DECENTRALISED WATER CONSULTING

Murrindindi Shire Domestic Wastewater Management Plan

Draft V2 Prepared for Murrindindi Shire Council

Murrindindi Shire Council

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1 Introduction

Murrindindi Shire Council ('Council') are responsible for the approval and on-going oversight of on-site wastewater management systems (traditionally described as 'Septic Tanks' and more recently described as 'On-site Systems') within the Shire. On-site systems are the traditional method for managing sewage and other forms of wastewater on properties that are not connected to a Goulburn Valley Water reticulated (or town) sewerage system. They are also the preferred method of wastewater management for new developments in Low Density Residential, Rural Living and Rural land use zonings.

When designed, constructed and operated correctly, on-site systems can provide a safe, cost effective and sustainable wastewater management service. Unfortunately, not all on-site systems meet community expectations in this regard. This can occur due to a variety of factors including;

- Topography, soil and climate constraints (land capability constraints);
- Small lot size associated with older subdivisions;
- Older septic systems that discharge sewage off-site;
- A lack of management and maintenance;
- Septic systems incorrectly installed; and
- Wastewater load exceeding septic system capacity.

In some circumstances the impact of failing on-site systems can be significant, particularly with regards to risk to human health. Under the State Environment Protection Policy (Waters of Victoria or 'WOV') Council are required to prepare and implement a Domestic Wastewater Management Plan (DWMP). The State Environment Protection Policy (WOV) requires a DWMP to identify and prioritise wastewater risks in a local government area and develop actions to manage those risks.

1.1 Purpose

This is a revision of the Murrindindi DWMP which was first developed and adopted in 2006. It also coincides with a recent update of the EPA *Code of Practice: On-site Wastewater Management* (2016) and a current review of the SEPP (WOV). In the thirteen years since the initial DWMP, there have also been a range of new technologies and approaches to on-site wastewater management.

The primary purpose of this DWMP is to:

- identify, assess and manage cumulative risks of onsite domestic wastewater systems discharging waste beyond allotment boundaries;
- engage with the Victorian Environmental Protection Authority (EPA) and Goulburn Valley Water to identify existing unsewered allotments for inclusion in the domestic wastewater management

plan, which do not retain wastewater on site or are not capable of preventing the discharge of wastewater beyond allotment boundaries, or preventing impacts on groundwater beneficial uses; and

- identify, cost, prioritise and evaluate options to —
    - provide solutions to prevent discharge of wastewater beyond allotment boundaries;
    - provide for the compliance assessment and enforcement of on-site domestic wastewater systems in accordance with the plan; and
    - where applicable have regard to the Guidelines for Planning Permit Applications in Open, Potable Water Supply Catchments and any relevant guidelines authorised by the EPA.

2 What do Residents need to know about this Plan?

- Council are required to prepare a Domestic Wastewater Management Plan (DWMP) under the State Environment Protection Policy (Waters of Victoria). This DWMP must assess domestic wastewater (often referred to as on-site wastewater or septic tank) risks in the municipality and develop prioritised actions to address potential impacts.
- Specifically, Council are required to identify properties where wastewater is discharging off-site and develop actions to prevent this discharge from occurring.
- This DWMP includes on-site wastewater hazard mapping that identifies the risk associated with on-site wastewater management on each property based on land capability and lot size.
- A number of townships / localities have previously been identified by Council as high risk. Of these, Flowerdale, Kinglake and Thornton have been identified (via a risk based prioritisation process) as key areas identified as in need of improved or potentially alternative wastewater management strategies.
- There are a number of additional high risk areas along with isolated small lots that may also pose a risk of off-site discharge as there is insufficient land available for full on-site wastewater management (e.g. Kinglake, Buxton).
- The majority of unsewered areas in Murrindindi Shire are moderately to poorly suited to on-site wastewater management subject to meeting the requirements of the EPA Code of Practice for On-site Wastewater Management. This is driven by land capability constraints across the Shire, in particular lot size (in certain areas), climate, slope, and the presence of dams and incised watercourses.
- Domestic Wastewater Management Planning has included an evaluation of existing and potential future lot sizes in unsewered residential areas in conjunction with the broader Planning Controls.
- It is recommended that higher levels of scrutiny are applied to proposed unsewered developments proposing new allotments that are less than one hectare in size. The presence of constraints such as slope, gullies and watercourses can increase risk and limit options on lots below this size.
- The DWMP proposes a set of "Minimum Standards" for Land Capability Assessment and design information that needs to be submitted with Septic Tank or Planning Permits in unsewered areas classified as high risk.
- The DWMP also recommends that consideration be given to potential funding mechanisms for increased on-going oversight of on-site wastewater management system compliance.

3 Background

Council is responsible under the *Environment Protection Amendment Act (2018)* for the approval of on-site wastewater management systems (on-site systems or 'septic systems'). This includes the approval of alterations to existing systems and consideration of wastewater management risks associated with new unsewered development. The Murrindindi Shire Planning Scheme include reference to the relevant provisions of the *Environment Protection Amendment Act* and require consideration of the capability to contain wastewater within property boundaries when approving new development.

Council are also required to ensure existing on-site systems to not adversely impact on human health or the environment under the *Health and Wellbeing Act (2008)* and *State Environment Protection Policy (Waters)*. This has historically proven to be a challenging outcome for local councils to achieve due to constraints in the ability to resource oversight and enforce upgrades to failing or inappropriate systems.

3.1 Victorian Context

The following legislation is relevant to Domestic Wastewater Management in Victoria and has been considered in the development of this plan.

Local Government Act 1989

The Local Government Act (1989) provides a framework for the establishment and operation of Councils. This includes planning and providing services and facilities to local communities (including domestic wastewater management), making and enforcing local laws and exercising, performing and discharging the duties, functions and powers of Councils under this Act and other Acts.

Environment Protection Amendment Act 2018

The Environment Protection Amendment Act 2018 (EPAA 2018) has recently been passed which will repeal the previous Environment Protection Act 1970 (EPA 1970). The EPAA 2018 will come into effect in 2020. The purpose of the EPA 1970 was to create a legislative framework for the protection of the environment in Victoria which are to be enacted upon by the Environment Protection Authority (EPA). Some of these duties are delegated to local councils. The Act provides the basis of the regulatory framework for septic tank systems which from July 2020 will be known as on-site wastewater management systems and identifies the requirement for a permit to construct, install or alter a septic system. Permit application requirements, grounds for application refusal and septic tank maintenance requirements are also outlined under the Act.

The EPAA 2018 has introduced a range of changes including, but not limited to, stronger regulations and duties for parties engaging in operations that may have the potential to risk human health or the environment. This includes the on-site management of wastewater, in which on-going five-yearly

review of all new (but not existing) on-site wastewater permits has been mandated. Council are required to provide up to date details of new permits to EPA.

Importantly the General Environmental Duty (GED) is a key aspect of the amendment and is criminally enforceable. It requires that reasonably practicable steps are to be taken by all individuals to ensure that risk to human health and the environment are managed and eliminated or minimised. However, a strong focus of EPAA 2018 is on the regulation and duty to notify EPA regarding business and commercial operations, including the management of wastewater.

Water Act 1989

This Act provides a formal means to protection and enhancement of the environmental qualities of waterways and catchments and aims to eliminate inconsistencies in the treatment of surface and groundwater resources and waterways. Part 3 (Assessment of and Accounting for Water) of the Act identifies that the water resources assessment program must include an analysis the disposal of wastewater. This includes the collection, collation, analysis and publication of information about on-site wastewater management systems.

Planning and Environment Act 1987

The key legislation relating to land development in Victoria is the Planning and Environment Act 1987. The two objectives of the planning framework under the Act are;

- To enable land use development and planning and policy to be easily integrated with environmental conservation and resource management policies; and
- To ensure that the effects on the environment are considered when decisions are made about the use and development of land.

Public Health and Wellbeing Act 2008

The objective of this Act is to achieve the highest attainable standard of public health and wellbeing by;

- Protecting public health and preventing disease, illness, injury, disability or premature death;
- Promoting conditions in which persons can be health; and

Reducing inequalities in the state of public health and wellbeing. Under Division 1, Part 6 of the Act, Councils have a duty to remedy as reasonably possible all existing nuisances, whereby nuisances are (or a liable to be) dangerous to health or offensive. As such, if an on-site wastewater system is or has the ability to cause/become a nuisance, Council has a duty to rectify the existing / possibly threat to human health.

State Environmental Protection Policy (Waters)

This Policy provides a framework to protect and improve the quality of Victoria's waters with regard to the environmental protection principles set out in the Environment Protection Act (1970). Where reticulated sewerage is not reasonably practical (for singular and subdivision sites), Council must ensure that sewage can be sustainably managed within property boundaries. Under Part III (Division 1) of the Policy, Councils are to develop a Domestic Wastewater Management Plan that identifies the public health and environmental risks associated with on-site domestic wastewater management and outlines strategies to manage those risks. The policy also directs municipalities to utilise the Environment Protection Authority Code of Practice for Onsite Wastewater Management (EPA Publication 891.4 Dec 2016).

The Environment Protection Authorities Code of Practice for Onsite Wastewater Management provides standards and guidance to ensure the management of on-site wastewater protects public health and the environment for wastewater flows up to 5,000L/day. This code is the Victorian guideline for best practice management of on-site wastewater systems and land capability assessments. The code states that Councils need to assess the suitability of land for on-site wastewater management to ensure that permits are consistent with the guidelines of the code and outlines key obligations for Councils and occupiers of premises.

The State Environment Planning Policy (SEPP) *Waters of Victoria* has recently undergone a review and has recently been gazetted (now known as SEPP – Waters). Therefore there is a need to review the domestic wastewater management elements of the SEPP in relation to Murrindindi Shire. This review involves a consolidation of the current SEPP (Waters of Victoria) and SEPP (Groundwaters of Victoria).

The design, operation and management of on-site systems are supported by a number of standards and guidelines. Namely:

- EPA Code of Practice – Onsite Wastewater Management, Publication 891.4 (2016);
- MAV Land Capability Assessment Framework (2014) – replacing EPA Publication 746.1;
- AS/NZS 1547:2012 Onsite Domestic Wastewater Management (updated since last DWMP);
- AS/NZS 3500:2003 Plumbing and Drainage; and
- Guidelines – Planning Permit Applications in Open, Potable Water Supply Catchment Areas (DSE, 2012) – released since last DWMP.

Note: Since July 2016 EPA no longer award a Certificate of Approval to individual on-site wastewater systems. EPA now approves four system types in line with Australian Standards;

- AS/NZS 1546.1 Septic tanks
- AS/NZS 1546.2 Waterless composting toilets
- AS/NZS 1546.3 Aerated wastewater treatment systems

- AS/NZS 1546.4 Domestic greywater treatment systems (draft)

Council Officers can only approve the installation of an on-site wastewater system that is certified to comply with the relevant Australian Standard by an accredited conformity assessment body (CAB). As part of a permit application to council, the applicant will need to include a copy of the certificate of conformity from a CAB.

3.1.1 VAGO Audit of Domestic Wastewater Management

In September 2018 the Victorian Auditor General's Office (VAGO) released the report titled *Managing the Environmental Impact of Domestic Wastewater*. This audit focused on two metropolitan councils and water authorities as case studies. However, many of the outcomes are relevant state wide and specifically to Murrindindi Shire Council (MSC). Key outcomes included.

- an overly complex, onerous and duplicative regulatory framework
- a continued lack of clarity around roles and responsibilities
- regulatory barriers and gaps in governance and approval processes are hindering the timely imple mentation of alternative management approaches to sewer.
- regulatory tools that do not adequately drive property owners' compliance with planning permits and legislation
- significant information gaps across a whole range of important on-site wastewater management strategies
- lack of a consistent, robust and transparent risk assessment process.
- Lack of systematic inspection / oversight program
- councils not being held to account for their role in domestic wastewater management.

These outcomes coincided with the changes to the SEPP requiring councils to address some of these issues. The DWMP Risk Assessment and developed Action plan have been described and incorporated into the documents.

3.2 Status of Domestic Wastewater Management in Murrindindi Shire

Council's Environmental Health Coordinator is responsible for the regulatory oversight of Domestic Wastewater within MSC. This includes working with strategic and statutory planning to ensure wastewater risks are adequately considered during land use planning and approval processes.

Consideration has been given to the following MSC plans and policies during this DWMP review.

- Murrindindi Shire Council Plan 2017-2021
- Strategic Resource Plan 2017 – 2021

- Community and Structure Plans for key unsewered townships / villages.

How Are On-site Wastewater Systems Currently Managed in Murrindindi Shire?

3.2.1 Approval of New Unsewered Development / On-site Systems

Currently, on-site systems that manage or are designed to manage flow rates of more than 5,000 litres per day are regulated by EPA through works approvals and, in some cases, operating licences.

Systems with flow rates less than 5,000 litres a day are the responsibility of Council which issue permits for the construction, installation, and alteration of on-site systems. Council may refuse a permit if the site of the proposed system or proposed effluent land application is considered unsuitable and must refuse if the type of system is not approved by EPA.

Land use planning context is discussed below.

3.2.2 Management of Existing On-site Systems

Council are to enforce action for any system in which a permit was not obtained or if the conditions of the permit have been breached. Servicing reports for existing systems are obtained from service agents and compiled by Council. Council focus on high priorities such as significant non-compliances and failures, however this is contingent on the information provided by the service agents.

Council collect data and information on existing on-site systems across the Shire to help identify issues (particularly in higher risk areas) that require action. These include;

- Septic Permit register (refer Section 0)
- Service reports and complaints from residents (system failures)

Council do not currently have a formal on-site system inspection / audit program and this is a key action that Council wish to see implemented as part of this DWMP. An intention of this DWMP is to provide guidance on higher priority localities for collection of data as part of a Council System Audit Program.

3.3 Land Use Planning Context

The Murrindindi Shire Planning Scheme has been considered in developing this DWMP with a focus on areas identified for current and future residential development.

For Council to consider a planning permit application for development including subdivision in the absence of a reticulated sewerage system, a land capability assessment proving that the land is capable of treating and retaining wastewater within the allotment boundaries is required.

The Murrindindi Shire Planning Scheme prescribes minimum lot size thresholds for development within particular zones as follows;

- Low Density Residential Zone (LDRZ) – 4,000m^2
- Rural Living Zone (RLZ) – 1-4 hectares (depending on area/schedule – 2 hectares if unspecified)
- Farming Zone (FZ) – 40 hectares
- Rural Conservation Zone (RCZ) – 40 hectares

The Township Zone (TZ) requires any subdivision to meet a number of requirements / clauses based on the number of lots proposed. Minimum lot size within this zone would be subject to what is being proposed and how the applicant plans to ensure all wastewater can be managed on-site for each proposed lot. The RLZ requires a permit to subdivide land regardless of the minimum lot size (unlike other Council areas). However, smaller lot sizes may be permitted under specific circumstances (including the re-subdivision of existing lots where the number of lots is not increased).

The whole Murrindindi Shire is located within mapped Groundwater Management Areas (GMAs) and therefore these have been considered as part of land capability mapping and high risk village assessment outlined in this DWMP.

The Bushfire Management Overlay (BMO) is a constraint across the Shire, which has potential impacts for on-site wastewater management systems on unsewered properties. The key purpose of the BMO is to ensure the development of land prioritises the protection of human life and strengthens community resilience to bushfire. The land capability hazard mapping (discussed in Section 5.2) provides an indication of overall constraints to on-site wastewater management and therefore provide supporting information to be considered in combination with BMO.

An Erosion Management Overlay (EMO) is also present within the Shire. Areas of slope and landslip risk can have the potential to significantly influence the ability of a lot to contain on-site. The EMO hazard has been included in the on-site hazard mapping and is present across the north west portion of the Shire. This hazard is considered a key factor and appears to primarily encompass large FZ lots. While the EMO is considered a major constraint, the areas of concern appear to primarily encompass very large lots.

3.4 Integrated Water Management

Integrated Water Management (IWM) aims to provide a holistic and forward thinking approach to all elements of the water cycle (movement of water through its various phases) including wastewater in addition to stormwater, potable / non-potable water supply and local watercourses. The intention is for this approach to be adaptive to temporal changes over the long-term and designed in conjunction with end users (community) with a place based element to design.

The recently developed IWM Framework (DELWP, 2017) is aimed at assisting government agencies and the community in planning and implementation of these IWM concepts / options in the future. This includes the establishment of a number of new Victorian IWM Forums of which Murrindindi Shire is a member of the 'Goulburn Broken' IWM Forum.

4 Review of 2006 Domestic Wastewater Management Plan

The 2006 draft DWMP was a more generalised management plan for wastewater management that was developed during early implementation of the SEPP (WoV) provisions requiring Councils to prepare Domestic Wastewater Management Plans. Furthermore, there have been significant changes in the following areas in the ensuing 13 years. On-site and decentralised wastewater management technologies and management approaches.

- On-site and decentralised wastewater management technologies and management approaches.
- Victorian and national guidelines and standards pertaining to on-site wastewater management.
- Victorian and national policy and research into Integrated Water Management and Water Sensitive development.
- The availability of funding through the Victorian Country Towns Water Supply and Sewerage Program has since ceased.

MSC did not formally adopt the previous DWMP and as a result, Council has decided that a wholesale re-write of the DWMP is warranted. As such, no formal review process has taken place to date (DWC do not currently have a copy of the DWMP).

5 Revised Wastewater Management Risk Assessment

The risk assessment completed in 2006 was a largely qualitative evaluation based on limited available data. Best practice DWMP risk assessment involves a number of more quantitative methods to identify the presence, likelihood and magnitude of any risk factors associated with on-site wastewater management. Council have recently been actively working to review and collate Septic Tank Permit data into their Environmental Health and property databases which has improved issues around data availability.

In addition, the availability of more comprehensive Geographical Information System (GIS) data has also created opportunity for a spatial risk assessment to be undertaken. This includes consideration of cumulative impacts from both existing on-site wastewater systems and potential unsewered subdivisions.

There are two components to the DWMP Risk Assessment. The assessment has been completed using a Land Capability Hazard / Containment Framework developed by DWC in conjunction with Yarra Valley Water that applied the legislative and EPA Code of Practice definition and principles for on-site containment in a spatial (GIS) framework. The Framework has been slightly modified in the context the Murrindindi Shire DWMP but remains consistent with other DWMP risk mapping prepared for other councils.

The first component is the preparation of a broad scale land capability hazard or risk map;

- to ensure future development is sustainable;
- to recognise where past development practices prevent safe and sustainable DWM; and
- to identify areas where the environment may be sensitive to DWM impacts and requires special protection.

The second component is an infrastructure based assessment (looking at existing on-site systems);

- to identify risks associated with older, inappropriate DWM technologies or approaches (such as direct off-site discharge);
- to geographically identify areas where there are a high number of off-site discharge or failing systems.

Data availability has limited the coverage and accuracy of the existing system risk assessment to some degree. The DWMP includes Actions to facilitate data collection and incorporation in to the risk framework as part of implementation.

There are some areas in the Shire where both land capability constraints (such as slope, poor soils or proximity to waterways) and the presence of older off-site discharge systems combine to create significant immediate risks and place limits on the feasibility of achieving adequate levels of health

and environmental protection with on-site systems. Examples of this include the Kinglake and Thornton townships.

The DWM risk assessment process has identified these high risk areas and developed recommended strategies for alternative wastewater management. This can range from traditional reticulated sewerage to improved / managed DWM programs.

5.1 Review of Available Data and Information

Data were sourced from both Murrindindi Shire Council and the Victorian Government online data portal for undertaking the onsite hazard mapping for the Murrindindi Shire. These data are summarised in the following table.

Table 1 Summary of Available Data and Sources

Data	Description	Source
Topographic / Elevation Data	Vicmap 10m Digital Terrain Model (DTM) was obtained and which provides consistent coverage across the entire Shire.	Victorian Government
Ortho-photography	-	-
Soil type (landscape) data	Soil Type layer provides a spatial map layer of the Australian Soil Classification for Victoria. A soil hazard class was developed based on the Australian Soil Classification for each land unit. Geomorphology (GMU) layer for Victoria	Victorian Government data portal
Watercourses (All)	State-wide watercourse (hydroline) layer – 1:25,000 scale trimmed to Shire. Used to define both partially vegetated / rehabilitated intermittent drainage lines and permanent watercourses.	Victorian Government data portal
Hydroareas (waterbodies)	State-wide waterbodies layer trimmed to Shire. Used to define farm dams and other larger waterbodies.	
Groundwater bores	Groundwater bore locations and available data (potable / non-potable).	BoM Australian Groundwater Explorer online mapping (http://www.bom.gov.au/water/groundwater/explorer/map.shtml)
Groundwater Management Areas (GMAs)	Whole of Shire within mapped GMAs.	Victorian Government data portal
Land Systems	Land System types clipped to the Shire. Provides a landform description which was used to determine the drainage hazard class.	Victorian Government data portal

Data	Description	Source
Planning Overlay	Planning overlay used to isolate Environmental Significant Overlay (ESO), Floodways / Land Subject to Inundation, Erosion Management Overlay (EMO) and Bushfire Management Overlay (BMO).	Victorian Government data portal
Bio Region Conservation Areas	Bio-conservation vegetation layer used to define environmentally significant vegetation (in combination with ESO layer). *Native Vegetation - Modelled 2005 Ecological Vegetation Classes (with Bioregional Conservation Status)* - NV2005_EVCBCS layer utilised.	Victorian Government data portal
Property boundaries	Cadastral boundaries for current properties across Murrindindi Shire.	Victorian Government data portal
Stormwater Drainage	Stormwater drainage data available (largely located within sewered areas).	Murrindindi Shire Council
Drinking Water Supply Catchments	Potable Water Supply Catchments layer (PWSC100) was used to identify properties within designated drinking water catchments.	Victorian Government data portal
Sewer alignment	Alignment data provided to determine sewered / unsewered allotments (as best as possible based on data provided).	Goulburn Valley Water

Key guidelines and sources of criteria for the mapping are summarised in

Table 2.

Table 2 Guidelines / Standards: On-site Wastewater Risk Framework

Organisation	Resource	Purpose
Victorian government	SEPP (WoV)	Overarching regulatory performance objectives relating to protection of surface waters. Regulatory performance objectives with respect to protection of groundwater beneficial uses.
EPA Victoria	EPA Code of Practice (CoP) – On-site Wastewater Management (2016)	Sets out specific means of compliance recognised as "deemed to comply" with the SEPP. Setback distances adopted for risk classification Framework.
MAV	Victorian Land Capability Framework (2014)	Documents the state government endorsed land capability hazard framework for on-site wastewater management in Victoria. Used as the basis for the land capability elements of the risk classification.
Standards Australia	ASNZS1547:2012 On-site domestic wastewater management	Provides additional design, siting and operational guidance that has been applied within the risk classification Framework.

5.2 On-site Containment / Land Capability Hazard Mapping

DWC has previously developed an agreed definition of on-site containment as part of the Park Orchards Trial project (on behalf of Yarra Valley Water). This definition took the legal terminology from the SEPP (WoV) "*containment of effluent within the boundaries of the allotment and protection of any beneficial uses of groundwater*" and translated that initially into measurable hydraulic, nutrient and pathogen performance targets that can be validated through field monitoring and numerical modelling. This work confirmed that an effluent Land Application Area (LAA) that has been sized to the most limiting of a water, nitrogen or phosphorus balance (as per the MAV Land Capability Assessment Framework – 2014) and meets standard setback distances to sensitive receptors (from the EPA Code of Practice) can be considered capable of on-site containment.

As part of this DWMP, DWC has evaluated a range of on-site LAA design scenarios in addition to typical levels of development on unsewered properties to nominate a series of property size ranges that represent increasing levels of containment on-site (CoS) potential. These on-site containment criteria are proposed as a *conservative benchmark* to ensure on-site systems do not pose a risk to human health and the environment with all wastewater contained on-site. Appendix C outlines previous minimum lot size and cumulative impact data analysis undertaken by DWC which has been utilised to support these lot ranges.

Table 3 On-site Containment Lot Size Criteria

Lot Size Criteria	On-site Containment Capacity
<2,000 m^2	**Generally not capable of on-site containment:** Properties under 2,000 m^2 do not typically have sufficient available area to fit an adequately sized on-site system for a contemporary dwelling (e.g. a 4-5 bedroom house) whilst meeting recommended setback distances to waterways, groundwater bores and other sensitive receiving environments. Partial or full off-site wastewater management is the preferred strategy for these properties (e.g. reticulated sewerage, cluster system or centrally / authority managed on-site systems). Where owner managed on-site systems are the only available option, specialist design will be required along with increased oversight in order to achieve containment.
2,001 m^2 – 3,999 m^2	**Detailed Land Capability Assessment required to confirm ability to contain on-site:** Properties in this size range are likely to have sufficient available area to fit an adequately sized on-site system for a contemporary dwelling (e.g. 4-5 bedroom house). However, this will be highly dependent on-site specific land capability constraints and proximity to sensitive receiving environments. A more detailed LCA and design process is likely to be required to ensure full containment in addition to higher level treatment and greater construction and operational oversight. Where possible these properties should be considered for partial or full off-site wastewater management (e.g. reticulated sewerage, cluster system or centrally / authority managed on-site systems). Where owner managed on-site systems are the only available option, increased regulatory oversight is strongly recommended in order to ensure containment.
≥ 4,000 m^2	**Generally capable of full on-site containment:** Owner managed on-site systems are the appropriate wastewater servicing strategy for most properties of this size (subject to site specific land capability constraints). Cumulative impacts are negligible where EPA setback distances are met.

These definitions relate to the *long-term sustainability* of on-site wastewater management. For properties greater than 2,000 m^2, consideration must also be given to land capability constraints such as soil characteristics, slope, landslip and proximity to creeks, drains and groundwater bores. To address this, DWC have also completed a GIS based broad scale Land Capability Assessment (LCA) of unsewered properties in the Murrindindi Shire.

This LCA is consistent with the EPA CoP (2016) and the MAV Land Capability Assessment Framework (2014) with a detailed methodology provided in Appendix A. A summary of the hazard classes and what they mean is provided in

Table 4 below.

Table 4 Land Capability Hazard Map Summary

Classification	CoS?	EPA CoP?	Derivation	Description
Low Risk / Hazard	Likely (Refer Table 3)	Yes	Final Risk Score<1	Few/minor constraints to on-site wastewater management and low risk receiving environment. Periodic (e.g. 3 years) oversight as per current Septic Tank Permit conditions likely to manage risk.
Medium Risk / Hazard			Final Risk Score 1<>2	Individual and/or cumulative hazards slightly elevate the likelihood and/or consequence of on-site system failure. A higher level of design, construction, maintenance and oversight (e.g. annual inspection) input may be necessary to manage risk and meet regulatory objectives for health and ecosystem protection.
High Risk / Hazard	TBC On-site (Refer Table 3)		Final Risk Score >3	Individual and/or cumulative hazards significantly elevate the likelihood and/or consequence of on-site system failure. Best practice design, construction, maintenance and oversight essential to manage risk and meet regulatory objectives for health and ecosystem protection.
Very High Risk / Hazard		Very constrained (MAV, 2014)	Slope >30% (on average) / landslip risks	Significant Land Capability constraints (steep slope / landslip risk) across the majority of suitable land available within the property. On-site containment may be possible subject to advanced engineering and oversight where the provision of an off-site solution is cost prohibitive.
Non CoS	Unlikely (Refer Table 3)	No	Lot size < 2,000m^2	Generally no suitable land available for CoS. Full off-site solution is highly likely to meet the objectives of the SEPP.

After the development of the broad scale land capability hazard map, lot size was utilised to determine likely potential for containment on-site (CoS) for each property as outlined in

Table 3. This resulted in an overall Land Capability Hazard Class for each lot.

The following logic was applied to all unsewered lots to develop the final Land Capability Hazard Class.

- Lot size <2,000m^2 = Non CoS Classification (regardless of land capability);
- Lot size 2,001 m^2 – 3,999 m^2 = Greater of High Hazard or land capability hazard (as per mapping);
- ≥ 4,000 m^2 = Land capability hazard used (as per mapping).

The draft Wastewater Land Capability Hazard Map is presented below along with close up maps of key unsewered areas across Murrindindi Shire. The mapping is currently based on property (not parcel) boundaries as the intention of the DWMP is to focus on existing on-site systems within properties and the potential risks they pose.

Table 5 presents a breakdown of the hazard class for unsewered lots in Murrindindi Shire. These numbers are approximate as they may include some unsewered lots that are currently vacant / undevelopable. It was identified during groundtruthing that there were collections of undeveloped lots which was due to insufficient lot size (e.g. Granton). These are included in the land capability map statistics and may need to be consisted and revised as part of DWMP finalisation.

Sewerage alignment data was utilised to isolate properties that are serviced by reticulated sewer. However, the odd sewered property may still be present in the hazard mapping of unsewered lots. The majority of properties are classified medium to high hazard across the Murrindindi Shire.

Table 5 Land Capability Hazard Breakdown

Hazard Class	Murrindindi Shire
Low Hazard	397 (5%)
Medium Hazard	2,783 (34%)
High Hazard	3,655 (44%)
Very High Hazard	329 (4%)
Non CoS	1,092 (13%)
Total	**8,256**

It can be seen that the majority of the unsewered properties in Murrindindi Shire are capable of achieving on-site containment *subject to design, installation and operation of an on-site wastewater management system that meets the EPA CoP.* Approximately 44% of properties are likely to be capable of on-site containment but feature one or more significant constraints that may require more detailed LCA, design, installation and operational input. Approximately 4% of properties are classified

as very high and have significant land capability constraints including slope and landslip risk. These properties may be able to contain on-site, however, this is subject to advanced engineering and oversight. Additionally, approximately 13% of properties are considered highly constrained or highly unlikely to be capable of safe and sustainable on-site wastewater management in the long-term.

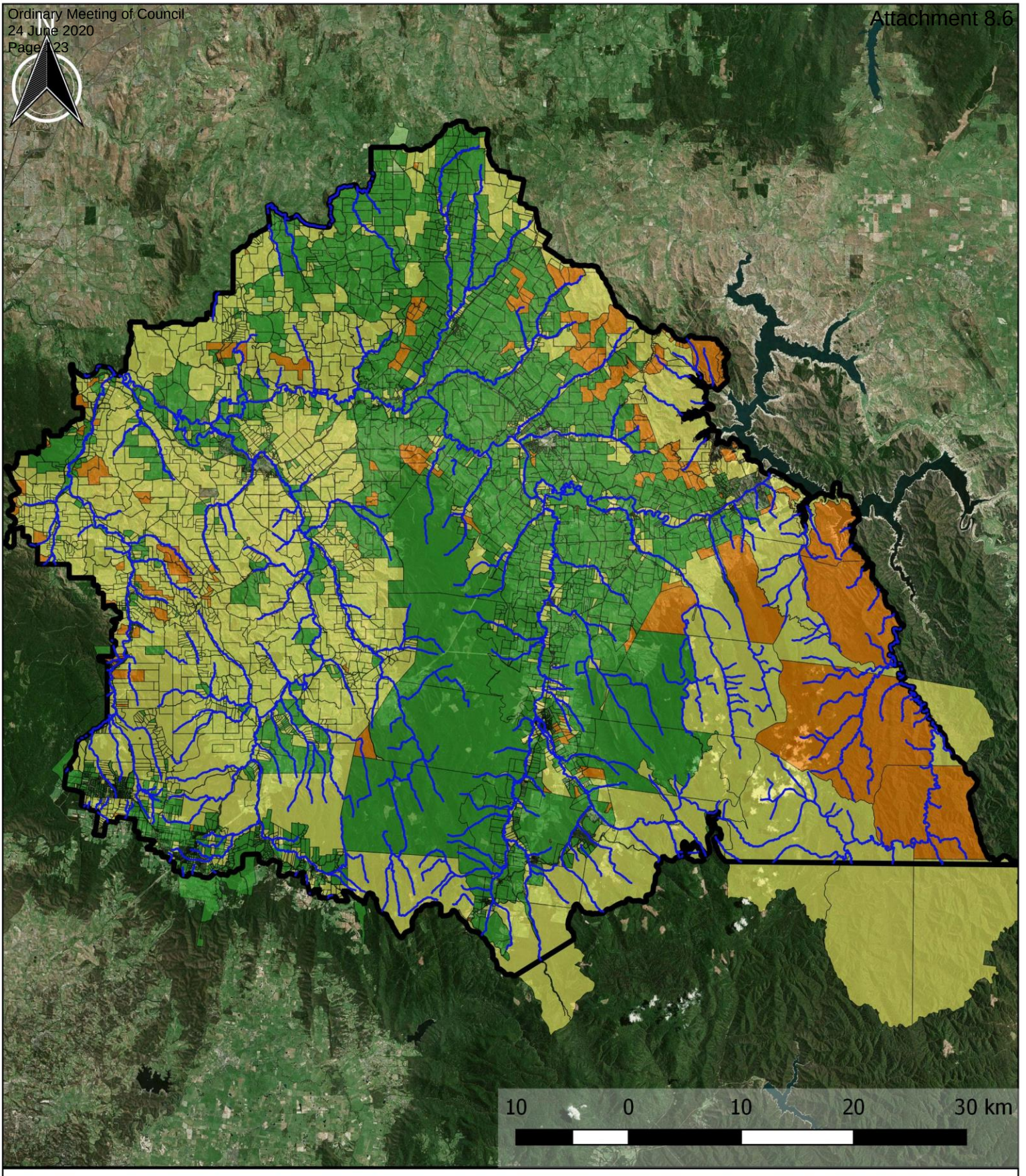

Figure 1: Murrindindi Land Capability Hazard Classification Map

LGA
Watercourse

LC Risk Classification

- Non CoS
- Very High Hazard
- High Hazard
- Medium Hazard
- Low Hazard

DECENTRALISED WATER CONSULTING

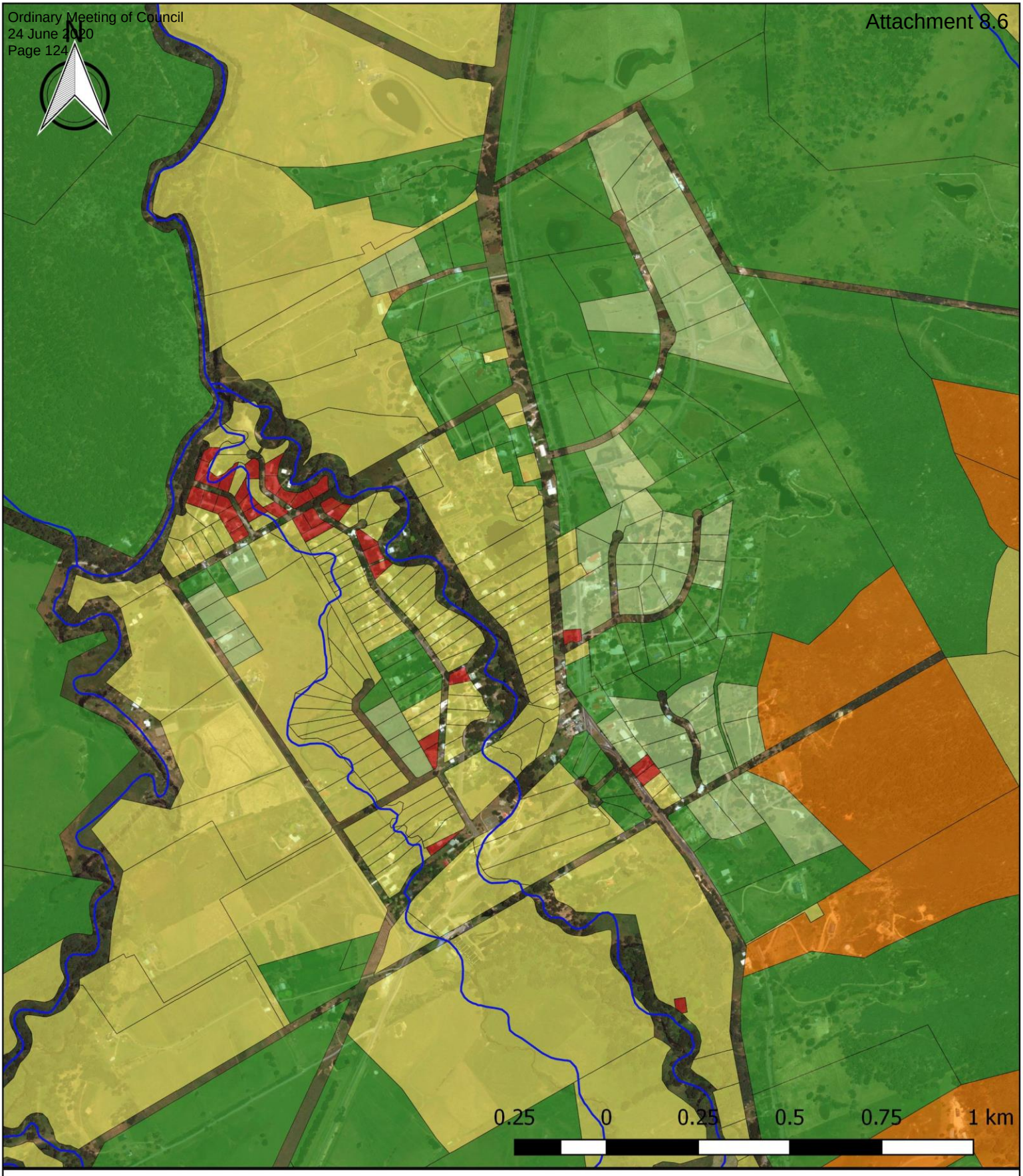

Figure 2: Land Capability Hazard Classification Map - Buxton

LGA
Watercourse

LC Risk Classification

- Non CoS
- Very High Hazard
- High Hazard
- Medium Hazard
- Low Hazard

DECENTRALISED WATER CONSULTING

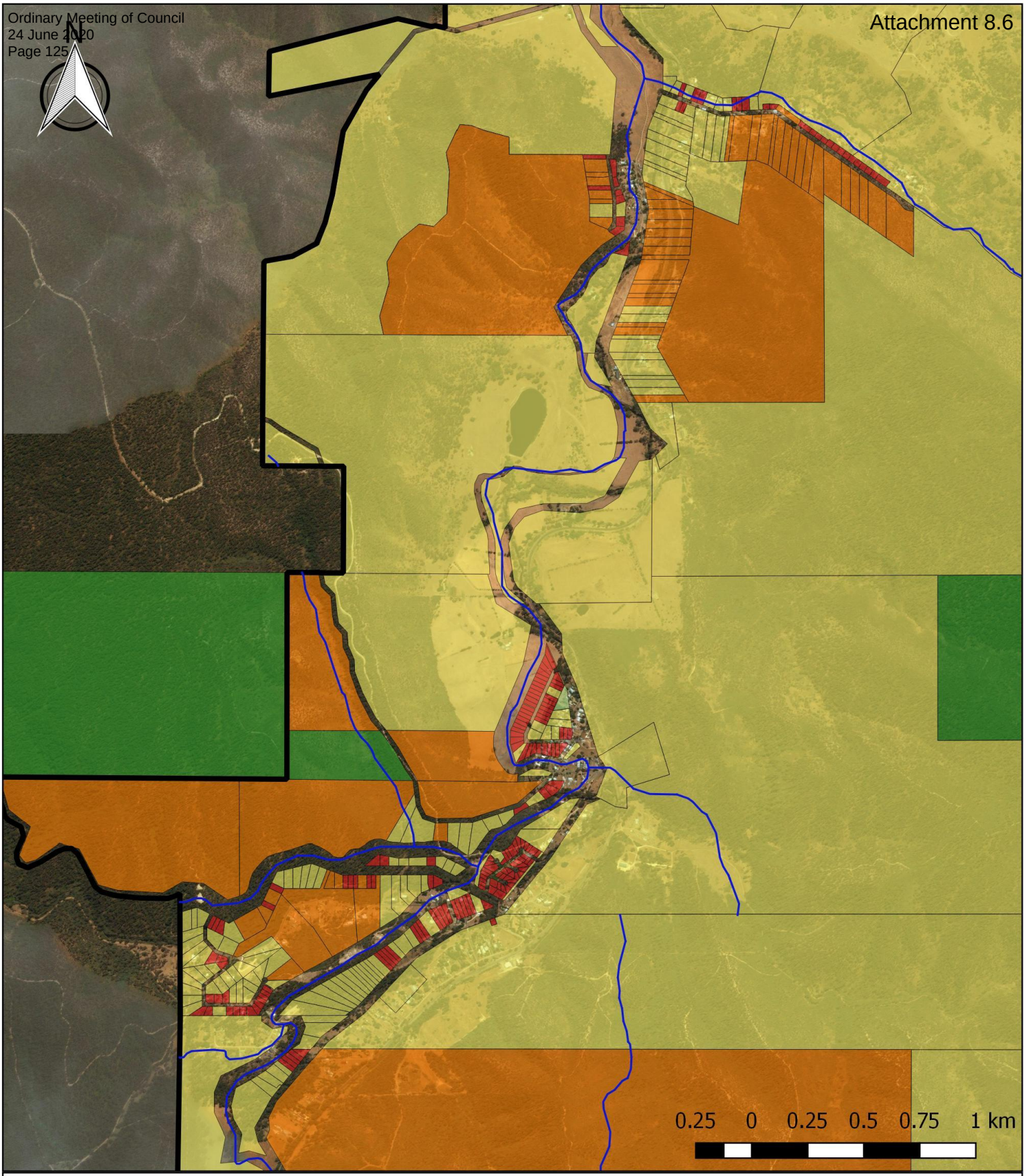

Figure 3: Land Capability Hazard Classification Map - Flowerdale

LGA
Watercourse

LC Risk Classification

- Non CoS
- Very High Hazard
- High Hazard
- Medium Hazard
- Low Hazard

DECENTRALISED WATER CONSULTING

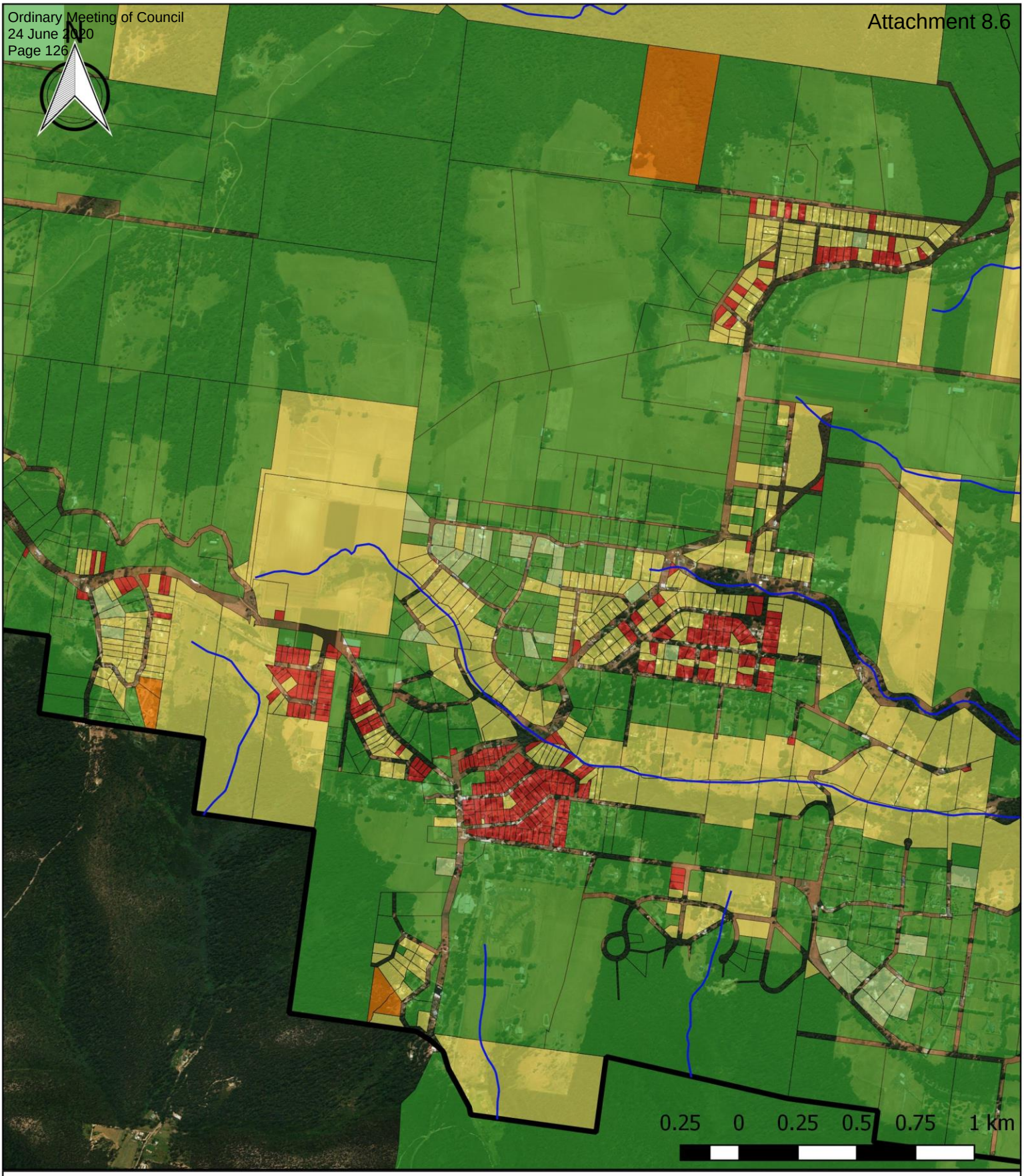

Figure 4: Land Capability Hazard Classification Map - Kinglake

LGA
Watercourse

LC Risk Classification

- Non CoS
- Very High Hazard
- High Hazard
- Medium Hazard
- Low Hazard

DECENTRALISED WATER CONSULTING

Figure 5: Land Capability Hazard Classification Map - Thornton

LGA
Watercourse

LC Risk Classification

- Non CoS
- Very High Hazard
- High Hazard
- Medium Hazard
- Low Hazard

DECENTRALISED WATER CONSULTING

Figure 6: Land Capability Hazard Classification Map - Yarck

LGA
Watercourse

LC Risk Classification

- Non CoS
- Very High Hazard
- High Hazard
- Medium Hazard
- Low Hazard

DECENTRALISED WATER CONSULTING

Figure 7: Land Capability Hazard Classification Map - Granton

LGA
Watercourse

LC Risk Classification

- Non CoS
- Very High Hazard
- High Hazard
- Medium Hazard
- Low Hazard

DECENTRALISED WATER CONSULTING

5.3 On-site Wastewater System (Management) Hazards

DWC have undertaken analysis of available data on the type, age and spatial distribution of the various types of on-site wastewater management systems in the Murrindindi Shire. Council are currently in the process of importing permit data into their health and property data management systems, however Councils attempts to extract existing STEMS data has been unsuccessful. The DWMP includes a recommend actions relating to both on-going data collection and analysis.

