



## Appendix F

### Overview of Impacts on Landscape Character Units (LCU)



# Appendix F. Visual Impacts on Landscape Character Units

## F1. Overview of Visual Impacts on LCU01 Nundle Village

Overview of LCU01: Nundle Village	Summary of Visual Impacts on Landscape Character:	Landscape Scenic Integrity:	Key Landscape Features:
<p>For the purpose of this report the Nundle Village LCU has been defined by the gently undulating to flat land making up the village of Nundle, located to the north west of the Project Area.</p> <p>The Scenic Quality Rating for the LCU is <b><i>low-moderate</i></b>, which has been applied to assist in the assessment of all viewpoints and residences within the LCU.</p> <p><b><i>Refer to Appendix B1.</i></b></p>	<p>Nundle Village is the most inhabited LCU of the Study Area with a mix of residential dwellings (within the village area) and small lot lifestyle properties on the outskirts of the town. Views from within the village are generally contained by dwellings and vegetation associated with residential lots and roadside vegetation, particularly from residential streets which run in a generally east west direction. The village consists of a main street (Jenkins Street) and Gill Street which run in a generally north to south direction. Due to the orientation of these streets, distant views to the western portion of the Project are likely to be available, when travelling in a southerly direction.</p> <p>The area around the intersection of Oakenville Street and Jenkins Street is generally identified as being the centre of town. The roadside vegetation, existing buildings and crest located nearby the pub screens a large portion of views toward the Project from the northern end of Jenkins street.</p> <p>Nundle Road (or Oakenville Street) meets with Jenkins Street and runs in an east west orientation. This road is generally associated with marking the entry into Nundle for motorists entering from the New England Highway. Views toward the Project will be available to the south east from the intersection at Lindsays Gap Road along Nundle Road, travelling into Nundle. Existing roadside vegetation on the southern side of Nundle Road is likely to fragment views to the Project.</p> <p>Views to the Project are likely to be available from a small number of lifestyle properties to the south of Nundle Village. Scattered vegetation throughout the landscape may assist in partially screening views to the Project from these dwellings.</p>	<p>Although the proposed wind turbines are likely to be discernible from some areas within the LCU, the Project will not dominate the visual catchment of the Nundle Village LCU.</p> <p>Due to the distance, the Project will form a minor element in the overall visual landscape. Visibility to the Project Site from the Nundle Village LCU is limited.</p> <p>The landscape elements which contribute to the scenic quality of the LCU will remain unchanged as a result of the proposal.</p>	<p>The key features of this LCU include a mixture low density residential houses on large blocks, gently undulating lots used for light farming activities, the presence of the Peel River and distant views of vegetated ridgelines to the east (associated with Hanging Rock) and to the south.</p> <p>Views to vegetated ranges (including the Project Area) characterise the arrival to Nundle from the north west. Although visible in the distance, the Project is likely to occupy a small portion of the vegetated ridgelines that surround Nundle Village. The key feature on arrival is the steep densely vegetated range associated with Hanging Rock which will remain unchanged.</p>

Table F1: Assessment of Landscape Character Impacts LCU01: Nundle Village

# Appendix F. Visual Impacts on Landscape Character

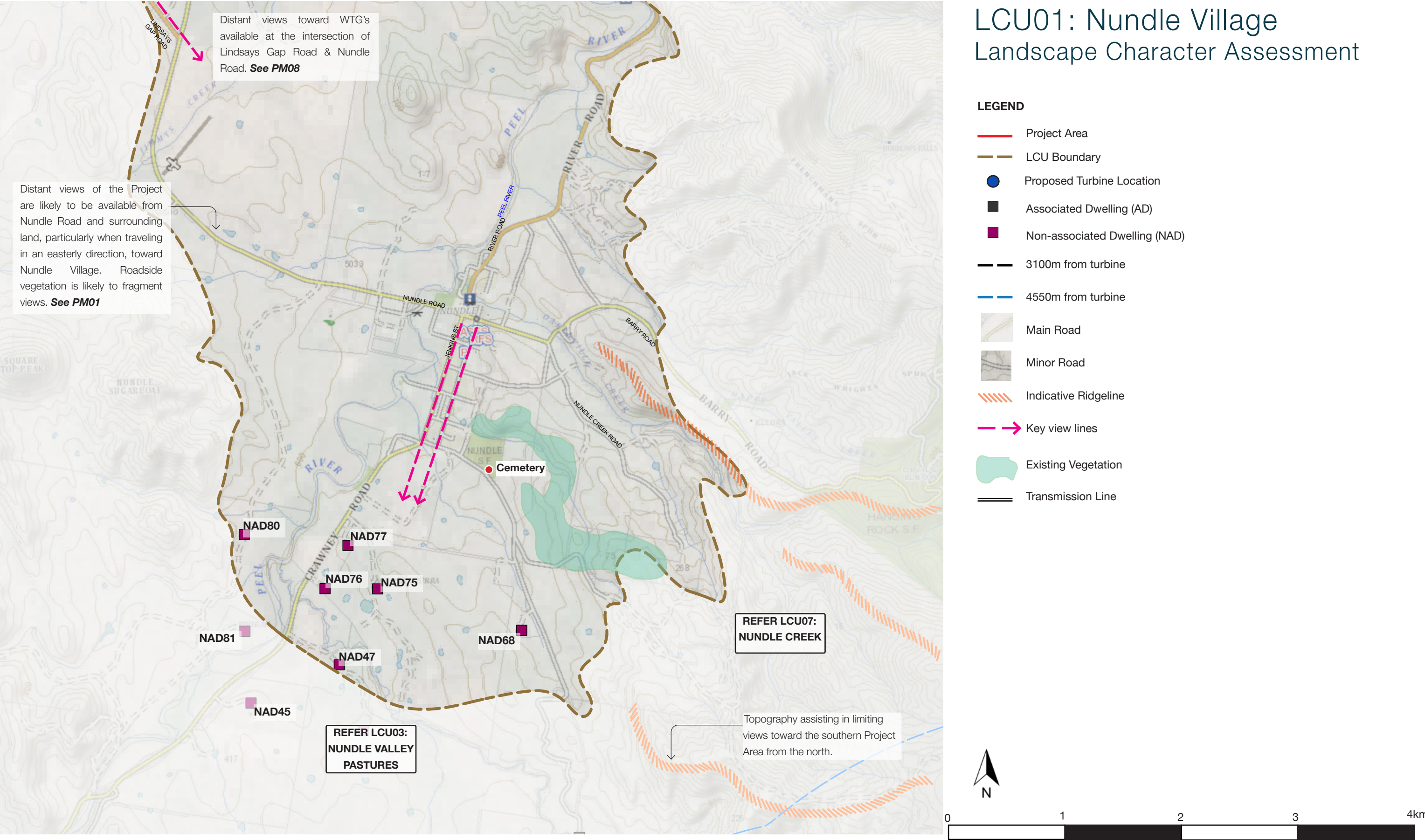


Figure F1: Assessment of Landscape Character Impacts - LCU01: Nundle Village (Map Source: Six Maps)



