Kevin Hazell | BUSHFIRE PLANNING

Bushfire assessment to inform the Moriac Structure Plan

Final report

28 November 2022
Version 1.0

Prepared for:

Surf Coast Shire

1 Merrijig Drive

Torquay VIC 3228

Contents

About

Kevin Hazell Bushfire Planning is a town planning service that works with public and private sector clients to understand and apply planning scheme bushfire policies and requirements. It is led by Kevin Hazell who is a qualified town planner with extensive experience working on bushfire planning at State and local levels in Victoria.

Kevin Hazell Bushfire Planning
KH Planning Services Pty Ltd - ABN 67 617 747 841
PO Box 208, Malvern, Vic 3144
www.bushfireplanning.com.au

Disclaimer

The views expressed in this report are those of the author. Information in this document is current at the time of writing. While all professional care has been undertaken in preparing the document, the author accepts no liability for loss or damages incurred because of reliance placed upon its content.

Version Control

Version	Date	Comment	Name
v0.1	9 September 2022	Draft for Council review	Kevin Hazell Town Planner
v0.2	30 September 2022	Working draft for CFA review	Kevin Hazell Town Planner
v1.0	28 November 2022	Final Report	Kevin Hazell Town Planner

1. Introduction

Kevin Hazell Bushfire Planning has been engaged by Surf Coast Shire (the '***Council***') to prepare a bushfire assessment to inform the Moriac Structure Plan (the '*Structure Plan*').

1.1 Scope of work

The scope of work requires the following:

a) Undertake a desktop assessment of the bushfire risk for the study area identified in Figure 1 in accordance with Clause 13.02-1S of the Surf Coast Planning Scheme. The assessment should also have regard to the guidance provided within Planning Practice Note 64 (Local Planning for Bushfire Protection).
b) Complete a literature review and background analysis to gain an understanding of the key land use planning challenges for Moriac. This process will including a review of documents outlined in the 'References' section of this brief.
c) Undertake a site visit to Moriac to gain an appreciation of the context of the settlement and the surrounding landscape.
d) Assess the suitability of locations put forward by land owners as potential sites for future 'long term' residential growth.
e) Prepare specific recommendations to ensure that future land use and development proposals consider the strategic risk identified in the Bushfire Hazard Landscape Assessment for Moriac.
f) Liaise with the Community Preparedness Team at the Country Fire Authority regarding the methodology adopted in the development of the Bushfire Hazard Landscape Assessment for Moriac.
g) Provide details of communications with the Country Fire Authority undertaken in the development of the Bushfire Hazard Landscape Assessment for Moriac.
h) Clearly state any limitations and assumptions associated with the review.
i) Attend the Phase 2 Community Engagement workshops. The primary purpose of these workshops is to seek feedback on the key directions contained within the draft Moriac Structure Plan.
j) Undertake revisions to the draft assessment report as required by Council.

1.2 About the Structure Plan

The Council describes the key factors driving the Structure Plan as follows:

- *State and regional planning policy reforms over the past ten years.*
- *The rezoning of the last piece of land identified for housing development in the Moriac Structure Plan 2010*
- *(MSP 2010), driving the need to consider future housing needs for Moriac.*
- *Timely review of the provision of public infrastructure including open space, footpaths and trails, community buildings and service infrastructure (i.e. electricity, water, wastewater) to determine future needs.*
- *Implications of growth in visitors to the rural hinterland for Moriac given its strategic location at the intersection of two main roads.*
- *An influx of new residents as a result of recent subdivision.*
- *The need to capture the current community aspirations.*

1.3 About the Study Area

Moriac is a small country town located within the Surf Coast Shire, located 3km south of Princes Highway generally between Waurn Ponds and Winchelsea.

The Study Area covers approximately 1,790 hectares and is based on the Moriac State Suburb Census collection boundary. The Study Area is generally consistent with the Moriac Structure Plan 2010 and allows for the consideration of rural interface related issues. Ravens Creek flows through the north and east, while Thompson Creek flows along the south of the Study Area.

Contextual information on the Study Area is shown in the following figures.

See **Figure 1A: Locality map with study area**
See **Figure 1B: Locality aerial photo with study area**
See **Figure 1C: Zones**
See **Figure 1D: Bushfire Management Overlay and Bushfire Prone Areas**

The Council has identified specific sites being considered as part of the Structure Plan.

See **Figure 1E: Sites for growth being considered in preparing the structure plan**

1.4 Methodology

c13.02-1S Bushfire Planning includes strategies that inform how bushfire hazards are to be assessed and for considering where and how growth and new development should occur. Having regard to these strategies, this report responds to the scope of work as follows:

- Section 1A provides an overview of planning scheme content for Moriac.
- Section 2 provides an overview of bushfire content in the planning scheme, including the strategies in *c13.02-1S Bushfire Planning*.
- Section 3 describes the bushfire context using a range of information sources, mostly arising from the work of public authorities such as fire authorities and the Council.
- Section 4 describes landscape bushfire hazards that may influence the locality, similar to a bushfire hazard landscape assessment described in *Planning Permit Applications Bushfire Management Overlay Technical Guide* (DELWP 2017). This includes the identification of landscape types that help understand the relative risk between different places.
- Section 5 describes the bushfire hazard at the neighbourhood and local scale. This is informed by the methodology for a bushfire hazard site assessment as described in *Planning Permit Applications Bushfire Management Overlay Technical Guide* (DELWP 2017) and *AS3959-2018 Construction of buildings in bushfire-prone areas* (Standards Australia).
- Section 6 includes a discussion and recommendations. The objectives and strategies in c*13.02-1S Bushfire Planning* are used to inform the recommendations.
- Section 7 & 8 includes a summary of the recommendations.

Attachment 3 includes the literature review of the four documents identified in the scope of work.

1.5 A note about the bushfire assessments

The bushfire assessments have been prepared to inform decision making associated with strategic planning and the strategic application of *c13.02-1S Bushfire Planning*. The bushfire assessments do not consider bushfire for the purpose of planning applications.

FIGURE 1A: LOCALITY MAP

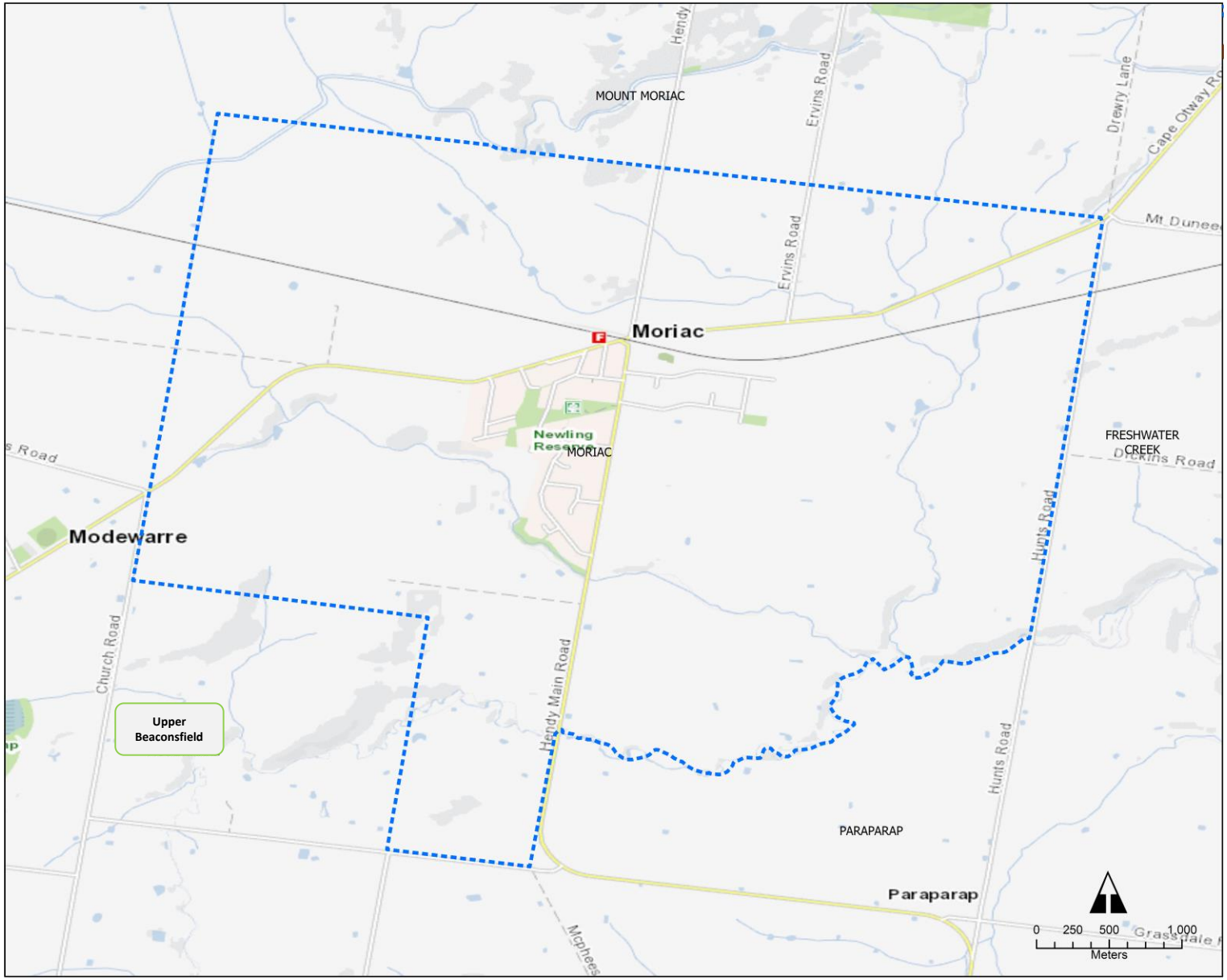


FIGURE 1B: LOCALITY AERIAL PHOTO

FIGURE 1C: ZONES

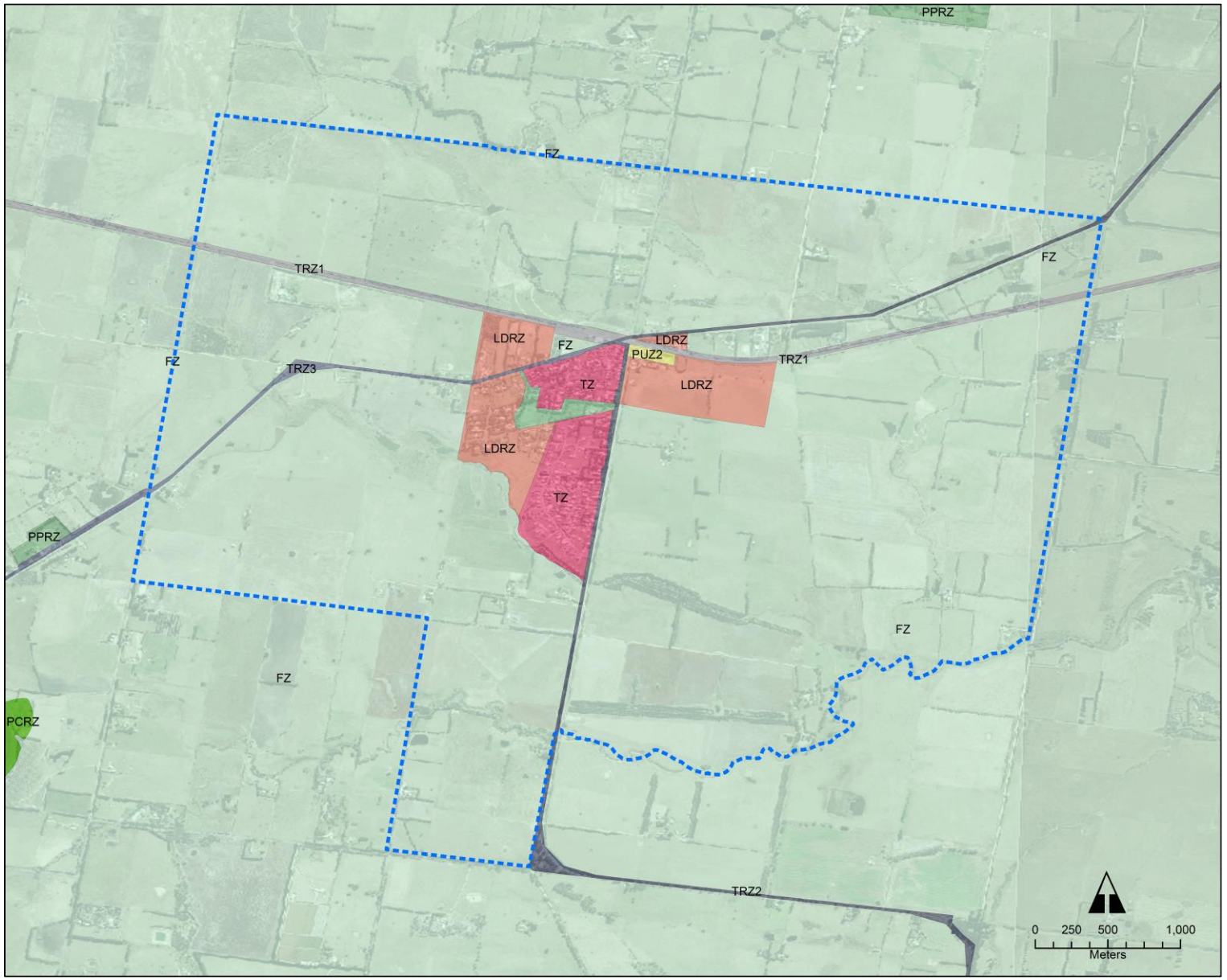
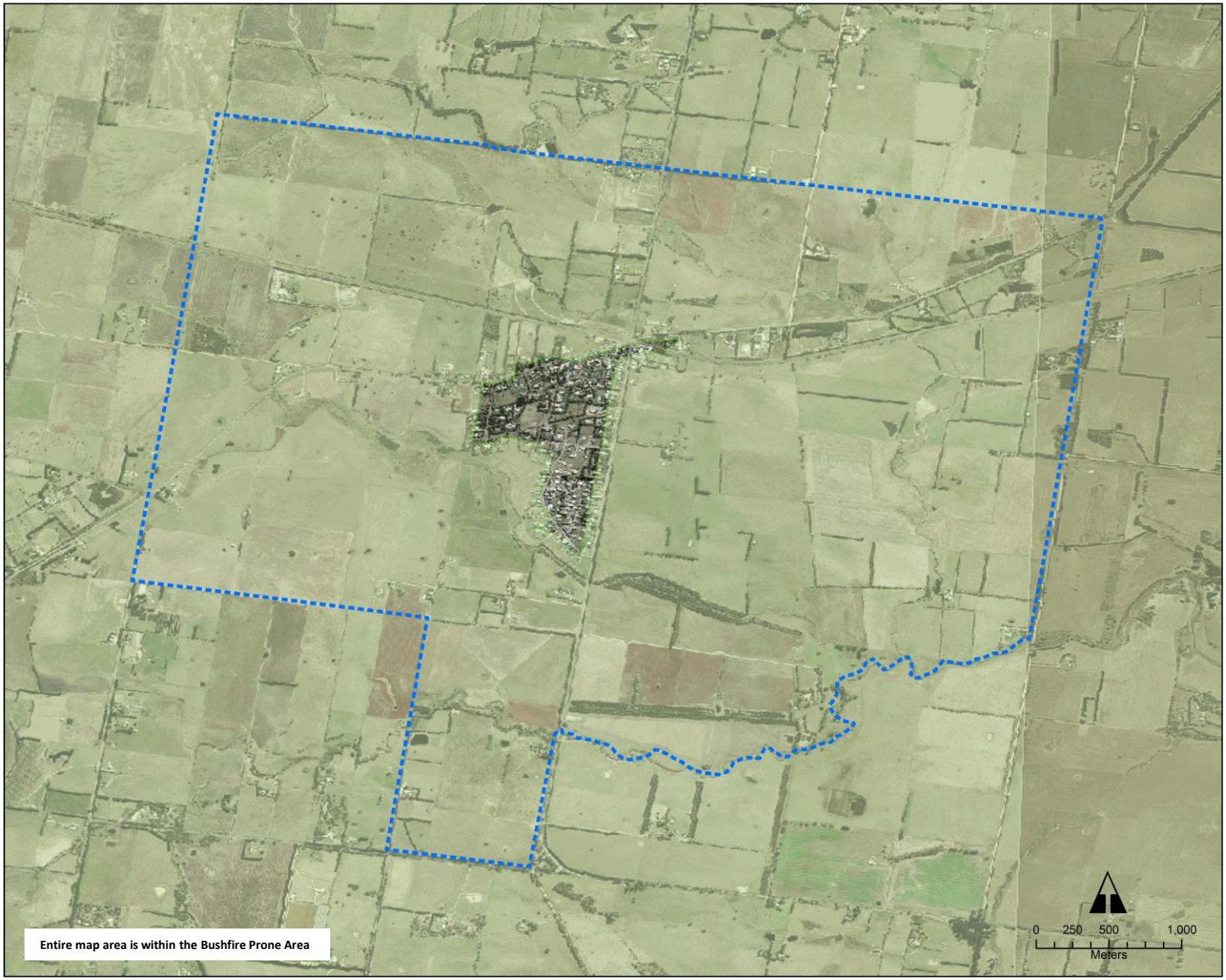


