

Proposed Renewable Wind Energy Facility at the
Perdekraal West Site 1
Western Cape Province

Amendment Report to Visual Impact Assessment

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Prepared for
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On behalf of Perdekraal West Wind Farm (Pty) Ltd

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1. Introduction

Perdekraal West Wind Farm (Pty) Ltd is proposing to amend the environmental authorisation for the proposed Perdekraal West Wind Energy Facility (WEF) near Touws River in the Western Cape. This amendment report addresses the potential changes in visual impact significance relating to the new proposals. The location of the proposed Perdekraal WEF is indicated in Figure 1.

2. Original VIA

The original Visual Impact Assessment (VIA) for the Perdekraal wind farm, (February 2011), was based on hub heights of 80m and a rotor diameter of 90m, (see Figure 2a). The visual significance rating after mitigation at that time was medium to high, given the large number of turbines, the open Karoo landscape and the proximity of district roads.

3. Subsequent Authorisation

Authorisation was given for the proposed Perdekraal West wind energy facility for 65 wind turbines with a hub height of 90m and a rotor diameter of 120m.

4. Proposed Amendments

The proposed amendments are to increase the rotor diameter from 120m to a maximum of 155m, increase the hub height up to 120m, and the blade tip height up to 198m, increase the wind turbine generation capacity up to 6MW. There has been a revision to the layout to take various sensitivities into account, along with a decrease in the number of wind turbines from 65 to 47, as indicated in Figure 2b.

5. Viewshed Analysis

A viewshed analysis has been prepared to provide a comparison of the difference in hub height from 80m and the proposed 120m, (Figures 3a and 3b), also taking into account the fewer number of turbines proposed (47).

The analysis indicated that with the proposed amendments, the viewshed would extend slightly further out, and that the proposed wind farm would potentially be more visible from the R356 Route. However, at a distance of 15 km the visibility of the wind farm would be marginal.

The increase in the rotor diameter is also expected to extend the viewshed, but given the marginal visibility of the wind farm at 15 km, the difference is not expected to be significant.

In addition, the reduced number of turbines would tend to reduce the visual clutter effect of the proposed wind farm, particularly when seen on the skyline, helping to balance out any difference in the overall visual impact. The current amendments will therefore have a zero or a negligible effect on the significance of impacts identified in the original VIA Report.

6. Mitigations

The layout of the wind farm has already been through a number of iterations based on the specialist studies and engineering considerations. The visual mitigations contained in the original VIA of 2011 would still have relevance, and no new visual mitigations are deemed necessary.

