

13 May 2016

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Attention: Jeff Bembrick

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Dear Jeff,

RE – White Rock Solar Farm; impact areas and constraints for new layout

Please find below a breakdown of the native vegetation clearing required the WRSF project including the solar panel arrays, access tracks, the 33 kV cable routes and fencing. In the breakdown, we have compared the indicative layout presented in the WRSF EIS, March 2016, to the new layout provided 20/4/2016.

All vegetation tallied is derived from the mapped low condition Blakely's Red Gum Yellow Box Grassy Woodland, Endangered Ecological Community (EEC). The calculations have been undertaken using the vegetation mapping and the digitised layouts, in ArcGIS and based on WRSFPL advice in respect of construction methodology.

Note, the impact area of 20,272m² for the solar array footprint is the worst case scenario and is only applicable if all vegetation with the solar array footprint is cleared. While shading and the development of tracks within the array footprint will modify vegetation, it has been identified by the contractor that most of the vegetation within the array footprint will be retained and that direct vegetation removal would only be associated with driving in posts (approximately 100mm by 200mm) to support the solar panel arrays. It is estimated the impact area for just the piling works within the solar array footprint would be approximately 446.7 m². The low proportion of the array impacting low condition EEC means that the impact of piling on the low condition EEC will be much less than 20,272m².

Additionally we have revised the impact calculations for the fence and access track based on WRSFPL advice on the construction methodology disturbance area.

The reduced disturbance area for the fence is based on the fence post installation with 300mm post holes. The impact area for the post holes is approximately 6m² of which only a small proportion will impact the low condition EEC. It is not proposed to clear any other vegetation during the fence construction.

In regards to the access tracks, the proposed track width is 4m and a buffer of 2m either side of the track (total 8m wide corridor) is considered adequate for construction purposes and suitable to represent the potential vegetation impacts. The change from the EIS is due to the project team's closer review of the access route and vehicles needing to access the site.

Also, please find overleaf an updated constraints map for the new layout, as requested.

Indicative layout WRSF EIS, March 2016		Revised layout 20/04/16	
Infrastructure components	Potential EEC Impact area (m ²)	Infrastructure components	Potential EEC Impact area (m ²)
Fencing (1m disturbance width assumed)	447	Fencing (fence post disturbance area)	6
Alternative Cable route ² (5m disturbance width assumed)	4,175	Alternative Cable route ² (5m disturbance width assumed)	4,175
<i>Indicative Cable route¹ (5m disturbance width assumed)</i>	<i>(3,445)</i>	<i>Indicative Cable route¹ (5m disturbance width assumed)</i>	<i>(3,445)</i>
Access Tracks (10m disturbance width assumed)	6,929	4m Access Tracks (total 8m disturbance width assumed)	5,546
Solar array footprint (if all vegetation removed)	20,651	Solar array footprint (if all vegetation removed)	20,272 ³ (worst case)
Total (not including indicative cable)	32,202	Total (not including indicative cable)	29,999
Total (Hectares)	3.22	Total (Hectares)	2.99

¹ Indicative cable route not included in the impact calculations, as the alternative cable is currently the preferred option.

² Alternative cable route considered more likely.

