Bushfire Management Guidelines

Sunshine Coast Council Environment Reserve Network

Environmental Operations 2020

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Acknowledgements

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1: Introduction

The Environmental Operations branch's (EO), Natural Areas Management team (NAM) manages the Sunshine Coast Council's Environment Reserve Network. There are approximately 630 environment reserves covering an area of 7100 hectares (ha) across the region (April 2020). The estate is constantly growing with purchases of significant land through the *Environment Levy* and land contributions through the development approval process. Bushfire management is a key responsibility for council on these reserves to both manage risks to life and property and to maintain the environmental values of the land. Other council lands are not captured in this plan, including other land under EO responsibility (eg unmade road reserve) or areas managed by other branches of council. Council's Asset Responsibility Matrix identifies management responsibilities.

The Bushfire Management Guidelines have been developed to identify the range of issues relevant to council and the actions required to address them.

The main objectives of this guideline are to identify;

- council's legislative requirements associated with environment reserve fire risk management,
- the process of identifying bushfire risk and its application to the environment reserve network,
- decision support tools and mitigation actions to address bushfire risk on the environment reserve network (fire trails, fuel reduced zones, prescribed burning),
- resources available to council to undertake fire management
- protocols for activities,
- monitoring requirements to achieve desired community safety and ecological outcomes relative to councils environment network.

2: Legislative requirements

There are a number of legislative, regulatory and policy requirements that relate to fire management within the council environment reserve network. The *Fire and Emergency Services Act 1990* is the primary Queensland government legislation that administers fire management. In addition, vegetation management legislation, regulation and local laws need to be considered. The following items in this section identify their relevance to council (refer Appendix 1 for an itemised summary).

Liability under Common Law

Local Government (LG) does not accrue liability for fire damage as a consequence of it having areas of vegetation adjoining residential properties. Such liability will only accrue where council operations were the source the fire in the first instance (eg. burning off, irresponsible storage of combustible material) or where there is such a large build-up of highly flammable material on council land that no reasonable local government could not consider it to be a significant fire hazard. It is clear that any vegetation can be a fire hazard, however, a council's liability (for obvious economic and practical reasons) does not extend to having to clear vegetation near a property boundary unless it causes a significant hazard that no reasonable council could ignore.

Fire and Emergency Services Act 1990

This purpose of this act is to govern the control and management of fires in Queensland and it has a direct impact on council operations. The act specifies that council needs to obtain permits for prescribed burns, actions required by landowners on becoming aware of a fire on their property and outlines the circumstances under which the Commissioner may require actions to address fire hazards. There is no legislative requirement in this act for the establishment and maintenance of fire trails and fuel management zones.

Vegetation Management Act 1999 (VMA)

The purpose of this act is to regulate the clearing of vegetation in Queensland. It sets the thresholds that define whether regional ecosystems are endangered, of concern or of least concern. The act also establishes the permit process for clearing of vegetation. There are a number of exemptions for clearing that occurs for fire management purposes by council when establishing fire breaks and fire control lines.

Nature Conservation Act 1992 (NCA) & Nature Conservation (Wildlife Management) Regulation 2006

In Queensland, all plants indigenous to Australia are 'protected plants' under the NCA. Under Section 89 (1C) "a person, other than an authorised person, must not take a protected plant that is in the wild unless the plant is taken under an exemption under a regulation.

In the *Nature Conservation (Wildlife Management) Regulation 2006:* exemptions exist under Sections:

- 261ZD for "taking protected plant for firebreak or fire management line". Using this exemption under Section 254, subdivision 4 (2)(a) a flora survey prior to undertaking works is not required.
- 261C Taking protected plant under the *Fire and Rescue Service Act 1990.* A person may take a protected plant that is in the wild if:

  (a) taking the plant is, or is a necessary part of, a measure that is — (i) authorised under the Fire and Rescue Service Act 1990, section 53(1) or 68(1)(c); or (ii) required under section 53(2)(j) or 69(1) of that Act; or (b) the person takes the plant by lighting a fire that is — (i) authorised under a notification under the *Fire and Rescue Service Act 1990*, section 63 or a permit granted under section 65 of that Act; and (ii) necessary as a means of hazard reduction.

Sunshine Coast Regional Council Local Law No. 3 (Community Health and Environmental Management) 2011

The purpose of this local law is to protect community health, safety and amenity and the environmental values of the region within the local government's area.

The local laws are not applicable to council undertaking prescribed burns on council managed lands as these are fires authorised under the *Fire and Emergency Services Act 1990.*

Sunshine Coast Planning Scheme 2014

The Sunshine Coast Planning Scheme contains provisions regulating the clearing of vegetation and requires an Operational Works Permit to be obtained. There are definitions for exempt vegetation clearing which cover works undertaken by council for fire management activities. As defined below the *Planning Regulation 2017* provides for exemptions (however, customers are encourage to first speak with the development services team prior to clearing native vegetation areas identified in the planning scheme).

Planning Regulation 2017

From 6 December 2019, clearing for firebreaks and fire management lines does not require local or state government approval under the *Planning Act 2016* in the following circumstances:

• The clearing is to establish or maintain a necessary firebreak to protect infrastructure (other than fences, roads and tracks) to a maximum width of 20 metres or 1.5 times the height of the tallest adjacent tree, whichever is the greater.

• The clearing is necessary to create a fire management line, up to a width of 10 metres.

• The clearing is on land that you own or lease (where it meets the purpose of the lease).

• No other laws or constraints apply.

Fire management lines are necessary pathways, roads, fence line clearings or tracks (including existing property tracks) used to access water for firefighting or divide the property for fuel reduction burning or back-burning. They may also occur along a property boundary.

3: SCC Environment Reserve Network

General Summary

Council manages 630 environment reserves throughout the Sunshine Coast, covering an area of 7100 hectares. The distribution of these reserves is shown in Map 1. These reserves vary in size from 334 hectares to 200 square meters. The following table describes the environment reserve network configuration.

Reserve Size	Reserves Managed	% Reserves Managed	Area Managed (Hectares)	% Area Managed
100 ha +	15	3%	2469	35%
50-100 ha	18	3%	1234	18%
10-50 ha	87	14%	2150	30%
1-10 ha	317	50%	1141	16%
<1 ha	192	30%	101	1%

As at April 2020

This table demonstrates that a small number of larger environment reserves (33) make up over 50% of the land area managed by EO, whilst over 500 small reserves account for less than 18% of the land managed. This results in a very large interface between council reserves and neighbouring properties where fire management may be an issue. With a finite resource base council must assess the fire risk across the region and focus fire management resources where the potential for large scale fire is highest and adjacent community assets are most at risk.

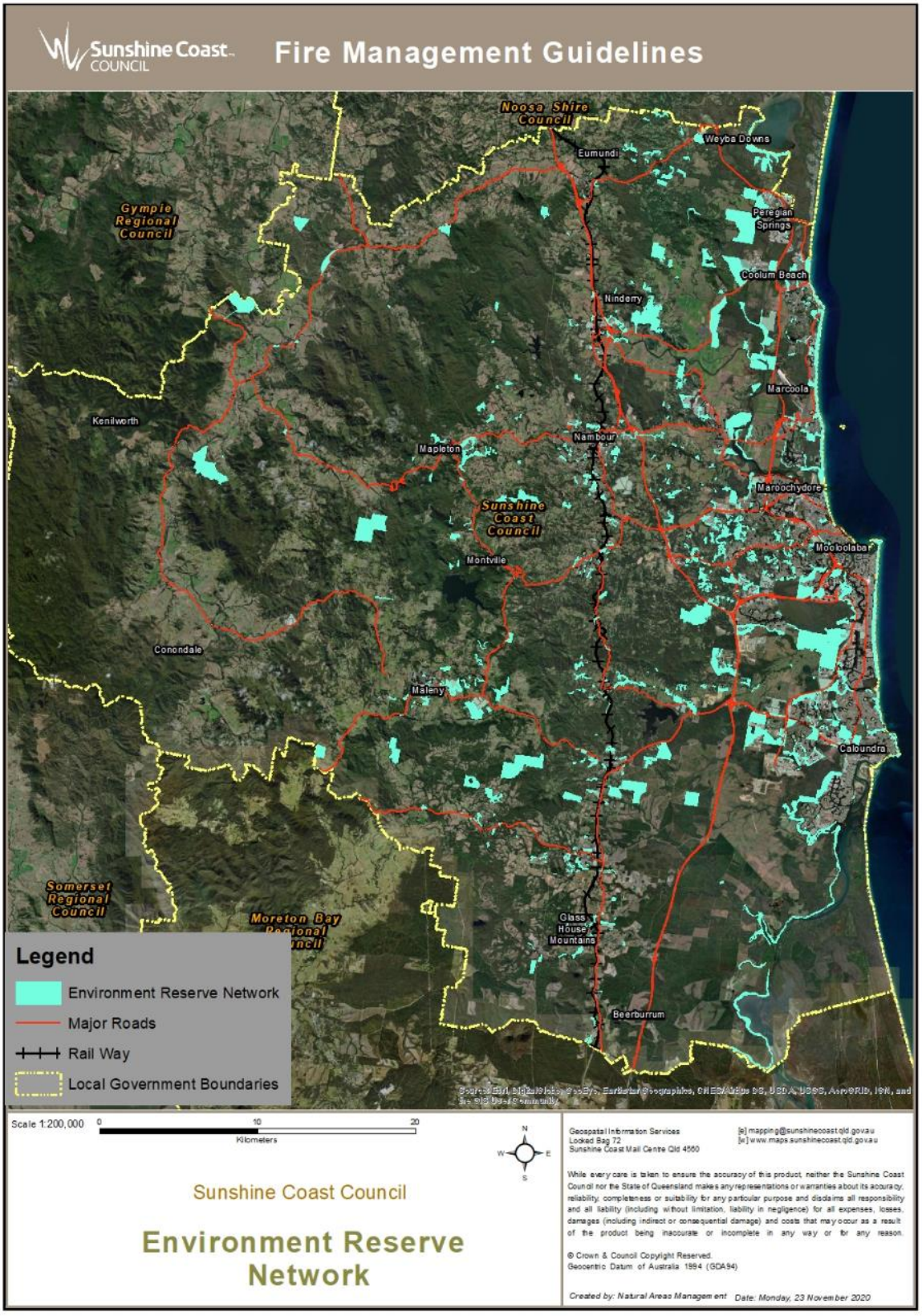
Council's environment reserves are only a small portion of the land on the Sunshine Coast.

Sunshine Coast (SC) Land Management Summary

- Council's Environment Reserve Network
  - 3% of SC land area
  - 4% of bushfire prone vegetation
- Queensland Government Protected Area Estate (e.g. national parks and forests)
  - 28% of SC land area
  - 46% of bushfire prone vegetation
- Private land & other land (e.g. roads, watercourses & other government land)
  - 69% of SC land area
  - 50% of bushfire prone vegetation

Data source: SCC operational open space mapping (figures approximate), Qld Gov. Bushfire Prone Areas 2017 (excludes potential impact buffers).