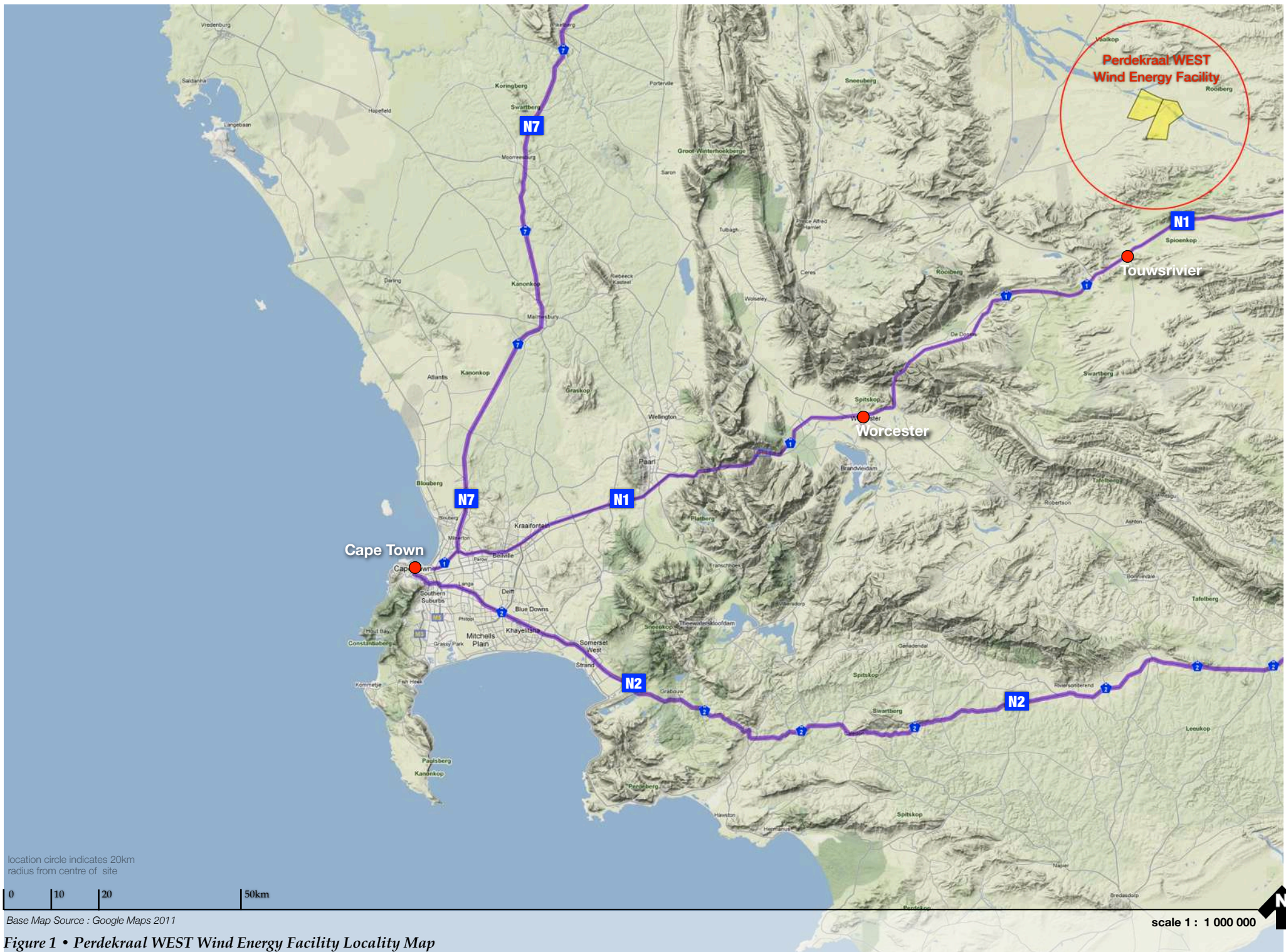
7. Conclusion

The reduced number of wind turbines (47 turbines), together with the increased hub height, rotor diameter and blade tip height would result in similar overall visual impact significance ratings to that determined in the original VIA and subsequent amendments, as indicated in Paragraph 4 above.

The disadvantage in visual terms of the marginally increased extent of the viewshed is offset by the advantage of having fewer wind turbines in the landscape.

The proposed amendments would result in no change in the overall visual impact significance ratings.

Provided that the visual mitigations listed in the original visual impact study (including post-construction rehabilitation of the site) are adhered to, the existing Environmental Authorisation for the Perdekraal West Wind Energy project should still be valid. Our opinion from a visual perspective is that the proposed amendments should be approved.



