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BUSHFIRE PLANNING

**Mornington Peninsula Shire
Strategic Planning Bushfire Assessment**
Final Report

**25 May 2023
Version 1.0**

Prepared for:

Mornington Peninsula Shire Council
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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.

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Version Control

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v0.1	6 May 2022	Draft for Council review	Kevin Hazell Town Planner
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1. Introduction

Kevin Hazell Bushfire Planning has been engaged by Mornington Peninsula Shire Council (the '**Council**') to prepare a Shire-wide strategic planning bushfire assessment.

The assessment includes contextual information on bushfire and identifies locations that are relatively higher or lower risk to support strategic land use planning and the preparation of planning scheme amendments. This information is important as it enables the consideration of municipal, sub-regional and regional bushfire policies in *c13.02-1S Bushfire Planning* of the Mornington Peninsula Planning Scheme (the '**Planning Scheme**').

1.1 Study area

The study area is the municipal area of Mornington Peninsula Shire.

See **Figure 1A: Study area**

1.2 Methodology for this report

This report applies landscape types them to different parts of the Shire. They are derived from considering likely bushfire scenarios, the potential for neighbourhood scale destruction and the availability and access to safer areas. These are all considerations within the policies of *c13.02-1S Bushfire Planning*. Landscape types enable inter-related considerations to be practically applied spatially.

Landscape types are described in *Planning Permit Applications Bushfire Management Overlay Technical Guide* (DELWP 2017). Landscapes type range from 1 to 4. Generally, as assessed landscape types progress through 1-4, the landscape risk increases. Landscape types are a particularly useful tool to appreciate the relative risk between locations, especially in the context of policies which seek to direct development to lower risk locations.

See: **Figure 1B: Overview of landscape types**

The landscape types identified in the assessment are necessarily strategic and are not intended to be scaled to individual properties. Landscape types are also not always a perfect match to a particular location but they remain useful in strategic planning, including as a stepping off point for discussions and further investigations (especially at a settlement, neighbourhood or local scale).

1.3 Structure of this report

The strategic bushfire assessment includes the following:

- Section 1.1 provides a brief planning context of the strategic and settlement context of Mornington Peninsula Shire.
- Section 2 provides an overview of bushfire content in the planning scheme, especially 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 to 8 provides an assessment of how locational policies in *c13.02-1S Bushfire Planning* affect different parts of the Shire, using landscape types.
- Section 9 includes a summary of recommendations.

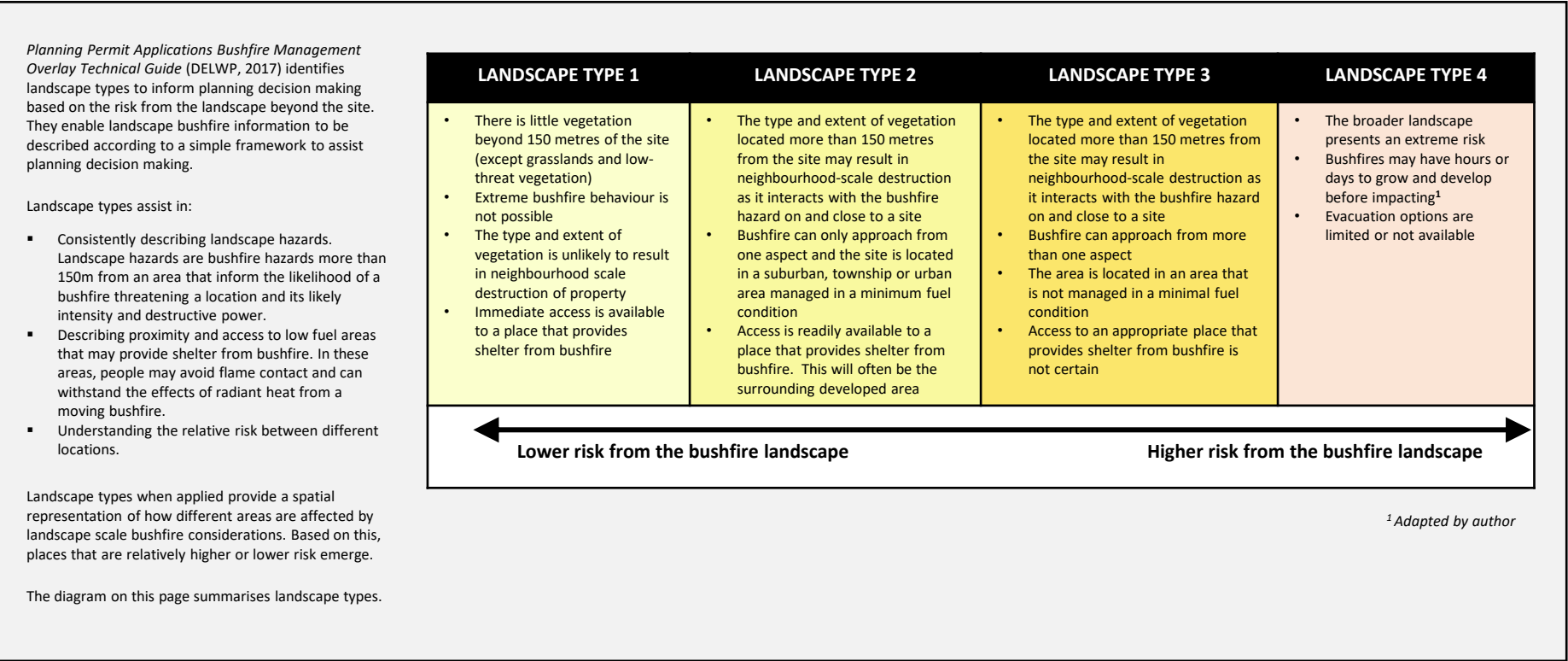
1.4 How to use this report

The landscape types identified in this report are only of utility to strategic planning as they have been prepared for this purpose and in recognition that any future strategic planning proposal affords the opportunity for further analysis. This report does not consider bushfire for the purpose of preparing or assessment a planning application and should not be used for this purpose.

FIGURE 1A: STUDY AREA



FIGURE 1B: OVERVIEW OF LANDSCAPE TYPES



1.1 Context on strategic and settlement planning in Mornington Peninsula Shire

The Mornington Peninsula Planning Scheme provides an appreciation of how places, settlements and growth are currently planned in Mornington Peninsula Shire, as derived from State, regional and local planning policies.

1.1.1 Municipal Planning Strategy

The Municipal Planning Strategy at c02.01 describes Mornington Peninsula Shire as follows:

The Mornington Peninsula is a special place, with a unique relationship to the rest of Melbourne. The Shire is located between Port Phillip Bay and Western Port Bay, approximately 50 kilometres south-east of central Melbourne, and is one of Victoria's most visited destinations for informal recreation.

The Shire has a total area of more than 720 square kilometres, with productive rural areas, scenic landscapes of state significance and a coastline extending more than 190 kilometres. Substantial areas of the Shire, such as the Western Port coast and Mornington Peninsula National Park, are of high conservation value and support sites of national and international significance.

The Peninsula is not a designated urban growth area. The green wedge planning provisions implement a 'green break' to protect the Peninsula from inappropriate metropolitan development and protect areas of environmental, landscape and scenic value. These areas include the Peninsula's biodiversity assets, national and state parks, Ramsar wetlands and coastal areas. In this context, the Peninsula has a different but complementary role to other parts of Melbourne in meeting the overall needs of the community.

The Peninsula retains a distinctive settlement pattern consisting of more than 20 separate settlements within a hierarchy ranging from larger centres to smaller towns and coastal villages. Around 70 per cent of the Shire is rural land within the green wedge planning zone and 30 per cent is taken up by towns and villages. Green wedge policy seeks to consolidate any new residential development into these existing settlements. The settlement pattern, rich history of buildings, places and sites of heritage significance, and the relationship between the townships, coast and rural landscape contribute to the Peninsula's distinctive "sense of place".

The Mornington Peninsula Shire has a permanent population of approximately 160,000 people (ABS 2016 Census). Many holiday houses are located on the Peninsula, leading to a substantial increase in its population during the summer peak period.

The Peninsula has a substantial rural population that is not directly or primarily engaged in traditional agriculture. That is, many properties are used for rural living, generating a further range of issues including fragmentation of rural land into smaller parcels, which leads to pressure on agriculture.

The strategic directions for settlements at c02.03-1 includes the following:

Direct growth primarily to major activity centres, and the remainder to neighbourhood activity centres.

Strengthen the hierarchy of activity centres while having regard to their individual character and functions, their relationships to each other and to adjacent rural, coastal and port development areas.

Concentrate commercial and non-commercial services in activity centres to serve the needs of the community, visitors and tourists, commensurate with the role and function of that activity centre in the activity centres hierarchy on the Mornington Peninsula.

Protect the distinctive sense of place of the Mornington Major Activity Centre, its low-scale village ambience and seaside atmosphere, its heritage values and its focus on Main Street.

Strengthen the Rosebud Major Activity Centre as a regional visitor destination, with a focus on its low-scale coastal ambience, its integral connection with the foreshore and its backdrop of Arthurs Seat.

Strengthen the Hastings Major Activity Centre as a regional visitor destination, with a focus on its coastal ambience, its integral connection with Western Port Ramsar Wetland and its scenic backdrop of Western Port Bay.

Protect the unique character and functions of the small coastal townships and rural villages, and maintain their compact form and amenity.

Avoid out-of-centre development and the creation of new activity centres.

Protect green wedge land, maintain the Urban Growth Boundary and protect the 'green break' between the Peninsula and metropolitan Melbourne.

Maintain rural areas for their environmental, landscape, recreational and agricultural values, and minimise development that could have an adverse impact on these values on land located in the Green Wedge Zone or Farming Zone.

Maintain separation between port development areas and activity centres, as identified in the Strategic Framework Plan under Clause 02.04.

Encourage greater housing diversity in established areas.

