



Bushfire Planning Considerations Report

113A Jupiter Boulevard Venus Bay

Lot 2 PS648056, Lot 1 TP 172550 and Lot 1 PS648056

August 23rd, 2016. Version 3.0

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Memberships

- Member of Planning Institute of Australia (MPIA)
- Corporate Bronze Member of Fire Protection Association of Australia

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Requirements detailed in this document do not guarantee survival of the buildings or the occupants. The client is strongly encouraged to develop and practice a bushfire survival plan.

Information and assistance including a template for a Bushfire Survival Plan is provided as part of the 'Fire Ready Kit' available through the CFA website at www.cfa.vic.gov.au or through your local CFA Regional office.

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Version Control

	Name	Date Completed	Comments
Desktop Assessment	Deanne Smith	25 June 2016	
Field Assessment	Deanne Smith	30 June 2016	
Report – Client Draft	Deanne Smith	6 July 2016	V 1.0
Report – Draft for CFA review	Deanne Smith	11 July 2016	V 2.0
Report – Final draft	Deanne Smith	24 July 2016	V2.1
Report – Final	Deanne Smith	26 July 2016	V2.2
Report – Updated	Deanne Smith	23 August 2016	V3.0 plan update

1.0 Introduction

This Report has been prepared to inform a Combined Planning Scheme Amendment and Planning Permit Application. A structured approach to risk identification and management is taken to provide decision makers with information to determine whether the bushfire risk has been reduced to an acceptable level.

In accordance with Planning Practice Note 64: Local Planning for Bushfire Protection, the four-step approach to considering bushfire has been taken. Other relevant Planning Practice Notes and Advisory Notes have been incorporated as required.

2.0 Establish the context

This section of the report establishes the context by providing factual information which is important when considering the way bushfire considerations may impact on the proposal. This information also provides the basis for discussions with the relevant fire authority (CFA) and for seeking authorisation to proceed with the Combined Planning Scheme Amendment & Planning Permit Application.

2.1 Locality and Site Description

Municipality	South Gippsland Shire Council
Title description	113A Jupiter Boulevard, Venus Bay
Overlays	Bushfire Management Overlay (BMO) Environmental Significance Overlay – Schedule 3 (ESO3)
Current Zoning	Farming Zone (FZ)
Site shape	Triangular
Site area	Approximately 12 Ha
Existing use and siting of buildings and works on and near the land	A caravan park operating in the south-eastern corner. Previously grazed vacant land for the balance of the allotment, with native vegetation regrowth.
Existing vehicle arrangements	Access from Jupiter Boulevard
Nearest fire hydrant	Not nearby
Any other site features relevant to bushfire risk	The site is adjacent the Cape Liptrap Coastal Park. A four-metre-wide fire break is established within the southern boundary of the allotment. This fire break is clear of all fuels and is a mineral earth break that can be used for access and maintained as clear into the future.

2.2 Site location

The planning proposal site is zoned Farming Zone (FZ) and is located between the land zoned Township Zone (TZ) and the land zoned Public Conservation Recreation Zone (PCRZ) – see Figure One. The location is a critical interface between the Cape Liptrap Coastal Park and Venus Bay – First Estate Township. The existing Caravan Park is located in the south-eastern portion of the larger

parcel of land, with access provided from Jupiter Boulevard. The parcel also has frontage at the north-western corner to Inlet View Road, to the north at Ockenga Close, and to the east at Centre Road.

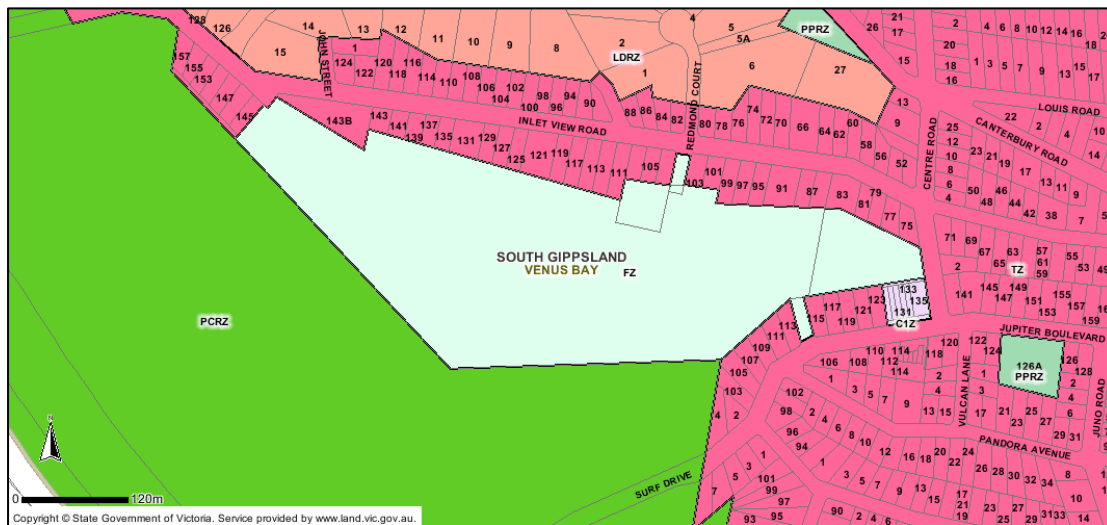


Figure One: Property Location – identified as the mint area central to the map (Planning Maps Online, DELWP, 2016)

Venus Bay – First Estate is the most southerly of the three estates that form the locality of Venus Bay. This estate interfaces with the Cape Liptrap Coastal Park on its south-western side and is surrounded by grassed farming land on all other aspects – see Figure Two. There is close proximity to the Tarwin Lower township, achieved by a drive of less than 5 minutes and a shared pathway that follows the Tarwin River.

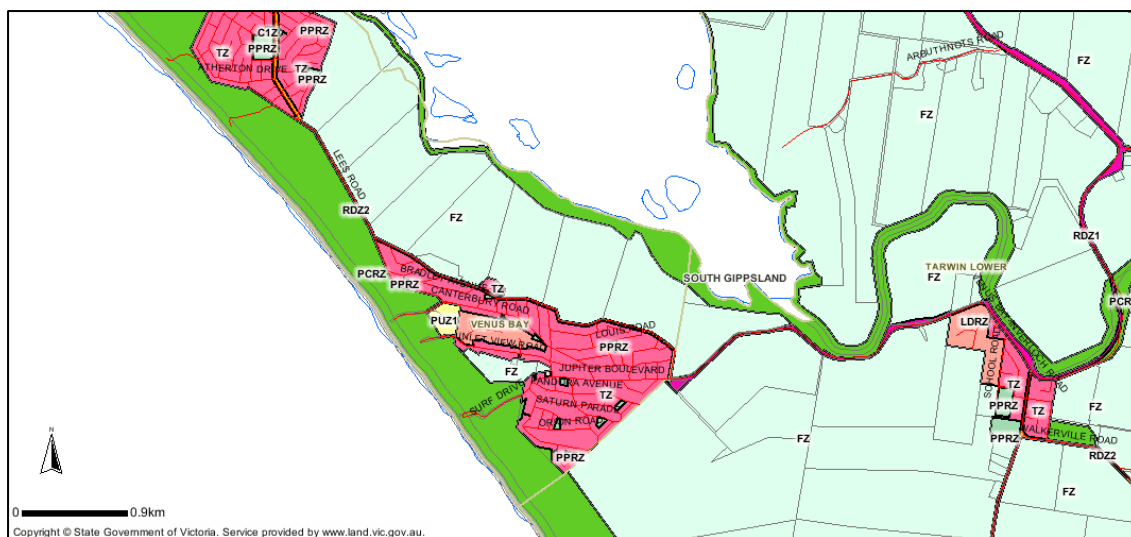


Figure Two: Property Location within the context of Venus Bay (Planning Maps Online, DELWP, 2016)

In considering the planning proposal site's exposure to bushfire risk, it is essential to look at the location of the site at a number of scales. Here, the key features are considered at the scales of 1km, 10km and 20km.