FIGURE 1D: BUSHFIRE MANAGEMENT OVERLAY AND BUSHFIRE PRONE AREA

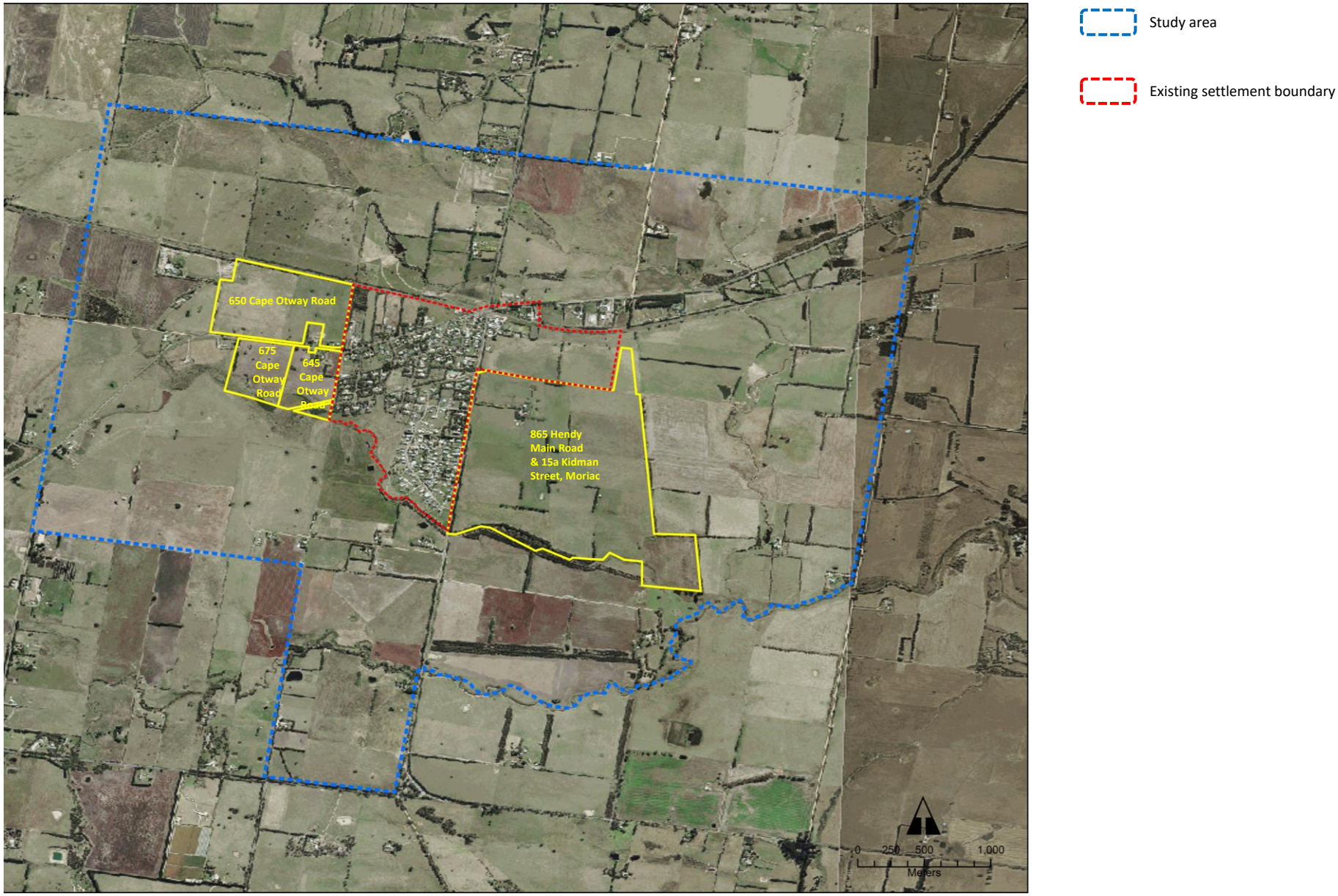


Study area

Bushfire Prone Area

The Study Area and immediate surrounds are not affected by the Bushfire Management Overlay

FIGURE 1E: SITES BEING CONSIDERED IN PREPARING THE STRUCTURE PLAN (Source: Surf Coast Shire Council)



1A. Existing Surf Coast Planning Scheme policies for Moriac

For context, the following provides a summary of key planning scheme policies for Moriac.

c02.03-1 of the Surf Coast Planning Scheme (the '*planning scheme*') describes Moriac as a:

> '*small rural town[.] with a majority of residents commuting elsewhere for employment opportunities, but who choose to live in the townships for their rural residential lifestyle*'.

c02.03-6 includes strategies for rural residential development and seeks to:

> '*direct rural residential development to identified areas in […] Moriac where it can be efficiently services and not encroach on future urban growth*'.

c02.03-6 identified that:

> *A key infrastructure constraint in Moriac […] is the lack of reticulated services, such as water supply, stormwater drainage or sewerage. This, in addition to insufficient public transport, further limits the growth of the townships.*
>
> *Moriac is provided with a reticulated water supply system that only has capacity to supply planned development with an elevation of less than 105 metres AHD.*
>
> *Urban stormwater runoff from lots not connected to a stormwater drainage system, particularly in Moriac, could pose a threat to the sensitive environment and water catchment area.*

c02.04-8 incudes the Moriac Framework Plan.

See **Figure 1F: c02.04-8 Moriac Framework Plan, Surf Coast planning scheme**

c11.01-1L-04 includes a local policy for Moriac:

> *Strategies*
>
> *Direct development in Moriac to the southern drainage catchment (located south of the railway line) and along the likely route of any future sewer main to facilitate efficient service provision.*
>
> *Encourage low density residential development north-west of Cape Otway Road, Moriac (Area 1) as shown on the Moriac framework plan in Clause 02.04.*
>
> *Protect the rural character of Moriac as a settlement located within a rural setting.*

The existing Moriac Structure Plan 2010 is a background document in the above policy. It is noted that there are some differences between the Moriac Structure Plan 2010 and the Moriac Framework Plan in the planning scheme.

See **Figure 1G: Moriac Structure Plan 2010**

c15-01-3L includes strategies for subdivision design:

> *Moriac strategy*
>
> *Encourage lot sizes that respect the town's rural character and enables provision of onsite waste water infrastructure.*
>
> *Moriac policy guidelines*
>
> *Consider as relevant:*
>
> - *A minimum lot size of 0.4 hectares in the township.*
> - *Minor variations to the minimum lot size of 0.4 hectares in the township where all waste water and septic tank effluent can be disposed of within the boundaries of the lot.*

c19.03-2L includes strategies for infrastructure design and provision:

> *Facilitate the provision of reticulated water to development in Moriac where it cannot be supplied through the existing system, particularly in Area 1 identified on the Moriac framework plan to Clause 02.04.*
>
> *Providing for a tanker or booster system in the provision of reticulated water supply for land in Moriac that is above an elevation of 105 metres AHD.*

c32.03 Low Density Residential Zone specifies minimum lot sizes as follows:

> *<u>LDRZ land to the east of the township (as specified in the VPP)</u>*
>
> - *0.4 hectare for each lot where reticulated sewerage is not connected. If no area is specified each lot must be at least 0.4 hectare.*
> - *0.2 hectare for each lot with connected reticulated sewerage. If no area is specified each lot must be at least 0.2 hectare.*
>
> *<u>LDRZ land to the west of the township</u>*
>
> - *1.0ha, as specified in the schedule to c32.02.*

FIGURE 1F: c02.04-8 MORIAC FRAMEWORK PLAN, SURF COAST PLANNING SCHEME

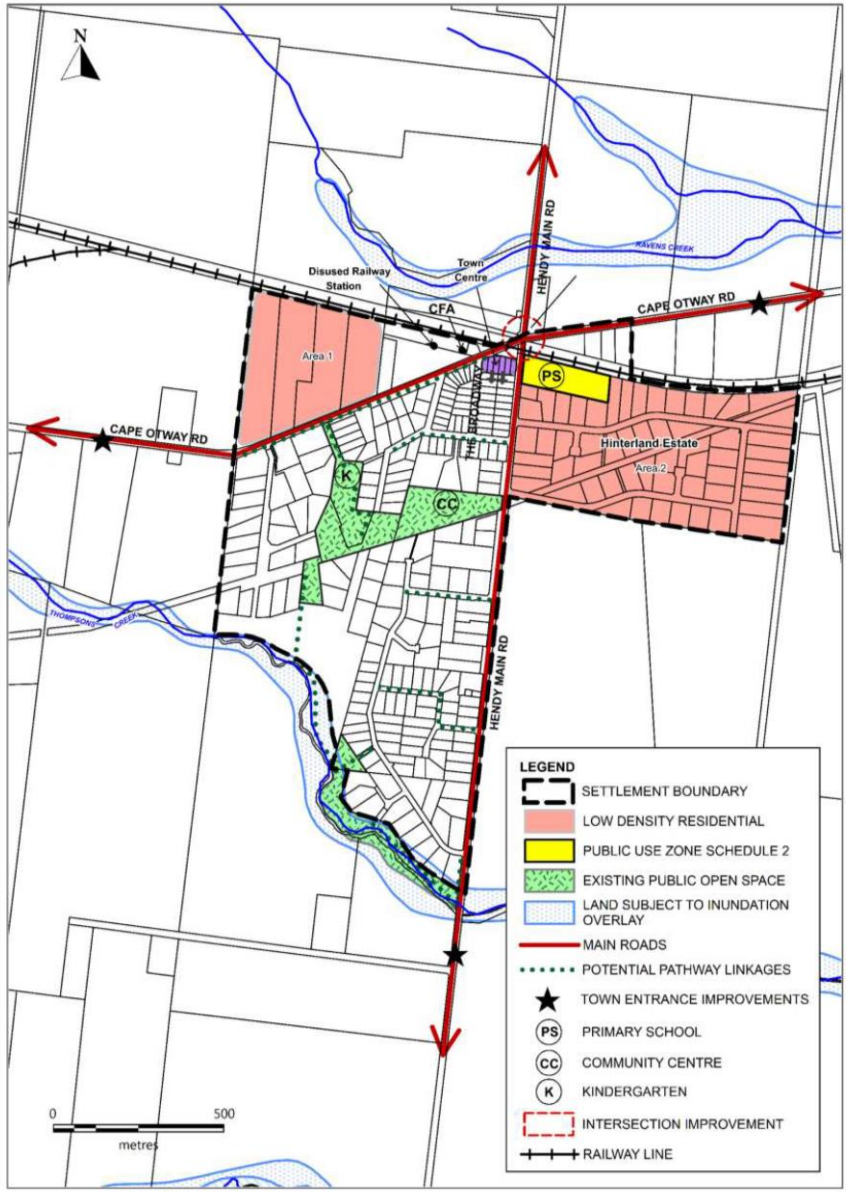
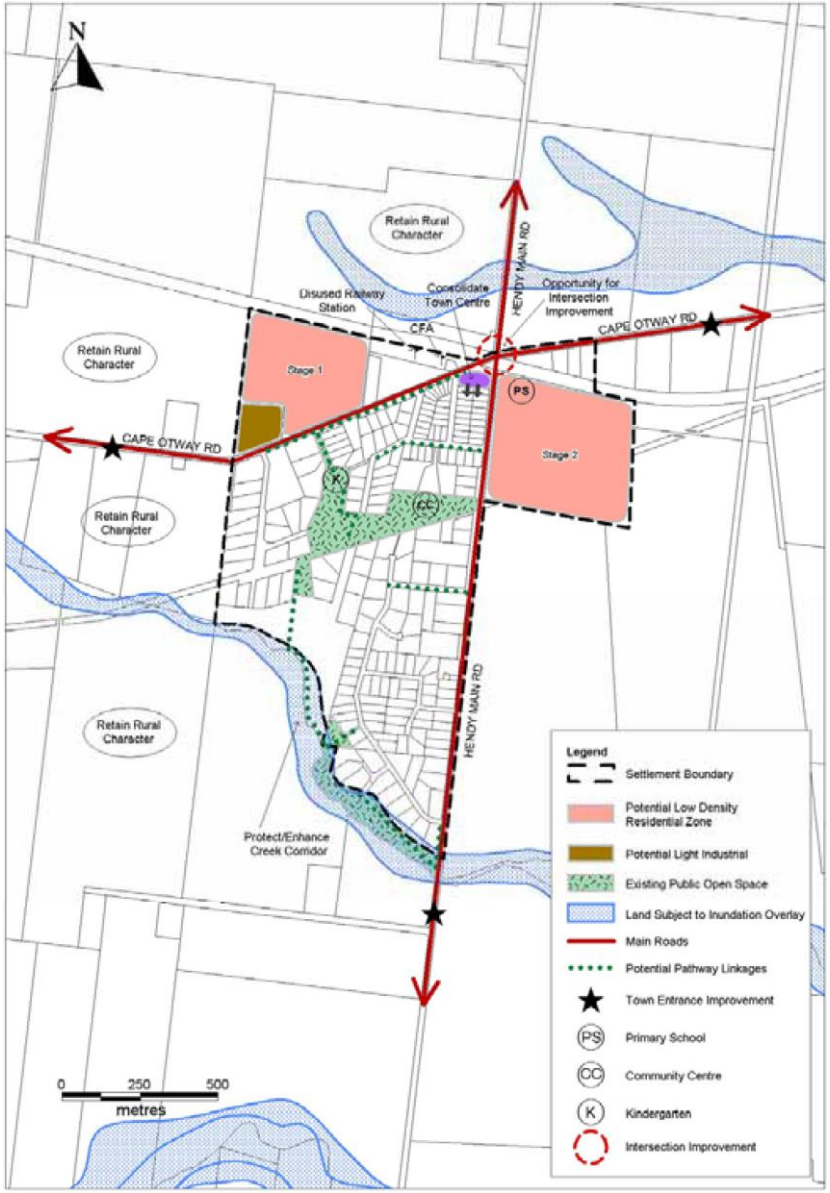


FIGURE 1G: MORIAC STRUCTURE PLAN 2010



2. Planning scheme bushfire context

The planning scheme contains provisions that inform permit requirements, application requirements and policies & decision guidelines where the bushfire hazard could be an influence on future land use and development. This section provides an overview of these provisions. Figure 2 summarises the considerations.

2.1 Integrated decision making (c71.02-3)

c71.02-3 requires planning authorities, in bushfire areas:

> *[T]o prioritise the protection of human life over all other policy considerations.*

Bushfire considerations are not to be balanced in favour of net-community benefit, as occurs for all other planning scheme matters. The bushfire emphasis in c71.02-3 was introduced through Amendment VC140 in December 2017. Such policy settings were recommended in 2011 by the *2009 Victorian Bushfires Royal Commission*.