See **Figure 1C: c02.04 Strategic framework plan**

1.1.2 Zones

Planning scheme policies are given effect through the application of Zones. Through the applied Zones, the dominant patterns of Mornington Peninsula Shire can be observed, including:

- A corridor of mostly continuous urban development along Port Phillip Bay.
- A township pattern along the Western Port Bay, with distinct settlements separated by non-urban areas.
- A non-urban hinterland area where agricultural uses are dominant with several smaller rural-type settlements. Within non-urban areas there can be a dominance of rural living uses.
- Larger settlement and urban areas in the northern part of the Shire, including Somerville and Tyabb.

FIGURE 1C: c02.04 STRATEGIC FRAMEWORK PLAN



2. c13.02-1S Bushfire Planning locational policies and commentary

c13.02-1S Bushfire Planning includes strategies on locational considerations that influence where development could be directed to enhance life-safety outcomes in response to bushfire hazards. These locational policies relate to landscape bushfire considerations, availability of safer areas and alternative locations for development. A summary of these policies are outlined in this chapter.

2.1 Landscape bushfire considerations

Landscape bushfire considerations include the scale of likely bushfire and the type of hazard in the wider locality where a bushfire can start and grow large. The following policies require these matters to be considered:

- *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.*

These policies ensure that decision making fully appreciates whether there is potential for destructive bushfires to arise. They emphasise the assessment of bushfire hazards not only very close to a site or area of planning interest but in the much wider area (referred to as the bushfire 'landscape').

2.2 Alternative locations for development

An appreciation of alternative locations for growth and development can assist in considering where best amongst alternatives can life safety be enhanced. The following policies require these matters to be considered:

- *Assessing alternative low risk locations for settlement growth on a regional, municipal, settlement, local and neighbourhood basis.*
- *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.*

Policies on assessing alternative locations for development tend to be determinative to acceptable strategic planning outcomes, including because of the policy focus on directing development to low risk locations. In many bushfire settings, such locations often do not exist and reinforce the need to avoid planning scheme enabled new development.

2.3 Availability of safer areas

Consideration of how occupiers of a development or people living in a specific location can move to a safer area was introduced into planning schemes in 2017. Bushfire protection is enhanced where people have a layering of options available to them, including being able to move to a safer location.

The following policies require these matters to be considered:

- *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 term BAL:Low seeks to define an area of land that is low fuel and generally more than 100m away from hazardous vegetation (or 50m for grasslands). It uses the methodology in AS3959-2018 Construction of a building in a bushfire prone area (Standards Australia). This methodology does not accommodate all forms of bushfire impact, including:

- Land that may be subject to extreme ember attack.
- Land where the vegetation is low-threat as defined by AS3959-2018 but which still presents a bushfire hazard from localised vegetation and other flammable elements, including buildings being on fire.
- Land in proximity to forested areas where there are steep slopes under the hazardous vegetation.

Despite limitations, policies relating to safer areas do provide a stepping-off point for considering safer areas in more detailed strategic planning activities.

2.4 Other supporting policies

c13.01-1S Natural hazards and climate change applies to bushfire decision making. 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, and these include:

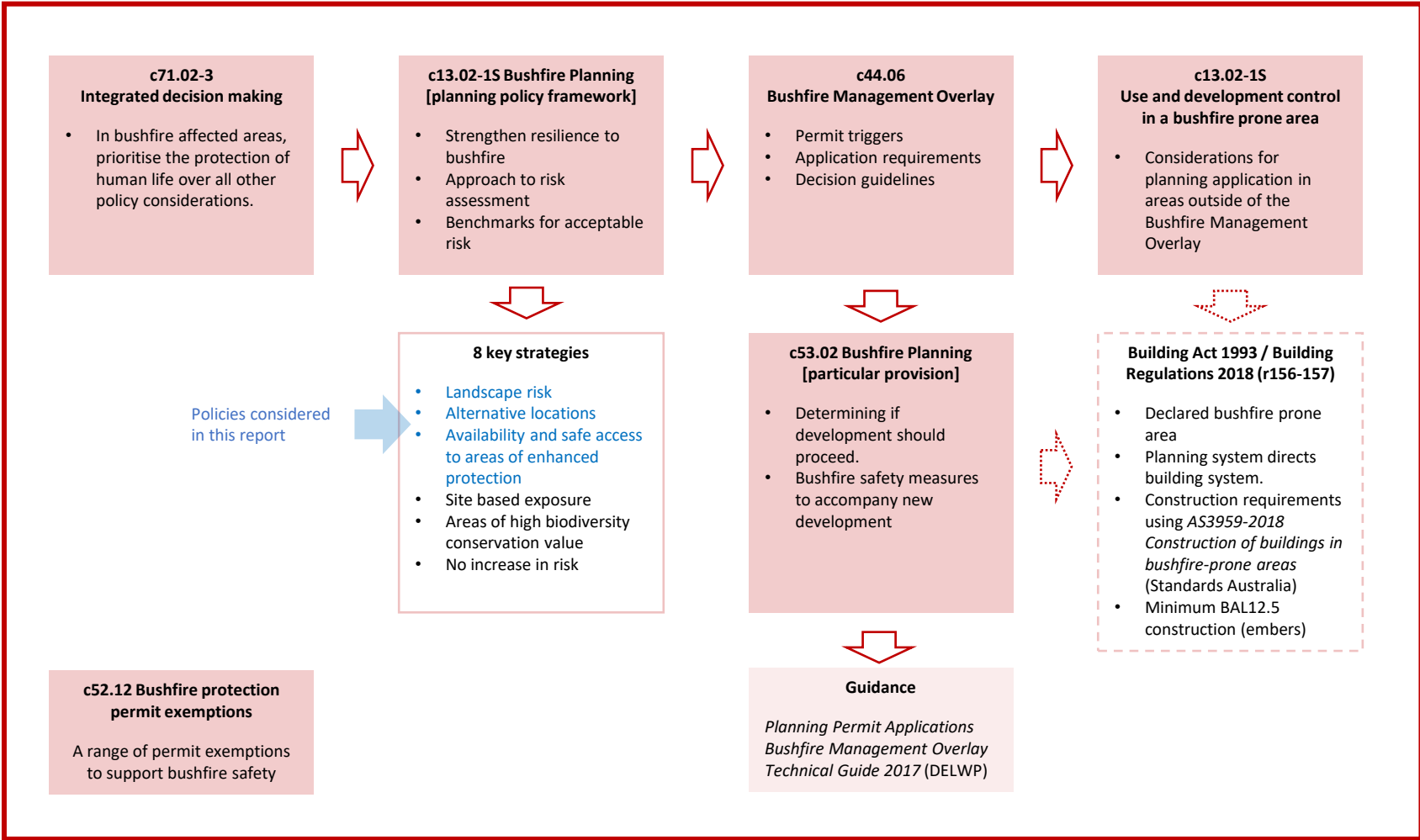
- *Consider the risks associated with climate change in planning and management decision making processes.*
- *Identify at risk areas using the best available data and climate change science.*
- *Integrate strategic land use planning with emergency management decision making.*
- *Direct population growth 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 or risk adaptation strategies to be implemented.*
- *Site and design development to minimise risk to life, property, the natural environment and community infrastructure from natural hazards.*

The above policies are complimentary to bushfire policies and reiterate the planning scheme focus on managing natural hazards by directing population growth and development to low risk locations.

2.5 Other *c13.02-1S Bushfire Planning* policies

The report considers locational policies only. Other policies in *c13.02-1S Bushfire Planning* are also relevant. This includes policies focused on neighbourhood and site scale factors along with policies requiring bushfire protection measures to be deployed in conjunction with new development.

FIGURE 2: PLANNING SCHEME BUSHFIRE PROVISIONS AND SUPPORTING MATERIAL



3. Bushfire context of Mornington Peninsula Shire

This section describes the bushfire context of Mornington Peninsula Shire 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).

3.1 Bushfire conditions

The Department of Environment, Land, Water and Planning (DELWP) (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.

The climate in the municipality is dominated by warm dry summers and cool wet winters. Whilst bushfires can start any time of the year, most occur between October and April. The largest and most damaging bushfires generally occur from December through February.

DELWP (2020) 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 Landscape bushfire hazards

The bushfire hazard includes vegetation and slope, along with weather that was outlined in the previous section.

3.2.1 Vegetation

Vegetation in the Shire includes:

- Coastal vegetation within Point Nepean National Park and along the coastal parts of Mornington Peninsula National Park.
- Large areas of vegetation including coastal vegetation on Western Port Bay orientated around HMAS Cerberus, Crib Point and Hastings.
- Large areas of forest and woodland vegetation in the hinterland areas, including Mornington Peninsula National Park, Arthurs Seat State Park and around Devil Bend Reservoir.
- Small areas of forest and woodland throughout the rural hinterland and around Mount Martha, often associated with riparian corridors.

The balance of vegetation in the Shire comprises grassland areas. Due to the modified environment grasslands are often in a managed setting because of agricultural activities, which may be both seasonal and periodical, or because land is managed in a rural living setting.

For considering the landscape risk associated with grasslands, 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.

3.2.2 Slope

Slope under hazardous vegetation informs how fast a bushfire may travel. The Country Fire Authority (2022) identify the following characteristics of slope:

- A fire will burn faster uphill. This is because the flames can easily reach more unburnt fuel in front of the fire. Radiant heat pre-heats the fuel in front of the fire, making the fuel even more flammable.
- For every 10° slope, the fire will double its speed.
- By increasing in speed the fire also increases in intensity, becoming even hotter.
- Fires tend to move more slowly as the slope decreases.
- Vegetated areas in steep and rugged terrain correlate with areas where more extreme bushfire behaviour can arise.

Areas where the terrain may particularly influence bushfire behaviour at a landscape scale include Arthurs Seat State Park and in the gullies / topography of the rural hinterland between Dromana and Cape Schanck. Other areas of slope such as on coastal reserves and in Mount Martha and Mount Eliza are more localised.

See Figure 3E: Slope based on a 10m contour

3.3 Bushfire management strategy guiding public agencies

The *Metropolitan 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 comparative to other locations in the Metropolitan region, some areas in Mornington Peninsula Shire are included where modelled house losses are anticipated. This includes locations forming a corridor through the rural hinterland between Rosebud and Hastings. Other areas where house losses are anticipated include St Andrews Beach and the rural hinterland.