# Appendix F. Visual Impacts on Landscape Character Units

## F2. Overview of Visual Impacts on LCU02 Wallabadah

Overview of LCU02: Wallabadah	Summary of Visual Impacts on Landscape Character:	Landscape Scenic Integrity:	Key Landscape Features:
<p>For the purpose of this report the Wallabadah LCU has been defined by the mostly cleared grazing land bounded to the north and west by Lindsays Gap Road and to the south and east by foothills associated with the Liverpool Range.</p> <p>The Scenic Quality Rating for the LCU is <b><i>moderate</i></b>, which has been applied to assist in the assessment of all viewpoints and residences within the LCU.</p> <p><b><i>Refer to Appendix B2.</i></b></p>	<p>The LCU has relatively low levels of habitation with the four (4) identified dwellings accessed Via Old Wallabadah Road. It is mostly unsealed and winding and has a relatively low frequency of use. Dwellings are typically set back from Old Wallabadah Road and accessed by private driveways. Views from along Old Wallabadah Road are generally contained by vegetation and topography, with the exception of fleeting opportunities for distant views from elevated crests.</p> <p>Lindsays Gap Road runs in a N/S direction through the LCU and connects to the New England Highway. Views toward the Project Area are likely to be screened by topography for the majority of the road, however distant views may be available at the intersection of Lindsays Gap Road and Old Wallabadah Road. Distance and speed of travel would significantly limit the ability to notice the Project from this location.</p> <p>Views from the identified residences within the LCU generally have a low degree of visibility to the Project due to local screening factors. Views toward the clearing associated with the transmission line may be available from some locations.</p>	<p>Visibility to the Project Area from the Wallabadah LCU is limited due to the distance, local screening factors, and topography.</p> <p>The Project may be discernible from some public areas within the LCU, however it will not modify the visual catchment or scenic integrity of the Wallabadah LCU area.</p> <p>The Project will form a minor element in the overall visual landscape. The landscape elements which contribute to the scenic quality of the LCU will remain unchanged as a result of the proposal.</p>	<p>The key features of this LCU include cleared undulating valleys used for grazing activities, creeklines and views to the foothills associated with the Liverpool/ Mount Royal Ranges. These features will remain unchanged..</p> <p>The Project will form a minor element in the overall visual landscape and will not disrupt the key landscape features.</p>

Table F2: Assessment of Landscape Character Impacts LCU02: Wallabadah



# Appendix F. Visual Impacts on Landscape Character Units

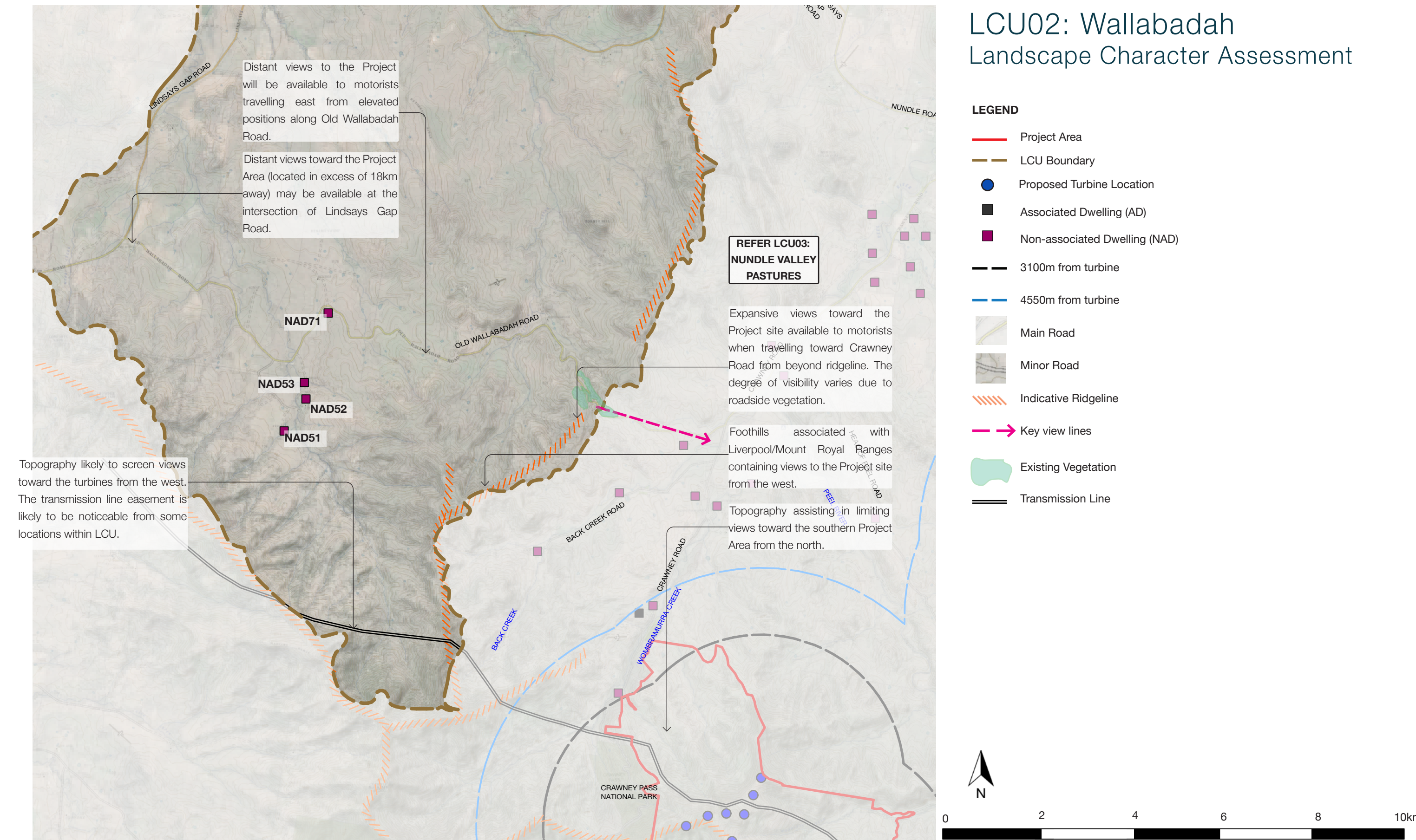


Figure F2: Assessment of Landscape Character Impacts LCU02: Wallabadah (Map Source: Six Maps)



