

26 February 2016



Mr David Kitto  
Director  
Department of Planning and Environment  
GPO Box 39  
Sydney NSW 2001

*Sapphire Wind Farm - Modification No. 1*

[david.kitto@planning.nsw.gov.au](mailto:david.kitto@planning.nsw.gov.au)

Dear David,

**MP/09\_0093**

**Sapphire Wind Farm - Modification No. 1**

Sapphire Wind Farm Pty Ltd (the Proponent) are submitting this letter to the Department of Planning and Environment (the Department) formally requesting a modification to the approved Sapphire Wind Farm (the Project) under section 75W of the Environmental Planning and Assessment Act 1979 (EP&A Act).

In general, the proposed amendments involve:

- Amendments to the Project Description and key impact assessments to account for:
  - An overall reduction in wind turbines across the Project;
  - The consolidation of two Project layouts into one;
  - An increase to the maximum tip height and rotor diameter for the Project to accommodate current wind turbine technology;
  - Minor amendment to the internal road and electrical design; and
- A discrete number of administrative modifications to the conditions of consent.

The proposed modifications are summarised in the accompanying sections of this letter and associated appendices.

Yours sincerely,

A handwritten signature in blue ink, appearing to read 'E Mounsey', written in a cursive style.

**Edward Mounsey**  
Chief Operating Officer  
CWP Renewables Pty Ltd

## Project Background

Sapphire Wind Farm (the Project) is a proposed development located approximately 18 km west of Glen Innes and 28 km east of Inverell in the Inverell Shire and Glen Innes Severn local government areas. Sapphire Wind Farm Pty Ltd (the Proponent) received approval from the NSW Government for the construction and operation of the Project on 26 June 2013. Approval was granted for two Project layouts comprising 159 and 125 wind turbine generator locations respectively, and associated infrastructure.

## Proposed Modification

The Proponent seeks approval to modify the Project to:

- Reduce the maximum number of wind turbine generator locations from 159 to 109;
- Reduce the number of Project layouts from two to one;
- Increase the maximum tip height and rotor diameter to accommodate current wind turbine technology;
- Accommodate minor amendment to the internal road and electrical design; and
- Accommodate a discrete number of administrative changes to the conditions of consent.

Significant improvements in wind turbine technology have occurred since the original Project approval was received in June 2013. Wind turbine technology has evolved towards longer blade lengths and taller towers to increase generation efficiency and therefore electrical production. The increase in electricity production results in a lower cost of energy and assists the NSW Government meet the objectives of the NSW Renewable Energy Action Plan (2013) and the NSW 2021 Plan of reaching a renewable energy target of 20 % by 2020.

The modified Project will comprise of up to 109 wind turbine generator locations from the approved 159 wind turbine layout (previously referred to as Layout 1). This reduction is from five key areas of the Project, but most notably involves the removal of the Wellingrove cluster in its entirety (Figure 1).

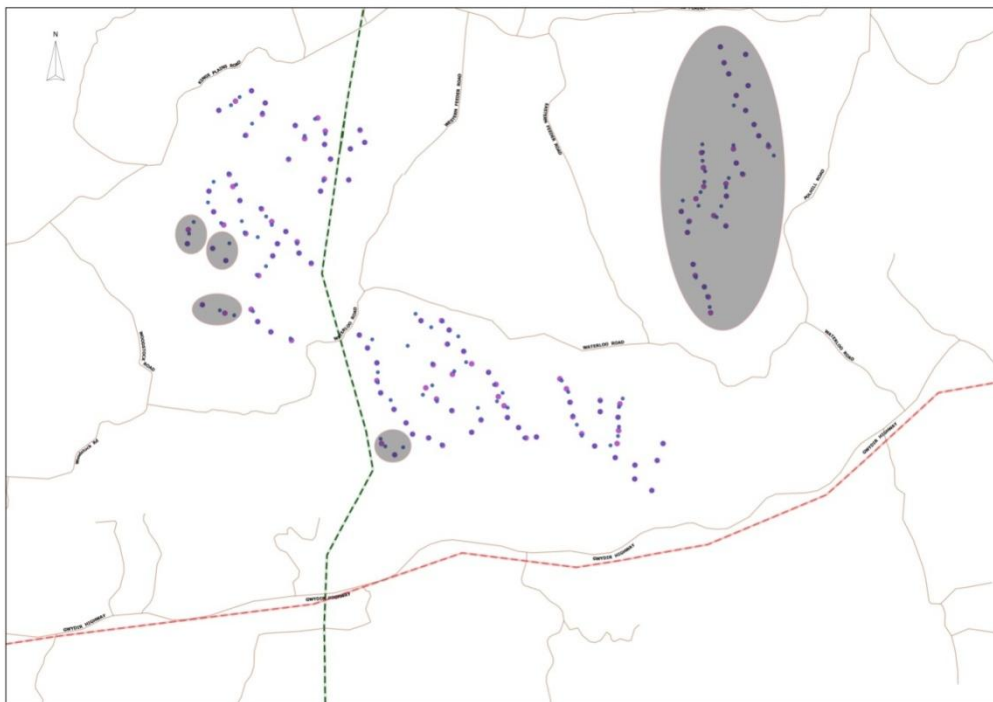
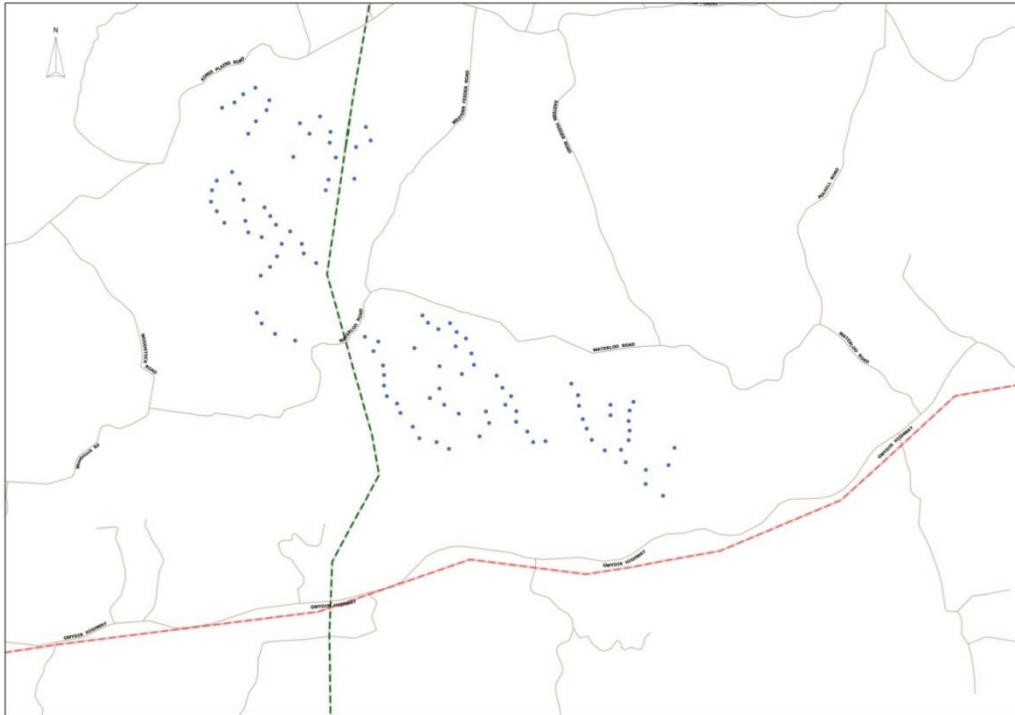


Figure 1: Approved Project Layouts with areas highlighted for wind turbine removal

Figure 2 depicts the revised 'single-layout' Project which has been presented to provide greater certainty for all Project stakeholders.



**Figure 2: Proposed Modified Single Project Layout**

The modified Project will be spread over 13 of the original 23 properties of the Project Site with details of land tenure provided in Table 1.

