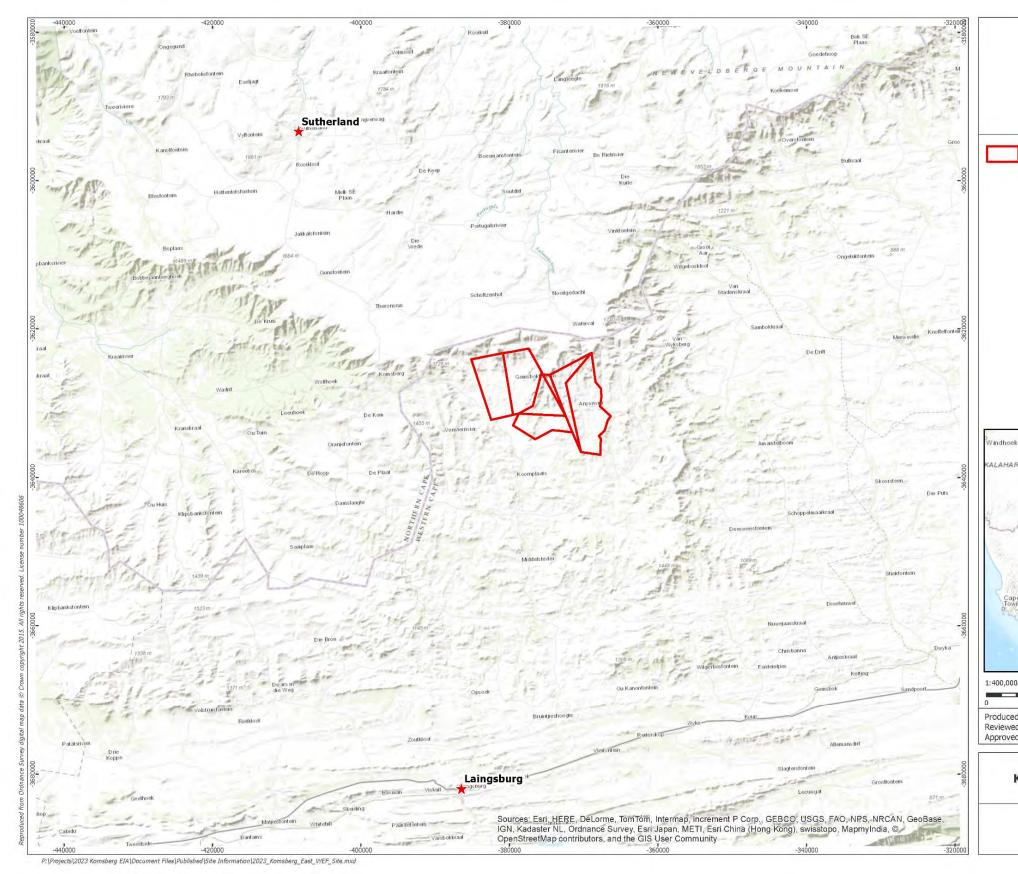


## FIGURE 1.1a: LOCATION OF THE PROPOSED KOMSBERG EAST WEF.



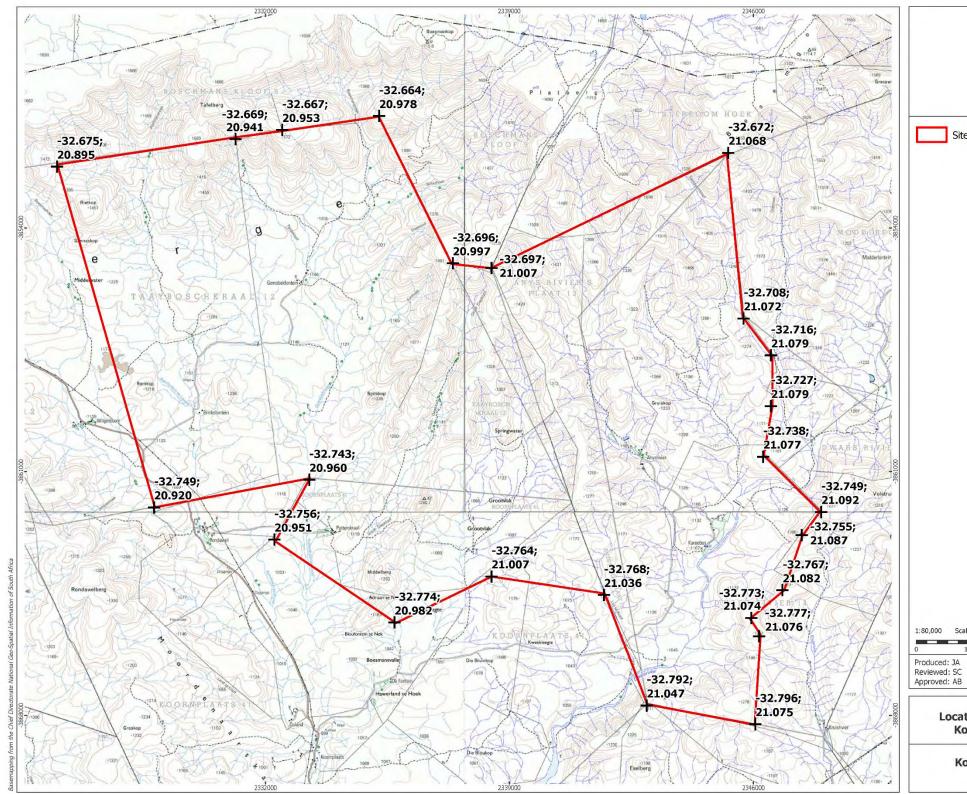
