Bushfire Management Statement

Surf Coast Shire
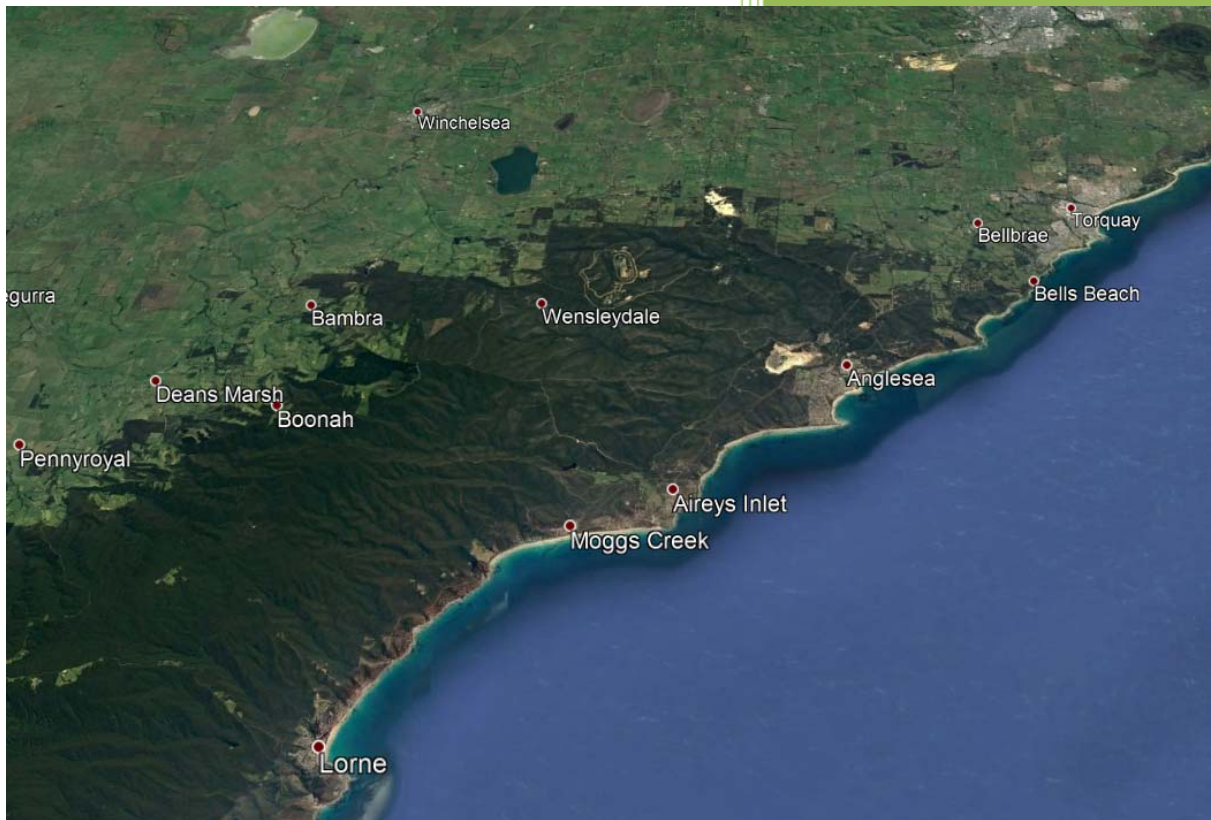
Table of Contents

Plan Details

Municipality:	Surf Coast Shire
Title description:	General overview of Surf Coast Shire
Overlays:	Bushfire Management Overlay (BMO) Bushfire Prone Area (BPA)
Zoning:	Multiple

Site Description

Site Dimensions:	35 km x 50km
Site Area (approx.)	Approx. 150 sq km
Any other features of the site relevant to bushfire considerations:	The shire has the Otway Ranges National Park to the South and grass land to the North.

Planning Context

Summary

The Otway District is recognised as being one of the highest bushfire risk areas in Australia and the world (Bradstock 2010). The factors that make up that risk include: extensive and highly flammable vegetation, rugged terrain and occasional extreme weather, combined with the proximity of houses to the bush, the nature of house construction and limited road access. Traversing the Shire, the Otway ranges and grassland areas are a key bushfire risk and a regional priority for risk management.
Fire has long been a part of the Otway District landscape. As history shows, there is considerable potential for devastating bushfires, and effective management of that risk is needed to minimise bushfire impacts

13.05 Bushfire

Objective

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

This report will detail the response to the planning scheme 13.05, to show where development is encouraged and where planning for development will have increased complexity, giving due regard to the above objective.

