BUILDING BUSHFIRE RESILIENCE IN THE GREAT SOUTHERN

SEMC STATE EMERGENCY MANAGEMENT COMMITTEE

Australian Government Department of Home Affairs

DFES Department of Fire & Emergency Services

CITY OF Albany

Shire of Plantagenet

SHIRE OF DENMARK

BIO DIVERSE SOLUTIONS

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Building bushfire resilience in communities – National strategy for disaster resilience

- "State governments and municipal councils to adopt increased or improved protective management, emergency management and advisory roles."
- Strive to recognize and understand the risks disasters pose to their own and their communities interests.
- Leaders drive development of partnerships and networks to build resilience at government, business, neighborhood and community levels.

What is the "Building Resilience In the Great Southern" [BRIGS] Project?

- The Western Australian and Commonwealth governments have a National Partnership Agreement for Natural Disaster Resilience that delivers the National Disaster Resilience Program (NDRP).
- Application was submitted to the NDRP to fund the three local governments to enhance the evacuation planning and bushfire risk mitigation strategies over 8 precincts.
- Aimed to implement sustained resilience or disaster mitigation strategies that directly benefit the WA community.
- This project reduces identified risks and closes capability gaps, in an effort to reduce future post-disaster funding needs.
- This project aided in the development of a rigorous physical risk mitigation program where possible and develops a greater understanding of bushfire risk in the community.

What is the "Building Resilience In the Great Southern" [BRIGS] Project?

8 precincts in 3 LGA's

- Goode Beach (CoA);
- Little Grove and Big Grove(CoA);
- Bayonet Head(CoA);
- Peaceful Bay (SoD);
- Ocean Beach (SoD);
- Weedon Hill (SoD);
- Kendenup (SoP); and
- Mount Barker Hill (SoP).

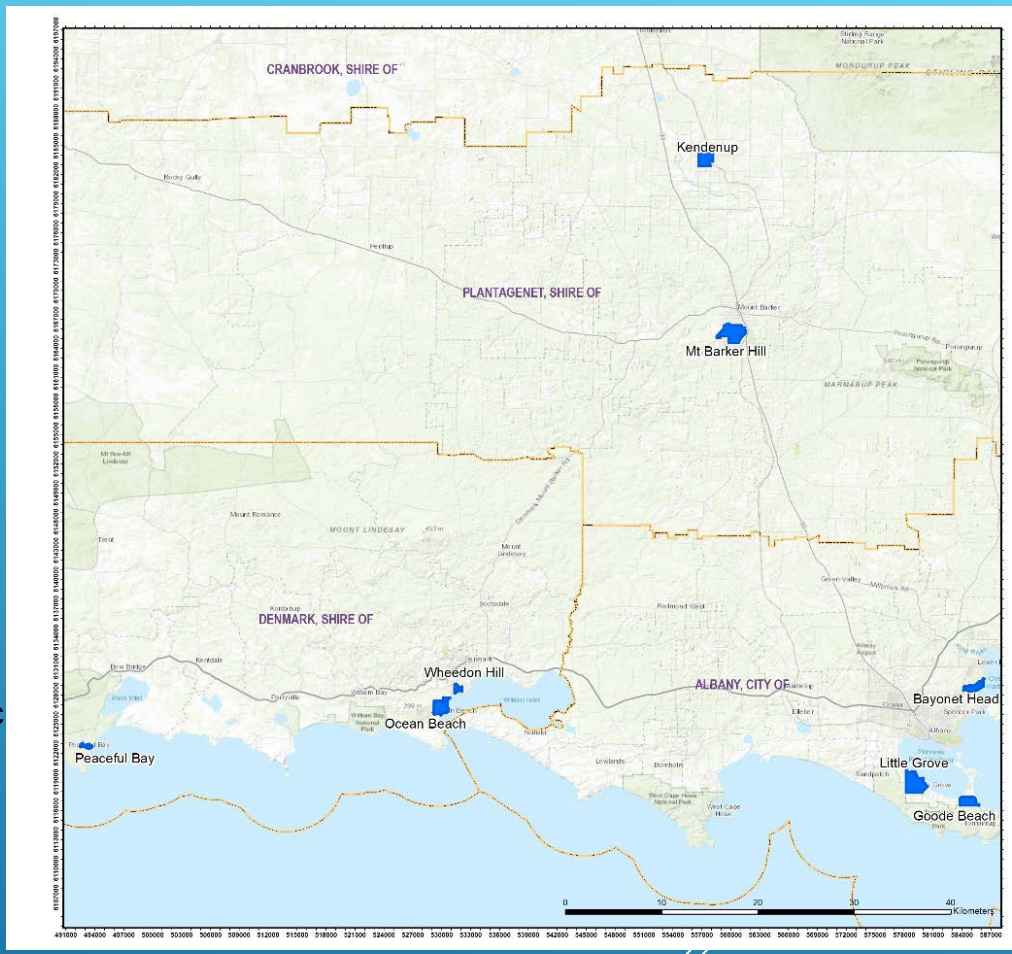
The 8 precincts identified for the project were based on the following parameters:

- High fuel loads and extreme bushfire risks;
- Limited access and egress for the communities to evacuate (one-way access);
- High population density in summer (extreme risk) period
- Legacy planning issues. Communities not consistent with the current SPP 3.7

What is the "Building Resilience In the Great Southern" [BRIGS] Project?

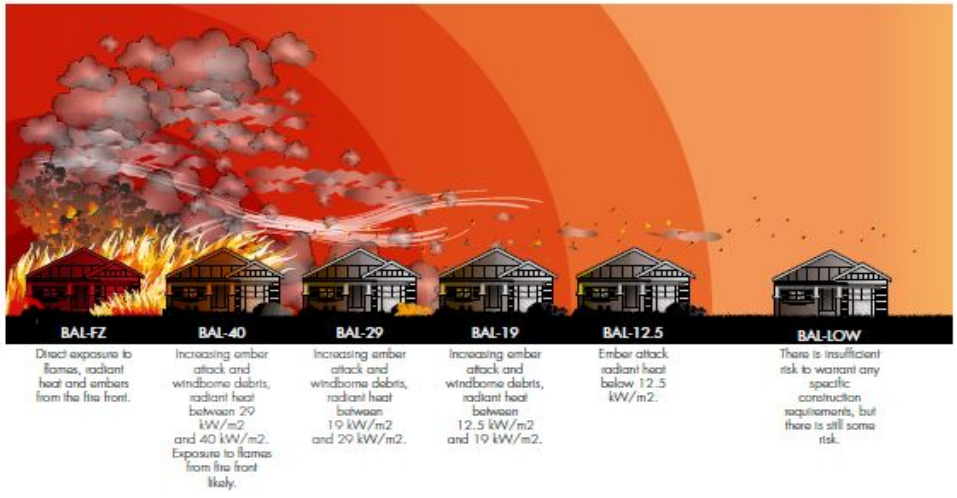
Key processes

- Applying a AS3959 BAL contouring methodological to define and map bushfire risks to our communities.
- CSIRO Spark modelling
- Identification of vulnerable communities where evacuation may be compromised.
- Identifying areas for possible community refuge. Develop Works Programs and treatment schedules with priorities developed.
- Review of gazetted fire notice in each LGA.
- Stakeholder engagement – DBCA, WCWA, DFES, LGA, DoEd,
- Public consultation – during project (in precinct, public sessions and post project through implementation).



AS3959-2018 Measures Bushfire Fuels

- AS3959 provides a measure of radiant heat flux (impact) on a building.
- AS3959 is also used as a planning tool to measure bushfire risk.
- Uses a classification system according to vegetation structure.



Plot	11, 12 & 13	Classification or Exclusion Clause	Grassland Type G

Location: To the south east and west of the subject site. Small areas internal to the precinct in residential areas which are deemed unmaintained lots.

Description: Introduced species such as Kikuyu, Phalaris, Conyza etc.

Average vegetation height: 200-300mm.

Vegetation Coverage: <10% trees.

Available fuel loading: 4.5t/ha.

Effective slope:

Plot 11: Downslope >5 to 10 deg.

Plot 12: Downslope >0 to 5 deg.

Plot 13: Flat/upslope

Photo Id 57: View looking south east of Grassland Type G (Plot 11) located off Grove Street West in private property.

Plot	5, 6, 7, 8 & 9	Classification or Exclusion Clause	Forest Type A

Location: Located throughout the precinct.