KOMSBERG WIND FARMS (PTY) LTD APRIL 2016

Arcus Consultancy Services Ltd





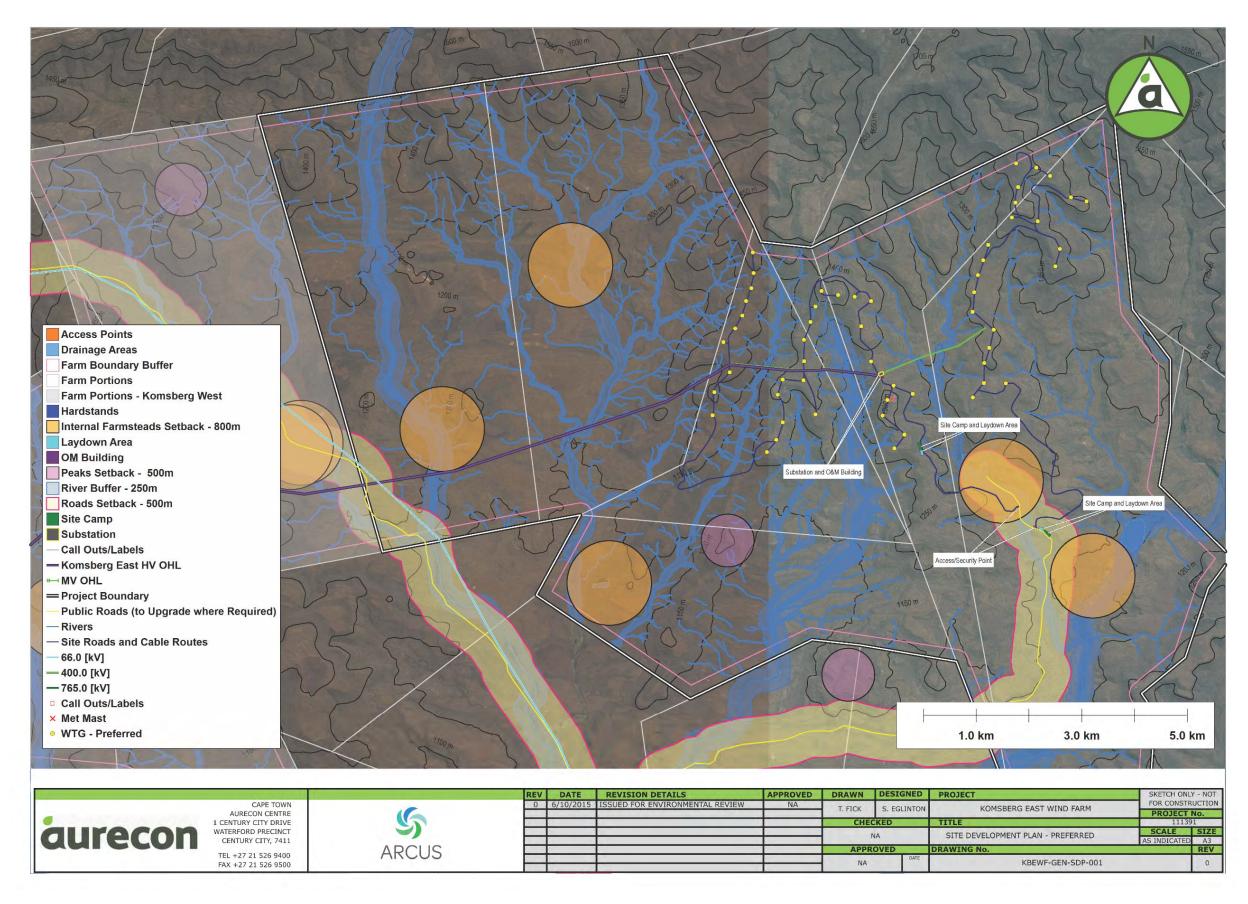
## FIGURE 1.1b: LOCATION OF THE PROPOSED KOMSBERG EAST WEF.