Bushfire Hazard Landscape Assessment

The Bushfire Hazard Landscape Assessment includes a plan that describes the bushfire hazard of the Surf Coast Shire (Map 1).
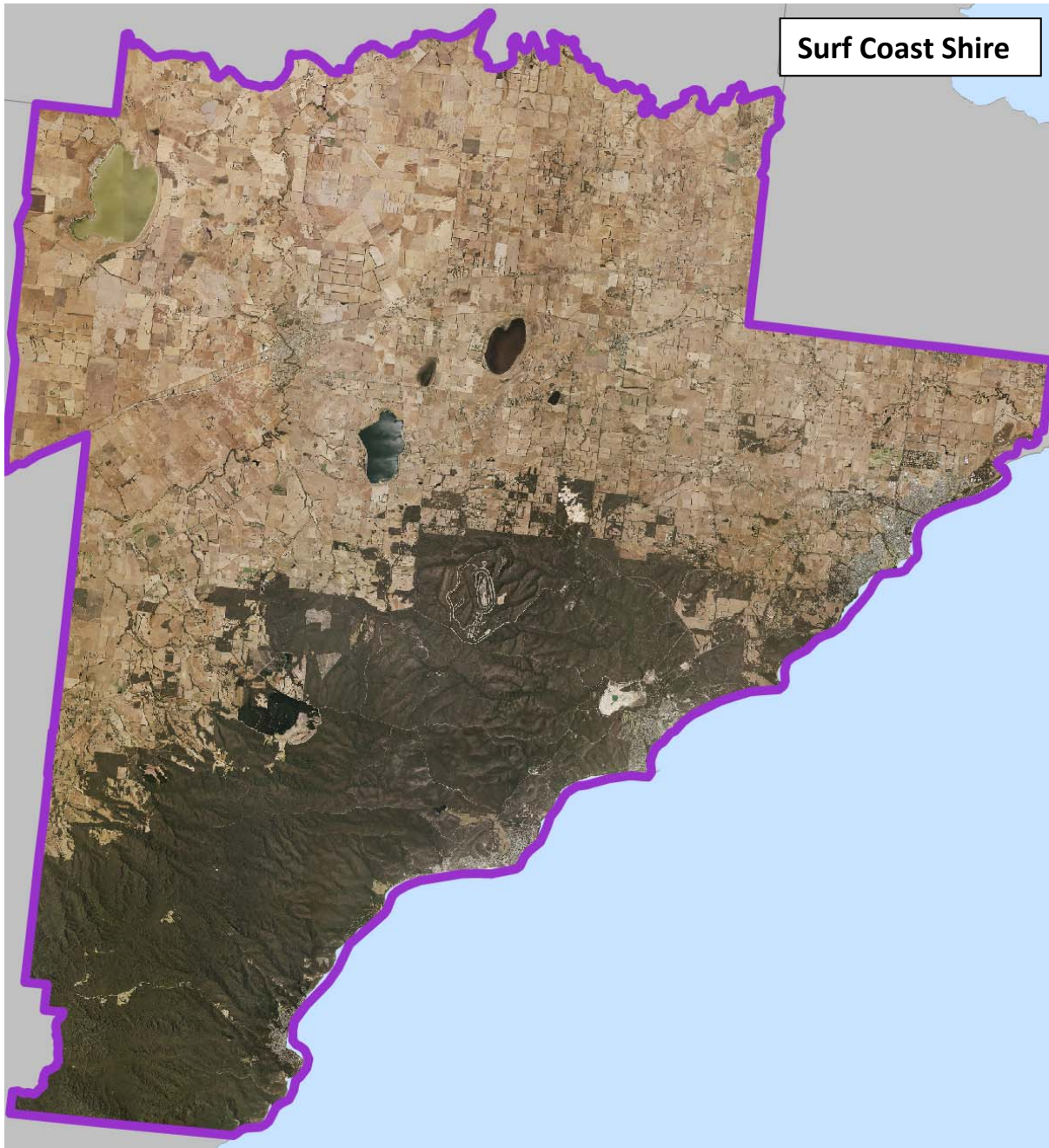

Map 1

Vegetation and landform extent in the broader landscape

The Surf Coast Shire is a tale of two main vegetation and land types. That being the flat grassland plains to the north of the shire and the forested ranges to the south of the shire. The significant forest to the south, being the Otway Ranges National Park. The land to the north and forming a significant component of the shire is cleared farming land which would allow wildfire to move unimpeded across the landscape, albeit with far less intensity and destructive power, as would be seen from native forests.

There is the potential for fire runs in excess of 20km long from all directions except the south and south east for coastal regions and for areas south of Geelong.

The forests are dominated by Eucalypt species with high surface and elevated fuel loads. Assessment of the Ecological Vegetation Classes (EVC) (DELWP) in the shire, shows the general vegetation to the south is a mixture of Woodland, Forest, and Rainforest. Areas to the North are largely grassland, which is essentially extensive farmland and the associated grasslands. The wet gullies and to a lesser extent the wetter forest types throughout this landscape would potentially carry a lesser risk from bushfires during average or higher rainfall years, however, during periods of drought, the wetter vegetation types do become available to burn and provide extremely high fuel loads for a bushfires on some rare occasions. The high fuel loads combined with the mountainous topography of the surrounding landscape has the potential to combine and create extreme bushfires when extreme climate and weather factors come into play.
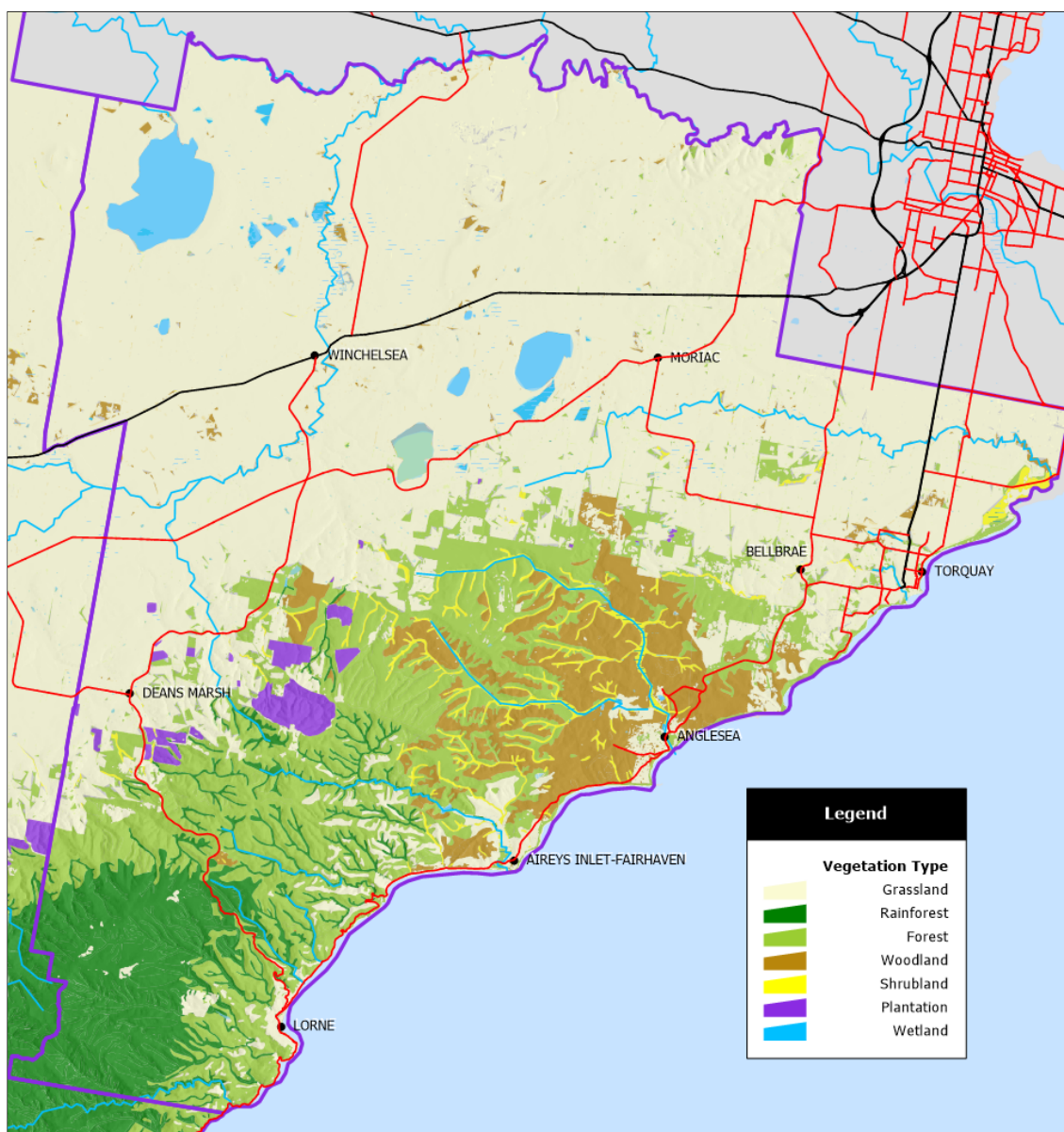
Map 2 Vegetation types as described in AS3959

