

Annex C

Schedule of Road Upgrade Requirements



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Upper Lachlan Shire Council

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Councils Requirements for the Reconstruction of the Roads Involved With the Over Mass and Overdimension Route to the Bialla Windfarm Project:

This schedule was developed during a field inspection of the route with representatives from Newtricity, ERM consultants, GTA consultants and ULSC on 3 December 2015.

The locations shown are based on chainages that are measured from the intersection of the Goulburn – Crookwell Rod (Main Road 54) AND Grange Road.

The works required are as follows:

I. Replacement of causeways

- a. Kialla Road – Seven causeways require replacement with pipe culverts to enable long vehicles to cross without ‘bottoming out’ on the pavement (and subsequently damaging the pavement);
- b. Range Road – Two causeways require replacement with culverts

II. Rehabilitation of Pavements

- a. Kialla Road – rehabilitation is required to the pavements at the following locations:
 - i. 7.69km – 8.29km (600m)
 - ii. 11.19km – 12.67km (1.5km)
- b. Range Road rehabilitation is required to the pavements:
 - i. 12.81km – 20km (7.3km)

The scope of the work is as follows:

- a. Remove grass and debris from the roadside out to the required width.
- b. Clear roadside drains to ensure that sound drainage is provided for the pavement and that it connects adequately to the road cross drainage culverts and causeways.
- c. Install approved soil erosion protection structures to drains and other areas as required.
- d. Shape shoulders to correct crossfall (4%) and add gravel to ensure correct width and cross sectional shape is achieved.

- e. Tyne existing pavement ,reshape to ensure correct crossfall is achieved and add 100mm of approved material that will be imported from an approved quarry.
- f. Add pavement stabilisation chemicals in accordance with geotechnical recommendations and mix with approved pavement mixing machine to achieve a homogenous pavement of minimum 200mm thickness.
- g. Shape and compact the pavement to specification.
- h. Apply topsoil to roadside areas to match adjusted levels to existing.
- i. Final trim pavement.
- j. Apply 14/7 double/double coat seal.
- k. Ensure that all erosion control devices are in place and working correctly.
- l. Apply 7mm reseal at completion of windfarm construction.

The specifications for this work are as follows:

- a. Seal width - 6.5m
- b. Shoulder width 1m (each side).
- c. Min. Crossfall 4% (on straight alignment)
- d. Superelevation (and transitions) on curves to be determined between contractor and ULSC.
- e. Min. compaction for pavement materials is 100% of standard compaction value.

Councils experience with the type of rehabilitation required indicates that the costs of such works are around \$280,000 - \$300,000/km. This will vary due to timing and the effect of time over the costs of inputs.

III. Intersection treatments to facilitate turning with long/wide loads:

- a. MR54 (Goulburn Road)/Grange Road intersection will require removal of several trees on the south eastern side of the intersection. It should be noted that the trees on the northern side of MR54 must not be touched;
- b. Grange Road/Cullen Street – this intersection will require widening. It should be noted that the widening cannot be constructed on the inside of the intersection due to the presence of a large protected tree;
- c. Cullen Street/Kialla Road – this intersection has a bypass track that was constructed for the Gullen Range Windfarm. The landowner of the land may be willing to enter into a similar arrangement with Newtricity;
- d. Kialla Road/Range Road – this intersection will require some earthworks to allow it to be traversed by over mass and overdimension vehicles;
- e. Range Road/Grabben Gullen Road – this intersection will require some modification for use by over mass and overdimension vehicles;
- f. Access arrangements to the Windfarm site – Council is aware that Newtricity wishes to use three locations to access the site from Grabben Gullen Road. As

was determined during the site inspection, none of these have adequate sight distance. Council acknowledges that adequate site could be available by relocating each access. Council understands that Newtricity has arranged for alternate access arrangements to be put in place. The locations appear to have adequate available sight distance and (subject to final measurements and design) will satisfy Council's requirements.