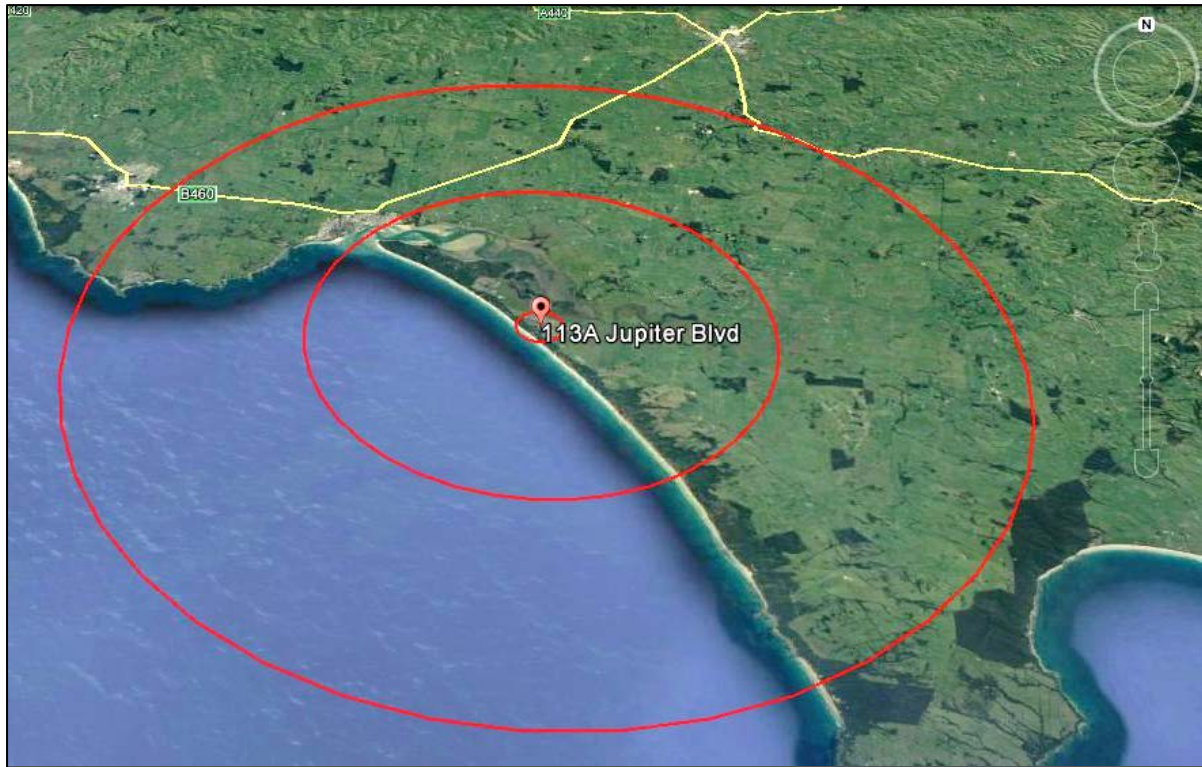


Figure Three: Property Location within the context of 1km, 10km and 20km radius from planning proposal site (Google Earth, 2016 – Imagery date 17/12/2015)

Within 20 kilometres of the planning proposal site, key features include:

- The Cape Liptrap Coastal Park extending from Point Smythe to the north-west of the planning proposal site down to Cape Liptrap in the south-east;
- The Inverloch Township to the north-west accessed via Tarwin Lower and providing a fully serviced township;
- The intersecting South Gippsland and Bass Highways north of Inverloch demonstrating the connectivity of this area to the greater South Gippsland region;
- The extensive grazing land in the area with limited vegetation patches demonstrating the predominance of grassfire rather than bushfire in this area as the more prevalent fire event.

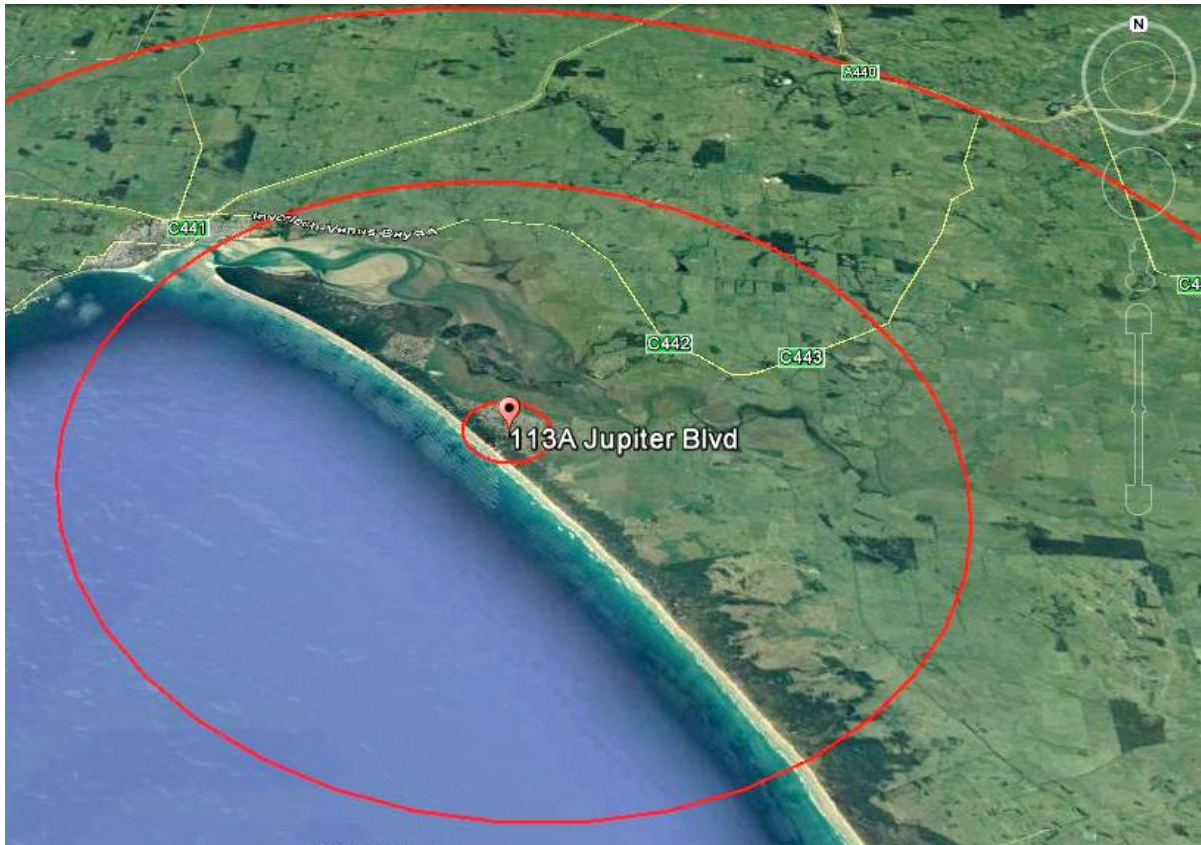


Figure Four: Property Location within the context of 10km and 1km radius from planning proposal site (Google Earth, 2016 – Imagery Date 6/5/2016)

Key features located within 10 kilometres of the planning proposal site include:

- Cape Liptrap Coastal Park incorporating Point Smythe to the north-west of the site which is able to carry bushfire down the coast to the planning proposal site;
- Andersons Inlet to the north of the planning proposal site forming a break to land located further north but contributing to northerly wind exposure;
- Tarwin River extending from Andersons Inlet to the Tarwin Lower Township in the east providing a linear break on the northern side of the main egress road from Venus Bay;
- Tarwin Lower Township to the east providing a safer place to retreat to with limited services including emergency services; and
- Extensive grazing land to the north and east providing a grassland interface that is managed by grazing and agricultural operations.



Figure Five: Property Location within the context of 1km radius from planning proposal site (Google Earth, 2016 – Imagery date 17/12/2015)

A closer consideration within 1 kilometre of the planning proposal site provides these features:

- The close interface of Cape Liptrap Coastal Park with the site and Venus Bay First Estate demonstrating the close proximity of the bushfire hazard;
- The linear nature of the vegetation and its exposure to coastal influence;
- The managed residential lots that comprise the majority of this estate and have vegetation that ranges from modified vegetation through to minimal vegetation;
- The low density residential lots to the north of the site that have less vegetation management;
- The grassland interface to the north, east and south-east of the estate providing grassfire scenarios; and
- The scrub vegetation extending into the township to the north-west of the planning proposal site providing the more severe bushfire scenarios.

2.3 Regional Bushfire Planning Assessment

The Regional Bushfire Planning Assessment (RBPA) for the Gippsland Region (2012) provides a high level analysis of locations where the bushfire hazard may impact on planning objectives. The RBPA provides information where a range of land use planning matters intersect with a bushfire hazard to influence the level of risk to life and property from bushfire. This information is required to be used as part of strategic land use and settlement planning at the regional, municipal and local levels.

“The RBPA is not a statutory planning provision and does not directly translate into planning schemes. However, it complements planning scheme provisions such as the Bushfire Management Overlay (BMO) by providing spatial and qualitative information from a variety of sources which together can inform considerations about where bushfire should be assessed early in the strategic planning process.” RBPA – Gippsland Region (2012)

The following table (Table One) is extracted from the RBPA and describes the different elements of Venus Bay that increase the risk from bushfire. Of particular note, the identified area code of 61-004 directly relates to the area of this planning proposal.

IDENTIFIED AREA CODE	LOCATION	DESCRIPTION
61-001	Venus Bay	Clusters of medium sized lots primarily used for holiday and recreational purposes. Dwellings in Venus Bay are surrounded by coastal vegetation. A single access road provides the only road vehicle egress and ingress into the settlement.
61-002	Venus Bay	Single constructed road servicing the Venus Bay settlement including medium and small sized lots (Lees Road)
61-003	Venus Bay	Cluster of small lots used for residential purposes. Bushfire hazard and vegetation permeates into developed urban areas primarily from the west.
61-004	Venus Bay	Cluster of small lots used for residential purposes. Bushfire hazard and vegetation permeates into developed urban areas primarily from the west.