2.2 Natural hazards and climate change (c13.01-1S)

The objective of the State natural hazards and climate change policy is:

> *To minimise the impacts of natural hazards and adapt to the impacts of climate change through risk-based planning.*

c13.01-1S Natural hazards and climate change contains a series of strategies to meet the above objective:

- *Respond to the risks associated with climate change in planning and management decision making processes.*
- *Identify at risk areas using the best available data and climate change science.*
- *Integrate strategic land use planning with emergency management decision making.*
- *Direct population growth and development to low risk locations.*
- *Develop adaptation response strategies for existing settlements in risk areas to accommodate change over time.*
- *Ensure planning controls allow for risk mitigation and climate adaptation strategies to be implemented.*
- *Site and design development to minimise risk to life, property, the natural environment and community infrastructure from natural hazards.*

2.3 State planning policy for bushfire (c13.02-1S)

The objective of the State planning policy for bushfire is:

> *To strengthen the resilience of settlements and communities to bushfire through risk-based planning that prioritises the protection of human life.*

The key strategy that directs bushfire decision making is:

> *Give priority to the protection of human life by:*
>
> - *Prioritising the protection of human life over all other policy considerations.*
> - *Directing population growth and development to low risk locations and ensuring the availability of, and safe access to, areas where human life can be better protected from the effects of bushfire.*
> - *Reducing the vulnerability of communities to bushfire through the consideration of bushfire risk in decision making at all stages of the planning process.*

c13.02-1S Bushfire Planning applies to all planning and decision making relating to land:

- *Within a designated bushfire prone area;*
- *Subject to a Bushfire Management Overlay; or*
- *Proposed to be used or developed in a way that may create a bushfire hazard.*

c13.02-1S Bushfire Planning contains a series of strategies and these are summarised below.

<u>Landscape bushfire considerations</u>

c13.02-1S Bushfire Planning requires a tiered approach to assessing the hazard:

- *Considering and assessing the bushfire hazard on the basis of [...] landscape conditions - meaning the conditions in the landscape within 20 kilometres and potentially up to 75 kilometres from a site;*
- *Assessing and addressing the bushfire hazard posed to the settlement and the likely bushfire behaviour it will produce at a landscape, settlement, local, neighbourhood and site scale, including the potential for neighbourhood-scale destruction.*

Alternative locations for development

c13.02-1S Bushfire Planning includes two strategies that seek to direct new development:

- *Give priority to the protection of human life by [...] directing population growth and development to low risk locations [.]*
- *Assessing alternative low risk locations for settlement growth on a regional, municipal, settlement, local and neighbourhood basis.*

Availability and safe access to areas of enhanced protection

c13.02-1S Bushfire Planning requires a location in easy reach that provides better protection for life from the harmful effects of bushfire:

- *Ensuring the availability of, and safe access to, areas assessed as a BAL-LOW rating under AS3959-2018 Construction of buildings in bushfire-prone areas (Standards Australia) where human life can be better protected from the effects of bushfire.*
- *Directing population growth and development to low risk locations and ensuring the availability of, and safe access to, areas where human life can be better protected from the effects of bushfire.*

The views of the relevant fire authority

c13.02-1S Bushfire Planning identifies that a key element of a risk assessment is to:

- *Consult […] with […] the relevant fire authority early in the process to receive their recommendations and implement appropriate bushfire protection measures.*

Site based exposure

c13.02-1S Bushfire Planning provides policy directions for planning authorities about the level of acceptable exposure for new development enabled by a planning scheme amendment:

- *Directing population growth and development to low risk locations, being those locations assessed as having a radiant heat flux of less than 12.5 kilowatts/square metre under AS3959-2018 Construction of buildings in bushfire-prone areas (Standards Australia).*
- *Not approving any strategic planning document, local planning policy, or planning scheme amendment that will result in the introduction or intensification of development in an area that has, or will on completion have, more than a BAL-12.5 rating under AS3959-2018.*

Areas of high biodiversity conservation value

c13.02-1S Bushfire Planning provides directions on situations where a bushfire risk and biodiversity values are both present:

- *Ensure settlement growth and development approvals can implement bushfire protection measures without unacceptable biodiversity impacts by discouraging settlement growth and development in bushfire affected areas that are of high biodiversity conservation value.*

No increase in risk

c13.02-1S Bushfire Planning provides an overall view of acceptable risk:

- *Ensuring the bushfire risk to existing and future residents, property and community infrastructure will not increase as a result of future land use and development.*
- *Achieving no net increase in risk to existing and future residents, property and community infrastructure, through the implementation of bushfire protection measures and where possible reduce bushfire risk overall.*

2.4 Bushfire Management Overlay (c44.06)

The purpose of the Bushfire Management Overlay is:

- *To ensure that the development of land prioritises the protection of human life and strengthens community resilience to bushfire.*
- *To identify areas where the bushfire hazard warrants bushfire protection measures to be implemented.*
- *To ensure development is only permitted where the risk to life and property from bushfire can be reduced to an acceptable level.*

The Bushfire Management Overlay is generally applied to patches of vegetation (except grasslands) that are larger than 4 hectares in size. Where such a patch of vegetation exists, a 150 metre ember protection buffer is added and this land is also included in the Bushfire Management Overlay. Areas of extreme hazard are also included in the Bushfire Management Overlay.

Planning Advisory Note 46: Bushfire Management Overlay Methodology and Criteria (2013, DPTLI) provides more information on where the Bushfire Management Overlay is applied.

Note: Bushfire Management Overlay does not apply to the study area

2.5 Bushfire Planning (c53.02)

c52.03 Bushfire Planning specifies the requirements that apply to a planning application under c44.06 Bushfire Management Overlay. The purpose of this provision is:

- *To implement the Municipal Planning Strategy and the Planning Policy Framework.*
- *To ensure that the development of land prioritises the protection of human life and strengthens community resilience to bushfire.*
- *To ensure that the location, design and construction of development appropriately responds to the bushfire hazard.*
- *To ensure development is only permitted where the risk to life, property and community infrastructure from bushfire can be reduced to an acceptable level.*
- *To specify location, design and construction measures for a single dwelling that reduces the bushfire risk to life and property to an acceptable level.*

2.6 Bushfire prone area (*c13.02-1S,* Building Act 1993 & Building Regulations 2018)

Bushfire Prone Areas are areas that are subject to or likely to be subject to bushfire. The Minister for Planning makes a determination to designate Bushfire Prone Areas under section 192A of the Building Act 1993.

Designated Bushfire Prone Areas include all areas subject to the Bushfire Management Overlay. Bushfire Prone Areas also include grassland areas and, occasionally, smaller patches of non-grassland vegetation.

The Building Regulations 2018 require bushfire construction standards in these areas and these are implemented by the relevant building surveyor as part of the building permit. These construction standards are referred to as bushfire attack levels (BAL).

Where land is included in the Bushfire Prone Area is also included in the Bushfire Management Overlay, the requirements of the Bushfire Management Overlay take precedence. Where this is the case, the building regulations ensure bushfire construction requirements in a planning permit are given effect to by the relevant building surveyor at the time a building permit is issued.

2.7 Use and development control in Bushfire Prone Areas (*c13.02-1S*)

c13.02-1S Bushfire Planning includes planning requirements for Bushfire Prone Areas. These are in the form a 'use and development control' that applies to certain uses that are in a Bushfire Prone Area.

The use and development control applies to Subdivisions of more than 10 lots, Accommodation, Child care centre, Education centre, Emergency services facility, Hospital, Indoor recreation facility, Major sports and recreation facility, Place of assembly, and any application for development that will result in people congregating in large numbers.

The use and development control requires that when assessing a planning permit application:

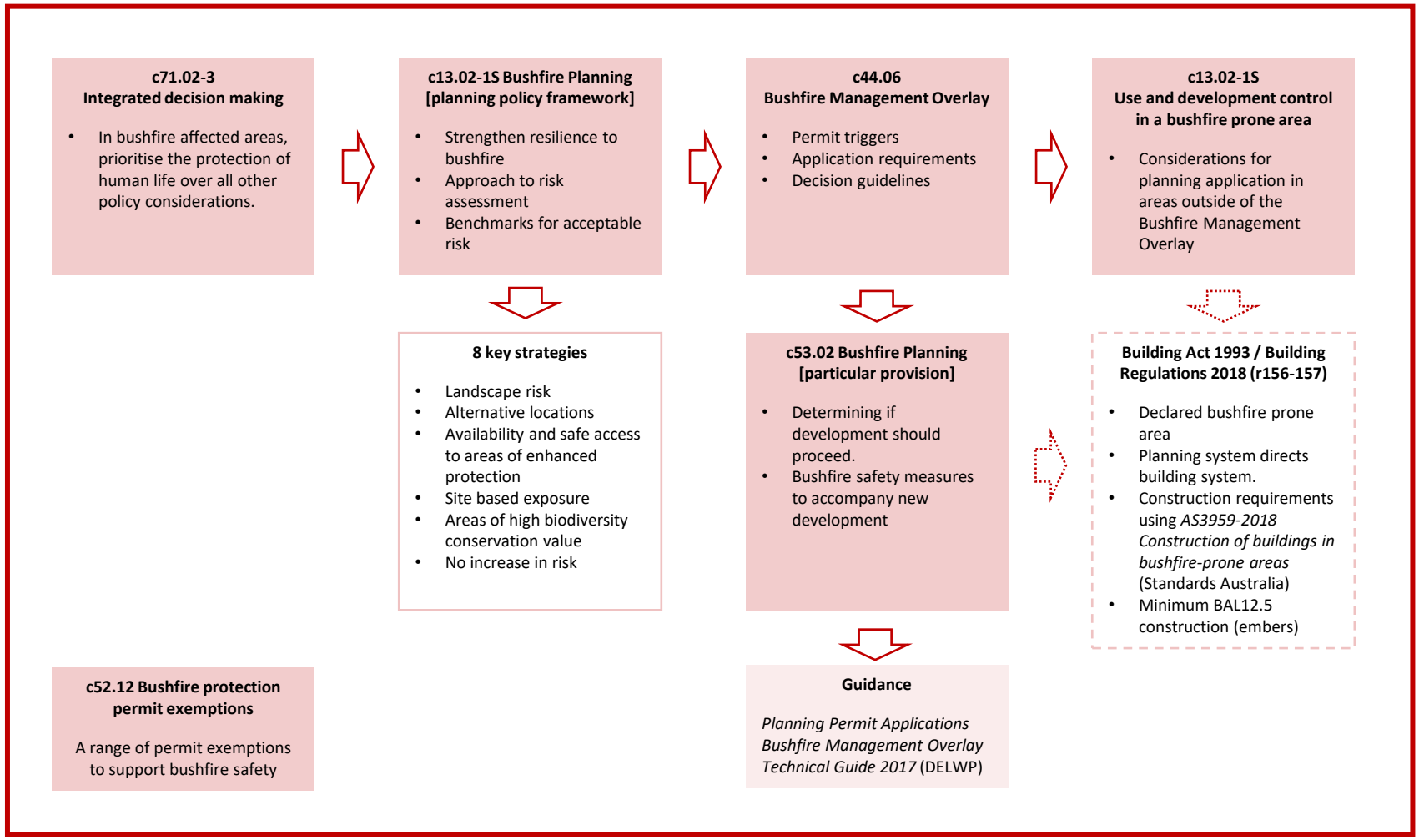
- *Consider the risk of bushfire to people, property and community infrastructure.*
- *Require the implementation of appropriate bushfire protection measures to address the identified bushfire risk.*
- *Ensure new development can implement bushfire protection measures without unacceptable biodiversity impacts.*

2.8 Bushfire protection permit exemptions (c52.12)

Bushfire related permit exemptions are included in *c52.12 Bushfire protection exemptions*. Exemptions are included for the following matters:

- Permit exemptions to create defendable space around existing buildings used for accommodation. They apply to bushfire prone areas, which includes land subject to the Bushfire Management Overlay. These are commonly known as the 10/30 rule and the 10/50 rule. This exemption applies to accommodation constructed or approved on or before 2009.
- Permit exemptions to create defendable space for a dwelling under the Bushfire Management Overlay, where the defendable space is specified in a planning permit issued after 31 July 2014. The permit exemption only applies to specified zones, which include residential zones. The permit exemption does not apply to defendable space specified in a planning permit for uses other than a dwelling and for any uses outside of the Bushfire Management Overlay.
- Permit exemptions for buildings and works associated with a community fire refuge and a private bushfire shelter (where a Class 10c building).

FIGURE 2: PLANNING SCHEME BUSHFIRE PROVISIONS AND SUPPORTING MATERIAL



3. Bushfire context

This section describes the bushfire context of the study area using a range of information sources that help understand bushfire. The matters identified include information typically provided as part of a bushfire hazard landscape assessment as described in *Planning Permit Applications Bushfire Management Overlay Technical Guide* (DELWP 2017).

Spatial information on the bushfire context is included in Attachment 1.

3.1 Bushfire conditions in Victoria

The Department of Environment, Land, Water and Planning (2015) identifies key features relevant to bushfires in Victoria. These include:

- A forest fire danger index of well over 100
- Severe drought conditions
- Temperatures above 40° C
- Relative humidity below 10%
- Strong to gale-force north-westerly winds
- A strong to gale-force west-south-westerly wind change that turns the eastern flank of a running bushfire into a wide new fire front.

DELWP notes that these weather conditions are representative of where a bushfire does most of its damage in a single day. The greatest loss of life and property in Victoria have historically been caused by such single day bushfires.

DELWP (2020) further notes that climate change is forecast to:

- Extend the bushfire season
- Make bushfires larger, more severe, and more frequent
- Make days with an elevated fire danger rating more frequent
- Start the bushfire season earlier, with more bushfires starting in spring (which may also change fire weather conditions that are experienced, such as wind speed and direction).

3.2 Bushfire management strategy guiding public agencies

The *Barwon South West Bushfire Management Strategy* (DELWP 2020) considers the long-term implications of bushfire to direct the activities of bushfire-related public agencies and to reduce bushfire risk to people, property, infrastructure and economic activity.

The bushfire management strategy includes simulations of house loss to identify areas across a landscape where bushfires could have the greatest impact. The outputs from these simulations show that the study area, comparative to other locations in the Barwon South West region, does not have areas significantly affected by projected house loss.

See **Attachment 1 Figure A: Modelled house loss bushfire risk**

3.3 Planning scheme bushfire designations

3.3.1 Bushfire Management Overlay

The Bushfire Management Overlay is applied in planning schemes based on areas of non-grassland vegetation larger than 4ha, with a 150m buffer applied to account for ember attack. It is also applied to land likely to be subject to extreme bushfire behaviour.

The Bushfire Management Overlay is not applied to any part of the Study Area. This reflects the lack of non-grassland bushfire hazards that meet the 4ha size threshold.

3.3.2 Bushfire prone area

A bushfire prone area is applied to all land within the Bushfire Management Overlay along with grassland areas, smaller patches of non-grassland vegetation and land usually within 150m or 50m of these areas.

For the Study Area, grasslands are included in the Bushfire Prone Area whilst low and lower fuel parts of the settlement on smaller urban lots are excluded except for a 50m buffer on the grassland edges of the settlement.

See **Figure 1D: Bushfire Management Overlay and bushfire prone area**

3.4 Victorian Fire Risk Register

The Victorian Fire Risk Register (VFRR) is a data set prepared by fire authorities and local councils that identifies assets at risk of bushfire. The human settlement data is most relevant to planning scheme decision making.

The VFRR is useful to the extent that it shows current assets (for example, settlements) at risk, according to fire authorities and the local council. The VFRR should not however be over-emphasised in planning decision making as it has not been prepared for this purpose and does not contemplate new risk that might arise because of a planning decisions.

The VFRR identifies the existing settlement parts of the Study Area as a medium risk. This is a typical outcome in the VFRR where settlements are within grasslands.

See **Attachment 1 Figure B: Victorian Fire Risk Register human settlement polygons**

3.5 Regional bushfire planning assessment

The *Regional Bushfire Planning Assessment Barwon South West Region* 2012 (DPCD) provides information about 'identified areas' where a range of land use planning matters intersect with a bushfire hazard. Identified areas are not identified in the Study Area.

See **Attachment 1 Figure 1D: Regional Bushfire Planning Assessment**

3.6 Joint Fuel Management Program

The Joint Fuel Management Program outlines where Forest Fire Management Victoria, the CFA and (sometimes) other public agencies intend to carry out fire management operations on Victoria's public and private land over the next three years. The Joint Fuel Management Program is published by Forest Fire Management Victoria (2021).

The Joint Fuel Management Program can include the following treatments:

- Asset protection zones designed to provide localised protection to human life, property and key assets.
- Bushfire moderation zones designed to reduce the speed and intensity of bushfires.
- Landscape management zones designed to reduce overall bushfire hazard at the landscape scale, in addition to land management and ecological objectives.

At a landscape scale, there are not treatments in or close to the Study Area. There are extensive treatments in the Otway Ranges more than 5km to the south of the Study Area.

3.7 Bushfire history

Bushfire history can be informative to understanding possible bushfire behaviour, but where bushfire has or has not occurred in the past should not be overemphasised in planning decision making. All bushfire hazards are assumed capable of being part of a bushfire and planning decision making is required to respond to bushfire hazards on this basis.