MAP 1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Coolum Beach
Ninderry
Marcoola
Kenilworth
Nambour
Mapleton
Maroochydore
Sunshine Coast Council
Mooloolaba
Montville
Conondale
Maleny
Caloundra
Somerset Regional Council
Moreton Bay Regional Council
Glass House Mountains
Beerburrum
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4: Assessing the bushfire risk

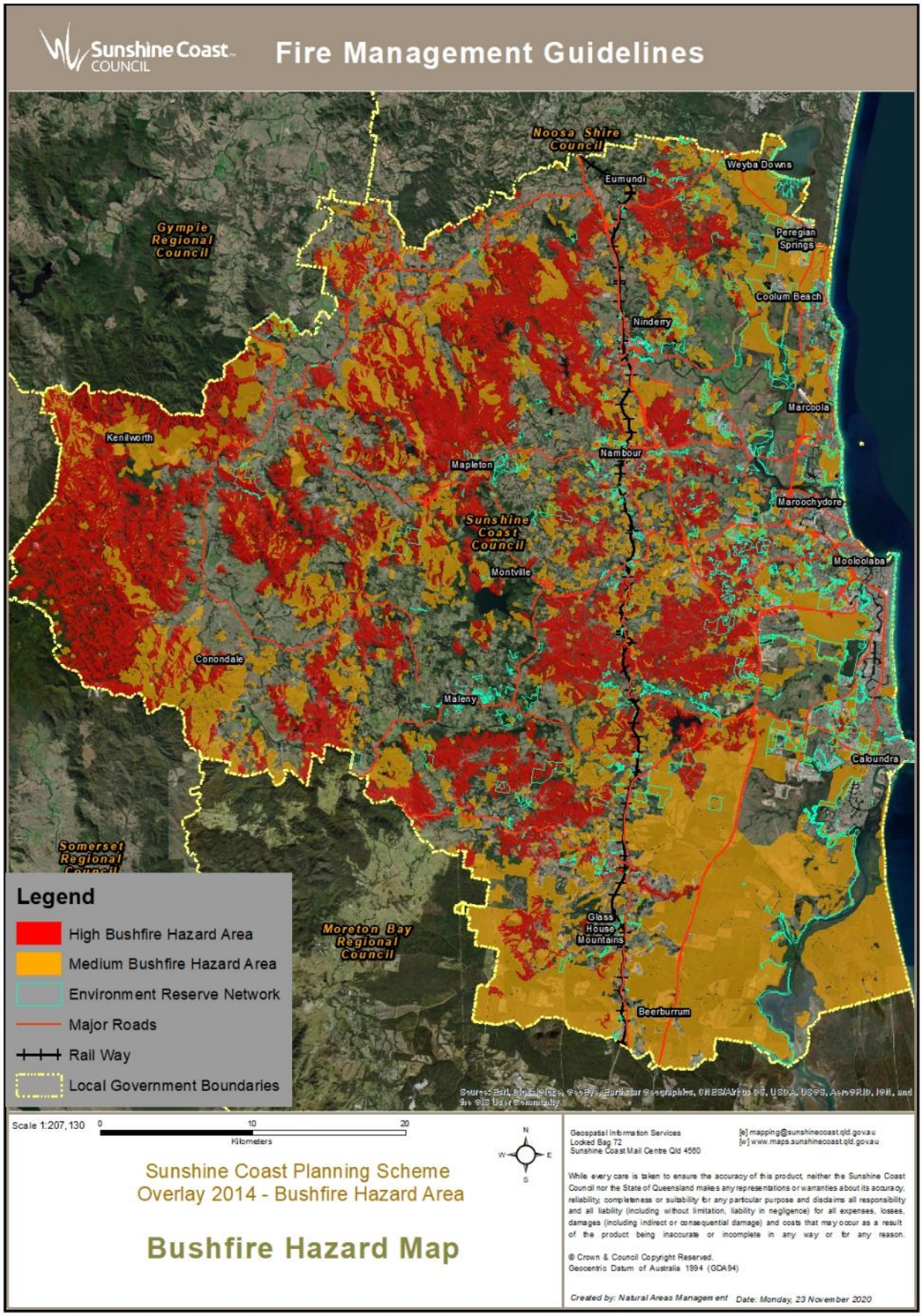
Fire hazard mapping

In 2011, SCC prepared a regional bushfire hazard map for inclusion in the *Sunshine Coast Planning Scheme 2014* (map update in line with the state planning policy expected after 2021). It currently provides an assessment of broad scale bushfire hazard prepared specifically for the sunshine coast (Map 2). The maps have been developed in accordance with the superseded State Planning Policy 1/03: Mitigating the Adverse impacts of Flood, Bushfire and Landslide (SPP 1/03), which sets out a well-established methodology for the determination of bushfire hazard. This mapping required an assessment of three key characteristics of land that have been found to be the main determinants of the severity of bushfire hazard. These factors are vegetation communities, slope and aspect and are combined to display regions of high, medium and low bushfire hazard.

Vegetation communities were defined using Regional Ecosystem (RE) Mapping Version 6 from the Queensland Herbarium. Bushfire hazard values from 0- 10 have been given to each RE as per documentation developed by the Queensland *Fire and Emergency Services*. Plantation forestry areas have been mapped using data provided by Forestry Plantations Queensland with a fire hazard rating applied as per SPP1/03. Slope and aspect have been generated using a digital elevation model derived from LiDAR (Light Detection and Ranging) ground return data. Values from 1-5 for slope and 0-5 for aspect are added to vegetation score to give an overall bushfire hazard score. Ratings of high, medium and low are given as per SPP1/03.

Total Hazard Score	**Severity of Bushfire Hazard**
13 or greater	High
6 to 12.5	Medium
1 to 5.5	Low

The State government has recently released new state-wide bushfire hazard mapping following the replacement of SPP1/03 with the new Single State Planning Policy (Single SPP). This mapping was not used in the current Sunshine Coast Planning Scheme 2014. The state government advised council to update the bushfire hazard mapping presented in the planning scheme to reflect their new methodology at some point in the future (planned for after 2021). In the interim, the general assessment of bushfire risk across the environment reserve network is undertaken by the utilising both the Queensland government *Bushfire Prone Mapping (2017)* and the 2014 planning scheme bushfire hazard overlays, with site based evaluation undertaken for verification and context.



MAP 2 Bushfire Hazard Map SCPS2014 – Low hazard removed

Hazard Mapping of SCC Environment Reserves

SCC uses a *geographic information system* (ArcGIS) to map, store and collect data relating to its environment reserve network. This software allows for the overlay of the regional bushfire hazard mapping on the reserve network and the ability to identify reserves that contain areas of high and medium bushfire hazard. This process has been used to generate lists of reserves for further inspection of site specific bushfire risk. The more recent Qld. government *bushfire prone area* mapping (2017) is cross referenced in any evaluation.

The focus for fire management activities is on the larger reserves or reserves that are part of large areas of contiguous vegetation where there is the potential for large scale fires. These lists are also assist to identify which reserves may require a fire management plan or specific management intervention (eg development or maintenance of fire trails, fuel managed zones or prescribed burning). New technologies (eg bushfire modelling) and approaches are being investigated for the update of this plan which is expected to be completed in 2022.

Potential Bushfire Corridors

Whilst council manages only small overall areas of bushland in the SC region (approximately 3%), there is value in the identification of potential fire corridors and reserves within these areas. The bushfire hazard mapping has been used to identify a number of significant areas where a concentration of high or medium bushfire hazard occurs on a landscape scale and where this might impact the environment reserve network and more specifically from a site perspective, adjacent assets.

Conondale Ranges

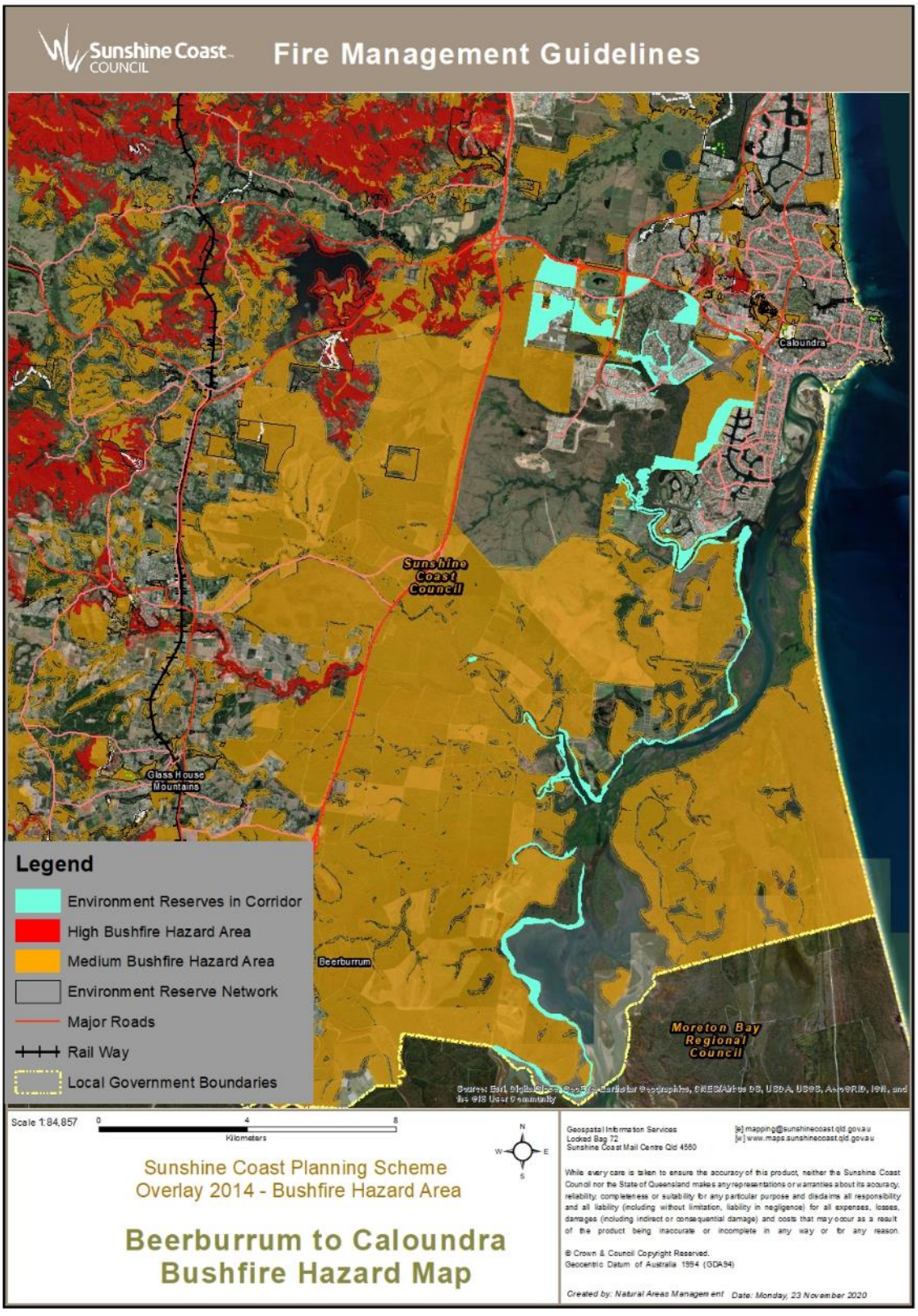
The Conondale National Park covers an area of over 20 000 hectares. With rugged terrain and limited access this area has the potential for large bushfires impacting of rural areas to the east. Council has no reserves in this area.

Approximate corridor area: 20 000 ha, council reserve area: 0 ha.

Beerburrum Forestry plantations to Caloundra (Map 3)

The large area of exotic pine plantations and private land to the south of Caloundra has the potential to support landscape scale bushfires. Past fires have occurred in 1994, 2006 and 2017. Bushfires under appropriate fire conditions may be difficult to contain and have the potential to impact on highly populated areas. The *Caloundra South* development has the potential to reduce the run and scale of these fires. Whilst SCC does not manage much land in this area, any reserves on the southern and western edges of Caloundra have the potential to be impacted.