Dominant species & description: Karri, Jarrah and Marri Forest (central to site), Peppermint Forest (residential areas). Overstorey of Eucalypt Trees, Peppermints, *Callistachys lanceolatum* (Native Willow) trees with a mid-storey of juvenile trees, Acacia, Kunzea, Hibbertia, Melaleuca and Leocopogon. Understorey of Kangaroo paws, native sedges and introduced grasses and weeds. Multilayered.

Average vegetation height: 12-16m (Peppermint and J/M) 15-25 (Karri).

Vegetation Coverage: 30-70% foliage cover.

Available fuel loading: 25-35 t/ha.

Effective slope(s):
Plot 5: Flat/upslope.
Plot 6: D/S > 0 to 5 degrees.
Plot 7: D/S > 5 to 10 degrees.
Plot 8: D/S > 10 to 15 degrees.
Plot 9: D/S > 15 to 20 degrees.

Photo Id 22: View of Plot 5 Forest Type A located to the west of the precinct in crown Reserve 24747

Plot	10 cont.	Classification or Exclusion Clause	Scrub Type D

Additional Photo of Plot 10.

Photo Id 52: View looking west of Scrub Type D located in the fringing foreshore areas in the north and north east of the precinct Note height staff 2m high.

AS3959-2018 Measures Bushfire Fuels

- Once vegetation structure and slope is classified uses a matrix to determine the impact of bushfire onto a building or subject site.
- AS3959 uses a Fire Danger Index (FDI) of 80.
- When a Fire Danger Index reaches 50 the conditions are considered as “Severe”; when conditions reach 75 the conditions are considered as “Extreme”.
- A radiant heat impact of 1Kw/m2 is similar to a household electric bar heater.

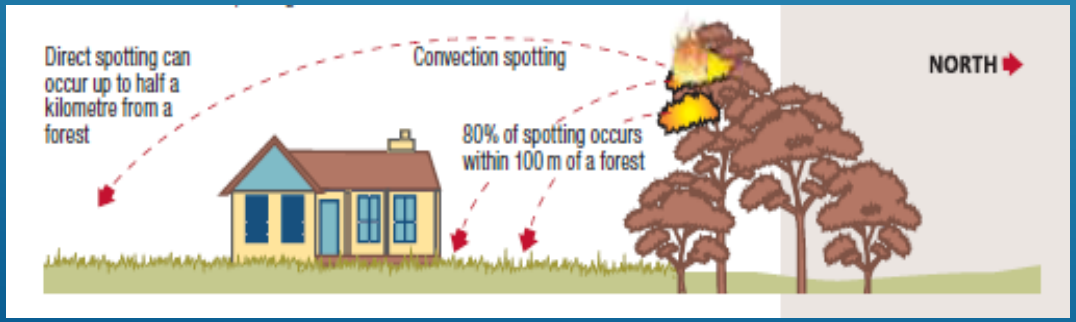


TABLE 2.5

DETERMINATION OF BUSHFIRE ATTACK LEVEL (BAL)—FDI 80 (1090 K)

Vegetation classification	BALs				
	BAL—FZ	BAL—40	BAL—29	BAL—19	BAL—12.5
	Distance (m) of the site from the predominant vegetation class				
	All upslopes and flat land (0 degrees)				
A. Forest	<16	16–<21	21–<31	31–<42	42–<100
B. Woodland	<10	10–<14	14–<20	20–<29	29–<100
C. Shrubland	<7	7–<9	9–<13	13–<19	19–<100
D. Scrub	<10	10–<13	13–<19	19–<27	27–<100
E. Mallee/Mulga	<6	6–<8	8–<12	12–<17	17–<100
F. Rainforest	<6	6–<9	9–<13	13–<19	19–<100
G. Grassland	<6	6–<8	8–<12	12–<17	17–<50
	Downslope >0 to 5 degrees				
A. Forest	<20	20–<27	27–<37	37–<50	50–<100
B. Woodland	<13	13–<17	17–<25	25–<35	35–<100
C. Shrubland	<7	7–<10	10–<15	15–<22	22–<100
D. Scrub	<11	11–<15	15–<22	22–<31	31–<100
E. Mallee/Mulga	<7	7–<9	9–<13	13–<20	20–<100
F. Rainforest	<8	8–<11	11–<17	17–<24	24–<100
G. Grassland	<7	7–<9	9–<14	14–<20	20–<50
	Downslope >5 to 10 degrees				
A. Forest	<26	26–<33	33–<46	46–<61	61–<100
B. Woodland	<16	16–<22	22–<31	31–<43	43–<100
C. Shrubland	<8	8–<11	11–<17	17–<25	25–<100
D. Scrub	<12	12–<17	17–<24	24–<35	35–<100
E. Mallee/Mulga	<7	7–<10	10–<15	15–<23	23–<100
F. Rainforest	<11	11–<15	15–<22	22–<31	31–<100
G. Grassland	<8	8–<10	10–<16	16–<23	23–<50
	Downslope >10 to 15 degrees				
A. Forest	<33	33–<42	42–<56	56–<73	73–<100
B. Woodland	<21	21–<28	28–<39	39–<53	53–<100
C. Shrubland	<9	9–<13	13–<19	19–<28	28–<100
D. Scrub	<14	14–<19	19–<28	28–<39	39–<100
E. Mallee/Mulga	<8	8–<11	11–<18	18–<26	26–<100
F. Rainforest	<14	14–<19	19–<28	28–<39	39–<100
G. Grassland	<9	9–<12	12–<18	18–<26	26–<50
	Downslope >15 to 20 degrees				
A. Forest	<42	42–<52	52–<68	68–<87	87–<100
B. Woodland	<27	27–<35	35–<48	48–<64	64–<100
C. Shrubland	<10	10–<15	15–<22	22–<31	31–<100
D. Scrub	<15	15–<21	21–<31	31–<43	43–<100
E. Mallee/Mulga	<9	9–<13	13–<20	20–<29	29–<100
F. Rainforest	<18	18–<25	25–<36	36–<48	48–<100
G. Grassland	<10	10–<14	14–<21	21–<30	30–<50

How do we get people out

“Bushfire fatality data from 260 fire events from 1901 to 2011 analysed by CSIRO, shows that whilst late evacuation represents the primary activity taken at the time of death, there is a rising trend of fatalities occurring within structures (sheltering in place)”

Need to:

- Examine evacuation travel times and routes. Bring together studies already done and build on what we don’t know.
- If route justified do we have community refuge?
- Is our community prepared?
- Summer visitors prepared? Absentee land owners?

Little Grove Precinct

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BIO DIVERSE SOLUTIONS

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Overview Map Scale 1:100,000

Legend

- Subject Site
- Cadastre

Scale
1:10,000 @ A3
GDA MGA 94 Zone 50

Data Sources
Aerial Imagery: WA Now, Landgate Subscription Imagery
Cadastre, Relief Contours and Roads: Landgate 2017
IRIS Road Network: Main Roads Western Australia 2017
Overview Map: World Topographic map service, ESRI 2012