However, bushfire history can assist in understanding how communities have previously experienced bushfire and can reiterate important features likely to arise in any future bushfire (for example, the effect of the late afternoon wind change typical in Victoria's worst bushfire weather).

Bushfire history includes the 1983 Ash Wednesday bushfires that affected large parts of the Otway Ranges and grassland areas to the north of the Otway Ranges.

See **Attachment 1 Figure 1C: Bushfire history**

4. Landscape and strategic bushfire considerations

This section describes landscape bushfire hazards. Having regard to the contextual information in Section 3, it considers how the bushfire hazard in the surrounding landscape may affect the study area.

Landscape bushfire hazards are important because they help to understand how bushfire may impact on a location, including the likelihood of a bushfire threatening a location, its likely intensity and destructive power, and the potential impact on life and property.

The extent of the surrounding landscape that is relevant is determined by factors such as the extent and continuity of vegetation, potential fire runs and where a bushfire can start, develop and grow large. The extent of bushfire hazard relevant may be 1-2km or up to 50km, depending on the locality.

The landscape analysis in this section takes a similar approach to a bushfire hazard landscape assessment described in *Planning Permit Applications Bushfire Management Overlay Technical Guide* (DELWP 2017). This includes the identification of landscape types that help understand the relative risk between different places.

See **Figure 4A: Overview of landscape types**

The section enables key strategies in *c13.02 Bushfire Planning to be c*onsidered. These strategies include the following:

> Landscape bushfire considerations
>
> c13.02-1S Bushfire Planning requires a tiered approach to assessing the hazard:
>
> - *Considering and assessing the bushfire hazard on the basis of [..] landscape conditions - meaning the conditions in the landscape within 20 kilometres and potentially up to 75 kilometres from a site.*
> - *Assessing and addressing the bushfire hazard posed to the settlement and the likely bushfire behaviour it will produce at a landscape, settlement, local, neighbourhood and site scale, including the potential for neighbourhood-scale destruction.*
>
> Availability of safe areas
>
> c13.02-1S Bushfire Planning requires a location in easy reach that provides absolute protection for life from the harmful effects of bushfire:
>
> - *Ensuring the availability of, and safe access to, areas assessed as a BAL-LOW rating under AS3959-2018 Construction of Buildings in bushfire-prone areas (Standards Australia) where human life can be better protected from the effects of bushfire.*
> - *Directing population growth and development to low risk locations and ensuring the availability of, and safe access to, areas where human life can be better protected from the effects of bushfire.*

Landscape areas schematically illustrated in this section are derived from two key two variables :

- Landscape bushfire hazards and their potential to generate extreme fire behaviour and neighbourhood scale destruction; and
- Availability and access to low fuel areas that may provide shelter from the harmful effects of bushfire.

See **Figure 4B: Landscape bushfire analysis**

4.1 Landscape bushfire hazards

Landscape bushfire hazards are from grasslands.

Due to the highly modified environment grassland areas are often in a managed setting either because of agricultural activities or managed as part of the gardens associated with rural living and low-density residential development. For considering the landscape risk associated with grassland areas, it is assumed that the grasslands are unmanaged.

The Country Fire Authority (2022) identify the following grassfire characteristics:

- Grassfires can start and spread quickly and are extremely dangerous.
- Grassfires can travel up to 25 km per hour and pulse even faster over short distances.
- Grass is a fine fuel and burns faster than bush or forests.
- Grassfires tend to be less intense and produce fewer embers than bushfires, but still generate enormous amounts of radiant heat.
- The taller and drier the grass, the more intensely it will burn.

- The shorter the grass, the lower the flame height and the easier the fire will be to control.
- Grassfires can start earlier in the day than bushfires, because grass dries out more quickly when temperatures are high.

Interspersed with grassland areas are areas of fragmented vegetation. These will include clumps of non-grassland vegetation, roadside vegetation, strips of trees (for example, along vehicle accesses and water courses) and the occasional smaller patch of non-grassland vegetation. The extent of fragmentation will be a factor when considering bushfire at the local scale but the impact on landscape-scale bushfire is minimal. The grassland vegetation will be the dominant driver of bushfire behaviour in the grasslands around the Study Area.

The Otway Ranges are located 6km to the south of the Study Area. In the Otway Ranges, extreme bushfire behaviour is to be expected. At the edges of the Otway Ranges significant ember attack is to be expected, as well as large grassfires as forest fires move into grassland areas.

It is considered Moriac is beyond the influence of extreme bushfire behaviour from the Otway Ranges. Extreme ember attack from it is unlikely, although long distance spotting may arise but this would be within what would be ordinarily expected in a Bushfire prone area, in any event.

There is the potential for more grassfires arising from ember attack out of the Otway Ranges. However, at the southern edge of the Study Area grassfire is assumed anyway, as outlined above. With the separation between the Otway Ranges and the Study Area, there is no material influence on planning decision making that doesn't arise for grasslands much closer to the Study Area.

4.2 Likely landscape bushfire scenarios

The extent of grasslands means a larger grassfire is capable of approaching the Study Area, most likely under the influence of a north-westerly wind and/or a south-westerly wind on the wind change typical in Victoria's bushfire weather. Grassfires may start in any location.

The main risk from grassfires is fire impacting on the edge of settlement areas and where hazards continue, bushfire may penetrate into settlement areas. Localise fires may arise in vegetation in gardens, parks and on roadsides. Smoke may arise throughout the Study Area.

Figure 4C provides a generalised understanding of how bushfire threatens settlements.

4.3 Low fuel areas

An assessment has been made of the location and access to places that are lower fuel where human life can be better protected from the harmful effects of bushfire. Low fuel areas can provide protection by enabling people to move away from bushfire hazards if they need to.

c13.02-1S Bushfire Planning defines low fuel places as BAL:Low. BAL:Low places are where hazardous vegetation is more than 100m away (50m for grasslands). Hazardous vegetation for the purpose of BAL:Low is defined as vegetation that cannot be excluded under 2.2.3.2 of *Australian Standard AS3959:2018 Construction of buildings in bushfire-prone areas* (Standards Australia).

In BAL:Low places, people sheltering in the open air will not be exposed to flame contact and the highest levels of radiant heat from a moving bushfire, although radiant heat from some hazards may still be life threatening. BAL:Low places may also be subject to localised fires, which could include gardens and structures on fire. BAL:Low places do not consider ember attack, which may arise in these areas.

BAL:Low places are present in the denser urban areas in the northern and southern parts of the settlement. The land not included in a Bushfire Prone Area, east of Daniel Drive, is a credible estimate of land that is capable of being assessed as BAL:Low, providing a reliable assessment of low-fuel land in Moriac.

Other areas which are lower fuel may be available, but larger lot sizes and less effective grassland interfaces mean they have not been included in the assessment.

See **Figure 4B for indicative locations of low fuel areas and BAL:Low capable areas**

Other places of shelter

A designated neighbourhood safer place is located at Newling Reserve / Moriac Community Centre in Moriac

Consistent with CFA advice, designated places of safety are not afforded any weight in this bushfire assessment. This is because designated places of safety are not a justification to enable new risk to be introduced that is otherwise not consistent with planning scheme policies.

4.4 Landscape types

Based on the likely bushfire scenarios, the potential for neighbourhood scale destruction and the availability and access to low fuel areas, landscape types can be applied. The identified landscape types are necessarily strategic and are not intended to be scaled to apply to individual properties.

Landscape type 1 is assessed for the Study Area. Landscape type 1 is described by DELWP (2017) as follows:

- *There is little vegetation beyond 150 metres of the site (except grasslands and low-threat vegetation)*
- *Extreme bushfire behaviour is not possible*
- *The type and extent of vegetation is unlikely to result in neighbourhood scale destruction of property*
- *Immediate access is available to a place that provides shelter from bushfire (usually capable of being provided within a site or development proposal).*

Landscape type 1 positions the Study Area at the lowest end of landscape risk on the spectrum of risk in Victoria using the landscape type typology.

See **Figure 4B: Landscape bushfire analysis**

FIGURE 4A: OVERVIEW OF LANDSCAPE TYPES

Planning Permit Applications Bushfire Management Overlay Technical Guide (DELWP, 2017) identifies landscape types to inform planning decision making based on the risk from the landscape beyond the site. They enable landscape bushfire information to be described according to a simple framework to assist planning decision making.

Landscape types assist in:

- Consistently describing landscape hazards. Landscape hazards are bushfire hazards more than 150m from an area that inform the likelihood of a bushfire threatening a location and its likely intensity and destructive power.
- Describing proximity and access to low fuel areas that may provide shelter from bushfire. In these areas, people may avoid flame contact and can withstand the effects of radiant heat from a moving bushfire.
- Understanding the relative risk between different locations.

Landscape types when applied provide a spatial representation of how different areas are affected by landscape scale bushfire considerations. Based on this, places that are relatively higher or lower risk emerge.

The diagram on this page summarises landscape types.

LANDSCAPE TYPE 1	LANDSCAPE TYPE 2	LANDSCAPE TYPE 3	LANDSCAPE TYPE 4
• There is little vegetation beyond 150 metres of the site (except grasslands and low-threat vegetation) • Extreme bushfire behaviour is not possible • The type and extent of vegetation is unlikely to result in neighbourhood scale destruction of property • Immediate access is available to a place that provides shelter from bushfire	• The type and extent of vegetation located more than 150 metres from the site may result in neighbourhood-scale destruction as it interacts with the bushfire hazard on and close to a site • Bushfire can only approach from one aspect and the site is located in a suburban, township or urban area managed in a minimum fuel condition • Access is readily available to a place that provides shelter from bushfire. This will often be the surrounding developed area	• The type and extent of vegetation located more than 150 metres from the site may result in neighbourhood-scale destruction as it interacts with the bushfire hazard on and close to a site • Bushfire can approach from more than aspect • The area is located in an area that is not managed in a minimal fuel condition • Access to an appropriate place that provides shelter from bushfire is not certain	• The broader landscape presents an extreme risk • Bushfires may have hours or days to grow and develop before impacting[1] • Evacuation options are limited or not available

Lower risk from the bushfire landscape ⟷ **Higher risk from the bushfire landscape**

Study Area

[1] *Adapted by author*

FIGURE 4B: LANDSCAPE BUSHFIRE ANALYSIS

FIGURE 4C: GENERALISED UNDERSTANDING OF HOW BUSHFIRE THREATENS SETTLEMENTS (DELWP 2020)

Understanding the bushfire threat

Landscape scale bushfire threats

Vegetation, topography and weather conditions are the three major characteristics that contribute to landscape scale bushfire threat.

The intensity and duration of a bushfire is largely influenced by these factors. These broader landscape characteristics strongly impact how a fire is likely to act and its probable size, intensity and destructive power and therefore its level of risk and potential to impact people and safety. In some circumstances the risk from a large bushfire cannot be mitigated, which is why development should be avoided in the areas of highest risk.

How bushfire may threaten a settlement

Bushfires are complex and many factors contribute to their behaviour and the threat they can pose. For the purpose of addressing bushfire through the planning scheme, there are three main factors to be considered at the settlement scale.

1. Flame contact and radiant heat
2. Ember Attack
3. Bushfire 'fuels' in vegetated areas

1. Flame contact and radiant heat

The settlement interface with the bushfire hazard is where a moving bushfire front will create flame contact and radiant heat that are harmful to human life and likely to destroy buildings.

Part 2 of the Guidelines provides direction on how to design the settlement interface to mitigate the impact of flame contact and radiant heat from a moving fire front.

2. Ember attack

Land on the settlement interface and land throughout a settlement may be exposed to ember attack.

Ember attack occurs when small burning twigs, leaves and bark are carried by the wind, landing throughout a settlement and igniting fuel sources. Fuel sources typically include vegetation but can also include buildings and sheds.

When ignited from embers, these fuel sources can generate flame contact and levels of radiant heat that are harmful to human life and can destroy buildings. Ember attack is the most common way that structures catch fire during a bushfire. Refer to Parts 1 & 3 on how to manage the threat from ember attack within a settlement.

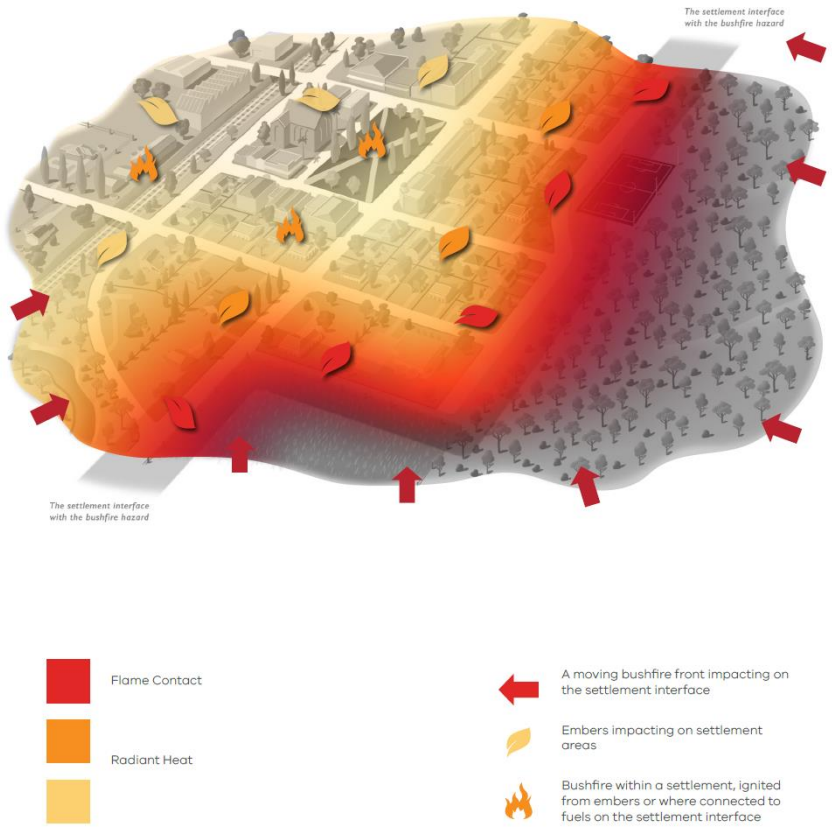
3. Bushfire 'fuels' in vegetated areas

'Fire runs' is the term given to describe how a bushfire will likely 'run' or move through a landscape. Fire runs are fuelled by vegetation and can be ignited where there is a continuous fuel path. This path may be from a forest and lead to a settlement. If the fuels at the interface are not managed it enables deeper penetration of a moving fire front or ember attack potential.

Vegetated areas within a settlement, such as nature reserves, river corridors and areas of remnant vegetation, can create a larger fire run by creating a continuous fuel path within or through a settlement.

Therefore, large vegetated areas may contribute to the fire run potential and therefore the risk to human life.

Refer to 1.4, 2.2, 3.1 and Attachment 1 on how to manage the threat from vegetated areas within a settlement.



5. Exposure to bushfire at the neighbourhood and local scale (12.5kw/sq.m of radiant heat)

Exposure to bushfire at the neighbourhood and local scale assesses the level of radiant heat likely to arise from hazardous vegetation within and in close proximity (150m) to a proposal. Considering exposure to bushfire enables new development to be separated from hazardous vegetation so that radiant heat of less than 12.5kw/sq.m arises, as required by *c13.02-1S Bushfire Planning* for new development enabled by a planning scheme amendment.

This section enables key strategies in *c13.02 Bushfire Planning* to be considered. These strategies include the following:

Site based exposure

- *Not approving any strategic planning document, local planning policy, or planning scheme amendment that will result in the introduction or intensification of development in an area that has, or will on completion have, more than a BAL-12.5 rating under AS3959-2018.*
- *Directing population growth and development to low risk locations, being those locations assessed as having a radiant heat flux of less than 12.5 kilowatts/square metre under AS3959-2018 Construction of buildings in bushfire-prone areas (Standards Australia).*

5.1 Methodology to determine exposure to bushfire

The methodology for a bushfire hazard site assessment as described in *Planning Permit Applications Bushfire Management Overlay Technical Guide* (DELWP 2017) and *AS3959-2018 Construction of buildings in bushfire-prone areas* (Standards Australia) informs the assessment. Key assumptions include a Fire Danger Rating of 100 and a flame temperature of 1080'C.

See **Figure 5D: Indicative site assessment diagram prepared at the settlement scale**

Hazard identification

Hazardous vegetation was identified within and around (150m) the Study Area using expert judgment based on field work and aerial photography. EVC's and tree cover data sets were also reviewed.