Other Landscape Factors

Depending on the nature, location and time to impact of any fire, the road network may be suitable for effective evacuation. There is however the possibility that evacuation would not be possible or very hazardous at the least. In these situations residents would potentially have the option to seek shelter in the nearby townships, or within the confines of the property.
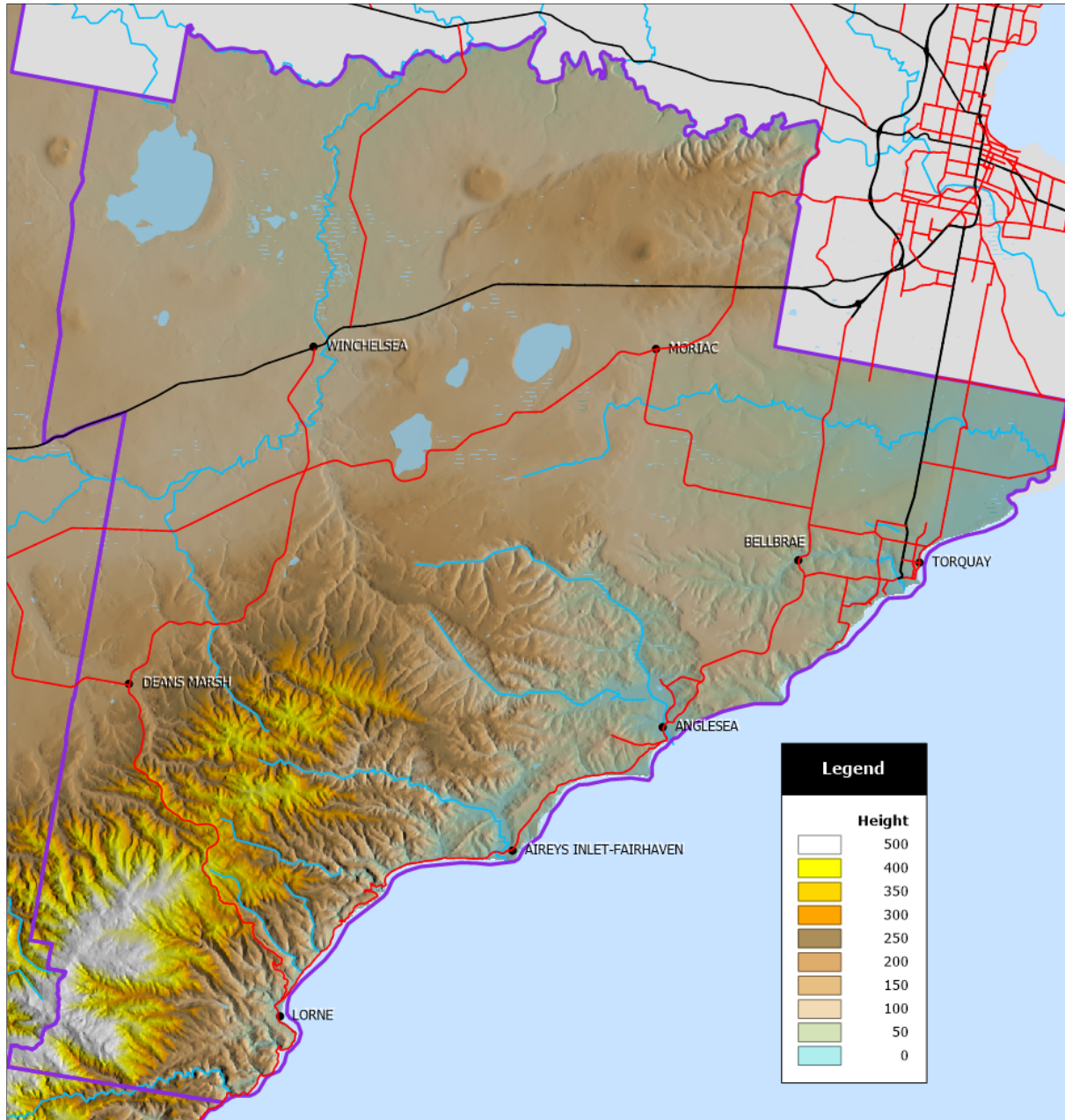
Map 4