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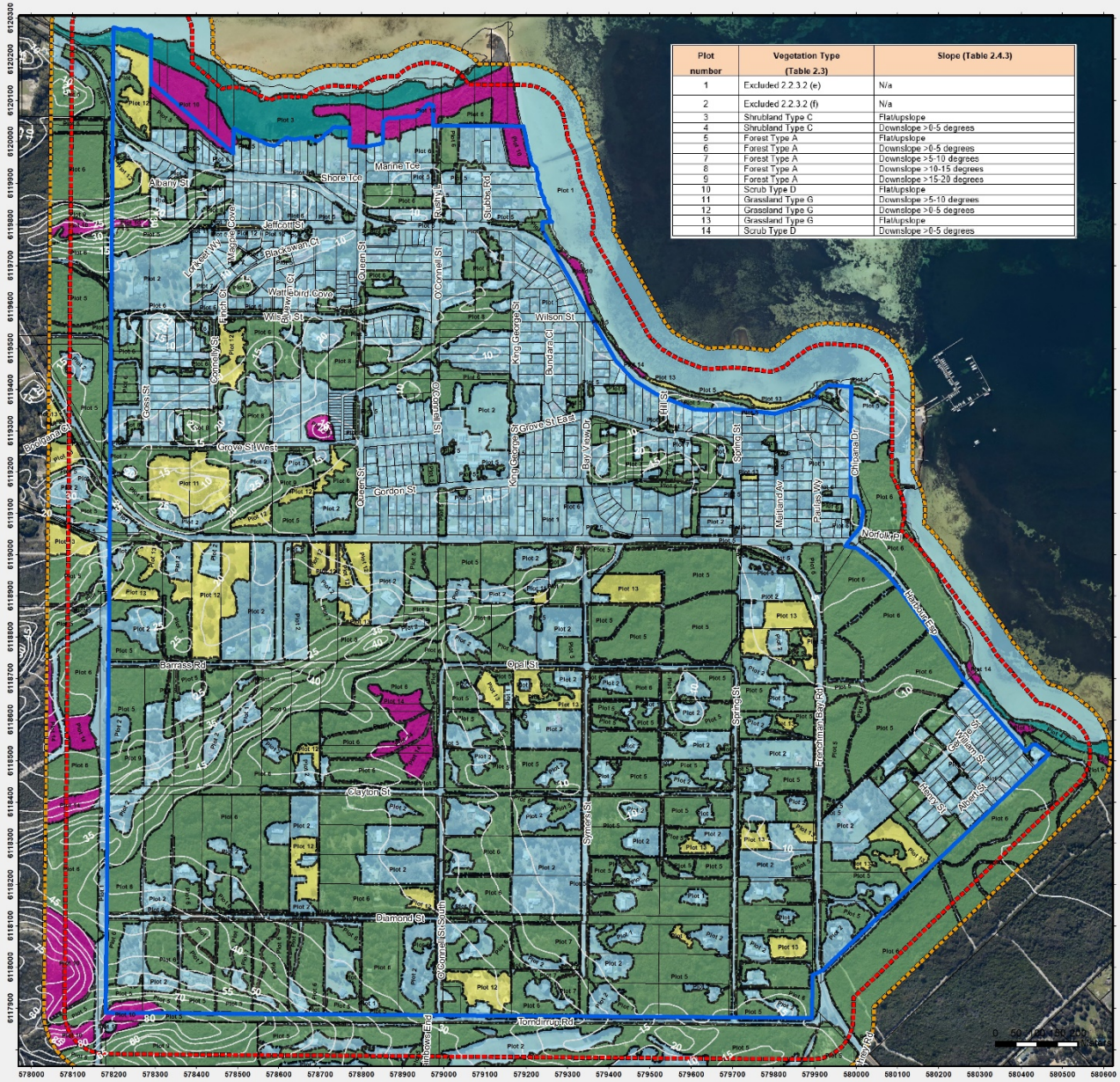
City of Albany
Little Grove Precinct
Albany, WA 6330

Figure 1. Location Plan

BAL Assessor	*QA Check*	*Drawn by*
KK	BT	SA
STATUS	*FILE*	*DATE*
FINAL	DFES001	30/10/2019

Vegetation Mapping Little Grove Precinct to AS3959



Plot number	Vegetation Type (Table 2.3)	Slope (Table 2.4.3)
1	Excluded 2.2.3.2 (e)	N/a
2	Excluded 2.2.3.2 (f)	N/a
3	Shrubland Type C	Flat/upslope
4	Shrubland Type C	Downslope >0-5 degrees
5	Forest Type A	Flat/upslope
6	Forest Type A	Downslope >0-5 degrees
7	Forest Type A	Downslope >5-10 degrees
8	Forest Type A	Downslope >10-15 degrees
9	Forest Type A	Downslope >15-20 degrees
10	Scrub Type D	Flat/upslope
11	Grassland Type G	Downslope >5-10 degrees
12	Grassland Type G	Downslope >0-5 degrees
13	Grassland Type G	Flat/upslope
14	Scrub Type D	Downslope >0-5 degrees

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Overview Map Scale 1:100,000

Legend

- Subject Site
- 100m Assessment Boundary
- 150m Assessment Boundary
- Cadastre
- 5m Contours

Vegetation

- Forest Type A
- Woodland Type B
- Shrubland Type C
- Scrub Type D
- Grassland Type G
- Low fuel or non vegetated 2.2.3.2

Scale
1:9,000 @ A3
GDA MGA 94 Zone 50

Data Sources
Aerial Imagery: WA Now, Landgate Subscription Imagery
Cadastre, Relief Contours and Roads: Landgate 2017
IRIS Road Network: Main Roads Western Australia 2017
Overview Map: World Topographic map service, ESRI 2012

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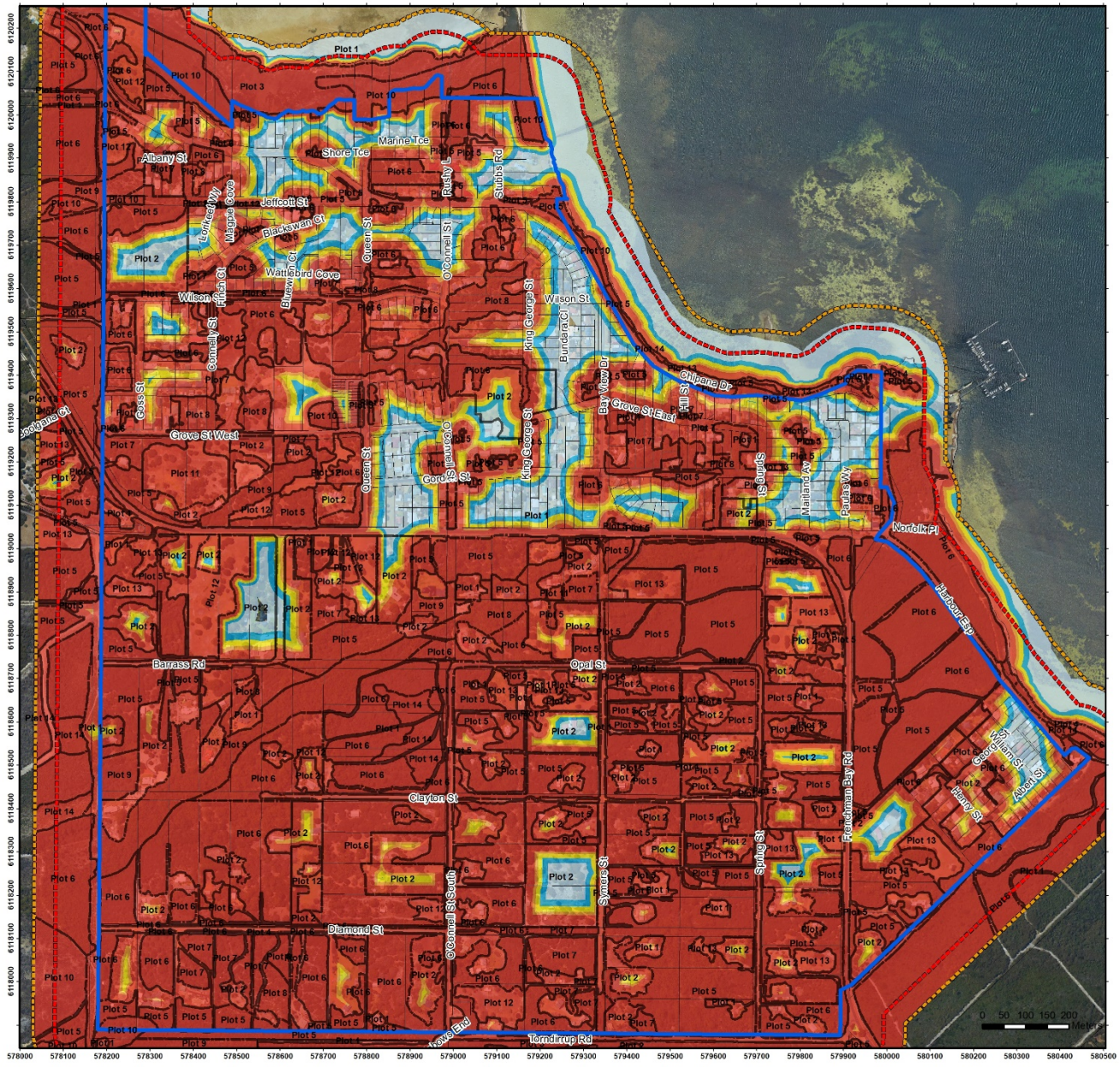
Vegetation Classes

BAL Assessor	QA Check	Drawn by
KK	BT	SA
STATUS	**FILE**	**DATE**
FINAL	DFES001	11/02/2020