Ecological vegetation classes (EVCs) are limited within the Study Area.

See **Figure 5A: Ecological vegetation classes**

Low-threat vegetation as described in *AS3959-2018 Construction of buildings in bushfire-prone areas* (Standards Australia) was excluded as it is not considered hazardous.

Slope under hazardous vegetation was assessed using the 10m contour, having regard to topographical information. Slope under hazardous vegetation informs how fast a bushfire may travel. The slope is generally flat but localised slopes arise.

At this stage, the site assessment diagrams should be read as indicative only. The 10m contour is a credible basis for strategic planning but at the site scale, there will ne nuance in the slope which may change the required setback. It is also the case that development, either proposed or constructed, will change the hazard including the removal of vegetation. The site assessment diagrams should therefore be read as indicative.

See **Figure 5B: Elevation based on 10m contour**
See **Figure 5C: Slope based on a 10m contour**
See **Figure 5D: Site assessment diagram (which includes contours)**
See **Figure 5D-1: Bushfire hazard site assessment diagram – 650 Cape Otway Road**
See **Figure 5D-2: Bushfire hazard site assessment diagram – 675 Cape Otway Road**
See **Figure 5D-3: Bushfire hazard site assessment diagram – 645 Cape Otway Road**
See **Figure 5D-4: Bushfire hazard site assessment diagram – 865 Hendy Main Road & 15a Kidman Street**

5.2 Planning scheme required bushfire setbacks

Setbacks from hazardous vegetation must meet Column A in Table 2, *c53.02-3 Bushfire Planning*. These setbacks provide for exposure a radiant heat flux of less than 12.5 kilowatts/square metre, as required by *c13.02-1S Bushfire Planning* for a strategic planning document or development enabled by a planning scheme amendment.

The following setback arise based on the assessed hazardous vegetation.

Grasslands

- **19m,** based on a slope of flat / upslope.
- **22m**, based on downslope of 0-5 degrees.
- **25m**, based on a downslope of 5-10 degrees.

Forest / Woodland

- **48m** based on a slope of flat / upslope.
- **57m**, based on downslope of 0-5 degrees.
- **69m** based on a downslope of 5-10 degrees.

The setbacks are shown on the site assessment diagrams below.

In the context of preparing the Structure Plan, the setbacks are highly achievable in the grassland setting that dominates the Study Area.

At a strategic scale, the difference between assessed vegetation types or slopes used in determining exposure is limited (for example, setbacks may vary 20-30m). However, a bushfire hazard site assessment will be necessary for any individual rezoning or development proposal. This is required under the ordinary approach for preparing a planning scheme amendment, in any event.

FIGURE 5A: ECOLOGICAL VEGETATION CLASSES

Data extracted: 2022

FIGURE 5B: ELEVATION BASED ON 10m CONTOUR

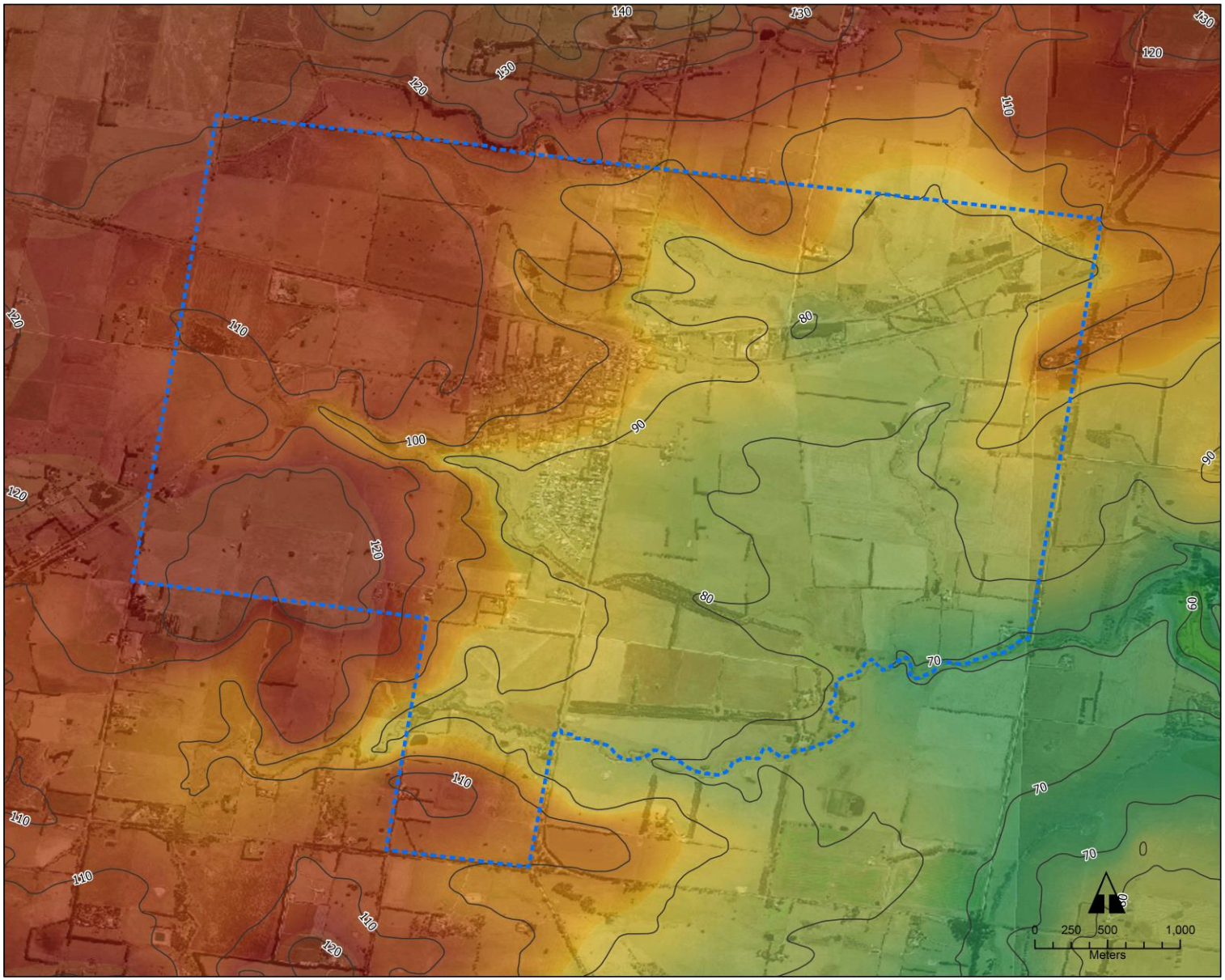


FIGURE 5C : SLOPE BASED ON A 10M CONTOUR

FIGURE 5D: INDICATIVE SITE ASSESSMENT DIAGRAM PREPARED AT THE SETTLEMENT SCALE

Study Area

Low-threat

Grassland

Forest or Woodland

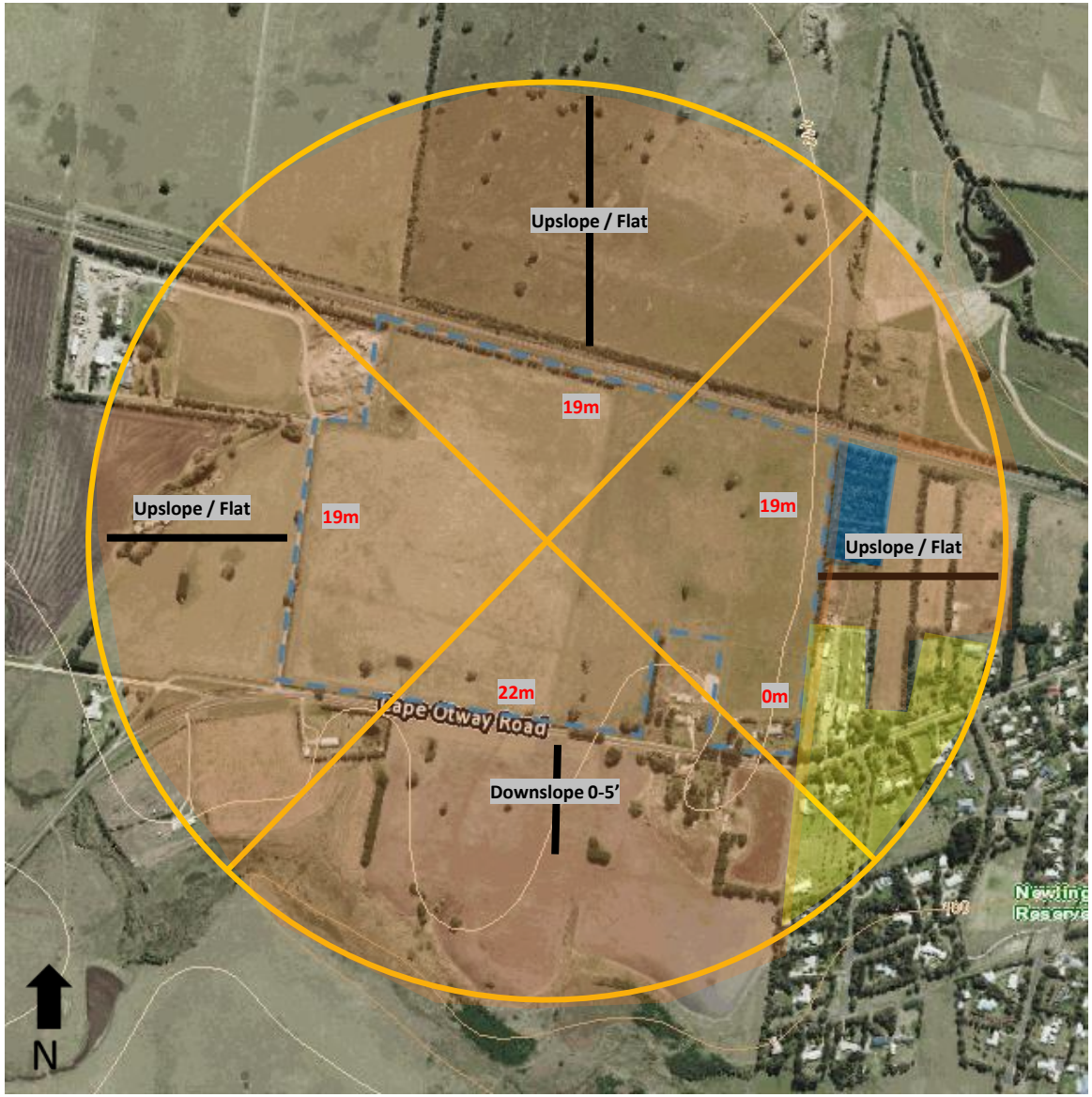
Pockets of Forest or Woodland in the grassland setting

1 Grassland / New subdivision

At the time of inspection, this land was relatively low threat. However, it is likely hazards will increase over time and during the transition from what was grasslands into lower density residential development. For this reason, it has been assessed as grasslands.

Not to scale, written dimensions apply

FIGURE 5D-1: BUSHFIRE HAZARD SITE ASSESSMENT DIAGRAM – 650 CAPE OTWAY ROAD



Subject Site

Assessment area

Downslope 5-10'

Slope direction & degrees

Classifiable vegetation

Forest

Woodland

Scrub

Shrubland

Mallee / Mulga

Grassland

Modified vegetation

Excludable vegetation

(e) Non-vegetated areas

(f) Low-threat vegetation

10m

Contours

80m

Setback required from hazardous vegetation

Do not scale drawings. Written dimensions apply.

FIGURE 5D-2: BUSHFIRE HAZARD SITE ASSESSMENT DIAGRAM – 675 CAPE OTWAY ROAD

Subject Site

Assessment area

Downslope 5-10' — Slope direction & degrees

Classifiable vegetation

Forest

Woodland

Scrub

Shrubland

Mallee / Mulga

Grassland

Modified vegetation

Excludable vegetation

(e) Non-vegetated areas

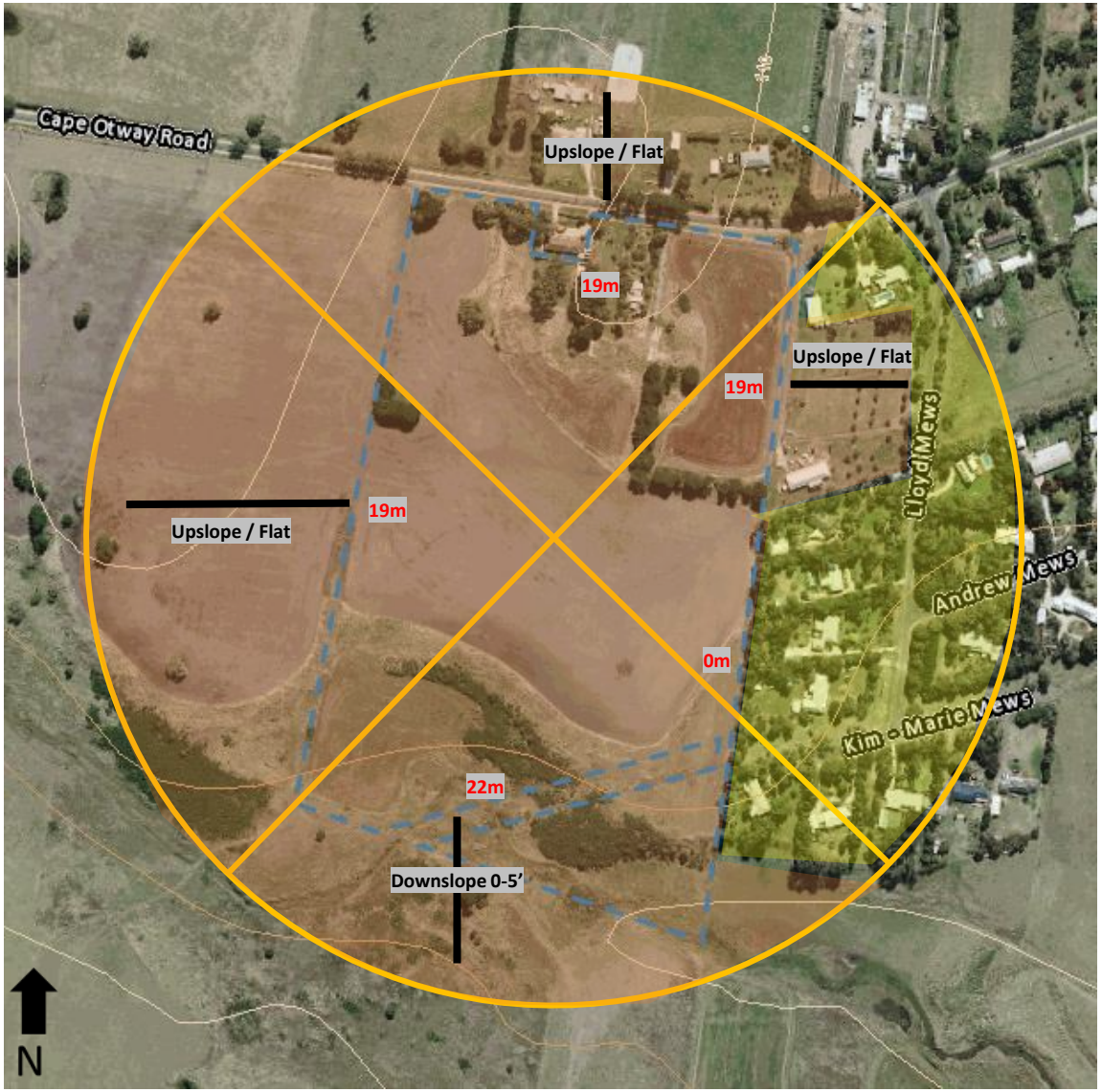
(f) Low-threat vegetation

10m — **Contours**

80m — **Setback required from hazardous vegetation**

Do not scale drawings. Written dimensions apply.