Conversely, settlements in the balance of Mornington Peninsula Shire contain no areas identified as being at any elevated risk of modelled house loss.

See Figure 3A: Modelled house loss bushfire risk (adapted from DELWP 2020)

3.4 Planning scheme bushfire designations

Planning schemes identify potentially bushfire affected land through the inclusion of land into the Bushfire Management Overlay or within a designated bushfire prone area (referenced in *c13.02-1S Bushfire Planning* and approved under the Building Act 1993).

See Figure 3C: Bushfire Management Overlay

See Figure 3D: Bushfire Prone Area

3.4.1 Bushfire Management Overlay

The Bushfire Management Overlay is applied across Victoria 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.

Of particular note is that the Bushfire Management Overlay is entirely included on the basis of the 150m buffer around non-grassland vegetation larger than 4ha. This means the criteria applying to land likely to be subject to extreme fire behaviour is not applied (or relevant) in the Shire.

It is noted that the Bushfire Management Overlay from Rye to Ocean Beach Road is based on non-bushfire hazard features (Melbourne Road, lot boundaries) which is not a typical feature of contemporary planning scheme bushfire mapping. This may be an area for Council advocacy to DELWP for a review of the mapping in selected parts of the Shire to ensure the criteria is correctly applied.

3.4.2 Schedules to the Bushfire Management Overlay

There are extensive areas included in the Bushfire Management Overlay that contain a schedule. These schedule areas are locations where the planning scheme pre-determines for single dwellings on a lot that the bushfire risk is acceptable with relatively basic protection measures.

3.4.3 Bushfire Prone Area

The bushfire prone areas applies to all land within the Bushfire Management Overlay. It also applies to grassland areas, smaller patches of non-grassland vegetation and land usually within 50m of these areas. All land in Mornington Peninsula Shire is within a Bushfire Prone Area except for urban land not at the immediate hazard interface in urban areas on Port Phillip Bay and settlements on Western Port Bay.

For the purpose of applying landscape types, land not in a bushfire prone area is excluded based on the planning scheme not identifying land as being affected by bushfire hazards.

It is noted that land from Rye to Sorento is included within a Bushfire Prone Area and land in parts of Portsea are excluded. The Bushfire Prone Area in these locations is not apparent in terms of the underlying hazard that is resulting in land being included or excluded. This may be an area for Council advocacy to DELWP for a review of the mapping in selected parts of the Shire to ensure the criteria is correctly applied.

3.5 Victorian Fire Risk Register

The Victorian Fire Risk (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. The VFRR should not 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 generally identifies higher risk assets in and around the larger hazard areas in the Shire, with relatively lower risks identified in the grasslands and smaller areas of hazard in many parts of the Shire.

The VFRR identifies areas of extreme risk around Arthurs Seat State Park.

See **Figure 3B: Victorian Fire Risk Register human settlement polygons**

3.6 Regional bushfire planning assessment

The *Regional Bushfire Planning Assessment Metropolitan Melbourne Region 2012* (DPCD) provides information about 'identified areas' where a range of land use planning matters intersect with a bushfire hazard.

Identified areas are shown in many parts of the Shire, including where hazard areas adjoin urban areas creating an urban / hazard interface, other areas where development is close to patches of non-grassland hazards, and the hinterland area between Arthurs Seat and Flinders where areas of hazard correlate with smaller lots used for residential or rural residential purposes.

See **Figure 3G: Regional Bushfire Planning Assessment**

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.

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 comprising larger fires have arisen around Crib Point, Arthurs Seat State Park and in Point Nepeann National Park. Numerous smaller fires have also arisen in conjunction with hazard areas in Baxter, Mount Martha and Main Ridge.

There is limited grassfires history recorded. This may reflect a higher level of management of grassland areas in the Shire.

See **Figure 3F: Bushfire history**

FIGURE 3A: MODELLED HOUSE LOSS BUSHFIRE RISK (ADAPTED FROM DELWP 2020)

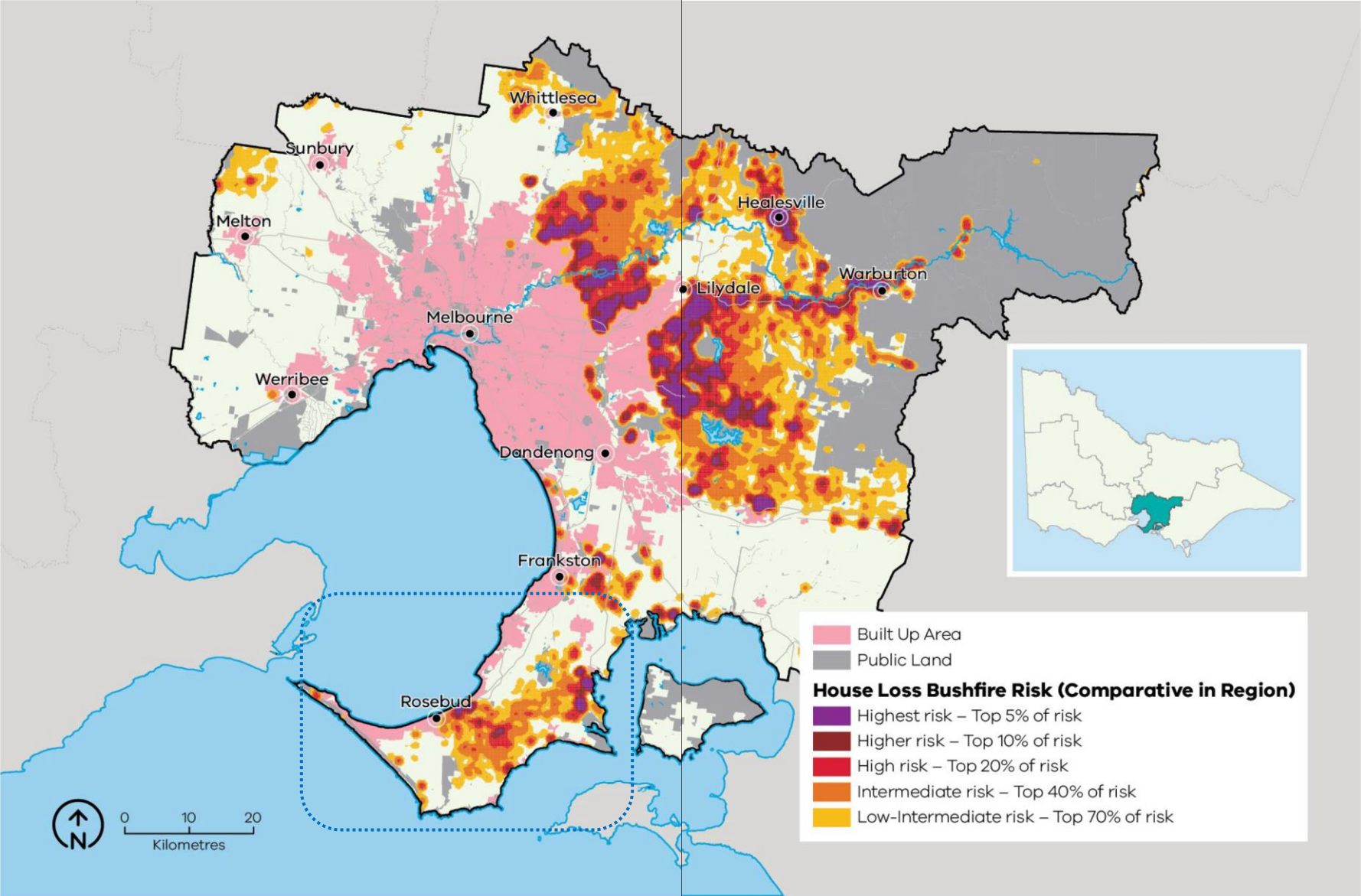


FIGURE 3B: VICTORIAN FIRE RISK REGISTER HUMAN SETTLEMENT (2022)