BAL Contour Plan – Little Grove Precinct



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Overview Map Scale 1:100,000

Legend

- Subject Site
- 100m Assessment Boundary
- 150m Assessment Boundary
- Cadastre

BAL Contours

- BAL-FZ
- BAL-40
- BAL-29
- BAL-19
- BAL-12.5
- BAL-LOW

Scale
1:8,500 @ A3
GDA MGA 94 Zone 50

Data Sources
Aerial Imagery: WA Now, Landgate Subscription Imagery
Cadastre, Relief Contours and Roads: Landgate 2017
IRIS Road Network: Main Roads Western Australia 2017
Overview Map: World Topographic map service, ESRI 2012

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Figure 7. BAL Contours

BAL Assessor	QA Check	Drawn by
KK	BT	SA
STATUS	FILE	DATE
FINAL	DFES001	11/02/2020

Works Program Mapping

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Overview Map Scale 1:100,000

Legend

- Subject Site
- Freehold Less than 4000m² - Fuel reduce (FMN)
- APZ
- Existing Dwelling
- Public Drinking Water Supply (PDWS)
- Critical Asset
- Prescribed Burn
- Fuel Reduce
- Threatened and Priority Flora

Scale
1:9,000 @ A3
GDA MGA 94 Zone 50

Data Sources
Aerial Imagery: WA Now, Landgate Subscription Imagery
Cadastre, Relief Contours and Roads: Landgate 2017
IRIS Road Network: Main Roads Western Australia 2017
Overview Map: World Topographic map service, ESRI 2012

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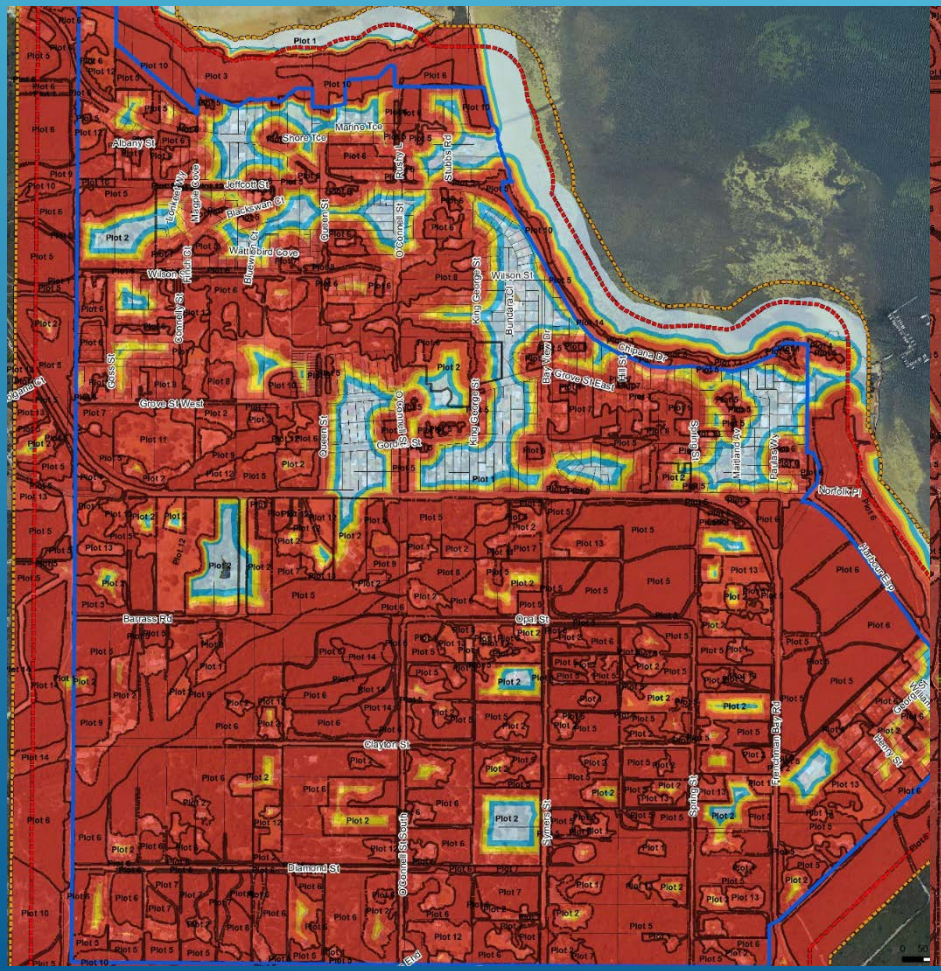
Figure 8. Works Program

BAL Assessor	QA Check	Drawn by
KK	BT	SA
STATUS	FILE	DATE
FINAL	DFES001	22/04/2020

BAL Contour Plan Pre & Post Program of Works

- Applying the CoA Fire Management Notice to the precinct on private property does provide for safer areas in the precinct
- Road reserves contribute to the bushfire risk, however the model is conservative and overestimates the impact. Caution!
- Impacts are seen throughout the precinct, biggest change is in the northern areas of the precinct.
- Applying the FMN does not get BAL 29 on all lots due to slope, most evident in larger lots in the south of the precinct.



Access and Water

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Overview Map Scale 1:100,000

Legend

- Subject Site
- Cadastre
- Hydrants
- Water Point (Tank Supply, Future)
- Water Pump Station
- Fire Service Access (FSA)
- Emergency Access Way (EAW)
- Emergency Access Routes (EAR)
- Dead End Road
- New Public Road
- Turn Around Area
- Water Point (Tank Supply, Future)
- Public Drinking Water Supply (PDWS)
- Vulnerable Land Use

Scale
1:10,000@ A3
GDA MGA 94 Zone 50

Data Sources
Aerial Imagery: WA Now, Landgate Subscription Imagery
Cadastre, Relief Contours and Roads: Landgate 2017
IRIS Road Network: Main Roads Western Australia 2017
Overview Map: World Topographic map service, ESRI 2012

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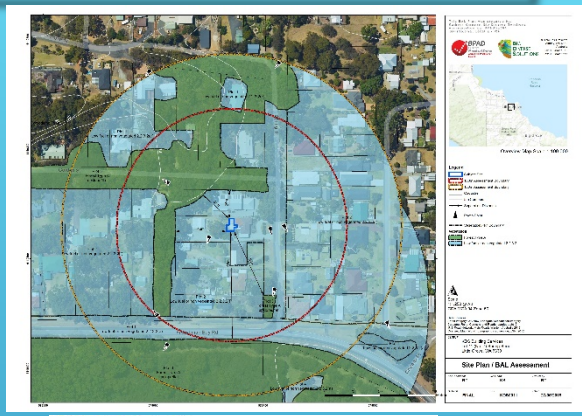
Albany, WA 6330

Figure 10. Access and Water

BAL Assessor	QA Check	Drawn by
KK	SA	BT
STATUS	FILE	DATE
FINAL	DFES001	17/04/2020

Program of Works

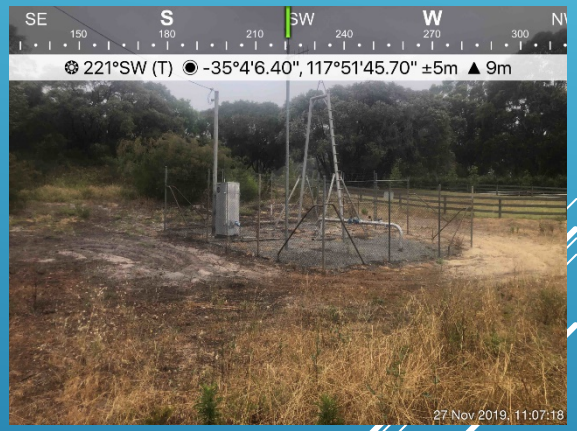
- Applying the CoA Fire Management Notice to the precinct on private property
- Retrofitting buildings within the precinct to BAL and AS3959.
- Undertake individual BAL assessments on dwellings to install a compliant APZ associated with BAL-29 or less and AS3959 setbacks/APZ area..
- Undertake systematic review of the FMN.
- Mechanical fuel reduction in road reserves in Emergency Access Routes to assist in safe evacuation and egress into and exiting the precinct.
- Government agencies and private land owners (larger special residential lots) to consider small, cool burns to assist reduction of fuel loads on private property/reserves and managing of fuels adjacent to other residents
- A regular maintenance regime on all internal public roads, mowing verges, trimming overhead branches and all powerlines.
- Linking future public roads, assigning Emergency Access Routes, Emergency Access Ways and Fire Service Access Routes for assisting in rapid flow of traffic in a bushfire emergency.
- Upgrading and/or maintaining access to a minimum of trafficable standards and ensuring turnaround areas are provided to WAPC guidelines technical standards.
- Investigate through Mitigation Activities Funding arrangements (MAF) opportunities to link the public road network.
- Linking public roads and FSA's - Bayview Drive to Frenchman Bay Road; Bayview to Chipana Dr Frenchman Bay Road; Gordon Street (Queen to Bayview) near School (Vulnerable land use); Wilson Street, Grove Street West to Queen Street; Symer Street to Opal Street to O'Connell Street South to Torndirrup Road; Symer Street to Opal Street to Spring Street to Torndirrup Road; and Harbour Esplanade to Chipana Drive.



