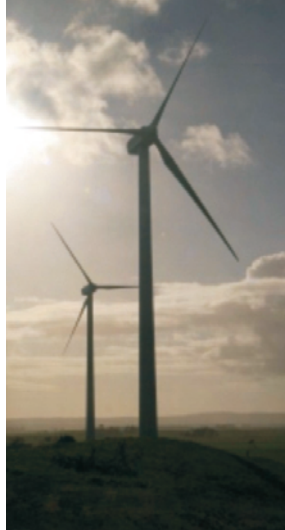


Woodlawn Wind Farm



Existing Environment

5

5. Existing Environment

5.1 Introduction

This chapter of the SEE provides a review of selected aspects of the existing environment for the amended Woodlawn Wind Farm project. It provides an overview of the geographic setting of the project as well as pertinent details of geology, soils, hydrology, landuse and socio-economic context in which the project variations can be considered. The 2004 EIS also provides a comprehensive reference for these aspects and this chapter provides a summary of key aspects drawing on previous information with updates as necessary. Where relevant it identifies potential environmental impacts for the amended project and an update for measures to mitigate the respective impacts.

Chapter 5 is complemented by subsequent Chapters 6 to 11, which address the more significant aspects of the environmental issues relevant to wind farm developments generally and for the Woodlawn Wind Farm in particular. Those chapters and the associated Appendices D to G provide comprehensive assessments of specific environmental aspects that have been undertaken and include a review of the existing environment for those issues.

A guide to the location of the respective information is provided in Table 5.1.

Table 5.1 – Key to location of sections describing the existing environment

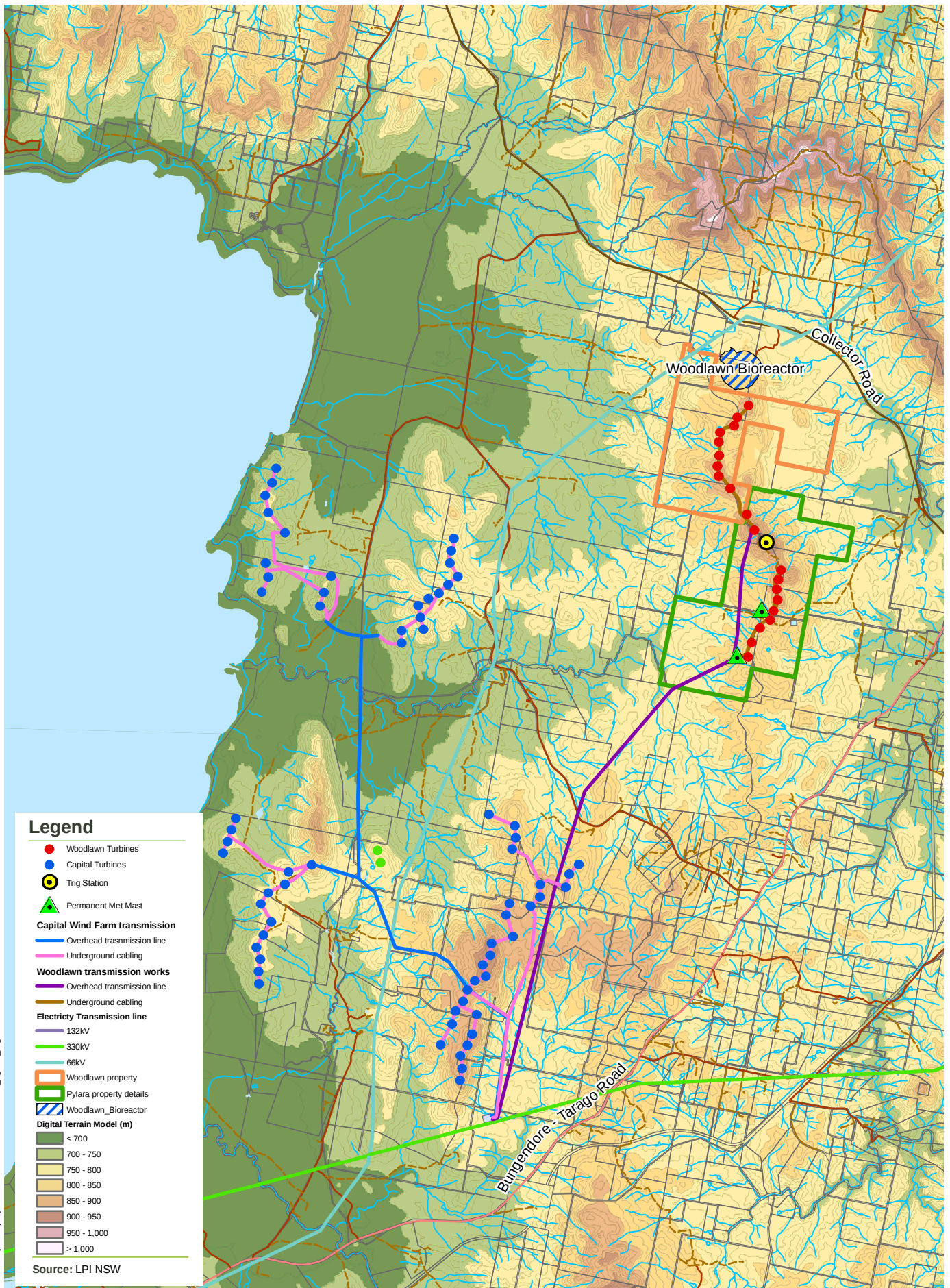
Chapter 5		Subsequent Chapters and appendices		
Environmental aspect	Section	Environmental aspect	Section	Appendix
Project location and setting	5.2	Visual and shadow flicker	6	--
Air quality	5.2	Noise	7	D
Geology and soils	5.3	Flora and fauna	8	E
Water resources and water quality	5.4	Heritage	9	F
Land use	5.5	Traffic and transport	10	--
Socio-economic aspects	5.6	Telecommunications	11	G
		Safety aspects	12	--
		Greenhouse issues	13	--