Septic Tank Permit records (from year 2000 to present) for approximately 2,460 on-site systems (including 311 'altered' systems) have been entered into the Council database (with duplicate properties removed by DWC as best possible). This is the best Council available data, however this is likely to be approximately 40% of total systems and no information has been provided regarding the effluent land application / disposal type. Table 6 summarises the breakdown of on-site system types in Murrindindi Shire based on available permit data. Table 7 summarise permit on-site system types for some of the key unsewered townships and localities. These breakdowns may change as the coverage and accuracy of data improves.

Table 6 Summary of Existing On-site Wastewater Management Systems in Murrindindi (40% data coverage)

System Types	Number	Percentage
Secondary Treatment Unit	826	38%
Septic Tank	1,230	57%
Composting Toilet	12	1%
Worm Farm	47	2%
Yarra Valley Water Treatment System	28	1%
Septic Tank and Sand Filter	1	0%
Worm Farm and Sand Filter	1	0%
Commercial Treatment System	1	0%
Unknown	2	0%
Total	**2,148**	

Table 7 On-site Wastewater Management System Permit Information for Localities

Suburb/Locality	Composting System	Yarra Valley Water Treatment System	Septic Tank	Secondary Treatment	Unknown	Alterations	Total
Acheron	0	0	20	4	0	4	28
Alexandra	3	0	51	38	0	15	107
Buxton	5	0	73	92	0	33	203
Castella	3	0	22	9	0	3	37
Cathkin	0	0	4	1	0	0	5
Caveat	0	0	13	0	0	2	15
Devils River	0	0	3	4	0	0	7
Dropmore	0	0	1	1	0	0	2
Eildon	3	0	47	29	0	10	89
Fawcett	1	0	16	4	0	0	21
Flowerdale	2	0	50	48	0	11	111
Ghin Ghin	0	0	8	1	0	0	9
Glenburn	1	0	58	12	0	6	77
Gobur	0	0	16	13	0	1	30
Granton	0	0	1	0	0	2	3
Hazeldene	5	0	25	52	0	16	98
Highlands	3	0	11	0	0	6	20
Homewood	0	0	2	1	0	1	4
Kanumbra	1	0	3	0	0	0	4
Kerrisdale	0	0	10	3	0	1	14
Killingworth	0	0	15	6	0	2	23
Kinglake	11	28	340	321	0	112	812
Koriella	0	0	6	6	0	0	12
Limestone	0	0	7	5	0	1	13
Maintongoon	2	0	4	1	0	1	8
Marysville	0	0	14	6	0	2	22
Merton	0	0	4	0	0	0	4
Mitta Mitta	0	0	0	0	0	1	1
Molesworth	1	0	9	2	0	2	14
Murrindindi	1	0	22	5	0	4	32
Narbethong	1	0	42	15	0	16	74
Pheasant Creek	0	0	35	6	0	7	48
Rubicon	0	0	6	2	0	2	10

Suburb/Locality	Composting System	Yarra Valley Water Treatment System	Septic Tank	Secondary Treatment	Unknown	Alterations	Total
Ruffy	1	0	2	0	0	1	4
Seymour	0	0	4	0	0	0	4
Strath Creek	3	0	39	5	0	6	53
Taggerty	5	0	50	24	2	13	94
Taylor Bay	0	0	3	19	0	5	27
Terip Terip	1	0	10	3	0	3	17
Thornton	0	0	22	17	0	3	42
Toolangi	0	0	37	12	1	2	52
Whanregarwen	0	0	10	4	0	4	18
Yarck	1	0	27	27	0	4	59
Yea	6	0	87	27	0	9	129
Unknown	0	0	2	1	0	0	3
Total							**2459**

It can be seen that the majority of systems are traditional septic tank and adsorption trench systems. More recently, new Permit to Installs have included a higher proportion of secondary treatment systems. Based on advice from Council, it is understood that a larger proportion of Permits issued prior to 2000 will include older septic tank systems (mostly more than 30 years old) and are expected to include a reasonable number of split systems with some level of direct off-site discharge.

While more traditional septic tank to absorption trench / bed systems can be a reliable and effective on-site wastewater management option, land capability characteristics in a number of unsewered areas in Murrindindi do not favour this approach. Specifically, the combined impact of low permeability soils, climate, topography and presence of watercourses (permanent and intermittent) combine to make both the constructability and operational reliability of septic tank to trench / bed system challenging. Comprehensive Land Capability Assessment (LCA) and on-going oversight are therefore critical to their effective performance.

The number and proportion of secondary treatment systems (including sand filters) will continue to grow in Murrindindi as existing on-site systems are replaced and new unsewered development occurs. While these technologies are necessary on many sites to meet EPA Code of Practice requirements and overcome land capability constraints, they do inevitably require higher levels of maintenance to ensure effective operation. Scheduled maintenance and three yearly inspections are a condition of approval for secondary treatment systems.

It is recommended that on-site wastewater management system (on-site system) data continue to be refined and developed to enable Council to maintain an active register of higher risk existing on-site

systems. Ideally, this should be linked with a spatial (GIS) mapping layer that enables Council to clearly identify hotspot areas that may warrant higher levels of operational oversight. As inspection data for existing systems grow, it can also be incorporated into this database.

This work will also enable operational risk to be overlayed with land capability risk to highlight the areas where the two types of hazard have the potential to create very high risk conditions. The most significant of these areas based on this DWMP Risk Assessment is Flowerdale and Kinglake with an alternative wastewater management solution likely for meeting regulatory requirements.

5.4 Unsewered Development and Septic Tank Permit Approvals

DWC have been consulting with Council's Strategic Planning staff to ensure the DWMP adequately aligns with current Planning Scheme and relevant Structure Plans.

The DWMP work discussed in Sections 5.2 and 5.3 will inform the development of recommended minimum standards for both subdivision and future Septic Tank Permit applications in relation to;

- Land Capability Assessment (LCA) standards;
- Cumulative impacts in constrained and/or sensitive areas;
- Potential for deemed to comply rules that could be applied to Low Risk properties; and
- Standards to ensure systems are constructed as per Permits.

The DWMP contains draft Minimum Standards in Appendix B for LCAs and Septic Tank Permit applications that are risk based and applicable to the on-site wastewater risk classification assigned to each unsewered property in Murrindindi Shire. This will provide Council with a consistent framework and clear expectations for applicants to follow when preparing Permit applications for both unsewered subdivision or individual systems.

5.4.1 Lot Size

Statistics were developed for allotment size across Murrindindi Shire and these are summarised below in Table 8. The typical lot size across Murrindindi Shire is moderate to large with a median lot size of ~2.5 hectares. It appears the lot size statistics presented below are skewed by a small number of very large properties, as can be seen from the significant difference between the average and median lot sizes. This aligns with the moderate to high land capability hazard observed across the majority of the Shire (~90%) which is driven by small lots (in certain areas) along with slope, climate and presence of dams and incised waterways.

DWC consolidated comprehensive minimum lot data (for sustainable on-site system installation) from previous projects undertaken for areas similar to Murrindindi Shire (large rural properties). Details of the data are provided in Appendix C.

The extensive data collated / analysed consistently indicates that lot sizes greater than 4,000 m^2 are likely to be capable of fitting a sustainable on-site sewage management system within the allotment assuming aspects such as native vegetation protection can be managed through site specific design and communication between relevant Council staff. This equates to the ~25th Percentile lot size across Murrindindi Shire, however as stated above this appears to be skewed by a number of very large lots.

Table 8 Murrindindi Shire Unsewered Allotment Size Statistics

Statistics	Approximate Lot Size
10%ile	1,610 m^2
Median	2.5 hectares
Mean	50.4 hectares
95%ile	149.4 hectares

5.5 Risk Based Prioritisation Process

A risk based prioritisation process has been undertaken by DWC to identify and rank higher risk villages / townships within Murrindindi Shire. This process was utilised to rank villages / townships into "bands" of priority for further actions. These actions could include prioritised inspection / rectification areas or development of alternative wastewater management solutions.

The limited availability of data confirming the type, age and condition of on-site systems in Murrindindi Shire limits the ability to incorporate 'Management Hazard' (existing on-site system data) into the risk based prioritisation process. A prioritisation process based on best available data has been undertaken and consists of a multi-criteria analysis (MCA) including the following elements;

- land capability using the proportion of properties classified as not able to Contain on Site (Non-CoS) in addition to the average land capability hazard class across the specific area;
- receiving water sensitivity, which included proximity of properties to named or intermittent waterways. Drainage within potable water / groundwater catchments was also considered;
- available on-site system type and age information from available permit data. The intention is the risk assessment could be updated as further inspection data is collected by Council on system non-compliance and failure.

A simple scoring system was utilised for each sub-measure, ranging from Lower Risk (1) to High Risk (5). The score of each sub-measure was then combined to provide a final risk score. The higher the final risk score the higher the ranking and priority for consideration as part of the DWMP. All sub-

measures were weighted equally i.e. no sub-measure was considered more important than the others. Details of the scoring measures are summarised in the table below.

Table 9 Prioritisation Process Summary

Category	Sub-measure	Details
Sustainability of On-site Wastewater Management	Properties that are too small to contain all wastewater on-site (Non CoS).	Both the number and % of Non CoS systems were determined for the respective area, based on the land capability and lot size analysis undertaken (refer Section 5.2).
	Land capability hazard for on-site containment.	Average land capability hazard for the area in addition to the average Final CoS Hazard (includes lot size constraints) was calculated for respective area.
Receiving Environment Sensitivity	Proximity to sensitive waterways and potable water catchments / Groundwater Management Areas (GMAs).	A desktop assessment of the proximity of high risk properties to sensitive waterways (permanent and intermittent), potable catchments and GMAs was undertaken and scored accordingly.
Existing and Legacy System Performance Issues *(to be Finalised)*	Major and critical non-compliance system issues (as data becomes available). Could be based on general Septic Permit age.	Both the number and % of major and critical non-compliant systems could be determined from Council's future inspection data (as data becomes available).
	Split system and known off-site discharge (OSD) systems (as data becomes available). Could be based on general Septic Permit age	Both the number and % of split system and known OSD systems could be determined from Council's future inspection data (as data becomes available).

The results of this analysis are presented in Section 5.6.4. Further details of the Prioritisation scoring and process is provided in Appendix E. The MCA scoring process has been developed based on the existing on-site data available. As the recommended inspection audit program becomes implemented (and any other on-site property data becomes available), the MCA ranking can be easily updated. .

5.6 Key Outcomes of Risk Assessment

5.6.1 Land Capability Hazards

- Land Capability in Murrindindi Shire is generally moderately to highly constrained with respect to safe and sustainable on-site wastewater management. Allotment size (in certain areas), climate, slope, dams and incised watercourses do pose a greater constraint across the Shire.
- Constraints can typically be managed through;
    - adequate minimum lot size (2ha is a recommended benchmark with 0.4 and 1ha by exception and with consideration of cumulative impacts);
    - increased Land Capability Assessment (LCA) and design detail on constrained properties to support Septic Tank and Planning Permit applications;

- provision of secondary treatment to enable a wider array of land application options on more constrained lots with respect to soil, slope and watercourses; and
- implementation of adequate maintenance and performance auditing (currently constrained by resources and regulatory powers).

5.6.2 Existing On-site Wastewater Management System Risks

Council estimate there are approximately 5,000 existing On-site Wastewater Management Systems in the Shire. An initial compilation and cleaning of historical Septic Tank Permit (~2,460 properties) data has been undertaken that identifies some gaps in understanding of the nature and condition of systems in Murrindindi Shire. In particular, there is no available information on the number of known systems with some form of off-site discharge (full discharge or split / greywater only).

Council are continuing to improve the accuracy and completeness of the on-site system dataset by updating permit data as it is collected. Additionally, this DWMP recommends the implementation of an On-site Wastewater Management Oversight Program (See Section 6.1.1) to collect accurate data on the type and overall condition and performance of existing on-site wastewater systems within the Shire. In particular, this will allow the identification of any "split" and full off-site discharge systems or damaged treatment systems / disposal areas which pose a high risk to the community and sensitive receptors.

It is recommended that the implementation of the on-site wastewater inspections initially targets key unsewered areas with high risk properties, specifically Kinglake, Flowerdale and Thornton. The existing permit data indicates that 30-60% of properties in these areas are non-containment and the average hazard class is high to very high, indicating that a large portion of these properties have the potential to pose a risk to sensitive receiving environments.

The majority of existing systems in Murrindindi Shire are more traditional septic tank (primary treatment) systems which likely drain to an absorption or Evapo-transpiration / absorption (ETA) trench or bed (no data is currently available regarding effluent land application / disposal type). This approach remains a reliable option for larger properties (indicatively greater than 1ha) due to the lack of moving parts and reduced reliance on maintenance. However, some soils and climate in Murrindindi Shire pose challenges to the design and construction of trench / bed systems in accordance with the EPA Code of Practice and *AS1547:2012*. It is recommended that Council consider the development of a clear and consistent set of minimum standards for the design and construction of primary treatment to trench / bed systems to ensure that good quality outcomes are achieved for Council and the property owner. This should include clear guidance on when septic tank to trench / bed systems will be considered and when they are not considered an acceptable long-term solution.

Notwithstanding, the primary risk factor associated with existing on-site systems is consistently the level of management and oversight applied to them on an on-going basis. Almost any on-site system

will fail to meet community standards in the absence of an on-going operation, maintenance and monitoring program. Under current legislation, responsibility for operation and maintenance rests with the property owner whilst regulatory oversight rests with Council (for systems <5,000 L/day).

Under the recent revision of the SEPP (WoV), a DWMP is to "provide for the compliance assessment and enforcement of on-site domestic wastewater systems in accordance with the plan." It is recommended that Council investigate opportunities and funding mechanisms and potential legal options for establishment of a more comprehensive operational oversight program for on-site systems.

5.6.3 New Unsewered Developments

There have been approximately 90-100 new unsewered allotments created per annum in Murrindindi Shire based on the current Septic Permit register as a general indicator. This is a relatively high number compared to other jurisdictions (however it is an indicator only). However, many of these applications relate to township zoned properties that are below the recommended 4,000 m^2 property size and require Land Capability Assessment and careful design and installation.

Council staff have raised concern about challenges associated with small undeveloped parcels of land in township zones. Some of these undeveloped lots have been classified as unable to contain on site or highly constrained for sustainable on-site wastewater management. Specific Minimum Standards are recommended for these properties that seek to minimise risk to human health and the environment

The evaluation of sustainable lot sizes for on-site wastewater management conducted as part of this DWMP support the current minimum lot size in Rural Living zone of 2 ha. While sustainable on-site wastewater management is achievable on lots that are 0.4 - 1ha in size, past experience in Murrindindi Shire and other jurisdictions has shown that site specific constraints and a greater reliance on diligent owner management can increase the risk of human health and environmental impact.

As such, planning permit applications for new unsewered development proposing lot sizes less than 1 ha should be subject to a higher degree of scrutiny with respect to Land Capability Assessment and potential for cumulative / off-site impacts. They may also warrant a higher level of operational accountability. This is to ensure domestic wastewater risks that have arisen from historical planning decisions are not repeated and a safe, sustainable benchmark for unsewered subdivision and rezoning is established.

DWC have previously applied the concept of "Useable Land" to provide a basis for increased levels of scrutiny and assessment for unsewered development. Useable Land can be defined as:

total allotment area excluding dams, intermittent and permanent watercourses, wetlands or waterbodies and open stormwater drains and pits in addition to the relevant buffer distances to those objects prescribed in the EPA Code of Practice for On-site Wastewater Management.

Where a proposed allotment can demonstrate 4,000 m^2 of Useable Land, Council can be comfortable that the objectives of the SEPP (WoV) will be achieved subject to typical on-site system design, construction and operational practices. Where this cannot be demonstrated, a higher level of assessment detail and Council scrutiny may be warranted. When used in conjunction with the Land Capability Risk Class, Useable Land enables constrained sites in close proximity to receiving environments to be targeted for this higher level of assessment including cases where site constraints render large portions of an allotment unavailable for effluent management.

It is recommended that the Risk Mapping be used to inform further investigations into land capability and minimum lot sizes for any future development areas.

5.6.4 Risk Based Prioritisation

The results of this risked based assessment are summarised in Figure 8 and Table 9. Further details of the Prioritisation scoring and process is provided in Section 5.5 and Appendix E. The focus of the figure below is ranking of the key high risk areas which have already been flagged by Council.

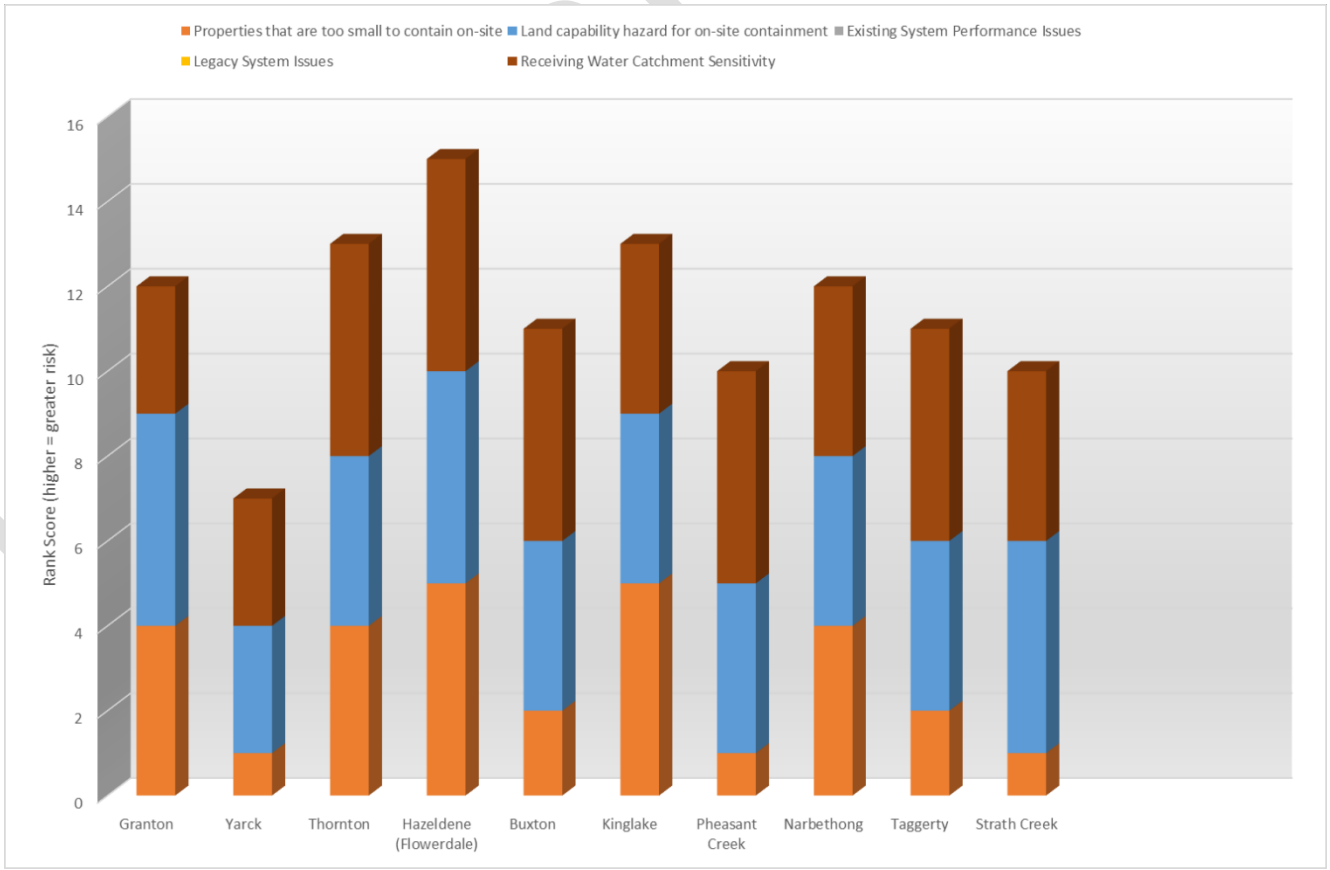

Figure 8 Results of Risk Based Prioritisation Assessment

It can be seen that Flowerdale, Kinglake and Thornton have ranked highest overall. This is based on a range of land capability constraints including small lot size (in certain areas), slope, climate and dams / waterways.

This prioritisation process has also been applied to other localities across the Shire to help guide the investment of resources in the inspection of remaining on-site systems in the Shire. The key data used in this process was the Land Capability hazard mapping and historical permit / inspection data available. Refer to Table 9 for initial outcomes from this process.

Table 10 Prioritisation of Domestic Wastewater Risk Management Actions

Priority Band	Township / Locality	Key Actions in this DWMP Period
Very High	Flowerdale Kinglake Thornton	Inspection ASAP to confirm existing system type and condition. Investigate alternative wastewater management solutions or pursue rectification / mitigation of off-site discharge. Potential follow up inspection in next 1-2 years. Seek rectification of failures to maximise containment (where possible). Potential water quality monitoring of impact zones.
High	Granton Narbethong Buxton Taggerty Isolated Non-containment (Non-CoS)	Inspection to confirm existing system type and condition. Seek rectification of failures to maximise containment (where possible). Implement finalised Minimum Standards in Appendix B for new Permits and require 3-yearly reports.
Medium	Pheasant Creek Strath Creek Yarck All other properties <4,000m^2.	Inspection to confirm existing system type and condition. Implement finalised Minimum Standards in Appendix B for new Permits and require 3-yearly reports.
Low	All other localities	Inspect if resources permit. Implement finalised Minimum Standards in Appendix B for new Permits and require 3-yearly reports.

These priority bands are considered an indicative guide to risk priority which can be strongly influenced by the age, type and condition of the existing systems present. A Priority Action has been put forward in Section 6 to investigate options for resourcing an on-going risk based inspection and oversight program.

The outcomes of the Domestic Wastewater risk assessment (as documented in Section 5.5) have identified a number of clear priority townships in terms of managing off-site wastewater impact risks as can be seen in the table above. In addition, there are some more isolated non-containment

properties dispersed throughout other areas that should be inspected as a priority to confirm actual on-site system performance. It is estimated that approximately 15-20% of unsewered properties in Murrindindi Shire would be failing to contain wastewater on-site or pose a high risk of non-containment. This is comparable to other council areas and these properties are almost entirely located in the priority townships.

The remaining ~80-85% of unsewered properties are likely to be able contain on-site subject to adequate on-going management and consideration of site specific land capability constraints. It is recommended that a risk based on-site system inspection program and Minimum Standards are developed for Septic Tank and Planning Permit applications (initial examples of Minimum Standards are provided in Appendix B) to address this. In addition, establish a system to ensure Permit conditions requiring a 3-yearly inspection by a licenced plumber and report to Council would be a relatively simple mechanism for overseeing on-going compliance in these areas.

6 Domestic Wastewater Management Action Plan

The revised risk assessment documented in Section 5 has been used to identify priority areas and properties for improved wastewater management. Where high proportions of properties are at risk of not containing wastewater on-site, priority actions focus on progressing strategies, potential management frameworks and funding models for some form of managed wastewater service. This Action Plan has been developed within the existing constraints of legislation and state government policy relating to on-site systems, water authorities and land use planning.

In accordance with the SEPP (Waters), where it is not feasible for reticulated sewerage to be provided to a town or area that has been identified as high risk of non-containment, alternative risk management or mitigation strategies should be considered. They form a key component of this Action Plan.

For medium and lower risk areas / properties, actions focus on resourcing and implementing improved levels of oversight for on-site system operation and management. In addition, it is proposed to establish risk based Minimum Standards for Land Capability Assessment, system design and assessment of potential cumulative impacts for new systems and unsewered development to ensure future impacts are avoided.

6.1 Priority Actions

The following Actions are the 'highlight' or priority actions that have been identified through the DWMP process.

6.1.1 Develop and Implement an On-site Wastewater Oversight Program

Of primary importance throughout most of Murrindindi Shire's unsewered areas is the need for on-going compliance oversight of on-site systems. The intention would be for a grading of inspection frequency and degree of enforcement action based on the broader priority bands presented in this DWMP (Table 10). It is recognised that this oversight regime would need to focus on higher risk properties as per the CoS Hazard Class developed from the land capability mapping layer and existing on-site inspection data (where available).

It is recommended that an initial inspection of all properties is completed in order of risk priority (see Table 10) for the following purposes.

- To obtain accurate data on type, age, condition, location and size of each system; and
- (Where possible) to engage with the resident on the importance of managing their system, guidance on the 'do's and don'ts' and why Council are conducting inspections.

Once this initial inspection has been completed, Table 11 summarises a recommended inspection / oversight program for MSC.

Table 11 Proposed On-site Wastewater Oversight Program

Inspection Frequency	Priority Band (See Table 10)	Follow Up on Required Works
Annual	Very High (excluding Non-containment properties[1]). Any property identified as having a major non-compliance requiring rectification[2].	Follow up within 3 months to ensure completion of required works.
Two-yearly	High Risk (excluding Non-containment properties[1]).	Follow up within 6 months to ensure completion of required works (minor non-compliances only).
Three-yearly	Medium Risk Any system with Permit condition requiring a 3-yearly inspection.	Follow up within 12 months to ensure completion of required works (minor non-compliances only).
Five-yearly	Low Risk[3]	

1. *Non-containment properties will be considered as part of development of any whole town solution or mitigation strategy.*
2. *Major non-compliances typically involve the failure of land application areas and off-site discharge of wastewater that was not originally approved or major structural / operational failure.*
3. *Where a new system is approved and installed on a Low Risk property, it may be adequate to rely on a 3-5 yearly check by a licenced plumber or drainlayer.*

The biggest challenge for all Victorian council's is the establishment of a long-term funding mechanism for this oversight and enforcement capability. This DWMP includes a small number of potential options for resourcing of the oversight program that will require further examination to confirm feasibility and acceptability to Council and the community.

It is recommended that Council prepare a business case for increased Domestic Wastewater Management oversight that strikes a balance between cost burden on the community, management of risk and fulfilment of Council's legislative obligations. This should include community engagement on both the risks / impacts of on-site systems and seeking feedback on community willingness to pay for improved oversight.

While this business case may not progress to implementation, as a minimum it enables Council to demonstrate it has actively sought to meet its domestic wastewater management obligations under the SEPP (WoV).

Three potential DWMP funding models are currently being considered for Murrindindi Shire (noting these are to be finalised as part of DWMP implementation).

- Utilise general Council revenue based on the human health and environment protection benefits to the community.

- Increase in Septic Tank Permit fees to allow for oversight of Permit condition compliance.
- Potential establishment of a Local Law to enable a levy to be charged.

There are other, external funding mechanisms that may also be available such as application of a charge associated with septic tank desludging and disposal. Additionally, systems approved since (approximately) 1999 typically have a condition on their Permit requiring three yearly checks by a licenced drainlayer. For these systems, the cost of this inspection would be borne by the property owner. This approach does not always provide the community with the best value for money and can be challenging to enforce and oversee (resulting in higher costs also).

6.1.2 Ensuring Future Unsewered Development is Safe and Sustainable

There are a number of localities and areas where on-site containment can be achieved subject to management of constraints. Constraints include slope, incised watercourses and soils with poor suitability for effluent land application.

Section 5.4 and 5.6.3 of this DWMP utilised the DWM Hazard Mapping prepared as part of risk assessment activities to set risk based Minimum Standards for the following (but not limited to) elements of DWM. Draft proposed Minimum Standards are provided in Appendix B and will be refined and finalised as part of DWMP implementation.

- Investigation, design and impact assessment requirements for unsewered Planning Permit and Septic Tank Permit applications.
- Triggers for completion of Cumulative Impact Assessments for new unsewered development that considers the impact of land capability of the amount of "useable land" on a site for DWM (as discussed and defined in Section 5.6.3).
- Additional requirements for non-residential DWM systems approved under the Septic Tank Permit system (<5,000 L/day).
- Policy positions for common challenges / constraints that impact on the ability to contain wastewater on-site (e.g. water supply catchments, land stability, bushfire management, flood risk, vegetation protection overlays)
- Risk based Septic Tank Permit conditions for on-going operational compliance requirements.
- Risk based requirements for designer certification of new DWM systems.

Use of the broad scale risk mapping completed as part of this DWMP enables Council to apply consistent requirements with respect to information required to support Permit applications. The risk class from the mapping should not be used to apply prescriptive technology or construction requirements because the mapping remains broad scale. Rather, it can be used to justify higher

levels of investigation and design analysis to ensure any potential constraints are detected and addressed.

6.1.3 Alternative Wastewater Management Investigation and Pilot Study

The risk assessment documented in Section 5 has identified a number of key areas where the risks of off-site discharge and system failure are elevated. This is the result of smaller lot sizes combined with land capability and receiving environment constraints (including groundwater). For Kinglake, this has been compounded by bushfire recovery and development pressure. For these towns / areas, owner managed on-site wastewater management is highly unlikely to meet regulatory requirements or community expectations for sanitation and environmental protection. Consequently, some form of alternative wastewater management strategy is likely to be required to meet requirements.

Given the isolated nature of these communities, the viability of connection to the Goulburn Valley Water sewerage network is likely to be low. Goulburn Valley Water confirmed during stakeholder engagement for this DWMP that external funding would be required to enable reticulated sewerage to be provided to these towns. This DWMP does not exclude conventional reticulated sewerage as an option for Very High Risk towns as it remains a highly effective (albeit high cost) solution. However, the recently revised SEPP (Waters) contains a specific requirement for Councils to consider and investigate alternative solutions beyond just reticulated sewerage including non-engineering (i.e. management based) solutions such as centralised management of on-site and cluster wastewater management systems.

Simultaneously, the establishment of the Victorian Integrated Water Management (IWM) Forums across Victoria creates opportunities for local councils, water authorities and other stakeholders to implement IWM solutions and approaches where beneficial. There are a number of local and decentralised approaches to wastewater management and provision of recycled water that fit within the sphere of IWM.

A current project being undertaken by Barwon Water in Forrest is an example where a combination of on-site and cluster technologies in addition to a small reticulation system are being used to maximise management of wastewater within the town, provide a recycled water source and improve liveability (currently constrained by the off-site discharge of greywater). The preferred solution being considered in Forrest involves secondary treatment and subsurface irrigation on each property, with a small 'effluent' sewer directing excess effluent to a local water reuse facility, for further treatment and controlled irrigation. Importantly it was identified that management of both on-property and off-property infrastructure must be undertaken by a Responsible Management Entity (e.g. potentially Barwon Water) and not the home owners. The project is highly contingent on external funding given the limited capacity for the community to fund the solution.

There are similarities between the challenges facing each of the Very High Risk towns in Murrindindi that lend themselves strongly to a more pragmatic, adaptable, IWM approach. This can range from

risk mitigation (e.g. capture and treat stormwater containing greywater) through to decentralised solutions that are centrally managed by public and/or private organisations. These challenges are consistently faced by many other local governments not only in Victoria but nationally.

The risk assessment has identified Flowerdale, Kinglake and Thornton as high priority areas for improved wastewater management. Initial desktop evaluation as part of the DWMP by DWC indicates that these areas are likely to be well suited to a decentralised solution that may involve partial management on site with excess recycled water managed as a communal facility. This Integrated Water Management approach is consistent with the recent VAGO Audit (2018), in which alternative options are to be investigated where provision of traditional sewerage is not viable. This investigation could be undertaken as a pilot study, similar to that currently underway as part of the Park Orchards Trial Project (via Yarra Valley Water) and in Blackwood (via Moorabool Shire Council).

Yarra Valley Water have currently been trialling upgrade of ~100 on-site systems within Park Orchards as a potential alternative servicing solution. The Blackwood Septic Program involved Moorabool Shire Council and Central Highlands Water funding the upgrade of on-site systems across a number of constrained, high risk properties (within a potable water catchment). This was due to the lack of provision of reticulated sewerage in the area and concern with potential failure of on-site systems.

A pilot scheme would assist in developing a model for the provision of an alternative wastewater management scheme to these high risk areas (and potentially others in the future).

It is recommended that investigations be undertaken in relation to these areas to;

- Design a suitable Pilot Project that achieves the multiple objectives of improved wastewater management and IWM outcomes;
- Investigate and identify potential funding, management opportunities, how public health and environmental health risks will be mitigated;
- Develop and implement monitoring and evaluation system/program of the alternative wastewater management pilot scheme;
- Pursue grants and other funding sources made available to implement an alternative wastewater management pilot scheme. This would require development of a business case to demonstrate to Government Agencies how this scheme might be implemented.
- Appendix D contains an outline of potential alternative wastewater management strategies and management models that may warrant further investigation as part of DWMP implementation.

Murrindindi Shire Council is currently a project partner on a Goulburn Broken IWM Forum project that aims to develop an evaluation framework for alternative small town

wastewater solutions. Buxton and Thornton have been included as case studies in this project.

6.1.4 Education and Engagement Program

As previously mentioned in this DWMP, the previous 2006 draft DWMP was not formally adopted. As such, no formal education or engagement program has been implemented.

Council's website has been updated since the previous DWMP to outline the Septic Tank Permit Process.. Copies of the Application to Install/Alter Septic Tank and a general Information Sheet for Septic Tank Application or Alterations is provided to the Septic Permit applicant, owner, plumber and Building Certifier.

The intention of this DWMP is to coordinate a number of additional education and engagement initiatives as part of a set Program. This could include;

- Develop a Stakeholder Engagement Plan, which outlines how stakeholders are to work to together to better manage domestic wastewater impacts with Murrindindi Shire Council (refer Appendix G).
- Develop and deliver wastewater management system maintenance and good land management practices education material via Council's website, pops up and printed information.
- Promote wastewater management education and septic system data availability to ratepayers, renters, solicitors, real estate agents, building certifiers, architects, engineers, plumbers, builders and other relevant parties.
- Develop and implement documentation to enable these community members to obtain information on properties they have interest in and status of a potential wastewater management system for the site.

6.1.5 DWM Information Collection and Management

Council have undertaken internal audits every 5 years in order to determine potential options to develop DWMPs and risk assessments. Council currently have Septic Tank Permit data imported into the Environmental Health System, however as discussed previously the data is currently only from year 2000 to present. This process is critical to improved management of Domestic Wastewater Management (DWM) risks. The DWMP puts forward options to streamline information collection and management for DWM as new Permit Applications are submitted or system inspection is undertaken in the future.

As a starting point it is proposed to investigate the developing of a Council user group to facilitate the integration of Open Office Health Manager wastewater management system data with Council GIS system. It is essential this is integrated with any inspection data collected as part of a future System Audit Program.

The DWM Hazard Mapping can potentially form the basis for an Area wide information management system for DWM systems. As information is input into Health Manager, it could be also directly updated in a mapping layer on intranet mapping.

6.2 Full Action Plan

At present, resourcing for Domestic Wastewater Management (DWM) obligations is limited primarily to Septic Tank Permit application assessment, response to complaints and addressing high risk on-site system failures that pose an immediate health risk. The following Action Plan has been developed with a view to balancing cost of implementation against Council's DWMP obligations under the SEPP (WoV) and the outcomes of the DWM Risk Assessment documented in Section 5.6. Implementation of the Action Plan will require resourcing beyond the existing situation. Consequently, investigations into potential long-term funding models is identified as a High Priority Action under the DWMP.

Table 12 Murrindindi Domestic Wastewater Management Action Plan

Action	Action Steps	Responsibility	Resourcing	Timing
Action 1 **High Priority** Develop Funding Models for On-site Wastewater Oversight / Compliance Program and Implement (refer to Section 6.1.1)	1. Evaluate potential funding models and make recommendation to MSC. 2. Seek approval for funding model. 3. Implementation (prioritised based on On-site System Inspection data analysis and risk).	MSC Environmental Health	Approx. 1 FTE staff + vehicle (approx. $120k p.a. including overheads)	DWMP Year 1 DWMP Year 1 DWMP Year 2
Action 2 **High Priority** Pilot alternative wastewater management strategies **for Flowerdale and/or Kinglake and Thornton**	1. Design a suitable Pilot Project. 2. Develop and implement monitoring and evaluation system/program. 3. Engagement between Council, Victorian Government Agencies and Community Stakeholders to identify potential funding and management opportunities. 4. Pursue grants and funding made available to implement an alternative wastewater management pilot study. Requires development of a business case to demonstrate how this scheme may be implemented.	MSC MSC, EPA, Goulburn Valley Water, DELWP	TBC	DWMP Year 1 DWMP Year 1-2 DWMP Year 3-5?
Action 3 **High Priority** Establish Minimum Standards for Septic Tank and Planning Permit Applications	1. Refine, finalise and adopt the Minimum Standards Tables in Appendix B. 2. Engage with neighbouring Councils to work towards consistent septic tank and planning permit application standards. 3. Conduct Consultant and Installer Information Sessions 5. Implement and Update as Required	DWC MSC Environmental Health	As part of DWMP Existing budget	DWMP Finalisation DWMP Year 1 DWMP Year 1
Action 4 **High Priority** DWM Information Collection and Management	1. Investigate developing user group to facilitate the integration of Open Office Health Manager wastewater management system data with Council GIS system. 2. Create a baseline Septic Tank Permit GIS mapping layer.	MSC Environmental Health MSC Environmental Health / IT (+possibly other Councils)	No additional	DWMP Year 1

Action	Action Steps	Responsibility	Resourcing	Timing
	3. Establish procedure for direct input of all new Permits' data as they are approved.			
Action 5 **High Priority** Education and engagement program	1. Develop a Stakeholder Engagement Plan, which outlines how stakeholders are to work to together to better manage domestic wastewater impacts. 2. Develop and deliver wastewater management system maintenances and good land management practices education material via Council's website, pops up and printed information. 3. Promote wastewater management education and septic system data availability to all relevant community members. 4. Develop and implement documentation to enable these community members to obtain information on properties they have interest in and status of a potential wastewater management system for the site. 5. Develop and deliver information guide on how to consolidate lots.	Decentralised Water Consulting MSC Environmental Health MSC Environmental Health MSC Planning	TBC ($5k-$10k)	DWMP Finalisation DWMP Year 1
Action 6 **Low Priority** DWM Impact Monitoring Program	1. Evaluate potential for an on-going water quality monitoring program in high risk areas.	MSC Environmental Health	TBC (monitoring program indicatively $10k-$40k p.a.)	DWMP Year 3
Action 7 **Low Priority** DWMP Action Plan Review	1. On-going evaluation against Action Plan 2. Adapt DWMP Actions as required based on available funding and previous action outcomes. 3. Full DWMP Review	MSC Environmental Health	Existing	Annually Annually DWMP Year 5
Indicative Budget Estimate for DWMP Action Plan Implementation	**TBC**			

7 References

BMT WBM (2012) *Assessment of On-site Containment: Park Orchards Case Study*. Yarra Valley Water.

BMT WBM (2015a) *Park Orchards Trial Project: Preliminary Design Package Volume 1*. Yarra Valley Water.

BMT WBM (2015b) *Integrated Water Cycle Planning for Community Sewerage Areas Case Study – Monbulk*. Yarra Valley Water.

BMT WBM (2016) *Park Orchards Trial Project: Baseline Monitoring Program Technical Review*. Yarra Valley Water.

DELWP (2017) Integrated Water Management Framework for Victoria.

EPA Victoria (2016) *Code of Practice for Onsite Wastewater Management*. Publication 891.4.

Municipal Association of Victoria (2014) Victorian Land Capability Assessment Framework.

Murrindindi Shire Council Planning Scheme (Online)

Standards Australia (2012) *AS/NZS1547:2012 On-site domestic wastewater management.* Standards Australia.

Victorian Auditor-General's Office (2018) *Managing the Environmental Impacts of Domestic Wastewater.*

Appendix A On-site Containment and Land Capability Risk Assessment Methodology

A1 Weighted Hazard Score for Land Capability

Properties with potential for containment on-site (CoS) were classified based on the potential risks and impacts associated with on-going on-site wastewater management. A detailed description of the weighted hazard scoring system is provided in the following tables. There are three Head Criteria used to calculate the overall Land Capability Hazard Score. These scores are determined through direct GIS queries and analysis with the land capability hazard calculated using four sub-criteria.

The methodology has been applied within Victoria as well as NSW for a variety of projects. It is consistent with best practice, the EPA CoP and MAV Land Capability Framework.

A1.1 Primary Land Capability Hazard Criteria and Risk Framework

*Land Capability Hazard / Risk = (Land capability hazard*0.5) +(Receiving Environment: Proximity*0.25)+(Receiving Environment: Sensitivity*0.25)*

Head Criteria	Classification	Hazard	Score	Weight	Description
Land capability hazard	Hazard score <0.95 in Land Capability hazard score	Low	0	50%	Few / minor land capability constraints to on-site wastewater management.
	Hazard score >=0.95 and <2 in Land Capability hazard	Medium	1		Some moderate land capability constraints to on-site sewage with potential to increase failure rates
	Hazard score >=2 in Land Capability hazard score	High	2		Significant land capability constraints which have a high potential to increase failure rates
Receiving Environment: Proximity	Property outside of setback area	Low	0	25%	Limited to no proximity risk
	Receiving environment setback intersects boundary	Medium	2		Risk may be elevated, particularly where other constraints exist or COS is marginal
	Receiving environment itself intersects boundary	High	3		High risk - careful design and oversight required as likelihood of impact high in failure event
Receiving Environment: Sensitivity	None present / >setback distance	Low	0	25%	Self-explanatory – acceptable risk
	Stormwater drain				Typical swale drains on street or piped system
	Degraded or cleared intermittent drainage line.				Gully lines with predominantly grass cover and some scattered trees and shrubs.
	Dam / small waterbody (Upslope)	Medium	2		Farm dams possibly used for irrigation of edible crops or watering livestock
	Partially vegetated / rehabilitated ephemeral waterways (Upslope)				Some ecosystem value, seeking to not degrade further.
	Open stormwater drains in public places				Adjacent to and within parks, reserves, schools, shops.
	ESO vegetation communities (non-riparian)				Non-riparian ESO (or bioregion) polygons
	Non-potable groundwater bore				Domestic stock and irrigation bores from available data
	Potable water supply catchment	High	3		Protection of human health (priority)
	Potable groundwater bore				Protection of human health (priority)
	Permanent watercourse / waterbody (Upslope)				Perennial or near perennial streams and rivers, or large lakes and reservoirs.
	ESO (high value) aquatic ecosystems				Riparian polygons of ESOs and bioregions

ESO = Environmental Significance Overlay; LAA=Land Application Area

A1.2 Land Capability Hazard Sub-criteria

Land capability hazard score equation is as follows and is used to calculate this hazard as per the table above (Low, Medium or High Hazard).

*(Slope hazard*0.4)+(Soil hazard*0.3)+(Drainage Hazard*0.1)+(Climate*0.2)*

Criteria	Value	Hazard	Score	Weight	Notes
Slope (area weighted average)	<10%	Low	0	40%	No impact on design or function
	10-15%	Medium	2		Some constraints to land application, breakout risks
	15-30%	High	3		High risk of design failure or effluent breakout
	>30%	Prohibitive	Prohibitive		Land application prone to failure regardless of management (Very High Hazard)
Soil	<1.5	Low	0	30%	Soil hazard was assessed and calculated as per BMT WBM (2012, 2015a & 2015b).
	1.5-2.5	Medium	2		
	>2.5	High	3		
Climate	≤3 months where RF > PET	Low	0	20%	Monthly average rainfall exceeds potential evapotranspiration only for a small number of months.
	4 to 5 months where RF > PET	Medium	1		Rainfall exceeds potential evapotranspiration for close to half of the year.
	≥6 months where RF > PET	High	2		Rainfall exceeds potential evapotranspiration for half or greater of the year (soils expected to be consistently moist).
Drainage Class	>Mod. well	Low	0	10%	Free draining soils, ridges, upper and mid slopes
	Imperfect	Medium	1		Imperfectly drained soil profiles, lower slopes (footslopes)
	<Poor	High	2		Poorly drained landscapes, depressions, water accumulation, swamps, floodplains

A1.3 Red flags

The need for a number of "red flags" was identified during groundtruthing and development of the Framework. Red flags represent more significant or extreme conditions associated with a specific criterion that have a significant and in some cases prohibitive impact on the ability to CoS.

Table 13 CoS Hazard Red Flags

Occurrence	Outcome	Purpose
Land capability = High	CoS Hazard Class = High automatically assigned.	Avoid significant and extreme (e.g. steep slopes and shallow soils) constraints on large lots that are not close to sensitive environments from being diluted.
Lot size <4,000m^2 = High		These sites will be highly dependent on site specific land capability constraints and proximity to sensitive receiving environments. A more detailed LCA and design process is likely to be required to ensure full containment in addition to higher level treatment and greater construction and operational oversight.
Receiving environment proximity = High		Capturing otherwise unconstrained lots that either contain or are immediately adjacent to sensitive receiving environments (i.e. if failure occurred there is limited assimilative capacity).
Receiving environment sensitivity = High		As above but capturing the need for greater vigilance where an on-site system is close to a high value or highly sensitive receiving environment (e.g. potable water supply catchment).

A2 Receiving Environment Analysis

Receiving Environment hazards were assigned the relevant Sensitivity hazard (as defined above) and applied to each of the unsewered properties within the LGA which contained the individual hazard. A Receiving Environment Proximity hazard of 3 (high) was applied to each property in which the relevant hazard polygon or line intersected the property boundary. If the Receiving Environment (RE) hazard buffer (setback) area intersected the property boundary, a RE Proximity hazard of 2 (medium) was assigned. The flooding and ESO hazard layers were not buffered and therefore were assigned a uniform RE Proximity hazard of 2 (medium). For very large lots >40ha, the hazard for any watercourses, waterbodies and high value ESOs within these lots was reduced (to medium) given the very high likelihood that a land application area could be installed with sufficient setback to these hazards. Details of each of the specific RE constraints which were considered are discussed below.

