FIRE MANAGEMENT PLAN

Gracetown Residential Development

SHIRE OF AUGUSTA MARGARET RIVER

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1.0 PURPOSE OF THE MANAGEMENT PLAN

The purpose of this Bushfire Management Plan is to detail the Fire Management methods and requirements that will be implemented within the proposed development. The aim of the Bushfire Management Plan is to reduce the threat to residents and fire fighters in the event of a fire within or near the subdivision.

2.0 SUBDIVISION LOCATION AND DETAILS

The subject area is an extension to the south east of the existing Gracetown townsite.

3.0 SITE DETAILS

The proposed development is in coastal heathlands varying in height of 1-2 metres with some areas 3-4 metres high to the south and south east of the existing Gracetown townsite.

The Cowaramup Brook flows into Cowaramup Bay near the existing townsite.

Topography in the area slopes away from the beach areas and Cowaramup Brook. Slopes vary from relatively flat near the beach with areas varying between 10-20 degrees in the steepest areas rising to 120 metres AHD at the south east edge of the site.

Sand dunes are located along the western edge of the shoreline.

A bush fire occurred to the south west of the existing townsite in 2005.

4.0 STATUTORY CONDITIONS

The Western Australian Planning Commission requires the preparation of a ‘Bushfire Management Plan’ for the proposed development as part of the Development Application. This document has been prepared to satisfy that requirement.

As fire management strategies may require altering to meet changing climate, environment and land use needs, it is advised that provisions of the Bush Fires Act 1954 may still be enforced in addition to this Fire Management Plan.

This fire management plan may need to be refined prior to the development proceeding.

This fire management plan will apply to the Gracetown residential area and all building requirements will be applicable to the construction of new homes only and will not apply to existing residences.
Diagram 1 Locality of Proposed Subdivision

Figure 5 - Development Investigation Areas
5.0 BUSH FIRE HAZARD ASSESSMENT

The assessment of fire risk takes into account existing site conditions which include:

- Topography with particular reference to ground slopes and accessibility;
- Vegetation cover – both remnant and likely revegetation; and the
- Relationship to surrounding development.

The bush fire hazard assessment is extreme in coastal heathland less than 2-4 metres in height (Class C Tall Shrubs) with slopes greater than 10 degrees (Planning for Bush Fire Protection 2001). These conditions exist in Gracetown and therefore the bush fire hazard is considered to be extreme.

The Mediterranean climate experienced by this area is such that the majority of rain falls in late autumn through winter to early spring. This rainfall supports substantial vegetation growth which dries off in Summer/Autumn.

The combination of prevailing winds and dry vegetation poses a fire risk and bush fire control is considered essential for the protection of life and property, and to ensure that frequent and uncontrolled burning does not degrade existing and replanted vegetation.

6.0 FIRE MANAGEMENT PLAN

The aim of the Fire Management Plan is to reduce the threat to residents and fire fighters in the event of bush fire within or near the site.

The Fire Management Plan has been developed to incorporate fire management methods. The aspects considered include:

- Road Systems;
- Firebreaks and Low Fuel Buffers;
- Dwelling Construction;
- Building Protection Zones;
- Hazard Separation Zone;
- Hazard Reduction; and
- Driveways

6.1 Road System

It has been indicated by traffic management consultants, Transcore, that the current Cowaramup Bay Road into Gracetown is capable of handling the proposed traffic as a result of the development from a traffic management perspective. It is proposed that the Cowaramup Bay Road westwards from Caves Road be treated as a low fuel buffer in order to reduce the impact of a fire in this vicinity.

A ring road will be located on the outside of the development. Internal roads along the contours will also be established. See Appendix A.
Existing fire protection/access
The existing Gracetown townsit is currently exposed under an ‘extreme’ fire rating and does not comply with the Planning for Bushfire Protection Guidelines. It appears that houses in the existing development are not built to Australian bushfire standards (AS3959) and the townsit does not have an adequate reticulated supply of water to fight any fires that might eventuate.

