ENVIRONMENTAL IMPACT STATEMENT:

19.Jupiter Wind EIS_ Appendix N_ Bushfire Risk Assessment

My responses to this report:

1. **Page 3 – Disclaimer**

"... This report was prepared in accordance with the contracted scope of services for the specific purpose stated and subject to the applicable cost, time and other constraints. In preparing this report, ERM relied on: (a) client/third party information which was not verified by ERM except to the extent required by the scope of services,and ERM does not accept responsibility for omissions or inaccuracies in the client/third party information; ....."

Comment – If ERM has used 3rd parties for information which they cannot guarantee the accuracy of, then this information should be removed from the report and only included when it's accuracy has been confirmed. Not to do so would mean the Department of Planning would be making decisions based on unqualified information.

2. **Identification of Assets – Figure 4.1 pp16/17**

Comment – Non-participating households 5-10kms should be included in this map as they are at risk should a fire "get away".

Recent fires (Sandhills Fire January 2013, Lower Boro Fire December 2016 and Curandooley Fire January 2017) each travelled great distances (Curandooley travelled 18kms). Each of these were categorised as State Government's section 44 emergencies. They each required aerial assistance to protect assets. The number of households within 10kms will give a more realisitic picture of how many households might be at risk should a fire escape the wind farm. Maps of these fires (showing their size) are provided below.

3. **BUSHFIRE RISK FACTORS –**

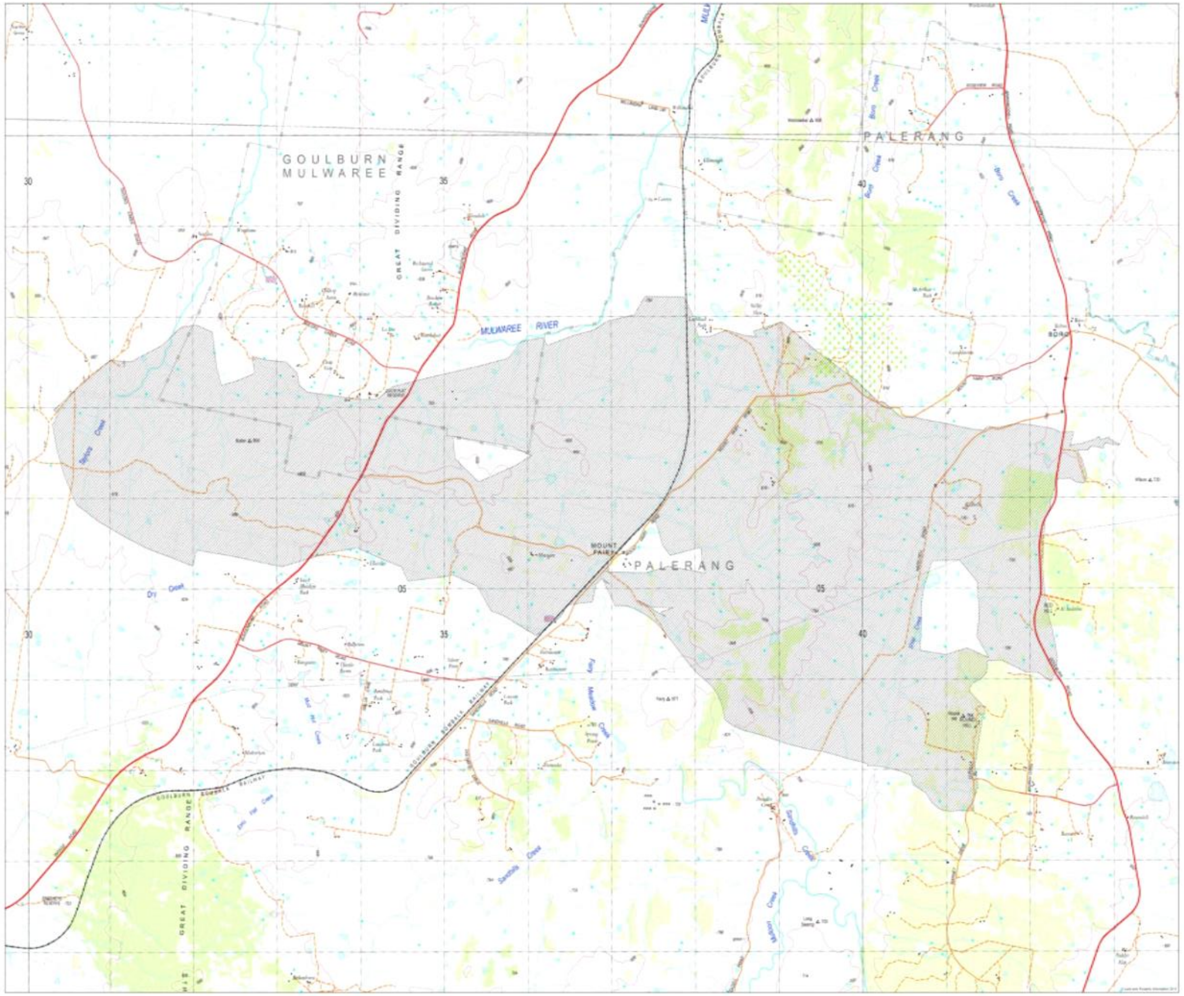
5.1 Regional Fire History (pp24)