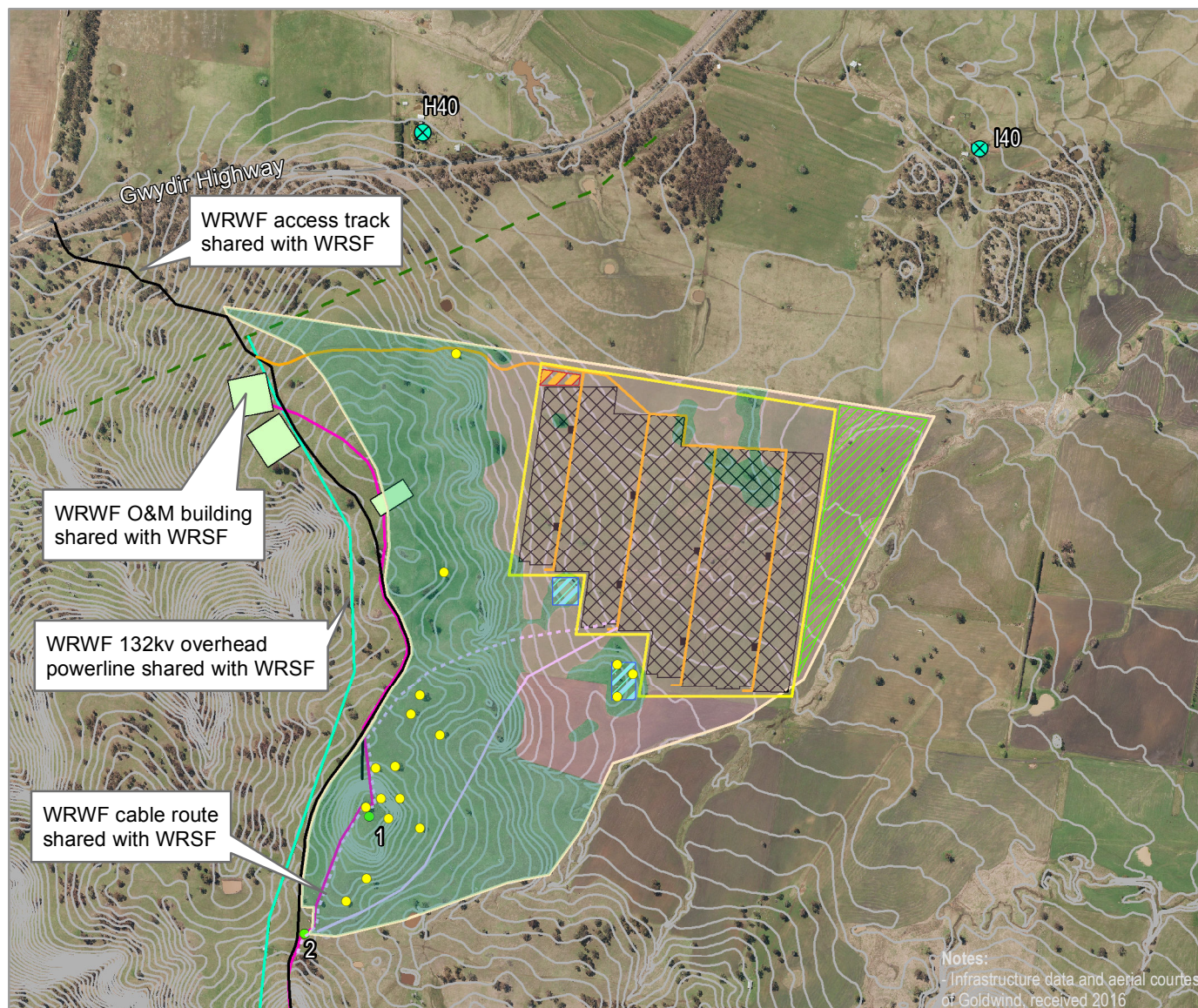
³ For solar panels no vegetation clearing is proposed and the vegetation removal may only be due to piling. Total area of piling impact is 447m². The impact on low condition EEC from piling will be significantly less than 447m² (<0.04 ha). This would mean the total impact on low condition EEC is reduced to about 1 ha.