# Appendix F. Visual Impacts on Landscape Character Units

## F3. Overview of Visual Impacts on LCU03 Nundle Valley Pastures

Overview of LCU03: Nundle Valley Pastures	Summary of Visual Impacts on Landscape Character:	Landscape Scenic Integrity:	Key Landscape Features:
<p>For the purpose of this report the Nundle Valley Pastures LCU has been defined as the land to the north west of the Project Area which is generally associated with the grazing land within the valley of the Liverpool/ Mount Royal Ranges.</p> <p>The Scenic Quality Rating for the LCU is <b><i>moderate</i></b>, which has been applied to assist in the assessment of all viewpoints and residences within the LCU.</p>	<p>Nundle Valley Pastures is a cleared, relatively flat area intersected by small tributaries and used mainly for agricultural purposes. Large lot homesteads are typical of the area and are scattered off Nundle Creek Road, Head of Peel Road and Crawney Road.</p> <p>Crawney Road runs through the centre of the LCU, in a SW/NE direction connecting with Nundle Village to the north. Views toward the range associated with the Project Area provides a visual backdrop to those travelling along this road. Distant views toward the Project Area are likely from the northern section of Crawney road on the approach into the Nundle Village limits. Views from the southern section of Crawney road are likely to be fragmented by roadside vegetation and local topographical changes typical of the area.</p> <p>Nundle Creek Road is a low use, unsealed road running generally NW/SE, accessed via Nundle Village. Due to the orientation of the road, views will be available when travelling SE toward the north of the Project Area. Localised topographical changes and vegetation may reduce the visibility of turbines from some locations.</p> <p>Head of Peel road meets with Crawney Road and generally runs SE/NW direction, within the Valley associated with the Project Area. Access through this section of the road is limited and generally only utilised by landowners. Views toward the Project will be available, however local topographical changes and roadside vegetation are likely to assist in fragmenting views toward the Project Area.</p> <p>Back Creek Road, also accessed off Crawney Road, runs generally SW/NE direction and also has a low frequency of use. Distant views of the Project Area may be available at the northern section of the road. Localised undulations and vegetation may obstruct some views.</p> <p>Views toward the Project will be available from a number of properties within the LCU. Localised topography, distance, and vegetation are likely to assist in fragmenting views to the Project from a number of these dwellings.</p>	<p>Although the proposed wind turbines will be a noticeable element from some areas within the LCU, they will not dominate the existing landscape character of the Nundle Valley Pastures LCU.</p> <p>Due to the distance, localised topographical changes and roadside vegetation the Project will occupy small portions of the overall visual landscape.</p> <p>There are limited opportunities to view the proposal in its entirety.</p> <p>The landscape elements which contribute to the scenic quality of the LCU will remain unchanged as a result of the proposal.</p>	<p>The key features of this LCU include undulating to flat generally, cleared agricultural landscapes and views of vegetated ridgelines.</p> <p>Views to vegetated ranges (including the Project Site) form a visual backdrop when travelling along Crawney road toward Nundle Village. Although visible in the distance, the Project is likely to occupy a small portion of the vegetated ridgelines.</p> <p>Whilst the Project will be a noticeable element in the landscape, the key features of the LCU are likely to remain undisturbed.</p>

Table F3: Assessment of Landscape Character Impacts LCU03: Nundle Valley Pastures