Comment – Recent bushfire data for the last 4 fire seasons in the vicinity of the Jupiter Windfarm should be included in this report. The Department of Planning should also be made aware of the recent 2 bushfires since the EPYC submission was made. This includes the Curandooley Fire (January 2017) and also the Boro Fire (December 2016). The Sandhills fire should have been mentioned in the EPYC submission due to it's severity (January 2013). EPYC should provide a map to the Department of Planning clearly identifying the area destroyed by all fires. This would give a realisitic perpective of the bushfire hazard risk for the area, as it would use actual data. Details of each fire are as follows:

Curandooley Fire:

Point of origin:	Capital Wind Farm, Curandooley
Land/Assets burnt:	3387 hectares, approx 100 cattle, 200 sheep, chickens, 2 vehicles, 2 sheds
Category:	State Government's section 44 emergency order
RFS Support:	Thirty-five NSW RFS units and five ACT RFS, eight heavy plant, including bulldozers and graders, three bulk water tankers and eight aircraft.

Media: http://www.theland.com.au/story/4408648/currandooley-fire-contained-rolling-updates-photos-video/?src=rss
http://www.canberratimes.com.au/act-news/fires-burning-at-tarago-wamboin-20170117-gtsxzs.html
http://www.abc.net.au/news/2017-01-17/tarago-fire-destroys-farm-shed-burns-100-hectares/8188136



Currandooley Fire
Public Liaison Map

Scale: 1 : 13,781

0 0.65 1.3
Km

LEGEND

- Active Fire
- Emergency Alert
- Burnt Area
- Backburn
- Neighbourhood Safer Place
- Evacuation Centre
- Information Point
- Road Closure

Health Facility
- Aged Care
- Hospital - Private
- Hospital - Public
- Nursing Home

Education Facility
- Childcare Centre
- Kindergarten
- Primary School
- Secondary School
- College
- TAFE
- University

Accommodation
- Aged Care
- Camping Ground
- Caravan Park
- Club
- Hotel

PRODUCTION INFORMATION

Plot Information:

Date: 20/01/2017
Time: 11:30hrs

Fire Statistics:

Burnt Area: 3065 ha
Burnt Perimeter: 46.25 Km

Map Details:

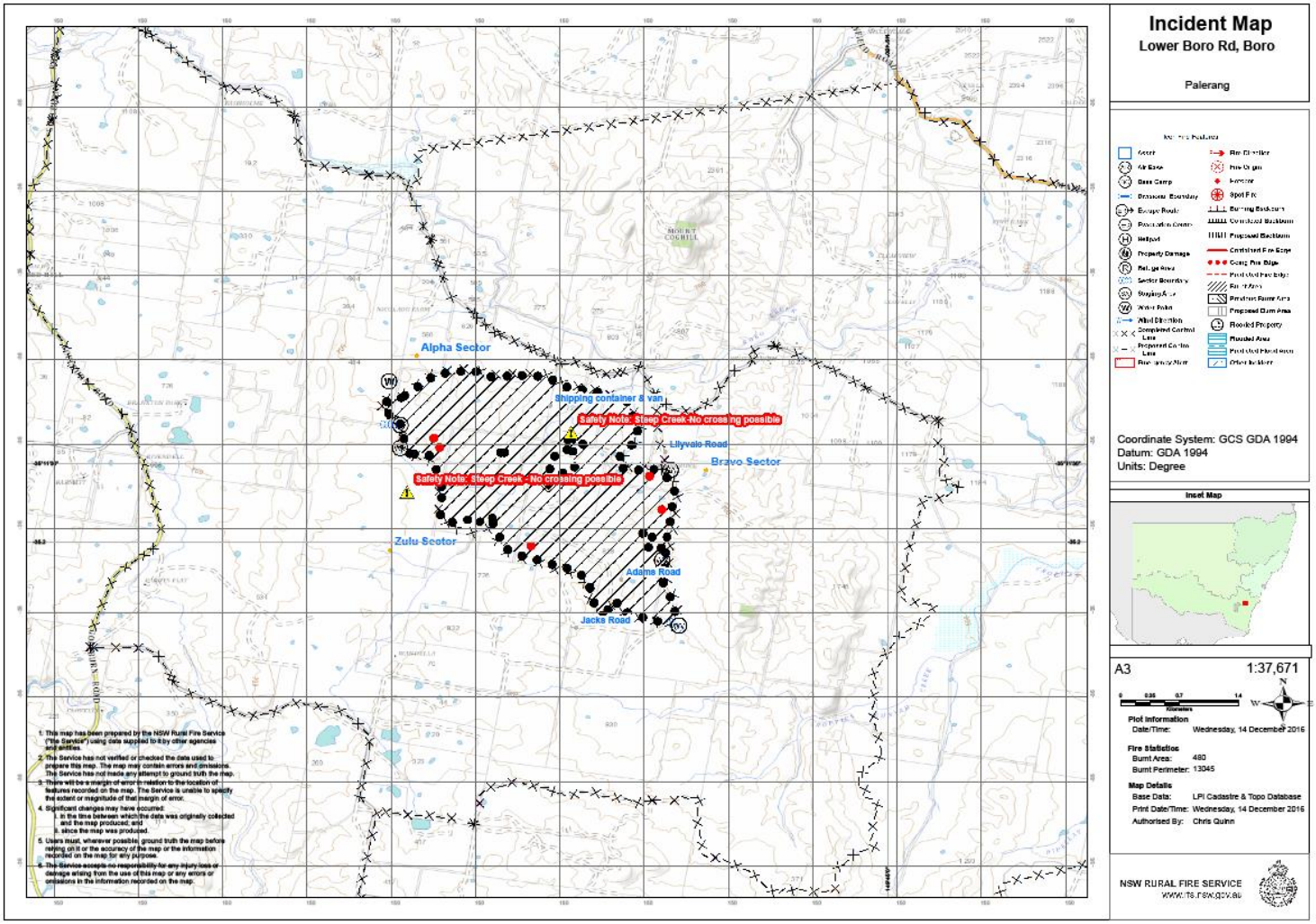
Base Data: © LPI, SPOT, AAM, SKM, OEH, Sensis, Kathrin
Map Projection: GDA 1994 NSW lambert
Print Date / Time: 20/01/2017 12:33:49 PM
Produced by: Kelwyn White

WARNING INFORMATION

NSW RFS INFORMATION LINE
1800 NSWRFS
1 8 0 0 6 7 9 7 3 7
PREPARE. ACT. SURVIVE.

The Boro Fire

Point of origin: Boro
Land burnt: 480 hectares
Category: State Government's section 44 emergency order
Media: http://www.abc.net.au/news/2016-12-14/boro-fire-near-lake-george-act-firefighters-farmland/8118710