Yours sincerely,

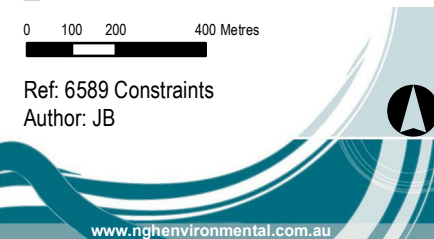


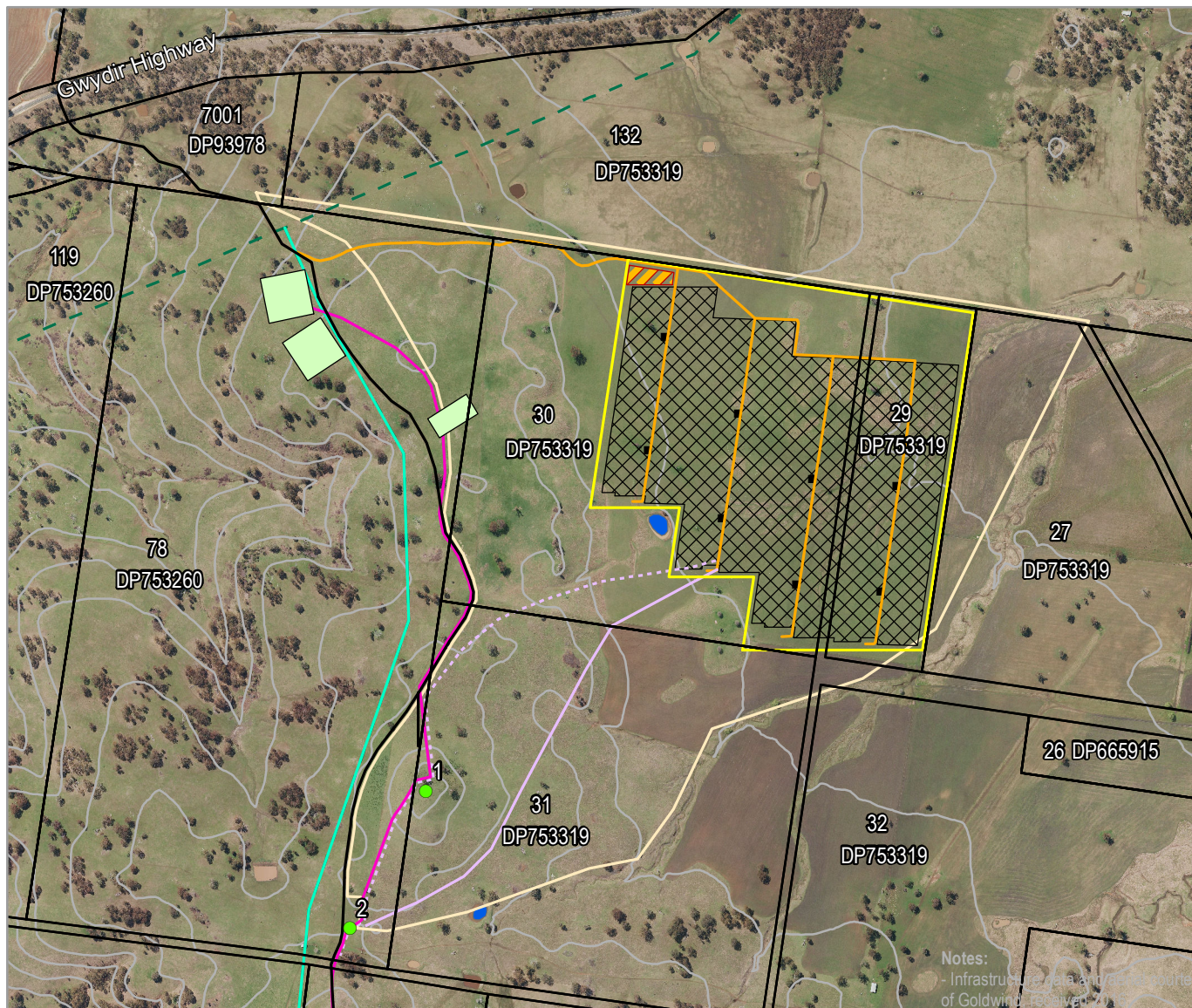
Jane Blomfield
Environmental Consultant

NGH Environmental



- Cultivated Exotic Vegetation
 - Yellow Box- Blakley's Red
 - Woodland Low Condition
 - Hollow bearing trees
 - Closest residences
 - 2m contours
 - Existing 132kV overhead powerline
 - Exclusion areas
 - Land reserved by the landowner for cropping
 - Stock watering infrastructure
 - Proposed solar farm (SSD 167487)**
 - Development envelope
 - Development footprint**
 - Solar array
 - Construction office and laydown area
 - Power Conversion Blocks
 - Indicative 33kV cable route
 - Alternative 33kV cable route
 - WRSF access tracks
 - Fence
 - Wind farm infrastructure (PA MP10_160)**
 - Wind turbine
 - Wind farm access track
 - WRWF 33kV cabling
 - Proposed 132kV overhead powerline
 - WRWF facilities
- 0 100 200 400 Metres
- Ref: 6589 Constraints
Author: JB





- 10m contours
- Farm dam
- Cadastre
- WRF 33kV cabling and communications

Proposed solar farm (SSD 167487)

- Development envelope

Development footprint

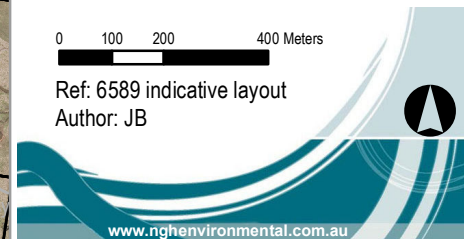
- ▣ Solar array
- ▣ Construction office and laydown area
- Power Conversion Blocks
- Indicative 33kV cable route
- Alternative 33kV cable route
- Fence
- WRSF access tracks