Data extracted in 2022

FIGURE 3C-1: BUSHFIRE MANAGEMENT OVERLAY



FIGURE 3C-2: SCHEUDLES TO THE BUSHFIRE MANAGEMENT OVERLAY



FIGURE 3D: BUSHFIRE PRONE AREA

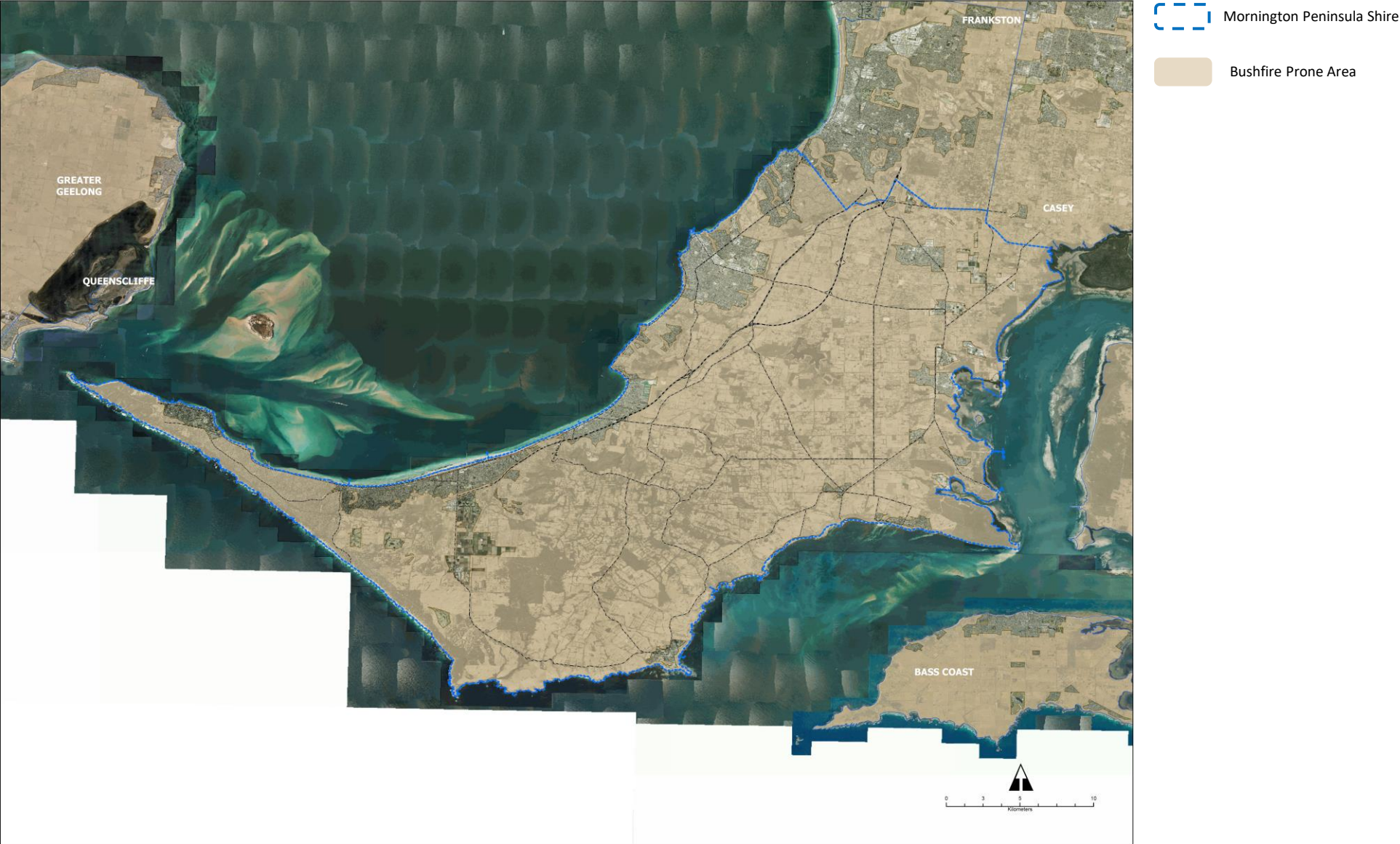
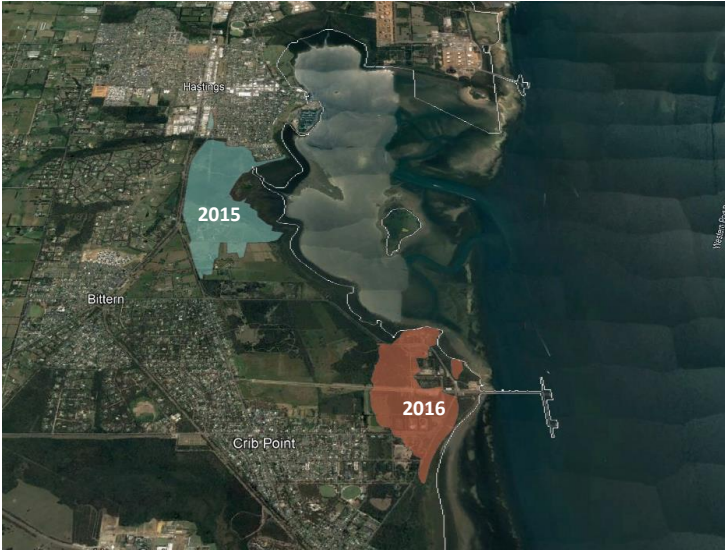


FIGURE 3E : SLOPE BASED IN A 10M CONTOUR



FIGURE 3F: BUSHFIRE HISTORY: LARGER BUSHFIRES

Hastings / Cribb Point



Mount Martha



Arthurs Seat



Data extracted in 2022

FIGURE 3G: REGIONAL BUSHFIRE PLANNING ASSESSMENT MELBOURNE METROPOLITAN REGION (DPCD)

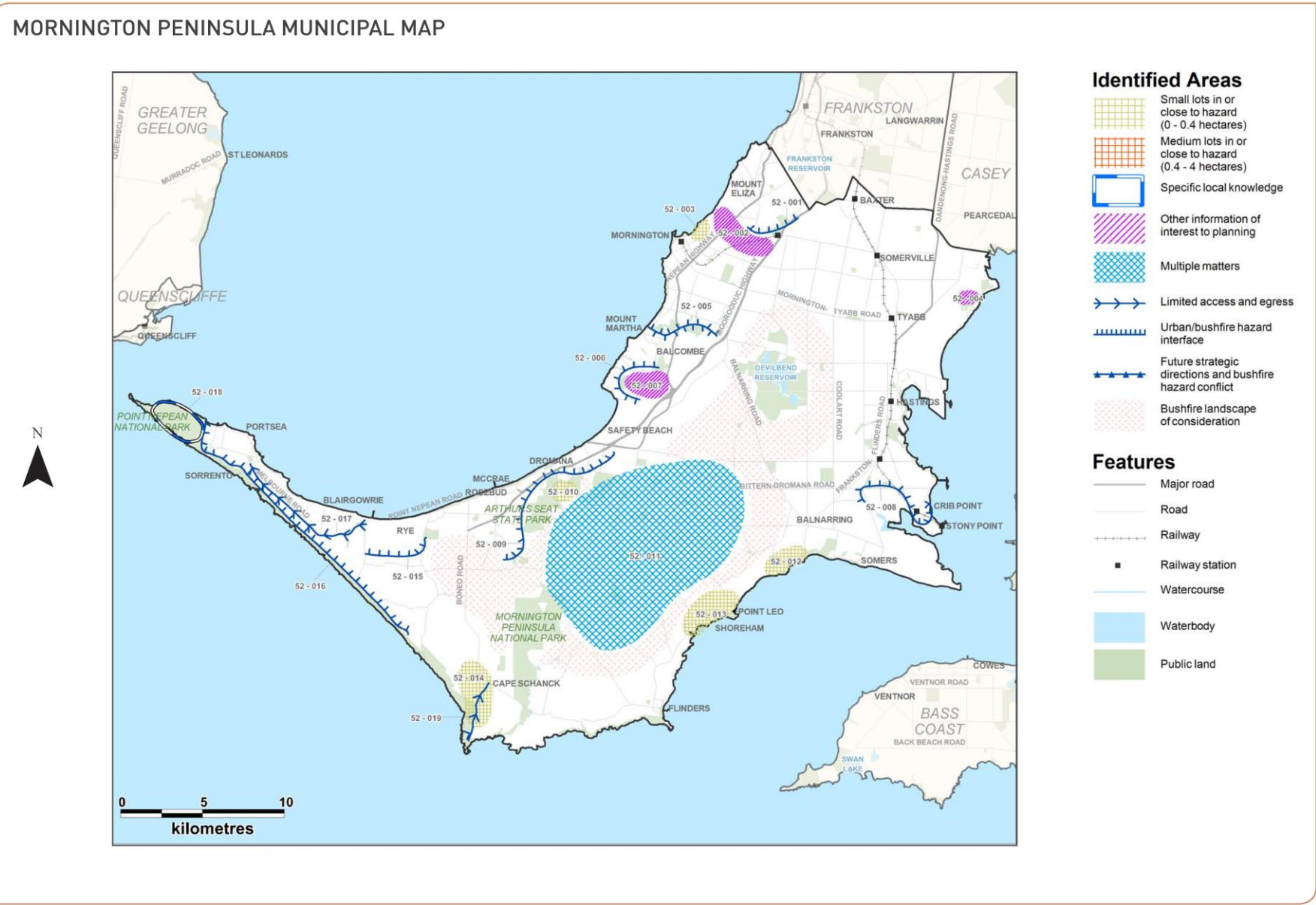


FIGURE 3H: GENERALISED UNDERSTANDING OF HOW BUSHFIRE THREATENS SETTLEMENTS (DEWLP 2019)

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.

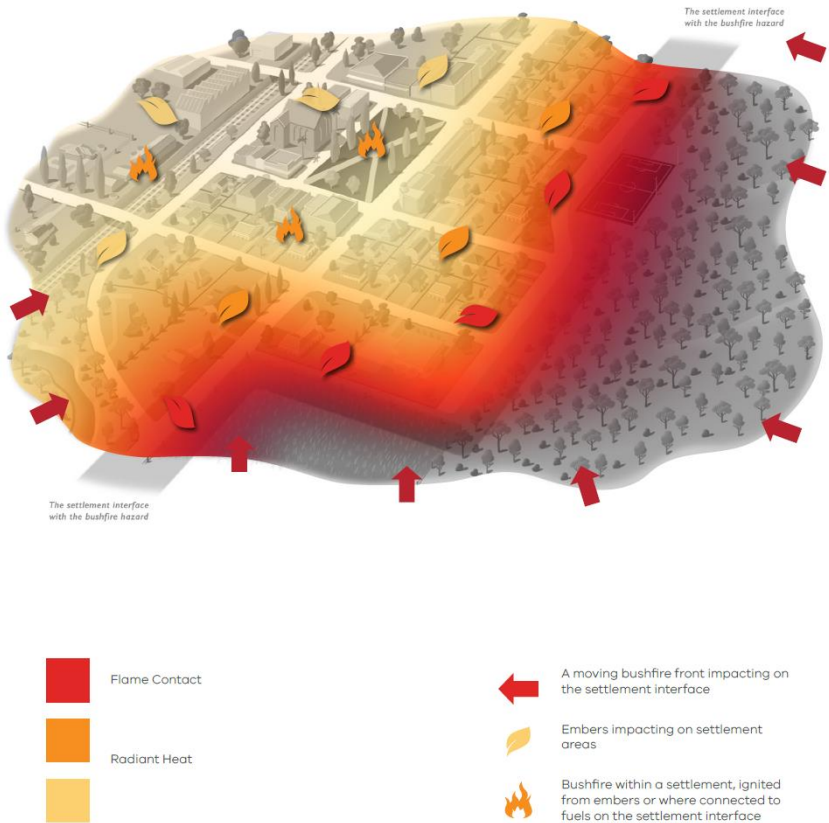
3. Bushfire ‘fuels’ in vegetated areas

‘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.



