</i> (D. Hunter & B. Yarran 941006) | Myrtaceae      | 2 |    |

## Threatened Fauna

Table 13 Shire of Chittering Threatened Fauna - extract from Local Biodiversity Strategy 2022

| Species   | Common Name  | Conservation Code |
|---|--|-------------------|
| <i>Oxyura australis</i>                           | Blue-billed Duck                                   | P4                |
| <i>Botaurus poiciloptilus</i>                     | Australasian Bittern                               | T                 |
| <i>Thinornis rubricollis</i>                      | Hooded Plover                                      | P4                |
| <i>Falco peregrinus</i>                           | Peregrine Falcon                                   | S                 |
| <i>Calyptorhynchus banksii</i> subsp. naso        | Forest Red-tailed Black Cockatoo                   | T                 |
| <i>Calyptorhynchus baudinii</i>                   | Baudin's Cockatoo                                  | T                 |
| <i>Calyptorhynchus latirostris</i>                | Carnaby's Cockatoo                                 | T                 |
| <i>Calyptorhynchus</i> sp.                        | White-tailed Black Cockatoo                        | T                 |
| <i>Actitis hypoleucos</i>                         | Common Sandpiper                                   | IA                |
| <i>Calidris acuminata</i>                         | Sharp-tailed Sandpiper                             | IA                |
| <i>Calidris ferruginea</i>                        | Curlew Sandpiper                                   | T                 |
| <i>Calidris melanotos</i>                         | Pectoral Sandpiper                                 | IA                |
| <i>Calidris ruficollis</i>                        | Red-necked Stint                                   | IA                |
| <i>Calidris subminuta</i>                         | Long-toed Stint                                    | IA                |
| <i>Limosa limosa</i>                              | Black-tailed Godwit                                | IA                |
| <i>Tringa glareola</i>                            | Wood Sandpiper                                     | IA                |
| <i>Tringa nebularia</i>                           | Common Greenshank                                  | IA                |
| <i>Plegadis falcinellus</i>                       | Glossy Ibis  | IA                |
| <i>Aspidites ramsayi</i> subsp. southwest subpop. | Woma southwest subpop.                             | P1                |
| <i>Pseudemydura umbrina</i>                       | Western Swamp Tortoise                             | T                 |
| <i>Neelaps calonotos</i>                          | Black-striped Snake, black-striped burrowing snake | P3                |
| <i>Hesperocolletes douglasi</i>                   | a short-tongue bee                                 | X                 |
| <i>Leioproctus contrarius</i>                     | a short-tongued bee                                | P3                |
| <i>Throscodectes xederoides</i>                   | Mogumber Bush Cricket                              | P3                |
| <i>Dasyurus geoffroii</i>                         | Chuditch, Western Quoll                            | T                 |
| <i>Phascogale tapoatafa</i> subsp. wambenger      | South-western Brush-tailed Phascogale              | S                 |
| <i>Notamacropus eugenii</i> subsp. derbianus      | Tammar Wallaby                                     | P4                |
| <i>Notamacropus irma</i>                          | Western Brush Wallaby                              | P4                |

| Species             | Common Name                                     | Conservation Code |
|---------------------|---|-------------------|
| Leporillus conditor | Greater Stick-nest Rat                          | S                 |
| Isodon fusciventer  | Quenda, southwestern brown bandicoot            | P4                |
| Macrotis lagotis    | Bilby   | T                 |
| Galaxiella munda    | mud minnow, western dwarf galaxias              | T                 |
| Westralunio carteri | Carter's Freshwater Mussel                      | T                 |
| Euoplos inornatus   | inornate trapdoor spider northern Jarrah Forest | P3                |
| Idiosoma nigrum     | Shield-backed Trapdoor Spider                   | T                 |