Table One: Bushfire risk in Venus Bay as described in the Regional Bushfire Planning Assessment – Gippsland Region (2012)



Figure Six: Enlargement of South Gippsland Municipal Map 2 (full map in Appendix One) showing the Venus Bay settlements (Regional Bushfire Planning Assessment – Gippsland Region, 2012).

This planning proposal is located in the area identified as 61-004. It is noted as being a cluster of small lots used for residential purposes with the bushfire hazard and vegetation permeating into

developed urban areas primarily from the west. This permeation occurs through the planning proposal site and through land further to the north-west. The ongoing management and use of the planning proposal site is important in the overall strategic fire management of Venus Bay.

Permeation of the township and the site



2.4 Bushfire Management Overlay

The planning proposal site is included in the Bushfire Management Overlay (BMO). As described in Planning Advisory Note 46 (2013), the BMO is a planning scheme provision used to guide the development of land in areas of high bushfire hazard. The location, design and construction of development and the implementation of bushfire protection measures must be considered under a BMO. The BMO applies to areas where there is potential for extreme bushfire behaviour, such as a crown fire and extreme ember attack and radiant heat.

Initiated by a recommendation of the 2009 Victorian Bushfires Royal Commission, the BMO was mapped using hazard data developed by the Department of Environment and Primary Industries (DEPI). The mapping was verified by the Department of Transport, Planning and Local Infrastructure (DTPLI) before gazettal.

The most significant bushfire hazard where head fire intensity is modelled to be

30,000kW/m or more informed where the BMO should apply. Inputs to this calculation included physical characteristics including vegetation, topography and separate fire behaviour models appropriate to the vegetation classification. Whilst areas of contiguous vegetation of less than 4Ha were excluded, buffers within 150 metres of vegetation were included in recognition of research that 92% of house loss occurs within this distance.

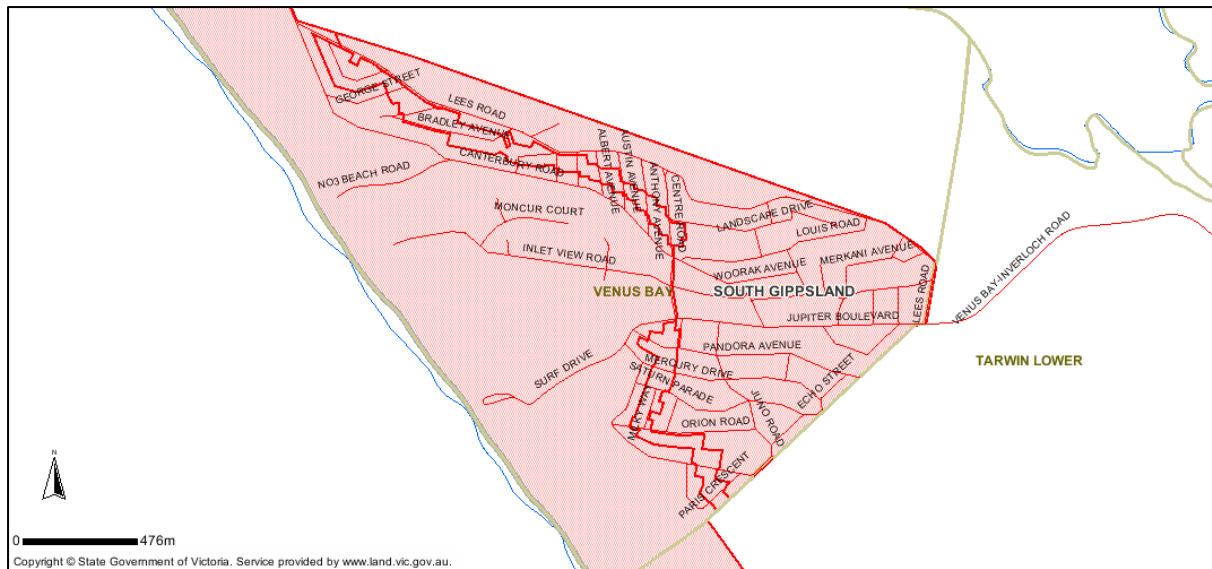


Figure Seven: Extent of the Bushfire Management Overlay across the site and in the vicinity (Planning Maps Online , 2016).

2.5 Bushfire Prone Area

The planning proposal area is included in the Bushfire Prone Area (BPA). As described in Planning Advisory Note 46 (2013), the BPA is a building regulation tool that identifies where moderate bushfire hazard can be expected. It applies to areas subject to the BMO, and to areas that experience a lower head fire intensity modelled to be between 4,000kW/m and 30,000kW/m. This level of hazard informs areas declared as bushfire prone in the building system. Areas at the upper end of the bushfire intensity range (that is 28,000kW/m and above and referred to as BHL1b) are considered, where appropriate, for applying the BMO based on the advice of the relevant fire authority.

As the planning proposal site is subject to the BMO, it is also in the BPA. The greater area surrounding Venus Bay is also in the BPA reflecting the moderate bushfire hazard that can be expected from the grasslands.

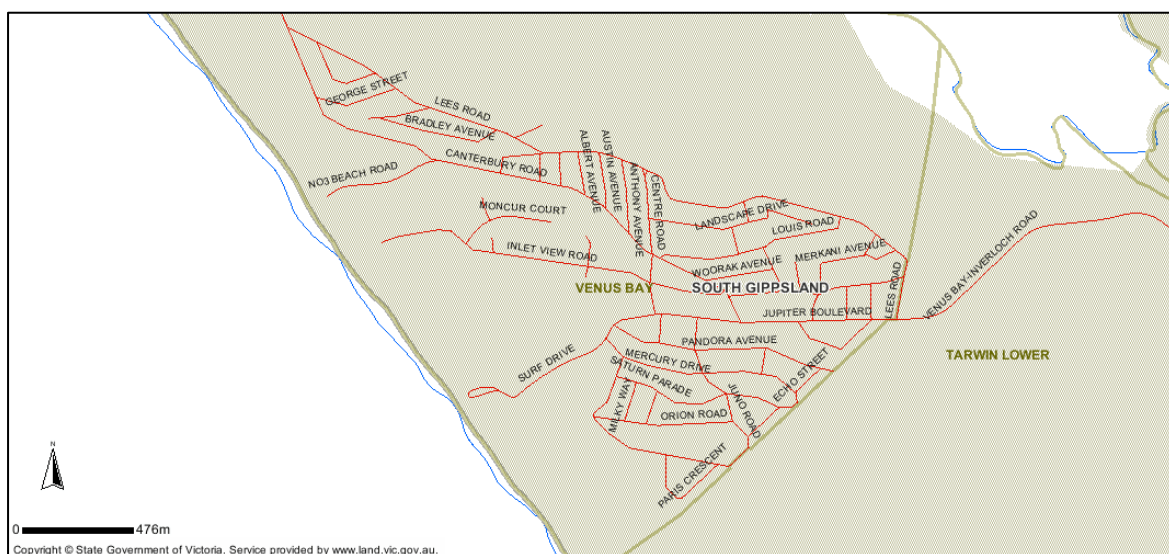


Figure Eight: Extent of the Bushfire Prone Area across the site and in the vicinity (Planning Maps Online, 2016).

2.6 Fire history

There is limited fire history in the immediate and broader landscape. Significant fires have occurred at Wilson's Promontory National Park (2005 and 2009) and Hallston (2013). DELWP recognise that there are challenges in achieving planned burning in this environment, both due to the lack of fire tolerance of the vegetation type, and the minimal safe window for burning. As such, mechanical vegetation management techniques are used in combination with community education to achieve safety from bushfire. The scrub located in the Cape Liptrap Coastal Park is Crown Land managed by DELWP. The scrub vegetation contained on the Crown Land is identified in both the South Gippsland Fire Management Plan, and the Regional Bushfire Planning Assessment.

There is no significant fire history associated with Venus Bay. Fires such as small grass and scrub fires caused by human intervention have been small and quickly extinguished by the fire brigade. There is a fire brigade presence in Venus Bay, with support from the sponsor brigade at nearby Tarwin Lower.

It should be noted that as area is coastal and as it is located in the high rainfall areas of South Gippsland, the area is often damp. The damp conditions limit the number of days the fuels are available to burn. The low fertility of the soils minimises the amount of fuel that is able to accumulate in any given season. As scrub is a wind-driven fire, it is days of warm conditions, but strong winds that pose the greatest risk of bushfire.

Vacant blocks covered in vegetation provide a mechanism for fire to penetrate the township. Some of these lots are located on the interface with the Cape Liptrap Coastal Park, however there are vacant lots scattered throughout the estates. An existing four-metre-wide vegetation break is in place on the subject property along the interface with the Cape Liptrap Coastal Park, reflecting the tenure-blind fire management adopted in South Gippsland. All the vegetation management occurs on the private land, with no management on the public land along this section of the Cape Liptrap Coastal Park.