4. Southern Mornington Peninsula

The southern Mornington Peninsula generally extends from Rosebud / Cape Schanck to the southern tip of the Shire. Landscape scale bushfire hazards are within Point Nepean National Park and Mornington Peninsula National Park. The latter forms a linear corridor of bushfire hazards along the southern coastline. These areas of hazard are of landscape significance.

Figure 4 illustrates the assessed landscape types in the southern Mornington Peninsula.

4.1 Landscape type 3 areas

Landscape type 3: National Park interfaces

Mornington Peninsula National Park forms a linear corridor of bushfire hazard along the 'back-beach' of the southern peninsula. It is relatively narrow and in part is fragmented by non-vegetated and other areas such as tracks, paths, roads and vehicle accesses.

Point Nepean National Park comprises the western interface between these landscape bushfire hazards and development. It is also fragmented in parts.

Land adjoining the national parks are exposed to landscape bushfire hazards. The lack of a defined hazard edge between the national parks and developed areas, including because developed areas are highly vegetated, means that a moving bushfire may enter developed areas. The hazard / interface area is also where ember attack is most likely. Through ember attack, there is the potential for localised fires in vegetated areas. This may include in gardens and on roadsides.

Neighbourhood scale destruction is to be expected in these areas. An elevated landscape risk exists and Landscape type 3 has been applied to reflect this.

Land on the interface from Portsea to Wildcoast Avenue, Blairgowrie provides access to lower fuel areas, enabling people to move away from the national parks into developed areas. The impact of the most severe bushfire is focused within 50m of the national parks. Landscape type 3 areas are therefore limited to a relatively narrow strip of land immediately adjoining the national parks.

Land between Wildcoast Avenue and Dundas Street is complicated by bushfire hazards within the freeway reservation. These provide an additional constraint on people moving to the north, away from bushfire in the national park.

Because of this, all land between the National Park and the freeway reservation are included in Landscape type 3 to reflect the increased uncertainty of movement before and during a bushfire. This has a correlation with how the Bushfire Management Overlay is applied to this area, likely reflecting similar considerations.

Landscape type 3: St Andrews Beach and Cape Schanck

Land in St Andrews Beach and Cape Schanck are influenced by Mornington Peninsula National Park, including areas where the bushfire hazard is less linear and may provide longer fire runs. These areas do not benefit from proximity to low-fuel areas, with reliably low fuel areas equivalent to BAL:Low being limited.

The combination of landscape-scale hazards and limited low fuel areas warrants the these locations being included in Landscape type 3.

Landscape type 3: Land around Fingal

Land around Final is within the hinterland of the southern peninsula. It is less influenced by Mornington Peninsula National Park. Instead, these rural hinterland areas comprise fragmented and smaller patches of non-grassland bushfire hazards mixed with grasslands. At a landscape scale, the lack of defined edges to bushfire hazards means moving bushfires and grassfires are possible throughout these areas, although the extent of grassland management either permanently or seasonally would be influential.

The configuration of development includes rural living style development and ribbon development along roads. Reliably low fuel areas equivalent to BAL:Low do not exist. The presence of fragmented vegetation, especially on road-sides, makes travel complicated before and during a bushfire.

These factors justify land around Final being included in Landscape type 3. This includes some small areas in the southern part of Tootgarook which interface with hazards.

The landscape risk around Fingal will be highly variable within quite small geographic areas and over time. For example, based on the patch-sizes of different hazard areas, where grasslands may be managed either permanently or seasonally, or the size of any parcel of land and whether bushfire protection measures are included (for example, well managed gardens).

4.2 Landscape type 2 areas

Landscape type 2: Southern peninsula middle areas

Landscape type 2 in the southern peninsula comprises a corridor of elevated landscape risk close to, but not immediately adjoining, Mornington Peninsula National Park and Point Nepean National Park. Landscape type 2 is assessed to reflect the 'middle' areas of landscape risk, forming a buffer between the higher risks at the immediate interface with the National Parks and the lower risk areas towards Port Phillip Bay. They also include some grasslands in the rural hinterland.

The southern peninsula middle areas contain higher fuel loads. But it is unlikely that sufficient hazards exist where a moving bushfire would penetrate into these areas. The main forms of bushfire attack are from embers and ember ignited localised bushfires in the pockets of higher fuel loads and within gardens and on roadsides.

The risk diminishes as people are able to move away from landscape scale hazards. As envisaged in Landscape type 2, this is in surrounding developed areas towards Port Phillip Bay. The places available to perform this function are generally capable of being defined as BAL:Low (and reflect the Landscape type 1 assessed below).

4.3 Landscape type 1 areas

Landscape type 1: Port Phillip Bay areas

Landscape type 1 comprises urban development on the Port Phillip Bay side of the southern peninsula. It is not exposed to landscape-scale hazards.

These areas sometimes contain higher fuel loads but these are within an urban and developed setting. They contain insufficient fuels to have a landscape influence and where a moving bushfire would progress through an area. The separation of these areas from landscape-scale hazards means that bushfire attack from embers and ember ignited localised bushfires interacting with the higher fuel loads is unlikely.

The main risk in these areas are from the small pockets of bushland, often in public reserves. These are not of landscape significance.

4.4 Land not included in a Bushfire Prone Area

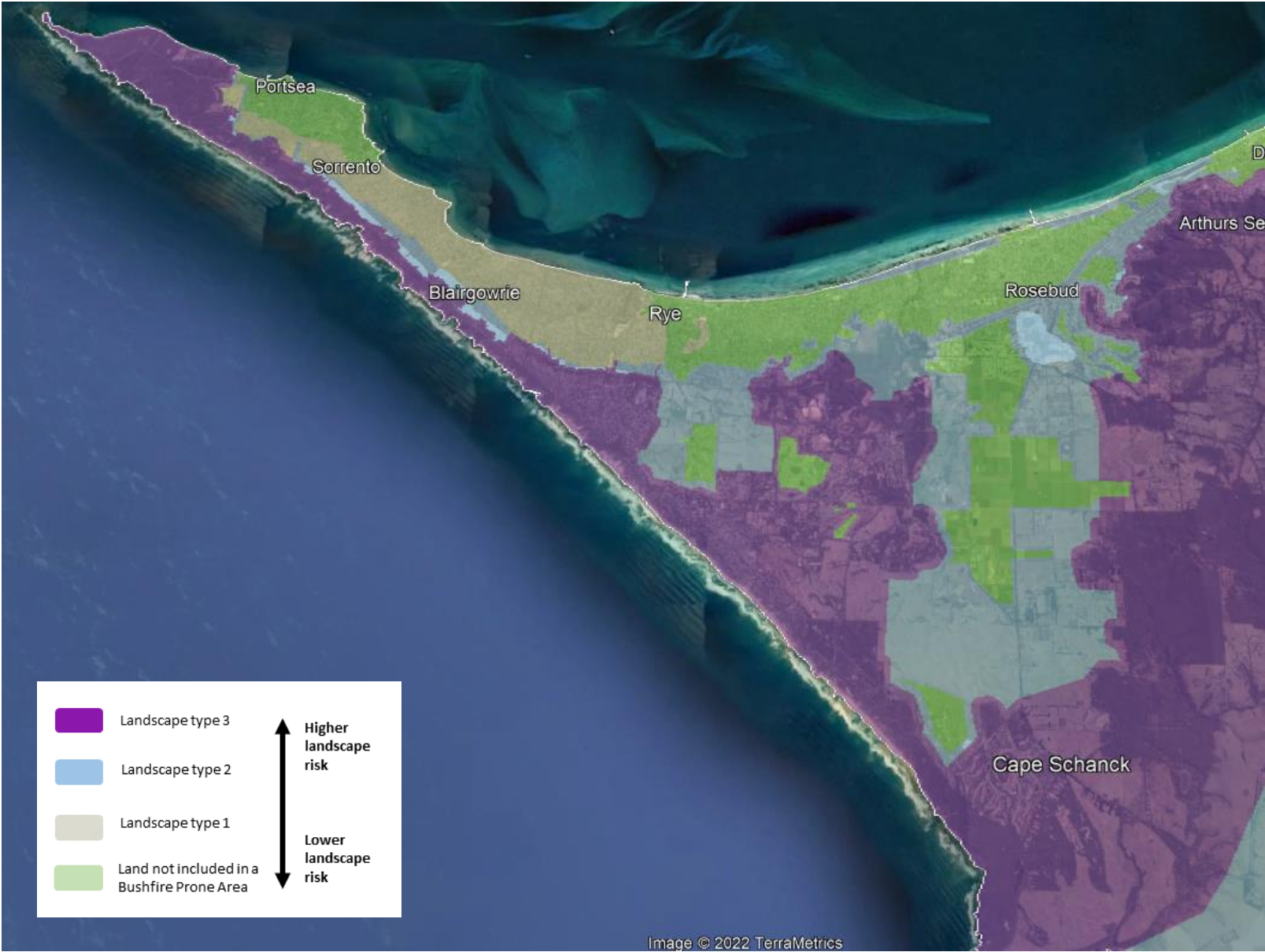
Land not included in a Bushfire Prone Area includes urban areas along Port Phillip Bay between Rosebud and Rye, along with parts of Portsea.

Land not included in the Bushfire Prone Area means the planning scheme confirms there is insufficient hazard and insufficient risk to warrant any pre-designation of these areas as being exposed to bushfire or grassfire.

Land not included in the Bushfire Prone Area can also be defined as BAL:Low areas, comprising vegetation that is non-hazardous, and reinforcing their suitability as places for sheltering in the open air. This includes for people moving into these areas from nearby hazard areas assessed as a landscape type, especially Landscape type 3.

Land not included in a Bushfire Prone Area is low risk for the purpose of planning scheme decision making. To align with the landscape type methodology, they would be consistent with Landscape type 1. However, the risk is sufficiently low that a landscape type need not be applied.

FIGURE 4: LANDSCAPE TYPES: SOUTHERN MORNINGTON PENINSULA



Boundaries shown on this plan are schematic only and should not be scaled to property boundaries

5. Mount Eliza to Safety Beach

Mount Eliza to Safety Beach, including Mount Martha and Mornington, form a corridor of urban development along Port Phillip Bay.