| ٩  | ARCU              | S |
|--|-------------------|---|
|  | -                 |   |
| e Boundar                                | ſŶ                |   |
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|  |                   |   |
|  |                   |   |
| ale @ A3                                 | 3 km              | N |
| 1.5                                      | Ref: 2023/REP/035 |   |
|  | Date: 11/04/2016  |   |
| tion of t                                | he Proposed       |   |
| tion of the Proposed<br>omsberg East WEF |                   |   |
|  |                   |   |
| omsberg East WEF<br>EIA Report           |                   |   |
| 1994                                     |                   |   |

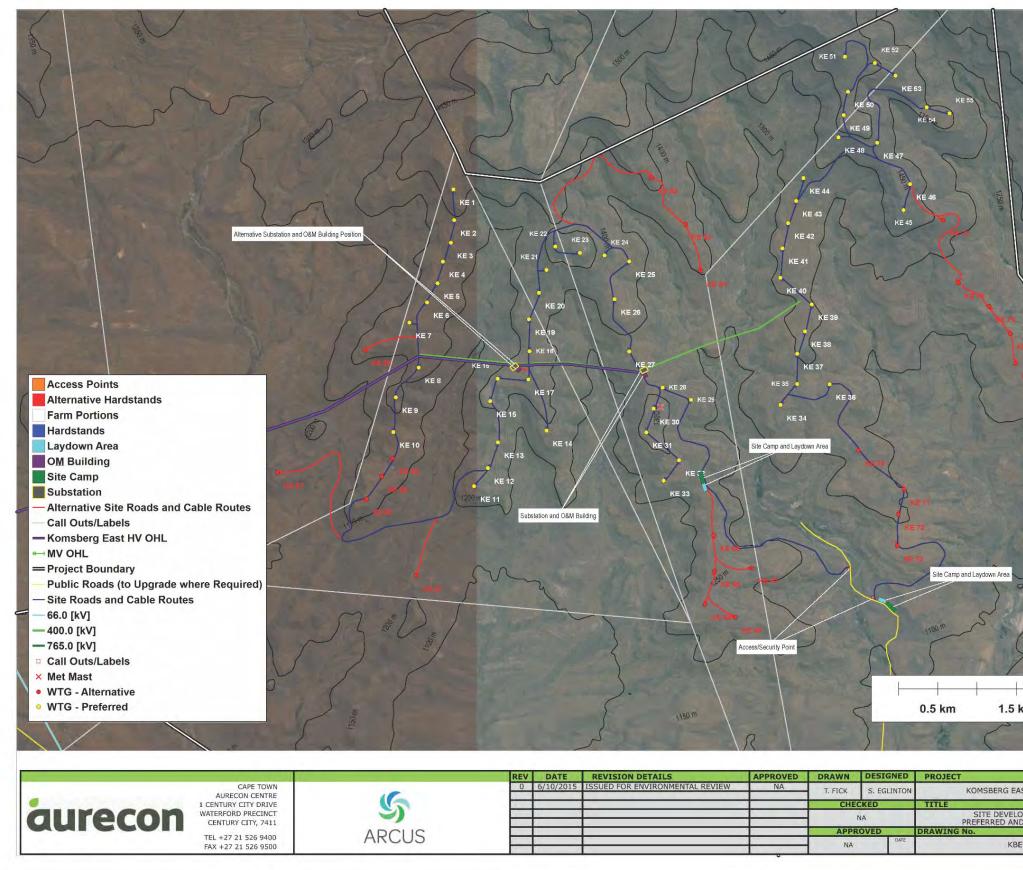


### FIGURE 1.2: PREFERRED LAYOUT OF THE PROPOSED KOMSBERG EAST WEF.





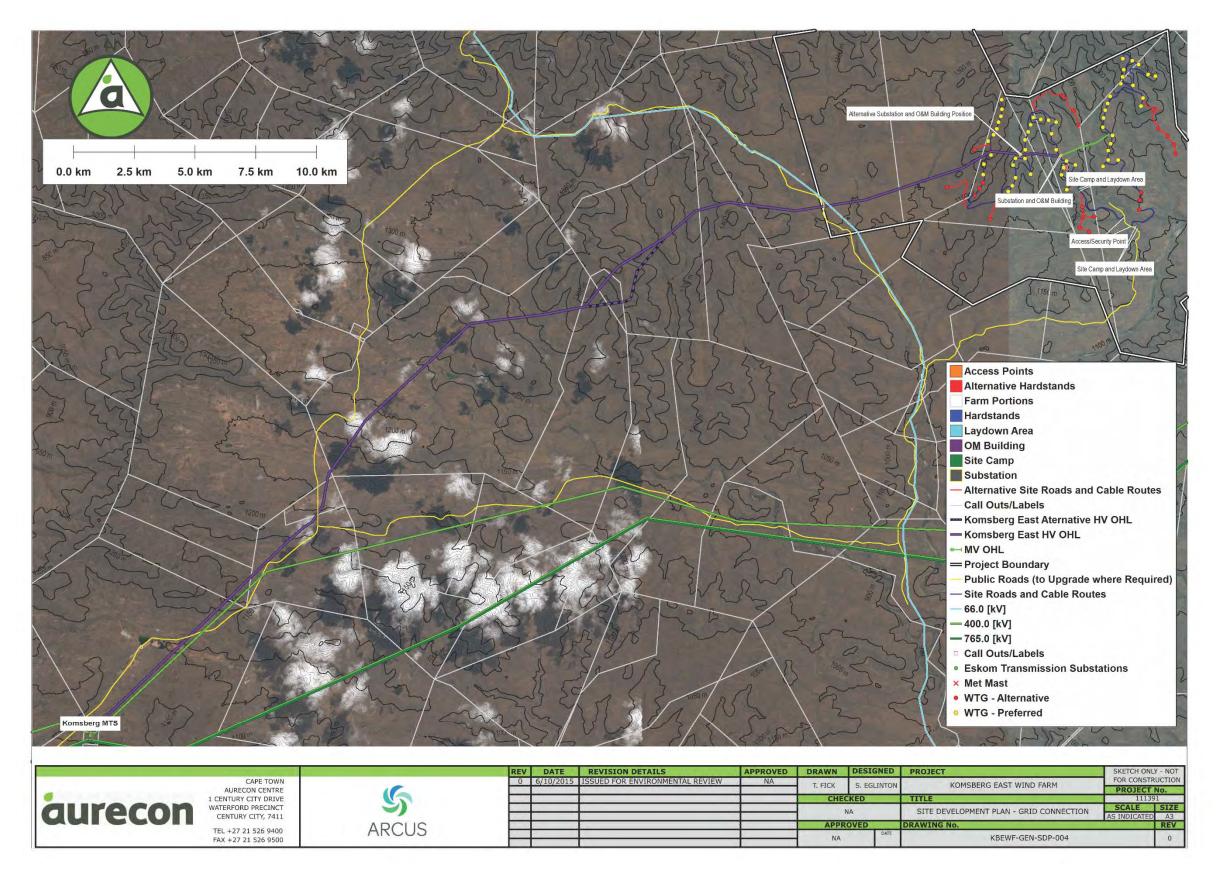
# FIGURE 1.3: ALTERNATIVE LAYOUT OF THE PROPOSED KOMSBERG EAST WEF.