# Appendix F. Visual Impacts on Landscape Character Units

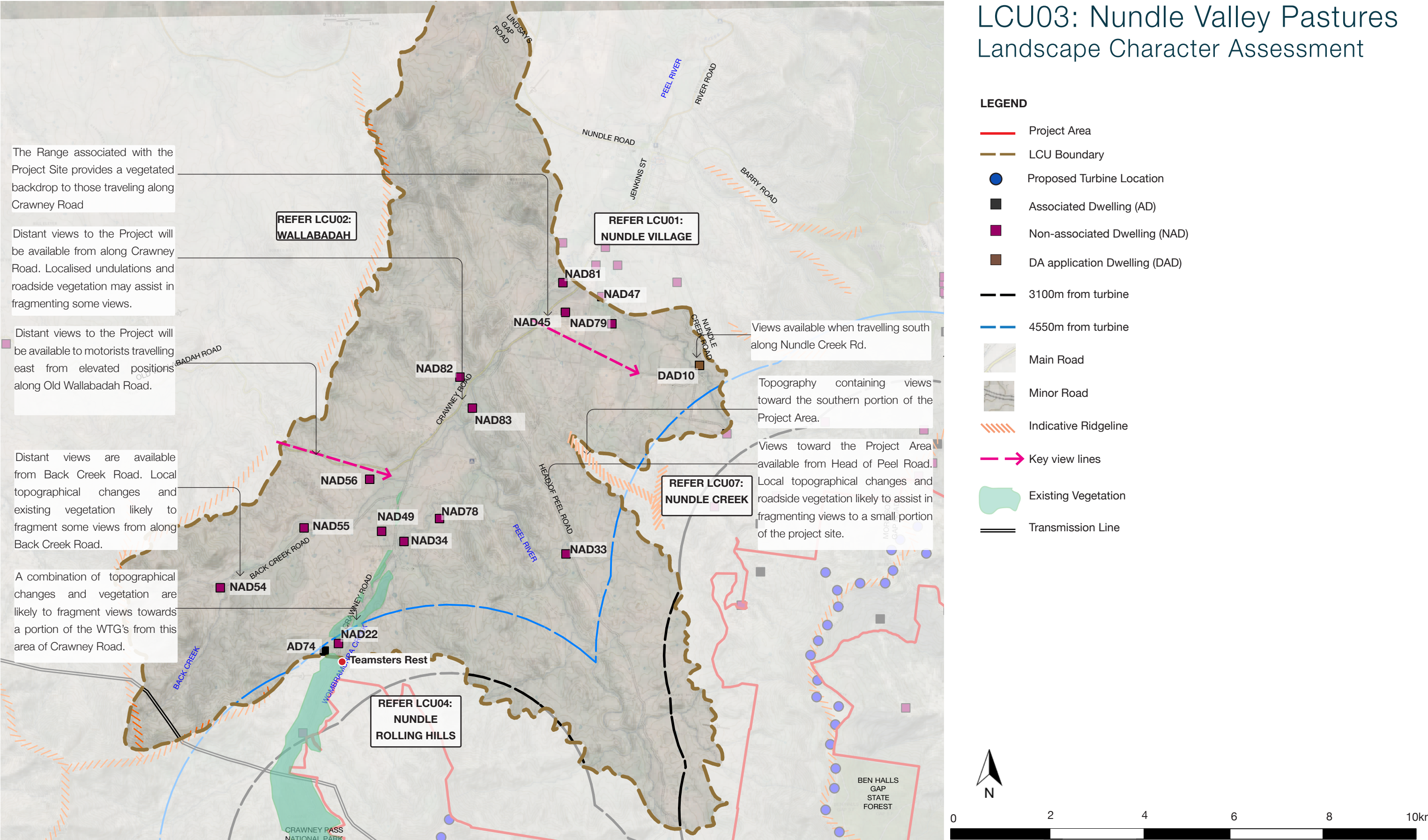


Figure F3: Assessment of Landscape Character Impacts LCU03: Nundle Valley Pastures (Map Source: Six Maps)



# Appendix F. Visual Impacts on Landscape Character Units

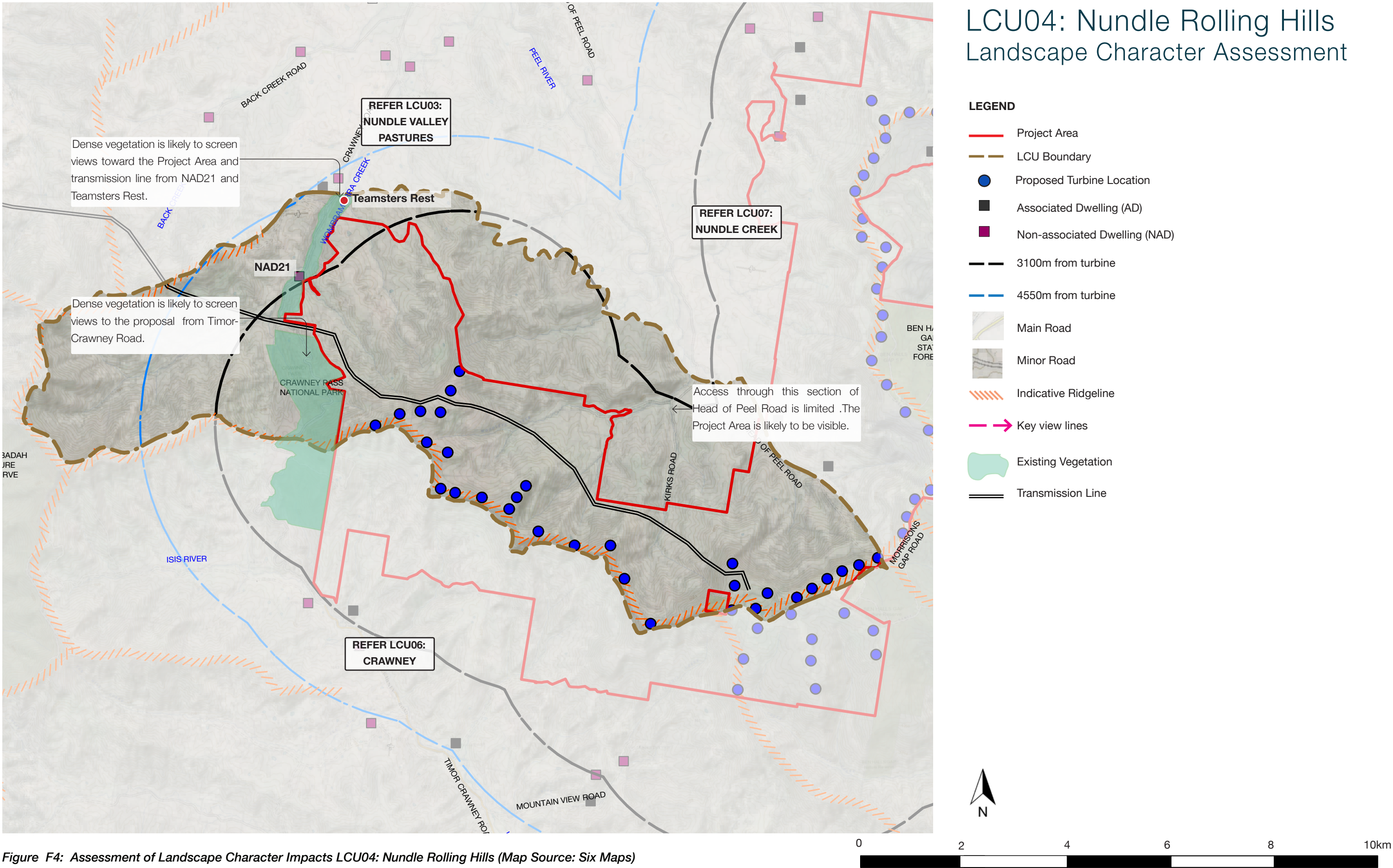
## F4. Overview of Visual Impacts on LCU04 Nundle Rolling Foothills