2.7 Municipal Fire Prevention Plan

The South Gippsland Municipal Fire Prevention Plan (SGMFP) identifies the provisions within the South Gippsland Planning Scheme including the Bushfire Management Overlay as in the range of treatments used to mitigate fire risk. The SGMFP is informed by the Victorian Fire Risk Register.

The likely scenario identified by the SGMFP for Venus Bay -First Estate based on McArthur Forest Fire Danger Indices (FFDI) of 100 is direct fire attack from West-SW coastal scrub into the township vegetation, including ember attack. It is also noted that an assessment of the area could not identify a suitable location, neither could potential works be identified which could create a suitable location for the establishment of a Neighbourhood Safer Place – Place of Last Resort. The coastal scrub impact is dependent on wind direction and speed. Community education (including a Community Information Guide), patrols and roadside management are identified as treatments of the risk, leaving a residual risk rating of High.

2.8 Surrounding Road network

The three estates that form Venus Bay are accessed via one main road, that being Lees Road. The planning proposal site is located in the first estate which is the most easily accessible. Egress to

Tarwin Lower occurs along the main access road bordered by the Tarwin River to the North and the grassland farming area to the south. There is strategic safe access from the planning proposal site, first to the adjacent village centre, then toward Tarwin Lower.

Sealed roads accessing caravan park, and sealed road adjacent to proposed entry of LDRZ subdivision



2.9 Existing settlement

Existing settlement patterns in Venus Bay were established without consideration of many natural hazards and environmental risks, including the bushfire hazard. The three estates have different characters, with the First Estate most resembling an urban settlement. The majority of the lots are of conventional residential size with some low density sized lots located to the north-west of the planning proposal site. The larger lots tend to have a greater extent of scrub vegetation with many of the sites reflecting a monoculture rather than a mosaic of vegetation.

The First Estate is supported by a small commercial centre and the main surf beach with the presence of a large Surf Life Saving Club. Access to the Second and Third Estates is provided via the outskirts of the First Estate. A number of vacant lots are scattered throughout Venus Bay. Since the implementation of the Bushfire Management Overlay, the extent of vegetation clearing on each site and the ongoing implementation of defensible space is converting Venus Bay to a settlement that is more able to mitigate bushfire risk.

2.10 Future development scenarios

The planning proposal for this site is to subdivide and rezone the land to create:

- Six Low Density Residential Zone lots;
- One Township Zone lot on Ockenga Close (to be rezoned to Township Zone);
- One Township Zone lot on Centre Avenue; and
- One balance lot containing the current caravan park (to be rezoned from Farming Zone to Special Use Zone in recognition of the importance of the site to the Municipality's tourism);

This planning proposal will be a Combined Planning Scheme Amendment and Planning Permit application (Figure Nine). This approach will provide certainty regarding the subdivision form, and its development outcome.

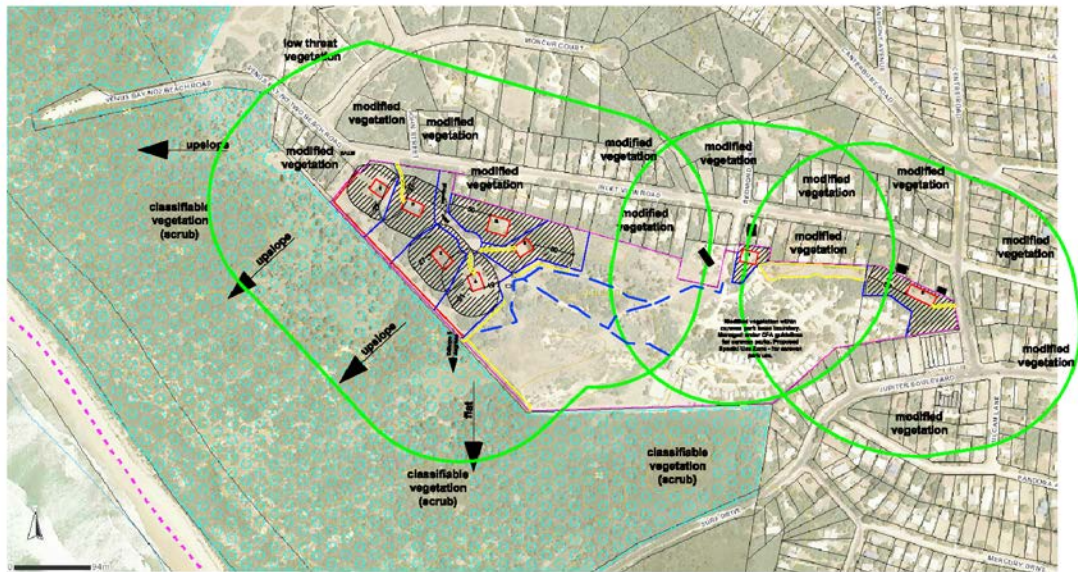


Figure Nine: Preliminary development proposal

Bushfire mitigation measures will need to be delivered by a range of methods:

- Balance lot – consideration should be made in the Special Use Zone and any associated schedule to enable vegetation management to occur for bushfire mitigation. A landscape plan should be used for vegetation management purposes. Additionally, the Emergency Management Plan required for the registration of the caravan park, provides another form of regulation and attention to the bushfire risk.
- Township Zone Lots – through the Bushfire Management Plan proposed as part of the planning permit application, including providing for the exemption of further BMO consideration by application of a Section 173 agreement.
- Low Density Residential Lots – through the Bushfire Management Plan proposed as part of the planning permit application, including providing for the exemption of further BMO consideration by application of a Section 173 agreement to each allotment.
- A landscape plan being endorsed as part of the permit, and effected through a Section 173 agreement or similar mechanism to each allotment.

Planning Note 46: Strategic Assessment Guidelines for preparing and evaluating planning scheme amendments (2014) requires the consideration of whether the amendment addresses the relevant bushfire risk. An amendment must be assessed to determine whether the changes proposed will result in any increase to the risk to life as a priority, property, community infrastructure and the natural environment from bushfire. A series of questions are provided by PN 46 to guide this assessment. These questions are responded to below.

- **Does the amendment meet the objective and give effect to the strategies to address Bushfire risk in the State Planning Policy Framework (Clause 13.05-1 of the planning scheme)?**

The State Planning Policy Framework considers bushfire risk in Clause 13.05-1 of the South Gippsland Planning Scheme. The objective of this clause is *to assist to strengthen community resilience to bushfire*. In order to achieve this objective, a number of strategies are outlined with the overarching strategies of:

- o *Prioritise the protection of human life over other policy considerations in planning and decision-making in areas at risk from bushfire.*
- o *Where appropriate, apply the precautionary principle to planning and decision-making when assessing the risk to life, property and community infrastructure from bushfire.*

This planning proposal prioritises the protection of human life over other policy considerations by providing a detailed report to inform the planning scheme amendment and planning permit application. The protection of human life is maximised by adopting a defensible space of BAL12.5 in the design of the new residential lots. This highlights the use of the precautionary principle in guiding the planning of this proposal, and the decision-making that will ultimately provide the planning approval.

Other strategies outlined in Clause 13.05 that are applied in this planning proposal are listed below.

Bushfire hazard identification and risk assessment strategies

- o Apply the best available science to identify vegetation, topographic and climatic conditions that create a bushfire hazard.

The mapping of the Bushfire Management Overlay is informed by the best available science as outlined in Advisory Note 46: Bushfire Management Overlay Mapping Methodology and Criteria. This has been supported by onsite assessment to inform the Planning Scheme Amendment and the Planning Permit Application.

- o Assess the risk to life, property and community infrastructure from bushfire at a regional, municipal and local scale.

The Victorian Fire Risk Register, the Regional Bushfire Planning Assessment, and the South Gippsland Fire Management Plan have been used to inform this report and the Planning Scheme Amendment.

Strategic and settlement planning strategies

- o Ensure that strategic and settlement planning assists with strengthening community resilience to bushfire.

The rezoning and development of this planning proposal site provides an opportunity for strategic planning to strengthen the community resilience to bushfire in the Venus Bay – First Estate. This will be achieved by careful consideration of the design and layout of the proposed subdivision; and the ability to intensify the ongoing land management requirements.

- o Consult with the relevant fire authority early in the strategic and settlement plan making process and implement appropriate bushfire protection measures.

The fire authority was consulted in the early stages of the design and provided the following input:

- Recognition of the benefit of the subdivision to residential lots to north in the context of increasing the overall number of people living in the area and the increased ability to manage the land.
- Maximising defensible space on the lots and considering methods of managing the vegetation outside the defensible space (e.g. break up continuity, mosaic arrangement)
- Retention of the fire break along the southern boundary
- Review of proposed layouts

- o Ensure that planning to create or expand a settlement in an area at risk from bushfire:

- Addresses the risk at both the local and broader context.

This has been considered through the production of this report, and consideration of the Regional Bushfire Planning Assessment and South Gippsland Fire Management Plan.