A2.1 Watercourses

The watercourse layer ('Hydroline') was found to correlate quite well with intermittent waterways and drainage lines across the LGA. Therefore, these were buffered by 30 metres (EPA CoP setback distance) and given the appropriate Receiving Environment Sensitivity hazard (Medium). The watercourse layer also correlated well with permanent waterways within the LGA and this was buffered by 60 metres and given an increased RE Sensitivity hazard (High). For properties ≥4,000m^2 in which an intermittent watercourse is within the property boundary a Medium RE Proximity hazard was assigned to capture the improved ability for a land application area to be located on larger lots

with sufficient setback to this constraint. The standard High RE Proximity hazard was assigned if the property was <4,000m^2.

A2.2 Waterbodies

Dams and other waterbodies were mapped within the 'Hydroarea' layer provided by Council. A large number of drainage depressions and low lying areas were also mapped within the waterbodies data. As these low lying areas would periodically be flooded and filled with water they were included within the hazard mapping. Small waterbodies (e.g. farm dams) were buffered by 30 metres and assigned a Medium RE Sensitivity hazard whilst larger waterbodies were buffered by 60 metres and assigned a High RE Sensitivity hazard. For properties ≥4,000m^2 in which a small waterbody (farm dam) is located within the property boundary a Medium RE Proximity hazard was assigned (as discussed above for watercourses). High RE Proximity hazard was assigned if the property was <4,000m^2.

A2.3 Groundwater

Groundwater bore locations were sourced from the Victorian Government online data portal ('NGIS_Bores'). All bores known to be potable water sources were buffered by 100 metres and assigned with a High RE Sensitivity hazard. There is uncertainty around currency, accurateness and completeness of groundwater bore data and therefore bores assigned as non-potable or unknown were not included (given the board-scale nature of the mapping). The whole of Murrindindi Shire is mapped with the Groundwater Management Areas and therefore these were not included directly within the land capability mapping. They were considered as part of the risk based prioritisation for high hazard towns (as documented in DWMP).

A2.4 Environmentally Significant Vegetation

The Council planning overlay was used to extract areas classified specifically as part of the 'Environmental Significant Overlay' (ESO). This was combined with the 'Native Vegetation – Bioregional Conservation' layer obtained from Vic Gov data portal. No buffer was applied to this combined ESO / Bio-conservation region and therefore it is assigned a uniform RE Proximity hazard of 2 (medium).

In order to identify high value (Riparian) ESO / Bio-conservation areas, permanent watercourses (with 30m buffer applied) was used to identify these areas and assign a High (3) RE Sensitivity hazard to any properties within this region. All other ESO / Bio-conservation areas were assigned a Medium (2) RE Sensitivity hazard.

A2.5 Flooding

Flood risk areas were identified via the Council planning overlay to determine properties within the 'Floodway' or 'Land subject to inundation' planning regions. Properties that were within these areas were assigned a medium RE Proximity hazard (and therefore minimum Medium Hazard classification)

to flag this potential land capability constraint for installation of a suitably sized on-site wastewater management system.

A2.6 Stormwater

Stormwater drainage infrastructure data was available, however the coverage was largely within sewered areas. Therefore the data had minimal overall influence within the land capability hazard mapping.

A3 Soil Hazard

Soil hazards relevant to on-site wastewater management have been evaluated using the parameters / system documented in the tables below.

A Land Capability Analysis report for Murrindindi Shire was previously prepared in December 2001 and the report and spatial / GIS data was provided to DWC. However, upon review it was determined that there was no way to reconcile the Land Capability Analysis document with the spatial data, leaving no way to spatially identify different soil hazard classes.

In order to develop a soil hazard class, DWC utilised the best available data in the form of the 'Soil Type' GIS dataset provided by the Victorian Government Data Portal. The soil landscape (Landunit) classification present in this layer could currently not be correlated with the Victorian Resources Online Soil Resource Mapping landscapes. However, DWC were able to develop a representative soil hazard class based on the Australian Soil Classification present within the GIS dataset. This soil landscape data was based on 3,300 land units across Victoria derived from 100 soil and land surveys undertaken over the last 70 years.

Groundtruthing field verification includes completion of soil investigations across Murrindindi at a number of representative locations. The focus was on the key / dominant soil landscapes and areas where there was uncertainty around soil characteristics and/or soil hazard was important for the overall Hazard Class. This also included collection of soil samples for laboratory analysis for a number of key soil landscapes (including data previously obtained for Kinglake).

Table 14 Parameters for Soil Hazard Derivation

Hazard Type	Parameter	Hazard Class	Description	
Depth Hazard	Profile Depth	Low	Greater than 1.5 metres profile depth	Greater depths of unsaturated soil provide increased treatment of effluent and reduced potential for lateral water movement.
		Medium	0.8 – 1.5 metres profile depth	
		High	Less than 0.8 metre profile depth	
Hydraulic Hazard	Texture	Low	Pedal loam to clay loam soils with mid-range permeability and moderate to free drainage.	
	Structure	Medium	Generally imperfectly drained, weakly structured clay loams and light clays or deep, rapidly drained sands (e.g. sand hills).	
	Indicative Permeability	High	Generally, shallow, structureless clays and sands in either very rapidly or very poorly drained landscapes.	
	Drainage			
Pollution Hazard	Nutrient Retention	Low	Generally, soils with high cation exchange (CEC) and / or phosphorus sorption capacity, no sodicity potential and good organic content in topsoil.	
	Sodicity	Medium	Generally, soils with moderate CEC, phosphorus sorption capacity, minor sodicity potential and moderate organic content in topsoil.	
	Organic Content	High	Generally, soils with low CEC, phosphorus sorption capacity, sodicity potential and/or limited organic content.	

Table 15 Weighted Average Logic for Soil Hazard Class

Hazard Score	Hazard Type	Weighting	Calculation
Low=1	Depth	1.5	**Final Hazard Class** = [(Depth HS x w) + (Hydraulic HS x w) + (Pollution HS x w)] / 3 **Weighted average hazard classes** 1 – 1.5 = Low Soil Hazard 1.5 – 2.5 = Medium Soil Hazard 2.5 – 3 = High Soil Hazard
Medium=2	Hydraulic	1	
High=3	Pollution	0.5	

A4 Slope and Drainage Hazard

Contours and slope grid were created within QGIS based on the Vicmap 10m Digital Terrain Model (DTM) available for the entire area. This assisted with evaluation of topographical, hydrologic and landscape constraints. The slope grid created from the DTM provided a broad desktop assessment of variability in slope, from which assumptions were evaluated and verified during groundtruthing. Slope was found to be a moderate to major constraint for a large portion of the Shire.

The drainage hazard was inferred from the general geomorphology (GMU and Land Systems of Victoria datasets - Victoria Gov. data) data layers based on identifying board areas in which poor drainage was likely to be a constraint to effluent management. The High Drainage Hazard areas predominately consisted of low-lying floodplains with incised watercourses present.

A5 Climate Hazard

A general climate analysis across the study area was undertaken to provide an assessment of the degree to which climate limits or enhances opportunities for the land application of effluent. The Climate Hazard analysis classifies the Shire based on the number of average climate months where rainfall exceeds potential evapo-transpiration (PET).

This provides a general spatial representation of periods where enhanced deep drainage or surface surcharging of effluent is more likely to occur because evapo-transpiration is providing limited or no assistance in assimilating wastewater. Conversely areas (grid cells) with limited or no average months where PET is greater than rainfall generally represent sites with good evapo-transpiration capacity available for effluent assimilation.

The baseline data layers used include;

- 2.5 km^2 grid of mean monthly rainfall (Bureau of Meteorology Climate Atlas) www.bom.gov.au/climate/averages/climatology/gridded-data-info/metadata/md_ave_rain_1961-90.shtml
- 10 km^2 grid of mean monthly areal Potential Evapo-transpiration (BoM Climate Atlas)

http://www.bom.gov.au/climate/averages/climatology/gridded-data-info/metadata/md_ave_et_1961-90.shtml

The rainfall and evapotranspiration data for each month were converted from lat/long co-ordinates to an MGA projection and then converted to a 40m grid cell size for consistency.

The final output of the RF minus PET monthly grid analysis was an approximation of excess rainfall for each month of an average statistical year. The results of this were used to determine an appropriate spatial climate hazard level across the LGA.

The climate hazard layer was created through classification of grid cells in accordance with the following conditions.

Low hazard: ≤3 months where RF > PET

Medium hazard: 4 to 5 months where RF > PET

High hazard: ≥6 months where RF > PET

A6 Groundtruthing

DWC conducted field groundtruthing of the land capability hazard mapping in March 2019. Twenty-one sites were assessed based on the risk / hazard classification Framework detailed above. Sites were selected to maximise benefits of field checking by;

- concentrating on locations where land capability inputs (i.e. the inputs subject to the most uncertainty) had the potential to influence the final Land Capability Hazard Class (e.g. soil landscapes which covered a large proportion of the Shire);
- identifying sites where there was observed uncertainty in the individual parameters used to assign a hazard class (e.g. near a soil landscape boundary or area of variable slope); and
- concentrating on areas with higher densities of on-site systems or known performance issues.

Groundtruthing involved visual checking of each site against the tables in Section A1 above. It also involved checking of soil hazard class against key criteria set out in Section A3. Soil hazard was a key focus of the groundtruthing given the limited data available for the Shire. Hazard mapping was then checked via a laptop and GPS at each site with results recorded with supporting photography.

The results found no significant discrepancies in the Land Capability Hazard Class for the groundtruthing sites. General comments / limitations were as follows.

- As discussed previously, limited consolidated soil landscape information for the Shire means that the Soil Hazard is general in nature and therefore it is recommended that at least one soil test pit is recorded for any site being assessed by a land capability assessor.
- Slope Hazard is based on the best available and most consistent data across the Shire, however as it is based on 10m DTM grids it will not necessarily pick up subtle changes across sites. It is appropriate for broad-scale mapping such as this.
- The Native Vegetation (Bioregional Conservation) data utilised as part of the ESO vegetation hazard has variable accuracy regarding actual vegetation location, however is it sufficient given the broad-scale nature of the mapping and is the best data available.

Appendix B Minimum Standards – Septic Tank Permits & Subdivision

Domestic Septic Tank Permit

The flow chart below outlines the pathway for assessing a septic tank permit for a new domestic on-site system or alternation to an existing system. The Minimum Standards for assessment and design are dependent on the Land Capability Hazard Class for the specific unsewered domestic site. An **example** minimum standards checklist is presented below in Table 16 for Low to Medium Hazard sites. The intention is that a consultant can undertake a simple domestic wastewater system design and report provided the Minimum Standards are achieved. In addition, **example** minimum standards for properties classified as High / Very High Hazard and Non CoS (and where Low / Medium minimum standards are not achieved) is presented below in Table 17.

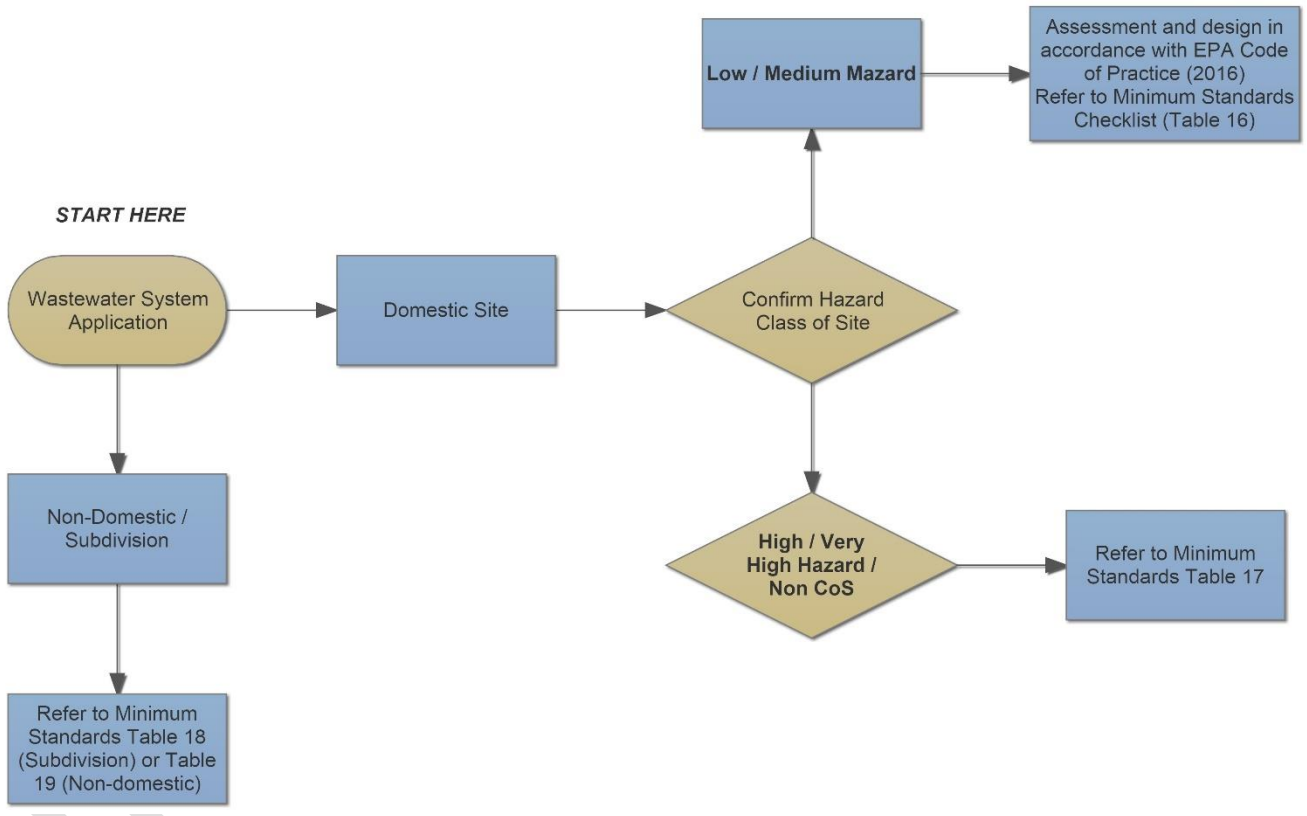

Table 16 Low / Medium Hazard Minimum Standards

1. Site Assessment	Low / Medium Hazard	
	Limit	**Comply (tick or cross)**
Aspect/exposure of disposal area (sun and wind)	**Moderate/High**	
Slope of disposal area	**<20%**	
Flooding – is the property flood prone?	**> 1 in 20 year ARI**	
Depth to bedrock or hardpan? (below point of effluent application)	**> 0.6metres**	
Depth to groundwater? (below point of effluent application)	**> 0.6metres**	
Dam, lake, reservoir or bore (potable water supply catchment) – *Upslope*	**> 300metres**	
Groundwater bore – distance to disposal area?	**> 60 metres**	
Permanent waters (potable water supply) – distance to disposal area?	**> 100 metres**	
Permanent waters (non-potable water supply) – distance to disposal area?	**> 60 metres**	
Dams, drains, intermittent watercourses – distance to disposal area?		
Vegetation - removal for disposal area?	**No**	
Any other health or environmental constraints specific to the property?	**No**	
Soil classification (*AS/NZS 1547:2012)*	**Cat. 1-5**	

Applications must be assessed under the High Hazard Minimum Standards where site specific investigations confirm a failure to meet any of the criteria in this table.

1. Slope may be estimated visually.
2. Subsurface criteria must be assessed through excavation of at least one soil test pit within the proposed land application area(s).
3. Soil classification shall be conducted through textural analysis as described in Appendix E of *ASNZS1547:2012*.
4. Failure to declare obvious property constraints may trigger additional investigation requirements.

Table 17 Minimum Standard for Wastewater Management Reports: High / Very High Hazard and Non CoS Lot

SINGLE ALLOTMENT (Domestic) Minimum Standard for Wastewater Management Reports		
Report Element	**Minimum Standard**	**Nominal Level of Detail**
Introduction and Background	• Name, contact details and qualifications of author(s). • Site location and owner. • Allotment size (m^2 or ha). • Proposed / existing water supply. • Number of bedrooms and occupants. • Availability of sewer.	One page of text and tables.
Site and Soil Assessment	• Broad overview of locality and landscape characteristics. • Details of the date and time of assessment in addition to statements confirming the methods used to complete the assessment. • Site and soil assessment accordance with MAV Land Capability Assessment Framework (2014), *AS/NZS 1547:2012* and EPA Code of Practice 2016 (CoP). • Summary of available published soils information for the site. • Detailed explanation of the implications of observed site and soil features for system design and performance. • Assessment of the existing condition of the receiving environment and sensitivity to on-site system impacts. Setbacks to be met as per EPA CoP.	• Paragraph and locality map. • Paragraph or table • Table(s) • 1-2 paragraphs • Up to 1 page of explanation and recommended design elements to overcome constraints. • Up to one page.
System Selection	• Summarise potential treatment and land application systems considered including advantages and limitations. • Preliminary design calculations for a minimum of 2-4 options. • Brief statement justifying selection of treatment and land application system.	• Table. • Summary table. • Paragraph.

Design	• Site specific calculation of design wastewater generation rates in accordance EPA CoP accompanied by water use / wastewater generation data to support design rates for all existing systems upgrades.
	• Certification details for the selected treatment system.
	• Land Application Area (LAA) sizing in accordance with EPA CoP and MAV (2014);
	  ○ Trench / Bed: most limiting of monthly water balance and annual nutrient balance calculations (EPA CoP).
	  ○ Surface / Subsurface Irrigation: most limiting of hydraulic sizing equation (Eq. L1 *AS/NZS 1547:2012*) and annual nutrient balance calculations (EPA CoP).
	• Hydraulic design calculations for all pressurised pipework (including drip irrigation).
	• Design drawings of all non-certified system components.
		• Tables and paragraph justifying calculations.
		• Attach Certificate
		• Table summarising inputs and assumptions accompanied by a summary table of results.
		• A4 schematic (not to scale).
		• A4 schematic (not to scale).

Site Plan	• Nominated Effluent Management Area (EMA) to be clearly shown to ensure construction does not occur over this area at any time; • Survey plan; • Location of tank(s); • Location of boundaries, buildings, swimming pools, paths, groundwater bores, dams and waterways; • Location of primary and reserve disposal areas; • Location of stormwater diversion drains and earth bunds (if applicable); • Setback (buffer) distances to the above features; • Two metre elevation contours;	• A4 Site Plan (1:500 scale minimum).

	• Location of drainage pipework (centreline).	
Appendices	• Soil bore logs for all test pits (Permeability test results). • Raw laboratory results for soil analysis. • All design calculations and assumptions.	-

Subdivision

The same Minimum Standards would be required for all new subdivision regardless of the specific properties Land Capability Hazard Class. An example table is presented below.

Table 18 Minimum Standard for Wastewater Management Reports (Subdivision)

INCREASE IN BUILDING ENTITLEMENTS Minimum Standard for Wastewater Management Reports		
Report Element	**Minimum Standard**	**Nominal Level of Detail**
Introduction and Background	• Name, contact details and qualifications of author(s). • Site location and owner. • Allotment size (m^2 or ha). • Proposed / existing water supply. • Number of new building entitlements. • Availability of sewer.	One page of text and tables.
Site and Soil Assessment	• Broad overview of locality and landscape characteristics. • Details of the date and time of assessment in addition to statements confirming the methods used to complete the assessment. • Site and soil assessment accordance with MAV Land Capability Assessment Framework (2014), *AS/NZS 1547:2012* and EPA Code or Practice 2016 (CoP). • Detailed review of available published soils information for the site. • Where multiple soil facets are present the site plan should show the approximate boundary between facets. • Detailed explanation of the implications of observed site and soil features for system design and performance. • Assessment of the existing condition of the receiving environment and sensitivity to on-site system impacts. Confirm setbacks are met as per EPA CoP.	• Paragraph and locality map. • Paragraph or table • Table(s) • 1-2 paragraphs • Minimum 3 soil test pits per soil facet. • Up to 1 page of explanation and recommended design elements to overcome constraints. • Up to one page.
System Selection and Design	• Summarise potential treatment and land application systems considered including advantages and limitations. • Brief statement justifying selection of potential treatment and land application systems. • Sizing of land application systems using the most limiting of monthly soil water and annual nutrient balances (EPA CoP / MAV 2014 and *AS/NZS 1547:2012*).	• Table. • Paragraph. • Table summarising inputs and assumptions accompanied by a summary table of results and paragraph justifying calculations.
Site Plan	• Useable Land to be clearly identified; • Survey plan; • Proposed allotment boundaries, dimensions and area; • Location of existing buildings, swimming pools, paths, groundwater bores, dams and waterways; • Location of exclusion zones (e.g. setback distances and unsuitable site and soil conditions); • Location of EMAs capable of containing LAAs and reserves (where applicable); • Two metre elevation contours; and • Location of existing and proposed drainage pipework (centreline).	• Minimum Site Plan (1:500).
Off-site Impacts (Where required)	• Confirm Useable Land (UL) and if Setbacks are achieved for each new lot (as per EPA CoP). ○ ≥4,000m^2 UL within each new lot and all setbacks achieved – **No further works required**	• Up to 1 page.

	○ <4,000m^2 UL within a new lot or EPA CoP setbacks cannot be achieved – **Site specific Land Capability Assessment required** in accordance with MAV (2014) and EPA CoP. • Methodology documenting the basis and source of input data including reference to site specific data and published information to justify use. • Results demonstrating compliance with local water quality objectives and adequate management of health risk as per EPA CoP. • Brief discussion of long-term risks to health and environment and recommended management measures to address impacts.	• 2-4 pages of tables, figures and text. • 1-2 pages of tables, figures and text. • Up to 1 page.
Appendices	• Soil bore logs for all test pits. • Raw laboratory results for soil analysis. • All design calculations and assumptions including screenshots of off-site impact spreadsheets/models (if required).	-

Non-domestic System (<5,000 L/day)

The same Minimum Standards would be required for all non-domestic systems regardless of the specific properties Land Capability Hazard Class. An example table is presented below.

Table 19 Minimum Standard for Wastewater Management Reports (Non-Domestic System)

NON-DOMESTIC SYSTEMS (ADWF <5 kL/day) Minimum Standard for Wastewater Management Reports		
Report Element	**Minimum Standard**	**Nominal Level of Detail**
Introduction and Background	• Name, contact details and qualifications of author(s). • Site location and owner. • Allotment size (m^2 or ha). • Proposed / existing water supply. • Description of proposed facility (including equivalent persons). • Availability of sewer.	One page of text and tables.
Site and Soil Assessment	• Broad overview of locality and landscape characteristics. • Details of the date and time of assessment in addition to statements confirming the methods used to complete the assessment. • Summary of available published soils information for the site. • Site and soil assessment accordance with MAV Land Capability Assessment Framework (2014), *AS/NZS 1547:2012* and EPA Code or Practice 2016 (CoP). • Brief and clear explanation of the implications of observed site and soil features for system design and performance. • Assessment of the existing condition of the receiving environment and sensitivity to on-site system impacts. Confirm setbacks are met as per EPA CoP.	• Paragraph and locality map. • Paragraph or table • 1-2 paragraphs • Table(s), minimum 3 soil test pits per soil facet. • Bullet point list of recommended design elements to overcome constraints. • 1-2 paragraphs
System Selection	• Summarise potential treatment and land application systems considered including advantages and limitations. • Brief statement justifying selection of potential treatment and land application systems.	• Table. • Paragraph.
Design	• Site specific wastewater characterisation based on best available published or local information including consideration of seasonal / monthly variation. • Establish site specific design criteria based on typical / published performance. • Brief process design outlining rationale, assumed performance and capacity to manage design flows and loads. Process performance should be supported by published data or information that demonstrates the suitability of the process to the site and development. • Sizing of land application systems using the most limiting of monthly soil water and annual nutrient balances (EPA Code and *AS/NZS 1547:2012*). • Off-site impacts assessment **may be required** if setbacks (as per EPA Code and *AS/NZS 1547:2012*) cannot be achieved – at discretion of Council. • Preliminary hydraulic design of collection, treatment and land application components.	• Seasonal / monthly time series of flow and loads and 1-2 paragraphs + table justification. • Paragraph and bullet points. • 1-2 pages including supporting tables and figures. • Tables summarising inputs, assumptions and results and paragraph justifying calculations. • Tables and process schematic.

Site Plan	• Location of boundaries, buildings, swimming pools, paths, groundwater bores, dams and waterways; • Location / extent of all system components (including any reserve areas); • Two metre elevation contours; and • Location of existing and proposed drainage pipework (centreline).	• Minimum Site Plan (1:500).
Appendices	• Soil bore logs for all test pits. • Raw laboratory results for soil analysis. • All design calculations and assumptions including screenshots of off-site impact spreadsheets/models (if required).	-

Appendix C Minimum Property Size Analysis

A review was undertaken of sustainable minimum property sizes for on-site sewage management based on collated data for a number of unsewered regions across Victoria and New South Wales, some which are similar to Murrindindi Shire. Sustainable minimum property size was previously considered to allow for typical levels of site development (based on applicable land use zoning) in addition to a conservatively sized land application system (using hydraulic and nutrient balances) and provision of adequate separation distances from sensitive receptors.

The intention of these previous assessments was to establish a conservative property size (or some other measure) that was considered adequate to provide Council with a high degree of confidence that an effective, safe and sustainable on-site sewage management service can be accommodated (with factors of safety).

C1 Methodology

Based on previous studies and experience, a conservative land area requirement for sustainable on-site sewage management has been calculated by the following procedure. The procedure was applied using rainfall from local stations and gridded potential evapo-transpiration data from Bureau of Meteorology (BoM).

- A design occupancy of 6 persons for a 4 bedroom house (using reticulated water) was adopted to represent the typical design residential development scenario.
- A typical system configuration of secondary treatment and subsurface irrigation was assumed. This scenario also allowed for primary dosed trenches and beds (discussed further below).
- Hydraulic and annual nutrient balance was undertaken based on the above occupancy assuming a Design Loading Rate (DLR) of 3 mm/day (Category 5 – light clays). This DLR was selected on the basis that it strikes an appropriate balance between conservatism and realism.

The outcomes of these water and nutrient balance calculations were then used to examine minimum Effluent Management Areas (EMA) required for the majority of typical sites and dwellings likely to be encountered.

An assessment was then undertaken of a sample of properties within unsewered zones of the LGA's. Properties were assessed to determine the capacity to provide available area for sewage management in addition to area occupied by development and separation distances from objects such as;

- building structures;
- driveways and paths;
- swimming pools and other dedicated recreational areas (e.g. tennis courts);

- land occupied by livestock or horses;
- property boundaries; and
- dams, intermittent and permanent watercourses.

The assessment was undertaken through orthophoto investigations and GIS creation of buffers around the abovementioned objects. Statistics on the area of land and proportion of total property area occupied by each component (inclusive of buffers) were recorded for analysis. The properties assessed were selected to provide a representative sample of typical development across a variety of unsewered areas. The data also consists of ~800 lots in Monbulk in which site specific available area for effluent management was measured on-property.

Statistics obtained from the assessments were analysed to identify any patterns or relationships between property size, land use zones and area available for EMA's. Multiple scatter plots of property size and the average area available for effluent management were created. This was completed for a number of property size ranges to determine relationships for these ranges that could be applied region wide. Data were utilised from many previous assessments across Victoria and New South Wales and provided a consistent relationship.

C2 Data Analysis

Based on the outcomes of previous water (checked against annual nutrient balances) balance assessments, an LAA of 650 – 850 m^2 has typically been required. The "design" estimate (outlined in points 1 – 3 above) based on the more conservative climate zone resulted in a minimum land application area of approximately 850 m^2. Allowing for treatment tanks, required zoning of LAAs and other infrastructure required for an on-site system, a typical EMA was found to be **~1,000 m^2**. Primary dosed trenches and beds (which are not always suitable for observed site and soil conditions) occupy approximately half the land area of a secondary dosed irrigation system. However, allowance for a reserve area must be made for primary dosed subsurface systems which results in a comparable land area requirement to that of a secondary dosed irrigation system.

The larger footprint is considered appropriate for planning purposes and allows for situations where issues such as irregular shaped areas and slope limit the proportion of available land that can actually be occupied by a land application system. It is important to note that the outcomes of this minimum allotment size assessment should not be used in a prescriptive or deterministic fashion. Individual applicants should be able to undertake additional site specific investigations to confirm the appropriateness of Council's general minimum lot size for their site.

The relationship between Lot Size and Available Area for Effluent Management for the various areas assessed was compared based on adoption of an average available area approach which was found to be more applicable and more adaptable to the study areas considered. This involved determining

the relationship between average available area and allotment size at allotment size ranges. The figure below contains the results of this consolidated analysis.

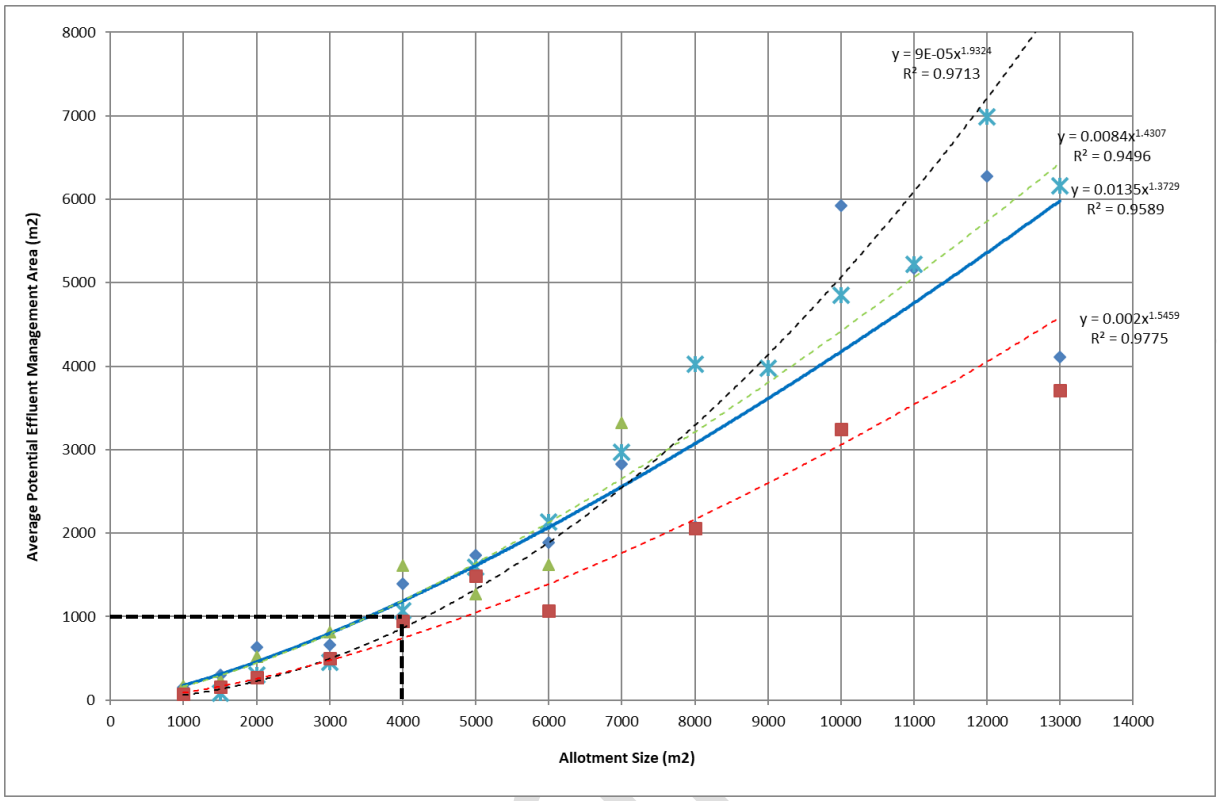

Figure: Average Available Area and Allotment Size Evaluation

The extensive data collated consistently indicated that lot sizes at or greater than 4,000 m^2 are likely to be capable of fitting a sustainable on-site sewage management system within the allotment, assuming aspects such as native vegetation protection can be managed through site specific design and communication between relevant Council staff.

Appendix D Potential Wastewater Management Strategies / Models

Strategy / Model	Description
Managed On-site Wastewater Management Systems	On-site Wastewater management systems upgraded and managed / operated (also potentially owned) by a Responsible Management Entity (RME) such as a Council or private utility, as discussed in Section 3.6 of the VAGO report (2018) based on US EPA governance model.
Decentralised / Cluster Wastewater Management System	System to collect treated effluent from on-property systems for polishing (potentially Class B) and irrigation across community / public open space. Cluster systems are typically set up at a precinct scale to treat wastewater from a group of properties within the vicinity of the nominated community / public open space. Allows opportunities for on-property reuse of treated wastewater to reduce downstream infrastructure / irrigation requirements. To be operated and managed by RME.
Monitoring and Inspection Program	Program for collection of on-site system type and performance data to guide priority of inspection and compliance assessment.
Integrated Water Management	Water management approach that aims to provide a holistic and forward thinking approach to all elements of the water cycle (movement of water through its various phases) including wastewater in addition to stormwater, potable / non-potable water supply and local watercourses. The intention is for this approach to be adaptive to temporal changes over the long-term and designed in conjunction with end users (community) with a place based element to design. Examples include Best Practicable Option upgrades to existing on-site systems with any excess wastewater not able to be contained on-lot sent to upgraded stormwater infrastructure (biofilters / constructed wetlands).
Funded on-site system upgrade grants.	Seek external funding to assist home owners in system upgrades. Operation and management of systems continues to be home owner responsibility.
Reticulated Sewerage (Conventional)	Delivery of low pressure sewer, pump stations and rising main to existing sewerage network or central Water Recycling Plant. Would be delivered and managed by Goulburn Valley Water (currently no plans to extend network).

Appendix E Risk Based Prioritisation

Appendix F Potential On-site System Risk and Management Hazard Methodology

This appendix includes details for a potential methodology for developing an onsite system 'Management' Hazard Class and final 'Domestic Wastewater Management' Class for the entire Shire. This is based on combining the Land Capability Hazard mapping class with a separate 'Management' hazard class based on On-site System (inspection data) for each property. This overall 'Domestic Wastewater Management' (DWM) Hazard Class would ultimately dictate the inspection frequency for each property and the time allowance for ensuring compliance issues (if any) are addressed and rectified.

The potential DWM / Management Risk Class is summarised in the table below for feedback from Council.

The intention would be for MSC to develop a consistent, clearly defined set of criteria for what constitutes as minor, moderate, major and critical non-compliance from the on-site system inspection data.

Where on-site system inspection data is not available, some additional criteria may include;

- Systems older than 30 years - automatic major non-compliance until inspected
- Systems 10-30 years old - automatic moderate non-compliance until inspected
- Systems <10 years old - automatic low risk (Management) until inspected

Another aspect for consideration is a potential reduction in the assigned Land Capability Hazard for a property based on inspection information. For example, following an inspection it may be determined that the existing on-site system achieves all minimum setbacks to sensitive environmental receptors and therefore the onsite hazard is being adequately managed.

Domestic Wastewater Management (DWM) Risk Map / Class

Land Capability Hazard + Existing On-site System (Management) Hazard = DWM Risk Class

DWM Risk Class	Description	Land Capability Hazard Class	Management Class	Inspection Frequency	Indicative Timeframe for Rectification of Non-compliance
Low	Few or no constraints to sustainable on-site wastewater management. Traditional technology approaches, routine maintenance and 3-5 yearly oversight likely to be adequate to manage risk. No known off-site discharge or major - critical non-compliance.	Low	Low risk or minor non-compliance	5 Yearly	1 Year
		Medium	Low risk		
Medium	There may be some moderate to major constraints to sustainable on-site wastewater management that require consideration in the approval of new systems. Higher levels of treatment and land application may be required in addition to more frequent oversight (2-3 years). No known off-site discharge or major - critical non-compliance.	Low	Moderate non-compliance (no OSD)	3 Yearly	9 Months
		Medium	Low or Minor non-compliance		
		High	Low risk		
High	Property will either a) possess significant constraints to sustainable on-site wastewater management that require specialist land capability assessment and design to mitigate; or b) contain an existing on-site system that has a known non-compliance. No known off-site discharge (critical non-compliance).	Low	Major non-compliance (no OSD)	2 Yearly	6 Months
		Medium	Moderate or major non-compliance (No OSD)		
		High	Minor non-compliance (no OSD)		
Very High	Properties with a known off-site discharge (either a legacy system or discharge due to a critical non-compliance) or too small to be able contain wastewater on-site in the long-term. Rectification of non-compliance and/or provision of an alternative wastewater management service should be a priority.	Non CoS & Very High	All	1 Yearly	3 Months
		Medium	Major non-compliance (no OSD)		
		High	Known off-site discharge (legacy system or due to a critical non-compliance)		

OSD = Off Site Discharge

Appendix G Stakeholder Engagement Plan

G1 Purpose

This is a Stakeholder Engagement Plan (DWMP Engagement Plan) prepared to support the Murrindindi Shire Council (MSC) Domestic Wastewater Management Plan (DWMP). The purpose of this Plan is to identify the key stakeholders in relation to domestic wastewater management in Murrindindi Shire and develop an appropriate program to inform, consult and involve stakeholders in the implementation of the DWMP.

This DWMP Engagement Plan will need to be reviewed throughout DWMP implementation to ensure it remains applicable and appropriate as information on and understanding of domestic wastewater risks and actions increases.

The engagement plan is presented in Table 20. Reference has been made to the International Association of Public Participation (IAP^2) Engagement Spectrum as a guide for the level of engagement proposed for each stakeholder group.

Table 20 MSC DWMP Stakeholder Engagement Plan

Stakeholder	Role	Engagement Points	IAP2 Spectrum	Engagement Activities
Relevant Council staff	- Septic tank permitting and oversight - Development Planning - Customer Service	- Staff training / understanding of DWMP - DWMP Risk mapping and classification - Minimum Standards for Permits - Information / data management	- Collaboration	- Procedure development - Training
IWM Forum	- IWM Implementation within region	- Coordinate with Council on opportunities for IWM implementation as part of DWMP.	- Collaboration	- Attendance at meetings - Potential development of Pilot Project
Goulburn Valley Water and Goulburn Murray Water	- Sewerage planning and delivery - Potable water catchment protection - IWM implementation	- DWMP Actions for High Priority areas. - Pilot Project implementation - Referrals for Permits in potable catchments - IWM Forum activities	- Collaboration	- Procedure development - Potential development of Pilot Project - Collaborate on solutions for High Priority towns
EPA Victoria	- Oversight of EP Act and SEPP (Waters) implementation. - Approval and regulation of systems >5,000 L/day	- DWMP implementation progress - Referrals for >5,000 L/day systems	- Consult	- 6-monthly meetings - Procedure development
Other Councils	- DWMP implementation in adjacent areas	- Coordination and sharing on DWMP implementation	- Consult - Collaborate?	- Quarterly meeting - Information sharing
DELWP	- Country towns water supply and sewerage.	- DWMP implementation progress	- Consult	- 6-monthly meetings (with EPA?)
Land Capability Assessors / Designers	- LCAs and design reports for Permit applications to install or alter Septic Systems.	- Understanding of DWMP Actions - Risk mapping and classification - Minimum Standards and Useable Land - Inspection and oversight program	- Consult - Collaborate?	- Training - 3-6 monthly meetings? - Reference site visits?
System installers and service agents	- Installation, rectification and alteration of systems. - Servicing and maintenance			
Unsewered property owners	- Operation and performance of their on-site system. - Obtaining planning or Septic Tank Permits as necessary.	- Understanding their on-site system - Take home DWMP outcomes and what they mean for them.	- Consult	- Education material / newsletter - Online / written surveys - Drop in sessions / pop ups - On-site inspections / meetings
General community	- Be aware of general risks and system functions	- General education on DWM.	- Inform	- Education material / newsletter

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Murrindindi Shire Council

Municipal Emergency Management Plan

2020-2023

Murrindindi Shire Council

Version 3.0, April 2020

Table of Contents

Table of Figures

1 Introduction

1.1 Agency and Municipal Council endorsement

This plan has been produced by and with the authority of Murrindindi Shire Council pursuant to Section 20(1) of the *Emergency Management Act 1986* and the *Emergency Management Act 2013*.

Murrindindi Shire Council understand and accept their roles and responsibilities as described in Part 4 of the *Emergency Management Act 1986*. This plan is a result of the co-operative efforts of the members of the Municipal Emergency Management Planning Committee (MEMPC) after consultation with those agencies and organisations identified therein.

Version No	3.0
Date of endorsement by MEMPC	
Date of adoption by Council	

Approved by:

Craig Lloyd
CEO
Murrindindi Shire Council

Signature Date

Sandice MacAulay
Councillor
Murrindindi Shire Council
Chair, Murrindindi Shire Council MEMPC

Signature Date

1.2 Audit report

1.3 Aim

The aim of this plan is to detail the agreed arrangements for the prevention of, the response to, and the recovery from, emergencies that could occur in the Murrindindi Shire as identified in Part 4 of the *Emergency Management Act 1986*.

1.4 Objectives

The objectives of the MEMP are to:

- Implement measures to prevent or reduce the cause and effects of emergencies
- Manage arrangements for the utilisation and implementation of municipal resources in response to emergencies
- Manage support that may be provided to or from adjoining municipalities
- Assist the affected community to prepare for and recover from an emergency
- Complement other local, regional and state planning arrangements

1.5 Authority

This Plan is developed by the Municipal Emergency Management Planning Committee (MEMPC) pursuant to Section 20, Part 4 of the *Emergency Management Act, 1986.* This Plan is administered by the Murrindindi Shire Council.

Address all enquiries, amendments or comments to:

MEMPC Executive Officer
Murrindindi Shire Council
PO Box 138
Alexandra, VIC 3714
mempc@murrindindi.vic.gov.au

2 Background

2.1 Context

2.1.1 *Murrindindi Shire*

The Murrindindi Shire, located one and a half hours to the north-east of the city of Melbourne has an area of 3,889 square kilometres. It includes the towns of Alexandra, Buxton, Castella, Eildon, Flowerdale, Kinglake, Marysville, Molesworth, Strath Creek, Taggerty, Toolangi, Yarck and Yea. The Shire is a popular tourist area with a number of National Parks, State Parks, the Goulburn River and Lake Eildon.

The Murrindindi Shire Council's main Council office is in Alexandra. Murrindindi Shire is named after the locality of Murrindindi which lies near its geographical centre of the shire.

Murrindindi Shire has a long history of fire as its major emergency type. The Shire was heavily impacted by the February 2009 bushfires where over 40% of the Shire was affected.

2.1.2 *Lake Mountain Alpine Resort*

Murrindindi Shire surrounds the Alpine Resort of Lake Mountain. The Southern Alpine Resort Management Board is the authority with control over the resort. The board is a member of the Murrindindi Shire Council MEMPC.

Lake Mountain Alpine Resort which is located 21 kilometres east of Marysville and 120 kilometres from Melbourne lies in the south east of the Murrindindi shire. After experiencing extensive damage in the 2009 fires, the resort visitor centre was rebuilt in 2011.

The Resort has historically been a winter resort with over 30 kilometres of cross-country skiing trails, a ski hire service, administration offices, a conference room and other visitor facilities. More recently, the resort has been diversifying and focusing on summer activities such as bushwalking and mountain bike riding with visitor facilities open through the summer period. The resort attracts on average around 200,000 persons annually.

2.2 Area Characteristics

2.2.1 *Topography*

Murrindindi Shire is in Central Victoria and is located on the north fall of the eastern section of the Victorian Highlands. The topography of the shire ranges from flat grazing land in the west and north of the shire, to the mountainous southern and eastern ranges, including the alpine areas around Lake Mountain Alpine Resort. The central part of the municipality generally follows the Goulburn River valley. The area has a number of national parks, state parks and reserves, which attract large numbers of visitors.

46% of the total land area of Murrindindi Shire is forested public land (1,788 square kilometres) consisting of State Forest, Parks, Reserves and other public land. A large proportion of this land is mountainous and heavily forested.

The Department of Environment, Land, Water and Planning (DELWP) and Parks Victoria manage the majority of this public land.

The Lake Mountain plateau, 120 kilometres east-northeast of Melbourne, is one of the southernmost sub-alpine areas on the Australian continent. The Lake Mountain massif is an undulating plateau rising from 1,330 metres through to 1,500 metres, which trends north-northwest from the Great Dividing Range. Further maps of Murrindindi Shire are in the Appendices.

2.2.2 *Demography*

Murrindindi Shire has 13,993[1] residents and like many areas in the Hume region of Victoria, Murrindindi Shire has an ageing population. In 2011, 18.5% of the population was over 65, which rose to 23.7% in 2016. This is significantly higher than the national average of 15.8% in this age bracket. Those over 65 are disproportionately distributed across the municipality. Eildon and Marysville have the highest median age in the Shire, at 51 years old. The townships of Kinglake and Kinglake West, including Pheasant Creek have the youngest median age, both at 37 years old. Despite being a peri-urban area in close proximity to Melbourne, Marysville has an older population than other comparable areas.

Murrindindi Shire experienced a decline in population due to the devastating bushfires of February 2009 in which nearly 1,400 homes were destroyed. In that period, the population fell by 1,000 people or 7.1%.

The Socio-Economic Indexes for Areas (SEIFA) Index of Relative Socio-economic Disadvantage (IRSD) ranks areas according to their relative socio-economic disadvantage. The average score for areas across Australia is 1,000 and areas with a score below 1,000 are more disadvantaged than the national average. Those areas with a score above 1,000 are less disadvantaged. Murrindindi Shire has a score of 997 and suggests it has an average level of disadvantage[2]. 14% of residents in Murrindindi Shire live in areas considered extremely socially disadvantaged compared with the national average of 20%. Towns with the highest level of disadvantage in the Shire are Yea and Eildon.

Murrindindi Shire has a similar proportion of overseas-born residents and those that speak a language other than English at home compared to other parts of rural Victoria. Around 11.5% of the population was born overseas, and around 90% of respondents only speak English at home. In general, the level of cultural diversity in the Shire reflects other areas of rural Victoria.

5.5% of people require assistance across the Shire. This includes persons with a disability or elderly persons requiring services. Other rural areas across Victoria record a similar

[1] Statistics at: http://statistics.murrindindi.vic.gov.au/
[2] Australian Bureau of Statistic, Murrindindi Statistics http://statistics.murrindindi.vic.gov.au/

average. The average percentage of people requiring assistance in the greater Hume Region is 5.7%.