location circle indicates 20km
radius from centre of site

Base Map Source : Google Maps 2011

Figure 1 • Perdekraal WEST Wind Energy Facility Locality Map

scale 1 : 1 000 000

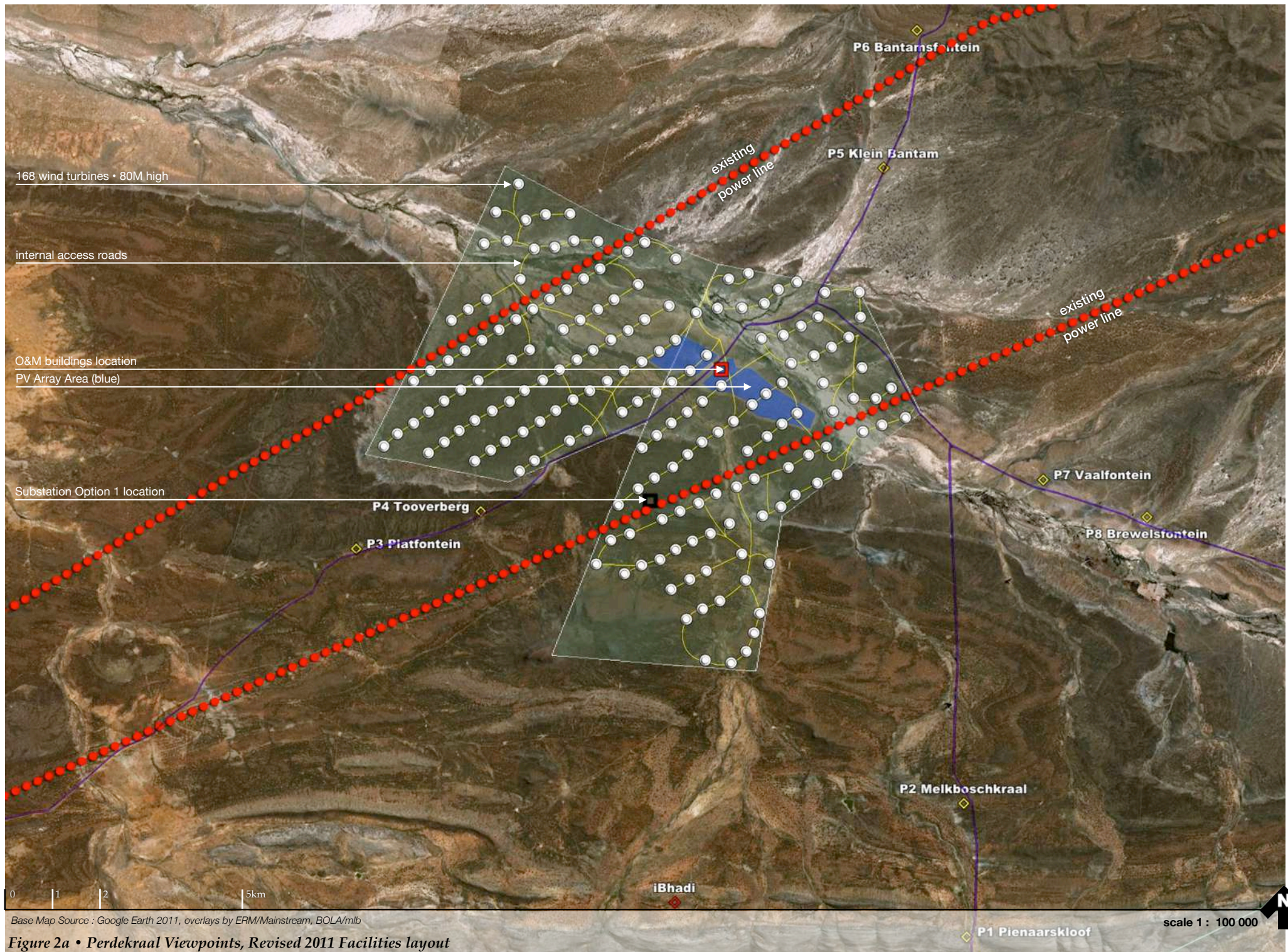