- Reduces the risk to future residents, property and community infrastructure from bushfire to an acceptable level.

The proposal increases the number of residents living on the land, however the proposal also increases the required land management. The ongoing requirements of defensible space and required construction levels reduces the risk to future residents to an acceptable level.

- Ensures any biodiversity and environmental objectives specified in the planning scheme are compatible with planned bushfire protection measures.

In order for this planning proposal to mitigate the bushfire risk to an acceptable level, any conflict with the environmental objectives needs to be resolved. Identification of weed species should occur as the first means of identifying vegetation for removal. Landscape plans should be required at the time each dwelling seeks planning permission, ensuring that ongoing defensible space is achieved and maintained.

- Ensures the risk to existing residents, property and community infrastructure from bushfire will not increase as a result of future land use and development.

The proposal increases the number of residents living on the land, however the proposal also increases the required land management. The ongoing

requirements of defensible space and required construction levels reduces the risk to existing residents by increasing the fire management of the land.

- Ensures future residents can readily implement and manage bushfire protection measures within their own properties.

The Bushfire Management Statement provided as part of the planning permit application to subdivide the land is the vehicle to address the ability of future residents to implement and manage bushfire protection.

Planning scheme implementation strategies

- o Specify in planning schemes the requirements and standards for assessing whether the risk to a proposed development from bushfire is acceptable and the conditions under which new development may be permitted.

The land is subject to the Bushfire Management Overlay and is required to respond to the Bushfire Planning Provisions.

- o Ensure that planning schemes, in particular the Municipal Strategic Statement, Local Planning Policies and zones applying to land, provide for use and development of land in a manner compatible with the risk from bushfire.

The Special Use Zone being introduced needs to provide for the use and development of the land (the caravan park) in a manner compatible with the risk from bushfire. A review of the proposed Special Use Zone should occur to ensure that this is the case.

Development control strategies

- o In areas identified in the planning scheme as being affected by the bushfire hazard, require a site-based assessment to be undertaken to identify appropriate bushfire protection measures for development that has the potential to put people, property or community infrastructure at risk from bushfire.

A site-based assessment has occurred to inform this report. Additional site-based assessment is to be undertaken in the preparation of the planning permit application for subdivision.

- o Only permit new development where:
 - The risk to human life, property and community infrastructure from bushfire can be reduced to an acceptable level.
 - Bushfire protection measures, including the siting, design and construction of buildings, vegetation management, water supply and access and egress can be readily implemented and managed within the property.
 - The risk to existing residents, property and community infrastructure from bushfire is not increased.
 - When assessing a planning permit application for a single dwelling in an established urban or township residential area, consider the need for a localised response to the bushfire risk and consider any relevant existing or

planned State or local bushfire management and prevention actions that may affect the level of on-site response needed

The Bushfire Management Overlay provides for the risk to new development to be addressed through the Bushfire Planning Provisions. This work is essential to support the application to subdivide land.

Policy guidelines

- o Planning must consider as relevant:
 - Any relevant approved State, regional and municipal fire prevention plan.
 - AS 3959-2009 Construction of Buildings in Bushfire-prone Areas (Standards Australia, 2009).
 - Building in bushfire-prone areas - CSIRO & Standards Australia (SAA HB36-1993, May 1993)

The Regional Bushfire Planning Assessment – Gippsland Region and the South Gippsland Fire Management Plan have been considered in the preparation of this report. AS3959-2009 will be considered in the planning permit application response.

- **Has the view of the relevant fire authority been sought in formulating the amendment? If the relevant fire authority has provided advice this should be summarised in the explanatory report.**

The fire authority was consulted in the early stages of the design and provided the following input:

- *Recognition of the benefit of the subdivision to residential lots to north in the context of increasing the overall number of people living in the area and the increased ability to manage the land.*
- *Maximising defensible space on the lots and considering methods of managing the vegetation outside the defensible space (e.g. break up continuity, mosaic arrangement)*
- *Retention of the fire break along the southern boundary*
- *Review of proposed layouts*

A copy of this report (in draft) was provided to the Country Fire Authority for further comments prior to finalisation:

- *CFA agrees that the land forms an important role as the interface between the Coastal Park and the township and that appropriate development and use of this land could help provide a buffer to the existing settlement.*
- *CFA's preference is for BAL12.5 defensible space as the predominant classifiable vegetation is scrub which at higher BALs provides minimal setback.*
- *CFA agrees the classifiable vegetation is scrub and will have fire behaviour reflecting that classification. CFA also agrees with the description of the potential fire behaviour in and around the site provided in the Euca Report.*
- *For CFA to support the proposal a landscape plan for the subdivision which includes mechanism that ensure the ongoing management of the land,*

particularly the land proposed to become Special Use Zone is needed. This might occur for example through a S.173 agreement as part of the permit.

- *Overall, the report prepared by Euca Planning is consistent with CFA's consideration of the site and fire behaviour associated with the site.*
- *Although CFA will have the application formally referred to them once the Combined PSA/Permit has been authorised by South Gippsland Shire Council. It should be noted that CFA only supports a portion of the land changing to LDRZ on the basis of the subdivision design, defensible space and building envelopes contained in the Euca Report being defined at the time of the amendment. For example, through a Development Plan as part of the amendment or S.173 agreement as part of the permit. LDRZ is included in Pathway One under the BMO and Clause 52.47 which could allow for some unsuitable outcomes if these important safety measures are not defined at the time of rezoning.*

- **Is the amendment consistent with the Local Planning Policy Framework objectives and strategies that apply to bushfire risk? Is local policy for bushfire risk management required to support the amendment?**

There is an absence of bushfire risk considerations within the Local Planning Policy Framework in the South Gippsland Planning Scheme. Clause 21.07 Environmental Risk could be strengthened by local policy that considers the influence on bushfire behaviour by the retention of vegetation on private and public land. This could be considered as part of the climate change considerations. Increased local policy for bushfire risk management is not required to support this amendment, but its absence from the Planning Scheme is highlighted.

3.0 Identify the risks from bushfire

Risk is the likelihood of being exposed to a hazard to its consequences. For bushfire the risk is to life, property and community infrastructure from a bushfire event. After setting the context (Section 2 of this report) it is important to identify the risks from bushfire.

3.1 Bushfire behaviour

A Bushfire Hazard Landscape Assessment has been prepared which includes a plan that describes the bushfire hazard of the general locality surrounding the site (Figure Ten). This plan is utilised in the Planning Permit Application.

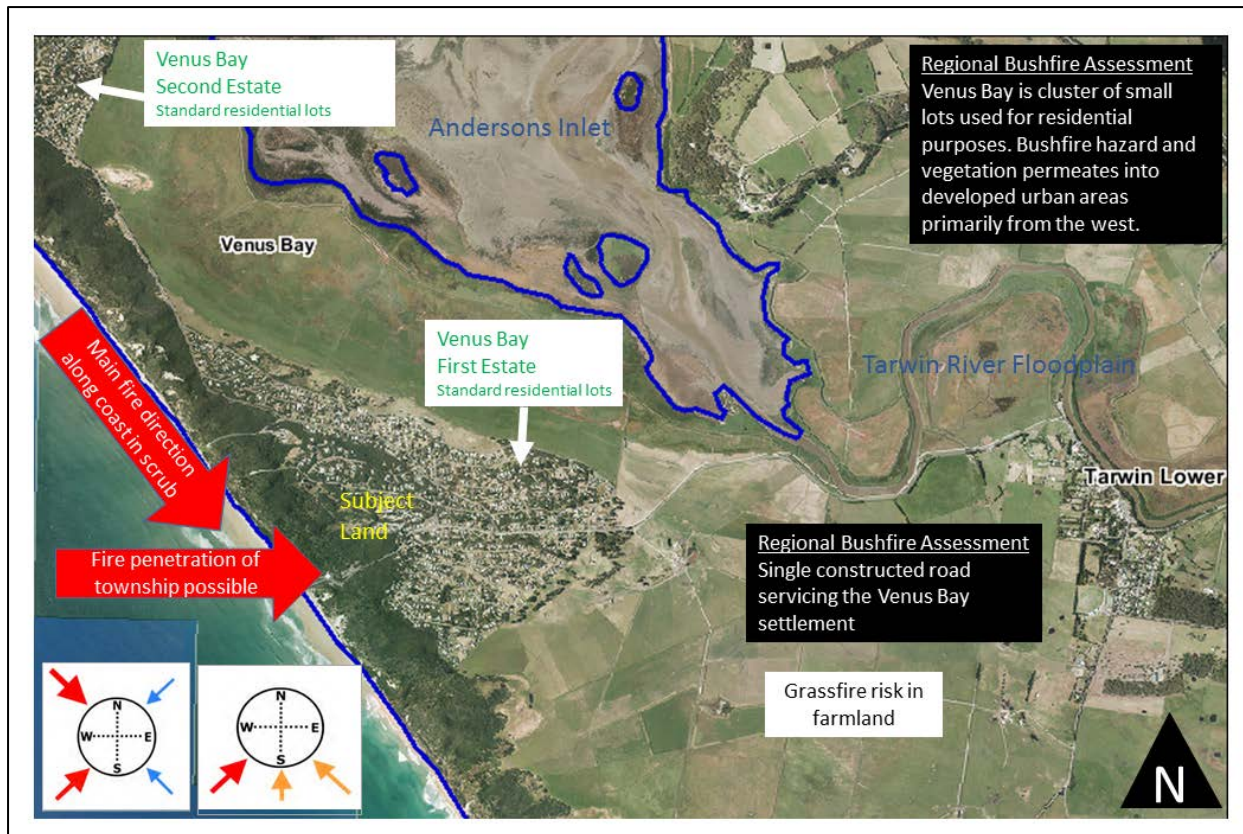


Figure Ten: Bushfire Hazard Landscape Assessment

The landscape risk of a site is an important consideration when mitigating bushfire hazards. The landscape risk is the combination of a number of elements in the surrounding landscape. These relate to the vegetation extent, the area available to a landscape bushfire, the orientation of the ridgelines and the steepness of the terrain, the accessibility to low threat areas and the quality of the road networks surrounding the site. The key features at the scales of 1km, 10km and 20km have been identified earlier in this report.