Council reserves within this corridor include: Bells Creek Riparian Area, Bobbie Sattler Nature Refuge Reserve, Racecourse Road Bushland Reserve, Pierce Avenue Bushland Reserve, Edward Corbould Bushland Reserve West, Edward Corbould Bushland Reserve East, Koala Court Park, Arbour Bushland Reserve, Lamerough Creek West Environment Reserve, Lamerough Creek Environmental Reserve, Isabel Jordan Bushland Reserve, Bells Reach Drainage Reserves (4 sites), Bellvista Drains (3 sites). Approximate corridor area: 15 000 ha, council reserve area: 740 ha.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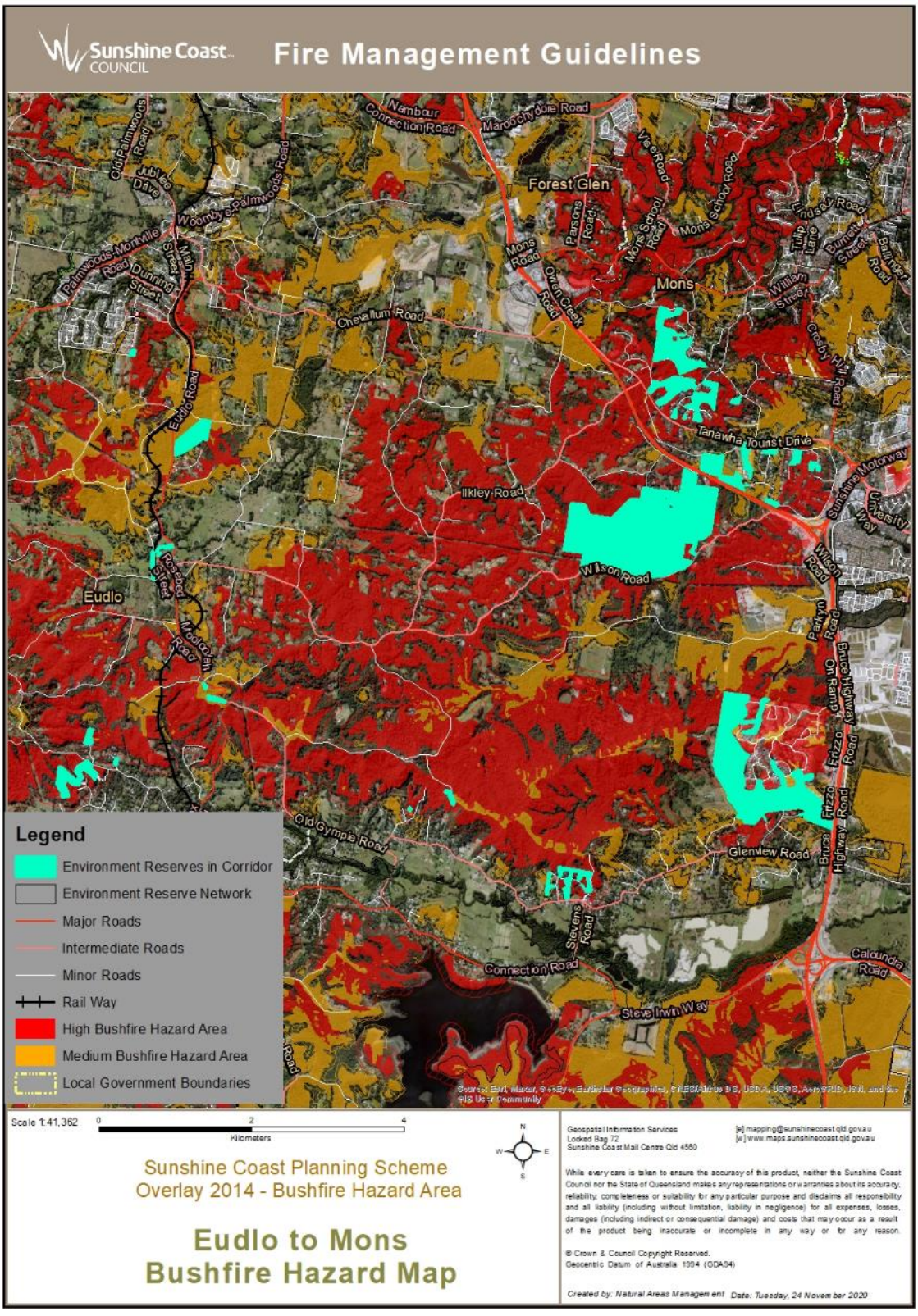
MAP 3

Eudlo to Mons (Map 4)

The ridges that run from the upper Mooloolah Catchment through to Mons have significant areas of remnant vegetation. This area is mostly privately owned with cleared areas of pasture occurring amongst the vegetated areas. Bushfires under appropriate fire conditions have the potential to travel several kilometers and impact on the populated areas of Chevallum, Tanawha, Mons and the western edges of Buderim.

Council reserves within this corridor include: Armstrongs Environmental Reserve, Maroochy Regional Bushland Botanic Gardens, Tanawha Tall Gums Conservation Area, Tall Gums Environmental Reserve, Topview Bushland Reserve Network, Cunning Rd Bushland Conservation Reserve, Frizzos Nature Refuge. Approximate corridor area: 6 500 ha, council reserve area: 528 ha.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Intermediate Roads
Minor Roads
Rail Way
High Bushfire Hazard Area
Medium Bushfire Hazard Area
Local Government Boundaries
Scale 1:41,362
Kilometers
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Eudlo to Mons
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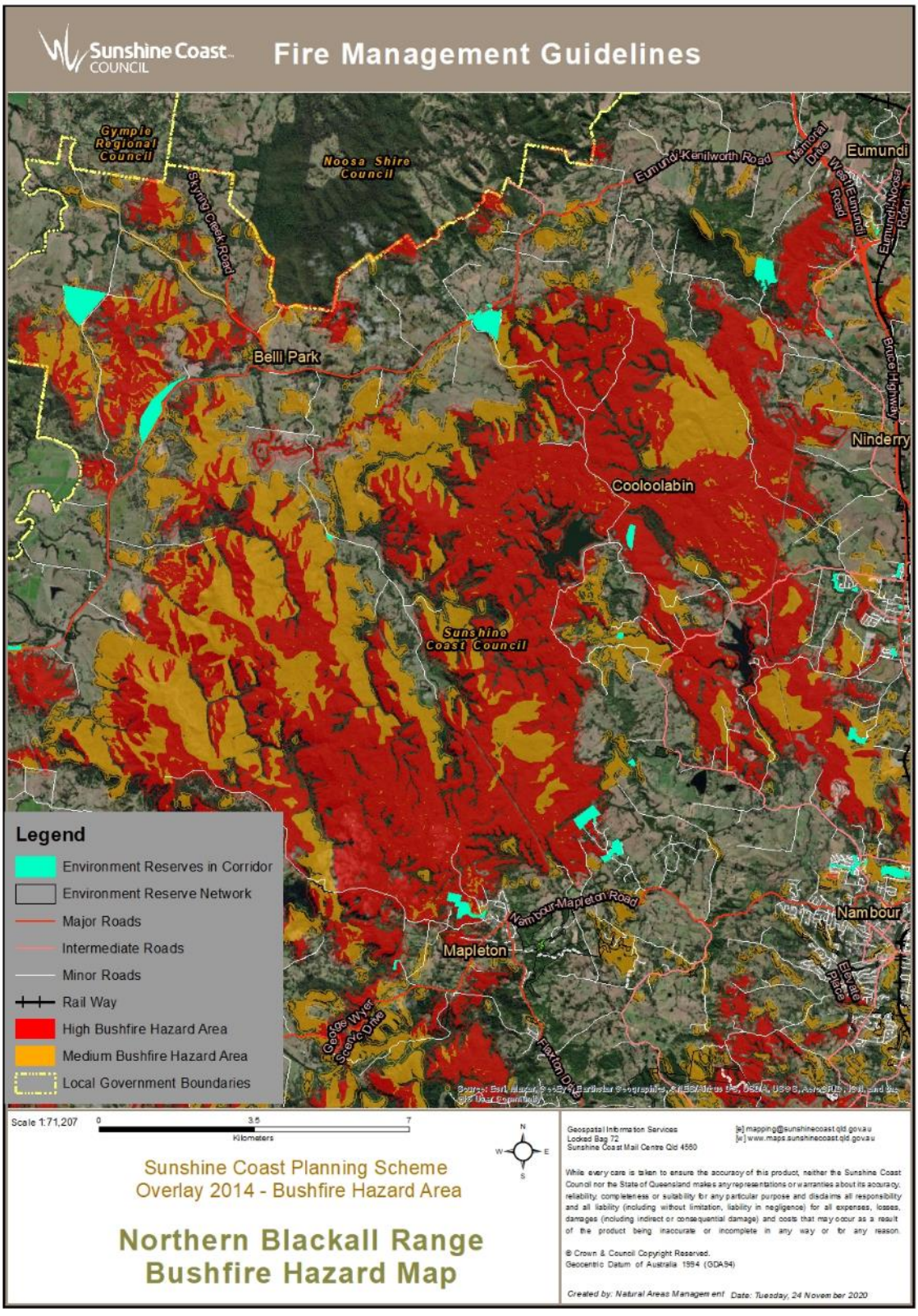
Forest Glen
Mons
Eudlo
Nambour Connection Road
Maroochydore Road
Old Palmwoods Road
Jubilee Drive
Woombye-Palmwoods Road
Palmwoods-Montville Road
Dunning Street
Main Street
Eudlo Road
Chevallum Road
Mons Road
Owen Creek Road
Parsons Road
Mons School Road
Vise Road
Lindsay Road
Tulip Lane
Burnett Street
Ballinger Road
William Street
Crosby Hill Road
Tanawha Tourist Drive
Sunshine Motorway
University Way
Ilkley Road
Wilson Road
Parkyn Road
Bruce Highway On Ramp
Fritzzo Road
Fritzzo Highway Road
Glenview Road
Old Gympie Road
Stevens Road
Connection Road
Caloundra Road
Steve Irwin Way
Rosebed Street
Mooloolah Road

MAP 4

Northern Blackall Range (Map 5)

This area is dominated by the Mapleton Forest Reserve and covers over 10 000 hectares of remnant forest managed by the Queensland Parks and Wildlife Service and private landowners. The area is dominated by open forest, though there are significant areas of rainforest in the gullies. The terrain is rugged and access for firefighting activities is limited. This area has the potential for large scale fires to develop, particularly under significant fire weather conditions with winds from the south west to north west.

Council reserves within this corridor include: Mapleton Forest Road Bushland Conservation Reserve, Andy Mergard Bushland Reserve, Balkins Road Bushland Reserve, Belli Park Bushland Conservation Reserve, Yandina – Cooloolabin Road Bushland Conservation Reserve. Approximate corridor area: 15 000 ha, council reserve area 215 ha.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Skyring Creek Road
Eumundi-Kenilworth Road
Memorial Drive
Eumundi
West Eumundi Road
Eumundi-Noosa Road
Bruce Highway
Belli Park
Ninderry
Cooloolabin
Sunshine Coast Council
Nambour-Mapleton Road
Nambour
Mapleton
Elevate Place
George Wyer Scenic Drive
Flaxton Drive
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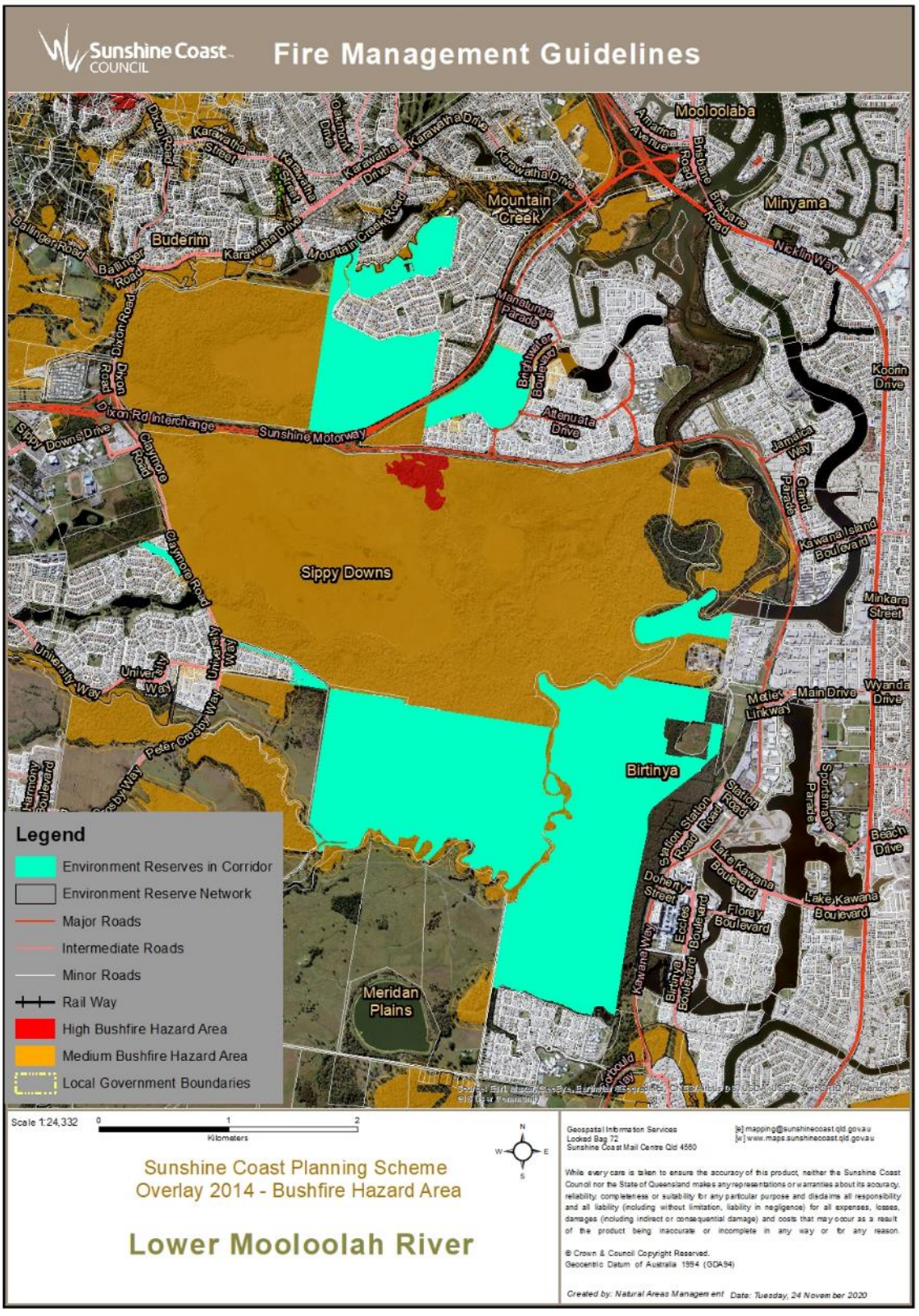
MAP 5

Lower Mooloolah River (Map 6)

The Mooloolah River National Park covers an area of over 800 hectares. The vegetation is a mixture of heathland, open forest and wetlands. Bushfires under significant fire weather conditions have the potential to impact on high density residential areas to the north and east. Council manages a significant interface between urban development adjacent to Mountain Creek Conservation Area and other areas which adjoin the national park.