Overview of LCU04: Nundle Rolling Foothills	Summary of Visual Impacts on Landscape Character:	Landscape Scenic Integrity:	Key Landscape Features:
<p>For the purpose of this report the Nundle Rolling Foothills LCU is defined topography adjoining the elevated ridgelines and crests of the Liverpool/Mount Royal Ranges between the Nundle Valley Pastures and the densely vegetated ridgelines associated with the Project Area.</p> <p>The Scenic Quality Rating for the LCU is <b><i>moderate</i></b>, which has been applied to assist in the assessment of all viewpoints and residences within the LCU.</p> <p><b><i>Refer to Appendix B4.</i></b></p>	<p>Nundle Rolling Foothills is characterised by elevated and densely wooded crests, valleys and areas of cleared undulating topography used for grazing and other agricultural purposes. The LCU is largely uninhabited and includes one associated dwelling: a rural lifestyle property accessed off Timor Crawney Road.</p> <p>A portion of Timor-Crawney Road runs in a N/S direction through the LCU. This section of Timor-Crawney Road is winding, steep and surrounded by roadside vegetation. Opportunities to view the Project Area from along this road are likely to be limited. The Project is unlikely to be visible from within Crawney Pass National Park</p> <p>Crawney Road connects with Timor Crawney Road generally runs in a SW/NE direction and is characterised by dense roadside vegetation. This is also likely to screen views from public locations along the road, NAD21 and Teamsters Rest.</p> <p>Head of Peel Road connect with Crawney Road and has limited Public access. Views from this section of Head of Peel Road are likely to be available.</p> <p>The transmission line is likely to run through the LCU. Views toward the transmission line are likely to be available from Kirks Road and sections of Head of Peel Road.</p>	<p>The Project Area is likely to be noticeable from some areas within the LCU. However, for the most part the Project will not dominate the visual catchment of the Nundle Rolling Foothills LCU.</p> <p>There are limited opportunities to view the Project Site within the LCU due to local screening factors and topographical undulations.</p> <p>The current landscape character and scenic quality of the Nundle Rolling Foothills LCU is likely to be slightly altered in some locations due to the Project.</p>	<p>The key features of this LCU include the densely vegetated and undulating terrain, cleared grazing land and fleeting views to the surrounding ridgelines.</p> <p>Although the proposed wind turbines are likely to slightly alter views toward the ridge from some limited locations, the landscape features will remain the key feature of the landscape within this LCU.</p>

Table F4: Assessment of Landscape Character Impacts LCU04: Nundle Rolling Hills



Appendix F. Visual Impacts on Landscape Character Units





# Appendix F. Visual Impacts on Landscape Character Units

## F5. Overview of Visual Impacts on LCU05 Forested Mountain Ranges

Overview of LCU05: Forested Mountain Ranges	Summary of Visual Impacts on Landscape Character:	Landscape Scenic Integrity:	Key Landscape Features:
<p>For the purpose of this report the Forested Mountain Ranges LCU has been defined by the densely vegetated land to the eastern slopes of the Dividing Range, north to the Hanging Rock area, and south to Ben Halls Gap Nature Reserve.</p> <p>The Scenic Quality Rating for the LCU is <b><i>moderate/high</i></b>, which has been applied to assist in the assessment of all viewpoints and residences within the LCU.</p> <p><b><i>Refer to Appendix B5.</i></b></p>	<p>The Forested Mountain Ranges LCU is characterised by uncleared, heavily wooded areas with steep to sloping topography with clusters of large lot residential dwellings situated along the ridgeline.</p> <p>The LCU is accessed from Nundle via Barry Road: a generally steep and winding road connecting Nundle to Hanging Rock. Views from along this road are limited due to the dense roadside vegetation, steep topography and 'switchbacks' typical of Barry Road. Hanging Rock lookout is located off Barry Road, with views extending south west. Views toward the southern turbines, in excess of 16km away, are likely to be available in the distance. Due to vegetation, topography and distance the turbines are likely to be difficult to discern from this location.</p> <p>The large lot residences located off Barry Road are generally associated with making up the Village of Hanging Rock township. Views from within the village are generally contained by vegetation associated with residential lots and roadside vegetation. Fleeting glimpses of the Project Area may be available from breaks in vegetation at the eastern section of Barry Road.</p> <p>Morrison's Gap Road is located off Barry Road and runs in a NE/SW direction and is generally utilised by a handful of land owners. Views from along this road are generally contained by dense roadside vegetation typical of the LCU, with the exception of the break in vegetation associated with the transmission line easement nearby NAD12. Residences in this area are typically surrounded by dense vegetation which is likely to contain views toward the Project Area, with the exception of AD23 which is orientated to the south and has cleared views out of the property.</p> <p>Shearers Road is accessed off Morrison's Gap Road and runs in an E/W direction. It is used to access a few isolated dwellings. Due to the orientation of this road and its proximity to the project, there is likely to be fleeting views towards a small portion of the Project Area from the eastern section of Shearers Road. Views from the majority of residences located off this road are likely to be contained due to the surrounding vegetation and localised topographical changes.</p> <p>The vegetated range has a high level of visibility from areas surrounding the LCU, in particular areas immediately west and south.</p>	<p>Although the proposed wind turbines are likely to alter the existing landscape as defined in this report as the Forested Mountain Ranges LCU, the dense vegetation and topographical changes typical of the LCU will remain unchanged.</p> <p>Due to the localised topographical changes and roadside vegetation the number of publicly accessible locations to view the Project from within the LCU is likely to be limited.</p> <p>As the range forms apart of the visual catchment from surrounding Landscape Character Units, the level to which it has the potential to alter the scenic integrity has been assessed based on the parameters of surrounding LCUs (in particular LCU03: Nundle Valley Pastures, LCU04 Nundle Rolling Foothills, LCU06: Crawney and LCU07 Nundle Creek).</p>	<p>The valued features of this LCU include the densely vegetated ridgeline which provides a backdrop from the surrounding areas. The proposed development is likely to alter the existing visual character of the ridgeline. However, the heavily wooded character of the LCU will remain unchanged.</p> <p>Due to the proximity of the Project Area to this LCU, there is the possibility of the turbines being a dominant feature within the landscape. However, the dense vegetation limits opportunities for these views from within the public domain. The close proximity reduces views to include a small portion of the Project Area.</p> <p>It is important to note that whilst the proposed wind turbines will be a noticeable element on top of the range, and in some areas a dominant feature, they will not disrupt central line of sight to the range. The range is likely to remain a key feature of the landscape from areas surrounding this LCU.</p>