This site is positioned between the Cape Liptrap Coastal Park and the commercial centre of Venus Bay. The location has a high risk of bushfire that needs to be mitigated. Management of this site, also provides a greater level of protection to the allotments to the north and east.

The vegetation in the broader landscape is a mixture of scrub, grassland and modified vegetation. Within the Cape Liptrap Coastal Park, the scrub vegetation is EVC 1 Dune Scrub/Coastal Dune Grassland Mosaic (Figure Eleven). The vegetation in the area was classified according to AS 3959:2009, Practice Note 65 (DTPLI 2014) and the Overall Fuel Hazard Assessment Guide (DSE, 2010). The AS 3959:2009 approach uses a generalised description of vegetation based on the AUSLIG (Australian Natural Resources Atlas" No.7 Native Vegetation) classification system. According to this method, vegetation can be classified into seven categories. Each category indicates a particular type of fire behaviour and these categories or classifications are then used to determine bushfire intensity. The vegetation classifications applied are listed in Table 2.

Table 2 – Vegetation Assessment

Vegetation Classification	Application to this site
Scrub	<i>AS 3959:2009 Definition</i> <i>Closed scrub (13) – Found in wet areas and/or areas affected by poor soil fertility or shallow soils; >30% foliage cover. Dry heaths occur in rocky areas. Shrubs >2m high. Typical of coastal wetlands and tall heaths.</i> <i>Site Description</i> <i>The planning proposal site has scrub vegetation on the south interface, and clumps of scrub throughout the site. To the south of the site, the vegetation is a mosaic with a variation in low fuels, mid-storey and tall specimens. In some locations that have had greater disturbance (such as lots within the interface) the scrub more closely resembles a monoculture. The ability to work through the vegetation is at times limited by the proximity of the multi-branched trunks to each other. Structurally this vegetation represents scrub vegetation adjacent to the site. Occasional banksia specimens can be identified in the vegetation, particularly further north towards No.2 Beach Road where the vegetation is more akin to Woodland. There is no evidence of eucalypts in the vegetation, and as the presence of eucalypts is less than 10%, there is no effect on spotting from such trees. However, the presence of banksia clumps in locations will contribute to increased fire behaviour. It is appropriate to consider that the fire behaviour will be representative of a scrub fire. Fuel loads are consistent with that assigned to scrub in AS3959:2009.</i>
Woodland	<i>AS 3959:2009 Definition</i> <i>Woodland – Trees 10-30m high; 10-30% foliage cover dominated by eucalypts; understorey or low trees to tall shrubs typically dominated by Acacia, Callitris or Casuarina.</i> <i>Site Description</i> Banksias are more dominant wherever the vegetation is more open – such as on the site, and adjacent to roads (eg. No.2 Beach Road). The fuel loads in these areas of Cape Liptrap Coastal Park are more reflective of woodland. It is expected that the fire behaviour would still be wind-driven through the scrub but with influence from the tall banksia species.

On the ground, the vegetation reflects scrub with some scattered banksia. To the north of the site is a mixture of vacant and developed lots. The Low Density Residential Land north of Inlet View is dense scrub vegetation which some clearing around dwellings, whereas in the eastern and southern part of the First Estate a greater degree of vegetation modification has occurred. The majority of the vegetation has grown to be dominated by one or two types of scrub and is closer to a monoculture than a mosaic, and represents scrub not grassland for the purposes of bushfire classification. The land north of Lees Road, south-east of the First Estate, and between the First Estate and Tarwin Lower is grassland that is used for grazing. This land presents a low risk of grassfire.

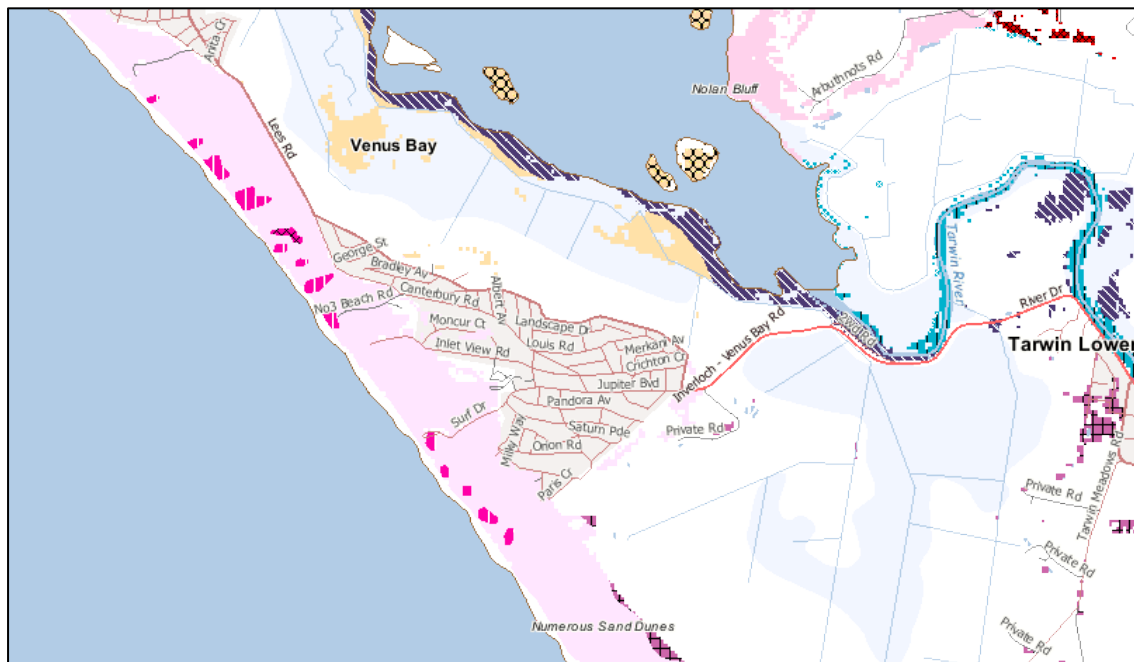


Figure Eleven: Ecological vegetation class group map for the vicinity showing the Coastal Dune Scrub/Coastal Dune Grassland Mosaic EVC 1 (pink), Coast Banksia Woodland EVC 2 (yellow), Estuarine Wetland/Estuarine Swamp Scrub Mosaic EVC 935 (blue) and Sandy Beach (hot pink).

The topography of the surrounding landscape does provide for any fire that starts in the vicinity of Point Smythe, Third Estate and Second Estate to move towards the site, and the Venus Bay – First Estate under a northerly influence. South-westerly change and coastal winds will drive any fire inland. Given the narrow shape of Point Smythe, and the vegetation type, any fire must be wind-driven to move through the area. The window of opportunity for a fire to move through is small, and the extent of vegetation is not sufficient for a fire to achieve landscape proportions. However, the fire will be intense for the period in which it does burn.