Figure 5 illustrates the assessed landscape types between Mount Eliza and Safety Beach.

5.1 Landscape type 2 areas

Hazard areas in Mount Martha and Mount Eliza include bushland reserves and riparian corridors. Fire runs are up to about 2km long at worst, but often much smaller. The vegetation type is a mix of forest, woodland and modified vegetation, with significant areas of fragmentation associated with recreational uses, access tracks and grassland areas. The hazard is mostly surrounded by urban development and relatively well managed grassland areas.

The hazard areas are not of landscape significance. Extreme bushfire behaviour is unlikely. There are no large areas of landscape-scale hazards interacting with these areas which might otherwise increase ignition potential or the potential for a fully developed bushfire to influence them.

Advantageously, adjoining development is mostly lower fuel. Bushfire penetrating deep into developed areas is unlikely. The main bushfire impact is immediately adjoining hazards and, at worst, up to 100-150m around them. The risk therefore diminishes as people are able to move away from hazard areas.

Due to the availability of low fuel areas, access is available to a place that provides shelter from bushfire. As envisaged in Landscape type 2, this is in surrounding developed areas. The places that may provide shelter would be capable of being defined as an area of BAL:Low.

Despite not being of landscape significance, at the immediate hazard / development interface neighbourhood-scale destruction is possible, including where bushfire protection measures are not in place. Because of this, these locations warrant being included into Landscape type 2.

5.2 Landscape type 1 areas

Landscape type 1 in Mount Eliza to Safety Beach comprise low fuel urban areas and grassland areas which are relatively well managed. They are not exposed to landscape scale hazards but comprise areas that:

- Interface with land included in Landscape type 2.
- Are urban but have in parts elevated fuel loads within a managed garden setting.
- Comprise grassland areas which, when not interacting with other hazard areas, fit readily into landscape type 1.

There are insufficient fuels for a moving bushfire to arise. The main forms of bushfire attack are from embers, although this would not be at extreme or even particularly high levels.

5.3 Land not included in a Bushfire Prone Area

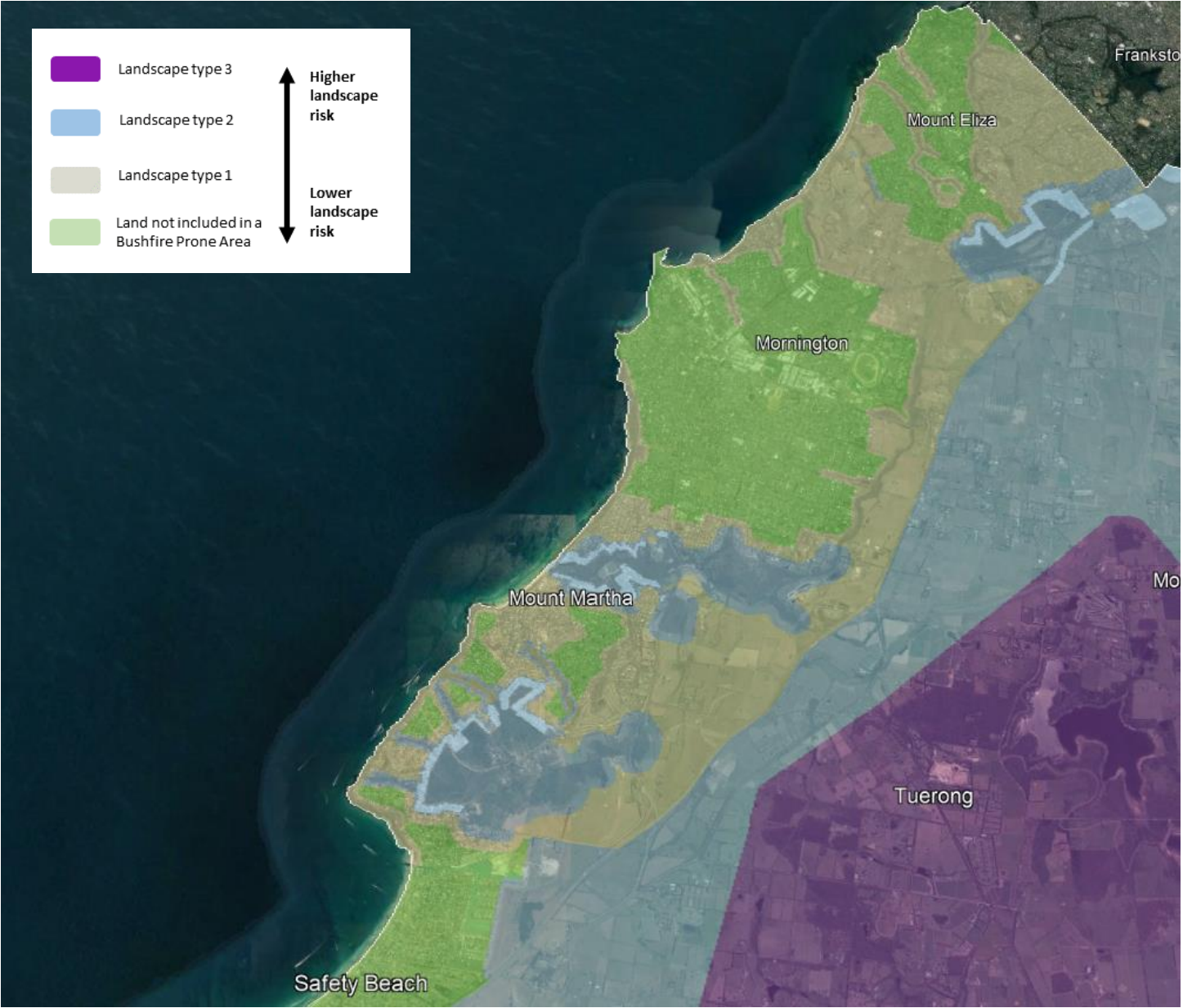
Land not included in a Bushfire Prone Area includes urban areas through Mount Eliza to Safety Beach, including Mornington, and areas more than 50-150m from hazards included the Bushfire Management Overlay.

Land not included in the Bushfire Prone Area means the planning scheme confirms there is insufficient hazard and insufficient risk to warrant any pre-designation of these areas as being exposed to bushfire or grassfire.

Land not included in the Bushfire Prone Area can also be defined as BAL:Low areas, comprising vegetation that is non-hazardous, and reinforcing their suitability as places for sheltering in the open air.

Land not included in a Bushfire Prone Area is low risk for the purpose of planning scheme decision making. To align with the landscape type methodology, they would be consistent with Landscape type 1. However, the risk is sufficiently low that a landscape type need not be applied.

FIGURE 5: LANDSCAPE TYPES: MOUNT ELIZA TO SAFETY BEACH



Boundaries shown on this plan are schematic only and should not be scaled to property boundaries

6. Western Port Bay areas and the northern hinterland

Western Port Bay areas include the eastern parts of the Shire, including settlements on Western Port Bay and non-urban areas between them. The northern hinterland comprises the dominant settlement of Somerville and extensive areas of lower-density development from Bittern, through Tyabb and to the outskirts of Somerville.

Figure 6 illustrates the assessed landscape types in the Western Port Bay areas and the northern hinterland.

6.1 Landscape type 3 areas

Selected Western Port Bay settlements

The eastern parts of Mornington Peninsula Shire contains a series of towns and settlements that are to the east of grassland areas. This includes Shoreham, Point Leo, Merricks Beach and Balnarring Beach along with parts of Bittern and Hastings. These settlements contain higher fuel loads on public and private land where a moving grassfire may enter developed areas and associated areas such as bushland reserves and coastal reserves.

Whilst the main impact area would be on the grassland / settlement interface, there remains a potential for fire to move relatively deep into settlement areas. Neighbourhood scale destruction as any grassfire moves into developed areas is to be expected.

Due to configuration of vegetation within the settlements, they do not benefit from reliably low fuel areas capable of being defined as BAL:Low. As envisaged in Landscape type 3, there is uncertainty on places that may provide shelter.

The combination of the above factors represent an elevated landscape and Landscape type 3 has been applied to reflect this.

It is necessary however to recognise that unlike many other Landscape type 3 places in the Shire and across Victoria, the driver of risk in these selected Western Port Bay settlements is hazard management within the settlement rather than landscape bushfire impacting on them. They are materially lower risk because of this within the spectrum of places capable of being included into Landscape type 3. This also means the management of hazards within a settlement is capable of being influenced through planning decision making, including to better manage hazards and deliver lower risk outcomes in completed new development.

Hastings southern interface and the Western Port Bay parts of Tyabb

Large areas of bushfire hazard exists to the south of Hastings and around Tyabb foreshore. These areas have the potential to generate larger bushfires that move towards settlements and developed areas.

In Hastings, the hazard abuts low-fuel areas capable of being assessed as BAL:Low. This is highly favourable and would be consistent with Landscape type 2 being applied. However, the scale of bushfire is more consistent with Landscape 3, which has been emphasised in the landscape type applied. In the Tyabb foreshore area, land is not reliably low fuel and in combination with the scale of bushfire, justifies Landscape type 3 being applied.

It is important to emphasise that in assessing these areas as Landscape type 3, they would be at the lower end of the risk spectrum within the landscape type.

Low-density residential areas in Somerville and Tyabb

Low density residential areas to the west and south of Somerville and Tyabb contain higher fuel loads where a moving grassfire may enter settlement and developed areas and where localised flammable elements may be ignited. The configuration of development in a low-density setting means there are limited reliable areas of minimal fuel and relative long journeys to places of enhanced safety, although areas immediately adjoining Somerville are relatively better in this respect.

6.2 Landscape type 2 areas

Grassland areas are included in Landscape type 2 on Western Port Bay and the northern hinterland. Ordinarily, grasslands can be included into Landscape type 1 and be considered lower risk. However, the grassland areas along Western Port Bay and northern parts of Mornington Peninsula Shire have the potential to:

- Carry higher fuel loads where land is used for rural living purposes rather than agricultural purposes. Smaller lot sizes (in a rural setting) in many parts of the grassland areas reinforce this.
- Be influenced by areas of fragmented vegetation in the central rural hinterland, where a bushfire and grassfires may develop and grow larger.