Table F5: Assessment of Landscape Character Impacts LCU05: Forested Mountain Ranges



# Appendix F. Visual Impacts on Landscape Character Units

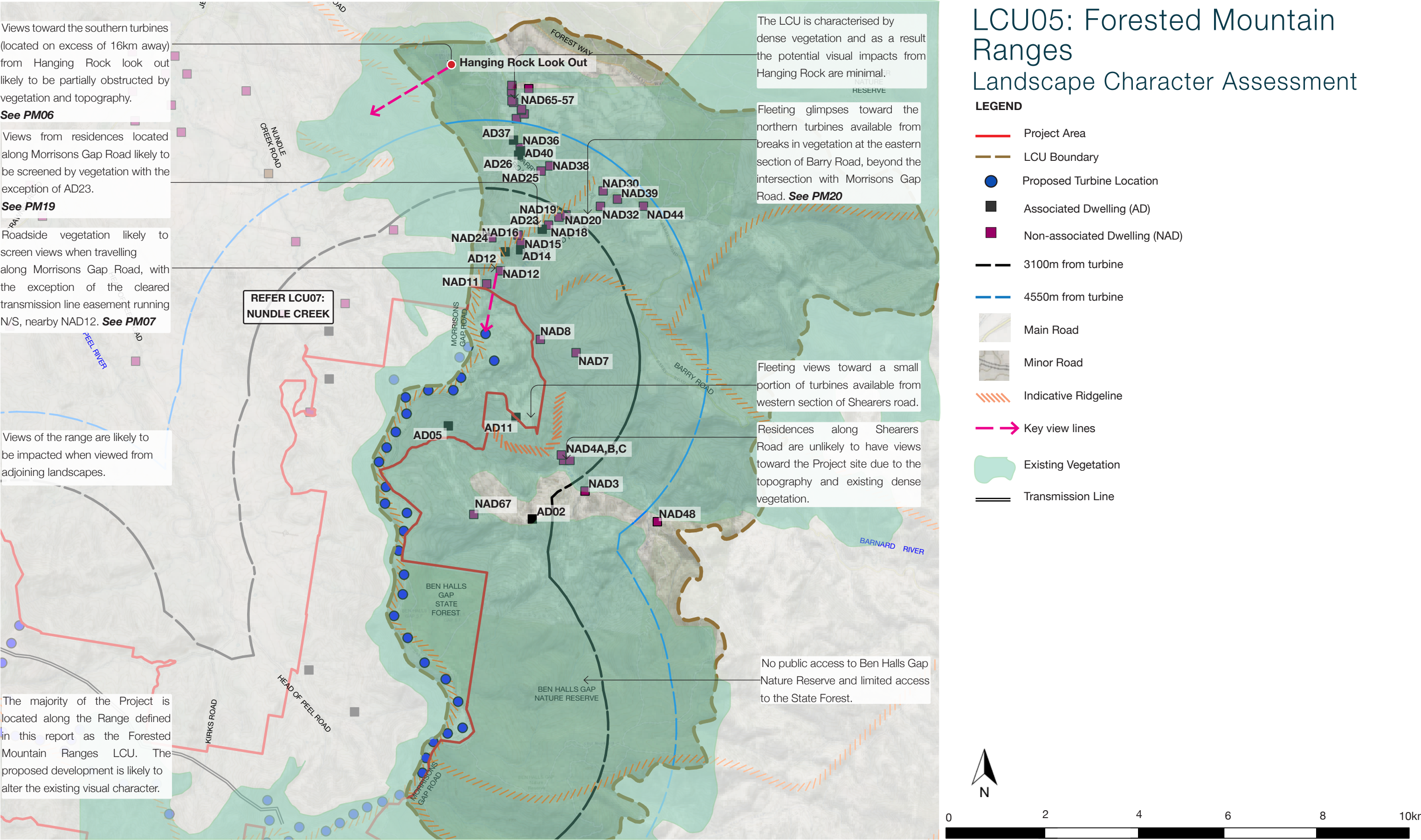


Figure F5: Assessment of Landscape Character Impacts LCU05: Forested Mountain Ranges (Map Source: Six Maps)



# Appendix F. Visual Impacts on Landscape Character Units

## F6. Overview of Visual Impacts on LCU06 Crawney

Overview of LCU06: Crawney	Summary of Visual Impacts on Landscape Character:	Landscape Scenic Integrity:	Key Landscape Features:
<p>For the purpose of this report the Crawney LCU has been defined by the cleared grazing land to the south west of the ridgeline including the generally undulating terrain, Valley Floor and intersecting vegetated tributaries. The LCU is loosely bounded to the north and west by the mountain ranges associated with Crawney Pass National Park and Wallabadah Nature Reserve and rolling foothills to the east.</p> <p>The Scenic Quality Rating for the LCU is <b><i>moderate</i></b>, which has been applied to assist in the assessment of all viewpoints and residences within the LCU.</p> <p><b><i>Refer to Appendix B6.</i></b></p>	<p>The Crawney LCU has few dwellings with the exception of mix of large lot lifestyle and rural residential properties located along Timor-Crawney Road and more isolated dwellings along Mountain View Road.</p> <p>Timor-Crawney Road runs through the centre of the LCU, generally along side the Isis River in a N/S direction. Views from along this road are available toward the southern portion of the Project Area, however due to the undulating nature of the LCU and the remnant roadside vegetation, views towards the turbines are generally fleeting, particularly the northern section of the LCU. Four dwellings are accessed via Timor-Crawney Road within the LCU. The residences have varying degrees of visibility to the Project, however topography and vegetation may assist in partially screen views from some locations.</p> <p>Crawney Pass National Park is accessed via a winding and steep section of Timor-Crawney Road. Opportunities to view the Project Area from along this road are likely to be limited. The Project is unlikely to be visible from within the Crawney Pass National Park.</p> <p>Mountain View Road is accessed off Timor Crawney Road. It is a relatively inaccessible dirt road used to access three dwellings. Due to the close proximity and localised topographical changes, views are likely to be limited to a small portion of the southern turbines. With the exception of NAD69, views toward the Project are likely to be limited from these residences due to the close proximity, localised topographical changes and vegetation.</p> <p>Sargeants Gap Road is also accessed off Timor-Crawney Road and runs in an E/W direction. Due to the orientation, views towards the Project are likely to be available from elevated positions along the western section of Sargeants Gap Road. Topography is likely to screen views toward the turbines from the eastern portion of the road.</p> <p>Pages Creek Road is accessed off Sargeants Gap Road and has a relatively low level of usage. Views from along this road are likely be screened with the exception of fleeting distant views toward the Project for a small section when travelling north.</p> <p>Views of the Project from the southern end of the LCU are likely to be hard to discern due to localised factors such as the undulating topography, distance and remnant vegetation.</p>	<p>Although the southern section of the proposed wind turbines are likely to be discernible along the ridgeline from some areas within the LCU, the Project will not cause significant modification to the visual catchment of the Crawney LCU.</p> <p>Due to the existing roadside vegetation, local topographical changes and distance, the Project will form a minor element in the overall visual landscape.</p> <p>The scenic quality of the LCU will be slightly altered as a result of the proposal.</p>	<p>The key features of this LCU include the densely vegetated undulating terrain and intersecting creeklines, cleared grazing land and fleeting views to the surrounding ridgelines.</p> <p>Although the proposed wind turbines are likely to slightly alter the views toward the ridge from some locations, the landscape features will remain the dominant feature of the landscape within this LCU.</p>