Water.. Do we have it when we need it?

Precinct	Water infrastructure	Capacity	Location	Comments
Little Grove	2 Service Tanks 2 Reservoir	225m3 22500m3	Frenchman Bay Road	Supply from Borefeild to Torndirrup transfer station for Albany city water supply. Loose this supply, no water supply to Albany. Albany has three days storage for general supply.

- Water sources into the precinct are via a pipe and gravitated tank network into the reticulated scheme pipe and hydrant network.
- As power outages are anticipated it can be assumed these primary sources may be unavailable during a large fire event.
- A model for water supply for bushfire preparedness is outlined in the proposed PACE model below:



PACE

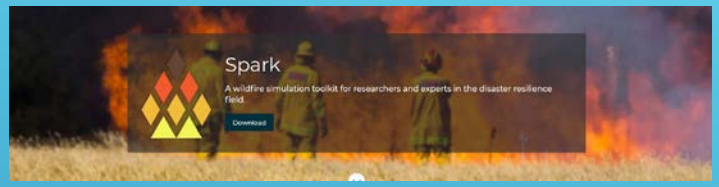
Primary: Reticulation scheme through hydrant supply

Alternative: South Coast brigade fire shed (install new 50,000L Reserve), New tank supply at Golf Course entry near Torndirrup Road and Frenchman Bay Road intersection. WCWA Reserve 30424 adjacent to existing bore, Lot 78 Spring Street adjacent to existing bore

Contingency: Torndirrup NP rangers (install new 120,000L reserve, see Goode Beach precinct report), Limeburners Creek – permanent supply identified pump/pipe connections to Standpipe. Isolated form reticulated scheme supply.

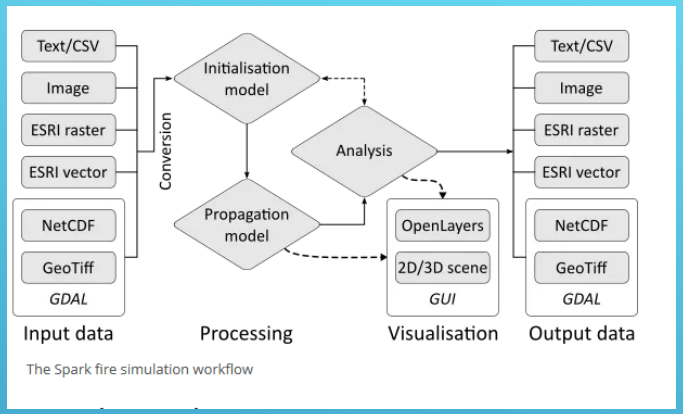
Emergency: Princess Royal harbour, private tank supply on private property (minimum 10,000L standalone supply at each property, camlock fittings).

CSIRO SPARK Modelling

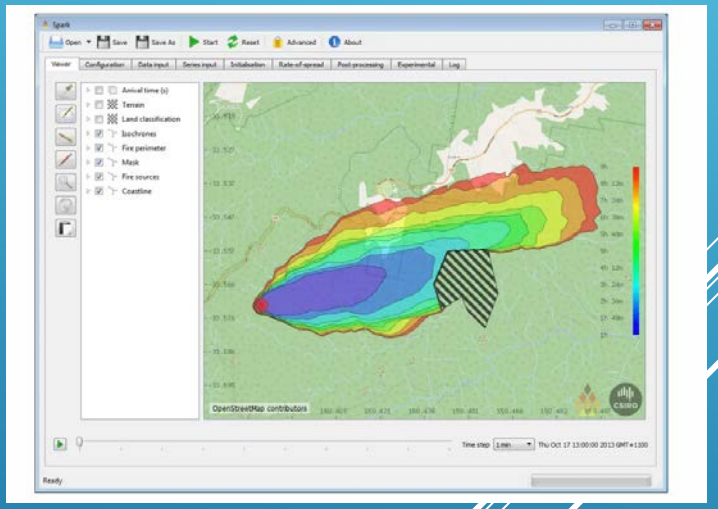


SPARK is s system developed by CSIRO that enables the simulation of hours of fire spread at a landscape scale.

- System based on a level set propagation model allowing simulation of any number of distinct fire fronts.
- BRIGS used SPARK to assess the likelihood and consequence of bushfire attack on life and property.
- The inputs associated with FFDI 80 for each wind direction (Relative Humidity of 11%, Temperature of 41.8°C, Wind speed of 40.1 km/h and Drought factor of 9).
- 5km Broadscale Vegetation mapping undertaken by BDS.
- Undertaken on each precinct for
  - Landscape risk – how large is the bushfire catchment of the precinct;
  - Locality risk – quantity and degree of the bushfire hazard;
  - Building risk – AS3959 to assess amount of buildings at risk; and
  - Analysis of evacuation and refuge options – safer place options within the precinct based on a radiant heat flux of ≤.10kW/m^2.
- Three directions were selected ESE, SW and NNW.- were selected after assessing Bureau of Meteorology (BoM) weather data for Albany (Station 9500) and the data available from the National Historical Fire Weather Dataset (Lucas 2010) for the Albany weather station.