5.2 Project location and setting

The turbine sites for Woodlawn Wind Farm will be located along a ridgeline which forms part of the Great Dividing Range. The 33 kV overhead transmission line and the Capital Wind Farm substation are at lower elevations and are located in the upper parts of the Taylors Creek and Dry Creek catchments. The topographic variations of the full project area are shown in Figure 5.1. More detail of the topographic variations at the Woodlawn Wind Farm site is shown in Figure 5.2.

As indicated in Chapter 2 the turbine sites are on the Pylara and Woodlawn properties that are now both owned by Veolia Environmental Services. The broader area is characterised by rural land holdings, is lightly timbered with occasional stands of cleared open forest and low density rural settlement. The Woodlawn Bioreactor and former mine tailings dams and infrastructure are located at the northern end of the wind farm site.

The project area is located in the Southern Tablelands which is characterised by relatively cold dry winters but with sometimes wet ground conditions and slightly higher monthly rainfall during summers that also have higher evaporation rates. Rainfall is generally variable and snow is possible at the higher altitudes and some lower elevations during winter. Site drainage is described in Section 5.4.



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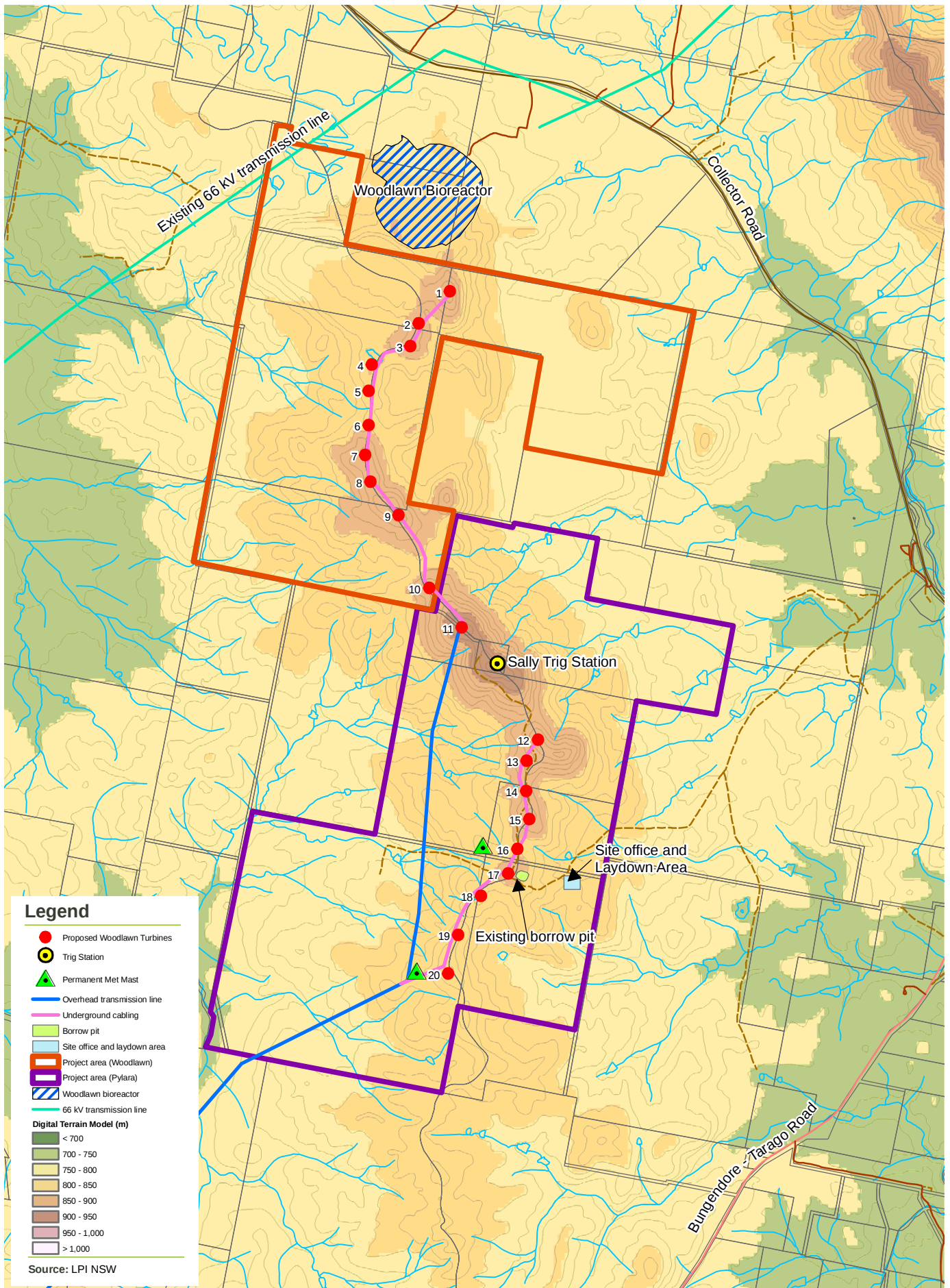
0 1.5 3 Kilometers

Projection: MGA

Woodlawn Wind Farm **Statement of Environmental Effects**

FIGURE 5.1: General Topographic Variation - Project Area

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0 500 1,000 Meters

Projection: MGA

Woodlawn Wind Farm **Statement of Environmental Effects**

FIGURE 5.2: General Topographic Variation - Wind Farm Site

Representative photos of the wind farm site are provided in Plates 5.1 to 5.6 and demonstrate the mostly cleared pastoral land on which turbines will be located. It is also very close to the former Woodlawn Mine Site and is adjacent a large open pit, tailings dams and a revegetated out of pit spoil pile.