Despite efforts to attract employment and investment in regional areas of Victoria over the last 10 years, it is estimated that Murrindindi Shire's growth forecast will remain low. Murrindindi Shire has high levels of youth unemployment (at around 12%), which is consistent with levels across rural Victoria.

Murrindindi Shire shows elevated unemployment levels amongst the 20 to 34 year old age group when compared to other areas in rural Victoria. The rate of unemployment amongst Murrindindi residents generally declines with age and has been persistently lower than the rural Victoria average. The unemployment rate in Murrindindi has been consistently lower than the rural Victorian average for the past 10 years. Currently (April 2020) the employment regional unemployment rate is 4.8% whilst the rate in Murrindindi Shire is 4.3%.

The shire is not in a regional transport corridor and has large numbers of 'lifestyle' blocks and holiday homes. Approximately 30% of the Shire's rate payers are non-residents.

Internet usage is increasing in Murrindindi Shire but is still lower than the national average - 80% of Murrindindi Shire households have internet access compared to the national average of 86%.

There is no permanent population at Lake Mountain Alpine Resort.

2.2.3 *History*

The majority of Murrindindi Shire lies in the traditional territory of the Daung wurrung or Taungarung language group, which spread across much of the central region of Victoria. The southern boundary of the Shire, including areas of the Kinglake National Park, is located in the Traditional lands of the Wurundjeri or Woi Wurrung people.

European settlement followed Hume and Hovell's overland exploration in December 1824. Many local towns were established during the 1850s and 1860s after the discovery of gold.

The Murrindindi Shire Council was declared on 18 November 1994 by the amalgamation of the former municipalities of Alexandra and Yea, and the addition of parts of the former municipalities of Healesville, Broadford, Eltham, Whittlesea and Euroa.

2.3 Vulnerable Persons - Community Organisations and Facilities

Understanding vulnerability in an emergency management planning context can help to shape the emergency management planning process. People not normally considered vulnerable can easily become vulnerable in an emergency by being isolated geographically, their socioeconomic situation, interruption to or loss of normal services and/or their mental and physical health. This adds another dimension of complexity to the development and implementation of prevention and preparedness activities.

A range of community groups and individuals can be considered vulnerable; this includes but is not limited to:

- frail aged people living alone;
- people from Culturally And Linguistically Diverse (CALD) backgrounds;
- people with physical and/or mental impairment through age, illness or disability;
- visitors and tourists to the municipality; or
- residents living in areas prone to natural and/or other hazards.

2.3.1 *Planning for Vulnerable Persons*

In its planning, communications and community engagement, Council recognises the diverse needs of affected individuals and communities. As highlighted in the *National Strategy for Disaster Resilience*[3], emergencies do not affect everyone in the same way – vulnerable community members are often the hardest hit.

Murrindindi Shire Council has endeavoured to plan for all groups and community types within the municipality of Murrindindi, with a particular focus on those that are vulnerable or exposed to excessive risk.

2.3.2 *Critical Infrastructure / Property*

Critical infrastructure and property are assets that are essential for the functioning of a society and economy. They require identification and the development of suitable treatment management strategies. Infrastructure includes:

- Transport
- Fuel (including gas)
- Light
- Power
- Water
- Sewerage
- Telecommunication
- A service (whether or not of a type similar to the foregoing) declared to be an essential service by the Governor in Council.

Murrindindi Shire is also home to some specific critical infrastructure including (but not limited to)

- Lake Eildon
- Eildon Pondage Power Station
- Rubicon Hydroelectric Power Station
- Various mobile phone and radio towers

These and other critical assets are documented in the CFA's Victorian Fire Risk Register (VFRR) for the Hume region.

2.3.3 *Major Infrastructure and Assets in the Murrindindi Shire*

Transport networks include:

[3] Council of Australian Governments, 2011, *National Strategy for Disaster Resilience*, February

- Goulburn Valley Highway
- Maroondah Highway
- Melba Highway

Major employers include:

- Trout and freshwater fish industry
- Outdoor education facilities/camps
- Department of Environment Land, Water and Planning (DELWP)
- Agriculture
- Tourism industry
- Softwood production
- Education
- Health

Key infrastructure authorities/providers include:

- AusNet Services
- Goulburn Valley Water
- Goulburn Murray Water
- AGL Hydro

Goulburn Valley Water is generally responsible for the provision of water and sewerage services throughout the majority of the Shire. The townships of Alexandra, Yea, Eildon, and Marysville are serviced by reticulated water and sewerage systems, with Buxton, Molesworth and Thornton being supplied with reticulated water only. Parts of Glenburn are serviced by sewer only. Most of the Kinglake settlements, Narbethong, Buxton, Taggerty, Thornton, Flowerdale, Yarck and Molesworth and are not connected to a sewer system. A small area of Kinglake West is serviced by Yarra Valley Water sewer systems.

Healthcare Facilities:

- Yea and District Memorial Hospital
- Alexandra District Health (Alexandra Hospital)
- Kellock Lodge Alexandra Inc (Aged Care Facility)
- Darlingford Upper-Goulburn Nursing Home
- Dame Pattie Menzies Centre
- Yea Rosebank Hostel (Aged Care Facility)

Retail and shopping areas include the centres of Yea, Eildon, Alexandra, Marysville and the Kinglake Ranges.

Education facilities and school camps include:

- Alexandra Primary School
- St Mary’s Primary School, Alexandra
- Alexandra Secondary College
- Continuing Education and Arts Centre of Alexandra (CEACA)
- Eildon Primary School

- Flowerdale Primary School
- Kinglake Primary School
- Kinglake West Primary School
- Middle Kinglake Primary School
- Sacred Heart Primary School Yea
- Yea High School
- Buxton Primary School
- Toolangi Primary School
- Marysville Primary School
- Outdoor Education Group (Eildon)
- Holmesglen (Eildon)
- Penleigh and Essendon Grammar Camp (Lake Eildon)
- Rubicon School Camp
- Crystal Creek Camp
- Camp Marysville
- Camp Narbethong

Childcare facilities:

- ABC Childcare
- Alexandra Kindergarten
- Eildon Child Care
- Flowerdale Children Centre
- Kinglake Ranges Child Care Centre
- Yea Kindergarten
- Various family day-care facilities (see Vulnerable Facilities List on Crisisworks for further information)

Caravan Parks

- Eildon Parks
    - Eildon Pondage Holiday Park
    - Boulevard Caravan Park
    - Blue Gums Riverside Holiday Park
    - Eildon Holiday Resort
    - Jerusalem Creek Marina and Camping Ground
- Eildon Waters Caravan Park (Thornton)
- Thornton Caravan Park
- Alexandra Tourist Park
- Alexandra Showgrounds Caravan Park
- Marysville Caravan Holiday Park
- Molesworth Recreation Reserve Caravan Park
- Yea Riverside Caravan Park
- Big 4 Taggerty Caravan Park
- Breakaway Twin Rivers Caravan Park (Acheron)
- Black Spur Motel and Caravan Park (Narbethong)

Community or Neighbourhood Houses:

- Kinglake Neighbourhood House
- Flowerdale Community House
- Toolangi-Castella Community House
- Yea Community House
- Alexandra Community Hub
- Community Hub at Taggerty (CH@T)

Natural assets include:

- Goulburn River and tributaries (Acheron, Yea and Rubicon Rivers and King Parrot Creek)
- Lake Eildon National Park
- Kinglake National Park
- Yarra Ranges National Park
- Cathedral Ranges State Park
- Toolangi State Forest
- Rubicon State Forest
- Mt Disappointment State Forest
- Black Range State Forest
- Marysville State Forest
- Mt Robertson State Forest
- Murrindindi Scenic Reserve
- Steavenson River and Steavenson Falls, Marysville
- Snobs Creek Falls

2.3.4 *Major Events in Murrindindi Shire*

The following events generally occur annually in Murrindindi Shire and have numbers in excess of 500 people:

- Wakeboard Victoria State Titles (February)
- St Pat's Race Day Yea (February)
- Alexandra Easter Fair (April)
- Eildon Lions Easter Market (April)
- Truck Ute & Rod Show (June)
- Goulburn Fishing Festival (September)
- Marysville Jazz and Blues Festival (October)
- Foggy Mountain Bluegrass Festival (October)
- Molesworth Easter Bazaar (April)
- Eildon Big Fish Challenge (October)
- Eildon Boat Show (October)
- Spring Fair (Yea, November)
- Alexandra and Yea Agricultural Shows (November)

Further information on events in Murrindindi Shire is available on Council's website[4].

2.3.5 *Vulnerable Persons in Emergencies (VPE) Policy 2015*

The Department of Health and Human Services is responsible for the 'Vulnerable people in emergencies policy[5]' (VPE). The policy was developed to improve the safety of vulnerable people in emergencies, through supporting emergency planning with and for vulnerable people.

The policy uses the existing relationships with funded organisations in supporting clients to improve their safety and resilience through promoting personal emergency planning.

Policy requirements apply to organisations funded by the Department of Health and Human Services. These requirements only apply to agencies that provide personal care, support and/or case management services either in home or community settings.

To be eligible, clients must be living in the community within one of the 64 municipal council areas wholly or partly covered by the Country Fire Authority districts. This includes health or community care services such as home and community care, personal care or disability day programs.

2.3.6 *Vulnerable Persons' Register (VPR)*

The Vulnerable Persons Register (VPR) is a requirement of the VPE. It has been developed to store local information about consenting, identified vulnerable people. VPR information is entered by relevant agencies into a cloud-based system, which is locally managed by municipal councils.

Victoria Police has direct access to the VPR system to aid emergency planning and response, including potential evacuation.

The information in the VPR can be filtered, mapped, and where necessary exported to reports for authorised purposes, according to the role and access rights of each organisation.

Council contact VPR clients if there are predicted weather extremes to ensure they are aware of potential dangers.

2.3.7 *Vulnerable Facilities List (VFL)*

The VPE requires that a list of local facilities where vulnerable people are likely to be situated is coordinated and maintained by Council. This list, known as the Vulnerable

[4] Events list available at: http://www.murrindindi.vic.gov.au/Our-Community/Calendar-of-Events
[5] Version 3, February 2018, https://providers.dhhs.vic.gov.au/vulnerable-people-emergencies-policy

Facilities List (VFL) includes hospitals, schools, Aged Care Facilities and child care centres.

An updated copy of this document is maintained and available to Victoria Police and other agencies on Crisisworks at: https://murrindindi.crisisworks.com/

2.3.8 *Other Vulnerable Persons and Indicators of Vulnerability*

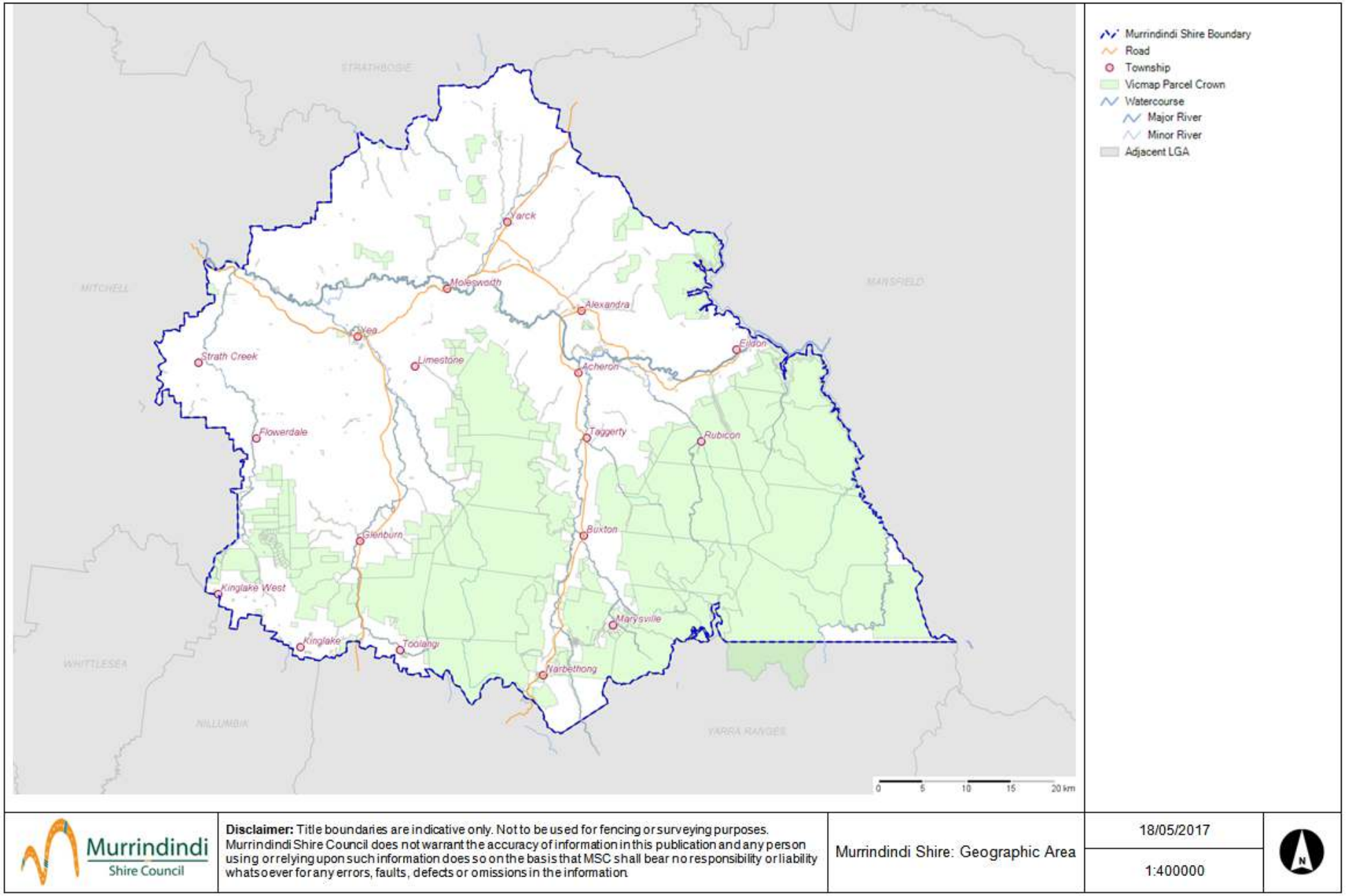
Council is aware that not all people with vulnerabilities are captured by the VPE. Many vulnerable persons in the community are not either in a vulnerable facility or registered on the VPR and are therefore outside the bounds of the policy. For example, asthmatics, pregnant women and frail elderly persons are generally not covered by the policy.

Vulnerabilities are highest with the very young, the aged and persons with a disability in our community. The following table highlights the various forms of vulnerability in the community.

Figure 1: Vulnerability Types and Context

Data	Vulnerability Context
Population	Population size in each township.
Housing Tenure	Residents who are more likely to stay and defend their homes. Awareness by residents of the risks in the environment in which they live. Many residents are not aware, for example, that they live in fire prone environments.
Age Groups	Number of young and elderly people living in the township. An indication of elderly people living alone in the township.
Aboriginal/Torres Strait Islander	Cultural context, how to approach residents and languages spoken.
Dwellings with Internet Access	Proficiency with and access to communication mediums.
Persons with a Disability	Vulnerable community members that maintain independent living but who may be more vulnerable than others during not just fires and floods but high heat periods and the loss of utilities such as power and water
Average Cars per Household	An indication of the mobility of residents.
Home and Community Care (HACC) Services	Vulnerable community members that maintain independent living with the support of service providers but who may be more vulnerable than others during not just fires and floods but high heat periods and the loss of utilities such as power and water
Recreation Site Risks	Localities within the municipality subject to increased visitors who may be more vulnerable in an emergency due to having less awareness of the risks within the environment they are in, less access to modern messaging mediums and risks associated with access and exit routes into and from the localities.

Figure 2: Municipal Map



2.4 History of significant emergencies

Murrindindi Shire has a long history of bush fire as its predominant emergency type. There have been five major fires in the municipality since 2000. These include the Castella (Toolangi State Forest) fires of February 2004, Mount Torbreck (State Forest) fires of April 2004, Kanumbra ("Brilliant" fire) New Year's Eve 2005, Kinglake/Glenburn-Yea/Highlands fires of late January/February 2006 and the 7 February 2009 fires[6].

The bushfires of February 2009 had a profound effect on the Murrindindi Shire. 95 people were killed and 1539 square kilometres, or 40% of the Shire, were burnt. The bushfires had catastrophic impacts on the communities of Murrindindi Shire and its businesses, tourism and natural environment were severely impacted as a result. 1,397 houses were destroyed as well as 3,533 kilometres of fencing. Flora and fauna were also severely impacted; five threatened species of fauna listed under Victoria's the *Flora and Fauna Guarantee Act 1988* occur in the burnt areas, as well as three species listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

In addition to the devastation caused by the fires in February 2009, Lake Mountain was also impacted by a structural fire in 2009. This fire destroyed the only building to survive the February fires in June of the same year with costs estimated at $1,000,000.00.

Other than fire, the history of major emergencies in the Murrindindi Shire has been flood[7] and to a lesser extent, vehicular accidents. Within the last few years, the region has been subject to a number of both floods and fires. Lake Mountain Alpine Resort incidents include search & rescue, motor vehicle accidents and snow related incidents.

Figure 3: Major Emergencies in the Murrindindi Shire Area Since 2000

Year	Murrindindi Shire Council	Lake Mountain
2001	-	Land Search
2002	-	Land Search
2003	-	Road Closure- Storm
2004	Bushfire – Castella and Toolangi fires	-
2005	Storm – August	-
2006	Bushfire - January	-
2007	Storm – December	-
2008	-	Ski Trail Closure – windstorm event
2009	Bushfire - February	Bushfire – February Structure Fire - June
2010	Storm - January	-
2011	Flood – January	-
2019	Storms - January	-

[6] For a complete list of historical fire impacts in Murrindindi Shire, see the *Murrindindi Shire Council Municipal Fire Management Plan* 2020.
[7] For a complete list of historical flood impacts in Murrindindi Shire, see the *Murrindindi Shire Council Flood Emergency Plan 2018*.

3 Planning Arrangements

3.1 Planning structures and responsibilities - Overview

The *Emergency Management Act 1986 and 2013,* and the *Local Government Act 2020* identifies councils as playing a critical role in Victoria's emergency management arrangements and systems. Councils have access to specialised local knowledge about the environmental and demographic features of their municipalities. People will naturally seek help from their local council and emergency management agencies during emergencies and the recovery process.

The *Emergency Management Act 2013* is yet to have an effect at the municipal level. The State Government has indicated that the *2013 Act* will supersede the *1986 Act* and be fully implemented in December 2020. Until such time, the *Emergency Management Act 1986* largely dictates local municipal requirements.

The *Emergency Management Act 2013* established Emergency Management Victoria (EMV) as the overarching body for emergency management in Victoria. The Act also established the following positions and functions:

- The State Crisis and Resilience Council (SCRC)
    - an emergency management advisory body responsible for providing advice to the Minister for Police and Emergency Services on emergency management policy and strategy
- The Emergency Management Commissioner
    - the Commissioner is responsible for coordinating the response to major emergencies (including ensuring appropriate control arrangements are in place) and operating effectively during Class 1 and Class 2 emergencies
- The Chief Executive of Emergency Management Victoria
    - this position is responsible for the day to day management of Emergency Management Victoria
- The Inspector-General for Emergency Management (IGEM)
    - this position is responsible for developing and maintaining a monitoring and assurance framework, and evaluating the performance of the sector.

Emergency Management Victoria (EMV) is the State coordinator of relief and recovery. Coordination at the regional level is delegated to the Department of Health and Human Services (DHHS).

3.2 Municipal Emergency Management Functions

Murrindindi Shire Council accept responsibility for the management of municipal resources and the coordination of community support to counter the effects of an emergency during

both the response and recovery phases. Council's emergency management responsibilities include:

- The provision of emergency relief to affected persons during the response phase
- The provision of supplementary supply (resources) to lead agencies during response and recovery
- Municipal assistance to agencies during the response and recovery phases of emergencies
- Assessing the impact of the emergency (impact assessments)
- Coordinating recovery activities within the municipality

3.2.1 *Municipal Emergency Management Planning Committee (MEMPC)*

The Murrindindi Shire Council Municipal Emergency Management Planning Committee (MEMPC) is formed pursuant to Section 21(3) & (4) of the *Emergency Management Act 1986*, to formulate a plan for the Council's consideration in relation to the prevention of, response to and the recovery from emergencies within the Murrindindi Shire.

It is not the MEMPC's role to manage emergencies. This is the responsibility of the agencies and personnel identified under the response and recovery arrangements. The MEMPC is required to prepare the Municipal Emergency Management Plan (MEMP), which documents response and recovery operational arrangements, and to ensure that all the subjects listed in the MEMP outline are investigated and adequately provided for.

The ongoing role of the MEMPC is to review and amend the operational components of the MEMP by:

- Producing the MEMP for consideration by Council
- Reviewing and updating the Plan annually, including reviewing risks to the community, with responsibility for this task delegated to the MEMPC Executive Officer
- Conducting a review of the risks examined in the Community Emergency Risk Analysis (CERA) processes on a three yearly basis
- Arranging regular tests/exercises of the MEMP

The following organisations make up the MEMPC Committee (see restricted appendices for contact details for each position) with the amount of representatives from each agency to be determined by that agency:

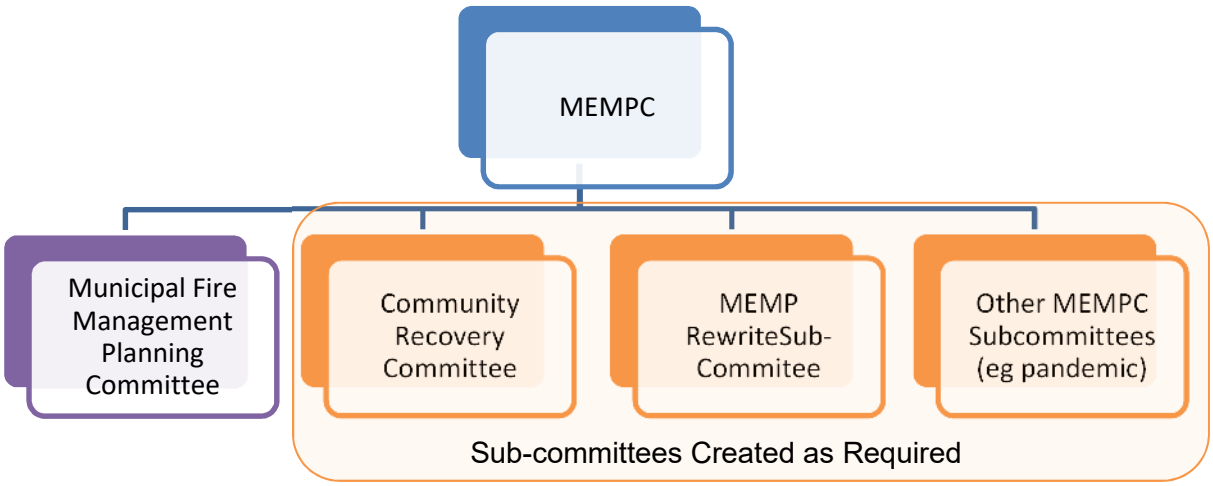
- Chairperson – Murrindindi Shire Councillor
- Murrindindi Shire Council
- Southern Alpine Resort Management Board
- Victoria Police
- Country Fire Authority (CFA)
- Victoria State Emergency Service (VicSES)
- Ambulance Victoria
- Department of Environment, Land, Water and Planning (DELWP)
- Parks Victoria (PV)
- Australian Red Cross (ARC)
- Department of Health and Human Services (DHHS)

- Victorian Council of Churches (VCC)
- Goulburn Murray Water (GMW)
- Goulburn Valley Water (GVW)
- Community representatives (up to four)
- Wireless Institute Civil Emergency Network (WICEN)
- UGFM – Radio Murrindindi
- Alexandra District Health

Others as required

- Centrelink
- Yea and District Memorial Hospital
- AGL Energy
- AusNet Services
- Regional Roads Victoria (formerly VicRoads)
- Department of Education and Training
- Salvation Army

Figure 4: MEMPC and Sub-Committee Structure



3.2.2 *Meeting Agendas*

The MEMPC Executive officer will create and circulate meeting agendas. All attempts will be made to circulate agendas at least two weeks prior to meetings dates. All meeting agendas will include, but not be limited to:

- Review of contact details of MEMPC members
- MEMP updates or amendments – including feedback from agreed annualised risk review process and risk treatment updates and emergency management exercises
- Sub-committee reports on sub-plan updates and reviews
- General business

3.2.3 *Frequency of Meetings*

The MEMPC will aim to meet at least four times per year or once per quarter, although MEMPCs are only required to meet three times in a calendar year. Extraordinary meetings may be called as required by the MERC, MERO or MRM, after an emergency impact to the Shire or if a new risk to the municipality is identified.

Members will be contacted by email using the MEMPC contact list. If there is a requirement to call an out of session meeting and the MEMPC have agreed that, if necessary, a teleconference or other communication method (e.g. video conference or Skype) may be held to eliminate the need for all members to be in one location. MEMPC members recognise there may be a requirement for an out of session meeting following an incident, on identification of a significant new risk or a significant change in staff.

3.2.4 *Record Keeping*

Minutes of all meetings must be taken. The MEMPC Executive Officer takes meeting minutes and sends out agendas for the MEMPC.

A copy of the minutes will be sent to:

- Hume Region Emergency Response Coordinator (RERC);
- Department of Health and Human Services (DHHS), Regional Recovery Coordinator (or delegate);
- all members of the Committee; and
- a meeting of the Murrindindi Shire Council.

3.2.5 *MEMPC Subcommittees*

Municipal Fire Management Planning Committee

The role of the Murrindindi Shire Council Municipal Fire Management Planning Committee (MFMPC) is to provide a municipal level forum to build and sustain organisational partnerships, generate a common understanding and share purpose with regard to fire management and ensure that the plans of individual agencies are linked and complement each other.

The MFMPC also has two key requirements:

- Produce the Municipal Fire Management Plan (MFMP) for consideration by Council
- Monitor, review and report to Council and community through the MEMPC

MEMP Rewrite Committee

The MEMP Rewrite Committee is responsible for overseeing the rewrite of the MEMP. Once drafted, the MEMP will be presented to the MEMPC for endorsement and Council for adoption.

Other MEMPC Subcommittees

The MEMPC will establish any subcommittees as required. For example, a flood, pandemic or recovery committee may be required depending on the type and class of emergency.

3.3 Legislated Emergency Positions – Council

3.3.1 *Emergency Management Legislation Amendment Bill 2018*

From 2020, State, Regional and Council requirements will change under the implementation of the *Emergency Management Legislation Amendment Bill 2018*.

The planning reforms in the Bill are structured to be implemented in three separate phases – State, Regional and Municipal. This is to facilitate a smooth and orderly transition to the new arrangements. Phased implementation also promotes an integrated approach to planning between the three planning levels.

In particular, the Bill provides that the State level emergency management planning arrangements would take effect first. During this phase, the Emergency Management Commissioner drafted and will soon issue a new state emergency management plan. Once that is in place, the regional level arrangements can take effect.

A new Regional Emergency Management Planning Committee (REMPC) will be established for each region, which will be responsible for preparing a regional emergency management plan. After the new regional emergency management plans are in place, the municipal level arrangements can take effect.

A new Municipal Emergency Management Planning Committee (MEMPC) will be established in each municipal district, which will be responsible for municipal level emergency management planning.

Until the new framework is rolled out at a particular level, the existing arrangements for that level remain in place. At the municipal level, this includes the existing emergency management planning and audit arrangements under the *Emergency Management Act 1986*, and the fire prevention planning arrangements under the *Country Fire Authority Act 1958*. The Bill will be implemented at all three planning levels by 1 December 2020.

3.3.2 *Current Legislative Requirements*

There are three key roles that each Council must currently (April 2020) have under state law:

- The Municipal Emergency Resources Officer (MERO), required under the *Emergency Management Act* 1986
- the Municipal Fire Prevention Officer (MFPO), required under the *CFA Act* 1958, and
- the Environmental Health Officer (EHO), required by the *Public Health and Wellbeing Act* 2008

The Emergency Management Manual Victoria also suggests Council have a Municipal Recovery Manager (MRM).

3.3.3 *Municipal Emergency Resources Officer (MERO)*

The MERO position, required by the *EM Act* 1986, is responsible for the coordination of council resources to enable emergency response and recovery. The MERO and MRM should have a good working relationship, and also collaborate with other EM personnel.

The MERO contributes to the development and maintenance of the MEMP in partnership with local emergency management agencies such as the Victoria SES, Victoria Police and DHHS.

The role of the MERO is to:

- Coordinate municipal resources in emergency response
- Provide council resources when requested by emergency services or police during response activities
- maintain effective liaison with emergency agencies within or servicing the municipal district
- Maintain an effective contact base so municipal resources can be accessed on a twenty-four hour basis
- Keep the municipal emergency coordination centre(s) prepared to ensure prompt activation if needed
- Liaise with the MERC and the MRM on the best use of municipal resources
- Organise a response debrief if requested by the Municipal Emergency Response Coordinator (MERC), an appointee of Victoria Police
- Ensure procedures and systems are in place to monitor and record expenditure by the council in relation to emergencies
- Maintain and write the MEMP
- Perform other duties as determined.

There are 3 MEROs at Murrindindi Shire Council.

3.3.4 *Municipal Fire Prevention Officer (MFPO)*

The *Country Fire Authority Act* 1958 and the *Metropolitan Fire Brigades Act* 1958 require each council to appoint a fire prevention officer, generally known as an MFPO, and any number of assistant fire prevention officers. Under both Acts, a MFPO may delegate, by written instrument to an assistant, any power or duty of the fire protection officer, except the power of delegation.

The role of the MFPO is to:

- Undertake and regularly review council's fire prevention planning and plans (together with the Municipal Fire Management Planning Committee (MFMPC), if one exists)
- Maintain the Municipal Fire Management Plan (MFMP)
- Liaise with fire services, brigades, other authorities and councils regarding fire prevention planning and implementation
- Advise and assist the Municipal Emergency Management Planning Committee (or MFMPC) on fire prevention and related matters
- Ensure the MEMP contains reference to the Municipal Fire Management Plan
- Report to council on fire prevention and related matters
- Carry out statutory tasks related to fire prevention notices and infringement notices
- Investigate and act on complaints regarding potential fire hazards
- Advise, assist and make recommendations to the general public on fire prevention and related matters
- Issue permits to burn (under s. 38 of the *Country Fire Authority Ac*t)
- Facilitate community fire safety education programs and support Community Fireguard groups in fire-prone areas.

- Support fire services in the delivery of community fire safety education programs.

There is an MFPO and three Assistant MFPO's at Murrindindi Shire Council.

3.3.5 *Municipal Recovery Manager (MRM)*

The MRM takes an active role in emergency planning and is responsible for coordinating council resources to assist emergency relief and recovery activities. The MRM may delegate duties to provide for effective management of recovery functions.

The role of the MRM to:

- Coordinate municipal and community resources for recovery
- Assist with collating and evaluate information gathered in the post impact assessment
- Establish priorities for the restoration of community services and needs
- Liaise with the MEM and MERO on the best use of municipal resources
- Establish an information and coordination centre at the municipal offices or a location more appropriate to the affected area
- Liaise, consult and negotiate with recovery agencies and council on behalf of the affected area and community recovery committees
- Liaise with the regional recovery committee and Department of Health and Human Services
- Undertake other specific recovery activities as determined.

There are three MRMs at Murrindindi Shire Council.

3.3.6 *Environmental Health Officer (EHO)*

Section 29 of the *Public Health and Wellbeing Act* 2008 provides that each council must appoint one or more EHO.

In relation to emergency management, the EHO has a role in:

- Food surveillance
- Inspection of food handlers and food distribution outlets
- Food sabotage
- Infectious disease surveillance and investigation
- Disinfection (concurrent (immediate) or terminal (at end of isolation))
- Water (purity and quantities) in consultation with DELWP and DHHS
- Waste collection and disposal (putrescible, dry, indestructible, sewage and toilet waste)
- Sanitation (toilets, showers, washing facilities)
- Accommodation (adequate size, suitable)
- Ensuring proper disposal of dead stock and animals in consultation with the Local Laws unit
- Zoonotic diseases (those transferred from animal to humans)
- Water, land and/or air pollution

- Collection and dissemination of information on public health issues
- Development of Public Health Notices
- Planning (development of a municipal public health emergency management plan if resources allow) and participate in the MEMPC when required.
- Act as the Pandemic Coordinator in the case of the activation of the Pandemic Sub-Plan

3.4 Partnerships, Strategies and Plans

Local Government's role in preparing for risks is central and partnerships, strategies and plans are implemented based on detailed knowledge of the local community, its characteristics, strengths, vulnerabilities and a detailed appreciation of the risks faced by the community.

Murrindindi Shire Council and the emergency response and recovery agencies that operate within its boundaries recognise they have a key role in preparedness activities. To complement the emergency management process council enforces and continues reviewing existing policies in land use, building codes and regulations, urban planning, community safety and health.

To achieve this Council promotes the social, economic and environmental viability and sustainability of the Municipality; ensuring that resources are used efficiently and effectively and that services and facilities are accessible and equitable. It undertakes community consultation, engagement and planning to reduce the likelihood of emergencies and to build community resilience and capacity to recover from events that do occur. Council achieves this through strategic partnerships and the development of a range of plans, policies, networks and strategies that tie to emergency management. These include:

Regional plans, policies, networks and strategies:

- Hume Region Local Government Network
- Hume Region Municipal Emergency Management Enhancement Group (MEMEG)
- Hume Region Emergency Management Planning Committee
- Hume Region Strategic Fire Management Planning Committee
- Municipal Association of Victoria's Protocol for Inter-Council Emergency Management Resource Sharing
- Hume Region Relief and Recovery Plan
- Hume Region Strategic Fire Management Plan

Local plans, policies and strategies

- Murrindindi Shire Council Plan
- Municipal Strategic Statement
- Murrindindi Shire Public Health and Wellbeing Plan
- Community Safety Plan
- Roadside Management Strategy
- Disability Action Plan
- Community Action Plans
- Community Information Guides

- Zoning/Land Use Management
- Building Codes
- Building Use Regulations
- Public Information/Education

3.5 Audit requirements and process

3.5.1 *Plan Review*

Content of this plan is to be reviewed annually, if additional risks are identified, or after an emergency which has been managed under part of this plan. Organisations delegated with responsibilities in this plan are required to notify the MEMPC Executive Officer of any changes of detail (e.g. contact information) as they occur. The MERO is responsible for the MEMP review.

Amendments are to be produced by the MERO and distributed by the MEMPC Executive Officer as required in electronic format to MEMPC members and emergency agencies via the Crisisworks documents page (https://murrindindi.mecccentral.com) or by other electronic form when required. Paper copies of plans will no longer be provided by Murrindindi Shire Council.

3.5.2 *MEMPC Testing and Exercises*

This plan will be tested on an annual basis unless there has been activation during the period (which will count as a test). The MERO will coordinate and have responsibility for the exercise which will involve all MEMPC member agencies where possible. Any procedural anomalies or short falls encountered during these exercises or ensuing operations must be addressed and rectified at the earliest opportunity.

It is recognised that the best form of testing is the actual operation during an emergency and the subsequent debrief. A number of options exist to enable testing of this plan, these range from debriefs, training and a variety of exercises.

A MEMPC exercise may test individual or a combination of elements including preparedness, response, relief or recovery. Efforts will be made by the MEMPC to ensure that exercises are undertaken across this spectrum.

Generally, unless other agencies volunteer, the MERO will coordinate, develop, run and prepare exercises including developing a document outlining the exercise outcomes. All MEMPC members will be invited to a given exercise as well as other agency representatives as required.

3.5.3 *Audit Details*

Murrindindi Shire Council, pursuant to Section 21A of the *Emergency Management Act 1986*, shall submit the MEMP for audit (to the relevant authority) every three years. This audit will assess whether the plan complies with statutory requirements.

This section of the plan will be updated with the new requirements of the *Emergency Management Act 2013* as they are rolled out across the State. This includes the new self-assurance audit requirements when they come online.

3.5.4 *Reviewing Risk and Risk Assessments*

Risk assessments completed as part of the MEMP planning process will be reviewed by the MEMPC prior to an audit (i.e. at least once every three years).

4 Prevention/Mitigation Arrangements

4.1 Background/Introduction

Murrindindi Shire Council recognise we have a key role in prevention and mitigation activities to reduce the risk, or minimise the effects, of emergencies that may occur in our municipality. Council aims to reduce the impact and likelihood of emergencies through its implementation, enforcement and continued review of existing policies in land use, building codes and regulations, and urban planning.

The ability of a community to respond to an emergency situation and in turn recover from the effects of an emergency will depend on the attitude and the resilience of affected communities. Assisting, and where required, helping to create more resilient communities through coordinating community education and awareness programs are a key role of the MEMPC. Resilient communities are informed communities.

The Municipality and the MEMPC will support and promote appropriate prevention and awareness programs within the municipality including media releases, advertisements, newsletters, Councils website, emergency services expo's and through service networks

4.2 Hazard, Exposure, Vulnerability and Resilience

4.2.1 *Hazard*

A hazard can be defined as a dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.

The hazards of concern to disaster risk reduction are of natural origin and related environmental and technological hazards and risks. Such hazards arise from a variety of geological, meteorological, hydrological, oceanic, biological, and technological sources, sometimes acting in combination.

This MEMP, informed by the Community Emergency Risk Assessment, includes identified hazards which would lead to sources of risks in the Murrindindi Shire. Risk statements are generated to establish a credible relationship between a source of risk and mitigation measures.

4.2.2 *Exposure*

Exposure refers to people, property, systems, or other elements present in hazard zones that are thereby subject to potential losses.

While the literature and common usage often mistakenly combine exposure and vulnerability, they are distinct. Exposure is a necessary, but not sufficient, determinant of risk. It is possible to be exposed but not vulnerable (for example by living in a floodplain but having sufficient means to modify building structure and behaviour to mitigate potential loss).

However, to be vulnerable to an extreme event, it is necessary to also be exposed. This is particularly the case in Murrindindi Shire in the case of bushfire. Due to half the municipality being covered by trees, our exposure to a forest fire is clearly evident. This is mitigated by the plans, procedures and responses to a given bushfire. These responses define our vulnerability to the risk.

4.2.3 *Vulnerability*

Vulnerability refers to the characteristics and circumstances of a community, system or asset that make it susceptible to the damaging effects of a hazard.

There are many aspects of vulnerability, arising from various physical, social, economic, and environmental factors. Examples may include poor design and construction of buildings, inadequate protection of assets, lack of public information and awareness, limited official recognition of risks and preparedness measures, and disregard for environmental management. Vulnerability varies significantly within a community and over time.

4.2.4 *Resilience*

Resilience can be defined as the ability of a system, community or society exposed to hazards to resist, absorb, accommodate and recover from the effects of a hazard in a timely and efficient manner.

4.3 Risk assessment process and results

4.3.1 *Community Emergency Risk Assessment (CERA) Process*

The Community Emergency Risk Assessment (CERA) process was utilised in the preparation of this MEMP by the MEMPC. It provides a framework for considering and improving the safety and resilience of their community from hazards and emergencies that aligns with the ISO 31000:2009 Risk Management Standard.

The CERA approach aims to understand the likely impacts of a range of emergency scenarios upon community assets, values and functions. As such, CERA provides an opportunity for multiple community impacts and consequences to be considered enabling collaborative risk treatment plans and emergency preparedness measures to be described.

To use the CERA process, the CERA tool, developed by the State Emergency Service (SES) was utilised. It provides a robust framework for a ‘community of interest’ to identify and prioritise those emergency risks that are likely to create most disruption to them. The assessment tool assisted in identifying and describing hazards and assesses impacts and consequences based upon the vulnerability or exposure of the community or its functions.

The outputs of the assessment process were used to inform the MEMP, introduce risk action plans and ensure that communities are aware of and better informed about hazards and the associated emergency risks that may affect them.

A CERA review, led by SES, was conducted in February 2018.

4.3.2 *Risk Identification and analysis*

The risk identification and analysis regime carried out (CERA) aligns with the ISO31000 standard. ISO31000 describes risk analysis as:

Risk Analysis = Consequence x Likelihood

The ISO31000 Standard emphasises the need to establish and manage the risk to the objectives that you have set during the plan development process.

During the preparation of this Plan, a risk analysis was carried out to identify potential natural and manufactured hazards within the municipality. The history of occurrence and the nature of each hazard, especially community vulnerability, have been considered during the analysis process. Due to ongoing changes of seasonal conditions, community development and public attitudes, the rating of the identified threats may vary over a period of time.

Listed below is a summary of the identified risks and their risk rating. The risk mitigation measures column includes plans that specifically manage identified risks.

4.3.3 *Risk Mitigation*

Mitigation of identified risks is a core component of the CERA process. Action plans detailing the treatment of risks is dealt with in each of the individual MEMP sub-plans. Examples of mitigation actions are included in the tables below.

Part of the CERA process is also examining how effective mitigation controls are at combating a specific risk. After the introduction of these mitigations, risk level may be reduced – this is known as the ‘residual risk’. Residual risk is the risk remaining after all possible treatments and mitigation measures are performed.

Figure 5: CERA Results

Risk	Consequence	Likelihood	Overall Rating	Control Agency	Risk Mitigation Plans/Controls	Risk Mitigation Actions (examples)	Risk Treatment Strategies
Large Regional Bushfire	Major	Medium	**High**	CFA or DELWP	Murrindindi Shire Council Municipal Fire Management Plan, DELWP Fire Operations Plan, CFA Regional Fire Plans	Detection by fire towers, Air spotter, lightning tracker, increased preparedness levels, patrolling, plans, fuel management, permits and inspections, codes for works, fire danger period etc.	Reducing likelihood of occurrence through mitigation measures
Large Regional Storm	Moderate	High	**High**	SES	SES North Eastern Regional Storm Plan (draft)	Warnings and community education, regulations, insurance, climate change plans, insurance, building regulations, drainage strategies, maintenance,	Reduce the consequence via plans and actions
Extreme Temperatures and Heatwave	Major	High	**High**	Emergency Management Commissioner	Murrindindi Shire Council Heatwave Plan	Plans – State, regional and local, contact of vulnerable clients, communicate heat health messages etc.	Reduce the consequence via plans and actions
Major Flood	Moderate	Medium	**Medium**	SES	Murrindindi Shire Flood Emergency Plan	Warnings and community education, regulations, insurance, climate change plans, insurance, building regulations, drainage strategies, maintenance, tree pruning programs	Reduce the consequence via plans and actions
Landslip (Roads)	Moderate	High	**Medium**	SES	Vic Roads Geotechnical Database	Plans, regular monitoring and review of roads and road infrastructure	Reducing likelihood of occurrence through mitigation measures
Pandemic/ Epidemic	Major	Medium	**Medium**	DHHS	Murrindindi Shire Council Pandemic Plan	Plans, promotion of immunisation, hygiene (messaging), infection control measures, exclusion of sick staff, active case finding, antiviral treatments etc.	Reduce the consequence via plans and actions

Risk	Consequence	Likelihood	Overall Rating	Control Agency	Risk Mitigation Plans/Controls	Risk Mitigation Actions (examples)	Risk Treatment Strategies
Structural Failure – Dam	Major	Low	**Medium**	DELWP	Lake Eildon Land On-Water Management Plan, Goulburn Murray Water	Dam surveillance and monitoring, check lists for identified threats, inspections after earthquakes, maintenance	Reduce the consequence via plans and actions
Transport Incident – Aircraft	Minor	Moderate	**Medium**	Victoria Police	Australian Government Aviation Disaster Response Plan (AUSAVPLAN)	Weather detection, forecasting, CASA requirements, warnings/intelligence, maintenance, training	Reduce the consequence via plans and actions
Mass Gathering	Minor	Major	**Medium**	Victoria Police	Event Management Plans	Permits and event management plans,	Reduce the consequence via plans and actions

Figure 6: Risk Ratings – break down

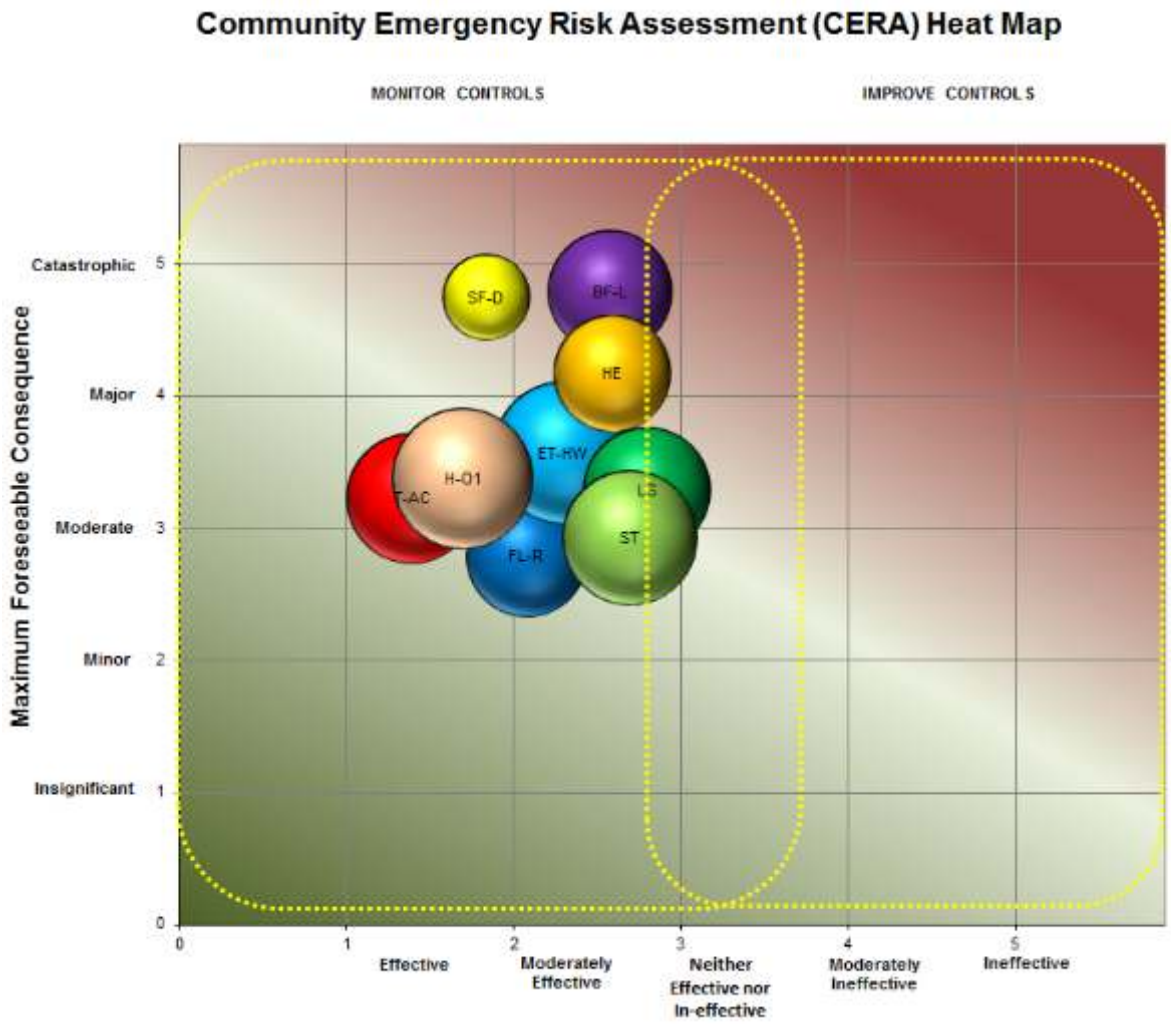
Risk	Maximum foreseeable consequence	Current Mitigation Controls	Residual Consequence	Likelihood/ Frequency	Overall Rating
Large Regional Bushfire	4.8	2.6	3.6	3.4	High
Large Regional Storm	2.9	2.7	2.4	4.0	High
Extreme Temperatures and Heatwave	3.6	2.3	2.6	4.5	High
Major Flood	2.8	2.1	2.6	3.3	Medium
Landslip (Roadways)	3.3	2.8	2.5	3.6	Medium
Pandemic/ Epidemic	4.2	2.6	2.9	3.1	Medium
Structural Failure – Dam	4.8	1.8	3.2	1.7	Medium
Transport Incident – Aircraft*	3.2	1.7	1.9	4.4	Medium
Mass Gathering*	3.4	1.7	1.9	4.4	Medium

Risk Rating	Consequence
1	Insignificant
2	Minor
3	Moderate
4	Major
5	Catastrophic

In the figure above, the consequences, controls, likelihood and frequency of risks has been determined by the MEMPC. The higher the number in the range - the more likely the outcome. For example, the maximum foreseeable consequence of a large regional bushfire is 4.8 out of 5 - a catastrophic consequence. However, due to the mitigation controls, the risk is significantly reduced.