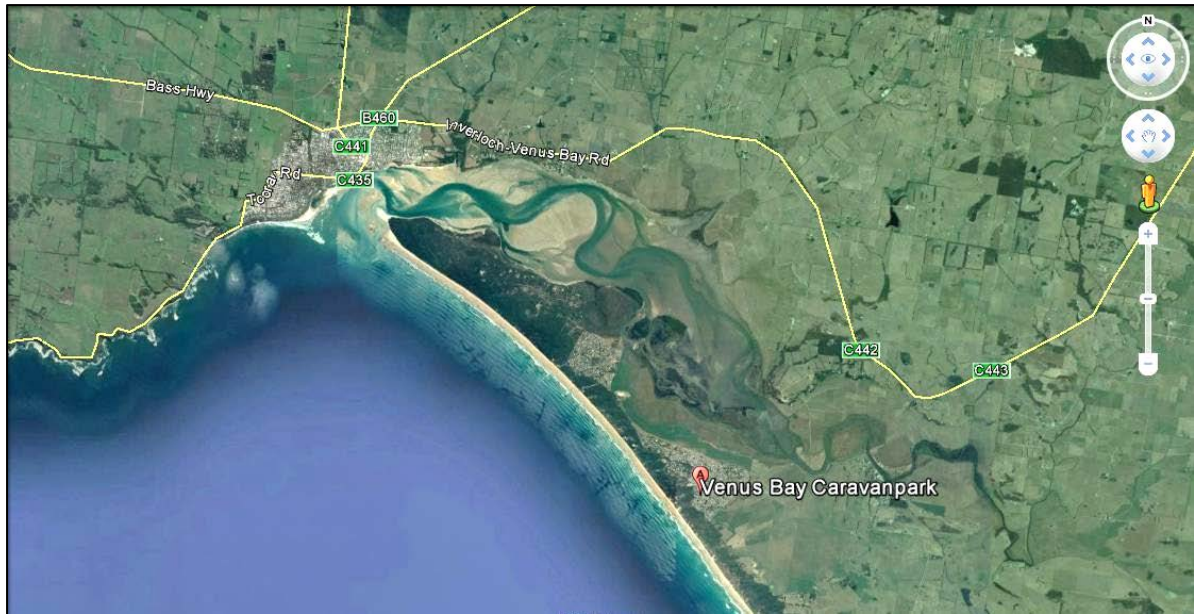


Figure Five – Landscape of Andersons Inlet (subject site is central to image)

The site is at an increased risk from bushfire due to its vulnerability from the west and the extensive linear Cape Liptrap Coastal Park. A detailed description of the potential bushfire behaviour is provided below which should be used to inform the creation of lots, siting of dwellings, extent of vegetation management and building construction levels.

Scenario 1 – Bushfire from the North-west

A fire approaching from the north-west has the potential for an 8km fire run through unmanaged scrub vegetation. The terrain north of the site is undulating with sand ridges running parallel to the beach. North-westerly winds are characteristic of extreme fire weather, and this is the most likely scenario that would carry fire into the planning proposal site. There are limited landscape features to the north-west that would mitigate the fire-run down the linear Coastal Park. This fire scenario is likely to provide radiant heat and embers to the planning proposal site.

Scenario 2 – Bushfire from the West

A fire approaching from the west has the potential for a 400m fire run through unmanaged scrub vegetation. The terrain north of the site is undulating with sand ridges running parallel to the beach. Westerly winds and south-westerly winds are characteristic of the coastal influence, and the south-westerly change that occurs on days of extreme fire weather. A small fire could start near the beach and achieve a 400m fire run to the planning proposal site, however the greater risk is from a Scenario 1 bushfire that is subject to the coastal wind influence or the south-westerly wind change. This fire would be driven into the planning proposal site. The design response for the subdivision should ensure the existing fire break is retained and maintained. Additionally, the design response for the subdivision should consider the effect of a flank fire under the north-westerly influence, and the head fire intensity from a 400 m fire run. This fire scenario is likely to provide radiant heat, embers and direct flame contact to the planning proposal site.

Scenario 3 – Bushfire from the East

East, north-east and south-east of the planning proposal site, is a built up residential area of Venus Bay. A landscape bushfire could not approach from the east. A bushfire from the east would be likely to be a result of spot fires and localised ignitions from a larger fire to the north-west and west. This fire scenario is likely to provide radiant heat and embers from localised ignitions.

Scenario 4 – Bushfire from the North

A fire approaching from the north has the potential for an 330m fire run through a mixture of unmanaged scrub vegetation and scattered dwellings. The terrain north of the site is undulating with a sand ridges running from west to east. Northerly winds would occur on days of extreme fire weather. The design response for the subdivision should consider the effect of a bushfire under a northerly influence, and the head fire intensity from a 330 m fire run. This fire scenario is likely to provide radiant heat and embers to the planning proposal site with some localised ignitions.

3.2 Features of the site that affect the level of risk

The features of the site that affect the level of risk are identified and discussed:

- access and egress both to the location or site within it

Venus Bay has a single access to and from the town. The First Estate is the most ideally situated being the gateway from the Tarwin River floodplains to Venus Bay. A sealed two-lane road exists between Venus Bay and Tarwin Lower with the Tarwin River to adjacent to the northern side of the road, and grazed farming land to the south side of the road. The balance lot provided to the Caravan Park will continue to have access to Jupiter Boulevard which has direct connection to the road to Tarwin Lower. The Township Zone lot will exit directly onto Ockenga Close and onto Inlet View Road in an area that is close to the more managed eastern aspect of the estate. The preliminary design response for the subdivision of the low density residential lots, provide access and egress via a short court to Inlet View Road. The connection to Inlet View Road should be clear of vegetation in order to assist in egress from the site. This is of particular importance given the direction of egress is towards two of the more likely fire scenarios.

- proximity to established urban or township areas

The planning proposal site is located between the established township area and the Cape Liptrap Coastal Park. The balance lot containing the caravan park is in close proximity to the commercial centre of Venus Bay, and egresses into this location. The Low Density Residential lot are located to the west of the site in the area that is more at risk from extreme bushfire. Whilst township lots exist immediately to the north of these lots, low density residential lots with limited managed defensible space further to the north. Nonetheless, these lots are able to exit onto Inlet View Road and travel into the established area of the township.

- vegetation on site that planning schemes seek to protect

The planning proposal site has patches of native vegetation scattered through the site that provide for the spread of fire. Whilst Clause 52.17 of the South Gippsland Planning Scheme

seeks to protect the majority of this vegetation, it is acknowledged that there are some Clause 52.48 exemptions that can be used in the creation of defensible space.

3.3 Risks arising from the proposal itself

The proposed layout provides for eight new dwellings. The new dwellings will be built in accordance with AS3959-2009 and the requirements of the Bushfire Planning Provisions, as proposed as part of the planning permit application. Based on an assumed occupancy of four persons per household, this proposal will increase the number of people occupying the land by 28 persons. This occupancy is expected to be a mix of permanent dwelling occupation, and holiday house occupation. It is expected that the caravan park will continue to be occupied at its current level. Should this proposal not proceed in some form, there is a risk that the vegetation will regenerate across the site effectively bringing the interface with the vegetation closer to the existing Township Zone lots.

4.0 Analyse and evaluate the risks

Risk analysis provides a key input into decision making on whether the risk has been reduced to an acceptable level. It is deemed that whilst there is an increase in human exposure by this planning proposal, a design response could be proposed that will mitigate the bushfire risk to an acceptable level for this development and for the existing settlement.

The rezoning of this land to Special Use Zone (SUZ) has limited effect on the ability of the caravan park to undertake fire mitigation works. The specification of the zone, and any schedule, should ensure that bushfire considerations are able to be taken into account. The proposed SUZ wording has been reviewed in the compilation of this report and feedback provided.

The rezoning of land to Low Density Residential Zone (LDRZ) needs to be more carefully considered, particularly the design response. There is an opportunity to prepare a design response that not only meets the requirements of Clause 44.06 Bushfire Management Overlay, and Clause 52.47 Bushfire Planning Provisions, but provides a beneficial reduction in the bushfire risk posed to the established dwellings and existing lots. It is essential that the proposed subdivision is designed and implemented in a manner that mitigates the ability for a fire to progress into the township through the proposal.

The bushfire attack level (BAL) is a means of measuring the severity of a building's potential exposure to ember attack, radiant heat and direct flame contact, using increments of radiant heat expressed in kilowatts per meter squared. The BAL is also the basis for establishing the requirements for construction to improve protection of building elements from attack by bushfire.

The highest BAL determines the construction requirements for the dwelling. A reduction of one BAL level may be applied if facades of the house are shielded from the bushfire hazard.

The BAL for the proposed allotments will be calculated using a Forest Fire Danger Index (FFDI) of 100 and a Flame Temperature of 1090K. These parameters are in accordance with the risk parameters set in Clause 52.47. A range of options have been determined for this site to assist in guiding the future dwelling design and siting. Dwellings should be sited to meet the requirements of BAL 12.5, unless approval is sought from CFA for a higher level of BAL construction and less defensible space.

5.0 Conclusion

The proposed translation of the risk mitigation into the planning scheme will involve rezoning of the land as proposed. It is not envisaged that a schedule is required due to the small number of lots, and the method of rezoning (combined planning scheme and planning permit application). The subdivision design must consider its place in the broader context of Venus Bay and not just in isolation. The subdivision and resulting planning controls on individual lots, must decrease the fire risk to the settlement and not enhance it. For this to occur, a site-specific landscape plan which provides for bushfire protection measures, appropriate vegetation retention and long term management of site amenity is required. This should be supported by a Section 173 agreement, or similar mechanism, to ensure that the requirement extend to future owners of the lots and inform new development. The importance of this land to the township needs to be reflected at the time of updating Municipal Fire Management Plans.

6.0 References

South Gippsland Fire Management Plan 2013-2016 Version 2.1 (2014)

Standards Australia (2009) Construction of Buildings in Bushfire Prone Areas. Standards Australia, North Sydney, NSW.