Bushfire History of the Area

The bushfire history can provide clues as to how much risk bushfire poses to any given site. The last large bushfire to affect the Eastern part of the Ranges was in 1983, but there have also been significant fires in the area in 1962, 1983 and 2009. As is typical of large landscape bushfires in southern Victoria the bushfires start under a hot northerly conditions and travel southwards before being turned by the introduction of a south westerly cold front. The pattern of fires we see will be some combination of probability of ignition, vegetation and urbanisation (which has an effect on the extent of available fuel).
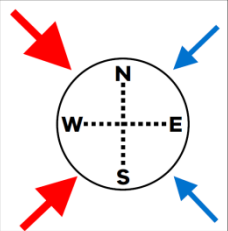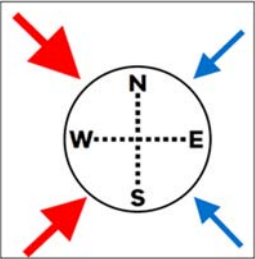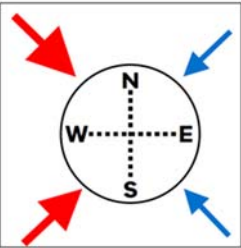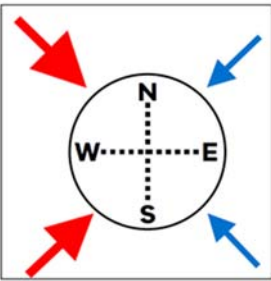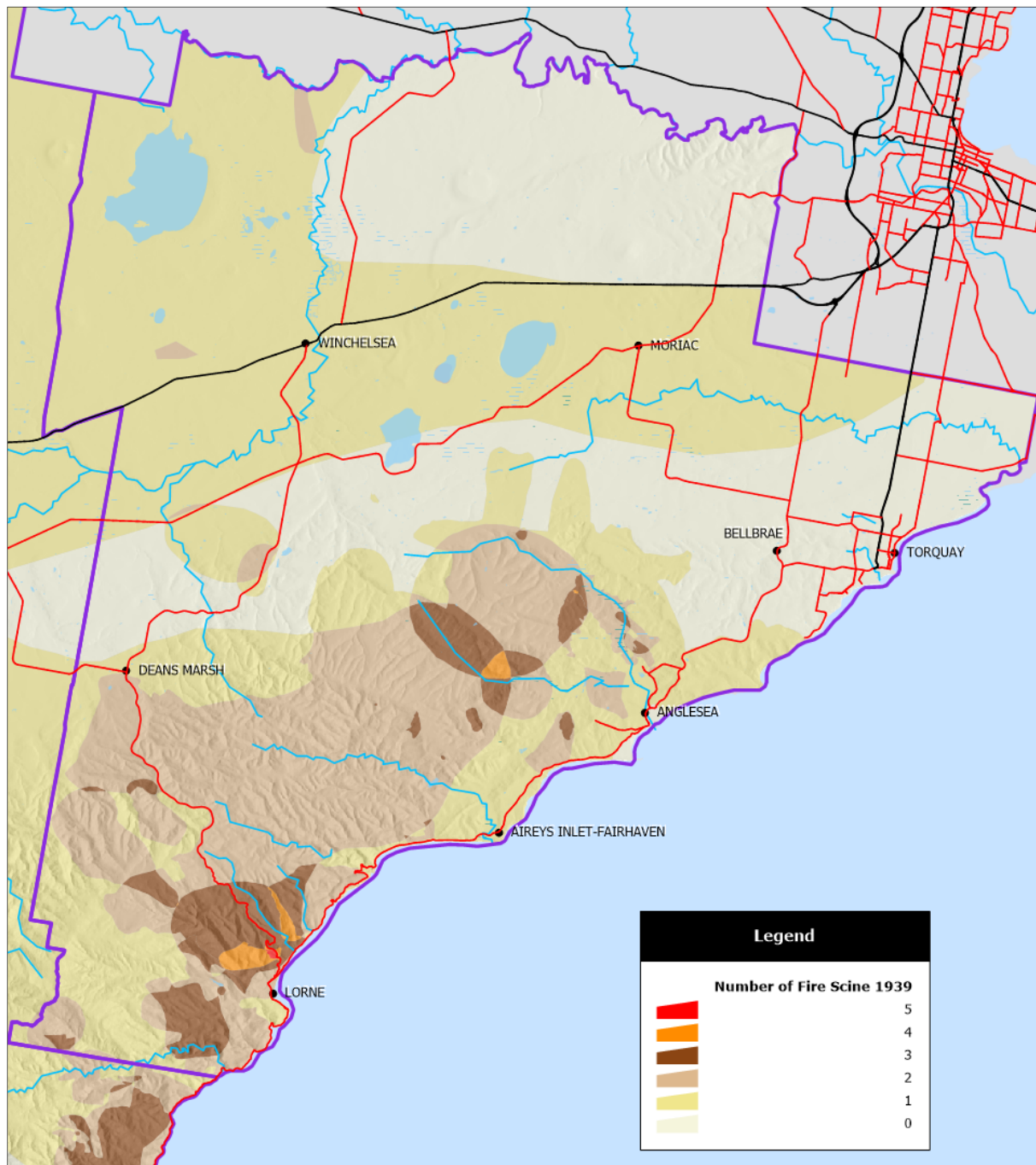

Map 5

Bushfire Risk

In order to weigh up all the factors discussed above, the following table discusses fire from each of the directions to help quantify bushfire risk.