The following diagram is a “heat map” of the key risks as determined by the MEMPC. The size of a bubble in the heat map denotes the level of residual likelihood once mitigation measures are taken into account. Large bushfires and structural dam failure (Lake Eildon) have been determined by the MEMPC to have the highest potential impacts. The heat map also show that the majority of identified risks have effective controls in place with only a few areas requiring improvement - the majority of events have controls in the “monitor” space rather than requiring improvement. This suggests that for the most part, emergency agencies are mitigating risks effectively.

Figure 7: Risk assessment – heat map



Murrindindi Shire Council & Lake Mountain Alpine Re			
28 February 2018			
Code	Risk	Ratings Confidence	Residual Risk Rating
BF-L	Bushfire - large, regional	High	High
FL-R	Flood - Riverine	Med	Medium
ET-HW	Heat Health	High	High
LS	Landslide	Med	High
ST	Storm	Med	Medium
SF-D	Structural Failure - Dam	Med	Medium
HE	Human Epidemic / Pandemic	High	Medium
T-AC	Transport Incident - Aircraft	High	Medium
H-O1	Other - Mass Gathering	High	Medium
		Select	
		Select	
		Select	
		Select	
		Select	
		Select	
		Select	
		Select	
		Select	
		Select	
		Select	

Note: Size of bubble reflects level of residual likelihood

4.4 Procedures and Policies

Murrindindi Shire Council has a number of policies and procedures that may be utilised in an emergency. These include:

- Fire Danger Policy
- Service Provision on Code Red Days Policy
- Employee Code Red and Fire Danger Policy
- Emergency and Defence Services Leave Policy
- Ultraviolet Radiation and Working In Seasonal Heat Policy
- Risk and Safety Policy
- Business Continuity Planning Policy
- Procurement Policy
- Communications and Engagement Policy

4.5 MEMP Sub-Plans

The Murrindindi Shire Council MEMP have a number of sub-plans that deal with specific risks and include treatment/action plans and risk prioritisation. These include:

- Murrindindi Shire Council - Municipal Fire Management Plan;
- Murrindindi Shire Council - Pandemic Plan;
- Murrindindi Shire Council - Heatwave Plan;
- Murrindindi Shire Council - Flood Emergency Plan;
- Murrindindi Shire Council - Emergency Animal Welfare Plan; and
- Murrindindi Shire Council - Emergency Relief Centre Handbook.

A number of Southern Alpine Resort Management Board plans specific to Lake Mountain Aline Resort are also sub-plans to the MEMPC. They include the:

- Lake Mountain Alpine Resort - Bushfire Management Plan; and
- Lake Mountain - Emergency Management Site Manual.

Copies of these sub-plans are available on Crisisworks for MEMPC members or emergency agency representatives (https://murrindindi.mecccentral.com)

4.5.1 *Other Agency Plans*

A number of risks identified in the CERA process are not mitigated directly by the MEMPC sub plans. For example, the Forest Fire Management (FFM) Murrindindi Joint Fuel Management Program (JFMP) mitigates risk in a fire sense more directly than the Municipal Fire Management Plan (MFMP).

The MFMP, a strategic document, is informed by the production of the more operational JFMP. That is the case for many of the risks identified – the MEMPC or its sub-plans are not the only risk mitigation for a given risk in the municipality.

4.6 Community Education

Community education is a vital component of prevention and preparedness. The development of relevant and appropriate community education resources and activities empowers the community and enhances their resilience through being well informed and therefore emotionally and physically equipped for an emergency. Resilient communities are well prepared, better able to respond to an emergency, and therefore better able to recover from the impacts of an emergency.

Murrindindi Council together with emergency management services/agencies actively engage the community through a range of mechanisms including community programs (Fire Action Week, Community Safety Week), projects, media releases, advertisements, social media, Council's website and Emergency Services websites.

Council also conducts a number of targeted community education activities such as provision of smoke alarms, replacing batteries in smoke alarms and the provision of emergency planning aids to aged and disabled clients.

Council is also active with emergency planning in caravan parks and ensures that all registered parks have an emergency management plan and information available to customers as part of the annual registration process.

Council has a specific emergency management section on its website[8] that advises local people on gathering further information to better prepare for emergencies. It includes information on:

- Bushfire prevention and planning;
- Emergency management resources;
- Neighbourhood Safer Places;
- Summer fire prevention and slashing program;
- Heat Health information; and
- The Goulburn Broken Regional Floodplain Management Strategy.

[8] Council's emergency area of the website can be found at: https://www.murrindindi.vic.gov.au/Your-Council/Emergency-Management

5 Response Arrangements

5.1 Introduction

Emergency response planning provides the mechanism for the scheduled accumulation of appropriate resources to cope with emergencies throughout the Municipality. It also provides guidance for requests for physical assistance from the State and Commonwealth agencies when Municipal resources have been exhausted.

This plan has been prepared in accordance with the principles of the State Emergency Response Plan, part 3 of the Emergency Management Manual of Victoria (August 2016 edition) and the Hume Region Emergency Response Plan.

Response management brings together the resources of many agencies and individuals who can take appropriate and timely action when required. Response management is based on three key management tasks – command, control and coordination.

Under the new *Emergency Management Act 2013*, the Emergency Management Commissioner has legislated coordination and control responsibilities over all major emergencies in the State of Victoria. For detailed information in relation to roles and responsibilities see the EMMV Part 3.

5.2 Control and Support Agencies

A control agency is identified within the table below, to control the response activities to be specified type of emergency.

A support agency is an agency which provides essential services, personnel, or material to support relevant control agency or affected persons.

Refer to part 7 Emergency Management Manual Victorian EMMV for further information

- https://www.emv.vic.gov.au/policies/emmv

5.2.1 *Emergency Classes and Control Agencies*

Class 1 emergency means—

(a) A major fire or

(b) Any other major emergency for which the Metropolitan Fire and Emergency Services Board, the Country Fire Authority or the Victoria State Emergency Service Authority is the control agency under the state emergency response plan.

Class 2 emergency means a major emergency which is not—

(a) A Class 1 emergency or

(b) A warlike act or act of terrorism, whether directed at Victoria or a part of Victoria or at any other State or Territory of the Commonwealth or

(c) A hi-jack, siege or riot.

Figure 8: Emergency Types and Control Agencies (EMMV Part 7, Nov 2016)

Emergency (as per the Emergency Management Act) 2013)	Form of emergency	Control agency (agency with the primary responsibility for responding to the emergency)	Class of major emergency
An earthquake, flood, wind- storm or other natural event	Earthquake	VICSES	1
	Flood	VICSES	1
	Heat	EMC	2
	Storm	VICSES	1
	Tsunami	VICSES	1
	Landslide	VICSES	1
Fire and explosion	Aircraft	ARFF /CFA/FRV	1 (2 if ARFF)
	Boilers and pressure vessels	CFA/FRV	1
	Explosion	CFA/FRV	1
	Explosive device	Victoria Police	3
	Fire	CFA/FRV/DELWP	1
Road accident or any other accident	Aircraft	Victoria Police	2
	Biological materials (including leaks and spills)	DHHS	2
	Gas leakage	CFA/FRV	1
	Hazardous materials, high consequence dangerous goods or dangerous goods (including leaks and spills)	CFA/FRV/ARFF	1 (2 if ARFF)
	Lifts, cranes or scaffolding and amusement structures	CFA/FRV	1
	Building collapse	CFA/FRV/VICSES	1
	Marine (not including marine pollution)	Victoria Police	2
	Military aircraft and ships	Defence Force	2
	Radioactive materials (including leaks and spills)	DHHS	2
	Rail and tram	Victoria Police	2
	Road	Victoria Police	2
	Aircraft – inflight emergency	Airservices Australia	2
	Maritime casualty – non Search And Rescue (all vessels) in commercial and local port waters	Commercial or Local Port Manager [1]/ TSV	2
	Maritime casualty – non SAR (all vessels in coastal waters) not in commercial and local port waters	TSV	2

Emergency (as per the Emergency Management Act) 2013)	Form of emergency	Control agency (agency with the primary responsibility for responding to the emergency)	Class of major emergency
Plague or an epidemic or contamination	Chemical contamination of livestock or agricultural produce (agricultural or veterinary)	DJPR	2
	Exotic animal disease (includes bees and aquaculture)	DJPR	2
	Plant pest or disease	DJPR	2
	Wildlife affected by marine pollution	DELWP	2
	Exotic marine pest incursion	DELWP	2
	Vertebrate pest/plagues	DJPR	2
	Pollution into inland waters	CFA/FRV	1
	Pollution of inland waters	EPA	2
	Retail food contamination	DHHS	2
	Food/drinking water contamination	DHHS	2
	Human disease	DHHS	2
	Blue-green algae	DELWP	2
A warlike act or act of terrorism, hijack, siege or riot	A warlike act or act of terrorism, hijack, siege or riot	Victoria Police	3
	Other threats against persons, property or environment	Victoria Police	3
A disruption to an essential service	Food supply, critical infrastructure damage or	Victoria Police	2
	Electricity	DELWP	2
	Natural gas	DELWP	2
	Petroleum and liquid fuels	DELWP	2
	Public transport	PTV	2
	Roads/bridges/tunnels	VicRoads	2
	Water and sewerage	DELWP	2
Rescue ***(note – not listed in the EM Act 2013 and potentially a support service)***	Building, structure	CFA/FRV/VICSES	1
	Cave	Victoria Police	2
	Land	Victoria Police	2
	Lift, crane, scaffolding or amusement structure	CFA/FRV	1
	Mine/quarry	Victoria Police	2
	Rail, aircraft and industrial	CFA/FRV/VICSES	1
	Road	CFA/FRV/VICSES	1
	Trench or tunnel	CFA/FRV	1
	Water	Victoria Police	2
Search ***(as above)***	Land	Victoria Police	2
	Water	Victoria Police / AMSA	2
	Overdue aircraft	AMSA	2

5.3 Command, Control, Coordination

The response management task is to bring together, in an integrated organisational framework, the resources of the many agencies and individuals who can take appropriate and timely action. Response management is based on three key management tasks being command control and coordination.

5.3.1 *Command*

Command refers to the direction of personnel and resources of an agency in the performance of that organisation's role and tasks. Authority to command is established in legislation or by agreement within an agency. The term 'chain of command' refers to the organisational hierarchy of an agency and identifies people or positions with accountability.

5.3.2 *Control*

Control refers to the overall direction of response activities in an emergency. Authority for control is established in legislation or in an emergency response plan, and carries with it the responsibility for tasking other agencies in accordance with the needs of the situation.

Control relates to situations and operates horizontally across agencies. Control of emergency operations will at all times remain the responsibility of the control authority as responsible for controlling the particular type of emergency. The controlling authority is to appoint an Incident Controller (IC) who will control the operation. A comprehensive list of agencies and their roles can be found within Part 7 of the EMMV-Emergency Management Agency Roles[9].

5.3.3 *Incident Control Level Emergency Management Team (EMT)*

The function of the incident control level (non-Council) Emergency Management Team (EMT) is to support the Incident Controller in determining and implementing appropriate Incident Management strategies for the emergency.

If an emergency requires a response by more than one agency, the Incident Controller is responsible for forming the EMT.

The EMT consists of:

- Incident Controller.
- Support and recovery functional agency commanders (or their representatives).
- The Emergency Response Coordinator (or representative)
- Other specialist persons as required.

[9] The EMMV is available online at: https://www.emv.vic.gov.au/policies/emmv/

5.3.4 *Coordination (Emergency Response)*

Coordination is the bringing together of agencies and resources to ensure effective response to and recovery from emergencies. In relation to response, coordination includes ensuring that effective control has been established.

The main function of the Emergency Response Coordinator is to coordinate the provision of resources as requested by the control and support agencies. The *Emergency Management Act 1986* identifies that Emergency Response Coordinators at Regional and Municipal and field level will be Victoria Police members. Their role wherever possible should be separate from operational Police activities. State control and coordination of Class 1 and Class 2 emergencies (see glossary appendix A9 for definitions) now falls to Emergency Management Victoria and the Emergency Management Commissioner under section 32A of new *Emergency Management Act 2013*.

The MERC is the primary emergency coordinator at a municipal level. The Municipal emergency management roles and functions have been defined in Part 3 of this Plan.

5.3.5 *Principal role of Emergency Response Coordinators (All Levels)*

All Emergency Response Coordinators will need to:

- Ensure that the appropriate control and support agencies are in attendance or have been notified by the incident controller and are responding to an emergency.
- Ensure that effective control has been established by the control agency in responding to an emergency.
- In consultation with the incident controller, ensure an emergency management team has been formed.
- Ensure the effective co-ordination of resources and services having regard to the provision of section 13(2) of the *Emergency Management Act 1986*.
- Arrange for the provision of resources requested by control and support agencies.
- Ensure allocation of resources on a priority basis.
- Determine in the event of uncertainty which agency is to perform its statutory response role within the region or specified area, where more than one agency is empowered to perform that role.
- Ensure recovery agencies are in attendance or have been notified by the incident controller of the emergency.
- Consider registration of persons evacuated or otherwise affected.
- Consider provision of relief needs to evacuees and agency personnel where necessary.
- Consider the need for the declaration of an emergency area in consultation with the control agency.
- Cooperate with all participating agencies and authorities.

5.4 Communications

The Emergency Management Commissioner is responsible for public, stakeholder and government communications for Class 1 emergencies supported by the “line of control”. The line of control refers to the line of supervision for those appointed to perform the control function and this relates to the specific class of emergency. Controllers escalate or provide direction on control issues through the line of control.

In class two emergencies, there are a number of agencies responsible for communication.

All agencies that have a role in these arrangements are responsible for the provision of their own communications systems during emergencies. Any agency requiring communications will put their request to the Municipal Emergency Response Coordinator.

5.4.1 *Telephone Communications*

The land line network will be the initial and primary means of communication in the event of an emergency, when it is available, and should be utilised to capacity where possible. When identifying locations for use as Assembly Areas and Emergency Relief Centres, consideration should be given to the communications facilities already in place at that location.

Additional telephones can be provided by Telstra, upon request by the MERC, who will in turn, submit such requests to the Regional Emergency Response Coordinator for action. All costs, related to such installations, are the responsibility of the requesting organisation.

The NBN roll out within the municipality is not yet complete and is not designed to cover the entire municipality at this stage. However, there are few redundancies in the new system. Generally, if the power is out, phones will not work. There are some options for battery back-up phones, or if your house or business has a generator but once power is out to a node or the exchange, you will not have the traditional copper or fibre based landlines in an emergency even if you have a generator.

Mobile telephone towers in Murrindindi Shire all have battery backups. It is suggested that these will last in the vicinity of 5-8 hours before requiring a generator back up if power is cut during an emergency.

However, if the power goes out in an emergency (such as a bushfire) that prevent a generator being brought to a site, mobile phone service may stop. Therefore, mobile phones cannot be relied upon to work if the power is out for an extended period.

5.4.2 *Communications Resources*

The following organisations have communications facilities and resources which may be available in an emergency:

- VicSES
- CFA
- UGFM – Radio Murrindindi
- WICEN

- Murrindindi Shire Council

5.4.3 *Crisisworks*

Crisisworks is an incident management software program which combines incident request tracking with agency logs, workspaces, geographical mapping, strong security and workflow, resource cost tracking and a recovery database to assist in helping people and property.

The system is primarily focused on providing a common operating picture, plus a complete record of Council's response to the incident. Its key strength is in its ease of use. It allows for direct agency involvement, and being cloud based, allows for remote operation, along with easy and secure information sharing. Being cloud based, the data is safe and secure away from the incident.

Crisisworks is the emergency management software program that Murrindindi Shire Council uses during an emergency response, relief and recovery activities, decisions and information.

Only authorised persons may access Crisisworks. To access Crisisworks, MEMPC members and emergency agency representatives need to register their interest with the MEMPC Executive Officer.

5.4.4 *Public Information and Warnings*

Murrindindi Shire Council understands the importance of timely, accurate and consistent public information before, during and after an emergency incident. As such the Murrindindi Shire Council's Communications Team will work with the EMT, Control Agencies and community to relay information to help minimise the impact to life and the community where possible.

The Control Agency, as set out in the EMMV, is responsible for the release of warnings of potential emergencies, regular updates and advice on what actions the public should undertake during that incident.

All messaging will align with the Victoria Warnings System and the Victorian Warning Protocol (https://www.emv.vic.gov.au/responsibilities/victorias-warning-system/victorian-warning-protocol). The Victorian Warning Protocol was established to provide emergency response agencies with a coordinated and consistent direction on advice and/or warnings to inform the Victorian community of a potential or actual emergency event.

Warnings and advice can be disseminated through a number of different mediums including but not limited to:

- Websites
- Radio and Television
- Print Media (where suitable)
- Phone messaging (including SMS)
- Emergency Alert
- VicEmergency notification (mobile app)
- Emails

- Verbal Messages
- Door knocks
- Social Media/Social Networking
- Variable Message Boards
- Information Boards

Municipal (Council) Communications

Council communication systems include:

- Telstra Telephone Network
- Mobile Telephone Network
- Portable IT devices
- Two Way Radio System.

Primary means of communication in an emergency will utilise a combination of all of these systems.

5.5 State emergency management priorities

The State has endorsed a set of emergency management priorities to underpin and guide all decisions made during emergencies in Victoria. The priorities focus on the primacy of life and the issuing of community warnings and information, in order to assist people to make informed decisions about their safety.

The priorities are

- Protection and preservation of life is paramount. This includes:
  - Safety of emergency response personnel and
  - Safety of community members including vulnerable community members and visitors/tourists
- Issuing of community information and community warnings detailing incident information that is timely, relevant and tailored to assist community members make informed decisions about their safety
- Protection of critical infrastructure and community assets that support community resilience
- Protection of residential property as a place of primary residence
- Protection of assets supporting individual livelihoods and economic production that supports individual and community financial sustainability
- Protection of environmental and conservation assets that considers the cultural, biodiversity, and social values of the environment.

The State emergency management priorities provide a framework for emergency managers to identify the priority roles and actions of agencies in an emergency response, especially where there are concurrent risks or competing priorities.

5.6 Local response arrangements and responsible agencies

Emergency management roles and functions in this plan are in accordance with Part 7 of the EMMV.

5.6.1 *Murrindindi Shire Council Plant and Equipment*

Municipal resources should be used in the first instance, prior to engaging private contractors. Responsibility for the management of resources rests with the MERO. As of October 2016, MEROs will now operate from the ICC.

A list of plant and equipment held by the Council and preferred contractors utilised by the Council in an emergency are available on Crisisworks for MEMPC members or emergency agency representatives (https://murrindindi.crisisworks.com). These lists are maintained by the MERO.

5.6.2 *Clearance of Drains/Roads, Road Closures and Alternative Routes*

On roads managed by Murrindindi Shire Council, Council road crews (or potentially external contractors) are able to clear blocked road drains or remove fallen trees from roads as required. In an emergency, the MERO directs all road crew activities.

Generally, the MERO must be consulted before municipal roads are closed in an emergency. If this is not possible due to a threatening situation where lives are potentially at risk, the Incident controller must notify the MERO as soon as practicable that a Council road has been closed.

As a road manager, Council must make certain roads it manages are safe before being reopened after an emergency. Consultation with the MERO is required before re-opening any Council managed roads.

The MERO is also responsible for determining alternative routes on Council roads when and if required in an emergency. The MERO will work with the responsible unit and under the direction of the Incident Controller in the determination of these routes.

5.6.3 *Transport and Engineering*

The MERO is responsible for all transport and engineering matters where the Council is concerned. The purpose of the plant, equipment and contractor list (available on Crisisworks) is to detail available transport and engineering resources within the municipality. This includes specialist and technical advice and deployment of those resources which are to be included in the lists and preferred contractors list. All requests for transport and engineering resources are to be directed to the MERC who will request them through the MERO.

5.6.4 *Request Procedures for Support*

An agency should exhaust all resources owned or directly within their control prior to requesting assistance from elsewhere. Once exhausted, supplementary resources will be allocated as per the EMMV[10].

An agency responding to an emergency, and requiring supplementary resources, can request resources via the MERC at the municipal level. Requests for resources should be provided in a format as decided by the MERC and include the name and position of the person requesting the resources and comprehensive details of the task to be undertaken. Private providers of resources are considered as possible sources of supply at the municipal level. The requesting agency is responsible for making appropriate arrangements for delivery of supplementary resources. Supplementary resources include anything the response agency needs to combat an emergency that it does not have at its immediate disposal.

As per the EMMV, when a control agency requests services and supplies (for example, catering) on behalf of a number of supporting agencies, the control agency will be responsible for costs incurred.

5.7 Financial considerations

5.7.1 *Request Hierarchy*

Expenditure for municipal resources utilised in emergencies must be authorised by either the MERO or the MRM and approved by the MERC. If not approved by the MERC, the Council will not be eligible for cost recovery from the Department of Treasury and Finance.

5.7.2 *Payment for Requested Resources*

Where requests are made by the relevant response agency which has exhausted their own resources, Council will be able to supply equipment and supplies through its MERO at the direction of the MERC. All requests are required to be submitted through the appropriate channels as identified in the EMMV.

Associated costs of Council owned equipment being utilised by response agencies in the management of an emergency will be absorbed by Council during normal business hours (8am to 5pm, Monday to Friday). Resource requests for the use Council owned assets, staff and equipment outside of these times will be charged to the requesting agency. This includes response agency requested standby on weekday evenings and any given public holiday or weekend.

Costs associated with sourcing external or privately-owned supplementary emergency response resources for the relevant response agencies will be recovered from the requesting agencies. This includes costs for all equipment, hire, catering and any associated on-costs of that request.

[10] Emergency Management Manual Victoria Part 4, S3.13.1 *Agency Resources*, p3-34, https://www.emv.vic.gov.au/policies/emmv/

Response agencies should be aware of their financial responsibilities before requesting anything from the Council.

All resource requests will come to the municipality through the appropriate channel; the MERC as stipulated in the EMMV. Any requests made outside of these guidelines will be redirected to the MERC. Requests from response agencies are not to come from an incident control centre directly to the MERO or any other Council officer. If Council officers or the MERO receive requests from response agencies, they are to advise the agency to contact the MERC in the first instance.

5.7.3 *Mitigation*

The EMMV summarises the major funding programs which can be accessed for prevention and mitigation purposes. Most are offered on a cost-sharing basis, typically one-third local agency, one-third State and one-third Commonwealth. Some projects may be funded on a 50:50 basis shared by the State and Federal governments.

Please note that all programs are subject to the eligibility criteria specific to that program and there is generally an assessment panel at both the State and Commonwealth levels that will make either recommendations or final decisions on projects

5.7.4 *Financial Arrangements for Response and Recovery*

The following summarises financial responsibilities for expenditure on response and recovery activities. As a general rule, whichever agency originates the request for the resources will be responsible for all costs.

5.7.5 *Emergency Payment Responsibilities*

The following emergency payment responsibilities apply in Murrindindi Shire:

- Where an agency's expenditure is in order to fulfil its own responsibilities, that agency is responsible for the cost
- Where one agency requests services and supplies in order to fulfil its own responsibilities as articulated in plans, that agency is responsible for costs incurred
- When a control agency requests services and supplies (for example, catering) on behalf of a number of supporting agencies, the control agency will be responsible for costs incurred
- Municipal councils are responsible for the cost of emergency relief measures provided to emergency-affected people

5.7.6 *Voluntary agencies*

Agencies are called upon to provide resources within the limit of their means. Where a volunteer agency expends extraordinary funds providing resources for emergency response and recovery to the extent that it seeks financial reimbursement, it should notify the control agency, or the agency to which it is providing services, at the earliest possible opportunity, preferably before deployment commences.

5.7.7 *Municipal Council Resources*

Murrindindi Shire Council is expected to use its resources in an emergency situation within the municipality within reason. Where equipment and/or personnel are sourced from external providers, the municipal council is responsible for providing those resources. However as per section 5.6.1 above, Council will only cover costs for Council managed resources requested and used during normal business hours. Costs outside of this, including costs of sourcing private contractors, will be recovered from the relevant requesting agency.

Some further reimbursement may also be available. Extraordinary expenditure incurred, (e.g. for overtime, or equipment hire used in emergency protection works, restoration of publicly owned assets or relief provided to emergency-affected people) may qualify for reimbursement by the Department of Treasury and Finance, refer to Appendix 1 Part 8, Emergency Management Manual Victoria.

5.7.8 *State Agencies*

State agencies involved in emergency response and recovery activities as part of their normal activities will initially fund them from their own budgets, including supplies (e.g. catering) purchased from contractors or volunteer agencies. For major emergencies some funding supplementation may be required. This would be the subject of a Government decision at the time, in the context of the agency's budget position.

5.7.9 *Private Organisations*

Private organisations meet their own expenses incurred in emergency activities.

5.7.10 *Government Post-Emergency Assistance Measures in Recovery*

A number of post-emergency assistance measures which may be made available to assist in various aspects of the recovery process can be found at Appendix 1 Part 8 Emergency Management Manual Victoria. Most are provided by Victorian Government agencies; a few Commonwealth assistance measures are also listed. Important factors to note are:

- Assistance measures are identified as being generally available at departmental discretion, or requiring a specific Government decision on each occasion
- The table is intended to list specific assistance in the form of financial or in-kind measures.
- Other recovery services are listed under Services and Agencies for Recovery in the EMMV

The assistance measures cover:

- Individual human need
- Residential and community reestablishment
- Community safety/health
- Economic recovery

- State Government assistance to municipal councils
- Commonwealth Government assistance to persons/municipal councils

5.7.11 *Natural Disaster Resilience Program (NDRP)*

The Emergency Management Manual Victoria, Part 8 Appendices and Glossary Appendix 1 – Financial Arrangements, details the funding arrangements of the Natural Disaster Resilience Program (NDRP) supports initiatives to reduce the impact of natural disasters, enhance community resilience and support emergency volunteers. Emergency Management Victoria (EMV) administers the Natural Disaster Resilience Grants Scheme for Victoria.

5.7.12 *Natural Disaster Financial Assistance (NDFA)*

Natural Disaster Financial Assistance (NDFA) for local councils in Victoria is provided by the Victorian State Government to assist in the recovery process and alleviate some of the financial burden that may be experienced following a natural disaster, in accordance with Commonwealth-State Natural Disaster Relief and Recovery Arrangements (NDRRA).

From 1 December 2019, responsibility for Victoria's administration of the Disaster Recovery Funding Arrangements moved from the Department of Treasury and Finance to EMV.

The NDRRA defines eligible natural disasters as 'any one of', or a combination of, the following natural hazards: bushfire; earthquake; flood; storm; cyclone; storm surge; landslide; tsunami; meteorite strike; or tornado. These arrangements do not apply to disasters where human activity is a significant contributing cause (e.g. poor environmental planning, commercial development, personal intervention (other than arson) or accident.

Refer to EMV[11] for details and a range of publications providing guidance for financial assistance.

5.8 Evacuation

Evacuation is a risk management strategy which may be used as a means of mitigating the effects of an emergency or disaster on a community. It involves the movement of people to a safer location. It also should include the return of the affected community. Evacuation is a scalable activity in that it may be applied to individuals, a house, a street, a large facility (e.g. school or hospital), a suburb, a town or a large area of the State.

Evacuation may be undertaken by individuals, families and households on their own volition and independent of advice, or it may be after an assessment of information provided by a Control Agency.

[11] For further details on NDFA visit: https://www.emv.vic.gov.au/how-we-help/disaster-recovery-funding-arrangements-drfa

Evacuations may be pre-warned or immediate depending on the circumstances. The decision to recommend 'to evacuate' is made by the Incident Controller/Control Agency.

Victoria Police is responsible for the coordination of evacuation in consultation with the Control Agency. Consideration must be given to the area that is to be evacuated, the route to be followed, the means of transport and the location to which evacuees will be asked to attend.

Agencies and organisations with a role in the evacuation process include;

- The Incident Controller/Control Agency
    - Considers and recommends evacuation in consultation with Victoria Police and other agencies and experts as needed
- Victoria Police
    - Manages the withdrawal, shelter and return stages of the evacuation in consultation with the Incident Controller and others as needed
- Ambulance Victoria
- Support Agencies
- Municipal Councils
- VicRoads
- Country Fire Authority (CFA)
- Australian Red Cross
- Department of Health and Human Services (DHHS)
- Department of Education and Training (DET)s

The five stages in the evacuation process are;

1. Decision – the decision to recommend that people evacuate is made by the Incident Controller. In making this decision, the Incident Controller should, if time permits, consult with police and consider other expert advice. This may not always be possible.
2. Warning or Recommendation – applied to evacuations, messages to the community will be either a warning to affected people that they prepare to evacuate or a recommendation that they evacuate immediately. The Incident Controller is responsible for authorising and issuing these messages to the community.
3. Withdrawal – is the removal of people from a dangerous or potentially dangerous area to a safer area. The Victoria Police Evacuation Manager is responsible for managing the withdrawal from the affected area which includes developing an evacuation plan which clearly identifies activities, timelines, roles and responsibilities of any agencies involved. This will include consultation with other agencies involved.
4. Shelter – Emergency Shelter provides for the temporary respite of evacuees. It may be limited in facilities but should provide security and personal safety, protection from the climate and enhanced resistance to ill health and disease. Emergency Shelters in the context of evacuation may include:
    - Assembly areas which cater for people's basic needs
    - Emergency Relief Centres
    - Tents and other impermanent structures
    - Other places of relative safety.

5. Return – the final stage of the evacuation process involves the return of people to the place from which they were evacuated. The Incident Controller makes the decision to advise people that they can return to the affected area in consultation with police and other relevant agencies. The Evacuation Manager is responsible for planning and managing the return of evacuated people with the assistance of other agencies where required. This may include authorising the release of messages regarding the return to the community in consultation with the Incident Controller.

Once the decision to evacuate has been made, the MERO and MRM should be contacted to assist. The MERO and/or MRM will provide advice regarding the most suitable Emergency Relief Centre, potential staging areas or assembly points and other resources that may be required (e.g. public health, emergency relief considerations or requirements and special needs groups).

Evacuation plans for specialised services in the municipality such as hospitals, schools, rooming houses, aged care facilities, kindergartens and shopping centres are the responsibility of the site managers. Facilities containing Vulnerable People (e.g. aged care facilities) form part of the Vulnerable People in Emergencies (VPE) Policy.

The Victorian Evacuation Guidelines are in the EMMV[12], Part 8, Appendix 9.

5.8.1 *Role of Murrindindi Shire Council in Assisting Evacuation*

Council has the following roles and responsibilities in the evacuation process:

- Coordinate the provision of council resources as required
- Establish and manage relief centres as required
- Assist Victoria Police with management of traffic flow including provision of information regarding road availability, capacity and safety
- Assist VicRoads to maintain list of road closures (public information).

MEMPCs will also:

- Develop and maintain MEMPs
- Assist SES with development of Flood Emergency Plans
- Identify and document within MEMPs facilities where vulnerable people are likely to be located
- Maintain within MEMPs a list of those services/agencies with awareness of vulnerable people within the community

5.9 Neighbourhood Safer Places (Places of Last Resort) and Fire Refuges

Neighbourhood Safer Places (NSPs) are a place of last resort and do not guarantee safety. They should only be used if a resident's Bushfire Plan fails and residents have no other place for shelter. Welfare facilities will not be made available and the place may not provide shelter from smoke and embers

[12] For a copy of the evacuation guidelines visit: https://www.emv.vic.gov.au/policies/emmv/

Figure 9: NSP Locations – Murrindindi Shire

Township	Location	Address
Alexandra	Leckie Park Cricket Oval	Station Street (opposite Lamont Street) Alexandra 3714.
Eildon	Eildon Basketball Courts Open space	Corner Centre Avenue and Main Street Eildon 3713.
Flowerdale	Flowerdale Hall	Whittlesea-Yea Road opposite Broadford-Flowerdale Road Flowerdale 3717.
Kinglake West	Kinglake West Recreation Reserve	Corner of Whittlesea-Kinglake Road and Recreation Road Kinglake West 3757. Entry off Recreation Road
Marysville	Marysville Community Centre Located in Gallipoli Park	Falls Road Marysville 3779.
Thornton	Thornton Recreation Reserve Oval	Taggerty-Thornton Road (near corner Goulburn Valley Highway) Thornton 3712.
Yarck	Yarck Recreation Reserve	Corner Yarck Road and Goodear Lane Yarck 3719. Entry off Goodear Lane
Yea	Yea Skate Park	Station Street (Melba Highway) opposite Mary Street Yea 3717.

The above list of NSPs was correct at the time of printing and is regularly updated. Location of NSPs can also be found on the Murrindindi Shire[13] or CFA Website[14]. NSP locations outside Murrindindi Shire are listed on the CFA website.

5.10 Planning for cross boundary events

Emergency events may cross municipal boundaries, requiring response and recovery activities from two or more local governments.

Victoria Police is the control agency for response and will request the MERO to contact neighbouring MEROs when resources are required from outside the municipality.

DHHS is the coordinating agency for emergency recovery at the regional level and will work in collaboration with the Councils who have local responsibility.

At a municipal level communication of identified risks across municipally boundaries take place through provision of MEMP plans to municipalities that border the Murrindindi Shire.

Every opportunity is taken to include neighbouring shires with MEMP exercises and to contact those municipalities if new risks are identified that may impact them. Murrindindi Shire Council is a member of the Hume Region Municipal Emergency Management

[13] Murrindindi Shire Website: http://www.murrindindi.vic.gov.au/Your-Council/Emergency-Management/Neighbourhood-Safer-Places

[14] CFA Website: http://www.saferplaces.cfa.vic.gov.au/cfa/search/default.htm

Enhancement Group (MEMEG) and has representatives regularly attending regional committees for response and recovery.

5.11 Resource sharing protocols

5.11.1 *Protocol for Inter-Council Emergency Management Resource Sharing*

Murrindindi Shire Council is a signatory to the Protocol for Inter-Council Emergency Management Resource Sharing. The protocol was developed as an agreed position between councils regarding the provision of resources to assist other municipalities with response and recovery tasks during and after emergencies.

The protocol, developed by the MAV, is intended to clarify operations, insurance and reimbursement issues that may arise through municipal resource-sharing arrangements. The protocol is consistent with the concepts and policy guidelines articulated in the *Emergency Management Act 1986* and the Emergency Management Manual Victoria.

Adoption of the protocol by member Councils is voluntary and Councils that commit are asked to recommit every three years.

A copy of this protocol, request forms and a list of member Councils can be found on the MAV website[15].

5.12 Debriefing arrangements

A debrief should take place as soon as practicable after an emergency. The MERC will convene the meeting and all agencies who participated should be represented with a view to assessing the adequacy of the Plan and to recommend any changes. Such meetings should be chaired by the chairperson of the MEMPC.

It may also be appropriate to conduct a separate recovery debrief to address recovery issues. This should be convened and chaired by the MRM.

5.13 Response/Recovery transition

When the response effort begins to transition to a solely recovery phase, a Transition from Response to Recovery Agreement (Transition Agreement) document will be required. The purpose of the document is to assist emergency management agencies involved in coordination of response, relief and recovery arrangements achieve a seamless transition from response to recovery phase following an emergency event.

The scope of the transition agreement includes:

- A description of the event

[15] For a copy of the protocol, visit: https://www.mav.asn.au/what-we-do/policy-advocacy/emergency-management/protocol-for-inter-council-resource-sharing

- Authorisation arrangements
- Coordination and management arrangements
- Transition activities and tasks to ensure continuity of essential community support
- Information and communication arrangements

The decisions relating to the timing of the transition of response to recovery coordination, and whether recovery coordination will be transitioned to local and/or state government), will be impacted by a number of key considerations. These include:

- The nature of the hazard/threat and whether there is a risk of a recurring threat
- The extent of impact on communities, as this may determine if a prolonged transition period needs to be implemented.
- The extent of and known level of loss and damage associated with the incident
- The considerations for the extent of emergency relief required by affected communities
- The considerations for the resources required to coordinate effective recovery arrangements

The Incident Controller, the Emergency Response Coordinator and Emergency Recovery Coordinator (State and/or Regional/Local Government – Municipal Emergency Resource Officer/Municipal Recovery Manager) will determine the transition structure and handover requirement to fully establish the Recovery Coordination arrangements. In a prolonged campaign incident, a transition period must be determined to allow sufficient time for briefing, resource planning and implementation of immediate recovery services.

The “Transition Agreement” involves specific activities of a short-term nature as recovery coordination requirements evolve and establish.

The key tasks under this agreement include:

- Continuity of emergency relief requirements, if required.
- Coordination of Initial Impact Assessments[16] in the affected communities.
- Identifying resources required to support immediate community recovery requirements including public health and safety.
- Coordination of essential clean-up operations.

Conclusion of Response implies the cessation of the responsibilities of Victoria Police as response co-ordinators. However, during the initial phase of recovery coordination, and on request of the Recovery Coordinator, the Victoria Police and other response agencies will continue to support recovery activities to affected communities.

Response and recovery agencies will work cooperatively during the period of transition and provide each other with appropriate support. Coordination responsibility is passed to the Department of Health and Human Services as the recovery co-ordination agency at the State and Regional level, while Local Government has management responsibility at the municipal level.

[16] As obtained by reference to Initial Impact Assessment Guidelines December 2012

5.13.1 *Termination of Response Activities and Handover of Goods/Facilities*

When response activities are nearing completion the MERC in conjunction with the control agency will call together relevant relief and recovery agencies including the MERO and the MRM, to consult and agree on the timing and process of the response stand down.

In some circumstances, it may be appropriate for certain facilities and goods obtained under EMMV arrangements during response to be utilised in recovery activities. In these situations, there would be an actual hand over to the Recovery Manager of such facilities and goods. This hand over will occur only after agreement has been reached between response and recovery managers.

Payment for goods and services used in the recovery process is the responsibility of the MRM through the MEMP arrangements.

5.14 Impact Assessment

Under the *Emergency Management Act* 2013 (The Act), the Emergency Management Commissioner is responsible for ensuring the coordination, collection, collation and reporting of information on the impact of the emergency.

Impact assessment is conducted in the aftermath of a class 1 emergency event to assess the impact to the community and inform government of immediate and longer-term recovery needs.

Impact assessment must be community focused to ensure the data/information will assist decision making on how to best support impacted communities.

Victoria uses a three stage process to gather and analyse information following an emergency event. The term impact assessment encompasses all three stages.

- Initial impact assessment (IIA)
- Secondary impact assessment (SIA)
- Post emergency needs assessment (PENA)

Despite three stages being described, impact assessment is not linear and some of the stages may be completed concurrently depending on the size and nature of the emergency event. The stages described must be an evolving continuum or a single process made up of stages which transition as seamlessly as possible.

This section of the MEMP has been developed with an understanding of EMVs “Impact Assessment Guidelines for Class 1 Emergencies (V1.0, 23 October 2015)”

5.14.1 *Initial impact assessment (IIA)*

IIA is a preliminary assessment (visual inspection and quantifiable early data) undertaken by response agencies.

IIA often comprise visual inspections, and/or the compilation of early available quantifiable data (such as number of dwellings destroyed or damaged), impacts on people remaining in affected area.

IIA provides early information to assist in the prioritisation of meeting the immediate needs of individuals and the community. It also indicates if further assessment and assistance is required.

IIA informs the incident controller about emerging risks and further potential hazards as well as informing resource allocation, provision of public information and to facilitate informed decision making. It may also inform decision makers of the need for continued response and requirements such as interstate/international assistance or specialised equipment. It therefore informs response as well as relief and recovery.

The aim of IIA is to capture, during the initial 48 hours after being able to access the area affected by the emergency, the nature and scale of the impact of the emergency on people, community infrastructure, and the economic, natural and built environments, in order to prioritise the requirements of SIA and enable commencement of emergency relief and early recovery activities.

Triggers to determine the requirement for IIA should be considered in accordance with the state control priorities. Some practical examples include:

- Injured/deceased persons
- Residential damage indicating displaced people
- Damage to essential infrastructure (road, rail, power supply etc)
- Damage to facilities of community significance e.g. schools and hospitals
- Identification of primary production impact and animal welfare requirements

IIA arrangements are designed to allow for flexibility in their application as it often occurs in a dynamic environment. Therefore, the circumstance of a particular assessment may require adaption. Consideration should be given to when IIA field teams will be able to access the impacted area.

Information collected in the IIA stage will be progressively made available to the IEMT and nominated recovery manager/coordinator.

IIA information is generally collected by response agency personnel. It may include other personnel from a variety of agencies at the discretion of the Incident Controller or officer in charge of IIA.

Murrindindi Shire Council will as soon as be practicable, liaise with the control agency regarding IIA. This IIA brief will support the Secondary Impact Assessment (SIA) and give Council an idea of the scope of impact.

Depending on the scale of impact, Council will generally request that data layers and reports gathered during the IIA be made available so they can be transferred to Crisisworks (https://murrindindi.mecccentral.com).

5.14.2 *Secondary impact assessment (SIA)*

SIA is a subsequent progressive and more holistic assessment of the impact of the event on the community. It examines built and natural environments, social and economic impacts, and resulting community needs. Impact assessment for relief and recovery requires an additional layer of analysis beyond the IIA, which includes a comparison with baseline information.

An adaptive and evidence-based relief and recovery program requires timely, accurate and progressively more comprehensive information about the impact of an emergency on communities.

Coordination of SIA is the responsibility of the nominated recovery manager/coordinator.

All departments and agencies involved in the collection of SIA should liaise with the nominated recovery manager/coordinator to ensure information is coordinated and shared.

Expected Outcome

It is expected that SIA will build on the observational information gathered through the IIA stage to provide an additional layer of analysis and evaluation. SIA will endeavour to:

- Inform the immediate needs of the community
- Set priorities for relief and recovery
- Assist in treating identified risks and support consequence management
- Identify duplicated reporting of impact assessment data
- Review the data reported in the IIA stage
- Inform the operationalisation of municipal, regional and state recovery plans
- Identify any underlying issues within affected communities that are likely to be impacted by the emergency event (e.g. economic instability, tourism, employment, transportation, supply chain disruption)
- Inform budget estimates for government
- Estimate the cost of destroyed assets and infrastructure
- Guide planning that focuses on restoration of public assets, building community resilience and assists in mitigating the impact of future emergencies
- Inform potential activation of state and commonwealth cost sharing via the Natural Disaster Relief and Recovery Arrangements

Data Collection

SIA collection is more detailed than IIA, and the information supports understanding the type and level of assistance needed by affected communities. Various information sources and methodologies are used to collect SIA data. This includes (but is not limited to):

- Multi-disciplinary field assessment teams
- Phone calls to affected communities
- Information collected at relief and recovery centres
- Existing databases (contextual information)
- Reports via media/social media

SIA will have personnel engaging with community members and obtaining impact information in greater detail.

To facilitate the SIA process Murrindindi Shire Council, shall as early as practicable, perform the following tasks:

- Coordinate the survey of the extent of damage indicating an evaluation of financial and material aid needed
- Provide a priority listing for restoration of community needs to assist agencies in the performance of their functions
- Monitor the acquisition and application of financial and material aid needed or made available in the restoration period
- Survey the occupancy of damaged buildings, facilitate the making of a determination and coordinate access to alternative accommodation if required

SIA Team

The preferred approach, where practicable, is through multi-disciplinary teams deployed to assess and assist community in a “one stop” concept. For example, a team composition could comprise an engineer, a community services officer, a local government official and a person from the control agency. Team composition and the number of teams required will change based on the level of impact. The SIA team will report directly to the MRM.

Teams for a general SIA will generally be composed of:

1. Team Leader
2. Municipal Building Surveyor
3. Psychosocial Support (VCC or as determined by MRM)
4. Environmental Health Officer (EHO)
5. Municipal Engineer (if required)
6. DELWP (if required)
7. Other recovery personnel as required

The MRM may co-opt persons within Council, other agencies or the community with the appropriate expertise to assist with the above tasks. Should the emergency extend beyond the municipal boundaries of Murrindindi Shire Council, the SIA may be merged with that of the other affected municipalities.