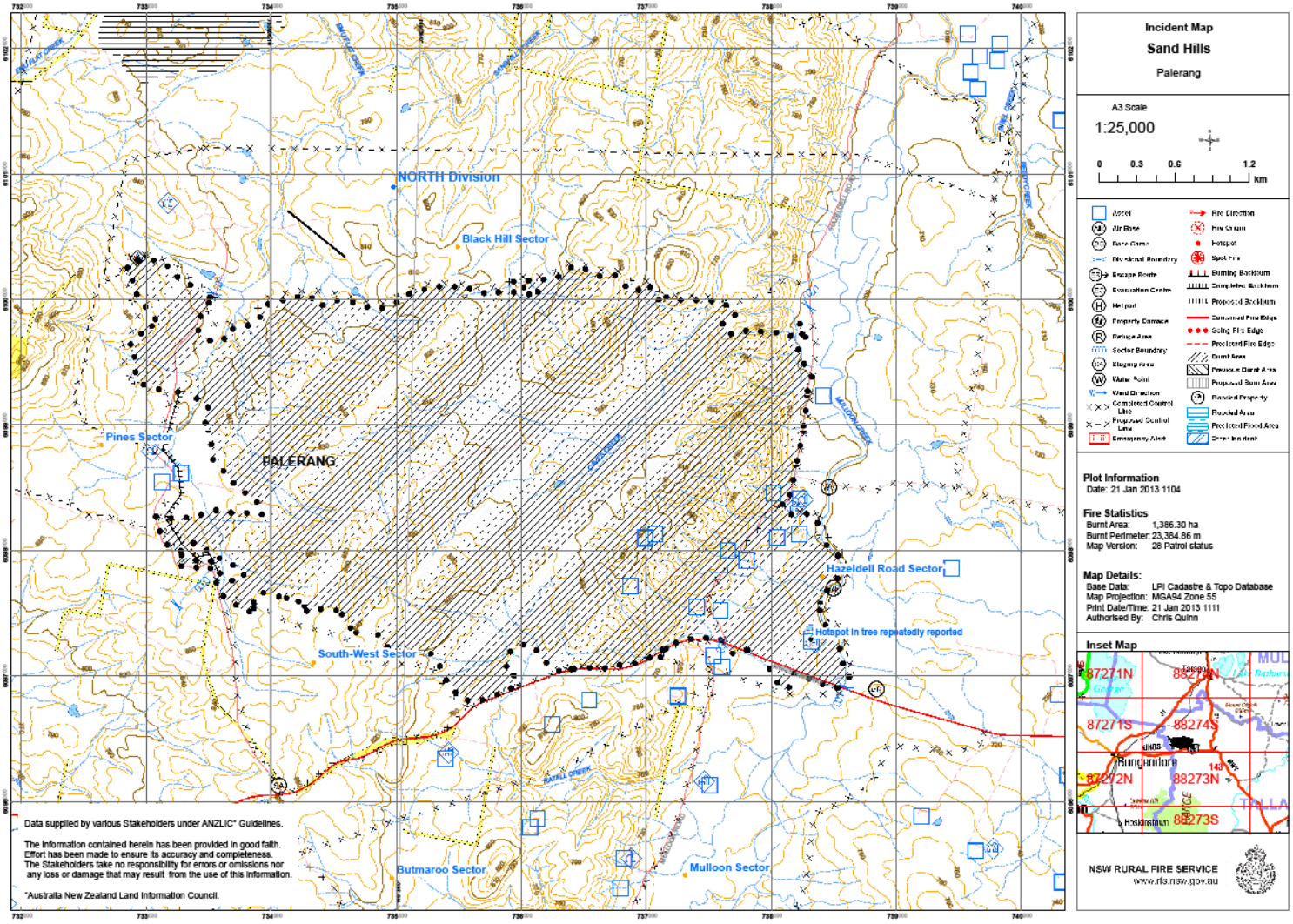


The Sandhills fire

Point of origin: Timber Hills
Land burnt: 1400 hectares
Category: State Government's section 44 emergency order
Media: http://www.canberratimes.com.au/act-news/bungendore-calls-for-help-in-replacing-its-firefighting-trucks-20130119-2d0eq.html

https://www.facebook.com/search/top/?q=timber%20hills%20bungendore

http://actrfs.blogspot.com.au/2013/01/sand-hills-fire-near-bungendore-nsw_10.html



Two other local fires occurred in the area in the last 4 bushfire seasons. These were the Herberton Fire (which coincided with the Sandhills Fire) and a Mount Fairy Road Fire (Which coincided with the Boro Fire).

The Herberton Fire was caused by lightning and burnt 74 hectares.

The 269 Mount Fairy Road fire burnt less than 1 hectare due to quick acting neighbours and aerial bombing via a helicopter and 3 RFS tankers. These were approx 10kms away attending to the Boro fire, so resources were diverted.