Table 1 – Bushfire Scenarios

| Scenario	Description
1 – North	A bushfire approaching from the north / northwest, would need to have moved through forested and or farmland areas. Due to the terrain and the potential length of fire runs, the shire could be subject to large developed fires and major ember attack.
Scenario	Description
2 - East	Major fires approaching from the East are much less common and generally not considered a significant risk. Fires approaching from the east may however be associated with larger fires from other directions due to convection and ember attack.
Scenario	Description
3 – South	The south and south west offer a significant fire risk, this is largely due to fires from the north changing direction after a wind change. This situation is reasonably common under historic extreme fire conditions This can lead to large and destructive fires.
Scenario	Description
4- West	Fires from the west are possible, however historically they are usually associated with a North or South influence.
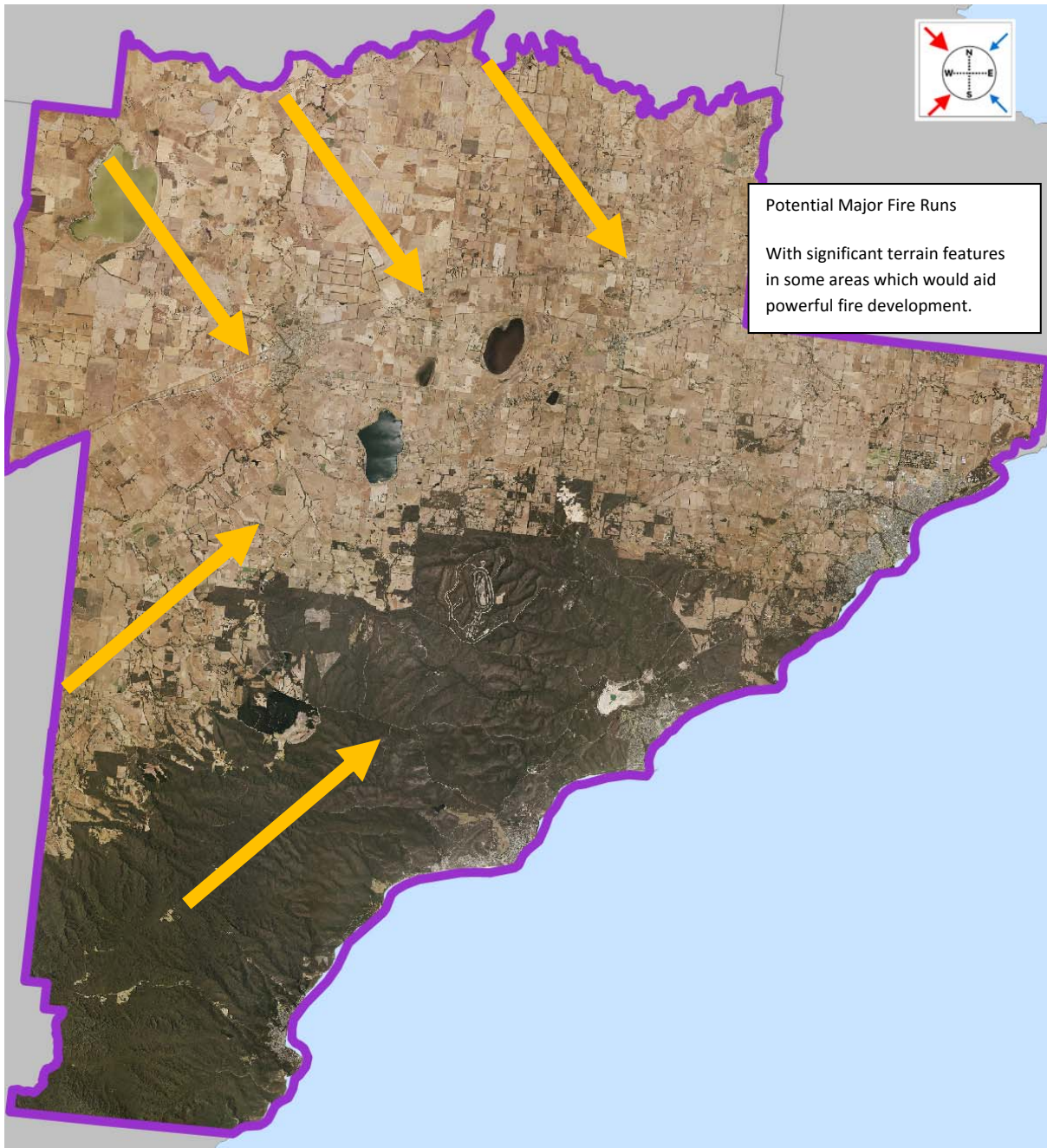
Map 6

The surf Coast Shire presents numerous fire combinations and situations. This is due to the varying vegetation, landform and potential for large scale fire to approach from the North, North West and south west. Whilst other directions are possible, they are much less likely to be broad scale and devastating.
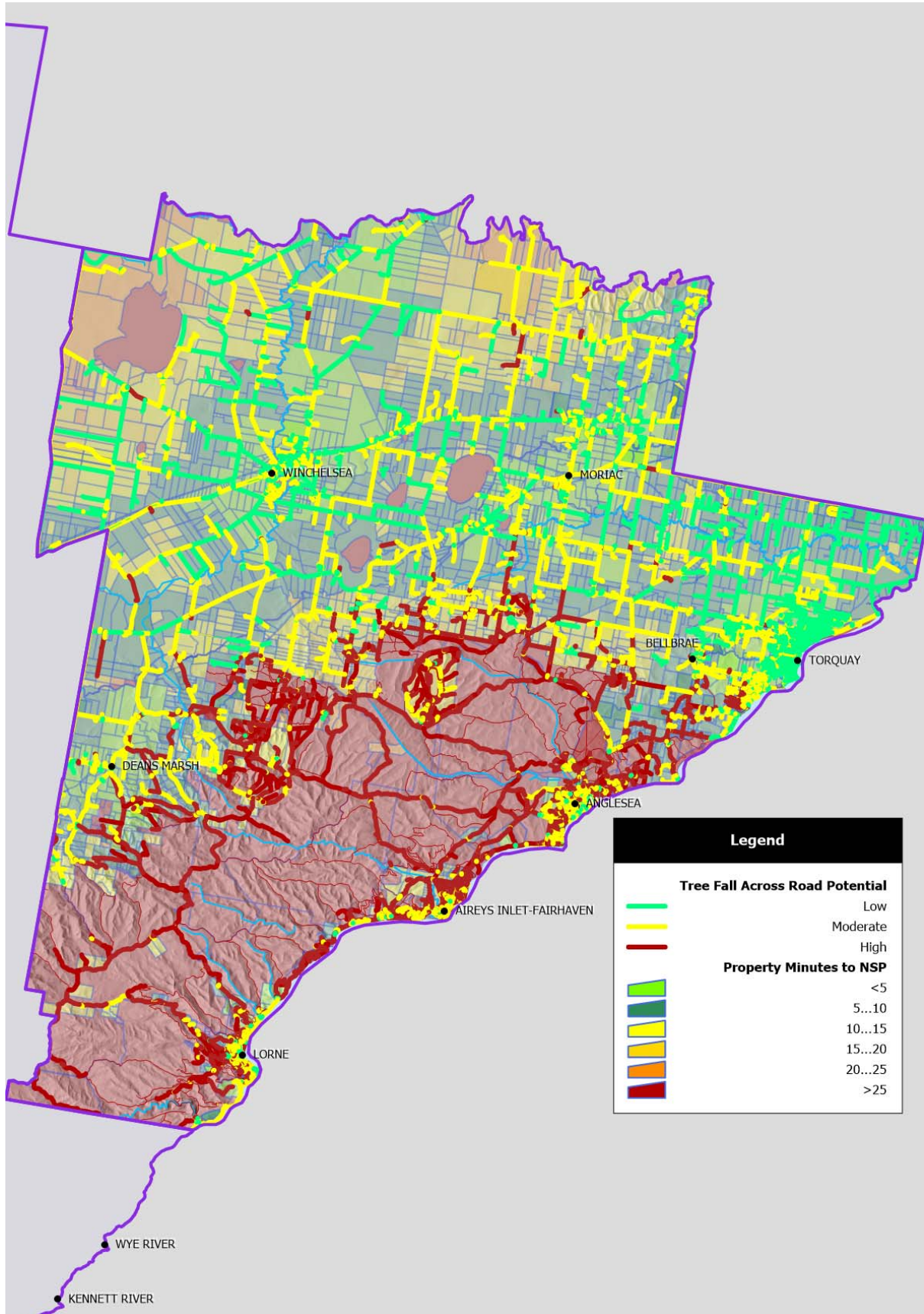
Bushfire Hazard Assessment