Reporting

The MRM is responsible for the preparation and dissemination of reports to all agencies and all parties with an interest in the relief and recovery process.

Within the first 3-7 days following an emergency, Council will advise EMV if:

- Damage has been sustained to essential public assets; or
- Council anticipates costs will or have been incurred undertaking an emergency activity.

Council will provide revised estimates of damage or eligible costs incurred under Victoria's Natural Disaster Financial Assistance (NDFA) scheme on a regular basis thereafter to EMV. The first revised estimate of damage should be provided within the first two months following the emergency event.

Interim and final reports will be made available to government and the nominated recovery manager/coordinator for the SIA and post emergency needs assessment stages. These reports are a single source document with time and date of release clearly marked. This is to ensure there is no confusion as to the most current and accurate information available at the time.

Timeframes

Finalisation of the SIA will aim to occur within four weeks of disaster onset. For longer term disasters, this timeframe may be extended.

5.14.3 *Post Emergency Needs Assessment (PENA)*

PENA estimates the longer term psychosocial impacts of a community, displacement of people, cost of destroyed assets, and the changes in the 'flows' of an affected economy caused by the destruction of assets and interruption of business. Such assessments inform the medium to longer-term recovery process and build the knowledge base of the total cost of emergencies that informs risk assessment and management.

Coordination

The responsibility for coordination of post emergency needs assessment will be dependent on the scale of the emergency. Coordination will be undertaken by the:

- MRM at the local tier
- Regional Recovery Coordinator at the regional tier
- State Relief and Recovery Manager at the state tier

Agencies involved in the post emergency needs assessment must ensure they are undertaking their activities in consultation with the nominated recovery manager/coordinator.

Activation

PENA implementation will be flexible and adaptable to the circumstances of the emergency event. The need for this stage depends on the nature and scale of the event.

The MRM will assess whether a post emergency needs assessment is required.

Analysis

PENA builds on and estimates costs based on the initial and secondary impact assessment stages. It provides an additional layer of analysis and evaluation.

It is critical those involved in post emergency needs assessment understand what has been completed previously to avoid duplication of task and unnecessary burden on the community in seeking information.

Government agencies monitor the progress of assessment reports and build on further information that may not have been available at the time of SIA.

These agencies also verify costs for recovery and rehabilitation for the medium and long term which were reported in the initial and secondary stages.

Reporting

The MRM is responsible for making PENA data available to all agencies with an interest in the relief and recovery process.

Other responsible agencies involved in the post emergency needs assessment will report information to the nominated recovery coordinator to reduce duplication.

Timeframe

Post emergency needs assessment can take months or even years, depending on the nature and scale of the emergency event.

Further details on impact assessment are available on the EMV website[17]

5.14.4 *Data Capture during Impact Assessments*

Council use the impact assessment module of Crisisworks to record data from any impact assessments. This allows field staff to directly input data via phones or tablet computers as required.

The module does not require internet access but an application (through the google play or iTunes stores) is required to be downloaded to a device before it is used in the field.

[17] EMV 2015 *Impact Assessments for Class 1 Emergencies,* Version 1.0, 23 October 2015, http://files.em.vic.gov.au/IMT-Toolbox/Inc/IIA-Guidelines-Class-1.htm

6 Relief and Recovery Arrangements

6.1 Introduction

To ensure adequate arrangements are in place to assist those who are affected by emergencies the Murrindindi Shire Council Relief and Recovery Arrangements have been developed in accordance with State Recovery Arrangements, the *Emergency Management Act 1986* and Municipal Emergency Management Planning arrangements contained in Part 6 of the EMMV. They have also been developed with reference to the Hume Region Relief and Recovery Plan (DHHS), the State Relief and Recovery Plan (EMMV Part 4)[18]

6.1.1 *Relief and Recovery Defined*

Relief is the provision of essential needs to individuals, families and communities in the immediate aftermath of an emergency. Relief is the first stage of recovery and must be seamlessly integrated with all other early recovery activities.

Generally, relief is necessary for a period of a few days to a few weeks but is dependent on the scale and size of the emergency. In the context of this document unless specifically required, the term recovery will be used to cover both processes.

Recovery is defined in the State Emergency Relief and Recovery Plan as 'the assisting of persons and communities affected by emergencies to achieve an effective level of functioning'.

According to the Emergency Management Manual Victoria, Municipal Councils are the local lead agency for the coordination of relief and recovery. Councils also have a key role in the maintenance of Public Health as outline in the State Relief and Recovery Plan.

Part 6 of the Murrindindi Shire Council MEMP has been written with the understanding that recovery must be community focussed, consequence driven and be considered across the four recovery environments; social, economic, built and natural.

Murrindindi Shire Council has an operational Relief Recovery Plan, a sub-plan to the MEMP that examines relief and recovery operational arrangements at the Municipal level. Copies of the Recovery Plan are available on Murrindindi Shire Council's Website (public version – www.murrindindi.vic.gov.au) or Crisisworks (restricted version - for MEMPC members or emergency agency representatives https://murrindindi.crisisworks.com).

6.2 Relief and Recovery Preparation and Planning

Municipalities have a responsibility to plan for and provide resources from within the municipal area in the event of an emergency, both in response and recovery, in accordance with the *Emergency Management Act 1986*, Part 4 (s18-21A) "Responsibilities of Municipal Councils".

[18] Emergency Management Manual Victoria, EMV, https://www.emv.vic.gov.au/policies/emmv

6.2.1 *Guiding Principles*

The following are the guiding principles that underpin all activities of relief and recovery and they need to be considered when planning for those elements of an emergency. Agencies working within Murrindindi Shire aim to approach the delivery of their services during an emergency within this framework.

Murrindindi Shire Council, as the coordinating agency, will endeavour to establish structures and work with communities to ensure these principles are met.

The following headings have been considered as part of the development of this plan

6.2.2 *Community led process*

- The active involvement of the community, either directly or indirectly affected, is essential.
- We will recognise differing community needs and work in partnership with the community. We will develop sound processes that are flexible and adaptive to the changing needs of the community.
- We will recognise that different people will be at different stages of their recovery and that decision making involves grief and will take time.
- A diversity of opportunities and choices must be available for people at different states of the grief and recovery process.

6.2.3 *Individuals and communities are resilient*

- Individuals, when provided with information about the situation and available services, are able to make informed choices about their recovery. Communities, when supported with information and resources, are able to support and manage their own recovery.

6.2.4 *Levels of recovery operations*

- Whilst recovery agencies are committed to the Victorian Emergency Management arrangements, operational and strategic decisions relating to the recovery process will be made through already existing governance procedures.
- Recovery operates at multiple levels of government. All agencies and organisations involved in management, coordination or service delivery will endeavour to undertake activities in a collaborative manner, within the agreed framework.
- Coordination and communication between the community, key agencies and Federal, State and Local Governments will assist in ensuring the success of recovery activities for the affected community.

6.2.5 *Roles of organisations and agencies*

- Recovery is not the exclusive domain of any single agency. All agencies and organisations willing to participate have an important role to play.
- Recovery is a whole-of-government and a whole-of-community process.
- The recovery process will build on existing structures and relationships.
- Effective recovery requires the establishment of planning and management arrangements that are understood and accepted by recovery agencies, control agencies and the community.

- Planning and management arrangements are more effective if training programs and exercises have prepared recovery agencies and personnel for their roles.

6.2.6 *Preparation for Recovery*

Effective recovery work is based on partnerships and community-led decision-making. It is the preparation before an event that builds these two key aspects. Key recovery partners have been identified and engaged as part of the preparation of this plan (listed in Appendix A). During an emergency event everyone involved should be able to complete their roles successfully and slot directly into their required roles under the guidance of the MRM.

There is an onus of responsibility on communities to identify their key leaders – these are the people who may lead a recovery committee should an event occur that requires one. They are also the people that may be involved in between events working with Council and other agencies and communities to build networks, nurture resilience and develop community all hazards management plans.

The responsibility of Councils is to support this community resilience, to make strong connections with local communities and to include communities in emergency management and recovery decision-making.

Key to Council's preparation is a comprehensive training strategy and support for skilled emergency management staff to be better able complete jobs expected of them. This plan is also integrated directly with Council's Business Continuity Plan to make the transition from emergency to business continuity more effective and efficient.

6.2.7 *A Disaster Resilient Community*

It is impractical to plan for recovery without acknowledging the existing resilience of the Murrindindi Shire community and the types of programs already in place that build community strength.

Community resilience can be defined in many ways. Characteristics of disaster resilient communities, individuals and organisations are:

- Functioning well while under stress
- Successful adaptation
- Self-reliance, education and awareness and
- Social capacity

Resilient communities also share the importance of social support systems, such as neighbourhoods and family networks, social cohesion, mutual interest groups, and mutual self-help groups.

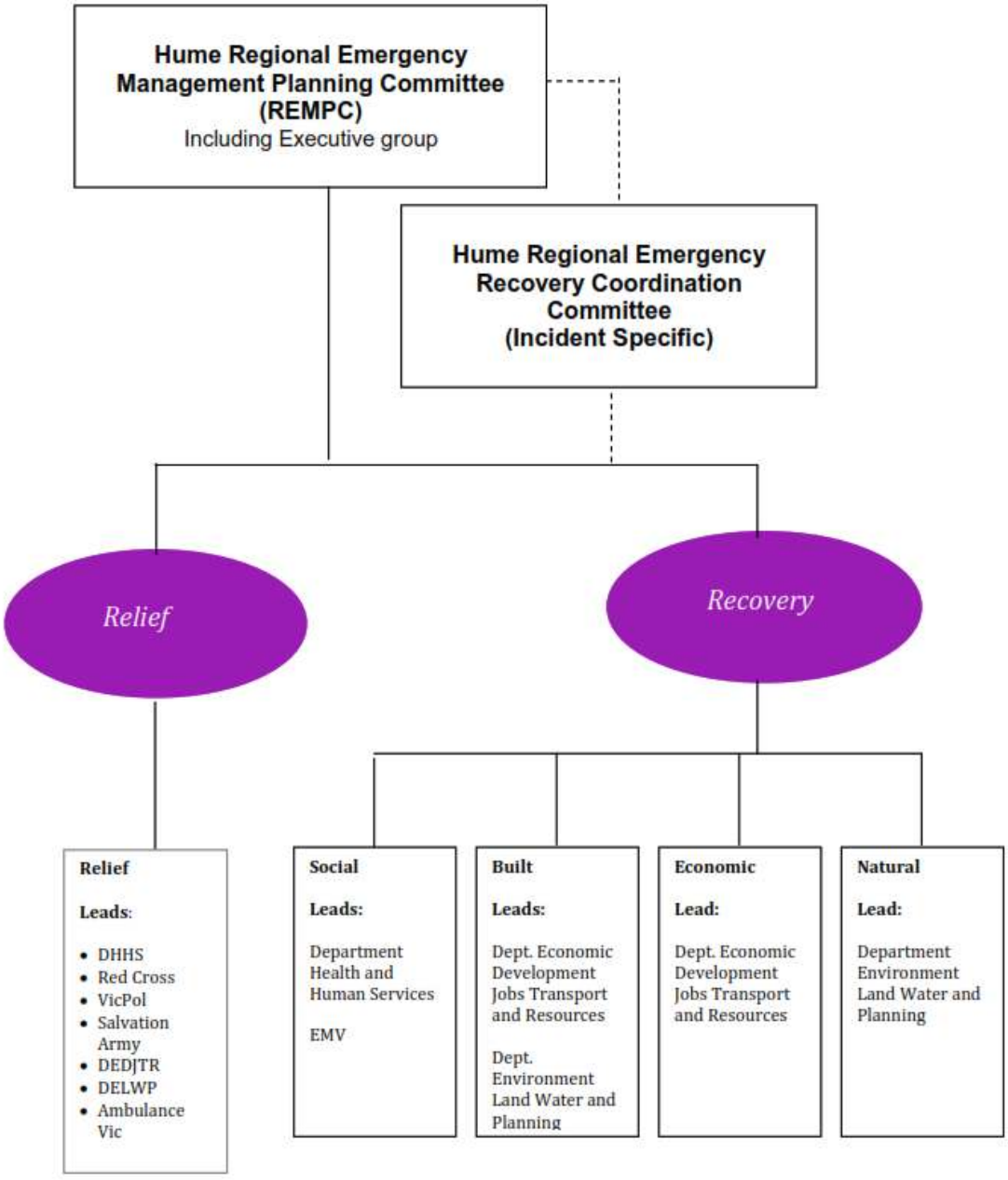
6.3 Relief

6.3.1 *Relief Coordination*

State and regional relief and recovery arrangements, roles and responsibilities are listed in the EMMV Part 4. EMV is the State coordinator or relief and recovery. At the regional level, EMV has listed DHHS as the coordinating agency.

Local relief and recovery is coordinated by Local Government. Relief and recovery arrangements at the local level are documented in this plan.

Figure 10: Governance Structure of Regional Recovery Planning in Hume Region[19]



[19] From *Hume Regional Relief and Recovery Plan 2017*, p 11

6.3.2 *Municipal Emergency Coordination Centre(s) (MECC)*

From October 2016, there is no longer a requirement in the EMMV for Municipalities to run a MECC. However, Murrindindi Shire Council will continue to run a MECC for the local coordination of relief and recovery. The MECC will generally only have Council staff in it. Other agencies, such as Victorian Council of Churches or DHHS may also work from the MECC upon negotiation. The MRM and support staff will generally be located in the MECC.

MEROs are now required to have a presence in the ICC. Thus, the coordination and provision of Council and community resources during an emergency for the response and recovery effort will occur in the ICC.

The primary MECC for Murrindindi Shire Council is:

- Murrindindi Shire Council Offices, Meeting Room, Perkins Street, Alexandra

The secondary MECC's for Murrindindi Shire Council is:

- Murrindindi Shire Council, Council Offices, Civic Centre, Yea, Victoria

6.3.3 *Local Relief Functions and Responsibilities*

Murrindindi Shire Council assisted by other organisations and with the support of the Department of Health & Human Services, is responsible for implementing relief measures including establishing and managing emergency relief centres.

Local lead agencies for the 11 relief functions are listed in the table below.

Figure 11: Relief Providers, Murrindindi Shire

Relief Function	Responsibility
Community Information	Council
Emergency Shelter	Council
Food and Water	Red Cross, CWA, Salvation Army, Local Providers (e.g. Lions)
Drinking water for households	Council, GV Water, DELWP
Food supply continuity	DELWP
Psychosocial support	Red Cross, Nexus Community Health, VCC
Non Food Items	Salvation Army, Rotary
Reconnecting Families	Red Cross (with assistance of Vic Pol)
First aid/Primary care	Ambulance Victoria, Red Cross
Financial Assistance	DHHS, DHS (Centrelink), Salvation Army
Animal Welfare	Council, DJPR, EHO, RSPCA, DELWP

Unless otherwise stated, service delivery by agencies in Murrindindi Shire will align with the agency requirements set out in Part 7 of the EMMV, 'Emergency Agency Roles'.

Murrindindi Shire Council has a number of agreements with local agencies for service delivery during emergencies. These include Red Cross, Victorian Council of Churches (VCC) and Rotary Clubs of Murrindindi Shire.

Red Cross will coordinate the supply of food and water during relief and recovery. This includes supplying food and water to Emergency Relief Centres (ERCs) during an emergency. Red Cross will also be supplied a current list of local agencies and groups (e.g.: sporting clubs or Lions etc.) by Murrindindi Shire Council that can assist them in this delivery.

VCC will fulfil the role of frontline psychosocial support by providing outreach services to residents affected by a trauma or emergency where required as determined by the Municipal Recovery Manager (MRM). VCC will also have a presence at ERCs when requested.

Murrindindi Shire Council has an agreement with the Rotary Clubs of Murrindindi Shire to coordinate the management of donated goods on behalf of the Council at the local level. If their capacity is exceeded, the Salvation Army will assist in coordinating donated goods.

6.3.4 *Capacity and Capability*

In the Restricted Appendices, Council attempts to gauge the capacity and capability of Council and the Community regarding their ability to deliver relief and recovery services locally.

Capacity and capability have been listed as accurately as possible so that external agencies and other municipalities may be able to gauge when and if Murrindindi Shire Council may call on them for assistance.

6.4 Activation of Relief

It is the Incident Controller's responsibility to activate emergency relief services with advice from the Emergency Management Team.

The provision of emergency relief services can be activated locally by the MERC, MERO or MRM at the direction of the Incident Controller.

6.4.1 *Requests for Emergency Relief*

Any requests for emergency relief need to be authorised by the MERC. Generally, the MRM will coordinate the delivery of the requests and report back to the MERC and DHHS as required.

6.4.2 *Relief Escalation – Municipal Level to Regional Level*

If the demand for relief exceeds the capacity of council, the RERC should be consulted with a view to request the Department of Health & Human Services (DHHS) to coordinate relief at regional level. To ensure a smooth transition of responsibility, Council should notify DHHS as soon as it becomes apparent an event will exceed its capacity. This does not replace the requirement for the RERC to monitor the emergency relief situation.

6.4.3 *Who is responsible for paying for relief?*

The responsibility for payment of relief is detailed below. Agencies requesting relief should be familiar with these arrangements.

- Murrindindi Shire Council is responsible for relief centre measures provided to emergency-affected persons
- If relief is requested by an agency for its own personnel, that agency will be responsible for costs incurred
- When a control agency requests relief (e.g. catering) on behalf of a number of supporting agencies, the control agency will be responsible for costs incurred.

6.4.4 *The MECC*

Relief and recovery operations will occur from the Municipal Emergency Coordination Centre (MECC) in the meeting room at the Council offices (or a secondary MECC if the offices are impacted) and be directed by the MRM.

6.5 Emergency Relief Centres (ERCs)

An emergency relief centre (ERC) is a building or place established to provide life support and essential needs to persons affected by any emergency (including evacuees). Emergency relief centres are established on a temporary basis to cope with the immediate needs of those affected during the initial response to the emergency. They do not imply any longer-term use of facilities as a location for recovery services.

An ERC will only be opened at the request of the Incident Controller.

The following roles may be involved in setting up and operating the centre:

- Municipal Emergency Response Co-ordinator (MERC);
- Municipal Emergency Resource Officer (MERO);
- Municipal Recovery Manager (MRM);
- Emergency Relief Centre Manager (ERCM);
- Relief Centre Staff; and
- Other Municipal Council Staff.

For detailed information on setting up an ERC, including role statements for the ERCM and Relief Centre staff, see the ‘ERC Operations Handbook’ (15/21939).

Locations of ERCs are in the Restricted Appendices.

6.5.1 *Services*

Both relief and recovery services may be provided at a relief centre. Thus, the provision by relevant agencies of any of the relief or recovery services such as catering, material needs, emergency shelter, grants, the provision of information, temporary accommodation and counselling may occur concurrently.

Irrespective of the relief or recovery services offered or the level of coordination being provided, the overall management responsibility for the centres remains with Murrindindi Shire Council

6.5.2 *ERC Handbook*

Murrindindi Shire Council has developed a handbook for relief centres (15/21939). This describes personnel, facilities and equipment to standardise methodology and procedures. A copy of these procedures is available on Crisisworks.

In support of Councils responsibilities with the management of ERCs, Council has appointed three MRMs, ERC Managers, and recruited and trained Council Officers to perform roles in an ERC when required.

In the event of the requirement for any or all of the functional services of relief the request must be directed through the MERC/MERO processes who will request the MRM to activate the required functional services. All functional services will operate and report back to the MERO/MRM.

6.5.3 *ERC Kits*

Murrindindi Shire Council has Emergency Relief Centre (ERC) Kits containing equipment immediately required to activate an ERC. The MRM or their delegate is responsible for establishing and maintaining the ERC Kits.

There are three kits – one set of four tubs at each Council Office (Yea, Alexandra and Kinglake).

6.5.4 *Catering*

The Australian Red Cross Victoria is the coordinating body for emergency relief catering and is supported by internal arrangements with, but not limited to:

- Salvation Army
- Country Women's Association
- Country Fire Authority Auxiliary
- Women's Support Group
- Various Church Groups
- Lions and Rotary Clubs
- State Emergency Service Teams
- Other Agencies as Co-opted.

Red Cross are responsible for maintaining food supplies to ERCs and will liaise with the MRM and DHHS on any potential impacts to the supply chain.

6.5.5 *Animal Welfare*

Council is responsible for coordinating the care of companion animals at ERCs. Other animals such as livestock and wildlife impacted by emergencies may also need containment,

food, water, veterinary treatment or humane destruction and disposal. DJPR is responsible for assisting with urgent animal welfare needs.

Murrindindi Shire Council will work alongside DJPR in any required response effort. To that end, Murrindindi Shire Council has developed an Emergency Animal Welfare Plan (EAWP, available as a download from Crisisworks for MEMPC Members or emergency agencies https://murrindindi.mecccentral.com. The EAWP is designed to capture the capacity and capability of Council's ability to respond to crisis that affect stock and companion animals.

Native animals that are impacted by an emergency are managed and planned for by DELWP.

The EAWP includes standard operating procedures for post emergency stock disposal and identifies triggers for activation of the plan.

The EAWP's aims are:

- Contribute to enhanced public safety and community resilience through effective planning and management of animals in emergencies, and
- Ensure animals are better considered and protected from suffering during and immediately following emergencies.

6.5.6 *Psychosocial Support*

Psychosocial support: a framework for emergencies (2017) guides the delivery of psychosocial support in Victoria[20].

Psychosocial support may range from personal support, community information and individual and group counselling, to specialised mental health services.

In an emergency, depending on the scale of the event, the MRM may choose to deploy Victorian Council of Churches (VCC) outreach services. The MRM may also request to DHHS that Nexus Primary Health – Community Health Services be activated to provide support. DHHS has an MOU with Nexus and is therefore responsible for activation.

The VCC service includes doorknocking affected residents and producing a report for the MRM on the mental health of affected residents. All VCC volunteers and Chaplains have completed psychological first aid training and are equipped to support people affected by trauma as a result of an emergency or disaster.

If people are identified as potentially requiring ongoing support by the VCC outreach program they will notify the MRM. The MRM may request assistance from Nexus through DHHS for ongoing support.

[20] A copy of the psychosocial support framework can be found at: https://providers.dhhs.vic.gov.au/psychosocial-support-framework-emergencies-pdf

Different groups will have different relief needs, and this is nowhere more evident than in psychosocial support post emergency.

6.5.7 *Legal Aid*

Victoria Legal Aid (https://www.legalaid.vic.gov.au/) is responsible for coordinating support from the legal community to individuals and communities affected by emergencies through Disaster Legal Help Victoria (DLHV). DLHV provides free information through a telephone help line, a website (http://www.disasterlegalhelp.org.au/), fact sheets and information kits.

Depending on the nature of the emergency DLHV also provides a legal presence at ERCs and facilitates pro bono legal referrals. The emphasis of services is on resolving disputes between insurance companies and clients.

6.5.8 *Registration of Evacuees*

The Register.Find.Reunite Service (https://register.redcross.org.au/) registers, finds and reunites family, friends and loved ones after an emergency.

Once activated people are able to register and inquire with the service via the Red Cross website from any computer or mobile device with internet access. People also have the option to register or enquire over the phone. If internet and mobile devices are down, people can register in person at an evacuation or emergency relief centre.

The service matches registrations from people affected by the emergency to enquiries from family or friends searching for news. Once a match has been made, an operator will contact the person who submitted the enquiry.

Victoria Police is responsible for the registration of evacuees in conjunction with Australian Red Cross. Red Cross is also responsible for the responsible for the operation of the Register.Find.Reunite service including training, resources and personnel.

6.5.9 *Other ERC Services*

Other services may be required at an ERC and are at the discretion of the MRM. These include things like a need for a first aid provider on site, the setup of a Child-Friendly space at the ERC and others as required or directed by DHHS.

6.6 Other Relief Functions

6.6.1 *Replacement of Essential Drinking Water for Households*

Locally, Murrindindi Shire Council will coordinate the replacement of fire-contaminated drinking water held in rainwater tanks for communities impacted by fire. If community members believe their tank water has been contaminated during an emergency, they can phone the Alexandra Shire office and report it on 5772 0333. If required, Council will then have the water tested for contaminants and flush and replace drinking water where necessary.

The Victorian Government Essential Water Replacement Scheme "Guidance Document" (November 2011) states that water authorities will not charge for drinking water used to replace essential water (of which drinking water is a part) contaminated by bushfire response efforts or fire related contaminants. The Guidance Document also states that DELWP will pay for any cartage costs required.

6.6.2 *Replacement of Essential Water Used During Bushfire Fighting Operations*

The *Country Fire Authority Act 1958* (s30 and s32) provides powers to the Country Fire Authority (CFA) and the Department of Environment, Land, Water and Planning (DELWP) to take water from any waterway or any other water supply on public and private land for firefighting purposes.

The Essential Water Replacement Scheme was introduced following the 2006-07 Great Divide Bushfires and was subsequently enacted in following years due to drought conditions across the state. The scheme was put in place for the replacement of essential water used during bushfire operations by Victoria's fire agencies.

In October 2010, the Victorian Government's Emergency Management Council endorsed the Essential Water Replacement Scheme as ongoing and is in place regardless of drought conditions. The scheme is implemented as part of the state emergency relief and recovery arrangements outlined in the Emergency Management Manual of Victoria.

Essential water is defined as water required to sustain:

- the health of affected residents and pets;
- the health and productivity of their stock; and
- agricultural and horticultural crops, permanent plantings and intensive industries.

In the event of fire regardless of where it starts, if Essential Water is taken from domestic tanks and stock or irrigation dams for firefighting purposes, water needed for essential use will be replaced (quantity taken) when requested by the Landholder.

Applications for replacement of essential water need to be submitted to DELWP within 3 months of the water being taken.

6.6.3 *Spontaneous Volunteers*

Spontaneous volunteers are people that turn up during or after an event willing to help but are not affiliated with any group or club. Traditionally, spontaneous volunteers have been difficult to coordinate for municipalities as they may require training, accommodation, food and close management or supervision.

The MRM will coordinate spontaneous volunteers and may choose to dedicate an officer to their management.

6.6.4 *Offers of Assistance*

Murrindindi Shire Council will coordinate offers of assistance internally with delegation via the MRM. Crisisworks will be utilised to record and monitor offers of assistance.

In this document, “offers of assistance” is understood to include the following:

- Corporate offers of assistance directed to local government (this includes financial, goods, services and offers of staff time) – Note that goods will be managed as per 3.13 above.
- Public offers of assistance directed to government (this includes financial, goods and services) – Note that goods will be managed as per 3.13 above.
- Members of the public offering to volunteer their time to assist affected communities, government or non-government organisations involved in the response and recovery effort
- Community groups or organisations offering to assist affected communities, government or non-government organisations with the response and recovery effort

The role of Council in managing offers of assistance is to:

- Facilitate activities that assist in the coordination of offers of services
- Direct offers of volunteering through appropriate channels
- Ensure that appropriate mechanisms are in place for the registration, referral, training and health and safety of volunteers and community groups (see 3.15 below)
- Provide consistent and accurate messages to the public.

The following standards apply to the coordination of offers of assistance

- Offers of assistance are channelled through the customer service centres.
- There is an integrated system for coordinating offers of assistance via Crisisworks.
- There are clear and consistent messages and all dealings with affected people and local communities are undertaken in a courteous, helpful and ethical manner.

All offers of assistance are handled in a timely and effective manner

6.6.5 *Material Needs*

The agency responsible for the provision of material needs in Murrindindi Shire Council is the combined Rotary Clubs of Murrindindi Shire. They may be assisted by:

- Red Cross
- Murrindindi Shire Council
- Salvation Army
- St Vincent De Paul Society
- Service Clubs
- CWA
- Church Groups
- SES
- Others as required.

Murrindindi Shire Council requests, as per the *National guidelines for managing donated goods*[21], for monetary donations over donated goods. Material donations are discouraged as financial donations can provide a greater level of choice can more accurately target any identified needs and help circulate money in affected communities. When communicating during an emergency, Murrindindi Shire Council will endeavour to promote the donation of money over material aid.

Murrindindi Shire Council has limited capacity to be able to coordinate donated goods and services. As a result, Council has developed an agreement for the local Rotary Clubs of Murrindindi Shire to coordinate donated goods and services in the Shire.

6.6.6 *Accommodation*

Individuals are encouraged to make their own accommodation arrangements if they cannot return to their homes. Friends, family, community, business, or government could provide emergency shelter if needed.

Municipal councils can offer accommodation at relief centres or alternative locations. The Department of Health and Human Services can arrange emergency shelter and accommodation when requested by municipal councils as part of the escalation process.

It is advised however for people to stay with relatives and friends if their residence is impacted or if they are isolated from their residence because of an emergency. By surrounding themselves with friends and family, impacted persons have a better chance of recovering more fully from an impact.

Post emergency accommodation comes in two forms: ‘Emergency Accommodation’ and ‘Longer Term Accommodation’.

Red Cross can provide emergency accommodation (for people impacted by single incidents such as house fires) for up to 3 nights.

[21] A copy of the guidelines can be found at: https://dcsi.sa.gov.au/__data/assets/pdf_file/0004/1894/national-guidelines-for-managing-donated-goods.pdf

6.7 Recovery

Management and service provision will be devolved as much as possible to the local level. State and Regional recovery strategies, services and resources will supplement and complement the municipality's initiatives rather than replace local endeavours.

Emphasis will be given to supporting and maintaining the identity, dignity and autonomy of affected individuals, families and the community.

Management of recovery will occur in the context of clear and agreed arrangements, and involve processes of consultation and co-operation through established communication channels.

Wherever possible, the normal municipal management and administrative structures and practices will be used, ensuring that these structures and practices will be responsive to the special needs and circumstances of the affected community.

Recovery information and recovery services need to be readily accessible to affected individuals, families and communities and responsive to their needs and expectations.

6.7.1 *Recovery Plans*

For each emergency, the MRM will coordinate the development of a disaster recovery plan. To assist in the preparation of the plan, the MRM will use the disaster recovery toolkit for local government published on the EMV website (https://www.emv.vic.gov.au/how-we-help/disaster-recovery-toolkit-for-local-government)

Disaster specific recovery plans will report on recovery progress and issues so that they can be appropriately reported. The primary focus is to be prepared to commence recovery processes when disasters do occur.

Community recovery plans are tailored specifically for activities following an event. These plans are generally operational plans developed for each event, and define strategies and interventions specific to the affected communities.

The plans aim to agree and communicate the short, medium and long-term goals for recovery. The plans need to consider the impact of the event, the location, community demographics and the vulnerabilities of the community. In addition, the existing social networks prior to the event, the culture and the four recovery components need to be considered. Planning must involve the community from the outset.

Community participation in the post-event planning process is critical to identify the specific activities that are required by the community to re-establish community systems and ensure the outcomes of the recovery process are community driven. The community can contribute to planning in a variety of ways, including attendance at local council meetings. The spontaneous public forums that emerge after an event are usually indicative of community concerns.

6.7.2 *Recovery Escalation – Municipal Level to Regional Level*

Where the impact of an event results in community needs exceeding the capacity of the Murrindindi Shire Council; Council may seek to escalate the level of management to the regional level. This escalation provides an additional layer of management rather than a replacement layer.

The MRM will contact the Regional Recovery Coordinator, DHHS Hume Region, to discuss the request.

6.7.3 *Reporting on the Status and Progress of Recovery*

The MRM will prepare reports as required to inform DHHS through the Regional Recovery Coordinator on the status and progress of incident recovery. As per recovery escalation above, highlighting where events may exceed capacity of Council or its supporting agencies as early as possible is critical.

The following applies to Progress Reports:

- Reports are to provide situational awareness and highlight issues for the Regional or State Recovery Coordinator.
- The incident doesn't need to have escalated to the regional or state level for a report to be produced
- Unless otherwise advised, reports should be prepared weekly for the first month after the incident, then monthly for the next six months. Reports should be provided on Fridays to SEMC@dhhs.vic.gov.au

Report templates are available from DHHS.

6.7.4 *Evaluation of Recovery Activities*

Evaluation of recovery activities and recovery programs following emergency events is essential to maximise lessons learned and identify where improvements can be made. Evaluation may take the form of a formal debrief of operations, or may involve workshops, seminars or applied research into particular areas of activity.

The MRM should conduct an evaluation of recovery operations following activation of the recovery arrangements in the MEMP. The evaluation may be an informal or formal debrief depending on the scale of the activation and must identify the strengths and weaknesses of the local operational response to the needs of the community.

The MRM must ensure that the Regional Recovery Coordinator, DHHS Hume Region, is aware of the outcome of the evaluation.

6.8 Risk and Consequence

The MEMPC identified that there are 9 key risks in Murrindindi Shire:

- Large regional bushfire;
- Large regional storm;

- Extreme temperatures and heatwave;
- Major flood;
- Landslip (roads);
- Pandemic/Epidemic;
- Structural failure – dam;
- Transport accident – aircraft; and
- Mass gathering.

For effective recovery, it is important to understand the consequences of the impact of these emergencies locally.

6.8.1 *Consequences*

Emergencies impact on communities in various ways and it is essential to consider the potential consequences of emergencies when planning for relief and recovery. The Regional Emergency Management Planning Committee (REMPC) has recognised a number of key consequences of an emergency for the community. The Murrindindi Shire Council MEMPC support this list of potential consequences to emergencies. They are:

- damage to, or loss of, homes and/or evacuation resulting in the dislocation of residents;
- significant loss of life and injuries resulting in community and individual trauma, health services;
- overload and economic impact (family loss of income);
- stress and trauma from exposure to emergency event resulting in significant psychosocial impact for the individual and community; and health services overload
- increase in the incidence of family violence;
- increase in the vulnerability of specific population groups;
- economic loss and potential decline of community wellbeing due to impact on agricultural land, livestock and/or business;
- economic loss and potential decline of community wellbeing due to the impact to tourism, manufacturing or other key industries;
- potential loss of biodiversity, water quality or water quantity;
- community wellbeing and functioning impacted due to disruption to routines and services;
- community access to the supply of goods due to damage to infrastructure;
- potential disruption to economic functioning, communications systems, public health systems and community wellbeing due to interruption or damage to utility infrastructure; and
- failure to meet community relief and recovery needs (appropriate activation of services) due to incorrect or inadequate impact assessment

Understanding these key consequences can support relief and recovery planning by helping to identify:

- relief and recovery partners;
- relief and recovery services that may be required; and
- options for relief and recovery funding.

6.8.2 *Functional Areas of Recovery*

There are four functional areas to consider:

Social environment
The social environment considers the impact an event may have on the health and wellbeing of individuals, families and communities. This environment is primarily concerned with safety, security and shelter, health and psychosocial wellbeing.

Built environment
The built environment considers the impacts that an event may have on essential physical infrastructure including essential services, commercial and industrial facilities, public buildings and assets and housing.

Economic environment
The economic environment considers the direct and indirect impacts that an event may have on business, primary producers and the broader economy.

Natural environment
The natural environment considers the impact that an event may have on a healthy and functioning environment, which underpins the economy and society. Components of the natural environment include air and water quality; land degradation and contamination; plant and wildlife damage/loss; and national parks, cultural and heritage sites

Each of these functional areas overlap considerably and require co-ordination and collaboration to address issues arising from an emergency.

The table (figure 9) overleaf details the four functional areas of recovery.

Figure 12: Four functional areas of recovery

Social Recovery Activities	Built Environment Activities	Economic Environment Activities	Natural Environment Activities
• **Housing and Accommodation –** *Assisting people displaced by the emergency to access temporary accommodation, assessing damage to buildings, building advice and transition to permanent housing* • **Individual and household financial assistance –** *Assisting households to minimise the financial impact of the emergency through financial assistance and advice* • **Psycho-social support** *Supporting the emotional, spiritual, cultural, psychological and social needs of affected people/communities* • **Health and medical assistance –** *Ensuring that health and medical emergency responses are coordinated and appropriate* • **Community Development –** *Supporting communities to share responsibility in recovery activities*	• **Energy services** – *build resilience within communities and the energy sector from emergencies and misname the impact on Victoria's economy and communities* • **Telecommunications –** *build resilience within the telecommunications sector from emergencies and minimise the impact on Victoria's economy and communities.* • ***Transport –*** • *build resilience within the transport sector from emergencies and minimise the impact on Victoria's economy and communities.* • **Building and assets –** *management of risk and facilitating restoration of buildings and assets.*	• **Local economies** – *Mitigate the impacts of emergencies on economic activity in affected communities* • **Businesses** – *Information, advice and support to businesses to facilitate good decision making and assist their recovery* • **Agriculture** – *Assist the agriculture sector to recover and minimise long term social and economic impact on primary producers and other animal owners.*	• **Natural environments and public land** – *manage consequence and mitigate risk to the natural environment on public land* • **Activities may include:** o *Erosion control* o *Restoration, clearing and rehabilitation* o *Provision of advice* o *Emergency approvals* o *Survey and protecting threatened bird, marsupial, aquatic and plant species* o *Surveying and protecting ecosystems* o *Wildlife welfare* o *Waste pollution management.*

6.8.3 *Social Environment*

The social recovery environment addresses the impact an emergency could have on the health and wellbeing of individuals, families and communities. Social recovery is closely inter-related to the other four recovery environments.

At the local level, Municipal councils are responsible for coordinating the social recovery environment. At the regional and state level, DHHS is the Coordinator.

Support for Individuals and Households

Municipal councils are responsible for locally managing and delivering recovery services for affected individuals and communities. Murrindindi Shire Council will consider appropriate support strategies, including how individuals will access information, the coordination of services, and case support for a given emergency. The DHHS may be able to assist if requested by municipal councils.

Case Management

The primary goal of case management is to create a single point of contact/co-ordination for support and service provision to individuals and families impacted by an emergency[22]. In order to identify the need for case management it is essential that as soon as possible following an incident affecting an area and/or community an Initial Impact Assessment (IIA) process is undertaken to ascertain the extent of disruption and damage across social, built, economic, natural and agricultural environments to help identify the assistance required.

The Case Management Service:

- is an individualised, relationship-based service that seeks to support and empower individuals, strengthening their capacity over time
- is an individualized service delivery based on comprehensive assessment, which is used to develop a case plan, developed in collaboration with the individual or family, reflective of their choices and preferences for the service arrangements being developed
- facilitates and works on behalf of the individual or family to obtain services, grants or information where individuals or families find it difficult to act on their own behalf
- provides personal support, attends to immediate needs, provides information, assesses current circumstances and undertakes referral and application processes for other services as needed
- advocates on behalf of the individual, couple or family in accessing housing, medical, financial and other types of assistance, as needed
- Continuously updates the assessment and support plan to address new and changing needs.

[22] Victorian Bushfire Case Management Service ,'Practice Guide and Operational Instructions' November 2009

Community Development and Community Development Officers

Depending upon the type and impact of a disaster the physical impact upon the community may be a key determinant in the community's recovery[23]. The physical impact of events such as earthquake or bushfire will significantly impact upon the capacity of an affected community. Consequently, they may be useful indicators of the need to initiate community development activities.

Community development may be required when:

- The emergency has a demonstrated impact upon community networks
- Where an affected area is experiencing or is likely to experience socio-economic disadvantage as a result of the emergency
- The nature of the emergency incurs a high degree of stress within the community that will impact upon its health and wellbeing

After time, community recovery programs should transition into regular mainstream services and activities that shift the focus from recovery, to community development[24]. Recovery agencies should consult communities on this transition of services, to ensure adequate support for the most vulnerable.

Often multiple community development activities will be taking place in an affected community. The use of a Community Development Officer to co-ordinate these activities and provide a point of contact for the affected community may be beneficial

Community Development Officers involved in community development recovery from a disaster have a very clear role to support and facilitate individual and community recovery. The underlying principle is the empowerment of individuals and communities to manage their own recovery.

Accessing Information

Individuals are encouraged to obtain information and services that will support their recovery. Municipal councils are responsible for promoting a single point of contact for residents to obtain information about the support, services and assistance that could be available. At Murrindindi Shire Council, this single point of contact is the MRM. In a complex event where one on one contact with the MRM is not possible, the MRM will coordinate and oversee all information provided to the community with support provided by the Manager Communications.

DHHS may assist local government if requested.

Financial Assistance

Recovery programs are generally in the form of advice and services for affected individuals and communities, rather than direct financial support. Individuals and households are expected to

[23] Emergency Management Australia, 'Community Development in Recovery from Disaster', September 2003

[24] Emergency Management Manual Victoria, Part 4, S4.5.3 'Activation of Recovery Activities and Transition to Post Recovery', p4-15, October 2014

actively protect their own property and assets (e.g. through adequate insurance), to minimise the financial impact of emergencies, and support their recovery.

DHHS is responsible for administering income-tested personal hardship assistance re-establishment payments to help eligible households re-establish as quickly as possible.

Psychosocial Support (Including Counselling and Advocacy)

Psychosocial Support includes supporting the emotional, spiritual cultural, psychological and social needs of individuals. A range of accessible support is needed to address the various ways people are typically affected by emergencies.

Personal support

Personal support is initiated in relief operations and can continue as part of recovery, alongside a range of individualised support programs. Various government and non-government agencies can provide personal support, including the Victorian Council of Churches (VCC), Red Cross, The Salvation Army, and DHHS.

Locally, Murrindindi Shire Council has an agreement with VCC and an MOU with Nexus Primary Health for the delivery of outreach services that target residents impacted by a trauma or emergency event.

Companion Animals

The benefits of companion animals and pets to the wellbeing of individuals and households must be considered in the development of recovery programs. Animal welfare arrangements are detailed in the Murrindindi Shire Council Emergency Animal Welfare Plan (copies are available from the MFPO or via Crisisworks (https://murrindindi.mecccentral.com) for MEMPC members or emergency services).

Targeted Recovery Programs for the Bereaved

In their planning, communications and community engagement, all agencies and groups involved in recovery must recognise the diverse needs of affected individuals and communities. As highlighted in the *National Strategy for Disaster Resilience*[25], emergencies do not impact everyone in the same way and vulnerable community members are often the hardest hit.

Murrindindi Shire Council has endeavoured to plan for all groups and community types within the municipality of Murrindindi.

Gender and Emergency Management

Men and women respond to emergencies differently, so recovery programs must be aware of gender differences. Municipal councils are responsible for working with individuals and communities to develop appropriate recovery programs that recognise and respond effectively to

[25] For and online copy visit: https://knowledge.aidr.org.au/resources/national-strategy-for-disaster-resilience/

gender differences. Men and women may have different needs and priorities in relief and recovery phases of an emergency. The different needs of men and women need to be taken in to account when developing recovery support options, communication methods and consultation mechanisms.

Evidence shows that the incidence of family violence increases post-disaster. Men are more likely to die in floods and bushfires than women and men strongly influence family decisions to stay and defend homes during bushfires, sometimes with tragic results. To positively affect such outcomes, the influence of gender roles and differences must be understood and addressed.

Murrindindi Shire Council has utilised the Municipal Association of Victoria's *Gender and Emergency Management Strategy*[26] to aid in the development of this plan.

The Strategy states that in Australia specific research into the effect gender differences and roles have on how individuals and communities prepare for, responds to and recover from disaster is sparse. However from what research exists in Australia and internationally a few general conclusions can be drawn:

- Relationship violence, child abuse and divorce have increased in the wake of overseas disasters[27]
- Men are more likely to die in floods and bushfires than women[28]
- Men strongly influence family decisions to stay and defend homes during bushfires, sometimes with tragic results[29]
- Men in a given household often have greater knowledge of formal emergency procedures than women[30]
- If women receive and understand disaster warnings, they play an important role in spreading the message through informal social networks[31]
- There is generally an increased burden of care-giving in the recovery and reconstruction phases and this is disproportionately shouldered by women.
- The many informal processes of rebuilding a sense of safety, community and resilience are also largely undertaken by women[32]
- Women face exclusions or have limited participation in some forums
- women experience more economic vulnerability post-disaster than men
- Men are less likely to access support to deal with trauma

[26] For an online copy visit: https://www.mav.asn.au/what-we-do/policy-advocacy/emergency-management/gender-and-emergency-management

[27] In the US, a 2009 study showed a four-fold increase in intimate partner violence following Hurricane Katrina. The increase was driven by first-time occurrences of violence amongst displaced people. Additionally New Zealand police also reported a 53 per cent increase in call-outs to domestic violence incidents over the weekend of the Christchurch earthquake on 4 September 2010.

[28] Amanda Ripley, 2008, *The Unthinkable: Who Survives When Disaster Strikes - and Why*, New York, Three Rivers Press

[29] Haynes K, Handmer J, McAneney J, Tibbits A, Coates L, 2010, Australian bushfire fatalities 1900-2008: exploring trends in relation to the "prepare, stay and defend or leave early" policy, 13 (3), Environmental Science and Policy, 185-194.

[30] Enarson E and Morrow H (eds), 1998, The Gendered Terrain of Disaster: Through Women's Eyes, Praeger, Santa Barbara.

[31] (ibid)

[32] (ibid)

Children and Youth

All agencies need to address the unique needs of children and youth in relief and recovery, in consultation with the Department of Human Services' *Emergency Management Planning for Children and Young People Guide*[33].

Children and young people account for around a quarter of Australia's population. They have unique needs and are particularly vulnerable in emergency events. Children are different from the adult population physically, psychologically and developmentally and their needs in emergencies and disasters should form an integral part of emergency management plans and the review process.

The Department of Education and Training (DET) is responsible for managing and coordinating school activities that address child and youth recovery.

Murrindindi Shire Council has used the DHHS guide in the preparation of this document and recognises that:

- Though all people are affected by an emergency, children and young people are uniquely vulnerable and require targeted and specialised interventions to help ensure the best opportunity to achieve a successful recovery
- Generally, there is a lack of advocacy for children and young people in the emergency management sector.
- Children are not 'little adults' and should not be managed in the same way as adults.
- Children and young people do not fit a "one-size-fits all" approach to emergency management planning. Instead, emergency management plans should consider the developmental stage of those affected.
- Children and young people can contribute to the emergency management planning process, and should be encouraged to do so

Vulnerable Persons Register

In accordance with the requirements of the DHHS, Murrindindi Shire Council has implemented the Vulnerable People in Emergencies (VPE) Policy 2012 including the creation and management of a Vulnerable Persons Register (VPR). This has included identifying vulnerable persons not receiving services and detailed for screening for the VPR. The electronic VPR has been implemented and is maintained and coordinated by Murrindindi Shire Council.