**Table 1: Land Tenure**

Landowner	DP	Lot	Landowner	DP	Lot	Landowner	DP	Lot
Landowner 1	750076	265	Landowner 10	750076	269	Landowner 13	435844	1
Landowner 2	1176646	1		750076	269		435844	2
Landowner 3	750121	212		750076	267		750121	9
Landowner 4	753305	135	Landowner 11	128314	1		750121	13
Landowner 5	1176646	2		651984	103		750121	15
Landowner 6	753305	132		753316	99		750121	16
Landowner 7	750076	268		1140309	1		750121	17
Landowner 8	750076	281	Landowner 12	113968	1		750121	18
Landowner 9	778366	12		750076	266		750121	18
	753260	119		753305	81		750121	52
	753319	54		872156	2		750121	90
	753319	61		1072905	2		750121	91
	778366	5					750121	92
							750121	92
							750121	139
							750121	209
							1200772	1
							1200772	2
							1200772	3
							1200772	4

Table 2 provides wind turbine centre-point coordinates for the modified Project comprising 109 locations from the previously approved 159 wind turbine layout (Layout 1).

**Table 2: Wind turbine centre-point coordinates**

WTG ID	Easting	Northing	WTG ID	Easting	Northing	WTG ID	Easting	Northing
<b>Sapphire Cluster</b>			<b>Sapphire Cluster</b>			<b>Swan Vale Cluster</b>		
1	347266	6716525	44	346223	6713497	82	349451	6710805
2	344448	6716872	45	345673	6711472	83	350035	6710600
3	344926	6717491	157	344316	6717905	84	349573	6709797
4	344998	6717747	158	344086	6717689	85	349448	6710222
5	345798	6717147	159	346737	6716252	86	349198	6709972
6	346048	6716872	46	345148	6711647	87	349954	6709563
7	345625	6716269	47	344798	6711922	88	350351	6710840
8	344648	6717197	48	344673	6712197	89	350285	6711138
9	346578	6716639	155	344633	6718073	90	349873	6711322
10	347523	6717047	156	343761	6717550	91	349898	6711697
11	347648	6716697	<b>Swan Vale Cluster</b>			92	350142	6711527
12	346598	6716922	52	347723	6711197	93	349726	6711927
13	346324	6717322	53	347973	6710822	94	349003	6712128
14	347223	6715697	54	347998	6710572	95	349149	6711937
15	346548	6715672	55	347998	6710297	96	349420	6711771
16	346473	6715397	56	348073	6710022	97	353073	6710047
17	344023	6715872	57	347848	6711447	98	353098	6709772
18	344223	6715572	58	348794	6711276	99	353198	6709422
19	344323	6715147	59	347498	6711572	100	353433	6708881
20	343623	6714847	60	348340	6709831	101	353923	6709522
21	343498	6715397	61	348429	6709584	102	353923	6709797
22	343623	6715647	62	348750	6709223	103	354398	6709372
23	343473	6715097	63	349698	6708647	104	354423	6709647
24	343823	6714547	64	349373	6708822	105	354523	6709872
28	345198	6713672	65	348923	6708922	106	354423	6709122
29	345323	6713997	70	350498	6708972	107	354398	6708872
30	345173	6714497	71	351173	6709797	108	352898	6710349
33	344774	6713167	72	350664	6709622	109	353300	6709174
34	345018	6713397	73	350748	6709322	110	354198	6708622
36	345542	6714321	74	351458	6709627	111	354323	6708297
37	345023	6714722	75	352223	6708847	112	353774	6708606
38	344873	6714947	76	351898	6708822	113	355441	6708221
39	344798	6714172	77	351748	6709097	114	355598	6708672
40	344448	6714297	78	351455	6709353	115	354843	6707728
41	344373	6714597	79	351323	6710022	116	354848	6708097
42	345898	6713747	80	351097	6710241	117	355298	6707422
43	345848	6713997	81	350946	6710557			

GDA 94 Zone 56

Figures 3 to 7 provide further detail with regard to the modified Project, Development Corridor, Development Footprint and associated Project features and constraints.

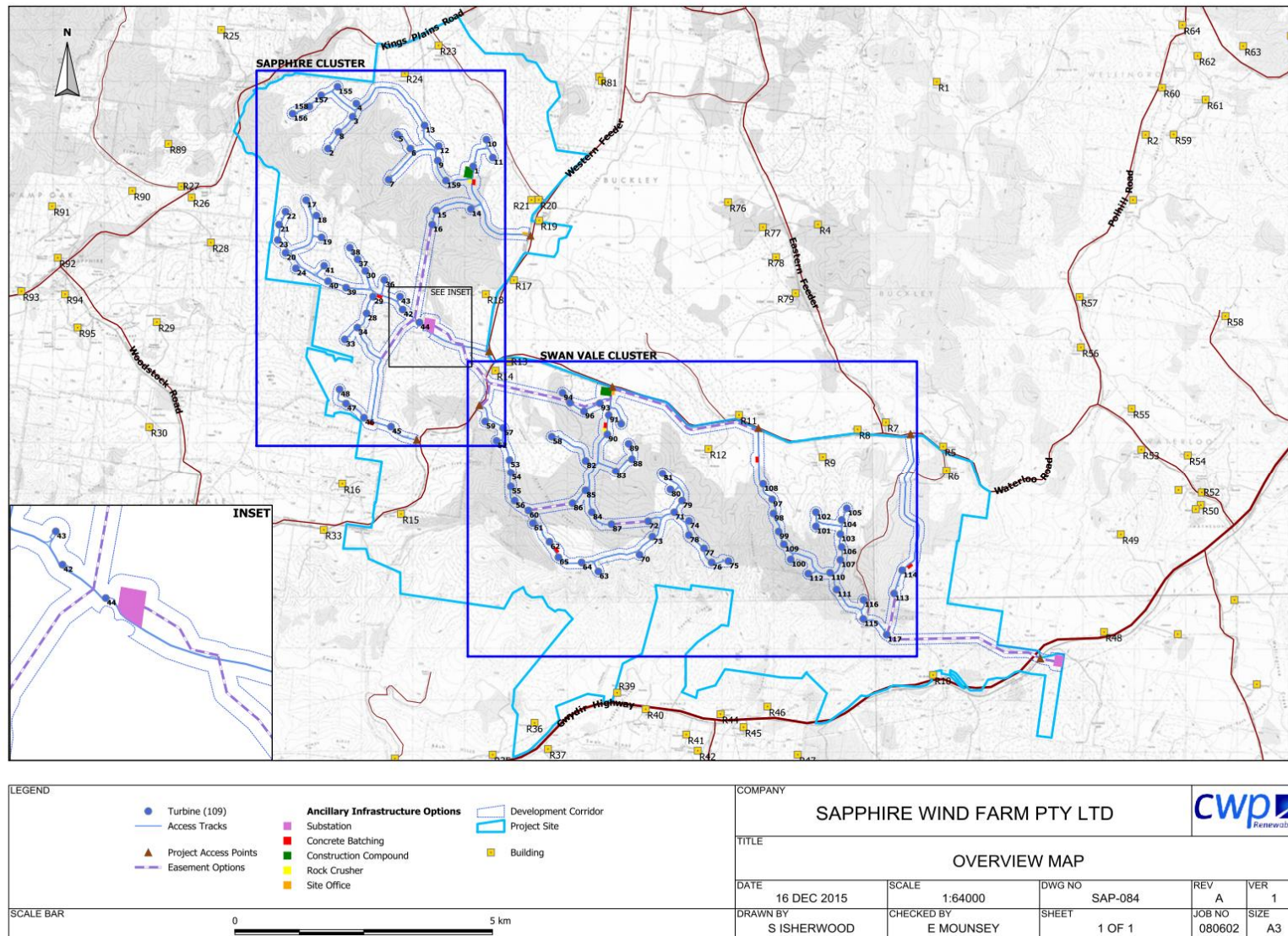


Figure 3: Project Overview Map (An A3 version is included in Appendix A)