Figure 2a • Perdekraal Viewpoints, Revised 2011 Facilities layout

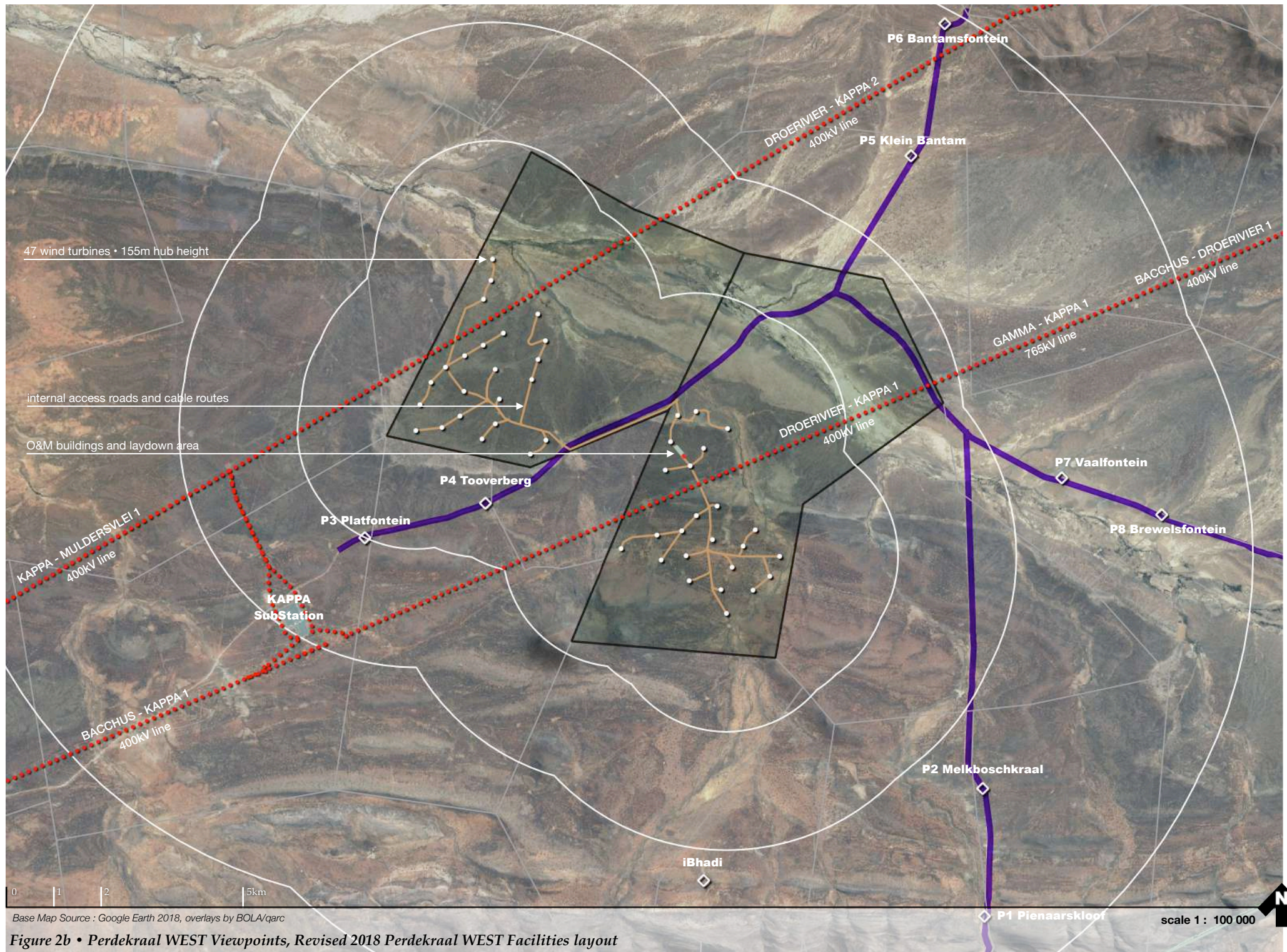
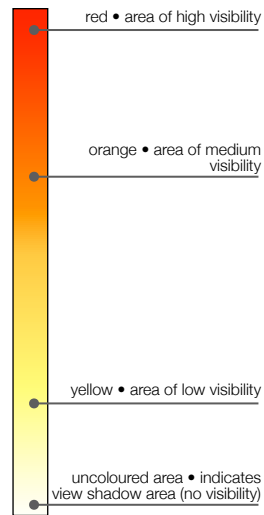
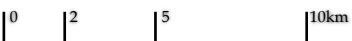


Figure 2b • Perdekraal WEST Viewpoints, Revised 2018 Perdekraal WEST Facilities layout