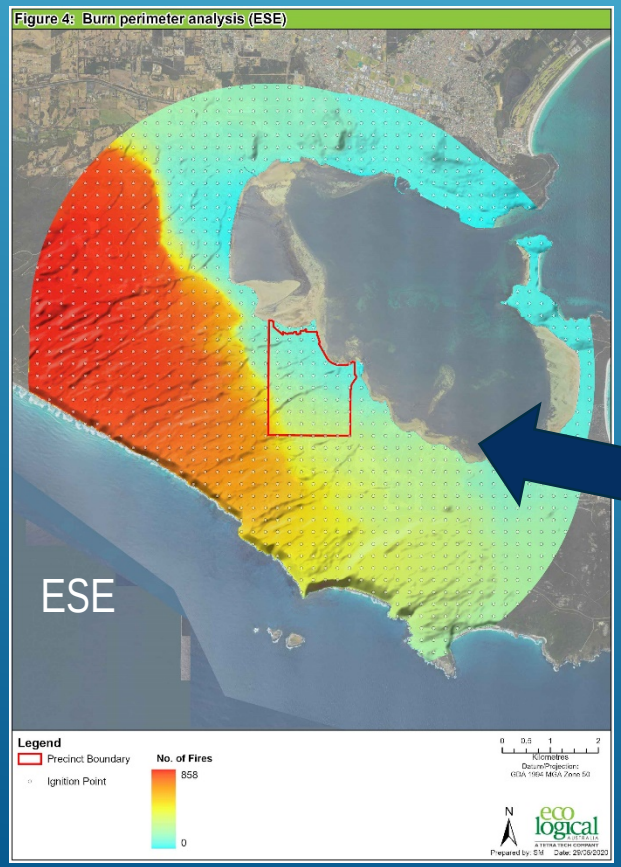


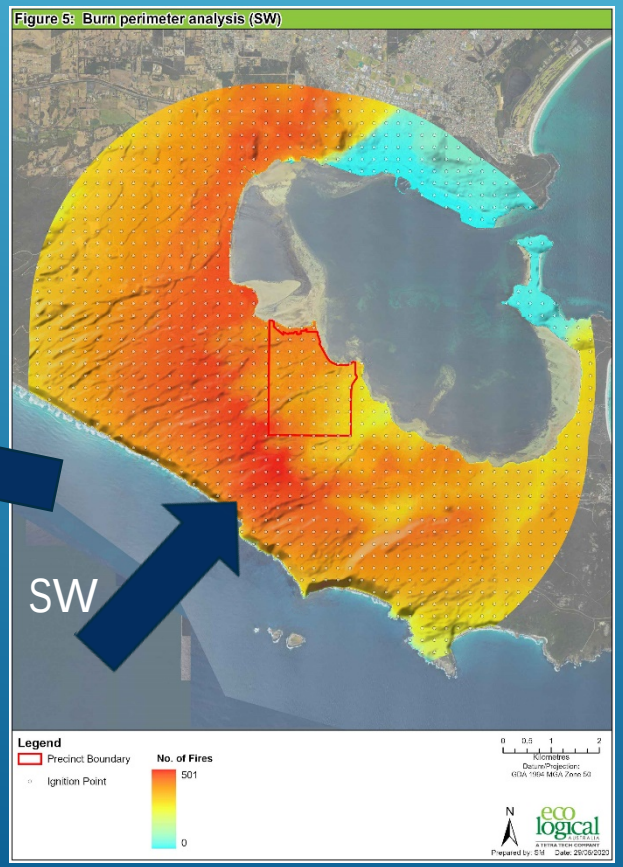
The Spark fire simulation workflow

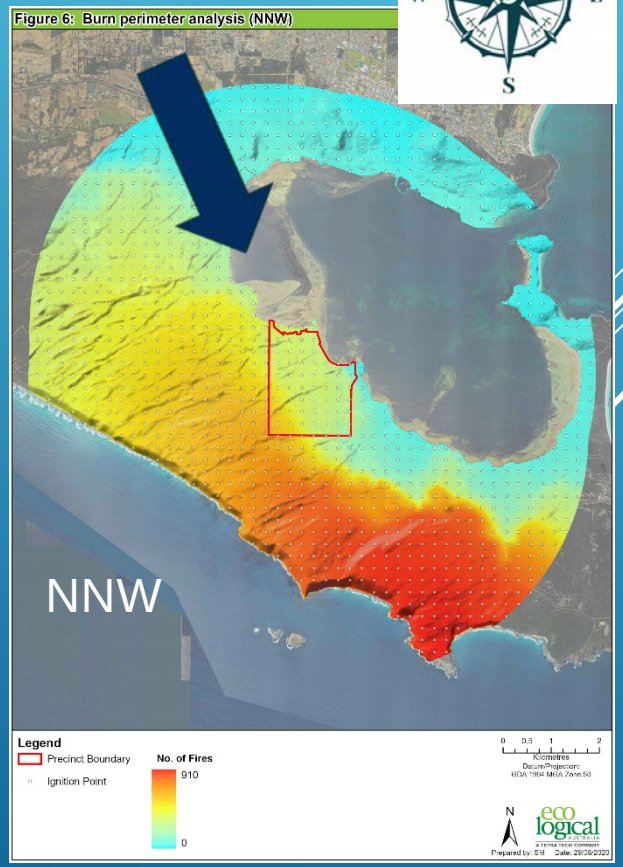


CSIRO – SPARK burn perimeter analysis

- The precinct is most at risk from fires spreading under an NW or SW wind.
- The maximum number of fires potentially impacting buildings within the precinct ranged from 480 to 636 under the three assessed wind directions with fires spreading under a NNW wind resulting in the largest impact to the precinct.
- Fires in the landscape have the potential to be very fast moving, when associated with grass and shrub/scrub fires.
- Large, vegetated areas surround the precinct to the southwest with connectivity to the north-northwest.







CSIRO – SPARK bushfire rate of spread analysis

- Assesses the potential bushfire spread and speed from different bushfire attack scenarios.
- Provides insights into the potential time to impact of assets within the precinct as well as the road network providing access.
- Shows fires spreading under SW and NNW winds pose the greatest risk to the precinct
- Fast ‘bands’ related to the wind direction, topography of the land and grassland vegetation.
- The large vegetated areas within Torndirrup National Park to the south to the west of the precinct that could facilitate rapid bushfire spread into the precinct.
- The potential for the single access route from the precinct (Frenchman Bay Road) to be compromised under fires spreading under NNW winds, thereby compromising evacuation to Albany to the north.

Figure 7: Bushfire rate of spread analysis (ESE)

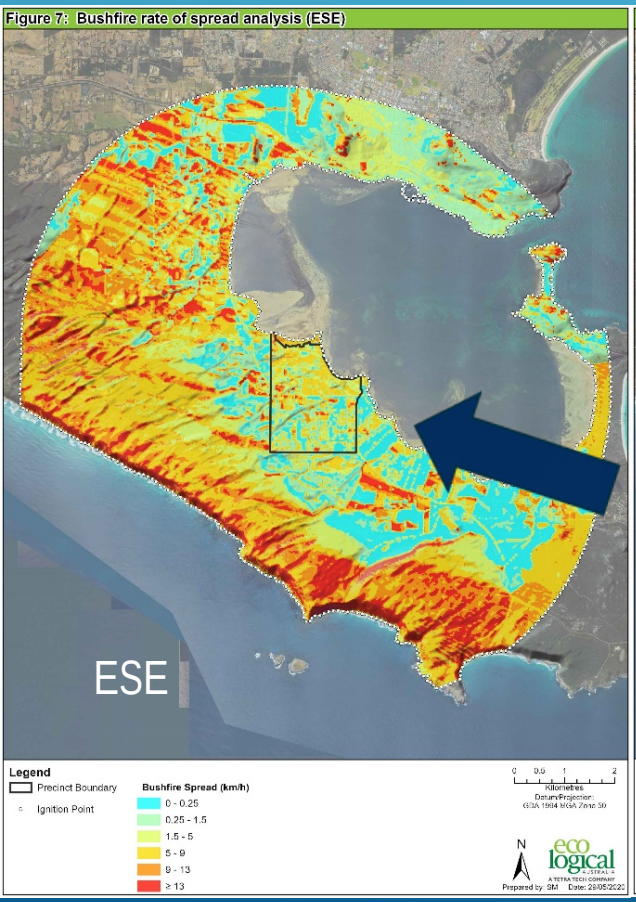


Figure 8: Bushfire rate of spread analysis (SW)

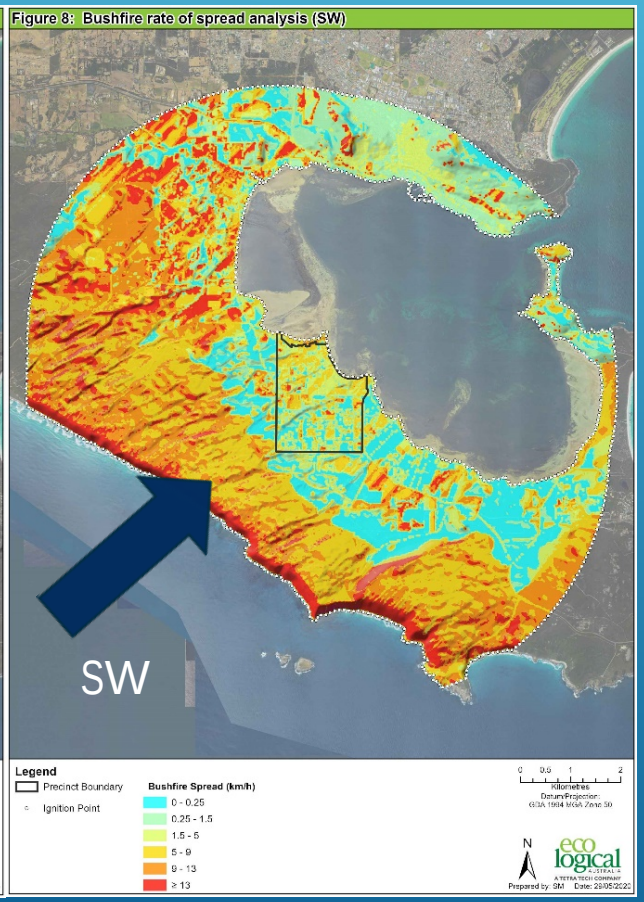
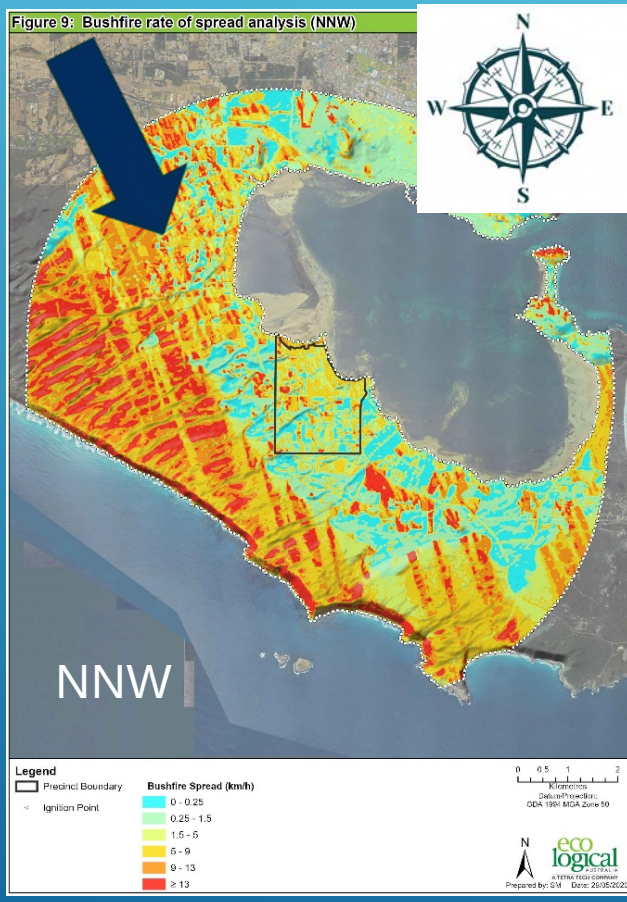