FIGURE 5D-3: BUSHFIRE HAZARD SITE ASSESSMENT DIAGRAM – 645 CAPE OTWAY ROAD



Subject Site

Assessment area

Downslope 5-10'

Slope direction & degrees

Classifiable vegetation

Forest

Woodland

Scrub

Shrubland

Mallee / Mulga

Grassland

Modified vegetation

Excludable vegetation

(e) Non-vegetated areas

(f) Low-threat vegetation

10m

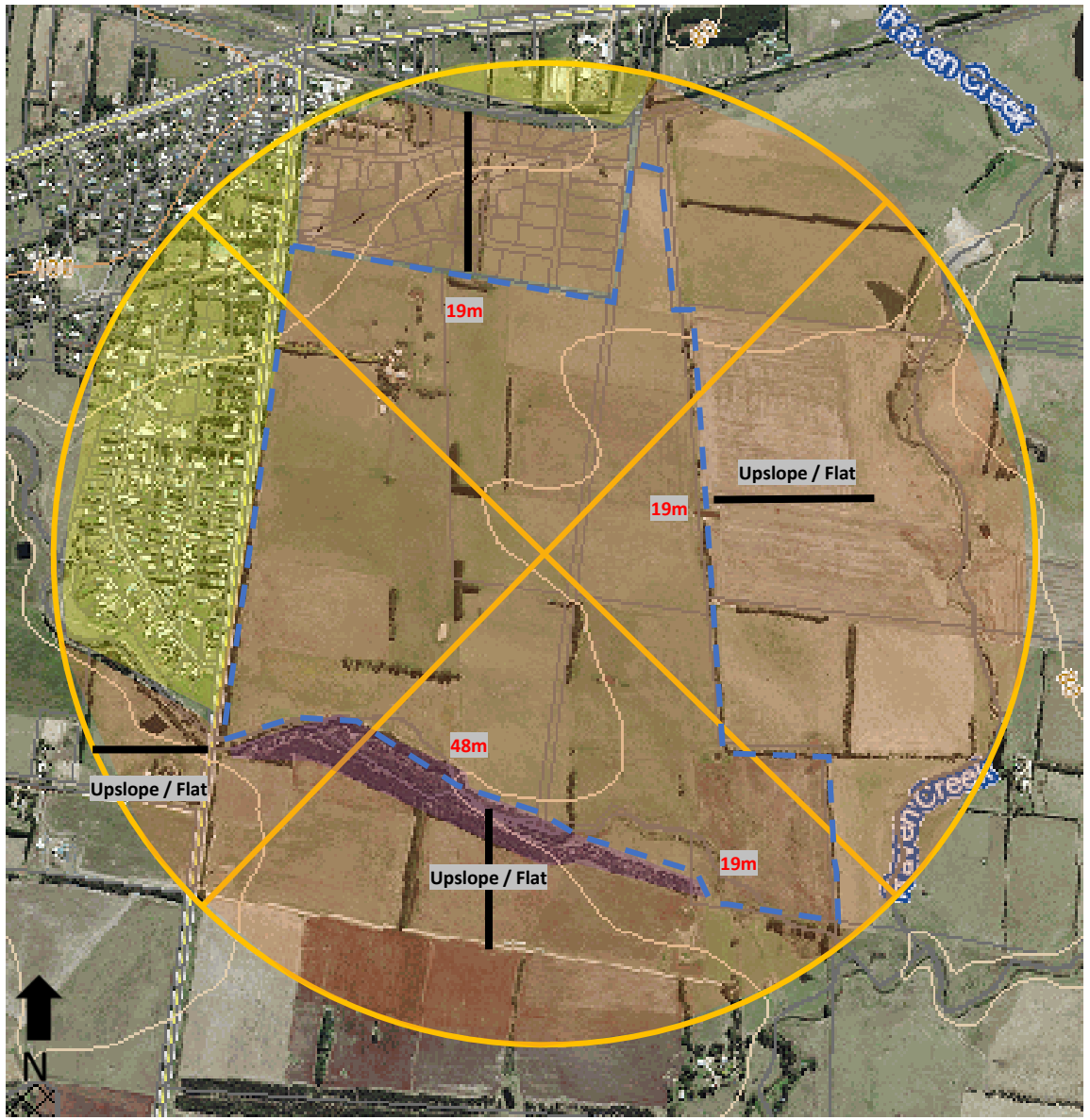
Contours

80m

Setback required from hazardous vegetation

Do not scale drawings. Written dimensions apply.

FIGURE 5D-4 BUSHFIRE HAZARD SITE ASSESSMENT DIAGRAM – 865 HENDY MAIN ROAD & 15a KIDMAN STREET



Subject Site

Assessment area

Downslope 5-10°

Slope direction & degrees

Classifiable vegetation

Forest

Woodland

Scrub

Shrubland

Mallee / Mulga

Grassland

Modified vegetation

Excludable vegetation

(e) Non-vegetated areas

(f) Low-threat vegetation

10m

Contours

80m

Setback required from hazardous vegetation

Do not scale drawings. Written dimensions apply.

6. Assessment against *c13.02-1S Bushfire Planning* and other bushfire provisions

This report has considered the bushfire context of the study area, the landscape hazard, the availability of low fuel areas and whether there are locations that could satisfy the *c13.02 Bushfire Planning* exposure requirement.

6.1 c13.02-1S Bushfire Planning

6.1.1 Landscape bushfire considerations

c13.02-1S Bushfire Planning requires a tiered approach to assessing the hazard:

- *Considering and assessing the bushfire hazard on the basis of [..] landscape conditions - meaning the conditions in the landscape within 20 kilometres and potentially up to 75 kilometres from a site.*
- *Assessing and addressing the bushfire hazard posed to the settlement and the likely bushfire behaviour it will produce at a landscape, settlement, local, neighbourhood and site scale, including the potential for neighbourhood-scale destruction.*

The bushfire hazard landscape assessment has considered the bushfire hazard at the strategic and landscape scales as required by these policies. The residual risk at the landscape scale is from grassfire. Grassfire is likely to arise form the north-west, west and south-west of the Study Area under dominant bushfire weather in Victoria.

Mitigating the landscape impact of grassfire is highly achievable through the separation of development from unmanaged grasslands and the planning of development to be low-fuel, preventing grassfire from penetrating urban areas and providing the ability for people to more away from the hazard interface. These outcomes are highly achievable in the Structure Plan.

The identified landscape type is Landscape type 1. Landscape type 1 positions the Study Area at the lowest end of landscape risk on the spectrum of risk in Victoria using the landscape type typology. Due to the lack of non-grassland landscape scale hazards, the potential for extreme bushfire behaviour is limited.

Based on the landscape assessment undertaken, it is concluded that development within the Study Area is consistent with landscape-scale bushfire considerations.

6.1.2 Alternative locations for development

c13.02-1S Bushfire Planning includes two strategies that seek to direct new development:

- *Give priority to the protection of human life by [..] directing population growth and development to low risk locations[.]*
- *Assessing alternative low risk locations for settlement growth on a regional, municipal, settlement, local and neighbourhood basis.*

The residual risk is from grassfires. This a routine risk area in Victoria and is where most new growth is directed to, including for example Melbourne, Geelong and Torquay growth areas. There is no relative risk benefit in directing development away from the Study Area based on the grassland risk. Instead, the objective is to manage the risk to low levels if introducing new development.

The relative risk is better understood through landscape types, with the Study Area assessed as Landscape type 1, the lowest landscape type using the DELWP methodology. The Study Area is a preferred location for development and there is no bushfire reasons why development cannot be directed to Moriac.

Within the Study Area itself, there are a range of considerations which can be applied having regard to policies which seek to direct where new development could proceed based on bushfire factors, having regard to the possible development sites identified in Figure 1E.

Development to the east of Hendy Main Road would take advantage of protection afforded by the existing settlement and would not be exposed to grassfire hazards to its north-west, a dominant direction for grassfire to be approaching. However, it would be exposed to grassfires on its southern boundary, with the south-west aspect also being a dominant direction for grassfire.

In completed development, development sites east of Hendy Main Road would have a permanent hazard edge to one of the two critical interfaces from a bushfire perspective. This is a typical outcome in grassland areas whilst concurrently prioritise protection from the north-west aspect (which would be avoided), delivering a credible application of policies that seek to direct development to bushfire optimised locations.

Development to the west of the existing settlement would be exposed to bushfire to the north-west and the south-west, both dominant directions for grassfire to be approaching. These areas (on the grassland / settlement edge) would therefore be exposed to grassfire on two aspects.

This may initially be assessed as sub-optimal compared to development to the east of Hendy Main Road, which would only be exposed on one aspect. However, new development to the west of the existing settlement can deliver a risk reduction to existing settlement areas within the Low Density Residential Zone which are not low fuel and for which there is currently no certainty a moving grassfire would not penetrate into developed areas.

Development to the west, optimised for bushfire in accordance with planning scheme requirements, would move the settlement edge from existing areas to new development, better enclosing existing areas and avoiding a hazard interface to them from the west. This would be a highly advantageous outcome, delivering risk reductions to existing areas as sought by policies in *c13.02-1S Bushfire Planning.* These risk reduction are strategically significant based on current conditions.

The residual risk to new development, if directed to these areas, would be grassfire approaching on two aspects. However, this is already the case based on existing development, with new development capable of being fully optimised to deliver low risk outcomes in the grassland setting.

On balance, whilst the arguments in favour of development to the east and west of the existing settlement differ, there is a credible basis that both represent acceptable alternative locations for development. In completed development, development to the east would be exposed to grassfire on one aspect whilst development to the west would be exposed on two aspects, but deliver a significant risk reduction to existing areas.

Where there are choices in preparing the structure plan on which development sites proceed, it is important that new development is contiguous to existing settlement areas and the proximity these provide to low fuel areas, as well as not encouraging hazards to remain or arise between different parts of what is, overall, a single settlement.

6.1.3 Availability of safe areas

c13.02-1S Bushfire Planning requires a location in easy reach that provides absolute protection for life from the harmful effects of bushfire:

- *Ensuring the availability of, and safe access to, areas assessed as a BAL-LOW rating under AS3959-2018 Construction of buildings in bushfire-prone areas (Standards Australia) where human life can be better protected from the effects of bushfire.*
- *Directing population growth and development to low risk locations and ensuring the availability of, and safe access to, areas where human life can be better protected from the effects of bushfire.*

BAL:Low places are present in the denser urban areas in the northern and southern parts of the settlement. The land not included in a Bushfire Prone Area, east of Daniel Drive, is a credible estimate of land that is capable of being assessed as BAL:Low and the low-fuel land in Moriac.

As development might occur further away from these existing BAL:Low areas, it will be important that additional areas of BAL:Low arise in new development. Future residents should not need to travel to low fuel areas except on foot within the same neighbourhood. This outcome can be routinely achieved where smaller lot sizes (up to 1,250sq.m) are created, as the lot size dictates that limited fuels can be retained or introduced. This can already be seen as having arises on newer development on Greenfields Drive.

Concurrently, as may be the case in Moriac if new development is unsewered, larger lots enable the introduction of bushfire hazards over time that may compromise reliable low fuel areas. Recent new development in the Farrer Drive area is an example of this.

The Structure Plan therefore needs to resolve this issue, based on its final lot typology and ensuring low fuel areas arise in conjunction with completed development. This is achievable through:

- Passive mitigation as a result of smaller lot sizes, and/or
- Applying bushfire vegetation management to new development to manage hazards if passive mitigation is not considered effective or appropriate.

In either event, the BAL:Low areas existing and proposed in conjunction with new development can provide future residents with access to a location that providers shelter from the harmful effects of flame contact and radiant heat from a moving bushfire. Access will be immediate and available by walking within the Study Area (and practically enabled by moving away from the grassland edges of the settlement).

Recommendations in this report seek to give effect to the above outcomes.

6.1.4 Site based exposure

c13.02-1S Bushfire Planning provides directions for planning authorities about the level of acceptable exposure for new development enabled by a planning scheme amendment:

- *Not approving any strategic planning document, local planning policy, or planning scheme amendment that will result in the introduction or intensification of development in an area that has, or will on completion have, more than a BAL-12.5 rating under AS3959-2018.*

- *Directing population growth and development to low risk locations, being those locations assessed as having a radiant heat flux of less than 12.5 kilowatts/square metre under AS3959-2018 Construction of buildings in bushfire-prone areas (Standards Australia).*

The assessment of site based exposure prepared as part of this report confirms that development can be set back from bushfire hazards to achieve a radiant heat flux of less than 12.5kw/sq.m in completed development. Based on this, exposure of future development would be consistent with *c13.02-1S Bushfire Planning*.

This is necessarily dependant on vegetation on lager lots being managed to not to enable the introduction of hazardous vegetation. Bushfire vegetation management is likely needed, with recommendations in this report seeking to give effect to this if lots larger than 1,250sq.m are proposed.

6.1.5 Areas of high biodiversity conservation value

c13.02-1S Bushfire Planning provides directions on situations where bushfire and high biodiversity conservation values correlate:

- *Ensure settlement growth and development approvals can implement bushfire protection measures without unacceptable biodiversity impacts by discouraging settlement growth and development in bushfire affected areas that are of high biodiversity conservation value.*

It is beyond the scope of this report to assess the biodiversity conservation value of vegetation that may need to be removed or managed as a result of bushfire requirements. However, given the lack of vegetation in the Study Area, it is reasonable to assume that development can accommodate bushfire protection measures.

6.1.6 No increase in risk

c13.02-1S Bushfire Planning provides an overall view of acceptable risk:

- *Ensuring the bushfire risk to existing and future residents, property and community infrastructure will not increase as a result of future land use and development.*
- *Achieving no net increase in risk to existing and future residents, property and community infrastructure, through the implementation of bushfire protection measures and where possible reduce bushfire risk overall.*

Structure planning to enable growth in Moriac is consistent with the bushfire policies and directions contained in the planning scheme. There is no planning scheme bushfire factor that would warrant new development being directed away from the Study Area. The risk from grassfire can be managed in accordance with standard planning scheme responses to bushfire hazards, as recommended in this report.

6.2 c13.02 Use and development control in a bushfire prone area

Planning consideration is required under the *c13.02-1S Use and development control in a bushfire prone area* for the proposal. The use and development control requires that when assessing a planning permit application:

- *Consider the risk of bushfire to people, property and community infrastructure.*
- *Require the implementation of appropriate bushfire protection measures to address the identified bushfire risk.*
- *Ensure new development can implement bushfire protection measures without unacceptable biodiversity impacts.*

The Use and development control in a bushfire area will apply to future planning applications to subdivide the land into more than 10 lots. This provides a planning scheme mechanism to ensure future development fully considers bushfire at the planning application stage.

To give some specificity to considering bushfire in future decision making, it is recommended that the Structure Plan include mitigation to increase certainty and to enable the Planning Authority to demonstrate through planning scheme content that bushfire has been fully addressed.

The following mitigation is recommended:

- Requiring future development to achieving the *c13.02-1S Bushfire Planning* exposure requirement.
- Where development would create lot sizes for Accommodation that are larger than 1,200sq.m, *c53.02 Bushfire, Table 6 Vegetation management requirements* should be applied. This will provide for a low fuel outcome and not enable hazards to increase over time. Other bespoke approaches to hazard management in areas with larger lots can be investigated and determined at subsequent stages and to the satisfaction of the relevant fire authority.
- Perimeter roads be provided on grassland interfaces / permanent hazard edges. This includes in development with larger lot sizes.

  This outcome is now typical in grassland areas, including in Melbourne, Geelong and Torquay growth areas and arising from precinct structure plans and CFA requirements. It will support preventing a moving grassfire from entering developed areas. Larger lot sizes, including in a Rural Living Zone, are not a justification for not providing perimeter roads.

The above mitigation can be accommodated in structure planning and would support the effective consideration of bushfire in future planning applications.

6.3 Sites for growth being considered in preparing the structure plan

Figure 1F included sites the Council is specifically considering as part of preparing the Structure Plan. Attachment 2 includes a site-scale overview of each site.

See **Figure 1E: Sites being considered in preparing the Structure Plan**

As discussed in Section 6.1.2, there are arguments in favour of development to the east and west of the existing settlement, although they differ in emphasis. Development to the east would be exposed on only one high risk aspect whereas development to the west would be exposed to two whilst concurrently delivering significant risk reductions to existing parts of Moriac.

Given that development to the east and west are within a grassland setting and can fit within the broader recommendations contained in this report, there is no bushfire factor that would necessarily emphasise one area over another. The outcome in completed development to the east and west would be low(er) risk, in any event, and the risk reduction provided in the west to existing settlement areas would credible justify it being exposed on two aspects to grassfire.

Where there are choices in preparing the structure plan on which development sites proceed, it is important that new development is contiguous to existing settlement areas and the proximity these provide to low fuel areas, as well as not encouraging hazards to remain or arise between different parts of what is, overall, a single settlement.