The State of Victoria Department of Environment, Land, Water and Planning (2016) Biodiversity Interactive Map.

The State of Victoria Department of Environment, Land, Water and Planning (2015) Fire Operations Plan 2015/16-2017/18 Gippsland Region.

The State of Victoria Department of Planning and Community Development (2012) Regional Bushfire Planning Assessment – Gippsland Region

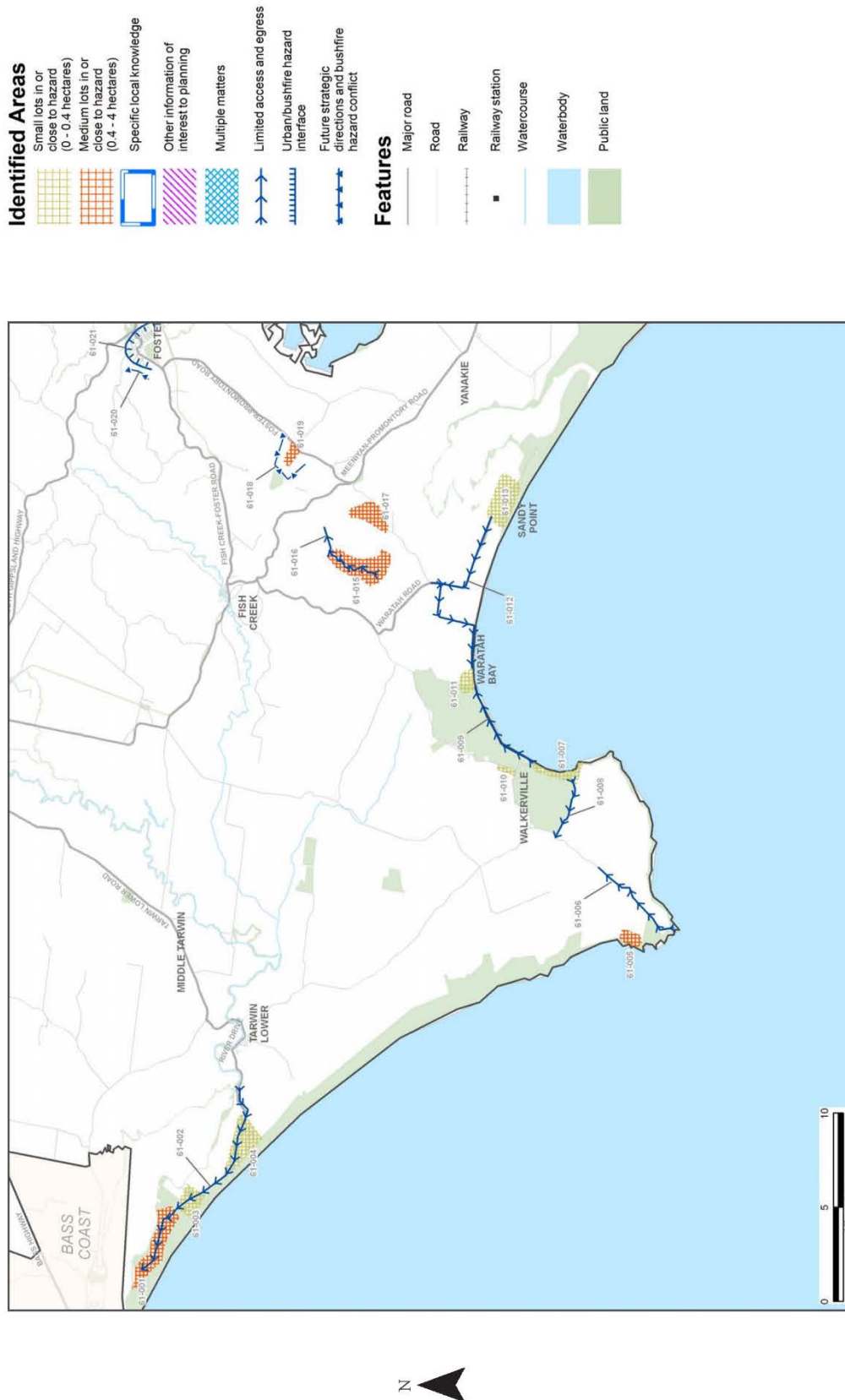
The State of Victoria Department of Transport, Planning and Local Infrastructure (2014) Planning Practice Note 65 – Preparing and Assessing a Planning Application under the Bushfire Provisions in Planning Schemes. Victorian Government, Melbourne.

The State of Victoria Department of Transport, Planning and Local Infrastructure (2013) Planning Advisory Note 46: Bushfire Management Overlay Mapping Methodology and Criteria. Victorian Government, Melbourne.

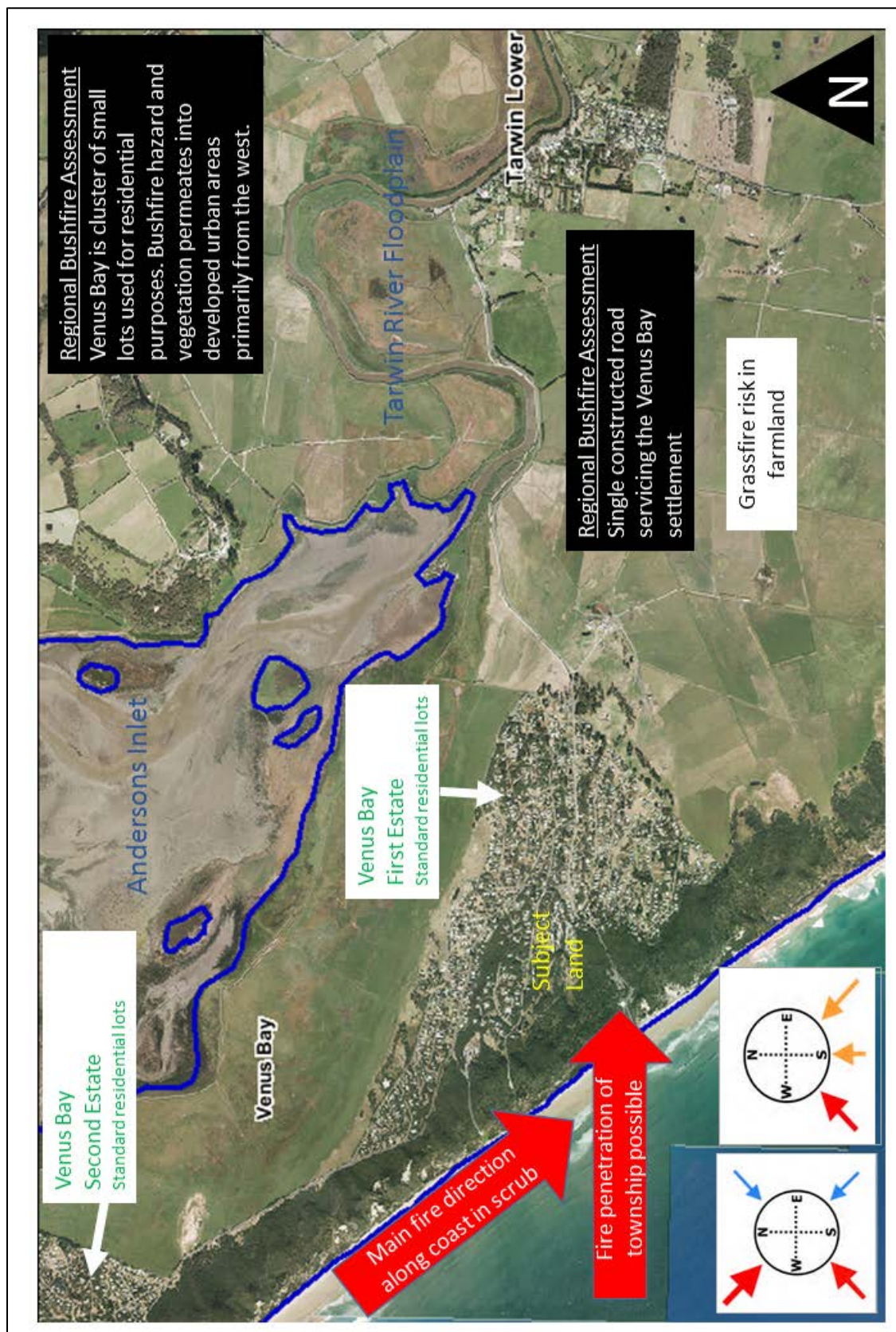
The State of Victoria Department of Transport, Planning and Local Infrastructure (2014) Practice Note 46: Strategic Assessment Guidelines for preparing and evaluating planning scheme amendments. Victorian Government, Melbourne.

Appendix One – Regional Bushfire Planning Assessment

SOUTH GIPPSLAND MUNICIPAL MAP – MAP 2



Appendix Two – Bushfire Hazard Landscape Assessment



Appendix Three – Draft Bushfire Management Plan