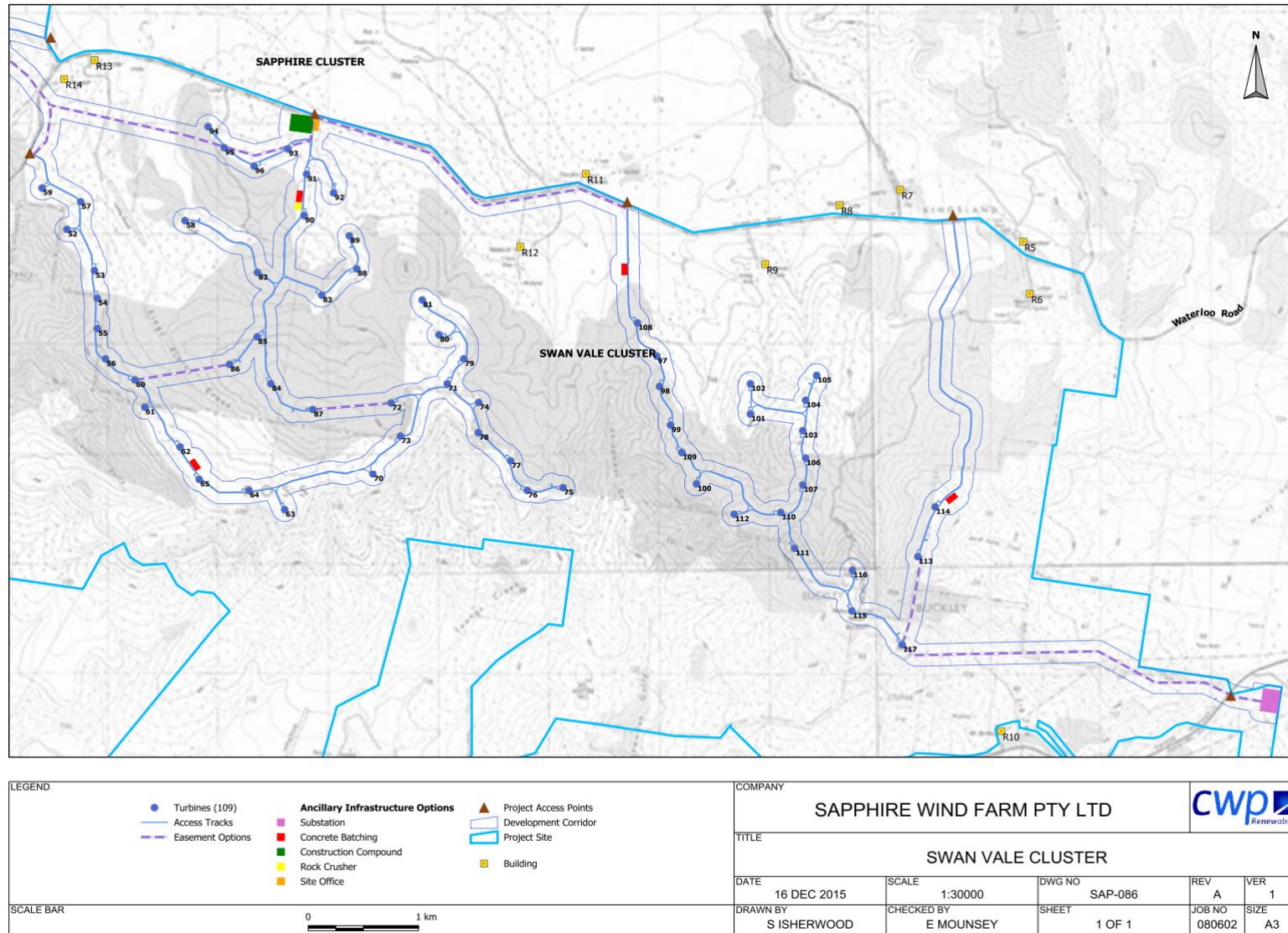


Figure 4: Swan Vale Cluster Detailed Overview (An A3 version is included in Appendix A)

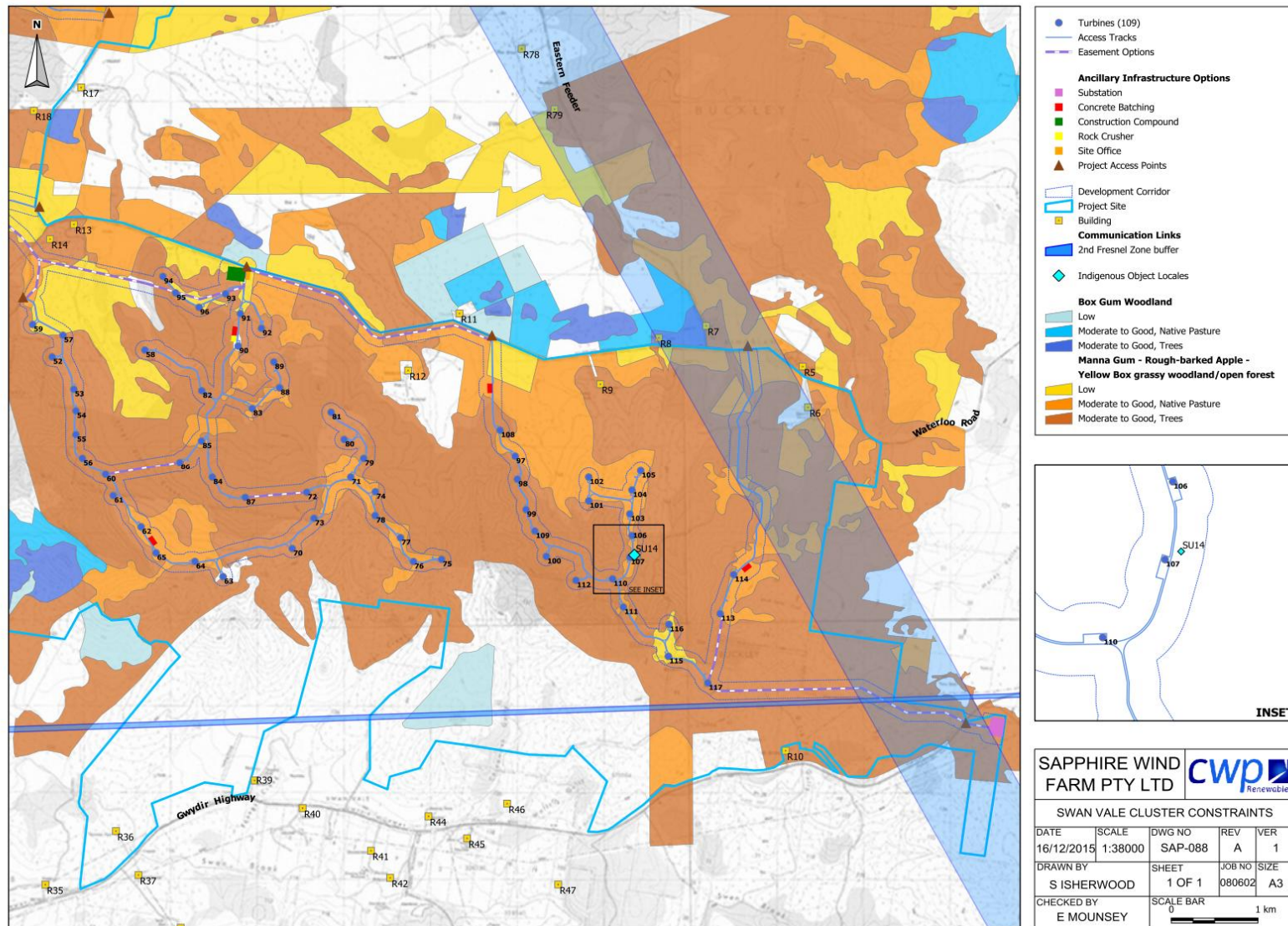


Figure 5: Swan Vale Cluster Constraints Overview (An A3 version is included in Appendix A)