VISIBILITY GRADIENT LEGEND

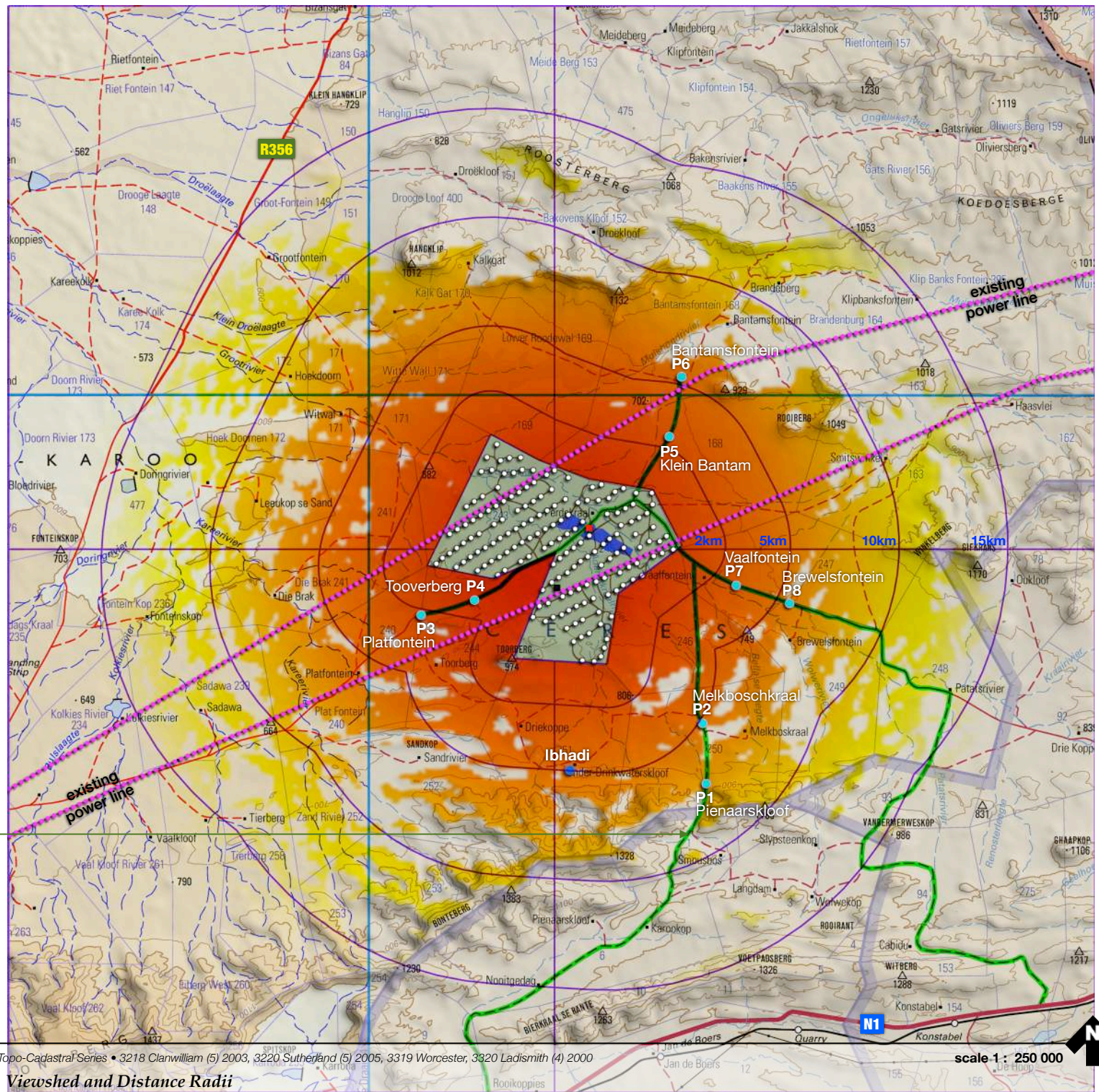


Field Track route



Source : Chief Directorate : National Geo-Spatial Information • 1:250 000 Topo-Cadastral Series • 3218 Clanwilliam (5) 2003, 3220 Sutherland (5) 2005, 3319 Worcester, 3320 Ladismith (4) 2000