In analysing the bushfire risk we have considered a number of factors, included in the following maps.

Distance to NSP Minutes
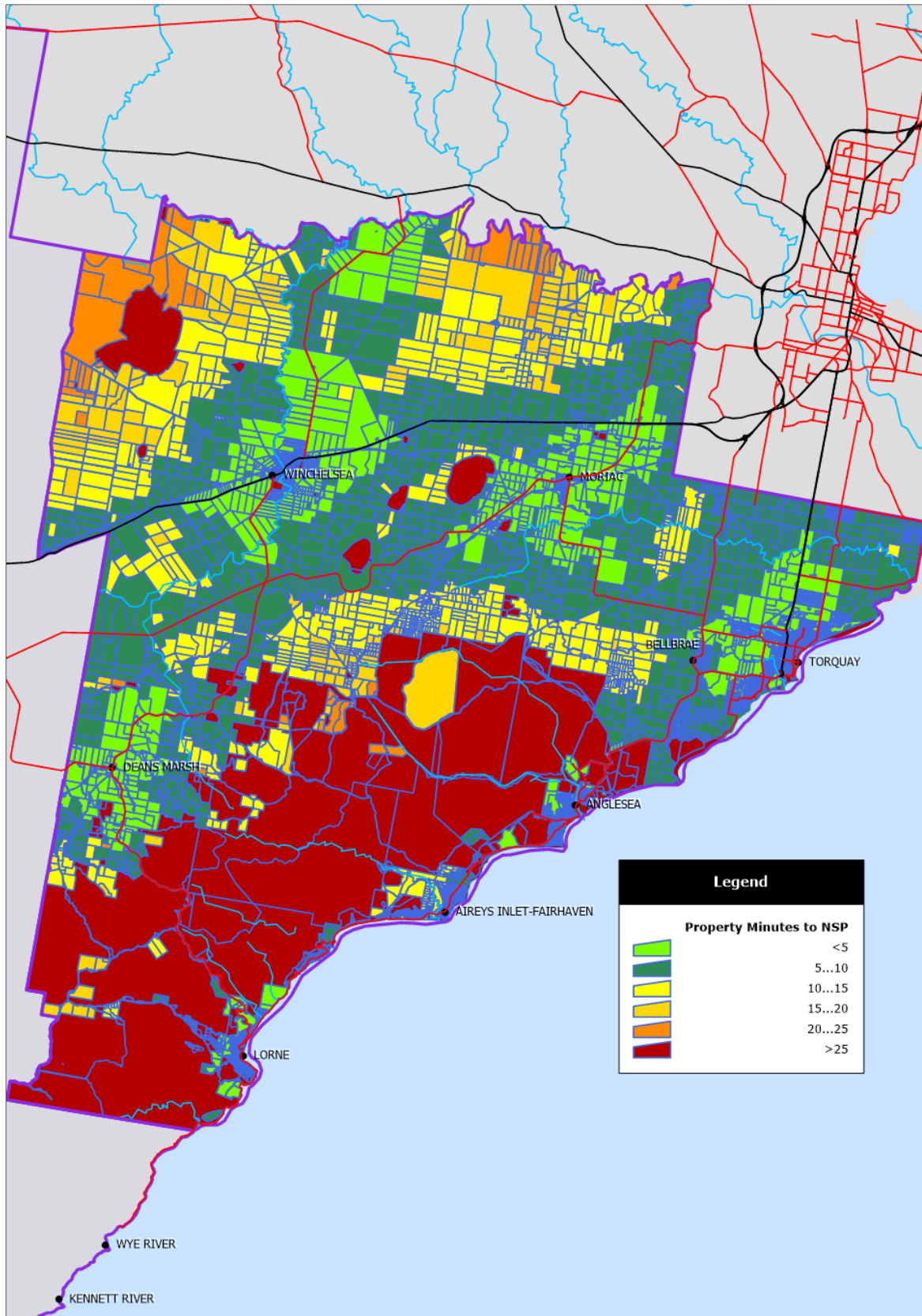
Map 7

## Tree Fall Potential Across Road

Map 8

This is a visual representation based on height of tree, width of road, exposure to wind and the presents of trees.

Using Pheonix to show risk

DELWP through the SBRASS process modelled tens of thousands of fires to measure effectiveness of prescribed burning. In the below example we extracted the average house loss and number of fires impacting each cell in the landscape and combined this with distance from a safer area. The risk is highest when average house loss is higher, a higher number of modelled fires has crossed that point in the landscape and if the cell is further from a safer area.

It should be noted that this data is an average and not a worst case senario.