Vulnerable Facilities List

The VPE 2012 also requires that a list of local facilities where vulnerable people are likely to be situated is coordinated and maintained by Council. This list includes hospitals, schools, Aged Care Facilities and child care centres. An updated copy of this document is maintained and

[33] For an online copy visit: https://earlytraumagrief.anu.edu.au/files/EM-planning-for-children-and-young-people-web.pdf

available to Victoria Police and other agencies on Crisisworks (https://murrindindi.crisisiworks.com/)

Displaced and Dispersed People

All agencies must consider support recovery activities for isolated communities, and displaced and dispersed people in other communities. Murrindindi Shire Council works closely with isolated communities to support vulnerable people through the Vulnerable Persons Register and that the broader community is aware of potential emergency risks and have personal bushfire plans in place.

Council will work with other municipalities, the Red Cross and other support agencies to assist displaced and dispersed populations who are within Murrindindi Shire at the time of an emergency to repatriate them to their communities of origin.

Council will work with DHHS and local support agencies to support homeless people and people in tenuous housing at the time of an emergency.

Recovery Centres

Once the relief effort has passed (after a few days to a week) impacted persons may still need centralised access to services. Council may choose to establish a recovery centre to support this access. In some cases, Murrindindi Shire Council may transition a relief centre into a recovery centre, or establish a standalone recovery centre. Recovery centres provide a single point of entry for affected persons for an 'all agency, all stakeholders' integrated recovery process. Murrindindi Shire Council will specifically request various recovery support agencies to attend the recovery centre to provide advice and guidance. These agencies may include DHHS, Red Cross, Salvation Army, Nexus Primary Health and other local support providers. Services available through recovery centre include: food, clothing, legal advice, counselling support, insurance, interpreter services and essential services.

Recovery centres will run until it is determined by the MRM that a recovery centre is no longer required. Recovery is the lengthy process that follows emergency relief and it can take years in some instances to recover to an 'approximation of normal'. Recovery involves repatriation, reconstructing permanent homes and infrastructure and enabling income-generating activities so that communities can once again operate independently.

During recovery, people displaced by a disaster are assisted in returning to their homes. At every stage of emergency management, protection is required for those at risk and during the repatriation process, women and children can be particularly vulnerable.

As people begin to return home, healthcare facilities, schools and water supplies need to be rebuilt. New jobs may need to be created and access to micro-credit loans provided so that individuals can establish or re-establish their own businesses.

While emergency relief is essentially providing people with whatever they need to survive, recovery means enabling them to get back on their own two feet. Most people are eager to

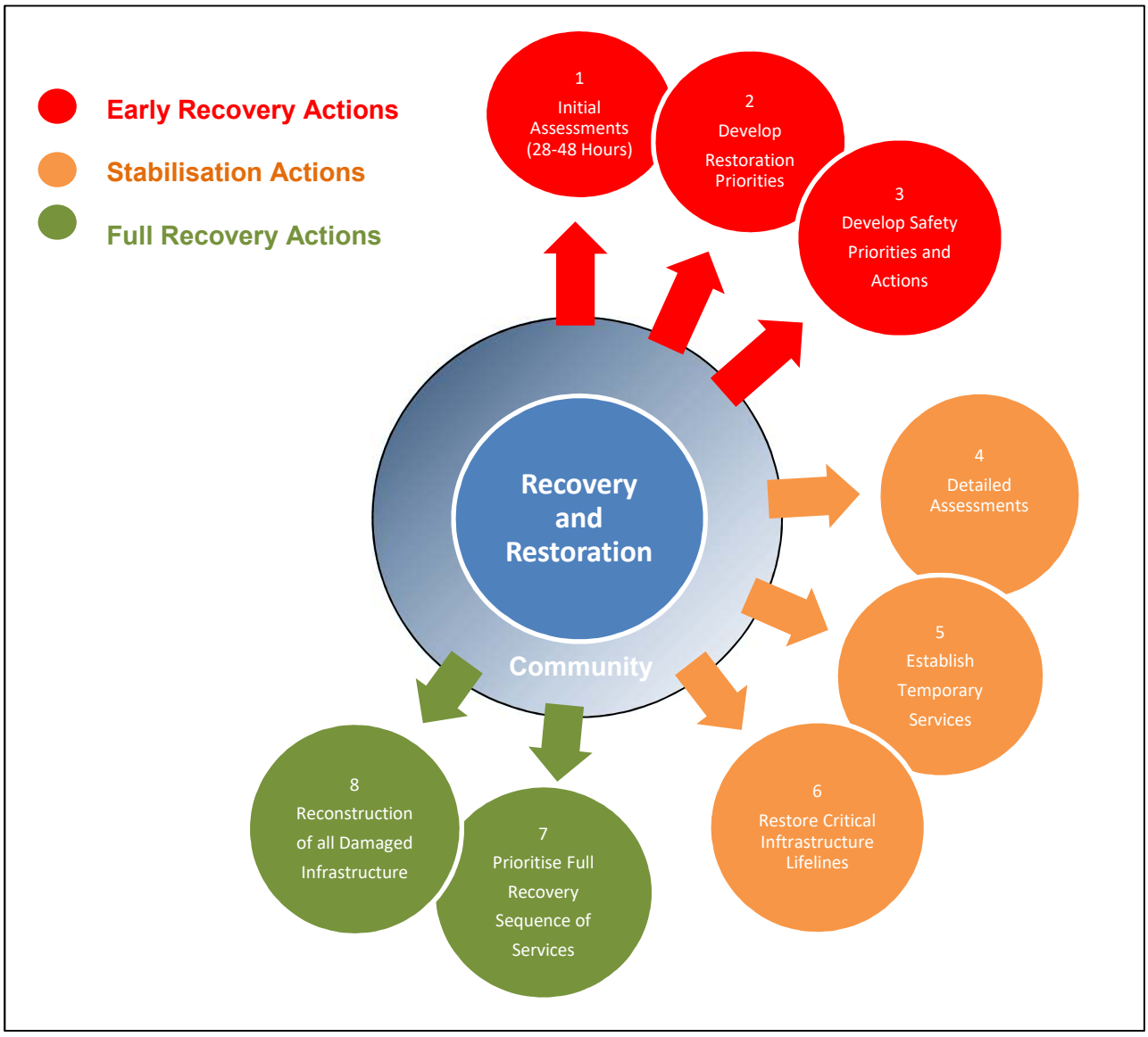
become self-sufficient – to feel confident that once the aid workers leave, they will have a viable and secure future.

If resources are exhausted Murrindindi Shire Council may request help from DHHS and other municipalities to establish, or continue running, a recovery centre.

6.8.4 *Built environment*

Infrastructure underpins the ability of private and public community services to function and assists impacted communities in their daily lives. Restoring impacted infrastructure post emergency, quickly and efficiently, assists communities in returning to an effective level of functioning more swiftly. Similarly to be able to deliver effective relief and recovery services to impacted individuals and communities the restoration of essential infrastructure and services that supports the delivery of relief and recovery needs to be prioritised.

Figure 13: Cross Sector Coordination Model[34]



Local infrastructure may also form an important part of community identity and connectedness. For example, some public buildings have an important symbolic role and the loss of such buildings can have a negative impact on community morale.

The Cross Sector Coordination Model (see figure 8 above) provides a framework that guides and supports the restoration and recovery of essential infrastructure and services.

Built environment impacts include (but are not limited to):

- Essential utilities and services
- Water, electricity, gas and telecommunications
- Roads (including bridges) and transport (including supply chains)
- Residential buildings

[34] Emergency Management Manual Victoria, Part 4 ' State Emergency Relief and Recovery Plan', p4-26, October 2014

- Water and wastewater management
- Waste and pollution management
- Community and public buildings and assets.
- Crisisworks Impact Assessment Module

Murrindindi Shire Council uses Crisisworks to allow near real-time impact assessments by Council officers on Council Assets post emergency. The application allows officers to record event impacts to Council infrastructure by using GPS location data, photographs of the damage, an entered description of the damage and initial estimates of resources required to make safe or repair for later review.

The application is a cloud based solution and can be used in areas without telecommunications as the information is stored on the device and uploaded once a reconnection to a network has been re-established. The application also allows for the real time tracking of the impact assessment team by the MERO.

Assessment of Damaged Buildings

Residential Buildings

Residential losses can contribute significantly to individual, family and community disruption. Residential damage affects:

- *Provision of shelter*
- Protection of household contents
- The feeling of belonging that is ‘home’
- Vulnerable sectors of the community
- Coordination of recovery and reconstruction operations.
- Damage may be a combination of structural and non-structural damage that may:
    - render the residence dangerous for entry
    - allow entry but prevent occupation of the building
    - require building repairs
    - be fixed by minor work
    - involve damage to contents.

Data regarding the impact to personal assets (homes, buildings, infrastructure, livestock etc) will be documented where possible when registering people at ERCs.

Timely assessment and repair of homes is critical to expediting the return of people to approximate normal life functioning. It is the responsibility of the householder and property owner to be adequately insured so that the clean-up, repair and reconstruction of damaged property can take place. The Victorian Building Authority (VBA) provides building advice and information and in some cases can assist in speeding up the building cycle after an emergency event.

Should the state need to assist in respect of clean up and demolition DJPR will coordinate, as appropriate.

Clean up and Demolition of Damaged Structures

Council will coordinate the clean-up and demolition of its own damaged assets. It is the responsibility of the householder, private owner or insurance company to clean up and dispose of privately owned damaged structures.

A Council building inspector will be available to offer advice, including demolition and clean up, and assessments of buildings if required.

Council can apply to the Environment Protection Authority (EPA) to seek emergency disposal of waste, which may enable partial or complete waiving of disposal fees for ratepayers

Building Advice and Information

Impacted persons who believe that they may have asbestos on site or who need an assessment of personal buildings impacted by an emergency are encouraged to contact council's building department.

When rebuilding, information on building standards in Murrindindi Shire is available online[35] and by phoning the Murrindindi Shire Council building department on 5772 0333

If temporary homes are required post emergency, Murrindindi Shire Council will coordinate their location and construction with assistance from the DJPR.

Essential Utilities and Services (including banking, education, and health)

Buildings that supply the community with essential services such as education, health care and banking, will be considered a priority for restoration by Murrindindi Shire Council.

Critical Infrastructure

Each of the main infrastructure suppliers in Murrindindi Shire (electricity, water, gas and telecommunications) has a plan for dealing with impacts to their services. It is beyond the scope of this plan to capture that information.

Murrindindi Shire Council will still be required to perform a number of essential community services during an emergency (e.g.: meals on wheels, client care etc). As a result, the Alexandra Office (Perkins St, Alexandra) has a backup generator to provide power during power outages.

Communications

The loss of telephone services, both cabled and cellular, will adversely impact other infrastructure operators, in addition to general commerce and the function of communities. Any disruption to internet services can be expected to have a like effect.

[35] For further information visit: https://www.murrindindi.vic.gov.au/Your-Property/Planning-and-Building/Building-and-Construction

All of the communications providers have plans in place to help in the restoration of impacted assets. The timing and restoration of these assets is entirely the responsibility of the communication providers and it is beyond the capacity of this plan to describe these processes.

Loss of television and radio services can be anticipated to have a negative influence on the psyche of impacted communities.

Power and Gas

Damage and loss to energy systems has far reaching implications for infrastructure in other sectors, upon which it is dependent, in whole or in part:

- Transportation systems:
  - Rail systems (such as electrified networks, ticketing systems and signals), traffic signals and liquid fuel supplies.
- Water
  - Loss of pressure from pump failure, contamination issues and sewerage systems.
- Communication systems
  - Cellular services, computer systems, internet and cable television.

In addition, loss of energy supplies to industry and businesses in affected areas leads to closure and economic impacts. Health and education services will also be affected.

Loss to domestic customers affects basic needs in terms of the provision of heating, cooling and light, which will have health implications. Vulnerable members of the community are most at risk. Restoration of services is often a complex task involving a diversity of stakeholders and priorities should be determined as quickly as possible. DJPR is the portfolio department responsible for power and gas supplies.

Roads and Transport

Transportation systems, including rail, road and air, provide mobility for passengers as well as the movement of goods from one point to another. Highways are among the oldest of infrastructure lifeline systems. These systems can often be interrupted and destroyed from the impact of a various number of hazards. Bridges represent a particularly vulnerable link in transport systems.

Disruption to transport systems affects communities and impedes recovery efforts, such as the restoration of other critical infrastructure and services. In any major recovery effort, the situation demands simultaneous actions at an accelerated pace.

In Murrindindi Shire, restoration of roads and transports will focus on:

- The restoration of arterial routes and local road infrastructure, providing access and egress to the affected areas (including local roads and bridges)
- The re-establishment of public transport services where possible
- Prioritisation and re-instatement of critical supply chains such as road access to allow deliveries of food, fuel and other essential community needs.

The Department of Transport (DOT) is the portfolio department with responsibility for transport and transport services.

Water and Wastewater

When a community is affected by an emergency, they often require the provision of emergency water and wastewater management to support health and wellbeing.

When the size and complexity of emergency recovery exceeds the local resources, coordination of emergency drinking water supplies and sewerage services becomes the responsibility of DELWP. DHHS is responsible for providing advice about the safety of drinking water.

Waste and Pollution

As a direct result of an emergency or due to the emergency response, considerable quantities of additional waste and disruption to waste collection and disposal systems can occur. The waste management system is dependent on the functioning of other municipal systems, in particular road networks and communications. These dependencies can result in the impacting of the emergency on waste services to properties directly affected, and also those not directly involved.

Air, water pollution and soil contamination can result from the waste derived from an emergency, which may generate larger volumes of waste, and more hazardous waste, than under normal conditions. The Environment Protection Authority is responsible for leading the development of strategies dealing with pollution management, including:

- Removal, transport and disposal of solid waste and debris
- Mitigation of the impact of wastewater on catchments, waterways, marine environments and human health
- Response to the health, visibility and amenity impacts of air pollution caused by smoke, dust, chemicals and unpleasant odours
- Supplementation of disrupted systems and facilities to manage the ongoing generation of human waste (sewerage) and garbage.

Council has responsibility for delivering waste collection and disposal services from households, businesses and public places. During and after any emergency Council will remain responsible for ongoing collection and disposal of household garbage via the kerbside service. This service will continue to the fullest extent possible during the emergency. In the early recovery and stabilisation phases the focus will be on ensuring all ratepayers have bins or access to bins for disposal of household and putrescibles rubbish. If necessary communal collection points can be established as a first response, to be followed by full re-instatement of the kerbside collection service as soon as practicable.

Waste will continue to be delivered to the Alexandra Landfill, unless it has been compromised by the emergency in which case an alternative disposal arrangement would be sought with another nearby landfill.

Council’s transfer stations will continue to operate to the fullest extent possible during and after the emergency. Council will determine as soon as possible after the emergency what level of

assistance will be provided to ratepayers. This may include discounted or free disposal of waste and debris for affected ratepayers.

Large volumes of inert waste can be disposed direct to the Alexandra Landfill. The site contains a cell constructed specifically for that purpose after the 2009 wildfires which was only partially filled. Depending on the scale and classification of the emergency, an emergency waste discharge permit can be sought from EPA which can make disposal more convenient and reduce the costs to Council and ratepayers.

Council is able to facilitate provision of waste services at staging grounds in the form of wheelie bins or skip bins. Due to the fact that increased clean-up waste volumes may have a significant financial impact on Council, recovery agencies need to discuss waste disposal arrangements at the earliest opportunity for significant events. Council will be responsible for establishing and communicating tipping fees, and for maintaining an account of costs incurred.

For local and regional events, management of the waste issues within the municipality will remain with the waste officer. For events of state or national significance, the event and recovery may be managed at a state level, with coordination by DJPR as required.

The provision of waste services to the community at all phases of an emergency presents opportunities to communicate with the public, including use of collection vehicles as travelling billboards and use of resource recovery centres as information and social hubs.

Community and Public Buildings and Assets

The state government, local councils, community and private sector all have responsibilities when community facilities are damaged or destroyed.

Damaged facilities can include:

- Community/neighbourhood centres and places for congregation
- Schools and learning institutions
- Kindergartens and child care facilities
- Places of spiritual worship (including churches, mosques, graveyards and memorials)
- Sporting and recreational facilities and clubs
- Cultural centres
- Entertainment venues
- Restaurants and cafes.

Each of these facilities has the potential to assist the community in its recovery process, but if damaged would be unable to perform their community functions. The damage may be structural damage to buildings or damage to furnishings and contents, or both. The property manager is responsible for ensuring adequate insurance is in place to enable the restoration of community facilities. Critical public buildings, infrastructure and facilities are pre-identified as priorities in the recovery planning process and adequate arrangements developed for their restoration or replacement if required.

If a large scale emergency occurs where considerable amounts of infrastructure are impacted, all levels of government will work together on the restoration, not only rebuilding like for like, but also taking the opportunity to restructure community infrastructure if required (for example, co-location of pre-schools, playgroups and kindergartens etc)

Departments are responsible for the restoration of critical infrastructure that sits within their portfolio, in conjunction with the Victorian Managed Insurance Authority and relevant private operators. Local councils are similarly responsible for council owned and managed assets and infrastructure, working with local businesses where appropriate.

6.8.5 *Economic environment*

The economic recovery environment addresses the economic impact of an emergency, which may include impacts on individuals and households, small and large businesses, industries, tourism, agriculture and the broader economy. Economic impacts range from immediate and intense, such as loss of personal income or loss or damage to business premises or agricultural property, to long-term and chronic, such as loss of workforce due to displacement, loss of workplace and/or resource (e.g. a forest) or reluctance of tourists to travel to hazard-prone areas. Early consideration of the economic consequences of an event is critical for community recovery. The viability of communities affected by emergencies can be dependent on the ability of local businesses to recover. Often local community leaders are also local business leaders. The viability of local businesses can impact on decisions within the broader community about whether or not residents will return.

Local Economic Sustainability

It is the responsibility of individuals and businesses to maintain adequate insurance and establish continuity plans to help reduce the impact of emergencies, though, history shows that this is often not the reality.

Locally, Murrindindi Shire Council is the coordinator of the activities required in the economic recovery environment. At the regional and state level, Department of Jobs, Precincts and Resources (DJPR) is responsible. Agriculture Victoria works under the auspices of DJPR. Local economic rebuilding and recovery is essential to the effective recovery of the wider community as the community and the economy are very closely linked.

The immediate challenge for an impacted community is to restore markets and access to markets for goods, services and labour affected by the emergency. Coherent and comprehensive strategies for post-emergency employment promotion are essential as post emergency employment supports short-term stability, reintegration, economic growth and the recreation of a sustainable economy.

Support for Individuals and Households

The economic consequences of emergency events for individuals and households can include impacts on:

- Employment security (either the availability of work or the ability of people to undertake work)
- Family income - payment of salaries or wages
- Ability to service debts
- Access to bank accounts, liquefiable assets and insurance payouts
- Individuals and households are responsible for maintaining insurance and other risk mitigation strategies to minimise the economic impact of emergencies.

A variety of programs may be made available to assist with the immediate economic impact of an emergency on individuals and households. These relief arrangements for individuals and households are identified in Section 3 above. Recovery programs will focus on supporting individuals and households to return to their pre-existing livelihoods or establish alternative livelihoods. Recovery programs are generally in the form of advice and services, rather than direct financial support.

Support for Businesses

The economic consequences of emergency events for businesses can include:

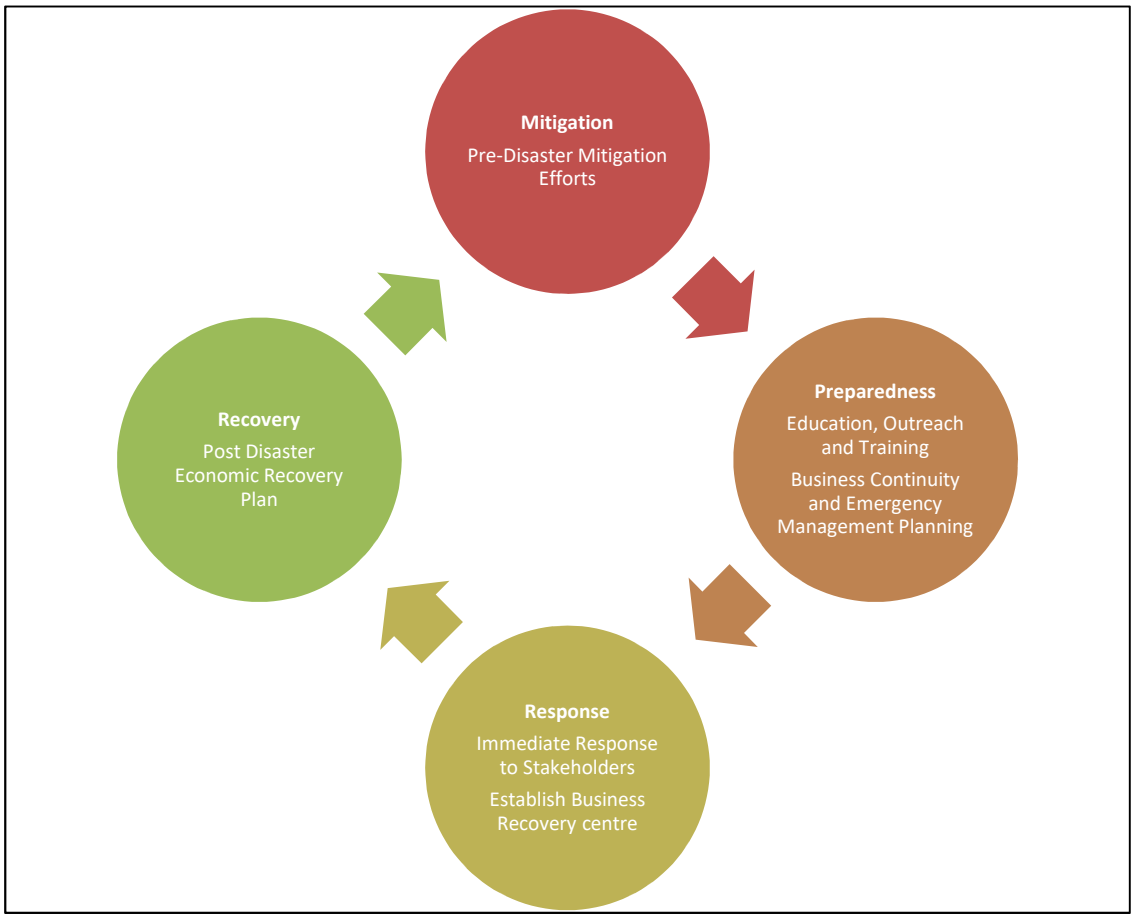
- unavailability of workers
- damage to physical premises and/or stock
- reduction in trade for individual businesses
- impact on cash flow and viability.

Individual businesses are responsible for maintaining insurance and business continuity plans to minimise the economic impact of emergencies.

Targeted recovery activities will focus on the provision of information and advice to businesses to support decision making and encourage a return to business. They may also involve the use of local businesses in recovery activities, development and promotion of local employment opportunities, local tourism and support of locally affected businesses.

Murrindindi Shire Council is responsible for the local management and delivery of economic recovery activities for businesses in the Shire of Murrindindi. At the state and regional level DJPR can assist municipal councils with this role. In the case of major disasters, such as the 2009 bushfires, a specialist authority may be established (such as the Victorian Bushfire Reconstruction and Recovery Authority) to coordinate rebuilding and recovery initiatives.

Figure 14: Emergency phases that businesses need to be aware of and plan for



Mitigation and Planning for Emergencies

Preparing business communities for disaster is a critical pillar of overall community planning and resilience. Investment into building local business capacity is never a bad investment as whether it is a natural disaster or an economic crisis, sound planning can provide a buffer and a solid building block for recovery.

Response Phase - Impact Assessment and Ongoing Data Gathering

Obtaining early and accurate information regarding the impact of an event is a core expectation on local government. Impacts on individuals, infrastructure and the community are generally measured and managed initially through municipal emergency recovery arrangements.

In terms of business recovery, a rapid impact assessment is a critical step that can help facilitate the appropriate response from government. Data gathering methods will vary given the scale and the timing of the assessment – phone calls, inspections, surveys and self-reporting via insurance claims, media regulatory channels and the like. Initial assessment is of a 'top line' nature – for example best estimates of how many commercial businesses have incurred physical damage and from this there can be some extrapolation of impacts on employees, suppliers, etc.

Establishing a Business Recovery Centre

Establishing a business centre is an integral feature of planning for business response to an emergency. Upon presenting at a relief centre to attend to personal needs, business operators will then be directed to a suite of business case management services.

In the early days of relief centre establishment, an area will be quarantined for a business support presence. Individual needs will of course take precedence but referral for business related needs must be streamlined and accessible. The need for a dedicated business support area is a point that cannot be made strongly enough – there are many barriers to business owners seeking support from perceptions such as their issues not being as important or fear of backlash i.e. "I have nowhere to live and you are worried about your business" to assumptions that they have no entitlement to support or no-one can remedy their issues.

Following the initial recovery referral area, the business support 'space' can transform into a hub for coordinated business case management from suitably qualified agencies working in partnership. At an appropriate time, a separate location to the emergency relief centre is ideal.

Business Recovery

The structure of recovery teams varies greatly from council to council based on scale of event, organisational structure and the level of resourcing available. There is no recommended single effective structure; however there are a number of principles which optimise effectiveness:

- Economic development cannot be a lone ranger nor can it be an afterthought, the folio must be well represented in the adopted structure.
- Core business is not different from recovery; it is just a matter of priority shifting.
- Temporary resources can deliver highly effective project output freeing up time for permanent resources to make best use of their local networks to support the recovery effort. (NOTE Temporary resources can only be effective if solid plans/templates are in place).

Business Recovery Resources

Murrindindi Shire Council developed a *Restore Your Business Community – Practitioners Handbook*[36] after the 2009 fires that captures lessons learned, tips and resources to guide economic development practitioners in helping their business communities through disaster planning, response and recovery.

[36]For an online copy, visit: https://www.murrindindi.vic.gov.au/Your-Business/Business-Support-and-Advice

Business Victoria's website[37] provides guidance on business preparedness, risk mitigation and business continuity. CPA Australia also has developed a useful toolkit for business recovery post disaster[38]

The Tourism Victoria website[39] includes a series of downloadable resources to assist businesses and local and regional tourism organisations plan for, respond to and recover from emergencies.

Business Recovery Group

If the circumstances warrant, Murrindindi Shire Council will assist in the creation of a business recovery group to assist, advice and where appropriate coordinate local business recovery actions. The recovery initiatives should be undertaken in consultation with established local organisations and/or regionally developed 'economic' recovery group. Key Stakeholders may include (but are not limited to):

- Local Business and Tourism Association
- Regional Development Victoria
- Office of the Victorian Small Business Commissioner
- Small Business Mentoring Service
- Agribusiness association (regional)
- Rural Finance Corporation
- Council

This group should be established to assist with:

- Consultation and stakeholder engagement, develop knowledge and information systems that identify the medium to long term recovery needs of businesses affected by the event;
- Developing and coordinating local, regional and metropolitan programs and events that will assist the recovery of businesses affected by the event;
- Informing and influencing Government and associated agencies in relation to programs and funding needs to aid business recovery;
- Publicising and facilitating access to support services that will assist the recovery of businesses affected by the event; and
- Monitoring and reporting to stakeholders and Government on the outcomes of business recovery programs.

Murrindindi Shire Council will maintain involvement throughout the 'economic' recovery process and will:

- Support the development of an Economic Recovery Strategy
- Advocate for the use of local contractors/businesses in the recovery process and, if unable, develop strategies to support local contractors/businesses
- Conduct local networking meetings and information sessions

[37] Visit: www.business.vic.gov.au
[38] For an online copy, visit: http://www.cpaaustralia.com.au/professional-resources/business-management/business-recovery/disaster-recovery-toolkit
[39] Visit: https://www.business.vic.gov.au/tourism-industry-resources

- Where funding permits, recruit Business Support Officers to provide independent business development advice to Murrindindi Shire businesses impacted by the event and
- Support access to the small business mentoring service to businesses either directly or indirectly impacted

Agricultural Recovery

Emergencies can have dramatic effects on the welfare of livestock, companion animals and wildlife, and the loss and damage suffered by primary producers.

Agriculture Victoria is responsible for policy development, state-wide coordination and operational delivery in regards to agriculture. Locally, Agriculture Victoria have responsibility with assistance from Murrindindi Shire Council.

After bushfire and floods Agriculture Victoria has a primary support role in the recovery of rural enterprises. Agriculture Victoria mainly focuses on:

- Assessing losses of agricultural assets and livestock, and the needs of affected persons and communities
- Assessing injured stock and provide advice on options such as humane destruction, emergency slaughter or treatment
- Assisting with humane destruction of burnt livestock where feasible
- Advising individuals, communities and governments agencies on re-establishing rural enterprises or alternative strategies for economic recovery
- Advising local councils and shires on disposal of dead or injured stock
- Advising distribution bodies (such as the Victorian Farmers Federation) on needs for donated fodder
- Delivering recovery projects identified by government to support the short and medium term recovery of individuals, communities and industries.

Agriculture Recovery Objectives

Agriculture Victoria aims to coordinate the safe, effective, efficient and timely relief services to those affected by:

- Establishing effective communication channels between various agencies, organisations and communities
- Scoping livestock, companion animal and wildlife welfare impacts, issues and responding to identified needs
- Collecting and providing loss and damage assessment information to inform immediate priorities and recovery programs
- Providing an avenue to refer individuals' needs to relevant agencies.
- Murrindindi Shire Council will support this process where required.

Animal Welfare

Agriculture Victoria will coordinate all animal welfare (livestock, companion animals and wildlife) and work with municipal councils, Royal Society for the Prevention of Cruelty to Animals (RSPCA), Australian Veterinary Association (AVA) and volunteer groups involved with assisting the recovery of animals after emergencies. This includes access to adequate feed and water, provision of shelter, housing and adequate space, freedom from pain, injury, disease and obvious discomfort, and freedom from unnecessary fear and distress. Key animal welfare considerations include:

- Maintaining acceptable animal welfare standards for all animal species
- Destruction of the minimum number of animals during the emergency response
- Best use of available resources (personnel, infrastructure, feed and water).

Emergency Animal Welfare Plan

To aid in the delivery of its responsibilities Murrindindi Shire Council has developed an Emergency Animal Welfare Plan (EAWP) which is designed to help mitigate the impact of emergency incidents on stock or animal welfare at a local level and to ensure post event recovery flows as smoothly as possible. The EAWP is a sub-plan to the Murrindindi Shire Council MEMP. The plan is available for MEMPC members and emergency agency representatives on Crisisworks (http://murrindindi.mecccental.com).

The EAWP describes local arrangements for animal and stock welfare management in an emergency and addresses the following risk areas:

- Bushfire
- Domestic and wildlife welfare
- Disease
- Wind/Storm Damage
- Flood Events
- Drought

The plan includes contact directories, activation and communication procedures and roles and responsibilities of municipal Local Laws Officers and other external agencies providing animal/stock welfare and related services in the event of an emergency situation. It covers planning, training of staff and available resources. Facilities where animals may be housed for the duration of an emergency and local contact information are included in the plan.

At the State level, Agriculture Victoria has developed the *Victorian Emergency Animal Welfare Plan*[40] that details their response to animal welfare.

Agriculture Victoria will also assess and assist with urgent animal welfare (livestock, companion animals and wildlife) needs of rural land managers, with emphasis in the first instance on the relief of animal suffering.

[40] Copies of the plan can be found at: http://agriculture.vic.gov.au/agriculture/emergencies/response/victorian-emergency-animal-welfare-plan

Where it is not possible for DELWP staff to attend an emergency involving native wildlife, Murrindindi Shire Council staff can assess and dispose of stock if required.

Agriculture Victoria and Environment Protection Authority (EPA) are also able to provide direction to municipal councils regarding the location of stock disposal sites. Potential stock disposal sites in Murrindindi Shire Council are captured in the Murrindindi Shire Council EAWP.

Loss and damage assessment

In significant incidents, Agriculture Victoria will attempt to contact all affected properties within the Farming, Rural Activity, Rural Conservation and Green Wedge Zones of the affected area to assess the impact of all agricultural losses and damage, commence remediation activities and further plan for recovery. Where it is not possible or practical for DEDJTR to contact people in these zones Murrindindi Shire Council Local Laws staff can be activated to complete these tasks in negotiation with Agriculture Victoria.

Referral of needs

If any urgent needs are identified during relief activities, Agriculture Victoria or Murrindindi Shire Council Local Laws staff will refer these needs to the appropriate agency.

Emergency fodder

Agriculture Victoria and the Victorian Farmers Federation (VFF) may provide emergency fodder for a maximum of four weeks following an emergency where significant amounts of pasture and/or fodder has been lost. Agriculture Victoria and VFF will jointly consider the need on a case-by case basis. Murrindindi Shire Council may also have some capacity to assist the DJPR and VFF locally through the use of Council land or depots for the delivery and storage of fodder.

Recovery arrangements

Following significant incidents, Agriculture Victoria may establish a longer term recovery program. Agriculture Victoria is a key support agency that takes a lead role in the provision of recovery services to commercial primary producers and rural land managers. The operational objective of a recovery program is to support primary producers in improving productivity after natural disasters and emergencies through the design and implementation of appropriate assistance programs.

The focus of an Agriculture Victoria rural recovery program is on:

- supporting the wellbeing of rural communities;
- revitalising the economy of rural communities through reestablishment of agricultural enterprises; and
- rehabilitation of productive land and the surrounding environment.

Case management

Where primary producers are impacted the MRM will liaise with the DJPR to determine what level of case management deployment the department will activate, to ensure coordination and minimise duplication.

Fencing

It is the responsibility of the owner of private land to fence their property and secure stock within their boundary. Landholders are expected to manage risks to their assets from the potential impact of emergencies. All landholders are expected to have appropriate levels of insurance cover for boundary and internal fences. Assistance can often be provided to rural landholders by volunteer groups to assist in dismantling damaged fences and reconstructing fences. Murrindindi Shire Council, with support from other agencies, will coordinate local volunteer efforts after emergencies.

The Victorian Government will pay 100 per cent of the restoration costs of fences damaged on private land as a result of machinery used by fire agencies to control bushfires. This includes damage to fences by machinery such as bull-dozers entering the property and/or constructing fire control lines, and other fire emergency vehicles obtaining access.

The Victorian Government will meet half the cost of materials to replace or repair fencing between private land and all national parks, state parks and state forests destroyed or damaged by bushfires.

Wellbeing and Economic Recovery of Rural Communities

The recovery and economic wellbeing of rural communities is managed and coordinated at the local level by both DJPR (including Agriculture Victoria) and Council. Agriculture Victoria has responsibilities regarding the recovery of agriculture and DJPR, industry. Council has more of a focus on personal support but can also provide business advice through its economic development department that supports both local business and tourism.

Rehabilitation of Productive Land

It is the responsibility of Agriculture Victoria to work with local land holders in the rehabilitation and restoration of productive land. Murrindindi Shire Council will assist where possible and when requested to do so.

6.8.6 *Natural environment*

A third of Victoria is public land comprising parks, forests and reserves. Emergencies that occur on this land have multiple consequences for biodiversity and ecosystem, economic and social values. Actions to recover from these emergencies may start while the emergency is still underway, and can continue for many months or years.

Locally, Murrindindi Shire has approximately 50% tree cover and much of this area comprises State Forests, Parks and National Parks. Recovery of these areas post emergency is a long process; large areas of the Shire are still recovering from the impacts of the February 2009 bushfires.

Natural Environment Roles and Responsibilities – DELWP and Forest Fire Management (FFM)

DELWP is responsible for coordinating natural environment recovery activities at the local, regional and state level, by working closely with partner agencies such as Parks Victoria, the EPA, catchment management authorities and communities. The *Code of Practice for Bushfire Management on Public Land*[41] (2012) outlines how DELWP and FFM approach recovery after bushfire; a similar approach is taken for other emergency events.

DELWP has a number of key responsibilities post bushfire or emergency which include:

- Protecting threatened habitats (including controlling the spread of invasive species)
- Surveying and protecting threatened species (including bird, marsupial, aquatic and plant species)
- Surveying and protecting aquatic and terrestrial ecosystems
- Regenerating forests (including for ecological purposes and future timber use)
- Restoring public land (such as walking tracks, fencing, and recreational and visitor facilities)
- Surveying and protecting sites of cultural heritage significance (Aboriginal and Non-Aboriginal)

Natural Environment - Council's Role and Responsibility

Council's main role in the natural recovery environment is as a support agency to government and community agencies and landholders. Local Government is able to link community members, groups and agencies to state departments and is also able to lobby for and connect groups and landholders with funding arrangements to carry out post impact restoration works in the natural recovery environment.

Council has actively worked with many community groups and agencies in fire recovery in the past such as 'friends-of' groups and Landcare groups and has been able to advocate on their behalf to State government agencies for resources and funding. Council has also worked with and offered advice to impacted landholders in the Shire.

Biodiversity and Ecosystem Impacts

Generally the natural environment will recover from emergencies over time without the need for intervention, but sometimes assistance is needed to help ecosystems recover, and the activities that can be undertaken include:

- Repairing the damage caused by the emergency or emergency response
- Protecting water quality and supply
- Controlling and preventing erosion after emergencies
- Protecting threatened habitats by controlling the spread of invasive species of plants and animals within the impacted area/s (this includes marine, coastal and waterway habitats)
- Surveying and protecting threatened bird, marsupial and aquatic species

[41] For a copy of the code, visit: https://www.ffm.vic.gov.au/who-we-are/code-of-practice

- Surveying and protecting threatened plant species
- Surveying and protecting aquatic and terrestrial ecosystems
- Regenerating forests for ecological purposes
- Wildlife rescue.

These activities are undertaken by DELWP, Parks Victoria, catchment management authorities or municipal councils as appropriate after emergency events.

Economic Impacts

Emergencies on public land or the marine environment can lead to impacts on the economies of communities and regions through the direct damage to the forestry, fishing, aquaculture, apiary and farming industries and indirectly to other industries such as nature based tourism, cultural based tourism and recreational tourism. Activities that can be undertaken to assist restore the economic viability of impacted industries includes:

- restoring access to impacted public land
- reopening the road network
- restoring visitor facilities
- monitoring and surveying impacted habitats
- regenerating forests for future timber use
- assisting farmers restore boundary fences between farms and public land (note, this service is only available after bushfire events.

These activities are undertaken by DELWP, FFM, Parks Victoria, VicForests and municipal councils as appropriate after emergency events.

Social Impacts

Natural environments have value to communities as they provide opportunities for recreation and a sense of connectedness to the environment and land. By undertaking recovery activities, the social values that have been impacted can start to be restored. Social impact recovery actions can include:

- Reopening / repairing walking tracks
- Restoring / repairing recreational facilities
- Surveying and protecting sites of cultural heritage significance.

These activities are undertaken by DELWP, Parks Victoria and municipal councils as appropriate after emergency events in consultation with local communities.

Protecting Water Quality and Supply

Bushfires particularly can affect the quality and supply of drinking water by contaminating catchment areas. Most critical effects occur if there is heavy rain soon after fire as loss off vegetation and altered soil structure can make fire-affected soil more erodible. Runoff can carry

sediments and pollutants that affect aquatic environments, drinking water quality and agricultural industries.

The extent to which water quality is affected is dependent on a number of factors including

- The size and extent of the fire
- The type of surrounding vegetation
- Soil and erosions
- The geographical features and size of the catchment and
- The time period between the last fire and a significant rain event

Controlling and Preventing Erosion Post Bushfire

FFM is the responsible agency for the control and prevention of erosion post bushfire on public land in Victoria. Council may assist FFM if and when required.

Agriculture Victoria will coordinate programs and support for the agricultural community regarding control and prevention of erosion on private land post bushfire. This may include field days and demonstration days that educate landholders on erosion control techniques suitable for use on impacted properties.

For landholders that are fire affected, Landcare produces a fact sheet on erosion control after bushfires [42]

Council Managed Land - Surveying Post Fire, During Recovery and Post Recovery

Council's role is to take responsibility in surveying its own land, but limited funding available post recovery makes it difficult to resource and undertake comprehensively. Other agencies have been more successful in securing funding for this purpose, and so partnerships with these agencies are important, largely Landcare and the Goulburn-Broken Catchment Management Authority (GBCMA).

Restoring Council Managed Public Land

There is a need to prioritise areas that require restoration, concentrating on areas that have the greatest environmental significance coupled with the consideration of social and economic impacts on people.

This process will either result in projects to refurbish existing, or construct new assets all of which has an impact on the natural environment. Projects need to ensure appropriate environmental impact assessments are undertaken, and that strategies to manage impacts are adopted into design, planning, delivery and finalisation of each project. The impact needs to viewed in two ways

Impact of construction process on the natural surroundings of the environment: this includes, soil, existing vegetation, waterways and other environmental constraints. Council has its own policy

[42] For a copy of the brochure, visit: https://www.landcarevic.org.au/groups/goulburnbroken/sundayck-dryck/erosion-control-after-the-fires/

and procedures to follow (Environmental Standards in Infrastructure Works Policy). In addition these processes may require other approvals such as planning scheme approvals or permits through state and federal legislation.

If it is a built asset, consideration of energy efficient and sustainable design: this includes refurbishment or construction of new structures considering building envelope, lighting, orientation, heating and cooling systems, and opportunities to generate renewable energy. Council has its own policy around energy management, and is conscious of long term operational costs of managing refurbished or new assets post an emergency event.

6.9 Recovery – Municipal Arrangements

6.9.1 *Recovery Implementation*

The MRM is to initiate recovery activities, as documented in this section of the Plan, as soon as possible when required after an emergency occurs.

The MRM shall convene a meeting with other recovery agencies as soon as is practical, where the emergency is of a magnitude that requires their involvement.

A range of recovery activities may be required after an emergency.

Implementation of the functional areas of recovery is as per the EMMV.

Recovery coordination arrangements will be used in any situation where more than one department, agency or organisation is required to provide services to assist communities and individuals recover from the impact of an emergency. Recovery coordination arrangements provide for:

- Assessment of impacts
- Input of affected community into decision making
- Coordination of service provision and
- Communication strategies.

The responsibility of municipal recovery coordination will rest with the MRM

6.9.2 *Activation and Notification*

The Municipal Emergency Response Coordinator (MERC) will advise recovery agencies of the emergency to the MRM and MERO. The MRM or delegate is to initiate recovery and/or preparation activities as documented in these arrangements as soon as practicable after an emergency or when advance notice of an impending emergency is known.

On receiving advice of an emergency, the MRM will bring together the responsible agencies to ensure that services and activities are provided in a coordinated manner, thus activating recovery arrangements.

Circumstances where the Regional Recovery Manager (RMR) may be required to inform the MRM of the need for recovery activities may include those where:

- The event has occurred outside the municipal district
- The response to the event is small scale, but the potential impact is large and
- There has been no need to activate municipal resources during the response to the event.

The recovery arrangements may be implemented in support of events where no response activities were required.

6.9.3 *Recovery Centres*

A Recovery Centre is a location designated by Council, in consultation with the Recovery Committee, to service affected people after an emergency event.

A recovery centre is a building in which a co-ordinated service response is provided to support emergency affected communities in the restoration of their emotional, social, economic, and physical well-being.

They may be located in the same places as ERCs or in another more suitable location if one is appropriate.

6.9.4 *Recovery Operational Steps*

There are five primary phases or steps in emergency recovery operations that are related to a continuum relative to small, medium and large scale emergencies.

The following table is an example of recovery time continuum for large scale emergency. The time continuum for small and medium emergencies may differ from those outlined below.

1. During the incident (the response phase)
2. Immediately after the incident (1-7 days)
3. Short Term (2-4 weeks)
4. Medium Term (2-3 weeks)
5. Long term (4 months and onwards; up to 18 months or 2 years depending on the impact of the incident)

Figure 15: Recovery Continuum

During the Incident

Activity	Responsibility
Conduct a RIA	EMCG with assistance from EMV and DHHS
Activate emergency relief arrangements (As per Relief and Recovery Plan Appendix B1)	MERC, MRM
Assess the need, an plan for, an ERC based upon data collected from RIA	MRM, planning department.

Immediately After the Incident (1-7 Days)

Activity	Responsibility
Establish and manage an emergency phone line (s) Direct unmanned phones to mobile.	MERO, MRM, IT
Continue the needs assessment and impact assessment to identify: • What needs to be done • Who will undertake those tasks • Who will they be coordinated by (who will do what, how where and when)	EMCG, DHHS, planning department.
Establish a mechanism for the provision of essential needs in the impacted area e.g. resources (financial, human & equipment), water, stock feed, temporary fencing, fuel, food and material aid	DHHS, EMCG
Activate a Recovery centre in the impacted area if necessary	MRM, DHHS

Activity	Responsibility
Initiate the recovery planning process including the: • Establishment of the CRC • Development of a community recovery plan	MRM, DHHS, DELWP, DJPR
If the recovery effort is broader than Murrindindi Shire, The Regional Recovery Committee may be activated to co-ordinate regional resources	DHHS, MRM MERO
Financial assistance – including hardship grants etc	DHHS, Centrelink
Temporary housing	MRM, DHHS
Reinstatement of Community Access Road Network	Manager Community Assets (MCA)
Scoping of extent of infrastructure damage	MCA

Short Term (2-4 Weeks)

Activity	Responsibility
Continue to monitor needs through the impact assessment process and community feedback	Community Recovery Committee
Continue the recovery planning process including the community recovery plan developed through engagement with the community	MRM, DHHS
Utilise community development workers and community engagement through: • Information sharing • Consultation • Supporting community initiatives and active participation	MRM
Financial assistance and temporary housing	DHHS, MRM
Start planning for PIA	EMCG
Reinstatement of Community Access – road network initial contact with Vicroads on NDF requirements • Scale of recovery • Development of recovery plan • Initial estimated costs • Approvals for NDF funding	MCA MCA & Director Assets & Development & Manager Business Services

Medium Term (2-3 Months)

Activity	Responsibility
Continue to implement community recovery plan	MRM, CRC
Commence planning for the development of a transition strategy to enable the timely and appropriate withdrawal of dedicated relief and recovery services and activities and transition to existing community support services.	MRM, DHHS, CRC
Conduct PIA	EMCG
• Reinstatement of Community Access – road network (major events) • Update and implementation of the Infrastructure Recovery Plan, Subject to Vic Roads Approval	MCA MCA

Long Term (Month 4 and Onwards)

Activity	Responsibility
Monitor, review and evaluate the community recovery plan	MRM, CRC

Continue the development of the transition strategy to support a seamless transition of recovery activities (council and support agencies) into core business. Community implementation of transition strategy.	MRM, CRC
Update and Implementation of the Infrastructure Recovery Plan, subject to Vicroads approvals	MCA

6.9.5 *Community Information and Briefing in Recovery*

Community information and briefing are vital components that assist in the recovery of emergency affected individuals and communities. Community information sessions will be conducted as soon as possible after an emergency in partnership with Victoria Police, CFA and SES.