## Threatened Ecological Communities

Table 14 Shire of Chittering Threatened Ecological Communities (November 2023)

| Community identifier | Community name  | WA listing category   | WA listing criteria met (IUCN Red List of Ecosystems) | National listing (EPBC Act)   | General location (IBRA bioregions) | DBCA regions     | DBCA districts                                   | Previous category (non-statutory listing endorsed in 2018 by WA Minister for Environment) |
|----------------------|---|-----------------------|---|---|------------------------------------|------------------|--|---|
| SCP20b               | <i>Banksia attenuata</i> and/or <i>Eucalyptus marginata</i> woodlands of the eastern side of the Swan Coastal Plain (floristic community type 20b as originally described in Gibson et al. 1994)      | Critically endangered | CR B1a(iii)   | Commonly a component of 'Banksia Woodlands of the Swan Coastal Plain ecological community' (Endangered)                   | Jarrah Forest, Swan Coastal Plain  | South West, Swan | Wellington, Perth Hills, Swan Coastal            | Endangered  |
| SCP20a               | <i>Banksia attenuata</i> woodlands over species rich dense shrublands (floristic community type 20a as originally described in Gibson et al. 1994)  | Critically endangered | CR B1a(i),b   | Commonly a component of 'Banksia Woodlands of the Swan Coastal Plain ecological community' (Endangered)                   | Swan Coastal Plain                 | Swan             | Perth Hills, Swan Coastal                        | Endangered  |
| Mound Springs SCP    | Communities of Tumulus Springs (Organic Mound Springs, Swan Coastal Plain)  | Critically endangered | CR A3<br>CR B1b                                       | Assemblages of plants and invertebrate animals of tumulus (organic mound) springs of the Swan Coastal Plain (Endangered)  | Swan Coastal Plain                 | Swan             | Perth Hills, Swan Coastal                        | Critically endangered   |
| SCP3a                | <i>Corymbia calophylla</i> – <i>Kingia australis</i> woodlands on heavy soils (floristic community type 3a as originally described in Gibson et al. 1994)   | Critically endangered | CR B1b  | <i>Corymbia calophylla</i> - <i>Kingia australis</i> woodlands on heavy soils of the Swan Coastal Plain (Endangered)      | Jarrah Forest, Swan Coastal Plain  | South West, Swan | Blackwood, Perth Hills, Swan Coastal             | Critically endangered   |
| SCP20c               | Shrublands and woodlands of the eastern side of the Swan Coastal Plain (floristic community type 20c as originally described in Gibson et al. 1994)   | Critically endangered | CR B1a(i),(iii),b,<br>B2a(i),(iii),b                  | Shrublands and Woodlands of the eastern Swan Coastal Plain (Endangered)   | Swan Coastal Plain                 | Swan             | Perth Hills, Swan Coastal                        | Critically endangered   |
| SCP3b                | <i>Corymbia calophylla</i> — <i>Eucalyptus marginata</i> woodlands on sandy clay soils of the southern Swan Coastal Plain (floristic community type 3b as originally described in Gibson et al. 1994) | Endangered            | EN A3<br>EN B1b, B2b                                  | Not listed  | Jarrah Forest, Swan Coastal Plain  | South West, Swan | Blackwood, Wellington, Perth Hills, Swan Coastal | Vulnerable  |
| SCP3c                | <i>Corymbia calophylla</i> — <i>Xanthorrhoea preissii</i> woodlands and shrublands, Swan Coastal Plain (floristic community type 3c as originally described in Gibson et al. 1994)                    | Endangered            | EN A3<br>EN B1a(ii),b, B2a(ii),b                      | <i>Corymbia calophylla</i> - <i>Xanthorrhoea preissii</i> woodlands and shrublands of the Swan Coastal Plain (Endangered) | Jarrah Forest, Swan Coastal Plain  | South West, Swan | Blackwood, Wellington, Perth Hills, Swan Coastal | Critically endangered   |
| SCP07                | Herb rich saline shrublands in clay pans (floristic community type 7 as originally described in Gibson et al. 1994)   | Endangered            | EN B1a(iii),b,<br>B2a(iii),b                          | Component of 'Clay Pans of the Swan Coastal Plain' (Critically endangered)  | Swan Coastal Plain                 | South West, Swan | Blackwood, Perth Hills, Swan Coastal             | Vulnerable  |
| Muchea Limestone     | Shrublands and woodlands on Muchea Limestone of the Swan Coastal Plain  | Endangered            | EN A3<br>EN B1b, B2b                                  | Shrublands and Woodlands on Muchea Limestone of the Swan Coastal Plain (Endangered)                                       | Swan Coastal Plain                 | Swan, South West | Swan Coastal, Wellington                         | Endangered  |



**Chittering** - *offering an idyllic rural lifestyle in Muchea, Lower Chittering, Chittering, Mooliabeenee, Bindoon and Wannamal*