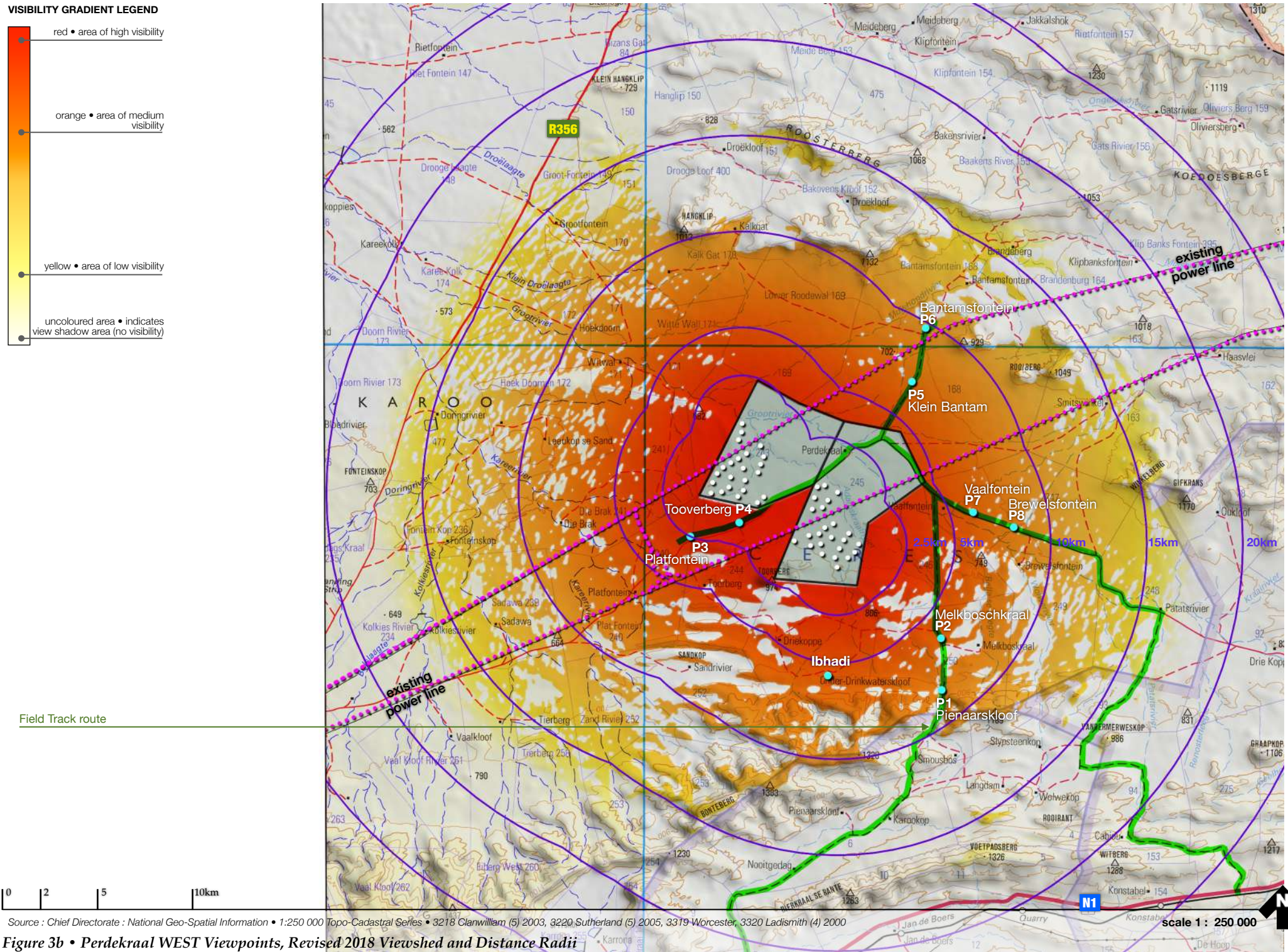
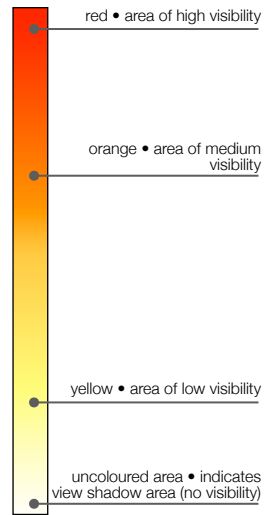
Figure 3a • Perdekraal Viewpoints, Revised 2011 Viewshed and Distance Radii



scale 1 : 250 000



VISIBILITY GRADIENT LEGEND



Source : Chief Directorate : National Geo-Spatial Information • 1:250 000 Topo-Cadastral Series • 3218 Clanwilliam (5) 2003, 3220 Sutherland (5) 2005, 3319 Worcester, 3320 Ladismith (4) 2000

Figure 3b • Perdekraal WEST Viewpoints, Revised 2018 Viewshed and Distance Radii

scale 1 : 250 000