6.4 Conclusion

The proposal is consistent with the bushfire policies and directions contained in the planning scheme. There is no planning scheme bushfire factor that would warrant the proposal not proceeding. More specifically, the proposal has considered and complies with:

- *c13.02-1S Bushfire Planning.*
- *c13..02-1S Use and development control in a bushfire prone are.*

Recommendations in this report are intended to reiterate the key design that should be integrated into the planning scheme amendment. These should operate in the planning scheme as local content.

6.5 Key literature review outcomes relevant to the recommendations in this report

The scope of work required a literature review of documents relevant to this bushfire assessment:

- Moriac Structure Plan 2022 – Background Report , Understanding Moriac 2022 Surf Coast Shire
- Moriac Structure Plan 2022 – Background Report Summary 2022 Surf Coast Shire
- Moriac Structure Plan, Community Engagement Summary Report – May 2022, Surf Coast Shire
- *Landscaping your Surf Coast Garden for Bushfire* 2015, Surf Coast Shire
- Moriac Structure Plan, 2010, Surf Coast Shire.

The documents provided contextual information which has informed this bushfire assessment. The following key take-outs are relevant to the recommendations in this report:

- *Landscaping your Surf Coast Garden for Bushfire 2015* has been prepared as guidance and is not capable of being used as a regulatory tool to secure low fuel outcomes as it lack specificity on requirements. The vegetation management requirements in *c53.02 Bushfire Planning*, as recommended in this report, should therefore apply unless the Council and CFA agree to a bespoke approach to vegetation management. Recommendation 2 references the potential for this to occur.

- Community views identified in the literature documents do not have an emphasis on introducing new vegetation. This is consistent with bushfire requirements. It will be important as the Structure Plan project proceeds that the inappropriate introduction of bushfire hazards for amenity or environmental reasons do not conflict with the need for new development to be low fuel and to prevent moving bushfires entering developed areas. This includes areas where larger lots are proposed.

- The bushfire policy settings that apply now significantly strengthen the bushfire in driving acceptable structure plan outcomes. This is noted in the background report and provides a firm basis for the Council considering and apply the recommendations in this report.

6A. Views of the relevant fire authority

c13.02-1S Bushfire Planning identifies that a key element of a risk assessment is to:

- *Consult[…] with […] the relevant fire authority early in the process to receive their recommendations and implement appropriate bushfire protection measures.*

The CFA were consulted on a draft of this report. A copy of their response is included in **Attachment 4**. CFA advised:

> *We have undertaken a preliminary review of the Draft Structure Plan and note the following;*
>
> - *No concerns in principle regarding the risk assessment of the sites in question,*
> - *Note your proposed setbacks and the methodology associated with this,*
> - *Note the availability to undertake appropriate risk reduction onsite for each of the study areas and note the lower threat landscape and environmental threats,*
> - *Concur that the predominate threat is grassland and can be managed, and*
> - *In relation to your commentary around biodiversity and conservation value; in the volcanic plains there is a strong and valuable correlation between high quality native grasslands and good fire management outcomes. Whilst your contention relates to the accommodation of bushfire protection measures and development; it may be worth noting the value of high conservation grasslands for fire management outcomes and encourage the reestablishment/maintenance of such values as a risk mitigation measure.*

The CFA advice provides the Council with a high level of confidence that this bushfire assessment is fit for purpose and can be used to inform the preparation of the Structure Plan. Subsequent stages in the preparation of the Structure Plan should give effect to the bushfire recommendations in this report, which will support continuity in CFA advice as the project develops.

7. Recommendations

Based on the assessments contained in this report, the following recommendations should be accommodated in the Structure Plan.

Recommendation 1: Interfaces with a bushfire hazard

Development will be required to be set back from assessed hazards for a distance no less than that required to ensure exposure is less than 12.5kw of radiant heat. This equates to Column A in Table 2 to *c53.02 Bushfire* in the planning scheme and includes:

Grasslands

- **19m** based on a slope of flat / upslope.
- **22m** based on downslope of 0-5 degrees.
- **25m** based on a downslope of 5-10 degrees.

Forest / Woodland

- **33m** based on a slope of flat / upslope using woodland.

Constructed (perimeter) roads can be used as part of the above setbacks.

Recommendation 2: Vegetation in completed development

c53.02 Bushfire Planning, Table 6 Vegetation management requirements should be applied to all lots for Accommodation which are more than 1,200sq.m. Alternative hazard management approaches can be developed to the satisfaction of the relevant fire authority in conjunction with future planning. This could include integrating decision making with the *Surf Coast Garden Landscaping Guide 2015*, if adapted for this purpose.

Notes:

As a result of Recommendations 1 and 2, the Structure Plan can demonstrate that development is exposed to less than 12.5kw/sq.m of radiant heat and a construction standard of no more than BAL:12.5 will arise.

Bushfire vegetation management requirements are shown on Figure 7B.

Recommendation 3: Perimeter roads

Development must be separated from permanent hazards by perimeter roads on permanent grassland interfaces. This includes as part of development within a Low Density Residential Zone or Rural Living Zone.

Note:

Hazard interface treatments are indicatively shown on Figure 7A.

Recommendation 4: Planning scheme controls

The recommendations in this report should form part of the Structure Plan itself and local planning scheme content.

FIGURE 7A: EXPECTED INDICATIVE TREATMENT ON HAZARD INTERFACES

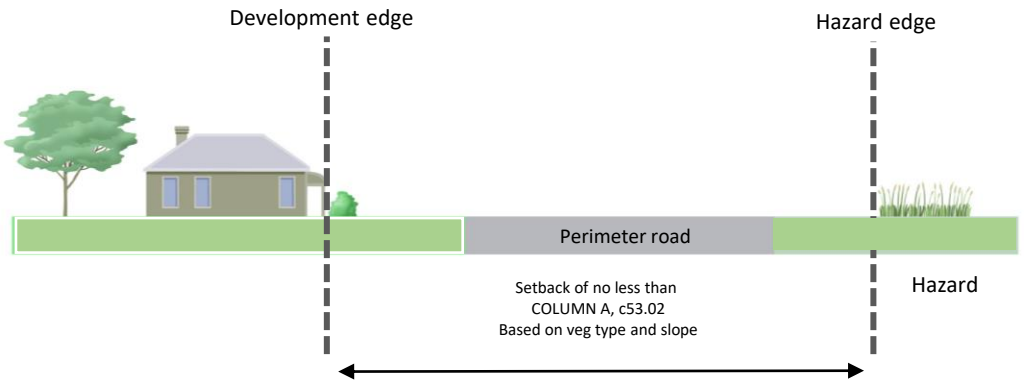


FIGURE 7B: TABLE 6, *c53.02 BUSHFIRE PLANNING* BUSHFIRE VEGETATION MANAGEMENT STANDARDS (DEFENDABLE SPACE)

- Grass must be short cropped and maintained during the declared fire danger period.
- All leaves and vegetation debris must be removed at regular intervals during the declared fire danger period.
- Within 10 metres of a building, flammable objects must not be located close to the vulnerable parts of the building.
- Plants greater than 10 centimetres in height must not be placed within 3 metres of a window or glass feature of the building.
- Shrubs must not be located under the canopy of trees.
- Individual and clumps of shrubs must not exceed 5 sq. metres in area and must be separated by at least 5 metres.
- Trees must not overhang or touch any elements of the building.
- The canopy of trees must be separated by at least 5 metres.
- There must be a clearance of at least 2 metres between the lowest tree branches and ground level.

References

Australian Institute for Disaster Resilience (Feb 2021) Ash Wednesday Bushfire - VIC/SA 1983 | Australian Disasters (aidr.org.au), - *[Update link to applicable bushfire] [insert description of bushfire e.g. Ash Wednesday]*

Country Fire Authority (2022), *Grassfires – Rural* (accessed at https://www.cfa.vic.gov.au/plan-prepare/am-i-at-risk/grassfires-rural)

Country Fire Authority (accessed in August 2022), *Victoria Fire Risk Register GIS data*

Department of Environment, Land, Water and Planning (2015), *Measuring Bushfire Risk in Victoria*

Department of Environment, Land, Water and Planning Melbourne (2020), *Strategic Bushfire Management Plan Barwon South West*

Department of Planning and Community Development (2012), *Regional Bushfire Planning Assessment - Barwon South West Region*

Department of Environment, Land, Water and Planning (2020), *Design Guidelines: Settlement Planning at the Bushfire Interface*

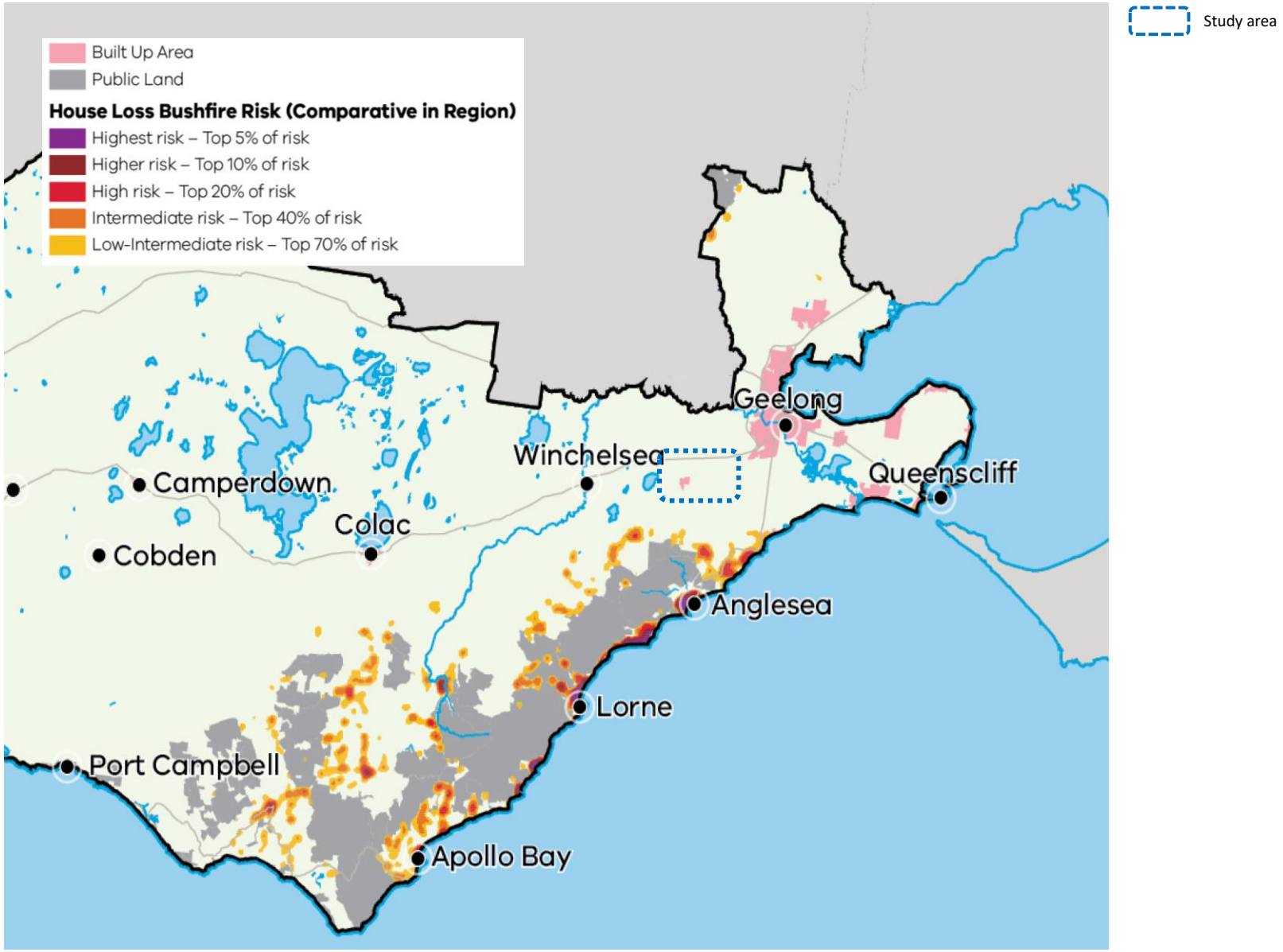
Forest Fire Management Victoria (2022) Strategic Bushfire Management Planning (accessed at https://bushfireplanning.ffm.vic.gov.au/)

Surf Coast Planning Scheme

Department of Environment, Land, Water and Planning, (accessed in March 2021), *Nature Kit 2.0* (https://maps2.biodiversity.vic.gov.au/Html5viewer/index.html?viewer=NatureKit)

Attachment 1: Bushfire Contextual Information

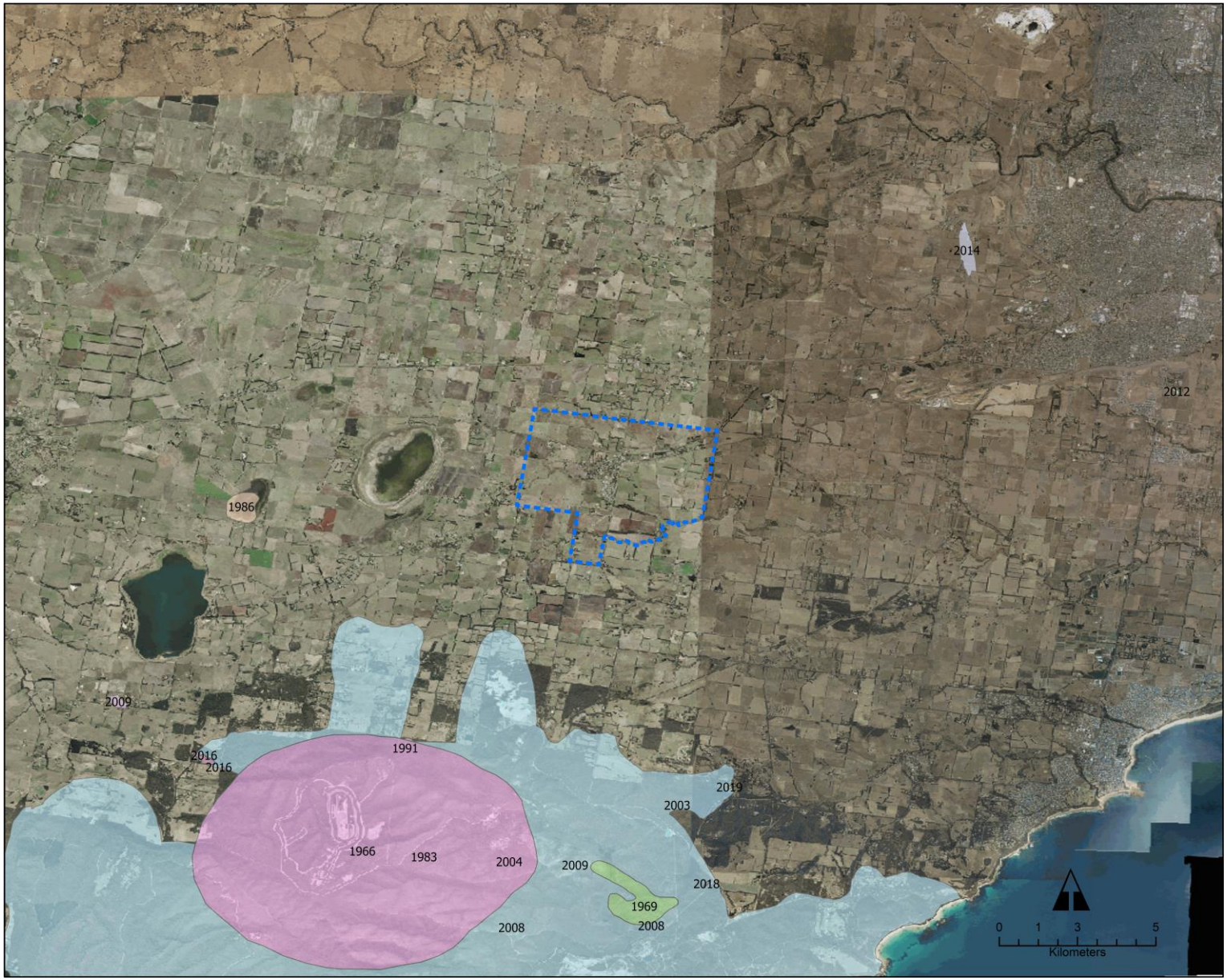
ATTACHMENT 1 FIGURE A: MODELLED HOUSE LOSS BUSHFIRE RISK (ADAPTED FROM DELWP 2020)