Table F6: Assessment of Landscape Character Impacts LCU06: Crawney



# Appendix F. Visual Impacts on Landscape Character Units

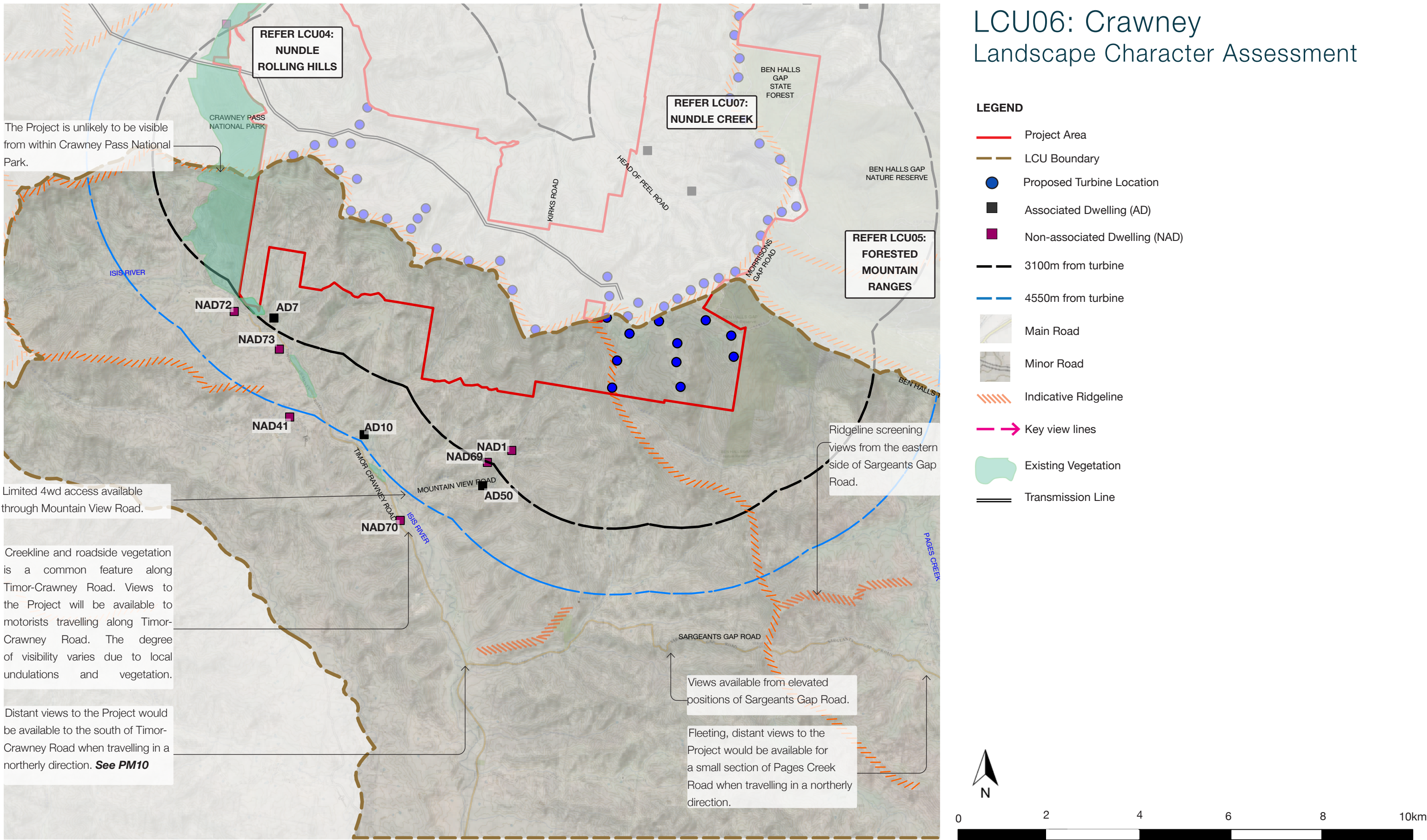


Figure F6: Assessment of Landscape Character Impacts LCU06: Crawney (Map Source: Six Maps)