Grassfires can be very dangerous. Grassfire can move with a wide fire front and where hazard edges are not well defined penetration into settlement and lower density residential areas may arise.

The landscape risk in the grassland areas will be highly variable within quite small geographic areas and over time. For example, based on the patch-sizes of different hazard areas, where grasslands may be managed either permanently or seasonally, or the size of any parcel of land and the potential to implement bushfire protection measures.

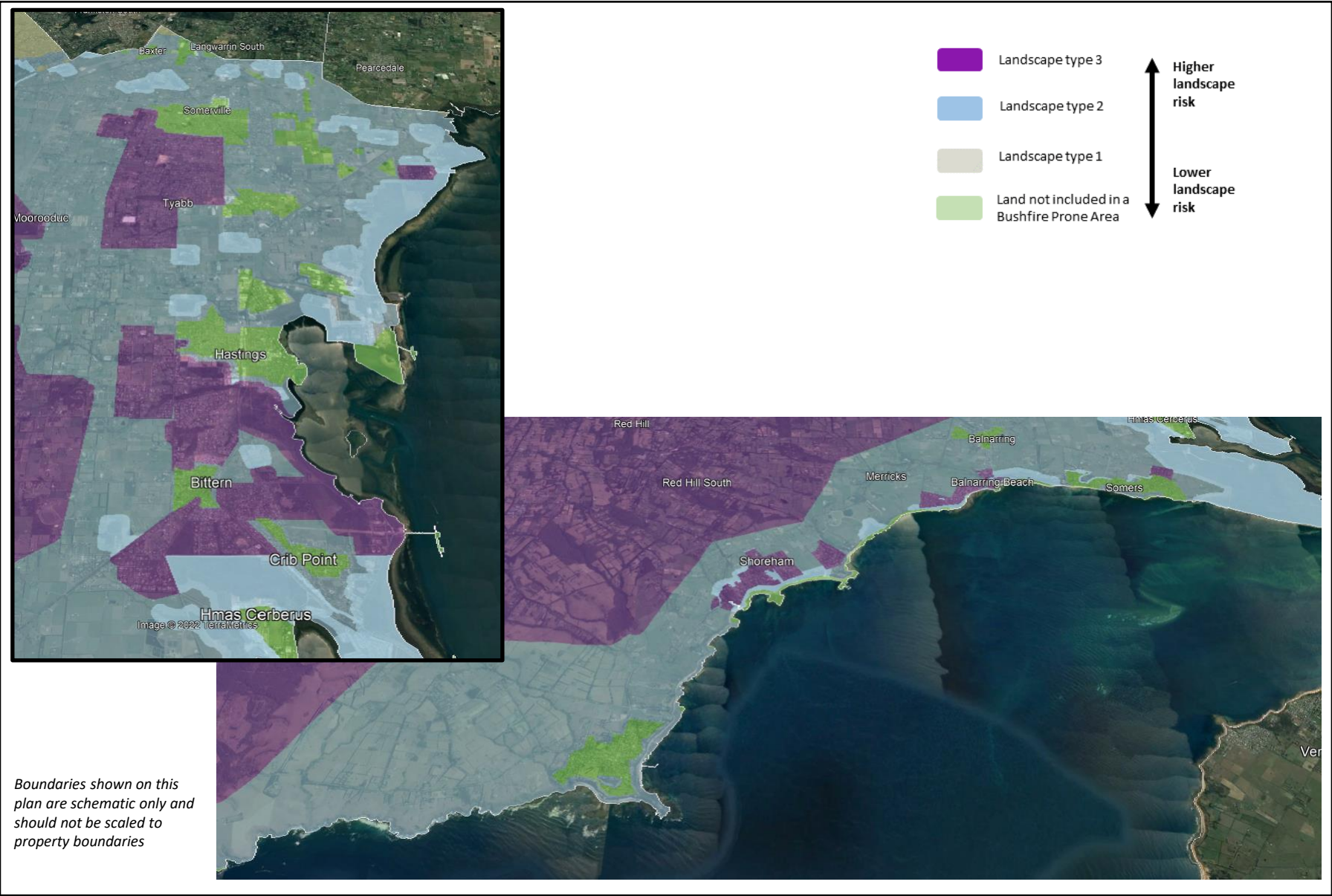
6.3 Land not included in a Bushfire Prone Area

Land not included in a Bushfire Prone Area includes low fuel settlement areas in Hastings, Bittern, Crib Point, Somers, and Flinders. Land not included in the Bushfire Prone Area means the planning scheme confirms there is insufficient hazard and insufficient risk to warrant any pre-designation of these areas as being exposed to bushfire or grassfire.

Land not included in the Bushfire Prone Area can also be defined as BAL:Low areas, comprising vegetation that is non-hazardous, and reinforcing their suitability as places for sheltering in the open air.

Land not included in a Bushfire Prone Area is low risk for the purpose of planning scheme decision making. To align with the landscape type methodology, they would be consistent with Landscape type 1. However, the risk is sufficiently low that a landscape type need not be applied.

FIGURE 6: LANDSCAPE TYPES: WESTERN PORT BAY AREAS AND THE NORTHERN HINTERLAND



7. Central hinterland and interface areas

The central hinterland comprises non-urban and rural settlements within the central parts of Mornington Peninsula Shire and urban areas to its north in Dromana and McCrae.

Figure 7 illustrates the assessed landscape types in the Central hinterland and interface areas

7.1 Landscape type 3 areas

The central rural hinterland

The central rural hinterland is influenced by larger forested areas to its west and north. Bushfire would be moving into the central rural hinterland from these areas under dominant bushfire weather. Throughout the central rural hinterland are fragmented and smaller patches of non-grassland bushfire hazards mixed with grassland areas. The lack of defined edges to the bushfire hazards means moving bushfire and grassfires are possible throughout these areas.

The configuration of development includes ribbon development along roads, no larger settlements or settlement areas that are capable of being reliably assessed as BAL:Low. The extent of fragmented vegetation, especially on road-sides, makes travel complicated before and during a bushfire.

These factors justify land being included in Landscape type 3. It is noted that in the *Metropolitan Bushfire Management Strategy* (DELWP 2020) includes parts of the central rural hinterland as being within the top 20% of modelled risk in Melbourne.

The landscape risk in the central rural hinterland will be highly variable within quite small geographic areas and over time. For example, based on the patch-sizes of different hazard areas, where grasslands may be managed either permanently or seasonally, or the size of any parcel of land and the potential to implement bushfire protection measures.

Arthurs Seat State Park interface areas

Arthurs Seat State Park and adjoining vegetated areas are a major bushfire hazard in Mornington Peninsula Shire due to the vegetation type and topography. Larger bushfires are likely along with the potential for ember attack over interface areas orientated north and north-west of the bushfire hazard. This includes parts of Dromana and McCrae.

The interface areas generally include lower-fuel urban land and the ability to move further north away from the bushfire hazard. This is highly advantageous and closely aligns with elements of Landscape type 2. However, the scale of the bushfire hazard has been emphasised by including these interface areas within Landscape type 3.

The availability of low-fuel areas means they are at the lower end of the spectrum of locations contemplated in Landscape type 3.

7.2 Landscape type 2 areas

Southern parts of McCrae and Rosebud

Landscape type 2 areas are identified in the southern part of McCrae, which interfaces with Arthurs Seat State Park. They may be influenced by large bushfires in the vicinity although they are not directly interfacing with hazard areas.

Advantageously, they are relatively low fuel. Bushfire penetrating deep into developed areas is unlikely. The main bushfire impact is immediately adjoining hazards and up to 100-150m around them. The risk therefore diminishes the further away from hazard areas.

Due to the availability of low fuel areas, access is available to a place that provides shelter from bushfire. As envisaged in Landscape type 2, this is in surrounding developed areas. The places that may provide shelter are capable of being defined as BAL:Low.