Figure 9: Bushfire rate of spread analysis (NNW)



Locality risk for the Precinct – Bushfire intensity

- To assess the quantity and degree of bushfire hazard in the immediate locality of the buildings associated with the precinct as a measure of the increased potential for more severe bushfire attack.
- Bushfire intensity is a function of the heat yield of fuel, rate of spread and fuel load.
- Fires spreading under a SW wind are modelled to potentially expose buildings within the precinct to the highest bushfire intensity (on average). and this result is attributable to the patterning of vegetation to the southwest of the precinct which comprises large areas of grassland vegetation abutting the precinct (fast rate of spread and moderate fuels).
- Potential bushfire intensity from bushfire spreading under NNW wind also has high bushfire intensity, , including in the area immediately prior to the precinct, indicating the potential for more severe bushfire attack to be experienced at the interface.
- In general terms, the results indicate that more intense bushfire is possible in the areas immediately north and south of the precinct, therefore indicating the possibilities of severe bushfire attack at the interfaces of the precinct.

ESE

NNW

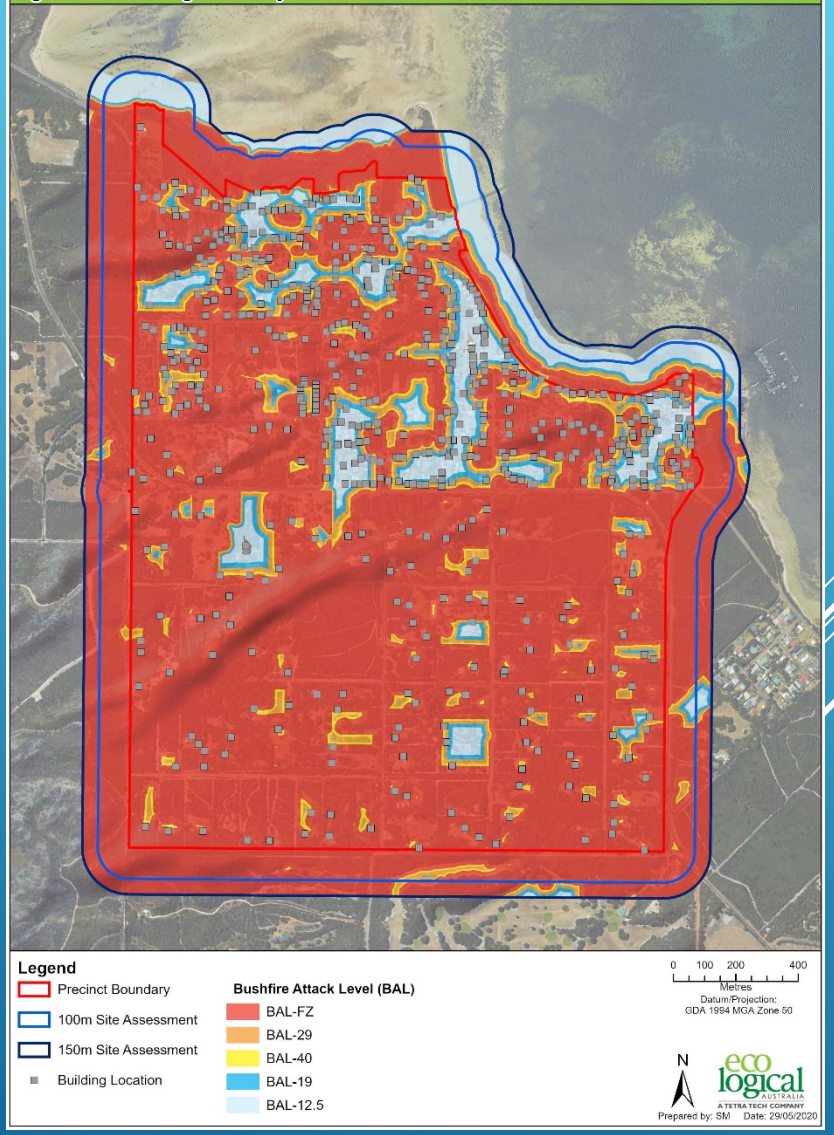
SW

Building risk assessment

- The majority of buildings within the precinct (approx. 84%) occur within areas potentially subject to BAL-FZ (i.e. flame zone) and no buildings were rated as BAL-LOW attributable to the large amount of forest vegetation within and surrounding the precinct
- Regular maintenance of vegetation on private properties as per requirements of all private property owners under the City of Albany 2019/2020 Firebreak and Fuel Management Notice (SoD 2019; and
- Fuel reduction along road reserves would likely result in a major reduction of building risk.
- The requirement for all buildings to be surrounded by an Asset Protection Zone would likely lead to a major reduction in building risk.

BAL Rating	Number of buildings	% of Buildings
BAL-FZ	371	84%
BAL-40	24	5%
BAL-29	24	5%
BAL-19	12	3%
BAL-12.5	10	2%
BAL-LOW	0	0
BAL-LOW (100-300 m from hazard)	0	0
Grand Total	**441**	**100%**