# Appendix F. Visual Impacts on Landscape Character Units

## F7. Overview of Visual Impacts on Nundle Creek

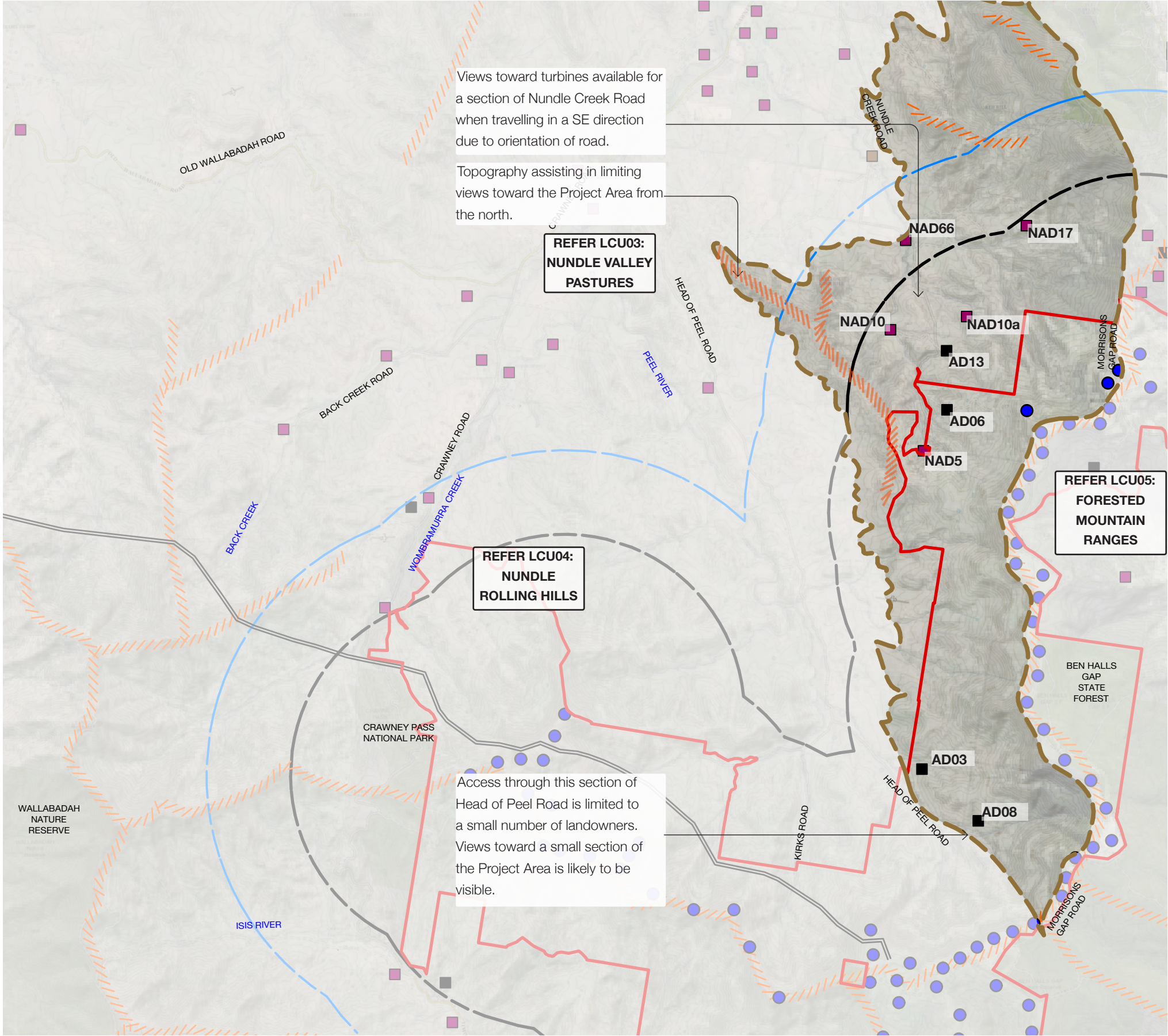
Overview of LCU07: Nundle Creek	Summary of Visual Impacts on Landscape Character:	Landscape Scenic Integrity:	Key Landscape Features:
<p>For the purpose of this report the Nundle Creek LCU has been defined by the partially cleared, undulating grazing land to the north west of the Project Area.</p>	<p>The Nundle Creek LCU is largely made up of undulating and mostly cleared rural residential blocks, accessed via private driveways off Nundle Creek Road and a relatively inaccessible section of Head of Peel Road. Views from along these roads are likely to be available from some locations.</p>	<p>The proposed wind turbines are likely to be noticeable along the ridgeline from some areas within the LCU, however due to the local topographical changes and proximity to the Project Area, the Turbines will form a minor element in the overall visual landscape.</p>	<p>The key features of this LCU include the cleared, undulating grazing land and fleeting views to the surrounding ridgelines.</p>
<p>The Scenic Quality Rating for the LCU is <b><i>moderate</i></b>, which has been applied to assist in the assessment of all viewpoints and residences within the LCU.</p>	<p>Nundle Creek Road is a low use, unsealed road running generally NW/SE connecting to Nundle Village. It is used to access a handful of properties, generally via private driveways. Due to the orientation of the road, views will be available when travelling SE toward the north of the Project Area, across the cleared, gently undulating grazing land. However, localised topographical changes and vegetation may reduce the visibility of turbines from some locations.</p>	<p>The current landscape character and scenic quality of the Nundle Creek LCU is likely to be slightly altered in some locations due to the Project as a result of the proposal.</p>	<p>Although the proposed wind turbines are likely to alter the appearance of the Ridge line from some locations, the Project is likely to occupy a small portion of the vegetated ridge.</p>
<p><b><i>Refer to Appendix B7.</i></b></p>	<p>Residences located in proximity to Nundle Creek Road will have varying degrees of visibility toward the northern WTG's. Scattered vegetation throughout the landscape may assist in partially screening views to the Project from these dwellings. Views from dwellings generally sited at the base of the Ridge are likely to have views to a small portion of the turbines due to local screening factors and proximity to the Project Area.</p>		
	<p>Head of Peel Road connects with Crawney Road and runs generally SE/NW direction, within the Valley associated with the Project Area. Access through this section of the road is utilised by only a few landowners. Views are likely to be available from this road toward the Project Area. Views from residences will be available from within this LCU.</p>		<p>The undulating rolling hills and traversing creek lines are likely to remain a dominant feature of the Nundle Creek LCU.</p>

Table F7: Assessment of Landscape Character Impacts LCU07: Nundle Creek



# Appendix F. Visual Impacts on Landscape Character Units

## LCU07: Nundle Creek Landscape Character Assessment



### LEGEND

- Project Area
- LCU Boundary
- Proposed Turbine Location
- Associated Dwelling (AD)
- Non-associated Dwelling (NAD)
- 3100m from turbine
- 4550m from turbine
- Main Road
- Minor Road
- Indicative Ridgeline
- Key view lines
- Existing Vegetation
- Transmission Line



Figure F7: Assessment of Landscape Character Impacts LCU07: Nundle Creek (Map Source: Six Maps)