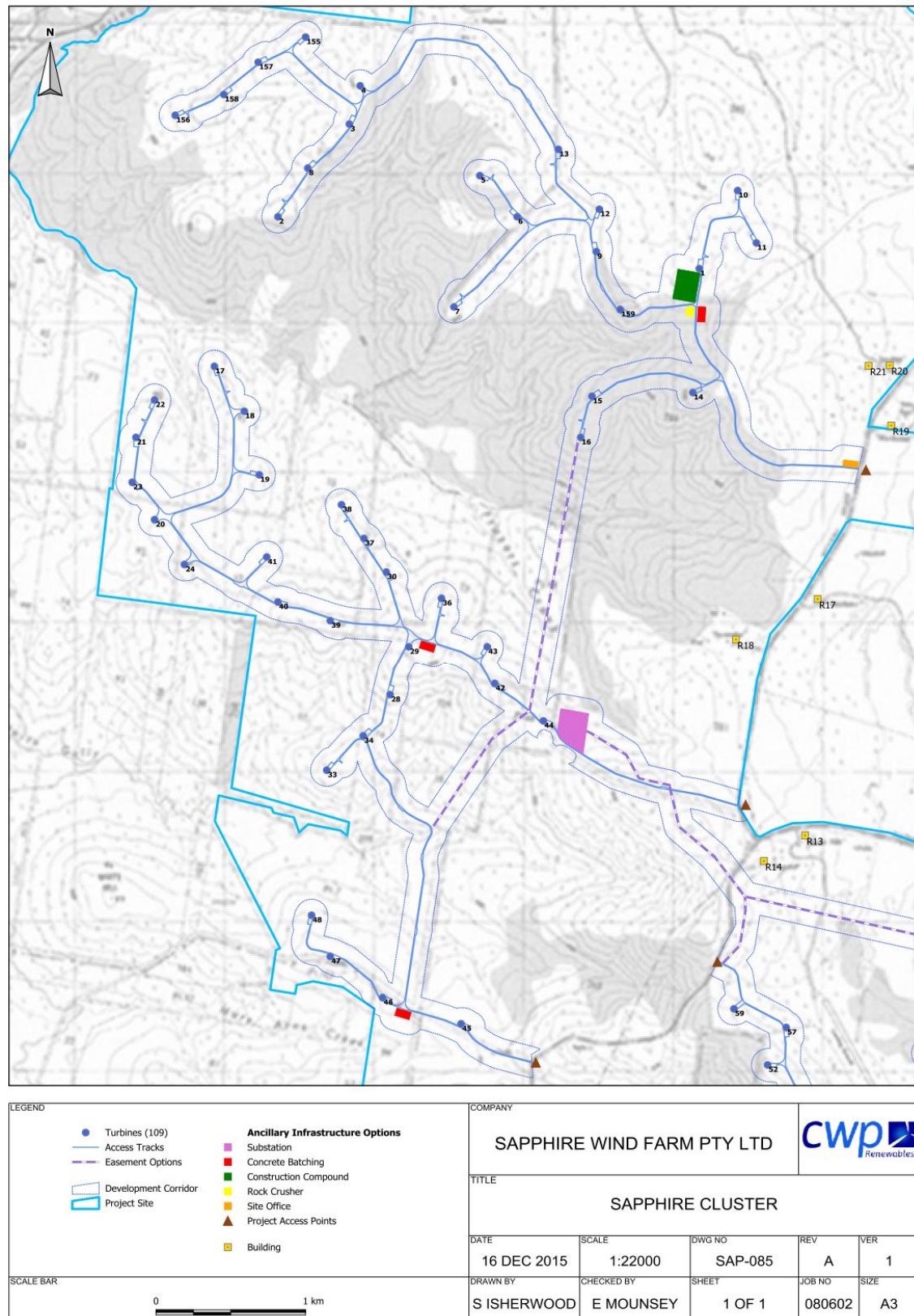


Figure 6: Sapphire Cluster Detailed Overview (An A3 version is included in Appendix A)



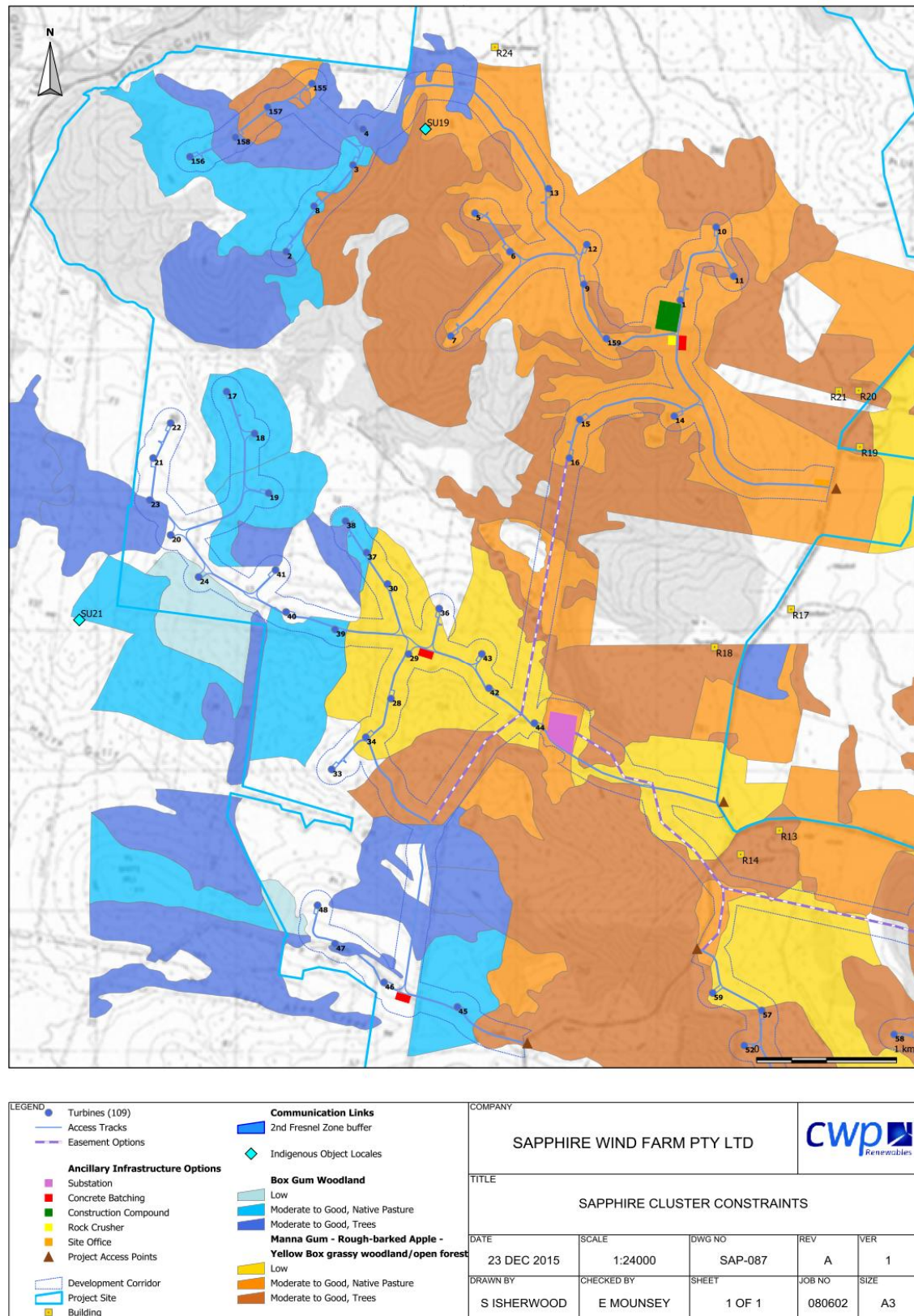


Figure 7: Sapphire Cluster Constraints Overview (An A3 version is included in Appendix A)

The approved Project permitted a maximum tip height of 157 m, a maximum rotor diameter of 126 m, and a range of tower heights to suit. The proposed modified Project seeks an increase to these maximums, increasing up to a tip height of 200 m (43 m greater than the current approval) including an increased maximum rotor diameter of up to 140 m (14 m greater than the current approval).

While these amendments result in an increase to the swept area on a per turbine basis (15,396 m<sup>2</sup> from 12,470 m<sup>2</sup>), when considering the reduction of wind turbine numbers across the modified Project, the overall swept area will reduce as a consequence of the Project modification to 1,678,142 m<sup>2</sup> from 1,982,825 m<sup>2</sup> (approximately a 15 % reduction).

In addition to the wind turbine generator amendments detailed above, this modification also deals with some minor changes to the on ground road and electrical design. These changes are depicted in Figure 8 with the associated impacts considered in the ecology and heritage reports attached to this modification. (Note that these changes to the on ground road and electrical design have been included in Figures 3 to 7 above).