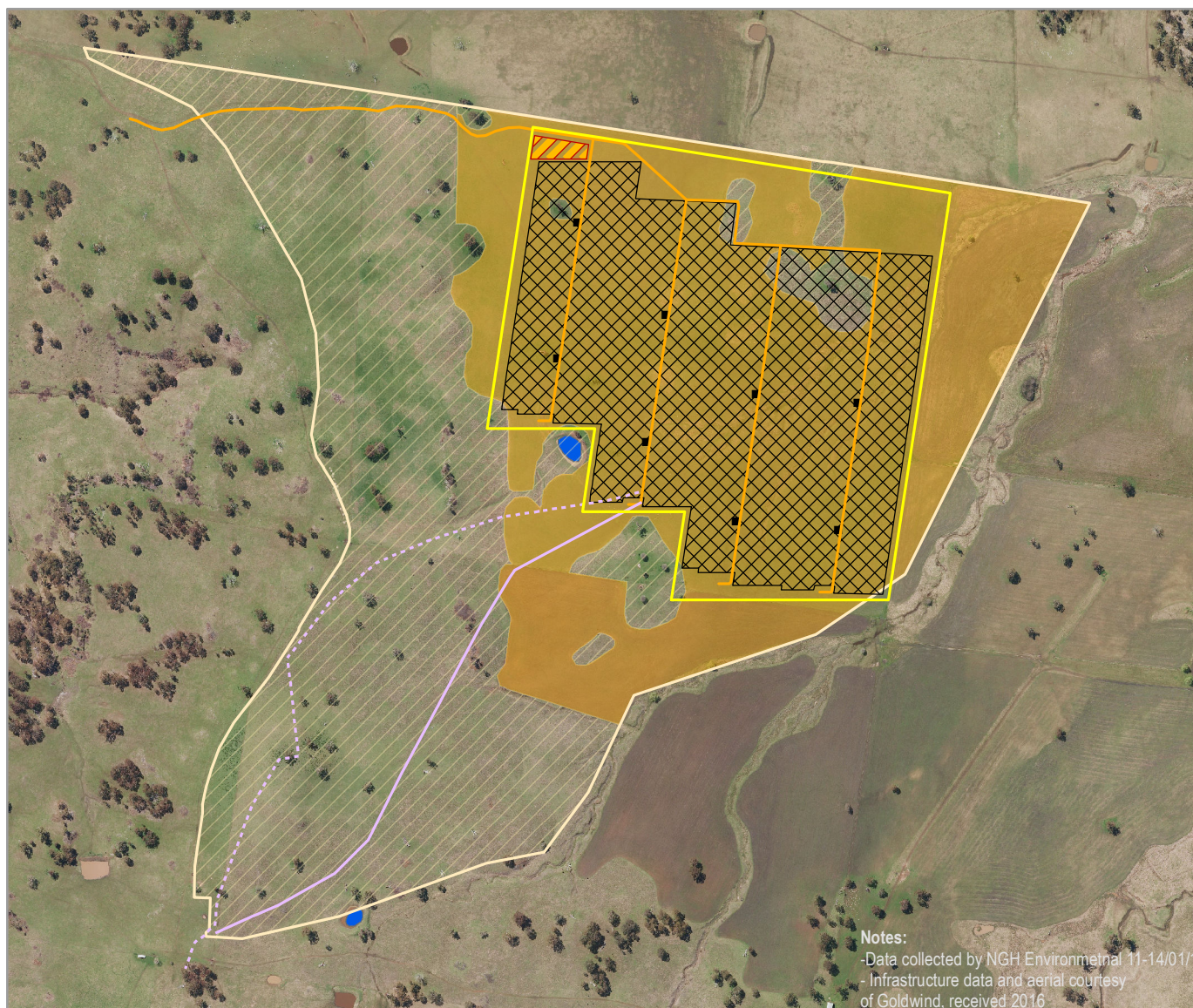
Wind farm infrastructure (PA MP10_160)

- Wind turbine
- Wind farm access track
- Existing 132kV overhead powerline
- Proposed 132kV overhead powerline
- WRF facilities

0 100 200 400 Meters

Ref: 6589 indicative layout
Author: JB





- Farm dam
- Cultivated Exotic Vegetation
Blackely's Red Gum-Yellow Box grassy
Woodland of the New England Tablelands
- ▨ Bioregion - Low Condition
- Proposed solar farm (SSD 167487)**
- Development envelope
- ▣ Solar array
- ▨ Construction office and laydown area
- Power Conversion Blocks
- - - Indicative 33kV cable route
- - - Alternative 33kV cable route
- - - WRSF access tracks
- - - Fence

0 100 200 400 Metres

Ref: 6589 Plant Community Types
 Author: JB



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