Basic Methodology

Anglesea Surface

Geelong Surface

Combined surface minimum time to safer area
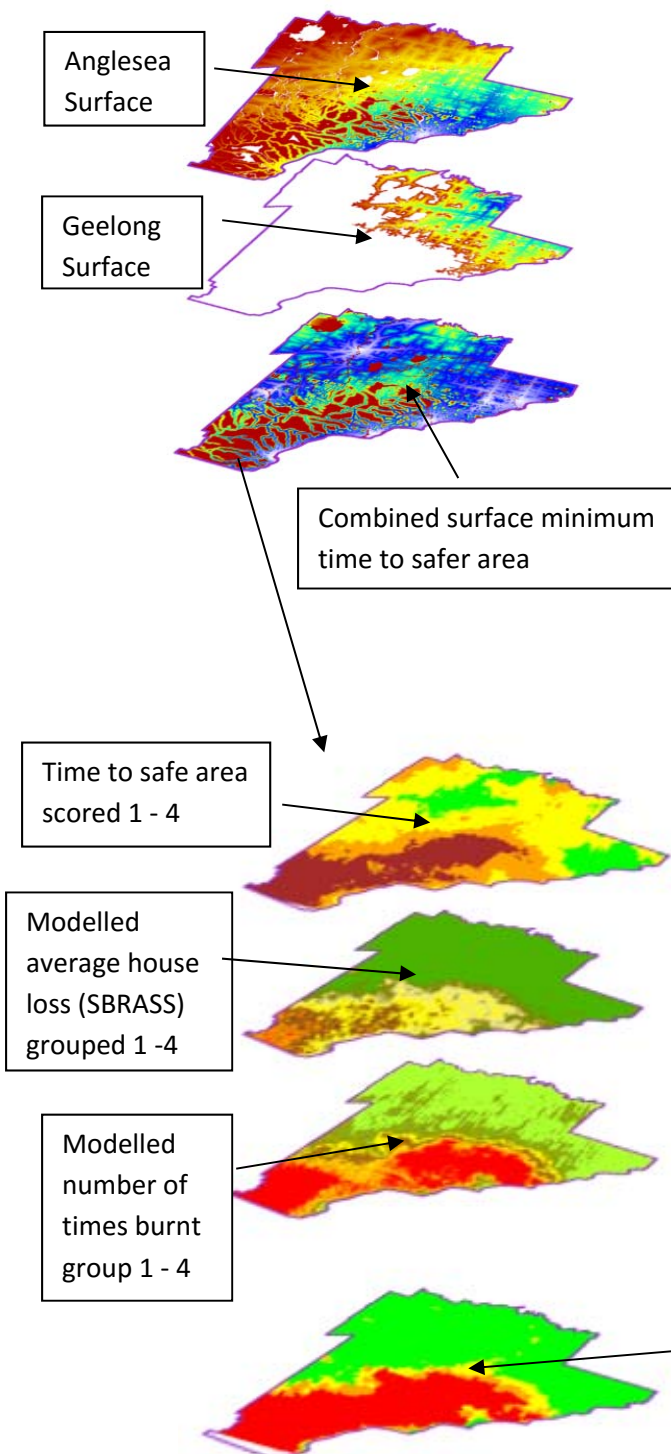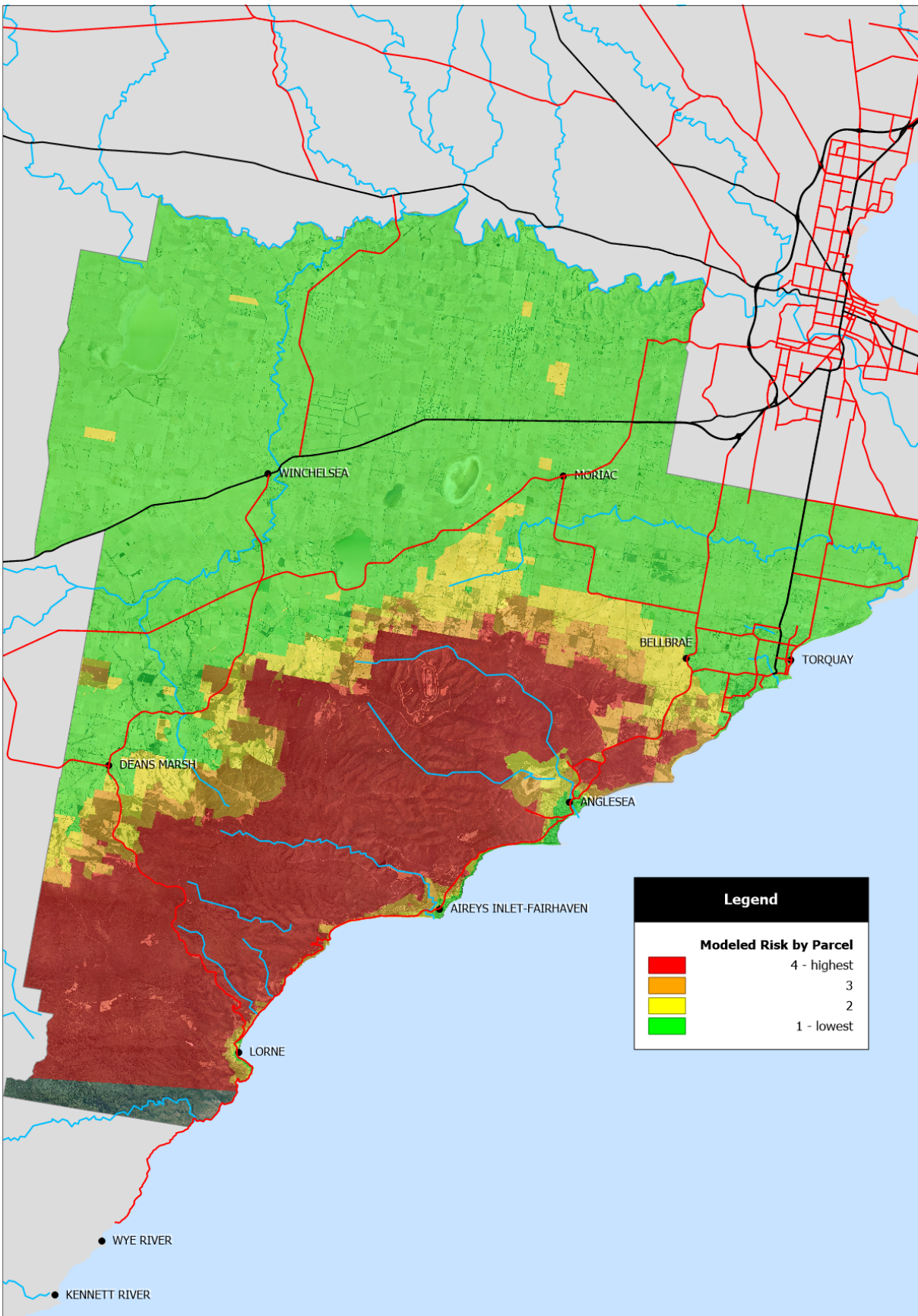
Time to safe area Raster

Multiple time surfaces were created from each of the nominated safer areas. The image represents the time it would take to get to the safer area for each town from any point in the shire. These locations included: Geelong, West Geelong, Bannockburn, Inverleigh, Apollo Bay, Lorne, Anglesea, Aireys Inlet, Highton, Barwon Heads, Colac Birregurra, Deans Marsh, Torquay, Moriac.