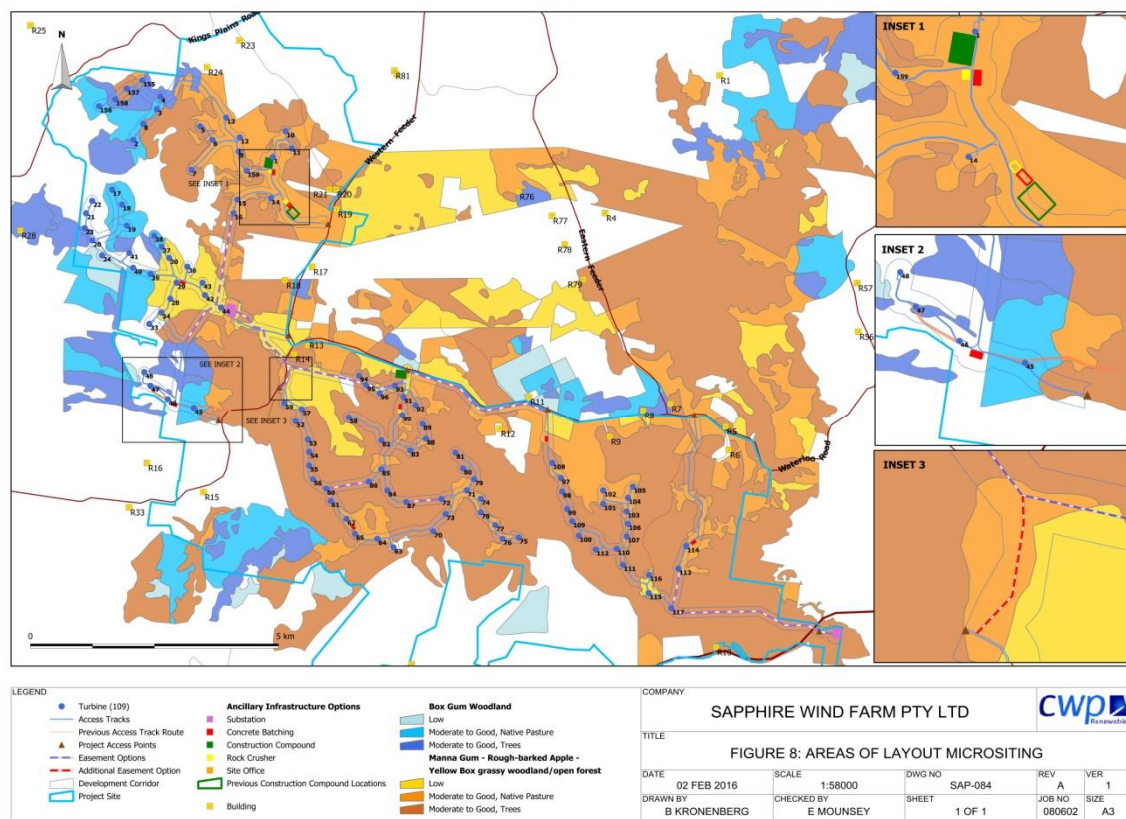


Figure 8: Areas of Layout Micrositing (An A3 version is included in Appendix A)

Table 3 details each component part of the modified Project with a comparison to the approved Project parameters.

**Table 3: Modified Project Components and Comparison with Approved Parameters**

Project Aspect	Units	Comparison with Approved Project
<b>Project Site</b> Area of land within the cadastre boundaries of all properties subject to this proposal	8,921 hectares (ha)	Reduced by 5,455 ha
<b>Development Corridor</b> Area within the Project Site within which the Development Footprint is contained	1,480 ha	Reduced by 502 ha
<b>Development Footprint</b> Area of all <i>Permanent</i> and <i>Temporary</i> Project infrastructure including temporary disturbances within the Development Corridor	136 ha	Reduced by 161 ha
<b>Project Capacity</b>	To be regulated by wind turbine generator availability and grid connection constraints	Current capacity limit of 319 MW
Permanent Project Infrastructure	Units	Comparison with Approved Project
Wind turbine generators	109	Reduced by 50
Tip height	200 m	Increase of 43 m
Rotor diameter	140 m	Increase of 14 m
Tower height	137 m	Increase of 35.5 m
Swept area ( <i>individual wind turbine</i> )	15,396 m <sup>2</sup>	Increase of 2,926 m <sup>2</sup>
Swept area ( <i>total comparison: <math>159 \times \pi 63^2 / 109 \times \pi 70^2</math></i> )	1,678,142 m <sup>2</sup>	Reduced by 304,683 m <sup>2</sup>
Hardstands	1,250 m <sup>2</sup>	No change
Footings <sup>1</sup>	625 m <sup>2</sup>	Increase of 225 m <sup>2</sup>
Road length	54 km	Reduced by 24 km
Road width	6 m	Reduced by 6 m
Overhead electrical reticulation and control cables <sup>2</sup>	16.6 km	Increase of 6.6 km
Collector substation location options	2	Reduced from six options
Collector substation <sup>3</sup>	4 ha	Increase of 2 ha
Site office / Facilities buildings <sup>4</sup>	400 m <sup>2</sup>	Reduced by 2.6 ha
Site compound <sup>5</sup>	3 ha	No change
Temporary Project Infrastructure	Units	Comparison with Approved Project
Earthworks alongside Permanent Infrastructure (cut and fill which also envelopes the Temporary Project Infrastructure detailed below) <sup>6</sup> :	75.5 ha	Reduced by 72.5 ha
Concrete batch plant options	6	Reduced by one option
Concrete batch plant	0.5 ha per optional site	Reduced by 0.5 ha
Rock crushing facilities options	2	Reduced by one option
Rock crushing facilities	0.3 ha per optional site	Reduced by 0.3 ha
Construction compound (additional)	3 ha	Reduced by 3 ha



<sup>1</sup> Included within permanent Development Footprint calculation and relates to the approximate area (per turbine) that will remain a permanent impact adjacent to the hardstand area. Temporary impacts associated with construction of the footings have been captured in the temporary earthworks area calculation.

<sup>2</sup> The estimated easement width is up to 45 m for the internal overhead transmission lines, though the actual impact area has been estimated to be 5 % (a 2.25 m corridor) of this total area given the low level of impacts associated with installing the power/transmission lines and the sparse vegetation cover along the selected routes. (Note the increase of 6 km is due to the inclusion of all preferred and alternate routes in the total figure whereas previously the Environmental Assessment only calculated the length based on the preferred easement route).

<sup>3</sup> The increase is to accommodate a substation suitable of accommodating suitable equipment for multiple connections under the TransGrid Renewable Energy Hub proposal. Under a Project only connection the substation footprint would not alter from the previously approved area of 2 ha.

<sup>4</sup> The site office and facilities buildings were previously considered a temporary impact. While there will be temporary site office and facility buildings, there is also a need for a permanent area to locate these facilities.

<sup>5</sup> The construction compound will consist of a fenced off area for the storage/lay-down of tools, vehicles, equipment, construction materials, turbine components. Following construction, one compound will be retained as a permanent area for the operational life of the wind farm for component storage and as an optional facility management building location.

<sup>6</sup> Construction of the internal road and hardstand network will require earthworks that are beyond the limits of the permanent road impact however remain within the Development Corridor. This is required to level areas of steep gradient to a design suitable for safely transporting Project components into position. Detailed civil designs have been prepared for the Project that include impacts associated with permanent road, hardstand, footings and turning head areas in addition to the area considered the extent of the earthworks.

## Impact Assessment

A preliminary risk assessment was undertaken across all technical aspects of the development to ensure that the proposed modification would be technically feasible. The results of this risk assessment lead to key technical assessments being commissioned. These are located within Appendix B, and summarised in Table 4.