The development of relevant and appropriate community resources and activities empower the community and enhance their resilience, thereby assisting their recovery process.

Murrindindi Shire Council will actively engage the community through a range of mechanisms including media releases, advertisements, newsletters, local radio (UGFM), Council website, Social Media and local services networks.

The affected community will need to be advised of the recovery services available to them. The MRM will ensure community is advised of the recovery services through regular Newsletters produced and circulated using the strategies previously outlined in Part 5 of this Plan, Public Information and Warnings.

In addition the strategies outlined in Part 5 of this Plan, consideration should be given to circulating Newsletters to

- Local Member of Parliament, Federal and State
- Council Website, Business Centres, Libraries, Visitor Information Centres, social media (eg: Council's Facebook page)
- Mainstream media outlets
- Outreach Centres
- Community Centres
- Police Stations (within the affected areas)
- CFA sites (within the affected areas)
- Neighbourhood Houses
- Other recovery, support and community agencies
- Impacted persons as required.

Community Briefings

Community Briefings may be conducted by response agencies as part of their role in keeping communities aware of the current emergency situation before, during and after events. Municipal recovery team members including a trained personal support practitioner should be part of the briefing team.

Community Information Sessions

As soon as practicable after an emergency, the MRM should arrange community information sessions. The development of these sessions is the first practical step in the process of ensuring a community is actively involved in the recovery management process. This should be in conjunction with Councils Marketing and Communications and consistent with Council policy.

These sessions can also be used to support the development of community recovery committees. The role of community briefings in the recovery context is to:

- Provide clarification of the emergency event (control agency)
- Provide advice on services available (recovery agencies)
- Provide input into the development of management strategies (Council)
- Provide advice to affected individuals on how to manage their own recovery, including the provision of preventative health information (specialist advisers).

Where the emergency has a criminal component Council will need to consult with the investigating authority on any necessity to restrict the content of the briefings.

Providing a Single Point of Contact

Where the MRM determines that the emergency is of such scale to warrant it, a Municipal Recovery Centre will be established to provide a “one-stop” service to ensure affected people are integrated into the emergency recovery process at a single point.

This Centre should be located in a building that meets its requirements and be staffed appropriately

6.9.6 *Community Recovery Committee*

Where the magnitude of the event requires community input into the recovery process, one or more Community Recovery Committees (CRC) may be established within the affected area. Community Recovery Committees may involve more than one municipality if the emergency affected area involves more than one municipality.

Consideration should be given for multi-agency briefings of the affected communities and media releases coordinated amongst agencies.

Community Recovery Committee Membership

The composition of the CRC will vary depending on the affected area. The membership of the Committee should include community leaders and representatives of:

- Municipal Recovery Manager
- Councillor
- Government Agencies Community Groups
- Affected Persons Non-Government Agencies

Community Recovery Committee - Functions

Functions of a CRC include:

- Monitor the overall progress of the recovery process in the affected community.
- Identify community needs and resource requirements and make recommendations to appropriate recovery agencies, Murrindindi Shire Council and the State's recovery management structure.
- Liaise, consult and negotiate, on behalf of affected communities, with recovery agencies, government departments and Murrindindi Shire Council.
- Liaise with DHHS as Coordinator through the designated Regional Recovery Coordinator or Regional Recovery Manager.
- Undertake specific recovery activities as determined by the circumstances and the Committee.

6.9.7 *Service Coordination*

The needs of individuals and communities after an emergency will vary in scale and complexity. However these needs can usually be met by existing services, supplemented by additional resources where there are capacity issues. Recovery planning and management should initially be on the basis of linking affected individuals into existing services provided by existing agencies.

In many emergency events people will have a complex set of needs. Some people may find it difficult to access the recovery services. Others may need specialist support that is not readily available, or a complex mix of services to meet their needs. This situation can occur when one emergency is followed by another or where a person's existing circumstances have made them more susceptible to the impact of an event.

An early assessment should be made of the need for and likely benefits of the application of a service coordination model. The appointment of a Service Coordination Officer may be beneficial to assist those most in need of assistance.

6.9.8 *Vulnerable Community Members*

At all times care will be taken to identify those in the community impacted by the emergency that require additional assistance (e.g. elderly, disabled, lower socio-economic status). The consequences of an emergency on community should not be assumed; community members considered most vulnerable to the emergency can change

6.9.9 *Single Incident Emergencies*

Councils are responsible at the municipal level to coordinate recovery activities in response to an emergency. This role relates to significant events impacting on a large part of the municipality as well as low level single incident emergencies.

A single incident emergency can include, but is not limited to, damage to buildings or structures caused by fire, storm, accident or criminal action. The building or structure can include:

- Private residential facilities
- Commercial residential facilities
- Any other building or structure involving the presence of hazards.

When notified of a single incident emergency Councils internal arrangements may include notification of Councils':

- MRM
- Emergency Case Managers
- Building Services, Municipal Building Surveyor
- Environmental Health, Environmental Health officers
- Statutory Planning
- Rates and Valuations
- Other notifications as required.

The circumstances of the emergency and the role Council has in the emergency will determine the level of notification within Council.

Council have developed a brochure to assist with those impacted by single incidents[43]. The brochure lists available assistance measures in Murrindindi Shire to those impacted by house fires and other emergencies that mean a primary residence in not habitable.

6.9.10 *Emergency Case Management Services*

Emergency Case Management is the process of organising and providing a timely, coordinated approach to assess emergency-related needs including health care, mental health and human services needs that were caused or exacerbated by the emergency and may adversely affect an individual's or family's recovery if not addressed.

In support of this the Murrindindi Shire Council provides an emergency case management Service managed by the MRM and which forms part of council's recovery arrangements.

The emergency case management function is provided by Councils Community Wellbeing Department.

The service offered by the Emergency Case Management includes:

- assistance in putting in place immediate short term accommodation needs
- assistance in putting in place immediate short term material aid; clothing, bedding, and other personal requirements
- assistance in referring affected persons to agencies and organisations for emergency financial assistance
- assistance in referring affected persons to services for psychosocial support
- assistance in referring affected persons to other appropriate services and support

[43] A copy of the single incident brochure is available at: https://www.murrindindi.vic.gov.au/Your-Council/Emergency-Management/Single-Incident-Relief-Assistance

The Emergency Case Management Role includes liaison with DHHS for each individual incident. The service provided is also consistent with the DHHS – Emergency Case Management Service Guide 2010 – which can be found on the DHHS web page.

6.9.11 *Development and Use of Community Networks in Recovery*

Recovery planners, coordinators and managers should always be cognisant of the value of existing community networks as a conduit for information delivery, needs identification and support of those affected. These established networks are significant in the community and often have an inherent value that newly developed service networks may never develop. Where possible and appropriate, recovery programs should work with and through these networks.

Community networks that are functioning in an affected community should be actively engaged and supported in the recovery process. In some instances networks may be present in the community but require additional support to enable them to function effectively as a recovery conduit to the community.

Examples of community networks include:

- Volunteer emergency services
- Church organisations
- School organisations
- Service clubs
- Community Associations
- Business and Tourism Associations.

6.9.12 *Volunteers*

Volunteers play a significant part in any recovery operation, particularly after large-scale, highly publicised emergencies.

Volunteers with clubs

This section of the MEMP examines volunteers who are affiliated with a specific organisation such as service clubs, community agencies and other non-government organisations Volunteers who are affiliated with an organisation will be directed by that organisation and are likely to have specific skills to undertake previously assigned roles.

Voluntary organisations, that are appropriately insured, may be directed by either the MERO or MRM in the completion of a broad set tasks post emergency. These tasks could range from re-fencing, rebuilding, assisting in catering or other services etc. .

Any clubs interested in registering interest in assisting in the relief and recovery process should contact the MRM through the Council offices.

Spontaneous Volunteers

Those who wish to volunteer at the time on an emergency but do not belong to a club or group will be directed to those groups that are supplying services or help in the first instance. If other clubs or groups are unable to take on extra volunteers, the MRM will try to coordinate them.

However, depending on workload during an emergency it may be that the MRM is not able to coordinate these volunteers and that we are not able to effectively use spontaneous volunteers during an emergency.

6.9.13 *Supply of Goods / Services*

The Municipality and other recovery agencies shall obtain and pay for goods/services through their own supply systems.

The MRM with the assistance of DHHS/EMV will coordinate the acquisition and supply of goods/services, which cannot be provided by the municipality or participating agencies.

6.9.14 *Victorian Government Assistance Measures*

The figure below details the basic package of post-emergency assistance measures that may be made available to assist in various aspects of the recovery process. Most are provided by Victorian government agencies; a few Commonwealth assistance measures are also listed. It is important to note that assistance measures are identified as being generally available at departmental discretion, or requiring a specific government decision on each occasion.

Figure 16: Victorian Government Assistance Measures

Measure	Purpose	Agency	Other Details
Individual Human Need Assistance Measures			
Generally available at departmental discretion			
Emergency relief assistance	To alleviate personal hardship arising from the effects of an emergency by helping to meet immediate essential health, safety and wellbeing needs.	DHHS	Payments available to assist a household during the first seven days after a single house fire or natural emergency event. Payments may also be available for single emergency incidents, other than single house fires, at the discretion of the Director, HHS EM. Eligibility is based on alleviating hardship, for an individual or household affected by an emergency (occurring or likely to occur) to provide shelter, food, clothing, personal items or transport to leave an affected area. The amount paid is based on a pre- determined 'set' amount per individual (adult and child), capped per household.
Residential and Community Re-establishment Assistance Measures			
Available subject to specific government approval			
Emergency re-establishment assistance *	To assist with the re-establishment of a principal place of residence and essential household items where the householder's needs are not met by their own resources (including insurance) or other forms of assistance.	DHHS	Payments available to eligible applicants following the activation of this assistance measure by the Minister for Police and Emergency Services or the Premier. Eligibility is based on an applicant's principle place of residence being uninhabitable or inaccessible for more than seven days as a consequence of the natural emergency event. Applicants must also meet an income test and expenses/ losses not being covered by insurance. Payments can be used for alternative accommodation, removal of debris from residential properties, essential repairs to housing to restore it to a habitable condition and repair or replacement of essential household items. The application period closes 180-days after the natural emergency event.

**This measure only available for 'Natural Disasters' as defined under the Commonwealth Government's Natural Disaster Relief and Recovery Arrangements.*

Measure	Purpose	Agency	Other Details
Concessional loans for principal residence *	To assist with there-establishment of the principal place of residence.	RFCV	Concessional housing loans may be made to people whose principal residence has been damaged or destroyed by natural disaster, and who wish to rebuild or buy another house within Victoria. These loans are granted on the basis of need to bridge the gap between the cost of rebuilding or relocation and the financial resources which are available to the individual including insurance.
Concessional loans for churches, voluntary organisations, etc. *	To assist with re-establishment of premises	RFCV	Concessional loans may be made available from time to time to non-profit organisations which have no reasonable access to commercial sources of finance. Loans are made on the basis of need to bridge the gap between re-establishment costs and insurance recovery.
Community Safety/Health Assistance Measures			
Generally available at departmental discretion			
Disposal of dead or maimed stock	To minimise the risk to public health.	Municipal councils in consultation with DELWP	Municipal councils are responsible for disposal. DELWP provides advice and supervision and may provide reimbursement.
Economic Recovery Assistance Measures			
Available subject to specific government approval			
Concessional loans for primary producers *	For carry-on purposes and to assist with the re-establishment of the economic enterprise	RFCV	Concessional loans for carry-on purposes (restocking, restoration, etc.) may be made available to full-time bona fide primary producers who have suffered natural disaster losses and, after insurance recovery, are unable to obtain requirements through normal commercial channels on suitable terms, and in the Corporation's opinion have reasonable prospects of recovery.

Measure	Purpose	Agency	Other Details
Concessional loans for small business *	For carry-on purposes and to assist with the re-establishment of the economic enterprise.	RFCV	Concessional loans may be made available to small businesses which are in need of special assistance as a result of natural disasters and which cannot obtain finance on suitable terms from normal sources including insurance and which, in the opinion of the Corporation, have reasonable prospects of recovery. Generally the corporation would expect to share the funding for such businesses with normal sources of institutional finance.
Clean-up grants for small businesses and primary producers *	To cover the cost of clean-up and reinstatement, not compensation for losses	RFCV	Clean-up grants are aimed at providing a holistic approach to the recovery for regions or communities severely affected by a natural disaster. Grants are subject to Commonwealth Government approval, maximum grant $10,000, up to $25,000 in exceptional circumstances.
Community recovery fund *		DPC/ DSDBI	A community recovery fund may be established in circumstances where a community is severely affected by a natural disaster and needs to restore social networks, community functioning and community facilities. Requires Commonwealth Government approval. Amount to be determined at the time of triggering assistance.
Generally available at departmental discretion			
Repair of damage to private fences (internal and boundary) by fire agency machinery during bushfire emergencies	To make an equitable contribution to landholder bushfire recovery.	DELWP/ CFA	Full restoration costs paid for fences damaged on private land paid as a result of machinery used by fire agencies to control bushfires. This includes damage to fences by machinery such as bull-dozers entering the property and/or constructing fire control lines, and other fire emergency vehicles obtaining access.
Restoration of fences damaged by bushfire on the boundary of private land and public land	To make an equitable contribution to landholder bushfire recovery.	DELWP/ CFA	Half the cost of materials paid to replace or repair fencing between private land and all national parks, state parks and state forests destroyed or damaged by bushfires.

Measure	Purpose	Agency	Other Details
Restoration of fencing damaged by DELWP planned burns that escape from public land	To make an equitable contribution to landholder bushfire recovery.	DELWP	Full restoration costs paid for fences or other assets that are damaged or destroyed by planned burns that escape from public land onto private land.
Rehabilitation of fire control lines constructed by fire agencies during bushfire emergencies	To minimise environmental degradation and erosion.	DELWP/ CFA	Assistance is provided to private land-holders to rehabilitate fire control lines, established by fire agencies, during the suppression of bushfires. Fire control line rehabilitation involves pushing back top soil and undertaking erosion control measures to protect the land from soil erosion and protect water quality. Government may also provide seed for use by the land-holder to control erosion and prevent soil movement. Assistance with the rehabilitation of fire control lines does not include replanting of trees, re-establishment of pasture, or any other agricultural crop.
Replacement of essential water taken from private land for use in wildfire suppression	To relieve genuine hardship in the community by replenishing essential private water supplies.	DELWP/ CFA	Water taken from household tanks or agricultural dams for fire fighting will be replaced (up to the quantity taken) when requested by the landholder and water is needed for essential use. The aim is to ensure that landholders have a sufficient water to sustain: the health of residents and pets, and the health and productivity of livestock and crops.
Assistance with contingencies or reconstruction of food supply chains and critical infrastructure	To ensure the rapid restoration of the supply of food	DELWP/ DSDBI	
Assistance for the transport of donated fodder to affected rural landholders	To ensure the immediate welfare of livestock in fire or flood	DELWP	

Measure	Purpose	Agency	Other Details
State Government Assistance to Municipal Councils			
Financial assistance to municipal councils: **(a) for the restoration of municipal assets *** **(b) for emergency protection works ***	To support extraordinary municipal expenditure during emergencies.	DTF	This assistance is generally available for natural disasters as defined. To lodge claims, see the DTF website at www.dtf.vic.gov.au and search under Budget and Financial Management (a) Municipal council meets the first $10,000 of approved expenditure, plus 25% of the next $100,000. Approved expenditure exceeding $100,000 is fully funded by the Government. (b) Government meets entire cost.
Commonwealth Government Assistance Measures to Persons/Local Governments			
Australian Government Disaster Recovery payment	To provide short- term financial assistance to people affected by major emergencies.	Centrelink	Payment of $1000 per adult plus $400/child to affected persons who are already receiving a Centrelink income support payment. Subject to determination of an event as a major disaster by the Minister for Families, Housing, Community Services and Indigenous Affairs.
Income support, pensions, benefits and allowances	To assist people affected financially by emergencies.	Centrelink	Payments are administered under the provisions of the *Social Security Act*.
Natural disaster relief payments to local government *	To assist municipal councils affected by natural disasters.	VGC	Grants of up to $35,000 per council per eligible event are provided to reimburse councils for approved costs not reimbursed by DTF.

Appendices

The following appendices are publicly available. There is also a restricted appendix with contact information available to MEMPC members via Crisisworks.

Abbreviations and Acronyms

AA	Airservices Australia
ADF	Australian Defence Force
AFAC	Australasian Fire and Emergency Services Authorities Council
AGCDTF	Australian Government Counter Disaster Task Force
AGD	Attorney-General's Department
AIIMS	Australian Inter-Service Incident Management System
AMSA	Australian Maritime Safety Authority
ANZEMC	Australia-New Zealand Emergency Management Committee
ARCV	Australian Red Cross Victoria
ARFF	Aviation Rescue and Firefighting (part of Airservices Australia)
ARTC	Australian Rail Track Corporation
ATSB	Australian Transport Safety Bureau
AusSAR	Australian Search and Rescue (part of AMSA)
AV	Ambulance Victoria
AVCG	Australian Volunteer Coast Guard
BOM	Bureau of Meteorology
CERA	Community Emergency Risk Assessment
CERM	Community Emergency Risk Management
CFA	Country Fire Authority
CI	Critical Infrastructure
CMA	Catchment Management Authority
COAG	Council of Australian Governments
COMDISPLAN	Commonwealth Government Disaster Response Plan
CWA	Country Women's Association
DACC	Defence Assistance to the Civil Community
DJPR	Department of Jobs, Precincts and Regions Agriculture)
DET	Department of Education and Training
DELWP	Department of Environment, Land, Water and Planning
DFACA	Defence Force Aid to the Civil Authorities
DFSV	Dairy Food Safety Victoria
DH	Department of Health
DHHS	Department of Health and Human Services
DOJ	Department of Justice
DOT	Department of Transport
DPC	Department of Premier and Cabinet
DTF	Department of Treasury and Finance
DVI	Disaster Victim Identification
EA	Emergency Alert System
EM	Emergency Management
EMA	Emergency Management Australia
EMC	Emergency Management Commissioner
EMLO	Emergency Management Liaison Officer
EMMV	Emergency Management Manual Victoria
EmRePSS	Emergency Resource Providers Support Scheme
EMS	Emergency medical service
EMT	Emergency Management Team

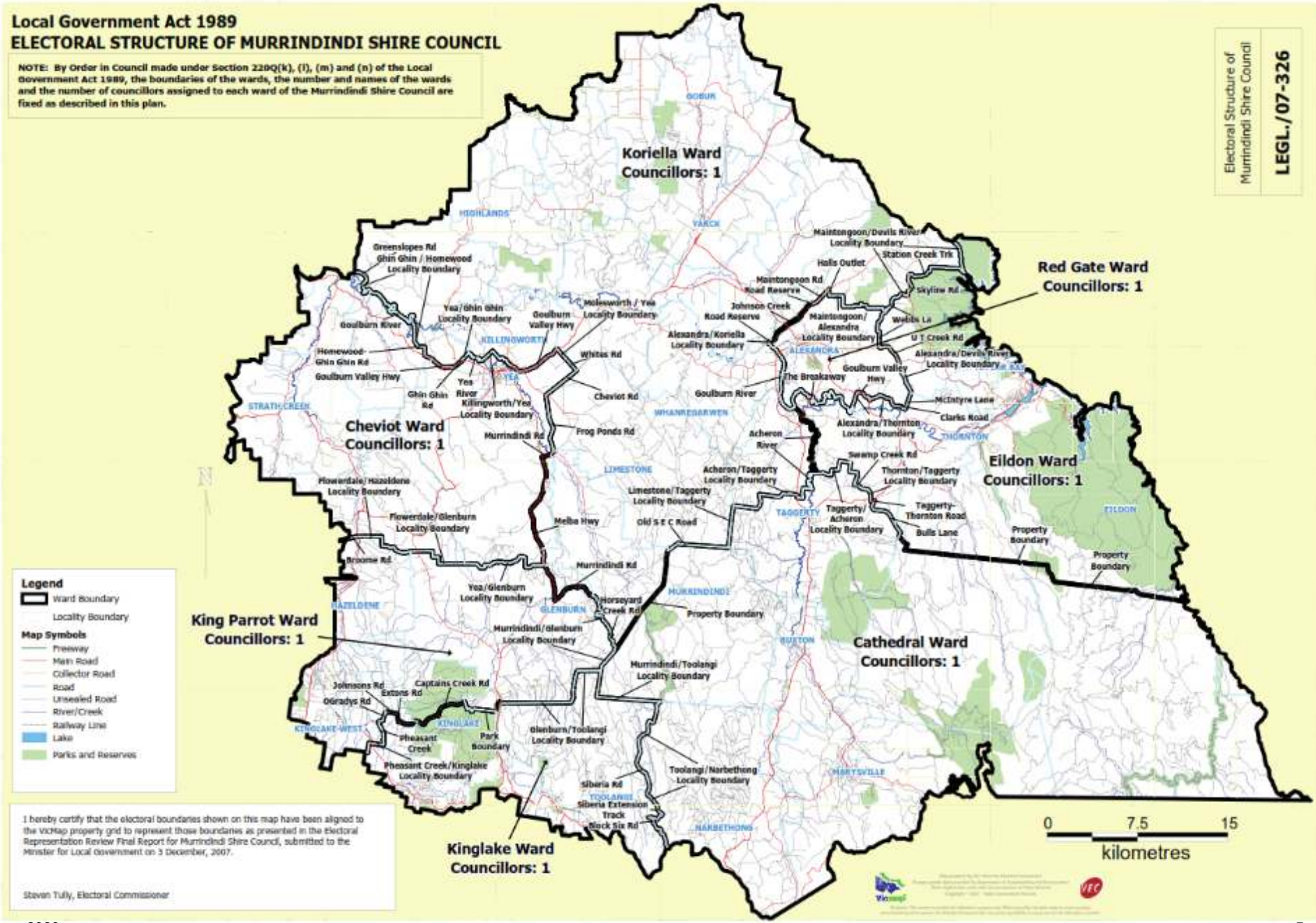
EMV	Emergency Management Victoria
EOC	Emergency Operations Centre
EPA	Environment Protection Authority
ERC	Emergency Relief Centre
ERCC	Emergency response coordination centre
ERDO	Emergency response development officer
ESTA	Emergency Services Telecommunications Authority
FERC	Field Emergency Response Coordinator
FRV	Fire Rescue Victoria
GMCMA	Goulburn Broken Catchment Management Authority
GIS	Geospatial information system
HHS	Health and Human Services
ICA	Insurance Council of Australia
ICC	Incident Control Centre
IDRO	Insurance Disaster Response Organisation
IFMP	Integrated Fire Management Planning
IMS	Incident Management System
IGEM	Inspector General Emergency Management
IMT	Incident Management Team
LSV	Life Saving Victoria
Marine EMT	Marine Emergency Management Team
MAV	Municipal Association of Victoria
MECC	Municipal Emergency Co-ordination Centre
MEMEG	Municipal Emergency Management Enhancement Group
MEMP	Municipal Emergency Management Plan
MEMPC	Municipal Emergency Management Planning Committee
MERC	Municipal Emergency Response Coordinator
MERO	Municipal Emergency Resources Officer
MFPO	Municipal fire prevention officer
MRM	Municipal recovery manager
MTM	Metro Trains Melbourne
NCTP	National Counter Terrorist Plan
NDFA	Natural Disaster Financial Assistance
NDRRA	Natural Disaster Relief and Recovery Arrangements
NERAG	National Emergency Risk Assessment Guidelines
NOPSEMA	National Offshore Petroleum Safety and Environmental Management Authority
NRIS	National Registration & Inquiry System
OESC	Office of the Emergency Services Commissioner
POC	Police Operations Centre (D24)
PTV	Public Transport Victoria
PV	Parks Victoria
RIA	Rapid Impact Assessment
Red Cross	Australian Red Cross Victoria
RERC	Regional Emergency Response Coordinator
RERCC	Regional Emergency Response Coordination Centre
RFCV	Rural Finance Corporation of Victoria
RR	Road rescue
RSPCA	Royal Society for the Prevention of Cruelty to Animals

SBCS	Small Business Counselling Service
SCC	State Control Centre
SCC	State Crisis Centre
SCN	Security and Continuity Network
SCPEM	Standing Council on Police and Emergency Management
SCRC	State Crisis and Resilience Council
SEAWC	State Emergency Animal Welfare Co-ordinator
SEC	Security and Emergencies Committee (of Cabinet)
SEMC	State Emergency Mitigation Committee
SEMT	State Emergency Management Team
SESC	State Emergency Support Centre
SEWS	Standard Emergency Warning Signal
SHERP	State Health Emergency Response Plan
TAC	Transport Accident Commission
TESS	Transport, Engineering and Services Support
TSV	Transport Safety Victoria
USAR	Urban Search and Rescue
VBA	Victorian Building Authority
VCC	Victorian Council of Churches
VEMC	Victoria Emergency Management Council
VGC	Victoria Grants Commission
VicPol	Victoria Police
VICSES	Victoria State Emergency Service
V/Line	V/Line Passenger Pty Ltd
VRCA	Victorian Regional Channels Authority
VWA	Victorian WorkCover Authority (WorkSafe)
WICEN	Wireless Institute Civil Emergency Network

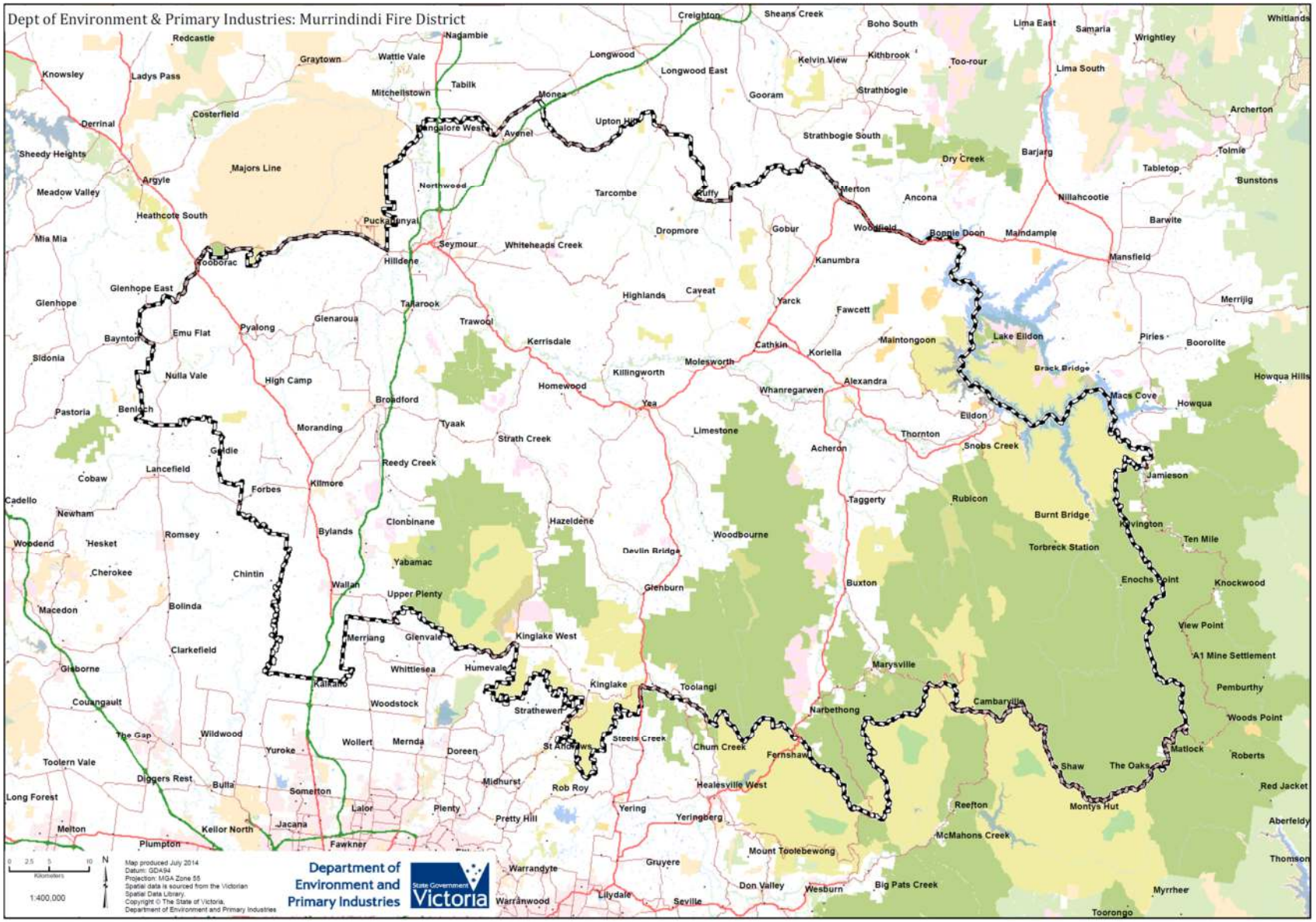
Maps

Location of Murrindindi Shire in Victoria

Victorian Electoral Commission Map - Murrindindi Shire



DELWP – Murrindindi Fire Region



Neighbourhood Safer Place – Place of Last Resort Maps

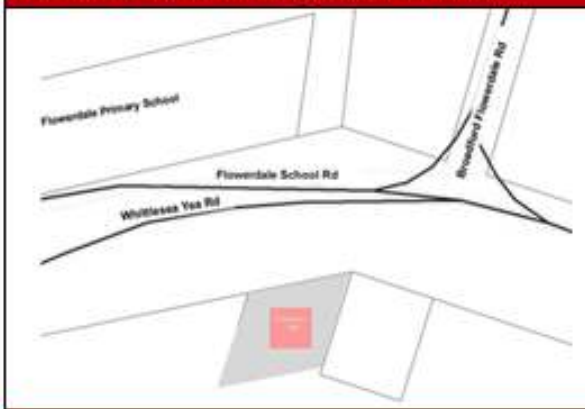
Alexandra: Leckie Park Cricket Oval, Vickery St

Thornton: Recreation Reserve, Taggerty-Thornton Rd

Eildon: Basketball Courts, Cnr Main St & Centre Ave

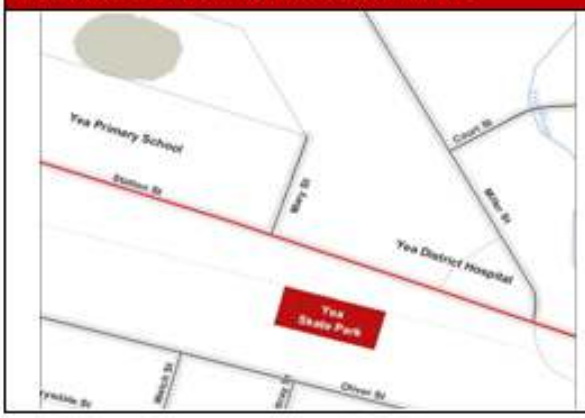
Marysville: Community Centre, Falls Rd

Flowerdale: Flowerdale Hall, Whittlesea-Yea Rd



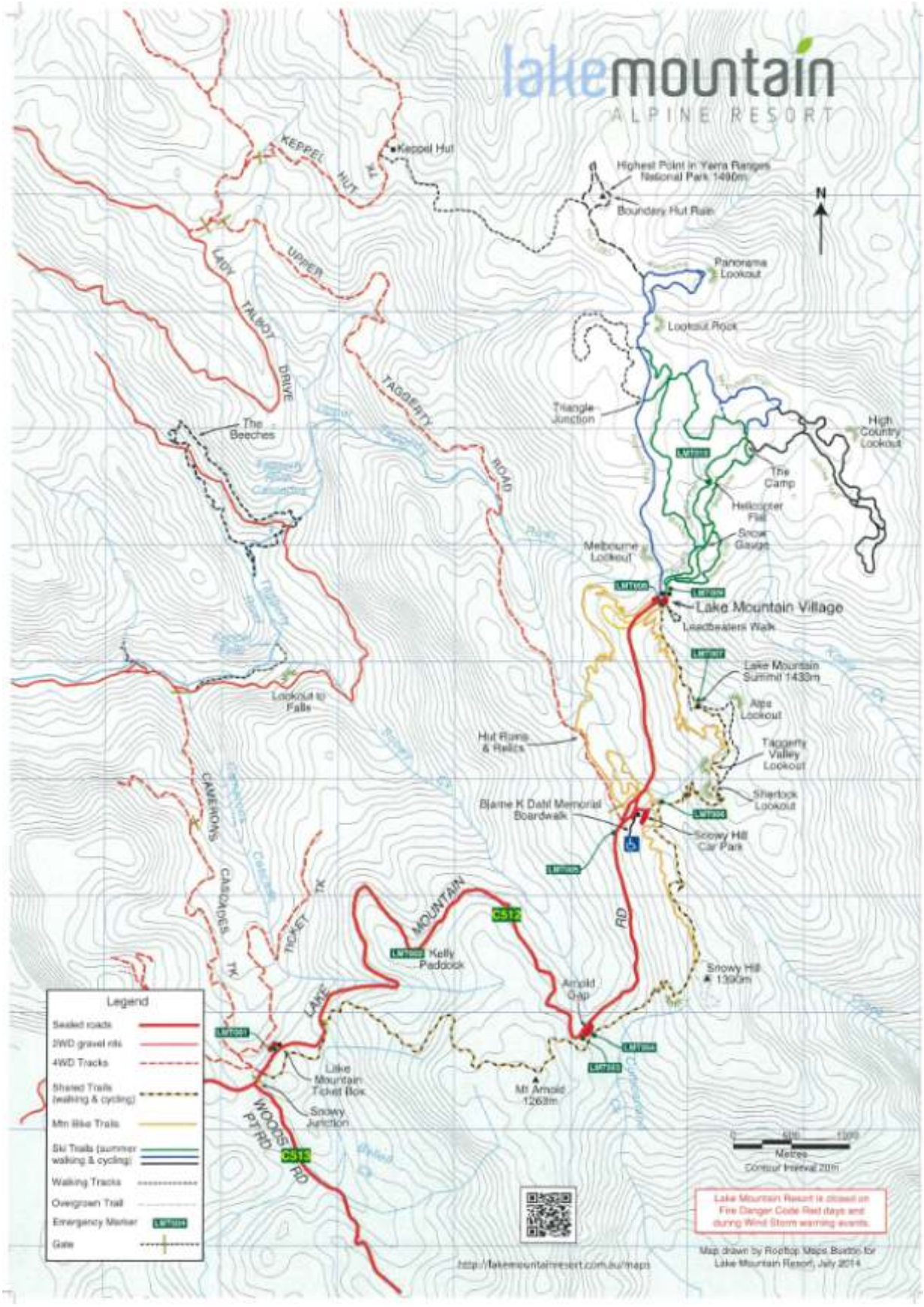
Yarck: Recreation Reserve, Yarck Rd

Yea: Skate Park, Railway Reserve, Station St



Kinglake West: Kinglake West Oval, Recreation Rd

Lake Mountain Alpine Resort Location Map



Lake Mountain Village Map

Restricted Appendices

Restricted appendices contain private information and are not made public. For MEMPC members a copy of the restricted appendices (including contact lists) is available via Crisisworks.

Regional Tourism

Memorandum of Understanding

Between

Tourism North East

and

Alpine Shire Council
Benalla Rural City Council
Falls Creek Alpine Resort Management Board
Indigo Shire Council
Mansfield Shire Council
Mount Buller Mount Stirling Alpine Resort Management Board Mount Hotham Alpine Resort Management Board
Murrindindi Shire Council
Rural City of Wangaratta Council
Towong Shire Council

July 2020

THIS MEMORANDUM OF UNDERSTANDING is made on 23 June 2020

BETWEEN

Tourism North East ("**TNE**")
ABN 84 715 244 593
Level 1, 19 -23 Camp Street
Beechworth
VIC 3747

AND

Alpine Shire Council
ABN 14 821 390 281
PO Box 139
Bright
VIC 3741

Benalla Rural City Council
ABN 42 379 380 529
PO Box 227
Benalla
VIC 3672

Falls Creek Alpine Resort Management Board
ABN 21 789 770 569
1 Slalom Street
Falls Creek
VIC 3699

Indigo Shire Council
ABN 76 887 704 310
PO Box 28
Beechworth
VIC 3747

Mansfield Shire Council
ABN 74 566 834 923
Private Bag 1000
Mansfield
VIC 3724

Mount Buller Mount Stirling Alpine Resort Management Board
ABN 44 867 982 534
1 Summit Rd
Mt Buller
VIC 3723

Mount Hotham Alpine Resort Management Board
ABN 93 938 780 598
PO Box 188
Bright VIC 3741

Murrindindi Shire Council
ABN 83 600 647 004
PO Box 138
Alexandra
VIC 3714

Rural City of Wangaratta Council
ABN 67 784 981 354
PO Box 238
Wangaratta
VIC 3676

Towong Shire Council
ABN 45 718 604 860
PO Box 55
Tallangatta
VIC 3700

These parties are collectively referred to as "**Regional Tourism Partners**".

Background

A. Tourism North East ("**TNE**") is the Regional Tourism Board for the High Country, responsible for coordinating strategic tourism efforts across the Region.
B. The Regional Tourism Partners acknowledge the importance of working collaboratively through TNE to drive positive tourism outcomes for the Region.
C. The Regional Tourism Partners agree to provide TNE with operational and activity funding to act as the Region's peak tourism body, as per the terms and conditions of this Memorandum of Understanding ("**MoU**").

1. Definitions

Memorandum of Understanding means a document that expresses mutual accord on an issue between two or more parties.

High Country means the tourism region identified by Visit Victoria, which encompasses the municipalities and alpine resorts represented and managed by the Regional Tourism Partners.

Product Pillars means the five product strengths that are common across the region including cycle tourism; food, wine and beer; snow; nature-based experiences; and arts and culture.

Region means the same as High Country.

Regional Tourism Board means one of the 11 organisations established at the directive of Tourism Victoria (now Visit Victoria), the State tourism body, to guide regional tourism development.

Regional Tourism Partners means Alpine Shire Council, Benalla Rural City, Falls Creek Alpine Resort Management Board, Indigo Shire Council, Mansfield Shire Council, Mount Buller Mount Stirling Alpine Resort Management Board, Mount Hotham Alpine Resort Management Board, Murrindindi Shire Council, Rural City of Wangaratta and Towong Shire Council.

TNE means North East Victoria Tourism Board trading as Tourism North East.

TNE Board means the group of members of the association known as Tourism North East who are appointed to manage the affairs and business of Tourism North East (excluding staff).

2. Term

a) This MoU will commence on 1 July 2020 and will expire on 30 June 2023, effectively covering three financial years: 2020/21, 2021/22 and 2022/23.
b) The Regional Tourism Partners agree to table negotiations from 1 May 2022 for the renewal of this MoU for a further three-year period.
c) This MoU must be executed by all parties by 26 June 2020.

3. Tourism North East Structure

a) TNE is the peak tourism organisation for the Region that works in partnership with Visit Victoria, industry and a range of government partners to support and develop regional tourism in the High Country.
b) TNE is established as an Incorporated Association under the Associations Incorporation Act 1981 and the Associations Reform Act 2012 and will be maintained as a financially autonomous body with responsibilities for its program, budget and financial sustainability.
c) The TNE Board, consisting of the CEOs of the Regional Tourism Partners, six skills-based appointees and an independent chair, will oversee the operation of TNE and its deliverables.
d) TNE Board members cannot delegate their position on the TNE Board to any other parties. In the case of the CEOs of the Regional Tourism Partners, this includes other representatives within their councils or resort management boards.
e) The TNE Board is established and governed as per the organisation's Rules of Association & Statement of Purpose, and all Regional Tourism Partners agree to adhere to its terms.

4. Role of Tourism North East

a) TNE is responsible for delivering the following across the High Country:
    i. Regional marketing and communication
    ii. Product development
    iii. Industry development including skills training and mentoring
    iv. Promoting public and private tourism investment opportunities
    v. Research
    vi. Advocacy efforts
    vii. Strategic planning
b) To both focus and maximise the effectiveness of initiatives associated with the responsibilities noted in 4a), TNE works to align its efforts with the Region's Product Pillars.
c) TNE and its Regional Tourism Partners work collaboratively to drive and optimise tourism related visitation and yield opportunities for the High Country, and establish the Region as a premier tourism destination that offers a consistent and engaging visitor experience.
d) The Regional Tourism Partners recognise the independent role, structure and mission of TNE and understand the function also includes being an independent voice and advocate for the regional tourism industry in local, state, national and international media.

5. Tourism North East Funding

5.1 Operational Funding

a) The Regional Tourism Partners will each provide TNE with $38,000 excluding GST pa in base operational funding for each year of the MoU Term.
b) This funding will be subject to CPI increases in years two and three of this MoU.
c) TNE will invoice each of the Regional Tourism Partners on an annual basis for their operational funding commitment. Associated payments must be made no later than 1 September each year of the MoU Term.

5.2 Activity Funding

a) Regional Tourism Partners agree to invest in tourism-related activities delivered by TNE, (including but not limited to campaigns, training and initiatives) above and beyond the operational funding noted in 5.1.
b) The amount of this activity funding will be independently determined by each of the Regional Tourism Partners on an annual basis in consultation with TNE, and will reflect the scope of activity proposed by TNE and its relevance to each of the Regional Tourism Partners.
c) TNE will invoice each of the Regional Tourism Partners on an annual basis for their activity funding. Associated payments must be made no later than 1 September each year of the MoU Term.
d) Regional Tourism Partners agree to support TNE's tourism activities via the involvement of their tourism, economic development, marketing and Visitor Information Centre personnel as required and appropriate.

6. Tourism North East's Obligations

In exchange for the operational and activity funding supplied by the Regional Tourism Partners, TNE is required to fulfil the following specific obligations, in line with the broader responsibilities outlined in Clause 4:

6.1 Strategic Planning

a) TNE must involve the Regional Tourism Partners in the strategic planning process for the region to ensure that the interests of each party is considered and accurately represented. This includes (but is not limited to) consultation associated with the development of:
    i. Victoria's High Country Destination Management Plan (ten-year scope)
    ii. Tourism North East Strategic Plan (three-year scope)
    iii. Tourism North East Business Plan (annual operating plan)

b) The TNE Board will review and collectively approve these plans - by consensus - prior to implementation, thereby influencing the direction of TNE's strategic tourism efforts.
c) These plans will be submitted to the Regional Tourism Partners and broader TNE Board in a timely manner to allow for meaningful input and plan alterations (if required) prior to implementation.
d) The status of these plans and their progress in meeting overarching objectives and key performance indicators will be reported to the TNE Board as per the measurement and control mechanisms listed in each plan.

6.2 Communications and Engagement

a) TNE will develop an annual communications and engagement program that details regular and formal communications with the Regional Tourism Partners and other relevant stakeholders.
b) This program will ensure that there are opportunities to:
    i. Keep Regional Tourism Partners abreast of TNE activities.

ii. Identify synergies between TNE and the individual programs of the Regional Tourism Partners, and look at where efficiencies can be achieved.
iii. Foster greater understanding of both the direction and outcomes of TNE initiatives.
iv. Provide TNE with the ability to brief Regional Tourism Partners about tourism opportunities, issues and trends relative to their destinations.

6.3 Performance Review

a) TNE will be subject to an annual performance review by the Regional Tourism Partners to ensure that the organization is fit for purpose, and meeting the needs of its diverse stakeholder base.
b) This review will take the form of a simple online survey, with the results to be summarised by TNE's CEO and discussed openly at a TNE Board meeting.

7. Exercise of Rights

a) The Regional Tourism Partners shall exercise the rights and pursue the opportunities granted under this MoU in a manner consistent with the good name, goodwill, reputation and image of each party and in compliance with all applicable laws and regulations.
b) The commitments of each of the Regional Tourism Partners under this MoU shall not be transferable or assignable either in whole or in part without the written consent of the other Parties.

8. Indemnity

This MoU does not constitute a guarantee or indemnity by the Regional Tourism Partners in regard to activities undertaken by TNE.

9. MoU is Binding

It is intended that this MoU is binding for all Regional Tourism Partners without the right of withdrawal from the arrangement except where there is a fundamental breach by TNE of any term or condition of this MOU, or if the role of TNE changes as per Clause 10.

10. Role of RTBs

a) The nature and scope of Tourism North East may change in accordance with State Government directives associated with Regional Tourism Boards. This may include: a change in the roles and responsibilities of Regional Tourism Boards; an amalgamation of Regional Tourism Boards with each other or other entities; a reduction or removal of State Government funding of Regional Tourism Boards; a governance change that impacts that relationship between State Government and the Regional Tourism Boards; or some other occurrence that significantly changes how TNE operates. In this instance, the Regional Tourism Partners may elect to revise, replace or terminate this MoU – a decision that must be determined unanimously.

b) If the Regional Tourism Boards are disbanded, resulting in the dissolution of TNE, this agreement will be null and void.

EXECUTED as a Memorandum of Understanding in 2020

SIGNED for and on behalf of:

Organisation	CEO Name	Signature	Date
Tourism North East ABN 84 715 244 593	Bess Nolan-Cook		
Alpine Shire Council ABN 14 821 390 281			
Benalla Rural City Council ABN 42 379 380 529			
Falls Creek Alpine Resort Management Board ABN 21 789 770 569			
Indigo Shire Council ABN 76 887 704 310			
Mansfield Shire Council ABN 74 566 834 923			
Mt Buller Mt Stirling Alpine Resort Management Board ABN 44 867 982 534			
Mount Hotham Alpine Resort Management Board ABN 93 938 780 598			
Murrindindi Shire Council ABN 83 600 647 004			
Rural City of Wangaratta ABN 67 784 981 354			
Towong Shire Council ABN 45 718 604 860			