The surfaces were combined into one surface that represents the minimum time from any location in the shire to the closest safer area.

Time to safe area scored 1 - 4

Modelled average house loss (SBRASS) grouped 1 -4

Modelled number of times burnt group 1 - 4

Development of the risk surface

The time surface was then combined with two output surfaces from the SBRASS (Strategic Bushfire Risk Assessment and Strategy Selection - DELWP) All 3 surfaces were classified into a 1 to 4 rating. The surfaces were simply combined by adding the values of the corresponding cells, that number was divided by the number of surfaces (3) and a final file of relative building complexity and bushfire risk based on 4 categories was created.

Final risk based map surface created, was grouped into 1 – 4 and matched to property boundaries. Having the 4 risk categories seemed to simplify the output to a logical and usable

Legend

Modeled Risk by Parcel

- 4 - highest
- 3
- 2
- 1 - lowest

Map locations: WINCHELSEA, MORIAC, BELLBRAE, TORQUAY, DEANS MARSH, ANGLESEA, AIREYS INLET-FAIRHAVEN, LORNE, WYE RIVER, KENNETT RIVER

Map 9

Using all the risk information to build Landscape Types
(As per Planning Permit Applications Bushfire Management Overlay – Technical Guide)
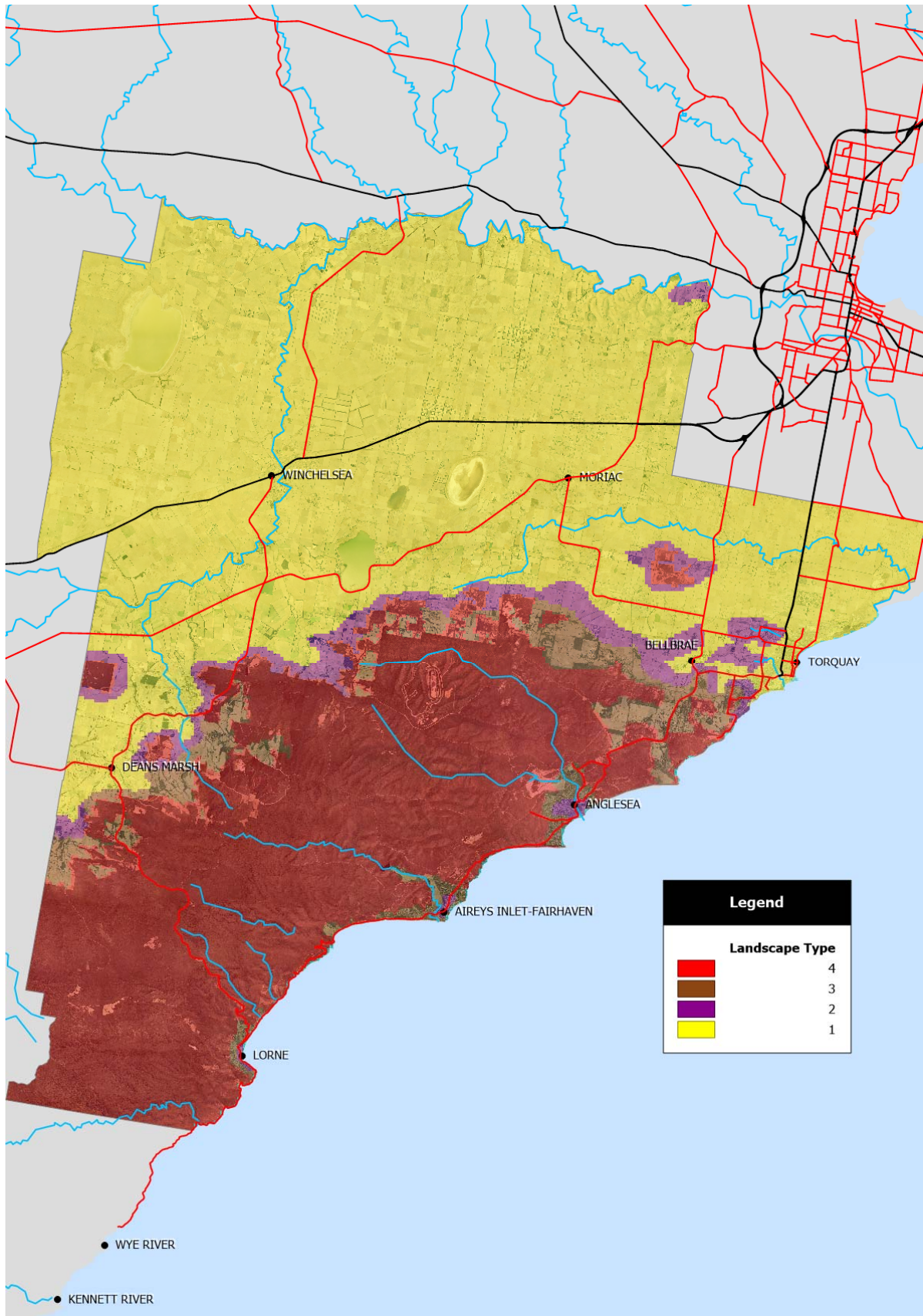
Map 10

This map was developed by assessing above information. It is generalist in its nature and any site specific assessments need to be made at the site level using Planning Permit Applications Bushfire Management Overlay - Technical Guide