**Table 4: Modification Technical Feasibility Assessment**

Technical Assessment	Key element(s) of the Modification	Consideration of change in impact	Summary of findings / recommendations
Landscape and Visual	Increased turbine dimensions Reduced Development Footprint	Proposed impacts have been considered by landscape and visual impact consultants Green Bean Design. A comprehensive modification assessment is provided in Appendix B.	<p>The Visual Impact Assessment (VIA) considers that the removal of up to 50 wind turbines, including all approved wind turbines within the Wellingrove cluster, will result in an overall reduction in visibility and visual impact for residential dwellings to the north, north east and east of the approved wind farm site.</p> <p>Further the VIA recognises that whilst the proposed increase in wind turbine height would be discernible from surrounding view locations and, in a small number of locations, increase the number of wind turbines visible (including views toward partial sections of wind turbine structures, rather than whole turbines), the increase in height will not give rise to a significant increase in the magnitude of visual effect.</p> <p>Moreover, the VIA has illustrated the potential for increase to the magnitude of visual effect and has determined that, within the parameters of normal vision, the proposed modified wind turbines would not give rise to an increased level of visual impact over and above those determined for the approved wind farm development.</p> <p>The VIA concludes that the proposed modified wind turbines and reduced wind farm footprint are unlikely to result in any significant increased level of visual impact when compared with the approved wind turbine design and locations.</p> <p><i>(Further discussion relating to the VIA is provided in the subsequent section of this report).</i></p>
Noise	Turbine model sound power profile	Proposed impacts have been considered by noise consultants SLR Consulting. A comprehensive modification assessment is	<p>Noise modeling using the standard ISO9613 algorithm was completed for a range of alternative WTG models.</p> <p>Scenarios including standard blade models, inclusion of serrated edge</p>

Technical Assessment	Key element(s) of the Modification	Consideration of change in impact	Summary of findings / recommendations
		provided in Appendix B.	technology and Sound Management Modes were performed. The noise impact assessment of the proposed modification shows that compliance with the noise limit requirements is attainable.
Flora and Fauna	Increased turbine dimensions Reduced Development Footprint	Proposed impacts have been considered by ecology consultants Eco Logical Australia. A comprehensive modification assessment is provided in Appendix B.	The request for variation to approval conditions will: - reduce impacts to native vegetation from 288.8 ha to 126.22 ha, including: - a reduction to the two EECs 'White Box – Yellow Box – Blakely's Red Gum grassy woodland and derived native grasslands' and 'Ribbon Gum, Mountain Gum, Snow Gum Forest/Woodland of the New England Tablelands' from 45.5 ha to 12.0 ha and 240.9 to 114.22 ha respectively; - reduce the area of potential habitat loss for the Regent Honeyeater from 113.7 ha to 48.2 ha; - reduce the area of potential displacement of Regent Honeyeaters from suitable habitat around the wind farm from 3,214 ha to 2,242 ha; and, - reduce the cumulative 'swept area' of turbine rotors from (and hence the risk of blade strike) 1.982M m <sup>2</sup> to 1.678M m <sup>2</sup> (15% reduction). In summary the modification will result in an overall reduction of direct and indirect impacts to biodiversity values in the Project area.
Traffic and Transport	Increased turbine dimensions Reduced Development Footprint	Proposed impacts have been considered by transport consultants Samsa Consulting. A comprehensive modification assessment is provided in Appendix B.	The proposed transport routes are feasible and significant constraints should not be encountered. No road capacity issues with regard to the modification. Consistent with previous assessment findings, the designated haulage contractor shall undertake detailed swept-path analysis to inform road network upgrades. Existing transport related management strategies remain relevant and are proposed to be maintained as part of this modification. It is considered that traffic and transport impacts would not be any greater than the previous (original) Project assessment and that over-



Technical Assessment	Key element(s) of the Modification	Consideration of change in impact	Summary of findings / recommendations
			size component and equipment transportation is considered to be feasible and relatively straight-forward.
Aviation	Increased turbine dimensions Reduced Development Footprint	Proposed impacts have been considered by aviation consultants The Ambidji Group. A comprehensive modification assessment is provided in Appendix B.	It has been determined that, in accordance with the requirements of CASA, Airservices Australia and NASF, the modified Project will not impact upon aeronautical facilities or practices as a result of the proposed changes to the Project.
Cultural Heritage	Reduced Development Footprint	Proposed impacts have been considered by archaeological consultants NSW Archaeology. Summary advice is provided in Appendix B.	The proposed changes have low potential to cause impacts to Aboriginal archaeological values. Owing to the low archaeological significance of the impacts associated with this Project modification, it is proposed that no changes to the current conditions of consent are required.
Communications	Increased turbine dimensions Reduced Development Footprint	Proposed impacts have been considered by communications consultants Laurie Derrick & Associates. Summary advice is provided in Appendix B.	It has been determined that the modified Project will be able to meet its Conditions of Consent and Statement of Commitments relevant to EMI. In regard to Condition 16, it is not considered necessary at this stage to consult with the NSW Government Telecommunications Authority or other Radio Communications Licensees (other than the Ambulance Service of NSW) as adequate clearance exist to other radio facilities and point to point paths. No amendment of the proposed 109 WTG layout is required to achieve Commitment 42 and regarding Commitment 48, the Ambulance Service of NSW has agreed that no mitigation is required prior to construction and that they will be able to use an alternate link if any interference is experienced.

## Visual Impact Assessment

The Proponent recognises that seeking a larger rotor and higher blade tip height can be perceived to potentially increase associated visual impacts. As such, the reduction in the total number of proposed turbine locations has been integral to the Proponent's approach to offset some of these potential increases in impacts. Further, and in order to proactively respond to stakeholder input, wind turbine locations have been removed from Project where community concerns were previously raised during the initial public exhibition period in 2011/12. Table 5 summarises these changes.

**Table 5: Modification response to community concerns**

Residence / Locality with initial concern	Distance from Approved Layout	Distance from Modified Layout	Location
Wellingrove (Locality)	2.50 km	9.50 km	Village located north-east of the Project
Spring Creek (R26)	1.78 km	1.78 km	Residence located along Kings Plains Road
Krystal Blue (R29)	1.87 km	2.84 km	Residence located along Woodstock Road
Golden Grove (R35)	3.37 km	4.03 km	Residence located along Gwydir Highway
Karoola (R57)	1.84 km	6.11 km	Residence located along Polhill Road

Further, the VIA evaluated 34 non-associated receiver locations within 5 km of the modified Project and determined that:

- Three [3] would experience a high visual impact;
- Eleven [11] would experience a moderate visual impact; and,
- Twenty [20] would experience a low-to-moderate or low visual impact.

The Proponent is pursuing Neighbour Agreements with the owners of the three high visual rating residences. Table 6 lists these residences, their distance and location from the nearest proposed wind turbine location within the modified Project and the status of conversations with each owner.

**Table 6: Status of Neighbour Agreements with High visual rating residences**

Residence	Distance from Modified Layout	Location	Status
Mount Buckley (R10) <sup>1</sup>	1.19 km	Residence located along Gwydir Highway	Progressing towards entering a Neighbour Agreement. A letter outlining the proposed terms of the agreement issued in February 2016.
Spring Creek (R26)	1.78 km	Residence located along Kings Plains Road	An agreement is in place to acquire Spring Creek in accordance current conditions of consent G1 to G8
Krystal Blue (R29) <sup>2</sup>	2.84 km	Residence located along Woodstock Road	Progressing towards entering a Neighbour Agreement. A letter outlining the proposed terms of the agreement issued in February 2016.

<sup>1</sup> Residence R10 ("Mount Buckley") is identified in "Table A.3 - Refined Assessment Matrix" in the appendix of the VIA as moderate not high. The uplift in rating is with regard to the authors footnote to Table A.5 in that same appendix whereby he states "Observations and measurements for individual residential dwellings must also take into account the potential visual effect of single or small numbers of wind turbines within a proposed wind farm development. Single or small numbers of wind turbines may give rise to moderate and high visual impacts under certain circumstances." In this regard the proximity and dominance of a single wind turbine on the residence has initiated the change in rating from moderate to high.

<sup>2</sup> Owing to the removal of nine proposed wind turbine locations from the immediate vicinity of this residence, including three which would have otherwise triggered the need for the Proponent to offer to acquire the property if those three proposed wind turbine locations were to be built (current conditions of consent G1 to G8), the Proponent is pursuing a course of action whereby a Neighbour Agreement has been offered to the owners of this residence.

With regard to the 11 moderate rated receiver locations, the VIA indicates that the majority of these dwellings will experience a visual impact in the upper moderate rating, and that it would be possible for some of the visual impacts could be mitigated through the implementation of landscape screening strategies. On this basis it is proposed that, for the 11 moderate rated receiver locations (and 20 low-to-moderate and low rated receiver locations) within 5 km of a proposed wind turbine location, the requirements under conditions C23, C24 and C30 of the current conditions of consent are to apply where applicable. Table 7 references these conditions of consent.