5.2 Regional Fire Weather (pp25)

"Prevailing weather conditions associated with the bushfire season in the Southern Tablelands Zone BFMC area are north/north westerly winds, although in late afternoons southerly and easterly winds may occur for short Periods"

Comment: Easterly breezes do not occur for short periods. In a typical summer, Easterly breezes occur anytime from 4 pm onwards and can continue well after midnight. These breezes are often associated with high wind gusts and are welcomed by residents most evenings throughout the whole Summer season.

5.3 Bushfire Hazard Class (pp30)

i) The risk Assessment Overlay was created using the Weighted Overlay Model, which uses slope and fuel as the two factors to calculate the bush fire hazard class. Figure 5.4 shows the result is primarily a Low bushfire Hazard Class for this area with small pockets of medium and high class on the slopes.

Comment: The methodology of only using slope and fuel to determine bushfire hazard class is not realistic. This area is known for its high wind speed, regularity of wind and strong wind gusts. Strong winds and gusts need to have an equal weighting with slopes and fuel in determining the bushfire Hazard class. This area is known to be bushfire prone by both Goulburn and Queanbeyan Palerang Councils. The Curandooley Fire had up to 50km wind gusts, the Sandhills

fire up to 100km wind gusts. Given the regional fire history in 5.1 above, this area should not be identified as low bushfire risk hazard.

ii) **Pp30 last paragraph** "Based on the information provided in the fire weather and fire hazard analysis above, likely fire behaviour can be predicted. The evaluation of existing bushfire behaviour within the Study Area shows that the greatest hazard is a combination of undesirable fire weather (ie hot and dry westerly winds during summer) and the potential for a fire to spread towards farm assets in the surrounding area. A fire under the influence of wind may travel fast in an easterly or south easterly direction, reaching assets before fire fighters can attend the scene."

Based on the modelling, likely fire behaviour can be predicted.

Comment - Fire behaviour cannot be predicted based on your modelling. Fuel load, slopes, wind direction/gust & speed and availability of resources to put out a fire are the determining factors. All need equal weighting.

A fire under the influence of wind may travel fast in an easterly or south easterly direction,

Comment - A fire under the influence of wind may travel fast in ANY direction. We also have NE wind patterns.

reaching assets before fire fighters can attend the scene."

Comment –Fires get out of control very quickly in this area.

- The recent 3 fires (Curandooley, Boro & Sandhills) is evidence that there are insufficient resources in the area. Fires, when they start, get out of control in a very short period of time. This is due to wind, availability and response times of local volunteers, condition of equipment and response times of crew coming from other districts

6.3 BUSHFIRE RISK EVALUATION (pp 44)

"Assuming a fire 'escapes' the wind farm, there is a low to medium risk of fire (adversely) affecting surrounding life, property and environment"

Comment: Recent regional fire history, as previously mentioned above, clearly shows the above statement is incorrect due to the significant amount of property affected during each of the three fires.

Overall Conclusion:

- I am concerned that the Jupiter Windfarm will increase the risk of bushfires in this region due to a lack of understanding (by their specialist staff brought in) of local conditions and how easily fires can be started from vehicles driving in dry grass, welding, angle grinding and blasting.
- Another key concern is the affect on aerial support as pilots can only fly near turbines when there is visibility. Unfortunately smoke usually accompanies large bush fires, so I fear aerial support will be limited. This is especially important because between Tarago and the Kings Highway, all roads (Boro Road, Duckfield Road and Barnet Drive) leading to dwellings are single entry/exit roads. This means households may not be able to escape large bushfires if aerial support is limited by the presence of turbines. I believe the risk to loss of human life and property from fire will increase should the wind farm be built.
- The predominately low risk bushfire hazard rating is misleading and has a poor methodology to support it.
- Actual fire data for the past 3 fires should be used to determine the bushfire risk. The fire at Curandooley adversely affected a large amount of wildlife, stock and property
- It is also important to note that wildlife (including small & medium birds) cannot outrun or fly away from large bushfires such as that which we have experienced repeatedly in this area. Vulnerable species are at a greater risk, not only from blade strike, but from the increased risk of bushfires getting out of control causing them to die of either i) exhaustion from trying to escape the fire ; or ii) the fire itself.