| 2           |             | NO                        | ~   |
|-------------|-------------|---------------------------|---|
| (1400 m     |             | X                         | ~   |
|             |             |                           |   |
| U           | 34          |                           | 1   |
|             | $\langle C$ | X                         |   |
| 1350 m      | 2           | 2                         | 1   |
| ţ.          | 3           | 2                         | Suil                                      |
|             |             | > 2                       | 140                                       |
| ~           |             | C C                       |   |
|             |             | 6                         | 5   |
|             | 1           | (                         | $\sim$                                    |
| 0           |             | 51                        |   |
| <b>e</b> 17 | 1/2         | $\langle \langle \rangle$ |   |
|             | VIL         | Z                         |   |
|             | 21          |                           |   |
| V           |             | 5                         | $\cap$                                    |
|             |             | $\sim$                    |   |
| -           |             |                           | and in                                    |
|             |             | X                         |   |
|             |             | 150 m<br>200 m            |   |
|             |             | 116                       | $ \  \  \  \  \  \  \  \  \  \  \  \  \ $ |
| -1          |             | < 5                       | 150 m                                     |
| /           |             | $\rightarrow$             |   |
| >           |             | 1                         | ~   |
| _           |             | +                         |   |
| m           | 2.5 km      | 3.5                       | km  |
|             | and         | R                         |   |
|             |             | SKETCH ONL                | Y - NOT                                   |
| ST WIND     |             | PROJECT<br>11139<br>SCALE | No.<br>01                                 |
| PMENT P     |             | AS INDICATED              | A3<br>REV                                 |
| WF-GEN-     | SDP-003     |                           | 0   |

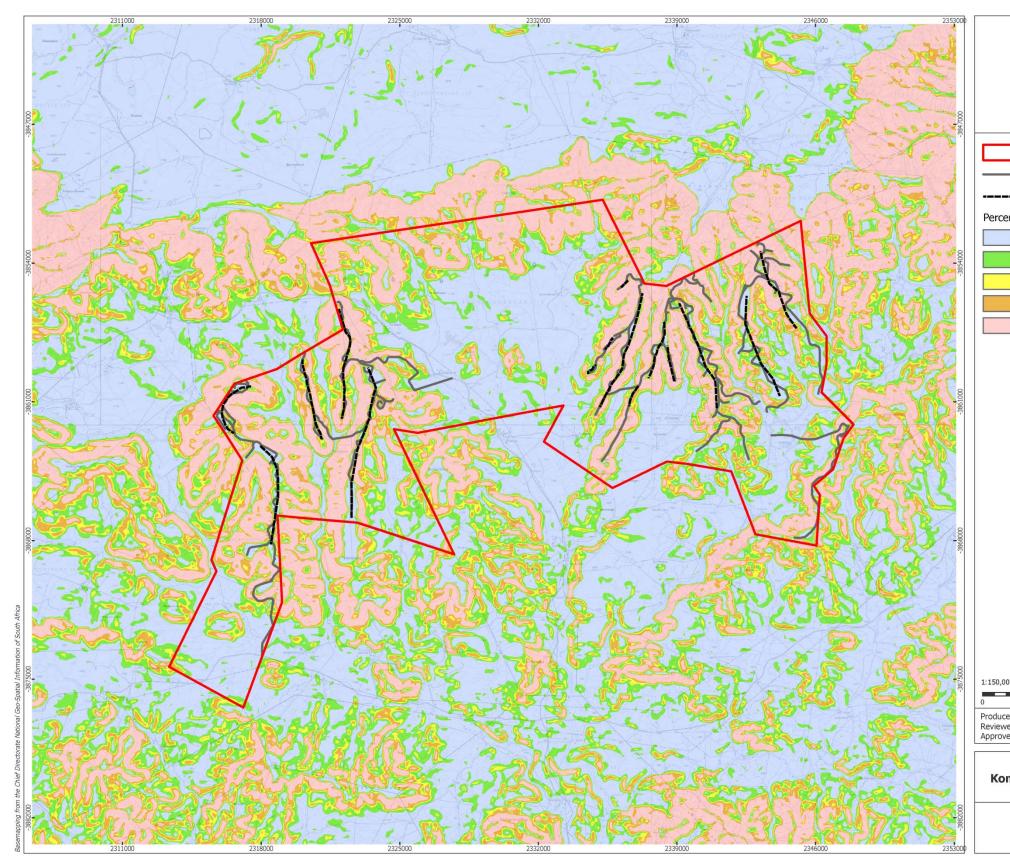


FIGURE 1.4 PROPOSED LAYOUT OF THE GRID CONNECTIONS INDICATING THE LOCATION OF THE PROPOSED SWITCHING STATION ON SITE, THE TRANSMISSION LINE CORRIDORS, AND THE ESKOM MAIN SUBSTATION.