**Table 7: Visual Conditions C23, C24 and C30**

Ref	Condition
C23	All residents, business owners or public authorities, whose dwelling, business or public area respectively, may be subject to moderate to high visual impact, as defined in the EA, shall be consulted regarding impact minimisation measures. The outcomes of this consultation process shall be used to inform the Design and Landscape Plan, required under condition C30.
C24	At the request of any owners of residential dwellings or businesses with views of a turbine(s) located within five kilometres of their dwellings, the Proponent shall provide and bear the full cost of reasonable and feasible landscaping treatments to visually screen these dwellings. Such a request may be made in writing by the owner of the dwelling or business within 6 months from the commencement of operation of the wind farm, and landscaping treatments agreed between the parties shall be implemented and completed within 12 months of such an agreement. Should the parties not be able to reach agreement on the scope of landscaping treatments, then either party may refer the matter to the Director-General for resolution. The Director-General's decision on such a referral shall be final and binding on the parties.



C30 <sup>1</sup>	<p>A Design and Landscaping Plan shall be prepared to outline measures to ensure appropriate development and maintenance of landscaping on the site to achieve adequate landscape buffers and address the visual impacts arising from the Project, including turbines, site access roads and associated above ground infrastructure, as far as is reasonable and feasible.</p> <p>The Plan shall be prepared by a qualified landscape architect and be prepared in consultation with Council. The Plan shall include design treatments for the turbines and ancillary infrastructure, including, but not necessarily limited to:</p> <ul style="list-style-type: none"> <li>(a) the landscape screening measures at residences in close proximity to the Project site and along nearby roadsides to screen potential moderate to significant views of the Project, including an outline of additional measures available for requested landscaping treatments, as permitted under condition C24;</li> <li>(b) landscape elements and built elements, including proposed treatments, finishes and materials of exposed surfaces (including colour specifications);</li> <li>(c) lighting;</li> <li>(d) a schedule of species to be used in landscaping;</li> <li>(e) details of the timing and progressive implementation of landscape works; and</li> <li>(f) procedures and methods to monitor and maintain landscaped areas.</li> </ul> <p>The Plan shall be submitted for the approval of the Director-General prior to the commencement of construction, unless otherwise agreed by the Director-General. The Plan may be submitted in stages to suit the staged construction program of the Project.</p>
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<sup>1</sup> Note proposed amendment to this condition in Table 10.

Three [3] receiver locations have been determined to have a reduced level of impact, which has been largely attributable to the removal of the eastern cluster of proposed wind turbine locations from the approved Project by way of this modification. Table 8 summarises these residences, their change in rating and rationale.

**Table 8: Receiver locations with reduced visual rating**

Residence	Distance from Modified Layout	Location	Visual Rating	Rationale
Down Field (R5) <sup>1</sup>	2.23 km	Residence located along Waterloo Road	Low	Removal of eastern cluster from the approved Project and existing vegetation screening surrounding the residence.
Pieta (R47)	2.9 km	Residence located along Gwydir Highway	Low to Moderate	Removal of eastern cluster from the approved Project and existing vegetation screening surrounding the residence.
Adavale (R48)	4.1 km	Residence located along Western Feeder Road	Low to Moderate	Removal of eastern cluster from the approved Project.

<sup>1</sup> Note this residence is owned by an associated Project landowner.

Further, and with regard to the 20 non-associated low-to-moderate and low receiver locations within 5 km of the modified Project, seven [7] are located within 3 km of a proposed wind turbine location of which three [3] are located on or within 2 km. Table 9 summarises these residences, their distance from the

modified Project and rationale as to why, despite their proximity to the Project, these receiver locations would experience a low-to-moderate or low visual impact.

**Table 9: Low-to-moderate and low visual rating**

Residence	Distance from Modified Layout	Location	Visual Rating	Rationale
Strathdarr (R17)	1.61 km	Residence located along Western Feeder Road	Low	Uninhabitable dwelling surrounded by trees.
Kings Land (R7)	1.85 km	Residence located along Eastern Feeder Road	Low	Occasional use dwelling surrounded by trees.
Frasers Creek (R27)	2.00 km	Residence located along Kings Plains Road	Low to Moderate	Dwelling surrounded by trees.
Croye (R87)	2.36 km	Residence located along Kings Plains Road	Low	Dwelling surrounded by trees.
Tomali Park (R89)	2.48 km	Residence located along Kings Plains Road	Low	Dwelling surrounded by trees.
Wirra Wirra (R90)	2.84 km	Residence located along Kings Plains Road	Low	Dwelling surrounded by trees.
Pieta (R47)	2.9 km	Residence located along Gwydir Highway	Low to Moderate	Removal of eastern cluster from the approved Project and existing vegetation screening surrounding the residence.

In summary, the VIA recognises that whilst the proposed increase in wind turbine height would be discernible from surrounding view locations and, in a small number of locations, increase the number of wind turbines visible (including views toward partial sections of wind turbine structures, rather than whole turbines), the increase in height will not give rise to a significant increase in the magnitude of visual effect.

## Amendments to the current Conditions of Consent

Table 10 provides a summary of recommended amendments to the current Conditions of Consent which are aimed at delivering more efficient and effective ways through which Project impacts are controlled.

Table 10: Proposed amendments to the Conditions of Consent

Condition of Consent		Amend / Delete	Proposed Amendment / Deletion / Rationale
Ref	Current		
Schedule B	Micro-Siting: Means a location allowance of 100 metres radius for project components as long as impacts remain consistent with that assessed.	Amend	<p>Propose to amend and reposition this definition to include the following text, and to be located either in Condition C4 or a new Condition C4A:</p> <p><i>The Applicant may micro-site the wind turbines and ancillary infrastructure without further approval provided:</i></p> <ul style="list-style-type: none"> <li>(a) <i>they remain within the development corridor shown in Figures 3 to 7;</i></li> <li>(b) <i>no wind turbine is moved more than 100 metres from the location shown on the figures in Figures 3 to 7 and defined by the coordinates in Table 2; and</i></li> <li>(c) <i>the revised location of the wind turbine and/or ancillary infrastructure would not result in any non-compliance with the conditions of this consent.</i></li> </ul>
B1	<i>(various document references)</i>	Amend	Propose to amend this condition to incorporate reference to this Modification and associated Appendices.
B6	The project shall not exceed 159 wind turbines and an installed capacity of 319MW.	Amend	<p>Propose to amend this condition to read 109 wind turbines, however remove installed capacity limit.</p> <p>The NSW Government's Renewable Energy Action Plan (REAP) seeks to encourage and maximise the penetration of renewable energy where technically feasible to do so. The 330kV transmission lines running through the site provide capacity for &gt; 700 MW and therefore it is proposed that the non-</p>



Condition of Consent		Amend / Delete	Proposed Amendment / Deletion / Rationale
Ref	Current		
			<p>technical capacity limit within the current approval is removed to align with the NSW Government's commitments.</p> <p>Additionally, it is now the common practice of the Department of Planning and Environment to remove references to the non-technical capacity limit within the conditions of an approval.</p>
B10	For the purpose of section 75S(2)(b) of the EP&A Act, the relevant provisions, as defined in section 75S(1A) of the EP&A Act, apply to this approval.	Delete	Propose to delete condition B10, however add a Note to condition B9 to state the Project is a critical infrastructure project.
B11	<p>The Proponent may elect to construct and/ or operate the project in stages. Where staging is proposed, the Proponent shall submit a Staging Report to the Director-General prior to the commencement of the first proposed stage. The Staging Report shall provide details of:</p> <ul style="list-style-type: none"> <li>(a) how the project would be staged, including general details of work activities associated with each stage and the general timing of when each stage would commence; and</li> <li>(b) the relevant conditions of approval, which would apply to each stage and how these shall be complied with across and between the stages of the project.</li> </ul> <p>Where staging of the project is proposed, these conditions of approval are only required to be complied with at the relevant time and to the extent that they are relevant to the specific stage(s). However, nothing in this allows submission of the Bird and Bat Adaptive Management Program, as required by condition C6, to be staged.</p>	Amend	<p>The staging of the Project would be provided for in the Construction Environmental Management Plan (CEMP) and other management documents required as pre-requisites to commencing construction.</p> <p>Propose to amend condition B11 (and subsequent conditions which refer to staging) to reflect Condition 15 of the Crudine Ridge Wind Farm Conditions of Consent, being:</p> <p><i>With the approval of the Secretary, the Applicant may submit any strategy, plan or program required by this consent on a progressive basis.</i></p> <p><i>To ensure the strategies, plans or programs under the conditions of this consent are updated on a regular basis, the Applicant may at any time submit revised strategies, plans or programs to the Secretary for approval.</i></p> <p><i>With the agreement of the Secretary, the Applicant may prepare any revised strategy, plan or program without undertaking consultation with all parties under the applicable condition of this consent.</i></p> <p><i>Notes:</i></p> <p><i>While any strategy, plan or program may be submitted on a progressive basis,</i></p>