Council reserves within this corridor include: Mountain Creek Conservation Area, Premier Circuit Environmental Reserve, Brightwater Western Environment Reserve and Lower Mooloolah River Environment Reserve, Approximate corridor area: 1 200 ha, council reserve area: 555 ha.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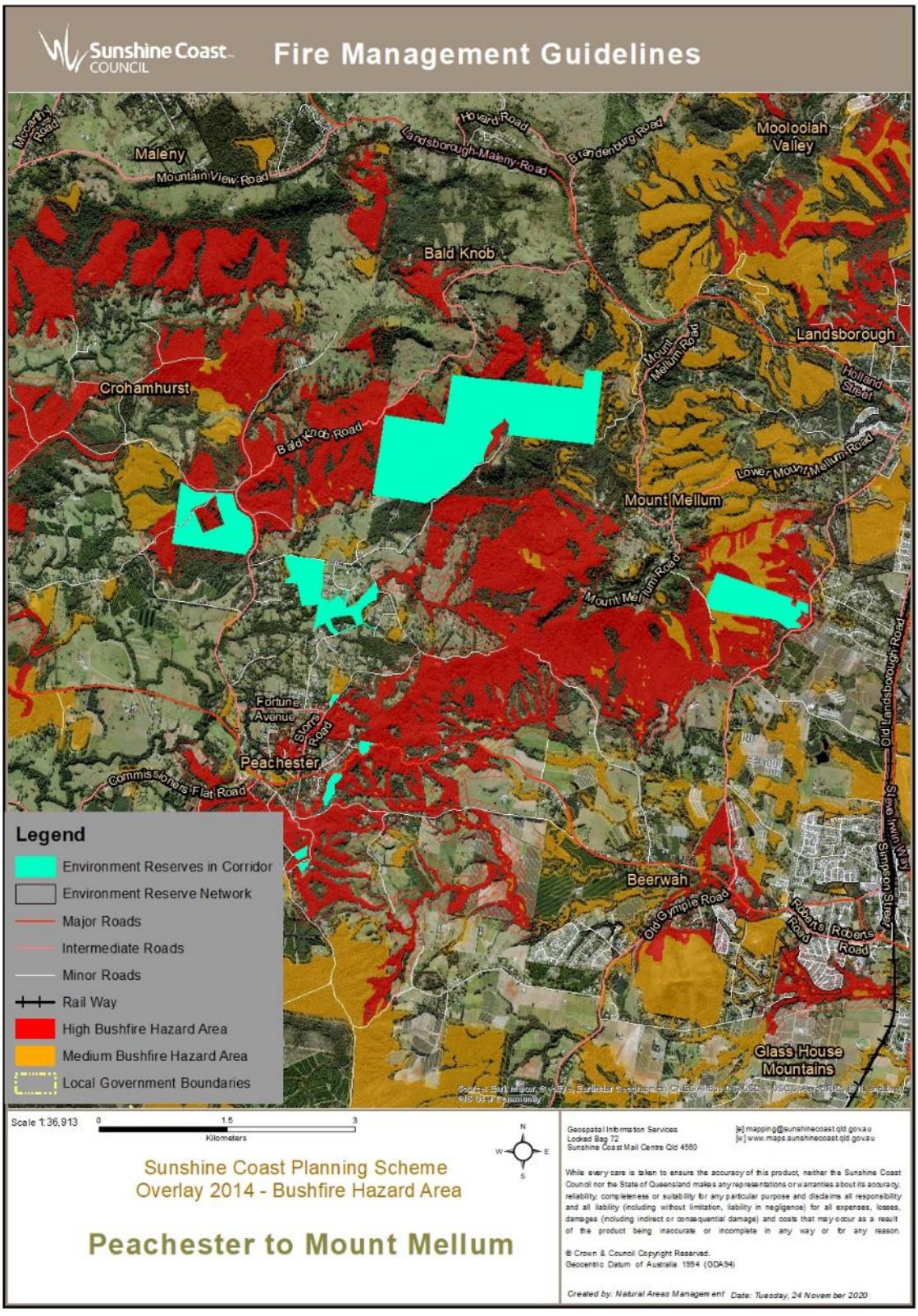
MAP 6

Peachester to Mt Mellum (Map 7)

An area of high bushfire hazard extends from the south east of Peachester to the north west towards Mount Mellum and the western edge of Landsborough. This area was impacted during the Beerburrum bushfire in 1994 and has the potential to carry a large scale fire. Most of the vegetation in this area is privately owned.

Council reserves within this corridor include: Crohamhurst Ecological Reserve, London Creek Environment Reserve , East Mount Mellum Nature Refuge, Range Road Reserve, Peachester Range Park, Taroona Court Bushland Park and Ocean View Park. Approximate corridor area: 1 800 ha, council reserve area: 335 ha.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Brandenburg Road
Mooloolah Valley
Bald Knob
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Holland Street
Crohamhurst
Bald Knob Road
Lower Mount Mellum Road
Mount Mellum
Fortune Avenue
Sloms Road
Peachester
Commissioners Flat Road
Old Landsborough Road
Steve Irwin Way
Simpson Street
Beerwah
Old Gympie Road
Roberts Road
Glass House Mountains
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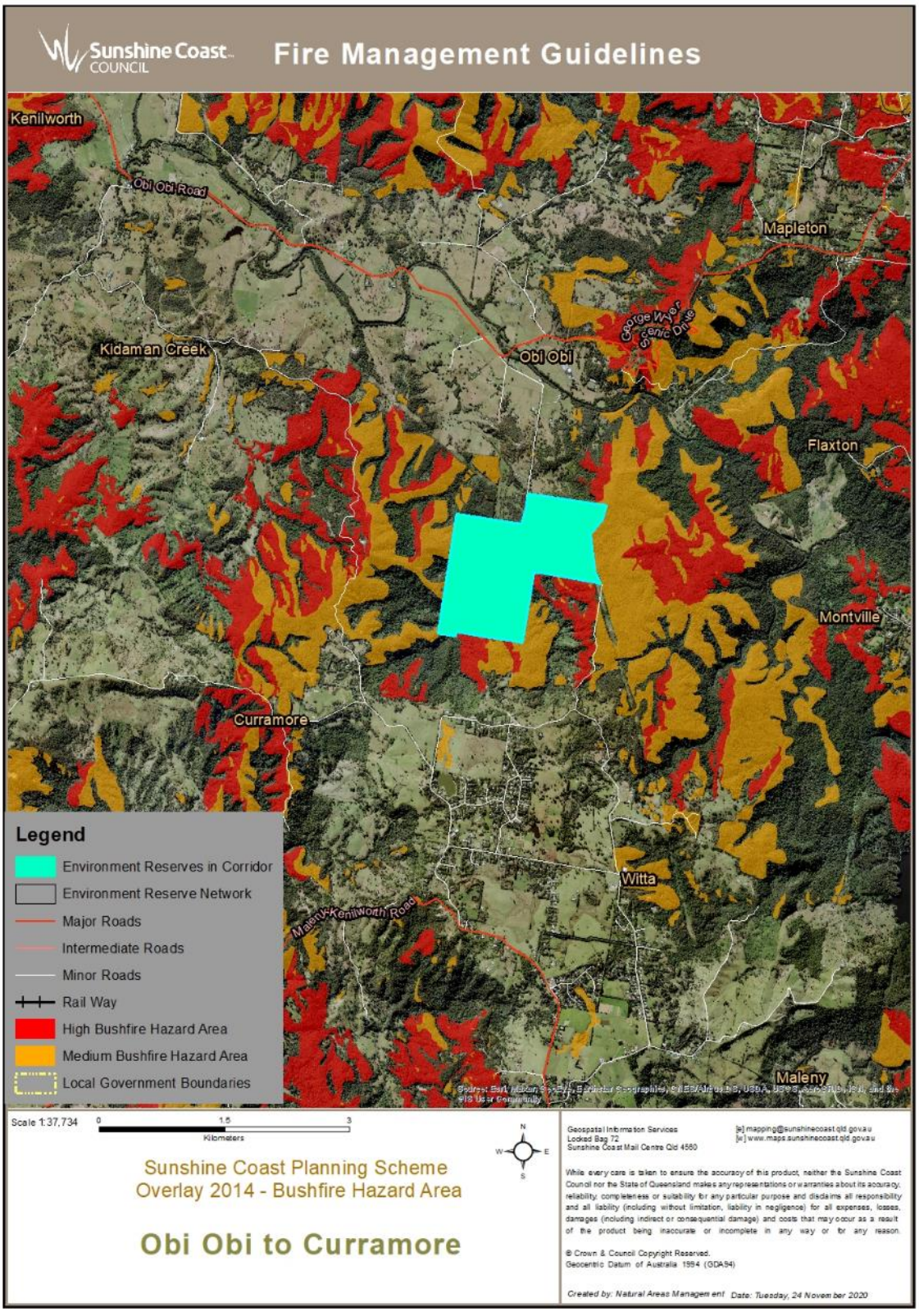
MAP 7

Obi Obi to Curramore (Map 8)

A large area of vegetation follows the ridgelines from Walli State Forest (south of Kenilworth) to Curramore and Witta. This area includes Maleny National Park as well as large areas of privately owned bushland.

Council reserves within this corridor include: Kirby's Road Environmental Reserve. Approximate corridor area: 3 000 ha, council reserve area: 215 ha.