Vehicle access to Gracetown is currently limited to Cowaramup Bay Road. Access to the townsit via this route is located on a suitable alignment from a fire safety perspective due to its low level fuel load (consisting of coastal heath and woodlands). The DEC have indicated that the existing vegetation and terrain on this route is not conducive to long duration fire event (e.g. no tall forests and heavy fuels that usually cause lengthy closures) and that they anticipate that in the event of a fire the road could be reopened in relatively short time frame after fire passage – particularly if fuel management strategies are put in place. (John Tillman, personal communications 2010). Current Planning for Bushfire Guidelines (May 2010) indicate that developments within an extreme fire rating area require two access and egress points to the main road network. This does not currently exist in Gracetown.

Current Agency Policy
In the Planning for Bushfire Protection Guidelines (WAPC/FESA 2001) it is a requirement for all developments to have ‘safe two way access and egress to be available to residents in a bush fire prone area.” Consequently consideration has been given to the provision of a second access road.

FESA are developing a “Bush Fire Risk Management – A Development Guideline for Communities” approach which takes into account fire protection of all land up to 3 kilometres from a development. This approach is to identify sources of Bush fire risk and plan to manage a reduction of this risk. It is suggested that this approach should occur through collaboration with Local Government, Bush Fire Brigades, FESA, DEC, private property owners and organisations that have property interests in the area. The methodology used will be an amalgam of the Australian/New Zealand Risk Management Standard (ANZS 4360-2004) and the Australian Standard AS 3959 Construction of Building in Bush Fire Prone areas. The Department of Conservation and Environment has a similar approach through their Wildfire Threat Analysis for land under their control in the Leeuwin Naturalist Ridge.

The Developer is prepared to work with the Community, Landowners, FESA, DEC and Bush Fire Brigades to carry out a Community Bush Fire Risk analysis and assist in the preparation of an action plan.

Road Alignment options
In the report Gracetown Development Investigation Report- Stage 1 (Koltasz Smith & Partners Feb 2000), a number of elements relating to the proposed development were investigated. This included the potential to construct a sealed access road linking the southern portion of the development to Caves Rd. As part of the investigations, a series of nine possible alternative routes were identified by Koltasz Smith. In order of
priority Options nine, eight and three were considered to be the most appropriate routs. See Diagrams 2-4.

The table below is a summary of information from the *Gracetown Development Investigation Report - Stage 1* report and outlines the advantages and disadvantages of each of the top three second access road alignments from a planning perspective only.

<table>
<thead>
<tr>
<th>Route Option</th>
<th>Advantages</th>
<th>Disadvantages</th>
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| Nine (9)     | • Alignment provides separation between the route and private property (being lot 342, and intersects Caves road approximately 3.5km south of Cowaramup Bay Road.  
• The route has low visual impact.  
• The land is suitable from a capability perspective as it would mostly involve development on the Gracetown low slopes which do not pose significant constraints to road construction.  
• The alignments propose a sympathetic alignment across the steepest contours of eastern slopes of the Ridge.  
• There is a minimal severance effect on the Leeuwin Naturaliste National Park.  
• Low fire risk in terms of escape distance and vegetation types. | • Approximately 1km of option nine (9) traverses steep topography and will require treatment to prevent stormwater erosion. |
| Eight (8)    | • Contained partially within the existing road reserve  
• Does not require the use of private property.  
• Low visual impact  
• Low fire risk | • Likely to have significant environmental constraints  
• Greater potential to sever national park. |
| Three (3)    | • Contained partially within the existing road reserve  
• Does not require the use of private property.  
• Low visual impact  
• Low fire risk | • Likely to have significant environmental constraints  
• Contained partially within the existing road reserve  
• Does not require the use of private property.  
• Low visual impact  
• Low fire risk  
• Will require extensive drainage work to eliminate possible erosion due to storm water disposal  
• Moderate visual impact due to traversing through exposed and steep slopes. |
Recommendations

It is recommended that:

- A second access road to Gracetown is to be constructed. This should not be dependent upon whether a new development proceeds given the current lack of fire management measures in the existing townsit;
- That a Community Bushfire Risk analysis be prepared in order to prepare a bush fire action plan;
- That road option nine (9) (as described in *Gracetown Development Investigation Report- Stage 1* by Koltasz Smith & Partners Feb 2000) is further considered as part of investigations into the alignment of a second access road.
Diagram 2 - 1st Priority Second Access Road alignment Option 9
Diagram 3 2nd Priority Access Road alignment Option 8
Diagram 4  3rd Priority Second Access Road alignment Option 3
Diagram 5  Passing Bay and Turn around areas Specifications of Firebreaks in Public Open Space

Passing bay measurements.

Turn around area measurements.

6.3 DWELLING CONSTRUCTION

Individual dwellings on each lot shall be designed and built to conform with:

- Bush Fire Survival Manual Guidelines;
- The Shire of Augusta Margaret River Specification and Requirements; and
- Australian Standards AS 3959.

The proposed residential area will be located on small lots varying in size from 300sq metres to 500sq metres and will be clustered as shown in Appendix A.

All dwellings will comply with the Australian Standard AS 3959-2009 “Construction of Buildings in Bush Fire Prone areas” Construction standard for buildings on the outer edge of the development will be greater than for internal dwellings. The detail in relation to the construction standard will be determined at the Subdivision stage of the development.

Community facilities such as the community hall are to provide shelter for visitors and tourists unable to leave town during an emergency. Compliance with Australian Standard AS 3959-2009 will be necessary to ensure this. The
developer and the Shire of Augusta Margaret River will be required to bring the community hall up to the required standard in order to meet this obligation. As part of the building construction for residential premises the following will be incorporated into building designs:

- Fire resistant building materials to be installed within all dwellings;
- Gutter protectors to be installed in all dwellings;
- Mandatory fire alarms to be installed internally;
- All dwellings will have fire extinguishers installed; and
- Evaporative air conditioners will not be permitted.

Copies of The Homeowners Bush Fire Survival Manual, Prepare Act Survive or other suitable documentation will be issued to each property owner by the developer on the sale of an allotment.

6.4 Building Protection Zone

As the majority of fire protection for this development is to be carried out on the outside of the development, i.e. Low fuel buffer, bush fires starting in the vegetation within the residential area is likely to be from by sparks and embers. It is proposed that:--

- A five metre building protection zone is to be established around each dwelling consisting of hand slashing of ground vegetation and the prohibition of trees will around each individual dwelling is to be established. This will form part of the Building Protection Zone.
- A twenty metre building protection zone will surround all dwellings and will be managed as public open space. Fuel loadings in this area will be managed to two tonnes/ha. Trees planted or retained in this area will be under pruned to a height of two metres. In this twenty metre building protection zone, internal roads, an external ring road, drainage areas and multiple use corridors will be established.

6.5 Hazard Separation Zone

A hazard separation zone extending forty metres from the residential area (the area to be slashed will have to be carefully selected and managed so as not to increase soil erosion in nearby sand dunes) will be mechanically slashed to 150mm to maintain fuels at four tonnes/ha. Some clumps of trees will be retained to achieve aesthetic objectives.

Most of the hazard separation zone will be located in the external Public Open Space and the external road will be part of this zone.

Possum dreys have been identified within the Hazard Separation Zone (see Appendix C for specific locations). These should be amongst those retained within the clumps of trees maintained for aesthetic objectives as described above.
6.6 External Public Open Space

An 80-100 metre Public Open Space area separating the current, proposed townsit and the Leeuwin-Naturaliste National Park is to be established. The Public Open Space is to consist of:-