Condition of Consent		Amend / Delete	Proposed Amendment / Deletion / Rationale
Ref	Current		
	The Proponent shall ensure that an updated Staging Report (or advice that no changes to staging are proposed) is submitted to the Director-General prior to the commencement of each stage, identifying any changes to the proposed staging or applicable conditions.		<i>the Applicant will need to ensure that the existing operations on site are covered by suitable strategies, plans or programs at all times.</i> <i>If the submission of any strategy, plan or program is to be staged, then the relevant strategy, plan or program must clearly describe the specific stage to which the strategy, plan or program applies, the relationship of this stage to any future stages, and the trigger for updating the strategy, plan or program.</i>
B12	The Proponent shall ensure that all plans, sub-plans and other management documents required by the conditions of this approval and relevant to each stage (as identified in the Staging Report) are submitted to the Director-General no later than three months prior to the commencement of the relevant stages, unless otherwise agreed by the Director-General.	Delete	Propose to delete condition B12 with regard to the suggested amendment to B11 noted above.  Note This will also affect Conditions C30, D8, E21, F13, F17, F18 and G13
B13	The Proponent shall ensure that employees, contractors and sub-contractors are aware of, and comply with, the conditions of this approval relevant to their respective activities.	Delete	Propose to delete conditions B13 and B14 as they attempt to impose liability on the proponent in a manner which is inconsistent with the position under the relevant legislation and, as such, are inappropriate.
B14	The Proponent shall be responsible for environmental impacts resulting from the actions of all persons that it invites onto the site, including contractors, sub-contractors and visitors.	Delete	Propose to delete conditions B13 and B14 as they attempt to impose liability on the proponent in a manner which is inconsistent with the position under the relevant legislation and, as such, are inappropriate.
C1	The clearing of native vegetation will be limited to the minimum extent practicably required as detailed in the Construction Flora and Fauna Management Plan and no more than 288.8 ha <i>[cont...]</i>	Amend	Propose to amend to reflect the reduction of number of turbines from 159 to 109 and road widths of up to 12 m to up to 6 m.  Proposed amendment to read:  The clearing of native vegetation will be limited to the minimum extent practicably required as detailed in the Construction Flora and Fauna Management Plan and no more than 122.22 ha

Condition of Consent		Amend / Delete	Proposed Amendment / Deletion / Rationale
Ref	Current		
C7	<p>Following final design and prior to the commencement of construction, or as otherwise agreed to by the Director-General, the Proponent shall develop and submit a Biodiversity Offset Package for the approval of the Director-General. The package shall detail how the ecological values lost as a result of the Project will be offset. The Biodiversity Offset Package shall be developed in consultation with the OEH and shall (unless otherwise agreed by the Director-General) include, but not necessarily be limited to <i>[cont...]</i></p>	Amend	<p>Propose to amend condition C7 to the effect that the Biodiversity Offset Package should be submitted prior to the commencement of Operations. This will provide consistency in timing with the EPBC Act approval.</p>
C11	<p>Prior to the commencement of construction, the Proponent shall consult with:</p> <ul style="list-style-type: none"> <li>(a) aerodrome operators that have an aerodrome located within 30 kilometres of the boundaries of the site, to determine any impact on Obstacle Limitation Surfaces at such aerodromes;</li> <li>(b) AirServices Australia, to determine potential impacts on instrument approach procedures at aerodromes, navigational aids, communications and surveillance facilities; and</li> <li>(c) Aerial Agriculture Association Australia, to determine potential hazards to aerial application and related operations.</li> </ul> <p>Reasonable and feasible mitigation measures for each of the potential impacts and hazards identified in condition 0 (a) to (c) above, shall be determined in consultation with the respective groups identified in this condition, prior to the commencement of construction.</p>	Delete	<p>Propose to delete conditions C11 as it is considered to have been satisfied during the re-assessment for the modified Project.</p>

Condition of Consent		Amend / Delete	Proposed Amendment / Deletion / Rationale
Ref	Current		
C16 (a)	<p>Prior to the commencement of construction, the Proponent shall:</p> <p>(a) consult with the NSW Government Telecommunications Authority and other registered communications licensees (including emergency services) to ensure that risks to these services are minimised as far as feasible and reasonable. This may include the installation of additional radio sites or services to ensure coverage of radio communications are not degraded;</p>	Delete	Propose to delete conditions C16(a) as it is considered to have been satisfied during the re-assessment for the modified Project.
C29	<p>With the exception of aviation hazard lighting implemented in accordance with the requirements of this condition, no external lighting other than low intensity security night lighting is permitted on site unless otherwise agreed or directed by the Director-General, or required by Civil Aviation Safety Authority.</p> <p>Prior to the commencement of construction, the Proponent shall consult with the Civil Aviation Safety Authority on the need for aviation hazard lighting in relation to the wind turbines. Any aviation hazard lighting shall be implemented in a manner that minimises visual intrusion to surrounding non-associated receivers as far as reasonable and feasible.</p>	Amend	Propose to amend condition C29 to allow for night time emergency lighting.
C30 (a)	<p>(a) the landscape screening measures at residences in close proximity to the project site and along nearby roadsides to screen potential moderate to significant views of the project, including an outline of additional measures available for requested landscaping treatments, as permitted under condition C24;</p>	Amend	Propose to amend condition C30 (a) to change the reference of "C24" to read "C23".

Condition of Consent		Amend / Delete	Proposed Amendment / Deletion / Rationale
Ref	Current		
C34	Prior to the commencement of relevant construction works, the Proponent shall consult with the Department of Trade & Investment, Regional Infrastructure & Services (Mineral Resources section) and holders of mineral, mining and exploration titles or tenements, with respect to measures to be applied during construction and operation of the project so as to minimise the potential for any sterilisation of resources on the tenement.	Delete	Propose to delete condition C34 as this activity was undertaken as part of the assessment process as an assessment requirement.
G1 to G8	<i>(refers to acquisition process of two properties should certain wind turbines be constructed)</i>	Amend	Propose to amend conditions to recognise that: <ol style="list-style-type: none"> <li>1. an agreement to purchase “Spring Creek” has been reached between the parties; and,</li> <li>2. the wind turbines that would otherwise trigger the acquisition process for “Krystal Blue” have been removed from the project.</li> </ol>



## **Appendix A - A3 Project Maps**

A1 - Figure 3 - Project Overview Map

A2 - Figure 4 - Swan Vale Cluster Detailed Overview Map

A3 - Figure 5 - Swan Vale Cluster Constraints Overview Map

A4 - Figure 6 - Sapphire Cluster Detailed Overview Map

A5 - Figure 7 - Sapphire Cluster Constraints Overview Map

A6 - Figure 8 - Project Overview Map - On ground road and electrical design changes

## **Appendix B - Consultant Reports / Correspondence**

B1 - Landscape and Visual Impact Assessment Report

B2 - Noise Impact Assessment Report

B3 - Biodiversity Impact Assessment Report

B4 - Traffic and Transport Impact Assessment Report

B4a - Email correspondence with Glen Innes Severn Council

B4b - Email correspondence with Inverell Shire Council

B5 - Aviation Impact Assessment Report

B6 - Cultural Heritage Impact Assessment Summary

B7 - Communication Impact Assessment Summary