Sunshine Coast COUNCIL
Fire Management Guidelines
Kenilworth
Obi Obi Road
Mapleton
George Wyer Scenic Drive
Kidaman Creek
Obi Obi
Flaxton
Montville
Curramore
Witta
Maleny-Kenilworth Road
Maleny
Legend
Environment Reserves in Corridor
Environment Reserve Network
Major Roads
Intermediate Roads
Minor Roads
Rail Way
High Bushfire Hazard Area
Medium Bushfire Hazard Area
Local Government Boundaries
Scale 1:37,734
0
1.5
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Kilometers
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S
Sunshine Coast Planning Scheme
Overlay 2014 - Bushfire Hazard Area
Obi Obi to Curramore
Geospatial Information Services
Locked Bag 72
Sunshine Coast Mail Centre Qld 4560
[e] mapping@sunshinecoast.qld.gov.au
[w] www.maps.sunshinecoast.qld.gov.au
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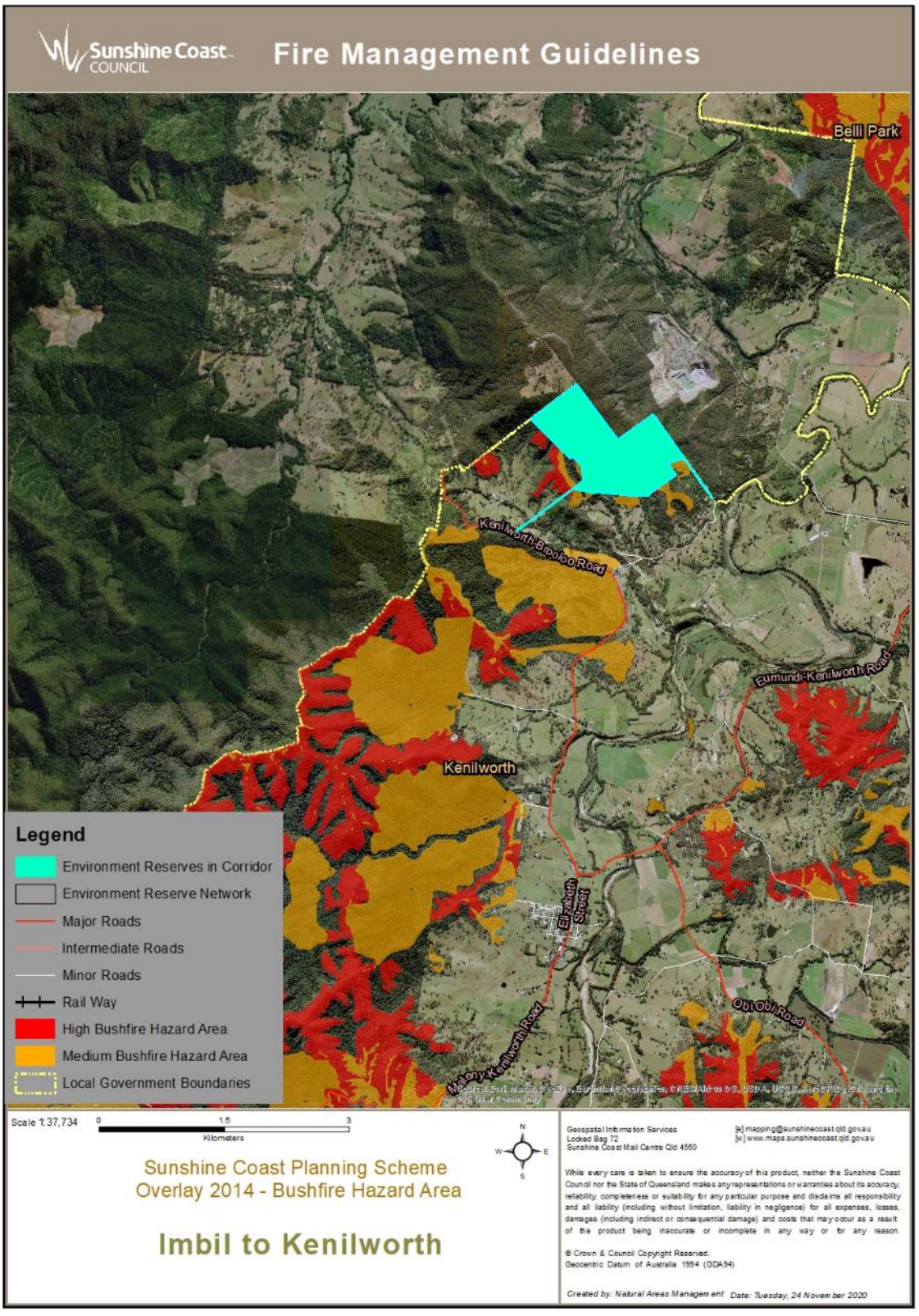
MAP 8

Imbil State Forest to Kenilworth (Map 9)

Over 8000 hectares of remnant vegetation and plantation forest sits to the west of Kenilworth in the Imbil State Forest. Bushfires under the appropriate fire conditions in this area have the potential to impact on Kenilworth and surrounding areas.

Council reserves within this corridor include: Kenilworth Bluff – Wilcox Family Park. Approximate corridor area: 5 000 ha, council reserve area: 123 ha.


Sunshine Coast COUNCIL
Fire Management Guidelines
Belli Park
Kenilworth-Bipoloo Road
Eumundi-Kenilworth Road
Kenilworth
Elizabeth Street
Obi Obi Road
Mahony Kenilworth Road
Legend
Environment Reserves in Corridor
Environment Reserve Network
Major Roads
Intermediate Roads
Minor Roads
Rail Way
High Bushfire Hazard Area
Medium Bushfire Hazard Area
Local Government Boundaries
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Sunshine Coast Planning Scheme
Overlay 2014 - Bushfire Hazard Area
Imbil to Kenilworth
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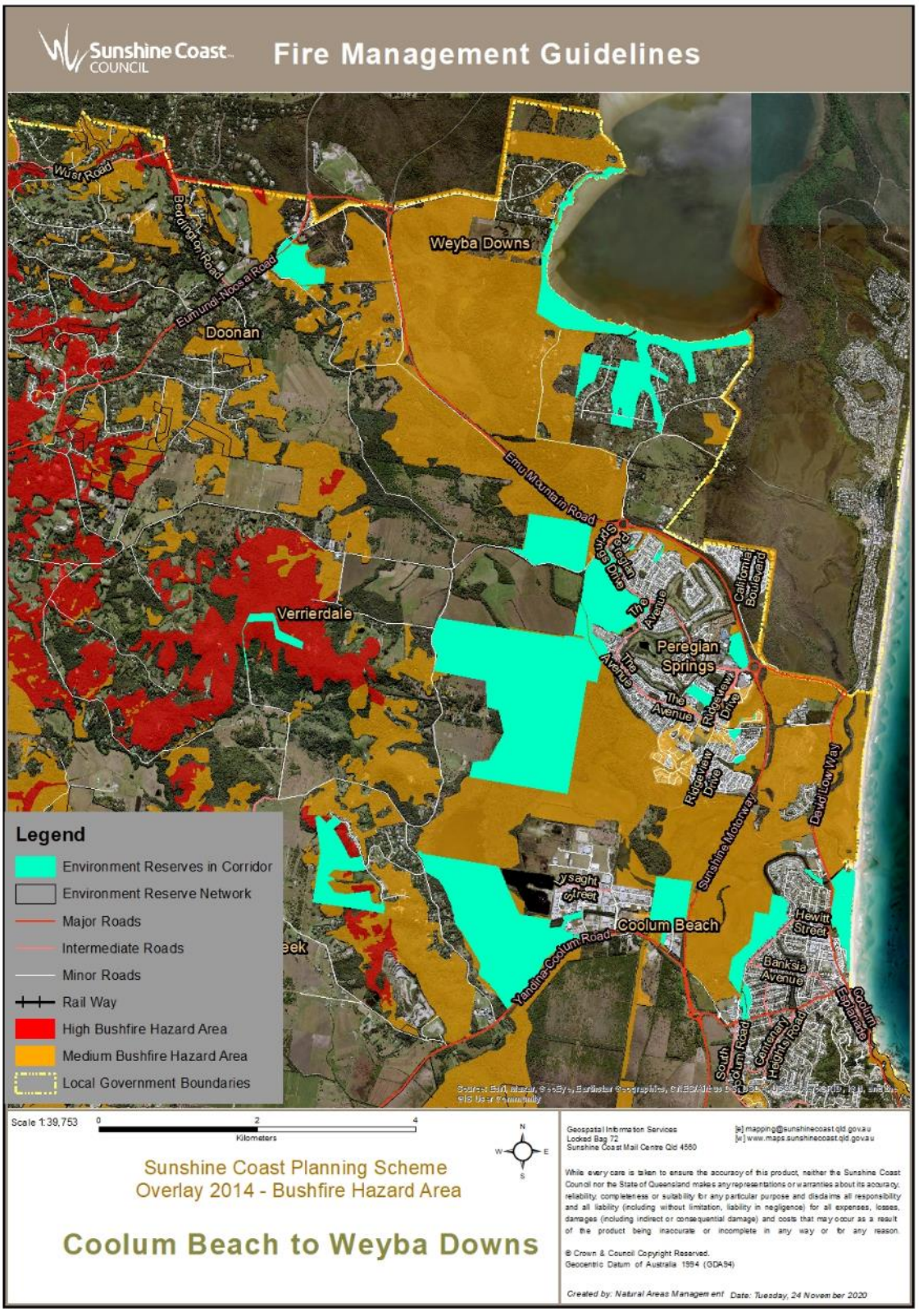
MAP 9

Coolum Beach to Weyba Downs (Map 10)

Over 5000 hectares of coastal vegetation is within Noosa National Park along the coastal strip from Noosa Heads to Coolum Beach and west to Verrierdale. Large fires have occurred in this area under fire weather conditions in 2009, 2017 and 2019, and have the potential to impact on the coastal development. Council works in partnership with QPWS in this area in the maintenance of fire trails and when undertaking prescribed burns.

Council reserves within this corridor include: Lake Weyba Bushland Network, Arcoona Road Bushland Conservation Reserve, Corbould Road Bushland Conservation Reserve, Stumers Creek Natural Amenity Reserve, Grays Road Environment Reserve, Doonan Creek Environment Reserve, Doonan Wetland Conservation Area, McCords Road Bushland Conservation Reserve, Havana Road West Natural Amenity Reserve, Brindabella Avenue Environment Reserve and Stumers Creek Bushland Conservation Reserve. Approximate corridor area: 5000 ha, council reserve area: 810 ha.


Sunshine Coast COUNCIL
Fire Management Guidelines
Wust Road
Beddington Road
Eumundi-Noosa Road
Doonan
Weyba Downs
Emu Mountain Road
Peregian Springs Drive
The Avenue
California Boulevard
Verrierdale
Peregian Springs
Ridgeview Drive
Sunshine Motorway
David Low Way
Coolum Beach
Yandina-Coolum Road
Hewitt Street
Banksia Avenue
Coolum Esplanade
Centenary Heights Road
Legend
Environment Reserves in Corridor
Environment Reserve Network
Major Roads
Intermediate Roads
Minor Roads
Rail Way
High Bushfire Hazard Area
Medium Bushfire Hazard Area
Local Government Boundaries
Scale 1:39,753
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Sunshine Coast Planning Scheme
Overlay 2014 - Bushfire Hazard Area
Coolum Beach to Weyba Downs
Geospatial Information Services
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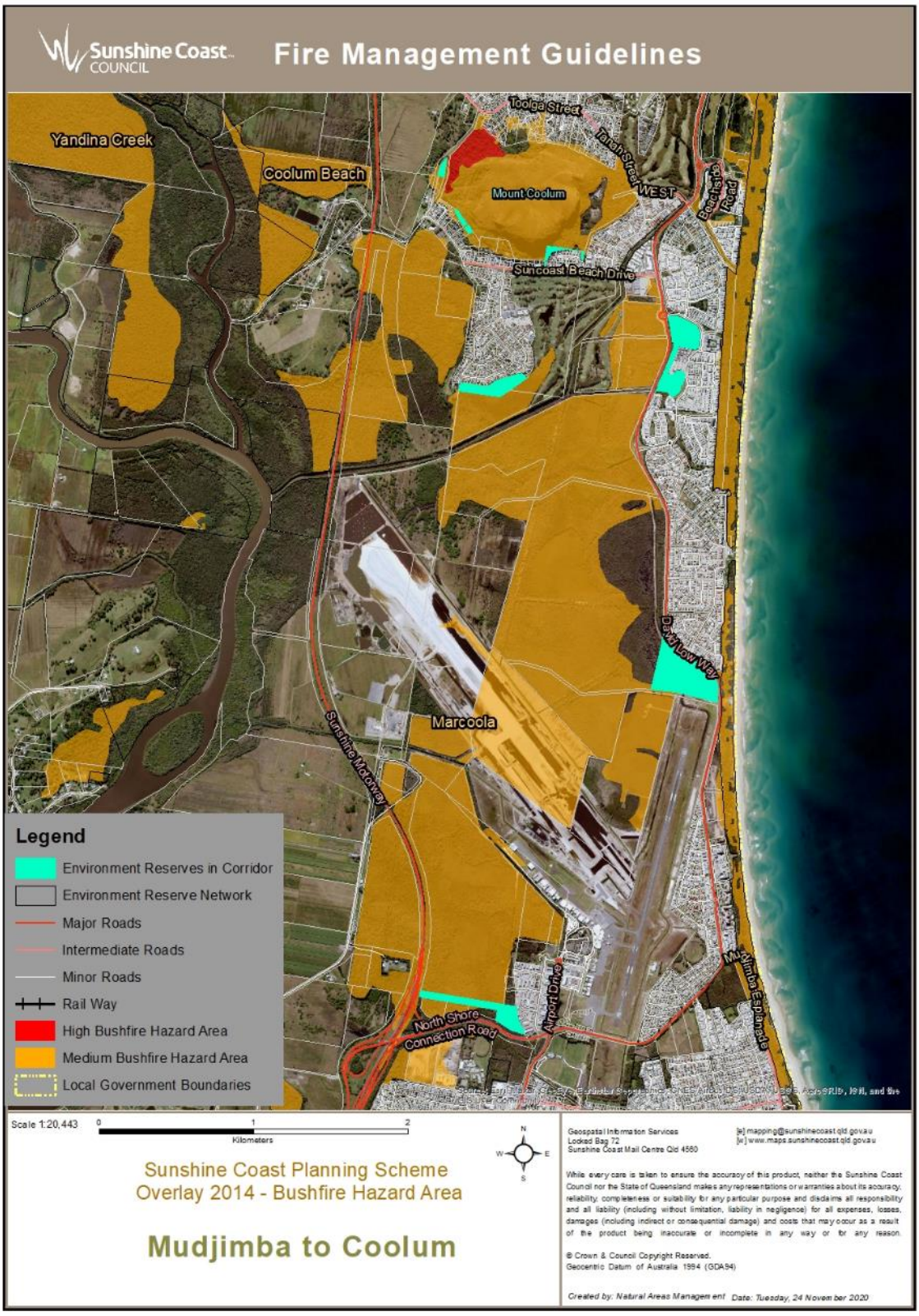
MAP 10

Mudjimba to Mt Coolum (Map 11)

Mount Coolum National Park and adjacent private and council land contains an area of coastal heath of approximately 500 hectares to the east of the Sunshine Motorway between Mudjimba and Mount Coolum. A large bushfire in this area has the potential to impact on adjacent residential development as well as the Sunshine Coast Airport. Areas to the south have been separated by the construction of an east – west runway.