Figure 13: Building risk analysis

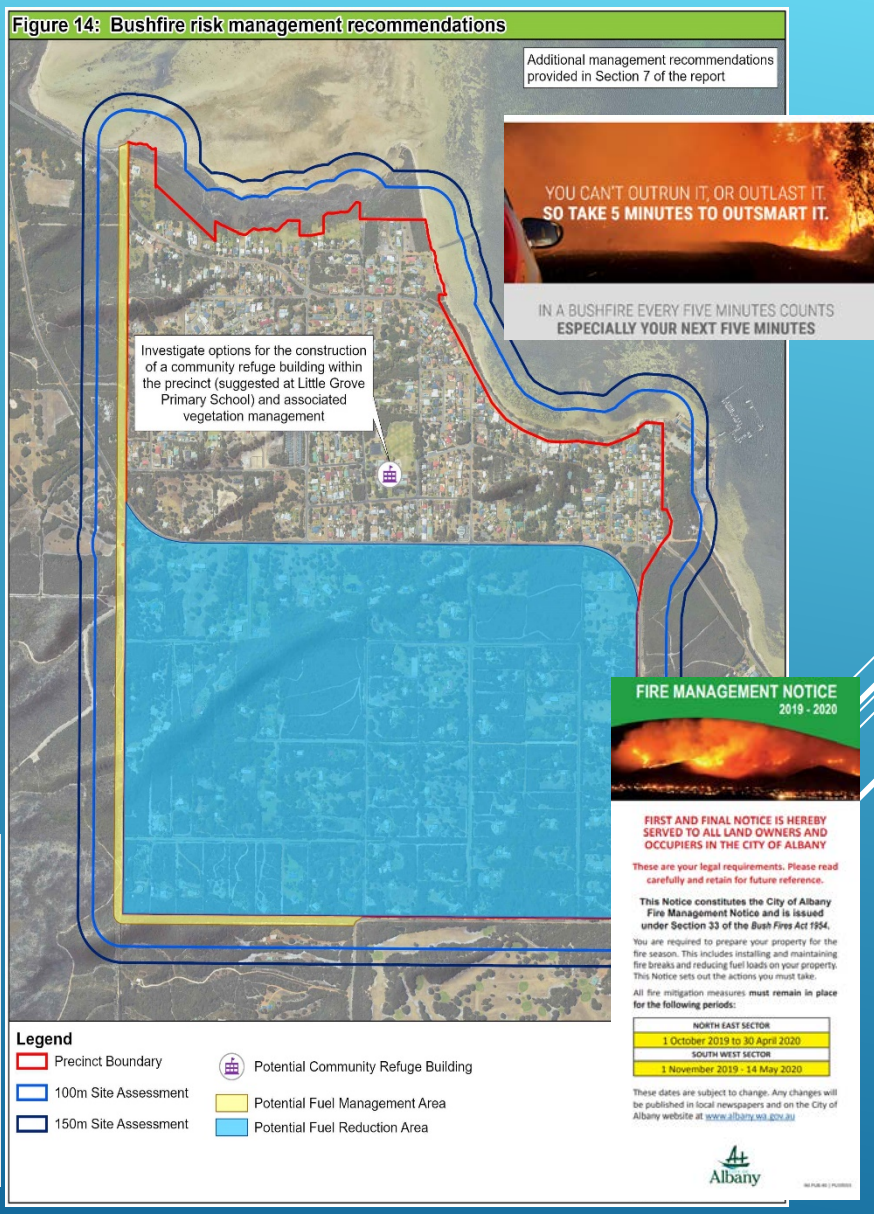


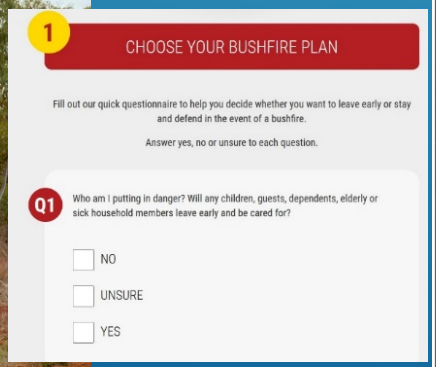
Analysis of evacuation and refuge options

- Early evacuation from the precinct to Albany is likely to be the safest option available to residents and visitors. The distance from the precinct to Albany is approximately 11.5 km travelling north on Frenchman Bay Road.
- Travel time by road is expected to take approximately 13 minutes with minimal traffic.
- Single access route to the off-precinct evacuation location, early evacuation, well in advance of a bushfire is recommended.
- Majority of houses within the precinct are old housing stock, and not built to AS3959-2018 (or previous versions). As such, the safety of an on-site sheltering option is not deemed to be high, in most instances. However, sheltering on-site in a well-prepared and defendable property is preferable to being caught out in the open.

On-precinct evacuation

- The analysis of safer place refuge options did not identify any areas of a suitable size within the precinct that could currently be used as a refuge based on the radiant heat flux thresholds.
- Investigate options for construction of community refuge building within the precinct (suggested location at Little Grove Primary School);
- Early evacuation to Albany well in advance of a bushfire is strongly recommended.
- Houses not built to AS3959 are not considered a safe sheltering option.
- Homeowners need awareness of the bushfire risk they are exposed to and comply with the CoA 2019/2020 Annual Bush Fire Mitigation Notice (CoA 2019).
- Residents should be encouraged to prepare their own bushfire survival plan.





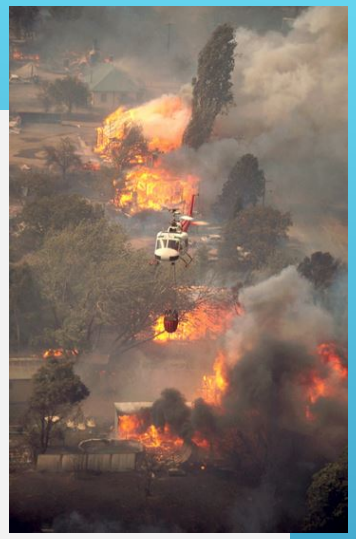
Cost

- Community cost post fire: Trauma, Re-establishment costs and time to rebuild.

  "Canberra suffered not just economic loss but significant social devastation. The first person to suffer from the smoke was a 61-year old man in Duffy. He died of asphyxiation fighting the fire in his backyard. Tragically there were also three more to follow, among them an 83-year-old woman and a 37-year-old woman. Many people were affected by depression, particularly those who had lost their homes in the fires. The community began to question the lack of preparation for the fires and the total confusion at the time."

- *LGA recovery cost: rebuilding, cost to government.*
- *Personal cost: trauma and rebuilding.*

The red indicates the families and homes destroyed in Duffy



Stakeholder assistance..

Priority and ranking No	Implementation Action	Agency
1	Assist with funding options to private landowners to retrofitting dwellings to BAL and AS3959.	DFES/SEMC & DoHA (fed)
2	Assist with funding options to private landowners to undertake individual BAL assessments on dwellings to install a compliant APZ associated with BAL-29 or less (where able to achieve) and AS3959 setbacks/APZ area.	
3	Consider small fuel reduction burns close to the community in DBCA managed reserves to assist with fire fighter protection and suppression activities. CoA Burn Program shown in conjunction with DBCA burn plans.	DBCA
4	Investigate options for construction of community on precinct refuge area within the precinct and associated vegetation management. Federal assistance may be required.	DFES/SEMC & DoHA (fed)
5	WCWA assist the LGA by providing baseline mapping of water supply to the precinct/greater town to assist with planning, mitigation and suppression activities.	WCWA
6	DPLH assist through provisions of advice to the LGA with planning strategies and schemes to ensure that SPP3.7 is applied consistently throughout the precinct.	DPLH
6	Consideration to updating the DFES Homeowner's Bushfire Survival Manual (DFES 2014) or similar public available information to assist with current public available information and dissemination from the LGA.	DFES
7	LEMC to assist with Investigation of options for the construction or designation of an on-precinct community refuge (or safer place) building and associated vegetation management.	LEMC
8	Assist with approvals of bushfire emergency access and egress onto state owned roads for alternative access from cul-de-sac roads/precincts.	MRWA
9	Continue to undertake vegetation management to 20m APZ (low fuel) around all water and critical infrastructure within the precinct as shown on Figure 8. Seek adjacent neighbour compliance to meet 20m protection zone where applicable.	DFES, LGA & Telstra
10	Review Local Planning Strategy to identify key areas of upgrades to critical infrastructure funding especially in regards to water, access (roads) and storage of hazardous substances (fuel etc).	DPLH
11	DPLH assist through provisions of advice to the LGA with planning strategies and schemes to ensure that SPP3.7 is applied consistently throughout the precinct.	DPLH
12	Assist with approvals of bushfire emergency access and egress onto state owned roads for alternative access from cul-de-sac roads/precincts.	MRWA
13	Continue to undertake vegetation management to 20m APZ (low fuel) around all water infrastructure within the precinct as shown on Figure 8. Seek adjacent neighbour compliance to meet 20m protection zone where applicable.	WCWA

Building bushfire resilience in communities – National strategy for disaster resilience

- "State governments and municipal councils to adopt increased or improved protective management, emergency management and advisory roles."
- Strive to recognize and understand the risks disasters pose to their own and their communities interests.
- Leaders drive development of partnerships and networks to build resilience at government, business, neighborhood and community levels.
- We have local, state and federal government listening….
- This is your community/precinct and the bushfire risks affect you….

Where to from here..

- How to establish Asset Protection Zones and biological values – talks with the community.
- Stakeholder working groups – from established BRIGS group.
- Bushfire ready group developed.
- Mitigation Activities funding priorities.
- Fire control notice review.
- Continue engaging with community/precinct.

Photo: R.Hedderwick, 2020

Where to from here…lets talk about it its your community..

- Questions
- Suggestions
- Funding options
- Bushfire ready groups
- Stakeholders not considered?
- Next steps from City of Albany
- Next fire season 2020/21 preparations
- Feedback on the project

CITY OF Albany

SEMC
STATE EMERGENCY MANAGEMENT COMMITTEE

Australian Government
Department of Home Affairs

DFES
Department of Fire & Emergency Services

BIO DIVERSE SOLUTIONS

eco logical AUSTRALIA
A TETRA TECH COMPANY