- A 15 metre low fuel area (slash to four tonnes/ha) on the outside of the buffer adjoining the National Park. A four metre wide cleared trafficable firebreak is to be located on the inside of the 15 metre low fuel area. See Section A-A in Appendix A;
- Part of the Building Protection Zone may be located in this zone and the whole of the Hazard Separation zone will be located within this 15 metre low fuel zone;
- On the inside a 10-15 metre road reserve consisting of bitumen road, drainage area and footpath will be constructed;
- Passing bays are to be provided every 200 metres and turnaround areas are to be provided every 500 metres. See Diagram 5 for specifications;
- The Public Open Space will be vested with the Shire of Augusta Margaret River;
- The Developer is to maintain the Public Open Space until all lots area sold. During this time the ongoing maintenance costs will be established. A special rating system would be established to cover the cost of maintaining the low fuel buffer in perpetuity; and
- Six 4 metre wide access/firebreaks will be established from the outer firebreak to the ring road creating smaller management areas.

6.7 Multiple Use Corridors

The corridors will be established between the rows of buildings as shown in Appendix A. Multiple use corridors will contain the following fire management measures:-

- Installation of fire hydrants at strategic locations (200 metres apart);
- Internal footpaths will be a minimum of 3 metres in width and be capable of accommodating fire appliances;
- Multiple use corridors will be vested in the Shire of Augusta Margaret River which will accept ongoing management funded by a Specific Area Rating. The developer will maintain these areas until all lots are sold.

6.8 Community Education

The Developer will provide a detailed information pack to each landowner at the time of sale of a lot outlining fire protection requirements and landowner obligations.
A 70A notification is to be placed on the title of each lot to advise that they are in a bush fire prone area and that they are to comply with the fire management plan. The Developer and Shire are to facilitate fire management/protection education/information programs for all landowners on an annual basis. The Shire will be solely responsible for this program upon the sale of all lots within the new development.

6.9 Visitor Safety In The Event of a Bush Fire

Community facilities such as the community hall are to be a safe haven (Building to comply with AS 3959-2009) for visitors/tourists unable to leave the town at the time of a fire emergency. The Developer and the Shire of Augusta Margaret River are to jointly bring the community hall up to the required standard.

6.10 Water Reclamation Plant

The Water Reclamation Plant site is to have a Building Protection Zone established around the compound and along the access road with all vegetation removed from within the compound.

7.0 FIRE FIGHTING FACILITIES

7.1 Water for Fire Fighting

The existing and proposed Gracetown is to have access to a reticulated non-potable water supply. The capacity of the water tank is to be large enough to contain 300,000 litres of water for fire fighting (20 litres/second for four hours) plus domestic requirements.

This water supply will also ensure that normal fire hydrants will be supplied at a rate of 10 litres/second for four hours at the most disadvantaged fire hydrant.

All fire hydrants are to be marked with standard pole and road markings as detailed in Appendix B by the Developer

7.2 Fire Hydrants

Fire hydrants are to be located within the existing and proposed development at 200 metre intervals along roads and footpaths (new development) within the vegetation corridors. The contractor (water service provider) managing the Gracetown water supply is to be responsible for the maintenance of fire hydrants and fire hydrant markings.

7.3 Fire Service

A small light tanker is located in Gracetown with support from the Cowaramup Bush Fire Brigade for bush fire fighting. The Fire & Rescue
Service in Margaret River Townsite will respond to structural fires with support from the Cowaramup Bush Fire Brigade.

8.0 SUMMARY

8.1 Overall Fire Threat

The design of this development and the facilities constructed at the time of development are such that with implementation of this Fire Management Plan, the fire threat to persons and property within the subdivision is significantly reduced.

8.2 Property Owner's Responsibilities

To maintain the reduced level of risk and threat of fire, the owners/occupiers of lots created by this proposal will be responsible for undertaking, complying and implementing measures protecting their own assets from the threat and risk of bush fire. Home owners will be required to:

- Ensure all domestic dwellings are designed and constructed in full compliance with the requirements of the Shire of Augusta Margaret River. It is a requirement that homes are built to the AS3959-2009 “Construction of Buildings in Bush Fire Prone Areas” as detailed in Section 6;

- Maintain fuel loadings within their lot to the standard detailed in the Building Protection Zone Section 6.4;

8.3 Developer's Responsibilities

Prior to subdivision being given final approval by the WA Planning Commission the developer shall be required to carry out works as described below. Subsequent to final approval to subdivide, the developer shall have no further responsibilities in relation to the provision of fire fighting facilities on lots which pass from their ownership. The developer will be responsible for the following actions:

- Lodging a section 70A notification on each Certificate of Title proposed by this subdivision. The Notification shall alert purchasers of land and successors in title of the responsibilities of this Fire Management Plan;

- Contribute to the construction of a second access road as detailed in Section 6.2.