Council reserves within this corridor include: Lumeah Drive Bushland Conservation Reserve, Boardwalk Boulevard Bushland Reserve, West Coolum Road Natural Amenity Reserve, Dharalee Court Bushland Conservation Reserve, Marcoola Bushland Conservation Reserve, Crinia Amenity Reserve. Approximate corridor area: 500 ha, council reserve area: 24 ha.


Sunshine Coast COUNCIL
Fire Management Guidelines
Yandina Creek
Coolum Beach
Mount Coolum
Toolga Street
Tanah Street WEST
Beach Isle Road
Suncoast Beach Drive
David Low Way
Marcoola
Sunshine Motorway
Mudjimba Esplanade
Airport Drive
North Shore Connection Road
Legend
Environment Reserves in Corridor
Environment Reserve Network
Major Roads
Intermediate Roads
Minor Roads
Rail Way
High Bushfire Hazard Area
Medium Bushfire Hazard Area
Local Government Boundaries
Scale 1:20,443
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Sunshine Coast Planning Scheme
Overlay 2014 - Bushfire Hazard Area
Mudjimba to Coolum
Geospatial Information Services
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MAP 11

5: Addressing the risks

Fire Management Plans

Council develops Fire Management Plans (FMP's) for reserves within the estate where fire risk management forms a significant component of the overall management actions. The development of a FMP involves a detailed site assessment to identify a number of issues including;

- Areas of high and medium bushfire hazard where specific hazard mitigation is required to reduce the risk of bushfires in the reserve impacting on adjacent properties or assets.
- This mitigation may be achieved through the construction of fire trails or fuel management zones. It can also be achieved through identifying protection burn areas where frequent prescribed burns are used to reduce fuel hazards.
- Fire trails and other access points within the reserve.
- Other assets that are used during fire management activities such as water points and gates.
- Community information and liaison with QFES where relevant.
- Environmental values that require periodic fire and guidelines for how and when fire will be used in these areas.
- Areas within the reserve that require fire exclusion.

An example Fire Management Plan has been included in Appendix 2a (appendix 2b contains a digital FMP, see note).

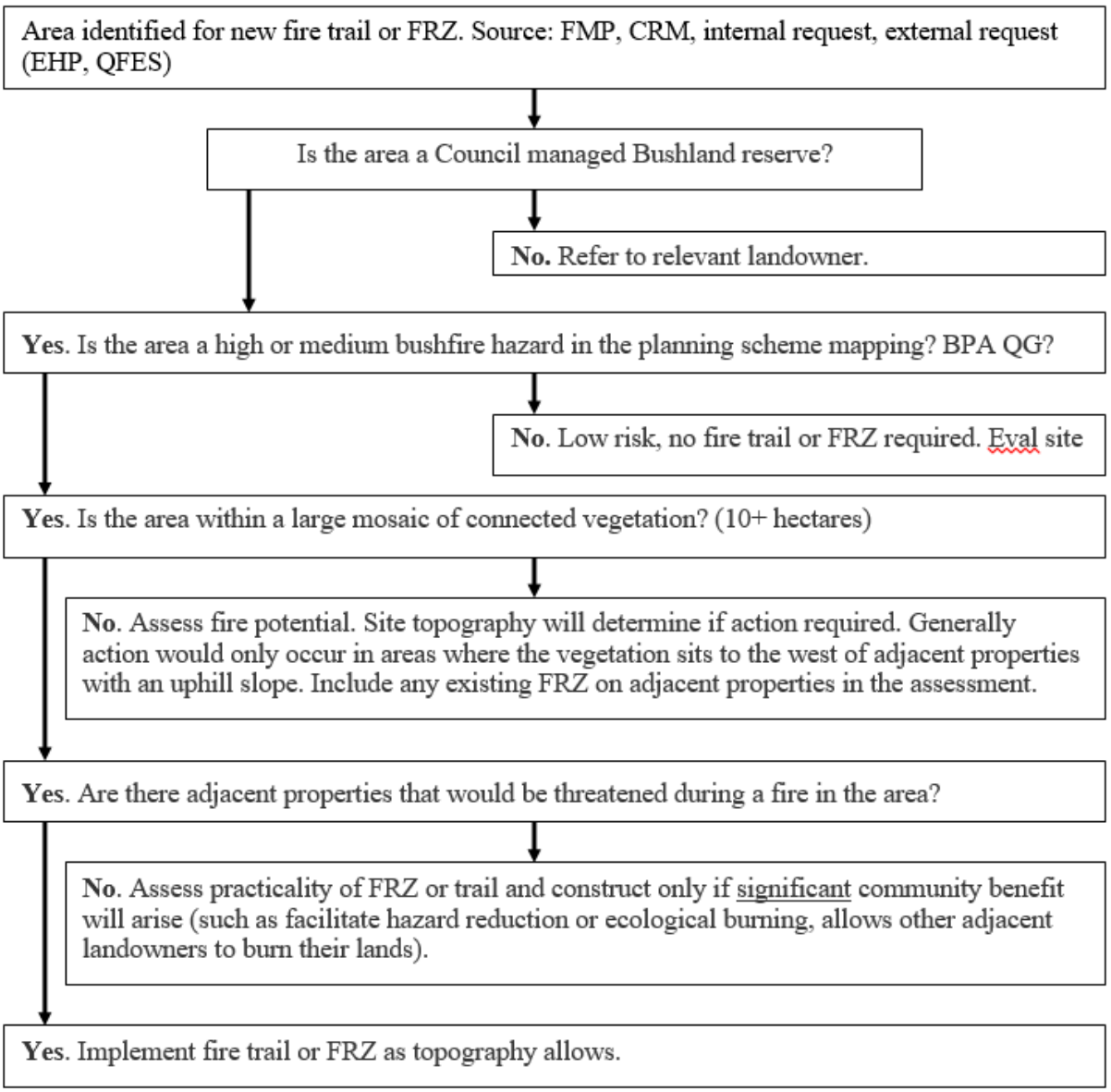
Note: In 2020 a new digital format for FMPs was developed. It is designed to enable updating of plans and facilitate their use as a practical non-static planning tool. Further integration of this digital format is planned for completion at the end of 2022. A pdf summary of this has been included appendix 2b.

Fire Trails and Fuel Management Zones (FMZ)

Fire trails and FMZ are established and maintained in reserves where a significant benefit is obtained. Council has developed the following decision chart to identify when a fire trail or FMZ should be established.

Once the decision to construct has been made and funding is available the design standards for fire trails and fuel management zones as defined in council's *Landscape Infrastructure Manual* will determine the level of construction. The maintenance levels on fire trails and FMZs depends on site conditions, risk and shared use patterns. for slashing of these areas depend on the reserve classification. The number of maintenance cuts per year ranges from one to six. The design standards for fire trails and fuel management zones as defined in council's *Landscape Infrastructure Manual* are included in Appendix 3.

Natural Areas – Fire Trail and Fuel Reduced Zone | Construction - Decision Process



Other considerations

- Are sufficient resources for both construction and ongoing maintenance costs available?
- Other areas (such as unmade road reserves). Inspect for potential for trail or FRZ in these areas to provide a significant community safety outcome. Generally trails will not be established in these areas as they contribute a small portion of overall fire risk in the landscape. If the road reserve presents the only possible option topographically, works can proceed as resources allow. As a general rule adjacent landowners would be expected to manage fire risks on their own lands. If such works occur on unmade road reserves all efforts should be made to include adjacent landowners in the maintenance of these areas to minimize ongoing maintenance costs to council.

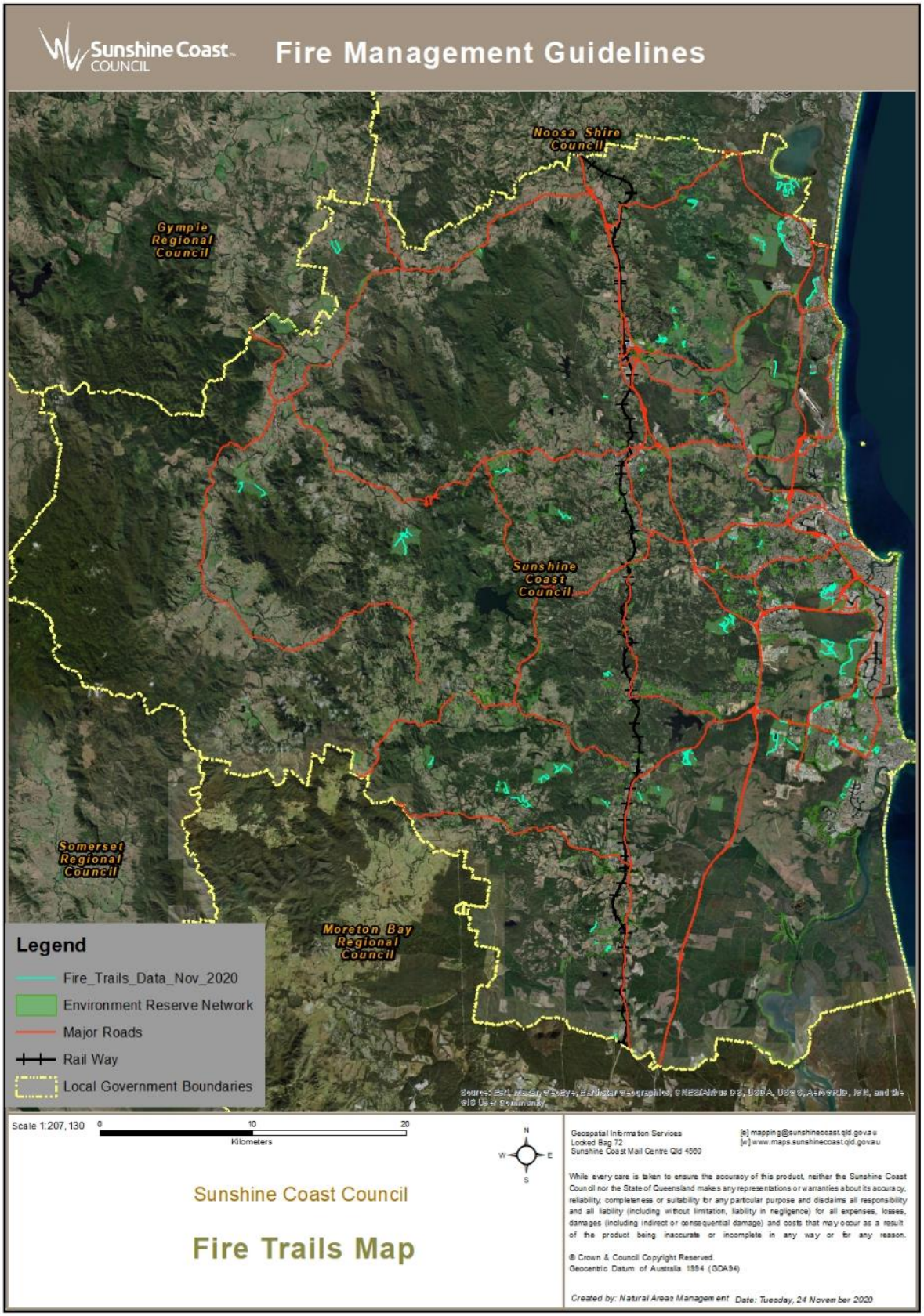
Fire Trail Mapping

Environment reserve trails are mapped using GPS and data recorded for each trail includes the reserve name, trail standard (as per above), trail condition and any relevant comments. In addition to the trails other features such as gates are mapped and data such as lock type is recorded. An example of a fire trail map is provided below.