Plate 5.1 – View to Southwest along Pylara access track



Plate 5.2 – View to north from Turbine site 20



Plate 5.3 – View north from near Turbine site 16



Plate 5.4 – View south from near Turbine site 12



Plate 5.5 – View north from Turbine site 11



Plate 5.6 – View south from Turbine Site 1

Plates 5.7 to 5.10 provide images of the lands at various points along the route of the proposed 33 kV transmission line. As can be seen in these plates, the land is mostly cleared grazing land. The route will avoid areas of remnant woodland and where practical, avoid impacting areas of potential archaeological deposit.

	
Plate 5.7 View to south from Woodlawn ridgeline along northern part of 33 kV line route and towards Capital Wind Farm	Plate 5.8– View to the north from Taylors Creek Road along the 33 kV line route
	
Plate 5.9 - View to the south from Taylors Creek Road along the 33 kV line route	Plate 5.10 – View to the south (substation in distance) – Southern part of the 33 kV line route

5.2.1 Existing air quality

The existing air quality in the Palarang Shire primarily varies with seasons in response to airborne particulate matter associated with windy and dusty conditions and events such as bushfires. Plates 5.1 to 5.10 show generally clear visibility. Visibility can also be affected under severe weather conditions with strong winds and high dust levels and by climatic factors such as low cloud cover on the ranges and fog and mist in the lower areas.

Apart from the Woodlawn Bioreactor and any mining activities the locality is distant from major industry that will be associated with emissions. The placement of wastes at the Bioreactor is subject to stringent controls and accordingly air quality at the location is not likely to be significantly affected by visible industrial air emissions. Also, due to the distance of the wind farm from the Federal Highway, more than 10 kilometres to the west, it is likely that any impact from freeway vehicle emissions on air quality at the wind farm site would be negligible. Traffic volumes in the immediate locality of the wind farm are much lower and are not likely to significantly affect air quality at the site.

The wind farm represents a low emission form of electricity generation that will have very little impact on the air quality of the locality once operational. The turbines will not produce emissions at the site. The very low emissions associated with the project are mainly associated with the equipment manufacture at other locations and transport of equipment and materials to the site. Vehicle emissions associated with operators and maintenance staff visiting the site will be negligible. Overall, there will be net savings in emissions for electricity generation associated with this renewable energy project to the extent that fossil fuel generation at other sites is displaced (Chapter 13).

The construction stage involves a significant amount of earthworks and the transport of large amounts of equipment and materials to the site as described below.

- **Earthworks:** Exposure of soils for foundations and access track construction and the formation of topsoil and rock stockpiles means that there is potential for the wind to create airborne dust that could degrade local air quality, albeit temporarily. Control measures will be incorporated in the works to ensure that such impacts are minimised. The controls will include:
 - Wetting of access tracks with water and, if necessary, wetting agent during dry and windy periods
 - Stabilisation of exposed soils and stockpiles
 - Where necessary, placement of stockpiles in sheltered locations
 - Restoration of disturbed areas as soon as possible

These measures will be integrated in the project Soil and Water Management Plan.

- **Vehicle movements:** All vehicles delivering equipment, materials and personnel to the site will be registered vehicles that are required to maintain the necessary emission controls. These vehicle movements are expected to be confined to a period of about eight months and their impact on air quality is likely to be negligible.

5.3 Geology and soils

The 2004 EIS provides an assessment of the site geology and potential impacts of the project on soils. The assessment included detailed geotechnical investigations, an overview of the site conditions and provided recommendations relating to foundation and road design. These aspects are still applicable for the amended project as the array covers the same area was addressed by the 2004 EIS.

The topography of the project lands varies between rolling to undulating hills with few to frequent rock outcrops and steep hills with varying degrees of rock outcrop. A moderate degree of variability in the underlying geology contributes to the variation in surface features, including changes in slope and erodibility of exposed strata. Photos of resistant rock outcrop are provided in Plates 5.11 and 5.12.



Plate 5.11 – Rock outcrop near Turbine 13 site



Plate 5.12 - Rock outcrop near Turbine 11 site