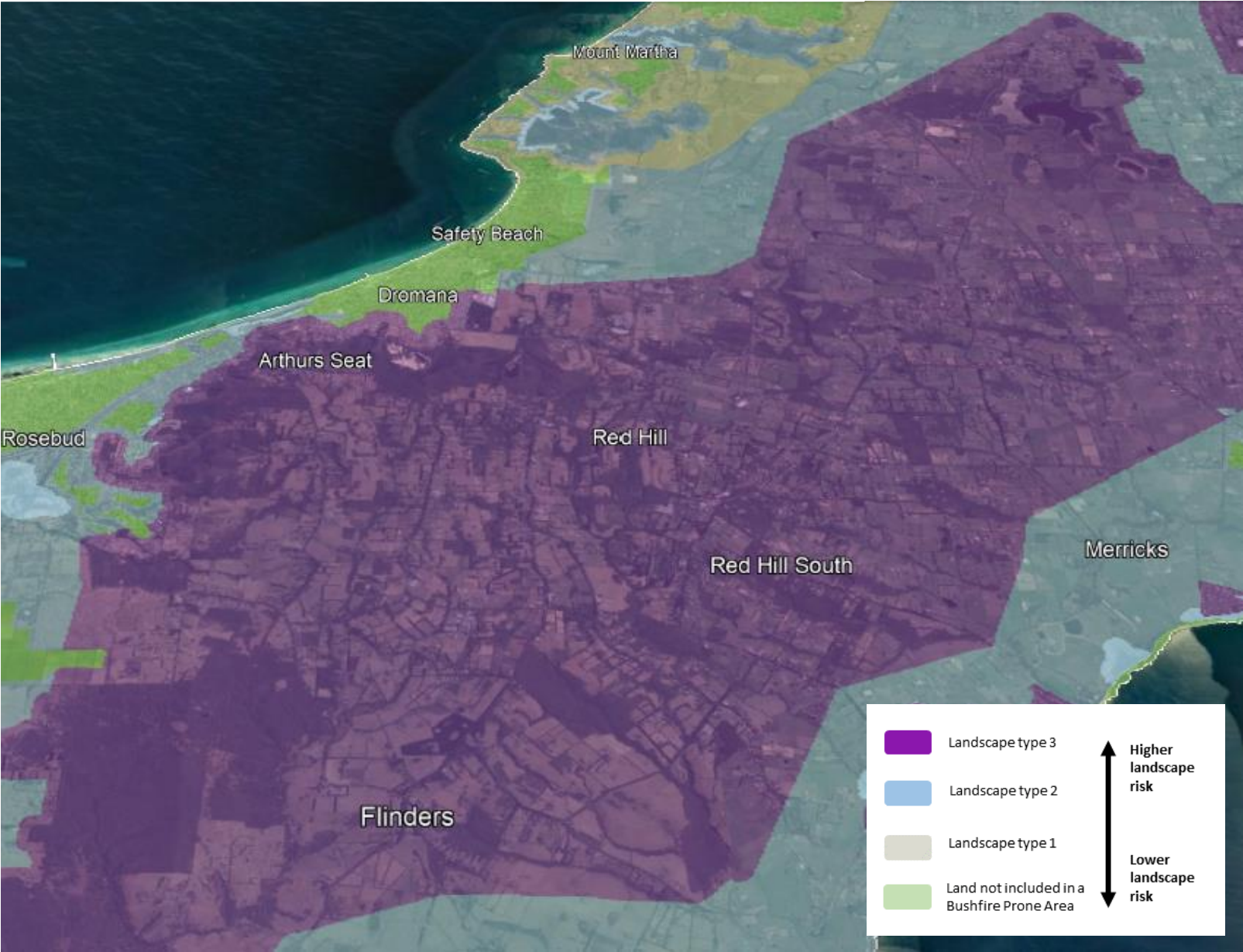
Grasslands to the east of Safety Beach

Grasslands are included in Landscape type 2 to the east of Safety Beach. This is a small area but is influenced by hazards further south where a bushfire and grassfires may develop, grow larger and move towards them. Whilst ordinarily grasslands would be Landscape type 1, the relationship with other hazards warrants Landscape type 2 being applied.

7.3 Land not included in a Bushfire Prone Area

There is no land within the central hinterland and interface areas not included into a bushfire prone area.

FIGURE 7: LANDSCAPE TYPES: CENTRAL HINTERLAND AND INTERFACE AREAS



8. Other landscape types

There are no locations in Mornington Peninsula Shire assessed as Landscape type 4 as part of this report. Landscape type 4 is at the highest end of the landscape risk spectrum using the landscape type approach.

The lack of Landscape type 4 locations is because there is no landscape significant hazard of a scale that might generate extreme bushfire behaviour commensurate with this landscape type. On a sub-regional and State scale, it is difficult to justify Landscape type 4 being assessed in Mornington Peninsula Shire.

However, this does not mean that conditions consistent with Landscape type 4 will not arise in conjunction with an individual development proposal, including for the purpose of an application under the Bushfire Management Overlay.

9. Conclusions

This report has applied landscape types from considering likely bushfire scenarios, the potential for neighbourhood scale destruction and the availability and access to safer areas. These are all considerations within the policies of *c13.02-1S Bushfire Planning*. Landscape types enable the inter-related considerations to be practically applied spatially.

The following conclusions are reached in response to the assessed landscape types.

9.1 Lower-risk locations

The following locations are lower risk from the perspective of locational policies in *c13.02-1S Bushfire Planning*:

- Land not included in a Bushfire prone area.
- Land identified within Landscape type 1 or Landscape type 2.

Planning scheme changes that direct growth and development to these areas are likely to be advantageous from the perspective of *c13.02-1S Bushfire Planning*.

9.2 Special considerations in Landscape 2

Land within Landscape type 2 often provides an area of transition (or buffer) from higher risk areas in Landscape type 3. They may also provide the area of low-fuel where people closer to the bushfire hazard will move into in the event of bushfire, to find places of shelter.

Planning in Landscape type 2 areas should recognise their role in managing risks associated with nearby higher risk areas.

9.3 Landscape type 3 areas

Landscape type 3 areas represent places of elevated bushfire risk when assessed against locational policies in *c13.02-1S Bushfire Planning*. In these areas, strategic planning will be particularly influenced by bushfire considerations and ensuring the planning scheme emphasises life-safety outcomes.

Landscape type 3 areas require further investigation before strategic planning proposals affect these areas. The investigations should consider:

- Whether development can be made further bushfire resilient through tailored bushfire protection measures. This is irrespective of whether land is within or outside of the Bushfire Management Overlay.

- Whether there are areas of BAL:Low already existing or capable of being created in conjunction with new development. *c13.02-1S Bushfire Planning* emphasises the importance of locations where people can find shelter in the event of bushfire.
- How the use of closure of non-permanently occupied development on higher risk bushfire days could assist managing the bushfire risk.
- In rural settings, how the siting of development maximises bushfire safety taking advantage of larger lot sites where options may be available to provide bushfire protection measures, including defensible space.

9.4 Bushfire mapping in the Planning Scheme

As discussed in Section 3.4, there is land in the Shire that does not appear consistent with contemporary planning scheme and building regulation bushfire mapping. This may be an area for Council advocacy to DELWP for a review of the mapping in selected parts of the Shire to ensure the criteria is correctly applied. This may result in land being excluded and additional land being included as a result of any review. The emphasis of any review should be on the correct application of the applicable criteria.

9.5 Landscaping guide

The Council is considering whether a bushfire landscaping guide could be developed in partnership with the Country Fire Authority (CFA). The guide could enable:

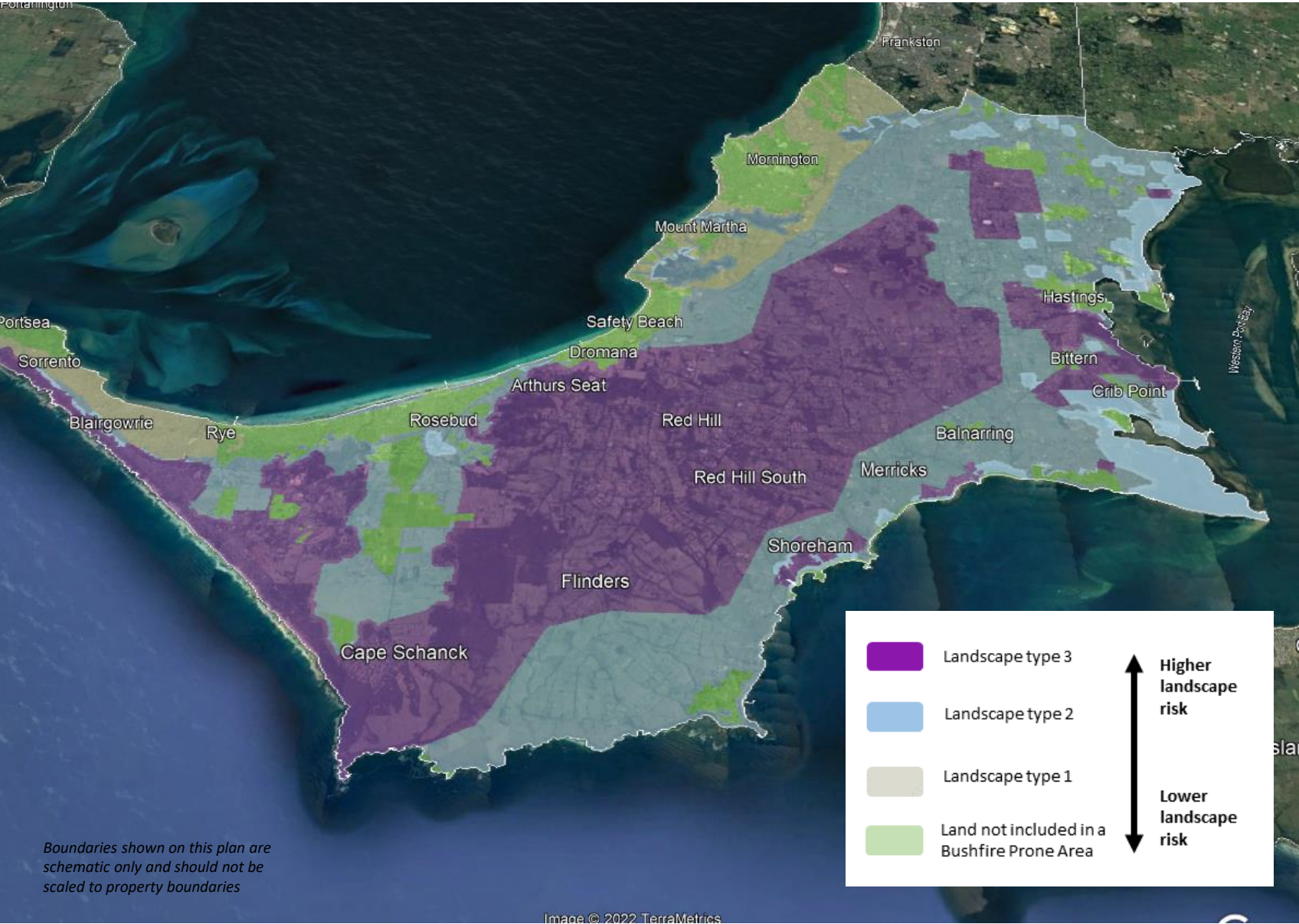
- More streamlined decision making where bushfire controls and other controls currently seek conflicting outcomes.
- Moving away from off-the-shelf bushfire vegetation rules in table 6 to those equally simply but tailored to the Shire or different parts of the Shire.
- Enhanced compliance with landscaping planning permit conditions, including through Council compliance activities.
- Better partnership working with fire authorities.

The landscape types identified in this report would provide a basis for distinguishing different areas in the Shire as part of any landscape guide.

9.6 CFA advice

CFA were provided with a briefing on this report and provided written advice in response to a draft of the report. Their advice is included in Attachment 1.

FIGURE 9: LANDSCAPE TYPE LOCATIONS: MORNINGTON PENINSULA SHIRE



References

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

Mornington Peninsula Planning Scheme

Attachment 1 – CFA correspondence



END OF DOCUMENT