As of November 2020 council has over 100 km of fire trails within its environment reserve network. Of this, 29 km are in good condition, 17 km are in fair condition and 125 m is in poor condition (1 segment). These statistics constantly change. Trails in poor condition are upgraded through the capital works program. Fire trails may be decommissioned, new trails mapped or condition ratings updated.

Fire Trail Statistics: November 2020

Fire Trail Condition	Trail segment count	Total length (km)
Good	86	29
Fair	64	17
Poor	1	0.125
Cond. not assessed	204	57
All	**355**	**103**


Sunshine Coast COUNCIL
Fire Management Guidelines
Noosa Shire Council
Gympie Regional Council
Sunshine Coast Council
Somerset Regional Council
Moreton Bay Regional Council
Legend
Fire_Trails_Data_Nov_2020
Environment Reserve Network
Major Roads
Rail Way
Local Government Boundaries
Scale 1:207,130
0
10
20
Kilometers
N
W
E
S
Sunshine Coast Council
Fire Trails Map
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Planned burning

Council undertakes planned (or prescribed) burning annually across its environment reserve network. On average, council undertakes 6 prescribed burns each year, varying in size from small areas of less than 1 hectare landscape scale burns of hundreds of hectares in conjunction with other land management agencies. Prescribed burn planning and implementation requires significant resourcing and the technical nature of the activities requires a specilaised skill set to ensure containment and successful outcomes. Prescribed burning is very constrained in urban environments and weather and site conditions must be strictly met to proceed with a burn.

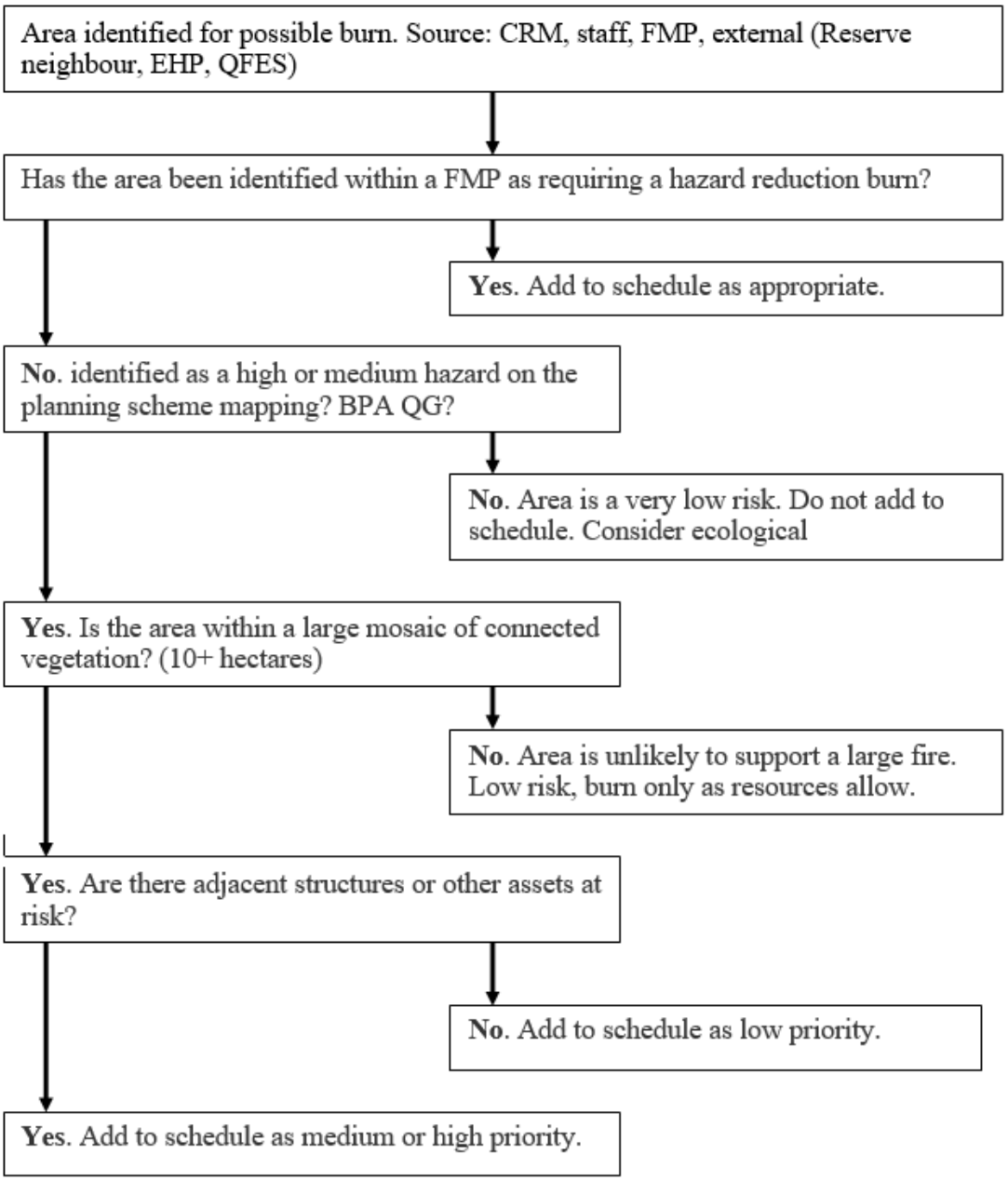
As well as industry guidelines and technical material, a range of standard council documentation has been prepared to manage the planning operational aspects of prescribed burning. This includes Job Safety and Environmental Analysis (JSEA), risk assessment and site induction forms, fire operations proforma (SMEACS / Burn Plan) and burn neighbour notification letters. Examples of these documents are provided in Appendix 4.

The NAM team maintains an ongoing forward program of prescribed burns. These burns are ranked in priority from 1 to 4. Priority 1 burns are typically achieved in the current year and lower priority burns will also be undertaken as weather and resources allow. At the end of each year completed burns are removed and those burns remaining move up the priority list. This increase in priority ensures that burns will be completed within a 4 year timeframe (weather and resources dependent). There is a chance that lower priority burns on the list will be downgraded after assessment against emerging regional priorities. Proposed burns which do not meet the assessment criteria may be added to a three to five year re-assessment schedule. Previous burn areas are added to the list on a rotational basis where they meet the criteria and according to accepted ecosystem guidelines.

Decision processes have been developed to ensure that any burns added to the schedule will achieve significant outcomes in terms of hazard reduction or ecological management. These processes are described below. Council strives to achieve both outcomes when undertaking prescribed burns when possible.

Natural Areas – Prescribed Burn Decision Process

Primary purpose: hazard reduction

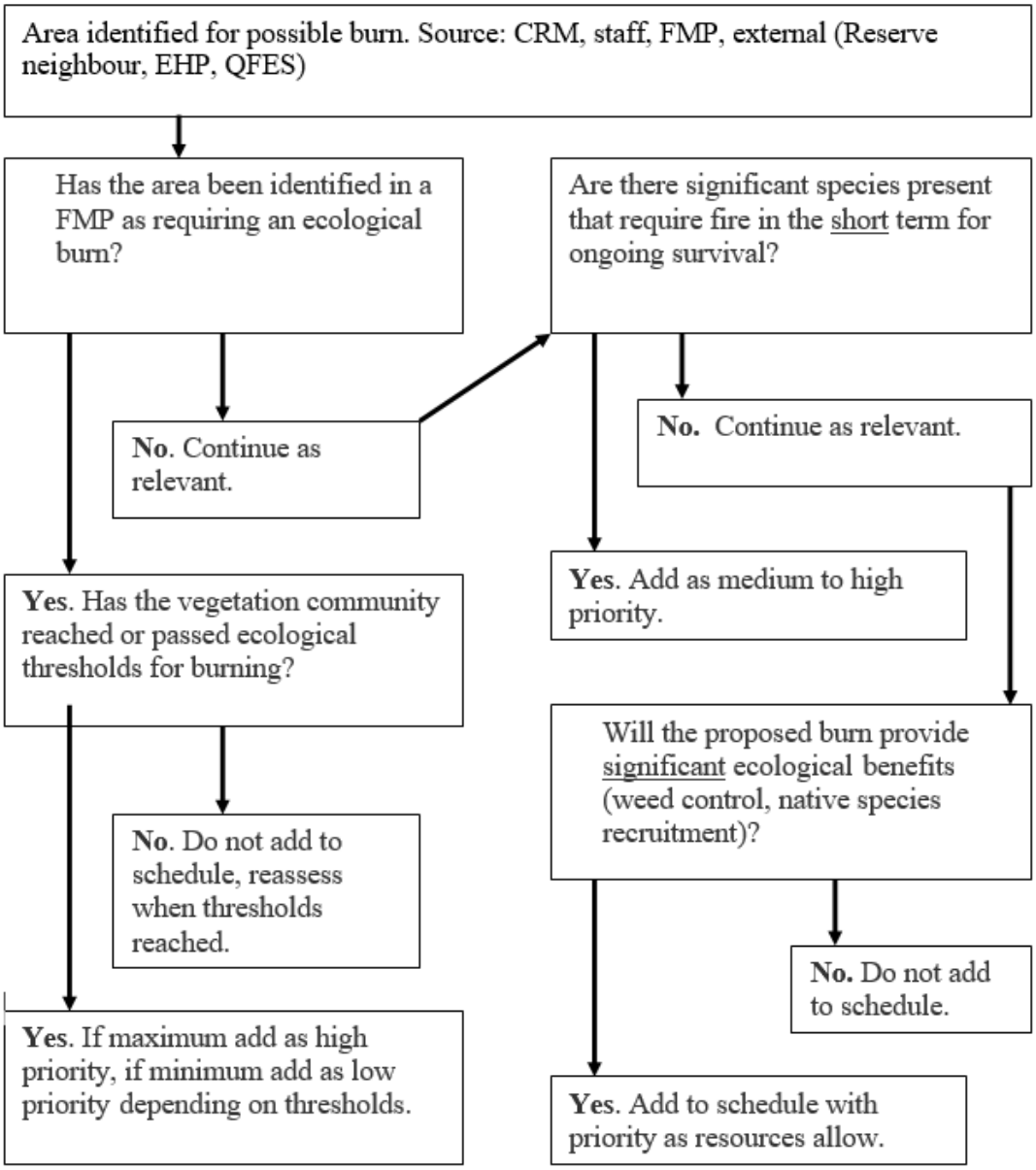


Other considerations

- Is there scope within the current burn schedule to add the burn?
- Can the burn be added as a low priority to be completed over the coming years as resources allow?
- Can the burn be reassessed in 3-5 years before adding to the schedule?
- Is the site due for another burn?
- Does the site have ecological burn priorities?

Natural Areas – Prescribed Burn Decision Process

Primary purpose: ecological



Other considerations

- Is there scope within the current burn schedule to add the burn?
- Can the burn be added as a low priority to be completed over the coming years as resources allow?
- Can the burn be reassessed in 3-5 years before adding to the schedule?
- Are there significant hazard reduction priorities on the site?

Fire management Resources

EO maintains fire management resources to allow council to undertake prescribed burns and unplanned bushfire management on its estate. The following resources are available (November 2020).

Fire Units

Call sign	Vehicle make	Tank capacity (L)
SC41	Toyota Landcruiser	400
SC42	Toyota Landcruiser	400
SC43	Ford Ranger	300
SC44	Ford Ranger	300
SC45	Ford Ranger	300

Staff

Training Level	Number of staff
Prescribed Burn Supervisor (complex burns) and Sector Commander	2 (+1 in training)
Crew Leader	9
Crew Member	17

At Nov 2020

6: Fire event response

Response protocols

Council has developed a response protocol with QFES that outlines the process for council resources to be mobilised during bushfires.