- Assist in the preparation of the Community Bush Fire Risk Analysis and Mitigation program.
- Establish and maintain vegetation links as detailed in Section 6.4 until the sale of all new lots;

- Establish and maintain Hazard Separation zone as detailed in Section 6.5 until the sale of all new lots;

- Establish and Maintain External Public Open Space as detailed in Section 6.6 until the sale of all new lots;

- Establish and maintain Multiple Use Corridors as detailed in Section 6.7 until the sale of all new lots;

- Develop a community education package as detailed in Section 6.8;

- Install water supply as detailed in Section 7.1

- Install fire hydrants and mark fire hydrants as detailed in Section 7.2;

- Supply a copy of this Fire Management Plan and The Homeowners Bush Fire Survival Manual to each property owner on initial sale of the allotment.

- Retain the trees within the development area that contain Western Ringtail Possum dreys (as identified in Appendix C).

- The Developer shall maintain Vegetation links, Hazard separation zones, External Public Open Space and Multiple Use Corridors utilizing established differential rates (set by the Shire) received from lot owners and made payable to the Shire.

8.4 Shire of Augusta Margaret River Responsibilities

The responsibility for compliance with the law rests with individual property owners and occupiers and the following conditions are not intended to unnecessarily transfer some to the responsibilities to the Shire of Augusta Margaret River.

The Shire of Augusta Margaret River shall be responsible for:

- Endorsing a Section 70A Notification on each Certificate of title affected by this Fire Management Plan.

- Assist with the development of a community education package as detailed in Section 6.8.

- Developing and maintaining District Fire Fighting Facilities.
- Maintaining in good order the condition of the district water tanks for fire fighting (other than the Gracetown water supply) and the apparatus for fire fighting purposes.

- Maintain Public Open Space (Sections 6.4-6.7) with funding provided by a differential rating system imposed on all lot owners by the Shire of Augusta Margaret River once all lots are sold within the development.

- Ensure continued retention of the trees within the development area that contain Western Ringtail Possum dreys (as identified in Appendix C), including during maintenance associated with this Fire Management Plan.

- The differential rates to maintain Vegetation links, Hazard separation zones, External Public Open Space and Multiple Use Corridors received by the Shire to the developer until all lots are sold. The Shire will then utilize the same funding source to undertake this maintenance post sale of newly created lots.
Appendix B Fire Hydrant Markings.

Hydrant indicator post

1.4 m

> 1 m

Hydrant box lid

Hydrant indicators post.

Aluminium lattice
Reflectorised delineators
H plate
Distance in metres

Indicates that the hydrant is on the same side of the street as the pole

Indicates that the hydrant is on the opposite side of the street as the pole
BLUE RAISED RETROREFLECTIVE PAVEMENT MARKER & HYDRANT INDICATING GUIDELINES

The implementation of the blue raised retro reflective pavement marker (RRPM’s) and new hydrant indicating regime is designed to provide greater ability for fire fighters to readily identify fire hydrant locations, particularly at night or where smoke affects visibility.

1a. TWO WAY UNSEALED ROAD

1b. SEALED UNMARKED TWO WAY ROAD

Blue raised retro-reflective pavement marker
Appendix C Possum drey locations

Western Ringtail Possum drey in POS of residential development area

Legend
- WRP drey locations
- Residential development area
- Lot 300
- Fire management area

Source: Green Ignace and McMillan Norden and Partners Surveyors Pty Ltd