ATTACHMENT 1 FIGURE B: VICTORIAN FIRE RISK REGISTER HUMAN SETTLEMENT

Data extracted in 2022

ATTACHMENT 1 FIGURE C: BUSHFIRE HISTORY

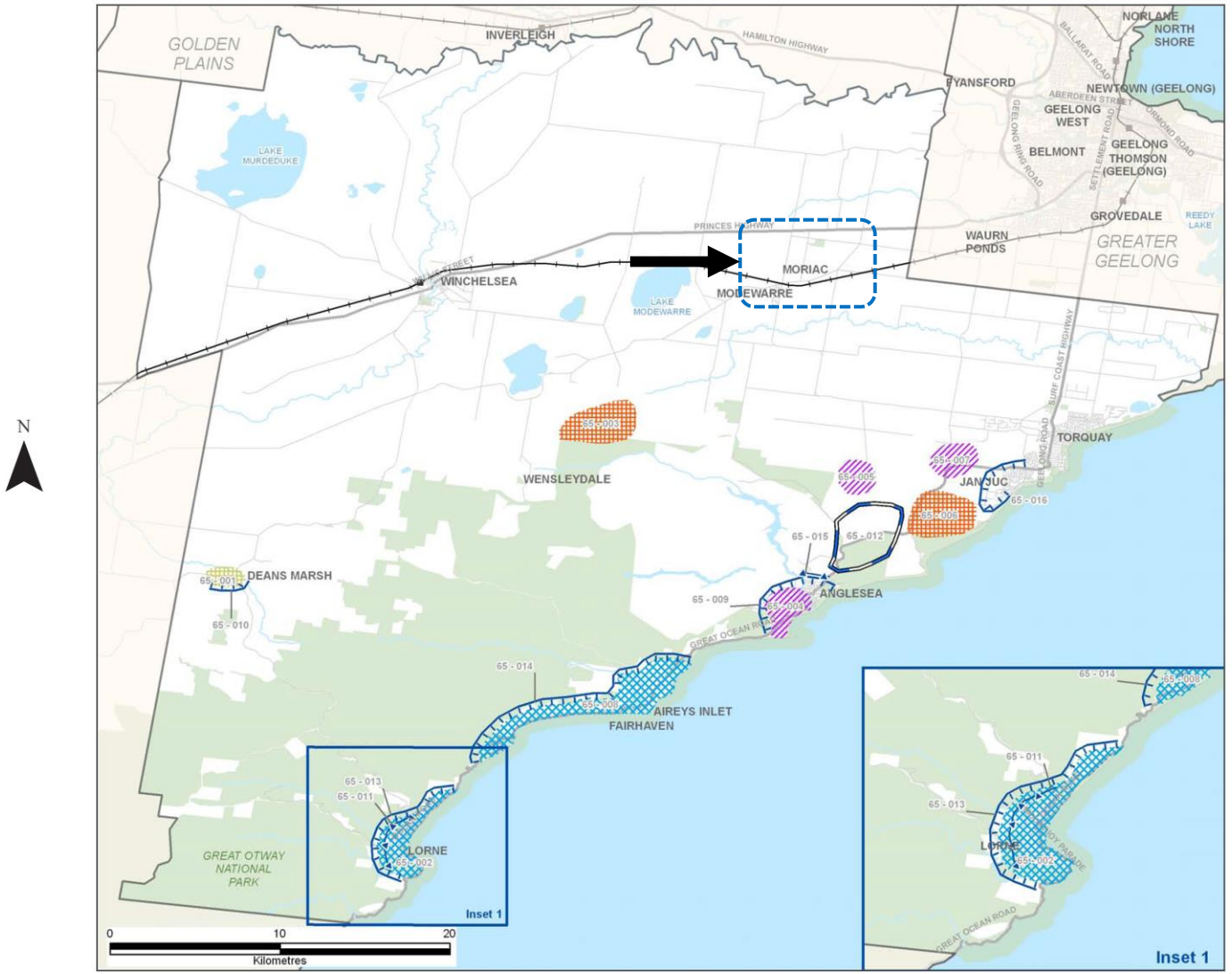


Study area

Data extracted in 2022

ATTACHMENT 1 FIGURE D: REGIONAL BUSHFIRE PLANNING ASSESSMENT BARWON SOUTH WEST (DPCD)

SURF COAST MUNICIPAL MAP



Identified Areas

- Small lots in or close to hazard (0 - 0.4 hectares)
- Medium lots in or close to hazard (0.4 - 4 hectares)
- Specific local knowledge
- Other information of interest to planning
- Multiple matters
- Limited access and egress
- Urban/bushfire hazard interface
- Future strategic directions and bushfire hazard conflict

Features

- Major road
- Road
- Railway
- Railway station
- Watercourse
- Waterbody
- Public land

Source: DPCD 2012

Attachment 2: Photos – Selected areas in and around the Study Area

Attachment 3: Literature review

The scope of work requires a literature review of four documents relevant to this bushfire assessment.

3.1 Moriac Structure Plan 2022 – Background Report , Understanding Moriac 2022 Surf Coast Shire

This document provides contextual information on Moriac relevant to the Structure Plan as a whole.

Community Feedback

The document identifies the following priorities arising from consultation:

- *Having a good amount of high quality and diverse shared open space (quality and quantity).*
- *A natural environment that is protected and built environment that reflects sustainability best practice.*
- *An attractive and hight quality environment that people can be proud of, including having a sense of character or identity that is unique.*
- *Easy access to shared community amenities like the local shops, on foot or by bike.*
- *Locally owned and operated businesses that provide the community with their daily needs.*
- *Well maintained and managed public domain; footpaths, parks, roads and other public assets.*

A liveability survey captured a broad range of comments relevant to the development of a new structure plan:

- *The need for better access to social infrastructure, including sporting facilities, open space and paths and trails.*
- *The quality and intensity of residential development.*
- *The need for bus services.*
- *The need to address road safety.*
- *The need to support reconciliation and Aboriginal culture.*

Recent and proposed planning scheme amendments

The background report included context on two planning scheme amendments.

Amendment C124 – Rezoning and subdivision of land at 600-640 Cape Otway Road, Moriac

Amendment C124 was approved in September 2021 and rezoned 13.8 hectares of land from Farming Zone (FZ) to Low Density Residential Zone (LDRZ) in Cape Otway Road, A planning permit was granted at the same time to subdivide the land into 29 low density residential lots, each with an area greater than 4,000 square metres. The Amendment also deleted reference to a 'potential light industrial' area from the Moriac Structure Plan north of Cape Otway Road.

Rural Hinterland Futures Strategy 2019 and proposed Planning Scheme Amendment C133

The Hinterland Strategy identifies the land around Moriac as being most suited to agribusiness and commercial farming. It also notes that Moriac is within an area well suited to tourism activities, identifying land at the proposed CORA site as well suited to a tourism activity cluster. The township is located within an agricultural soil quality hot spot, as shown in Figure 17 below. As part of Amendment C133 it is proposed to include a new strategy in the Planning Scheme to discourage use and development in agricultural soil quality hot spots not directly associated with soil based agriculture. If approved this would reinforce existing policy which limits the outward expansion of the Moriac urban environment.

Environmental hazards and constraints

The background report included context on bushfire:

> *Like much of rural Victoria, the landscape surrounding Moriac has a long history of impacts associated with bushfire events. Whilst fire plays an important role in maintaining the health of natural environments and ecosystems, uncontrolled bushfire poses a serious threat to the safety of rural communities.*
>
> *Moriac is located in CFA South West Region – District 7 and the local brigade is part of the Winchelsea Group. The Modewarre Fire Brigade is the local volunteer CFA unit with a two tanker shed located beside the Moriac Primary School in Railway Terrace. A new CFA shed is currently being constructed on a site fronting Cape Otway Road.*

The background report referenced the strengthened bushfire policies in the planning scheme since the 2010 structure plan was prepared:

> *Bushfire planning regulations have been significantly strengthened since the MSP 2010. Is is State policy to prioritise the protection of human life over all other policy considerations. In terms of settlement planning it is also State policy to (summarised):*
>
> - *direct population growth and development to low risk locations;*
> - *ensure the availability of, and safe access to, areas assessed as a BAL:LOW rating;*
> - *ensure the risk to existing and future residents, property and community infrastructure will not increase as a result of future land use and development;*
> - *achieve no net increase in risk to existing and future residents, property and community infrastructure through implementation of bushfire protection measures;*
> - *assess and address bushfire hazard proposed to the settlement and the likely bushfire behaviour it will produce at a landscape, settlement, local, neighbourhood and site scale;*
> - *assess alternative low risk locales for settlement growth on a regional, municipal, settlement, local and neighbourhood basis;*
> - *not approve any planning policy or document that will result in development in an area that has, or will have, more than a BAL -12.5 rating.*
>
> *It is also State policy to ensure settlement growth can implement bushfire protection measures without unacceptable biodiversity impacts and to discourage growth in bushfire affected areas that area also important areas for biodiversity.*

Information has been included on service infrastructure. This is relevant as it can be determinative of possible lot sizes.

> *Moriac is an unsewered town with all existing dwellings relying on on-site waste water management systems. On-site waste water systems are generally designed to treat and dispose of wastewater wholly within the boundaries of a property.*
>
> *The MSP 2010 identified a lack of reticulated sewerage as a major constraint to growth in the township and outlined some of the ongoing septic issues occurring in Moriac. A number of further investigations have been undertaken since that time to respond to concerns about failing septic systems in the town and the subsequent risk to human health and the environment, particularly given the high level of development activity.*

3.2 Moriac Structure Plan 2022 – Background Report Summary 2022
Surf Coast Shire

This summary document identifies potential guiding principles for the Structure Plan as follows:

- *Principle 1: Preserve and enhance the natural environments of Moriac and the surrounding rural hinterland*
- *Principle 2: Protect rural areas from impacts associated with housing development.*
- *Principle 3: Open space areas will continue to play an important role in defining the character and liveability of the Moriac township.*
- *Principle 4: Future land use and development decisions will prioritise the needs of pedestrians to create a safer built environment through improved accessibility and connectivity.*
- *Principle 5: The Moriac Structure Plan will seek to incorporate Traditional Owner knowledge and perspectives in a respectful and educative way.*

3.3 Moriac Structure Plan, Community Engagement Summary Report – May 2022
Surf Coast Shire

The community engagement summary included the following:

- ***T****he Moriac community have expressed a range of opinions about future growth, however, the vast majority of engagement participants agree that the small scale nature of the town and its role in the region should not be altered by future land use planning decisions.*
- *There is a prevailing community view that whilst a degree of incremental residential growth is expected, it should not come at the cost of impacts on the small town rural character of Moriac, nor should it impact the natural environment.*

- *Road safety concerns continue to feature strongly in conversations and in survey responses. Concerns have been expressed about the design of the intersection of Cape Otway Road, Hendy Main Road and the Warrnambool-Geelong railway line and speed limits on the Cape Otway Road within the township boundary.*
- *A number of locations on the edge of town have been put forward as potential places to be considered for future long term growth.*

Other community views were included in the background document reviewed on previous pages and are not repeated here.

3.4 *Landscaping your Surf Coast Garden for Bushfire* 2015, Surf Coast Shire

This document is an information document on how landowners can make some simple modifications to an existing garden to reduce your fire risk. It includes the key principles and further detail on actions relating to the principles. This includes advice on plants with desirable characteristics.

The document partially links to assisting in the preparation of a planning application, advising:

> *If you are designing a new garden or preparing landscape plans as part of planning permit requirements, the information contained in this booklet will help to ensure your new landscaping complies with planning regulations.*

The document uses a logic of moving from design principles and landscaping actions to determine the likely (beneficial) effects of bushfire behaviour. It also includes garden styles for high fire risk areas:

- *Bush Garden*
- *Family Garden*
- *Productive Garden*
- *Park Garden*

3.5 Moriac Structure Plan, 2010, Surf Coast Shire

The existing structure plan was reviewed. It includes the following principles and directions:

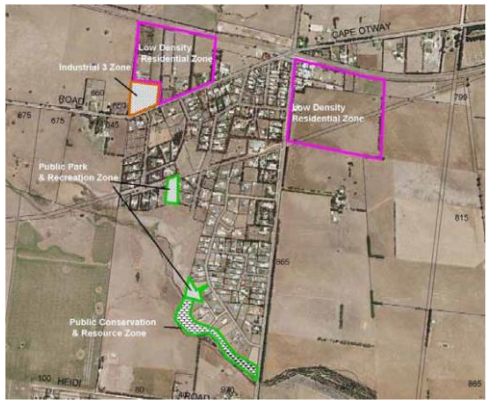
Principles

- *To protect the rural character of Moriac as a small settlement located within a rural setting.*
- *To maintain a compact township form and avoid linear sprawl of the township.*
- *To direct future residential expansion away from sensitive environmental areas.*
- *To ensure all new township growth areas are undertaken in a sustainable and staged manner.*
- *To provide for suitable lot sizes that reflects the standards for the containment and treatment of waste water.*
- *To maintain flexibility for future sustainable growth to occur. Sustainable growth is defined as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs'*

Directions

- *Encourage appropriate infill residential development.*
- *Contain urbandevelopment within the defined settlement boundary as defined in the accompanying Moriac Structure Plan Map. (Fig 2).*
- *Provide for limited growth option in the short to medium term to preserve the opportunity for longer term growth drivers, such as the impact of the duplication of the Princess Highway and the provision of other infrastructure.*
- *Support the provision of low density residential development in a staged manner north-west of Cape Otway Road (Stage 1) and to the north-east of Hendy Main Road (Stage 2) as shown on the accompanying Moriac Structure Plan Map. (Fig 2).*
- *Include the Moriac Primary School as low density residential at the time of rezoning the adjacent land earmarked as 'Potential Stage 2 Low Density Residential Zone'*
- *Prepare subdivision and development criteria to apply to future subdivision in the new residential areas (as part of any rezoning application), including sustainable best practice principles for development. The principles include road and pedestrian network; density; streetscape; open space; water sensitive urban design; vegetation guidelines, water and energy saving guidelines.*
- Monitor the supply and demand for residential land and other growth drivers as part of a future investigation of longer term township growth and appropriate development density.
- Ensure land use development does not encroach onto, or have adverse effects on the identified environmental assets.(Refer Part B – Background report)
- Ensure that, in the absence of reticulated sewerage, lots sizes are of a size and shape necessary to ensure appropriate effluent treatment and containment on site.

The existing structure plan included proposed rezonings:



The existing structure plan included investigation areas:

References to bushfire included the following:

> *Wildfire is generally not considered to be ahigh risk in the Moriac locality.*
>
> *Land indicated as having high wildfire risk is identified by the Wildfire Management Overlay in the planning scheme. There is currently no Wildfire Management Overlay within The Moriac Study Area.*

Attachment 4: CFA response received 22 November 2023

support@bushfireplanning.com.au

From: James Haley <J.Haley@cfa.vic.gov.au>
Sent: Tuesday, 22 November 2022 12:37 PM
To: support@bushfireplanning.com.au; Adam Rogers; Miriam Ray
Subject: FW: Draft bushfire report for Moriac Structure Plan

Hey Kevin,

Adam and I have reviewed this today; apologies for the tardiness in our reply, but it has been incredibly hectic over the past 6 weeks.

We have undertaken a preliminary review of the Draft Structure Plan and note the following;

- No concerns in principle regarding the risk assessment of the sites in question,
- Note your proposed setbacks and the methodology associated with this,
- Note the availability to undertake appropriate risk reduction onsite for each of the study areas and note the lower threat landscape and environmental threats,
- Concur that the predominate threat is grassland and can be managed, and
- In relation to your commentary around biodiversity and conservation value; in the volcanic plains there is a strong and valuable correlation between high quality native grasslands and good fire management outcomes. Whilst your contention relates to the accommodation of bushfire protection measures and development; it may be worth noting the value of high conservation grasslands for fire management outcomes and encourage the reestablishment/maintenance of such values as a risk mitigation measure.

If you would like to discuss further don't hesitate to give Adam or myself a call.

Cheers

James Haley Manager Community Safety
South West Region – 92-94 Coleraine Road, Hamilton, Vic 3300
M: 0428 376 941 F: 03 5551 1582 E: J.Haley@cfa.vic.gov.au

Protecting lives and property cfa.vic.gov.au

I acknowledge and pay my respects to the traditional custodians of this land, and to elders past and present

END OF DOCUMENT