SCC Assistance to QFES

- SCC is not a resource of QFES (ie not another rural fire unit under their control).
- SCC would assist when available, especially for emergency situations.
- SCC would provide QFES assistance within SCC capability as required.
- SCC has light attack capable crews and vehicles but would prefer mopping up duties in order to release QFES resources to other roles.

When would SCC Provide Assistance?

Fires on Council Owned Land

- SCC would always attend hazard reduction burns
- SCC would always attend unplanned bushfires when requested by QFES, as resources allow
- SCC would relinquish control of unplanned bushfires to arriving QFES crews

Fires on Private Land Adjoining Council Owned Land

- SCC would possibly attend hazard reduction burns – especially where necessary to manage council managed land
- SCC would possibly attend unplanned bushfires if notified where necessary to protect council managed land or the community
- SCC is unlikely to attend unplanned bushfires where there is no immediate threat to council managed land or the community - subject to potential future weather and threat predictions, or a specific request is made to the Coordinator Disaster Management by QFES

Fires on Private Land NOT Adjacent Council Owned Land

- SCC would not normally attend hazard reduction burns
- SCC would not normally attend unplanned bushfires unless it is necessary to protect the community or a specific request is made to the Coordinator Disaster Management by QFES

Fires on National Parks Land

- SCC would most probably attend hazard reduction burns when invited – especially where necessary to manage council managed land
- SCC would most probably attend unplanned bushfires if notified where necessary to protect council managed land or the community
- SCC may attend unplanned bushfires where there is no immediate threat to council owned land or the community - subject to potential future weather and threat predictions or a specific request is made by QPWS.

Call for Assistance

The Disaster Management system would be utilised to communicate requests from QFES for assistance from SCC.

Procedure as follows;

1. QFES Fire Communications Centre calls the Coordinator Disaster Management (Cathy Buck)
2. Where the Coordinator Disaster Management is uncontactable, requests may be made to the Group Executive Built Infrastructure (Tom Jamieson) or the Chief Strategy Officer (Bill Haddrill).
3. Coordinator Disaster Management advises Manager Environmental Operations and/or Manager Natural Areas Management
4. Coordinator Disaster Management activates Disaster Management arrangements or requests assistance

Triggers for increased resource availability

The Queensland Fire and Emergency Services use a Bushfire Preparedness Level (BPL) system to specify the readiness and availability of their resources during the year. There are four BPL categories and council receives notification from QFES when the BPL changes. The implications for local Rural Fire Brigades is summarised below.

QFES Bushfire Preparedness Levels:

QFES BPL1

- Normal activities

QFES BPL2

- All equipment checked and appliances in a complete state of readiness.
- Consider ceasing hazard reduction burning.
- Consider contact with Fire Wardens to discuss local conditions.
- Brigade area familiarisation and awareness of local area conditions.
- Assessment of water points (dams, creeks, pools etc).
- Update risk assessment of known hazards.
- Ensure adequate supply of PPE and drinking water in store.

QFES BPL3 (in addition to Level 2 activities)

- Conduct Brigade area inspections and patrols.
- Development availability lists.
- Development team roster.
- Be prepared to back up urban crews.
- Two brigade response active.

QFES BPL4 (in addition to Level 3 activities)

- All members be prepared and advise First Officer of any unavailability of personnel.
- Firefighters to keep hydrated.
- Where possible, have a crew on standby.

Sunshine Coast Council Bushfire Preparedness Levels:

Council uses the BPL to specify readiness levels for EO fire management resources. The implications for council resources are described below.

SCC BPL1

- Normal activities. One of the two lead fire units (SC41 & SC42) will have fire unit on the vehicle but no specific preparations in place.

SCC BPL2

- Both lead fire units (SC41 & SC42) will have fire units on. Tanks will be filled and all equipment on board for response if required.
- Natural Areas units (SC43-SC45) will have slip on units available for rapid installation if required.
- All staff to have PPE available at work location.

SCC BPL3 (in addition to Level 2 activities)

- Natural Areas units (SC44 & SC45) will have slip on units installed and ready for rapid filling and deployment if required.
- PPE to be available in vehicles.
- 4 staff on-call to provide a response capability as required.
- During easing fire weather conditions and after consultation

with the Manager NAM and the Coordinator Disaster Management, the Fire Management Officer may evaluate conditions, present justification and if agreed, downgrade rostering (as conditions allow), this will be reviewed and re-established if conditions worsen.

- Rosters and changes to be communicated to Coordinator Disaster Management, Manager EO, Manger NAM, SCC CAMS Callout staff

- **SCC BPL4 (in addition to Level 3 activities)**

- All fire units to be filled with all equipment ready for deployment (SC41-SC45)
- A total of 8 staff on-call to provide a response capability if required
- Rosters may be downgraded as above

Scheduled Natural Area Maintenance Activities

During periods of very high fire danger (FDI 24+) as advised by the *Bureau of Meteorology*, scheduled maintenance works by slashing and mowing contractors are to be assessed, and a risk assessment undertaken by the contractor. The Fire Management Officer will make reasonable efforts to notify SCC contract management officers in EO and Parks and Gardens and include the Coordinator Disaster Management into notifications. Where conditions are high risk, activities should be restricted or suspended until fire danger eases. Refer to the following draft table.

Draft Fire Danger Restrictions - slashing, mowing & brushcutting				
Max FDI Forest Fire Danger Index	**FDR** Fire Danger Rating	**Actions**	**Note**	**Guideline**
100+	**Catastrophic (Code Red*)**	**STOP**	Vegetation Management not to occur without a directive from emergency services or a council manager or delegated officer.	eg local fire ban (as per ban conditions), emergency declaration (fire)
75-99	**Extreme**			
50-74	**Severe**			
25-**49**	**Very High**	**Restrict / Stop** (Risk Assessment)	Conduct a site based fire hazard and risk assessment. **RESTRICT work to low hazard areas / times,** OR **STOP activities when adjacent bushland or other significant fire hazards exist**	Where any combination of the following occur in this FDR : rocky areas, dry ground fuels, grass is mostly brown (cured), forecast - low relative humidity (<25%), high temperatures (>33°C) and gusty or strong wind (>35km/h) or 35 FDI+, High risk score = Stop Works or seek approval. If proceeding, have a fire extinguisher or water (15L) on site and monitor. Or restrict / stop under a Local Fire Ban (as per fire ban conditions).
12-**24**	**High**	**Proceed with Caution / Restrict** (Risk Assessment)	**During mild conditions in low hazard areas - no special action required. Elevated FDR** = Conduct a fire hazard risk assessment when FDR is elevated and adjacent bushland or other significant fire hazards exist (eg rocky ground, ground fuels are dry, grass is mostly brown (cured), low humidity, high temperatures and gusty or strong wind.	Normally, no special considerations required. Undertake a site based evaluation and if high risk, restrict work to low hazard areas and or milder times of the day. Have a fire extinguisher or water (15L) on site and monitor. Or restrict / stop under a Local Fire Ban (as per fire ban conditions).
0-11	**Low-moderate**	**Proceed**	**No special action required**	

Note: call tripple zero if you cannot contain a fire immediately, report to contract administrator and or supervisor. This table may be applicable to other machine operations where similar risks exist. This draft table was under review by QFES at the time of publishing.

Integration with other agencies and resources

Currently, SCC is undertaking procurement of an investigating an integrated communications system for council resources (vehicles, trucks and plant). This radio system is not expected to be compatible with QFES equipment. EO are currently (2021) investigating the potential of on-board with the Government Wireless Network to enable communications compatibility. 7: Community safety

Community education

Council works in partnership with the Queensland Fire and Emergency Services in their delivery of community safety programs. As the peak body in Queensland, QFES implement a nationally based approach to community education through the *Prepare, Act, Survive* program. Council's EO branch and other branches also host community bushfire preparedness evenings at regional centers annually. This enables the community to understand the current bushfire management arrangements, their bushfire risk and plan ahead.

Council invests in significant interface management for property protection and regular evaluation of perceived bushfire risk through the customer request system and proactive reserve interface management. Education of the community is a focus of these customer service interactions, this ensures customers are provided clear and concise information. Council also directly engage with the QFES I-zone officers where customer request perceived fire hazard assessment is warranted, this often results in community education and extension activities.

8: Ecological requirements

The maintenance of environmental values is a significant factor in council's fire management program. Wherever possible council will try to integrate ecological outcomes with risk management.

Detailed information around recommended fire regimes and burning practices for the management of flora and fauna populations are contained in Appendix 5.

9: Monitoring and evaluation

Fuel load monitoring

Through the bushfire hazard assessment process (described in Section 5) council identifies those reserves where individual fire management planning or management intervention is required. Part of this planning process involves the identification of protection burn areas where fuels will be maintained at low levels through regular

planned burns. In these areas, desired fire intervals are specified to maintain fuel loads at low levels or to alter fuel structure to reduce hazard (eg by promoting a grassy understory). Mechanical fuel structure modification is significant part of council's forest fuel management program, especially on asset interfaces.

Fuel load assessment of these sites may be required as the prescribed burning thresholds are reached. Fuel load assessments may be undertaken using the *Overall Fuel Hazard Assessment Guide* (DSE 2010). EO has created a GIS dataset to enable data capture in the field which is consistent with the above guide and staff have undertaken training in the guides interpretation and use. In areas identified for protection burns, it is important to recognise that regular burning may result in changes to forest and fuel structure, and due to a number of plant response factors (eg timing and site conditions at the time of the burn), an area may develop a similar or increased fuel load in a short amount of time. For this reason, forest fuel structure may be considered as the best indicator for risk and fire suppression evaluations.

Periodic fuel load assessments generally occur in response to specific concerns being raised about potential fire hazard in council reserves or staff evaluations on previously burnt areas. Following any fuel load assessment, decisions to undertake hazard reduction through either burning or by establishing fire trails or fuel reduced zones will occur through the decision processes outlined previously.

Fire history mapping

The NAM team collects spatial information on all prescribed burns within the reserve network. Information is also captured for unplanned bushfire when possible. Once collected, the fire history data provides valuable information for use in assessing the recommendations in individual reserve Fire Management Plans or for future burn planning. On completion of a prescribed burn, the outer perimeter is mapped as accurately as possible using a mobile device and GIS application. Data such as Fire Management Unit, fire date, forest fire danger ratings, fuel loads, resources involved and fire behaviour details including intensity and extent is collected. Data may be obtained from the council GIS team who utilise remote sensing to map large scale fires on the sunshine coast, this data can be added to the EO burn history dataset.

Fire history data is also made available to other agencies such as QFES and the Queensland Parks and Wildlife Service. Data from all three agencies is integrated by the QFES *State Interdepartmental Committee for Bushfires* to produce a map showing prescribed burns for the QFES North Coast Region.

Fire trail and FMZ monitoring

The monitoring of fire trails and fuel management zones is undertaken as per Natural Areas Service Levels. For fire trails the minimum monitoring frequency is one time per year. Currently, council is rolling out a new asset management system which will include asset information relating to fire trails and FMZs.

Post fire monitoring

For prescribed burns, post fire monitoring is undertaken when resources allow. Assessing the effectiveness of burning to meet desired management objectives, both ecological and fuel reduction is important in certain circumstances. Photo points may also be used to monitor changes in vegetation over time. In sites where significant species are present council may install permanent monitoring plots in order to record data before burning and during the post burn regeneration. Given the resource intensive nature of this type of monitoring, this is primarily used where scheduled plant species are known or thought to be present or where experimentation is occurring. NAM's GIS fuel load assessment dataset also provides opportunities to monitor burn sites though vegetation assessment parameters and images.

Reactive monitoring after bushfires is undertaken to assess the effectiveness of any fire trails or fuel reduced zones. These events provide the opportunity to critically assess the performance of these measures and decide if the specifications used by council are adequate.

10: Appendices

Appendix 1: Fire Legislation and Law
Appendix 2a: example Fire Management Plan 2015
Appendix 2b: example Digital Fire Management Plan 2020
Appendix 3: Landscape Infrastructure Manual (fire trails & fuel managed zones)
Appendix 4a: JSEA Prescribed Burning (safety document)
Appendix 4b: Risk Assessment Prescribed Burning (safety document)
Appendix 4c: example Burn Plan / SMEACS briefing
Appendix 4d: Template Prescribed burn notification letter
Appendix 5: SCC Prescribed Burning Ecological Guidelines

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