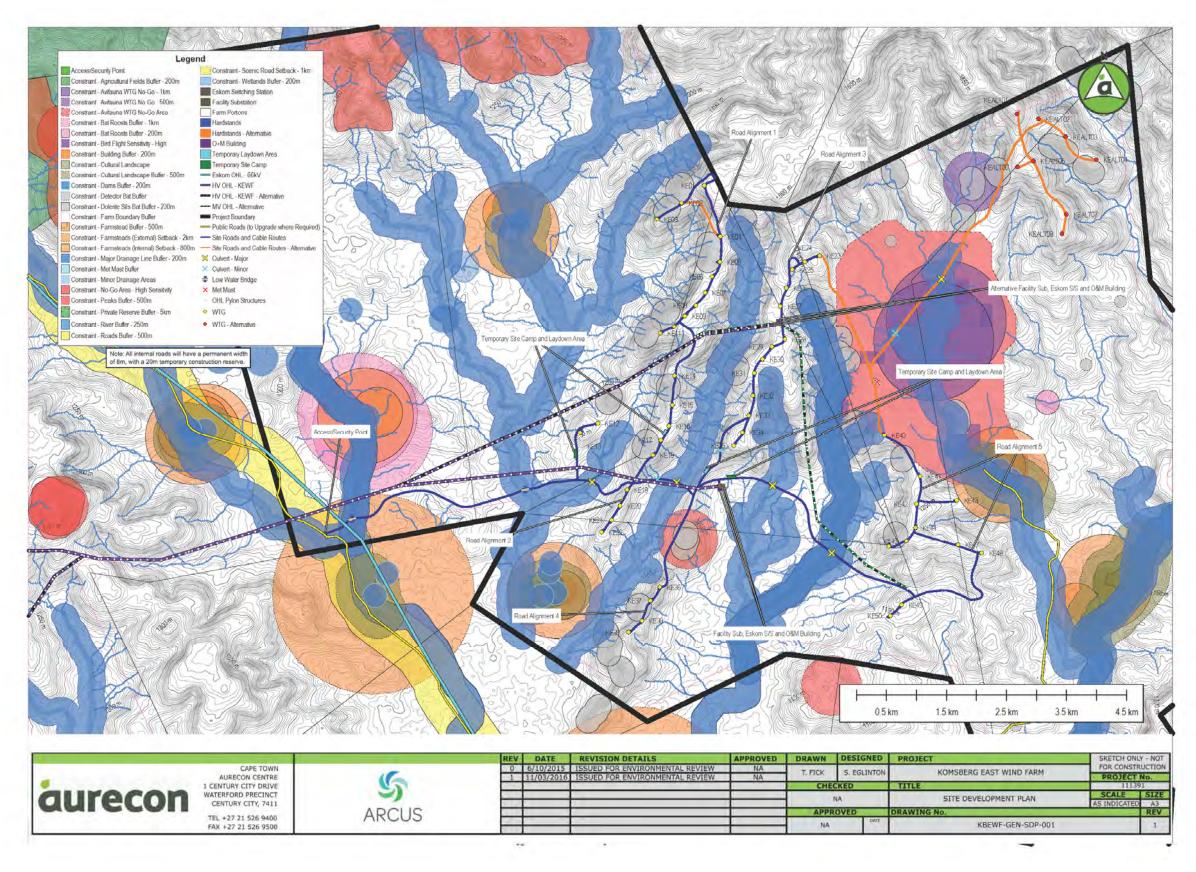
### FIGURE 1.5 SLOPE ANALYSIS MAP.



| ٩   | ARCUS              |  |  |
|---|--------------------|--|--|
| Site Boundar                                | Ŋ                  |  |  |
| <ul> <li>Proposed Sit</li> </ul>            | e Roads            |  |  |
| Ridges of Int                               | terest             |  |  |
| entage Slope                                |                    |  |  |
| Less than 8%                                | /o                 |  |  |
| Between 8 a                                 | ind 12%            |  |  |
| Between 12                                  | and 14%            |  |  |
| Between 14                                  | Between 14 and 18% |  |  |
| Steeper thar                                | 18%                |  |  |
|   |                    |  |  |
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| 000 Scale @ A3                              | N                  |  |  |
| 3   | 6 km               |  |  |
| ced: JA<br>ved: SC                          | Ref: 2023/REP/018  |  |  |
| ved: EH                                     | Date: 31/03/2016   |  |  |
| msberg East and West WEFs<br>Slope Analysis |                    |  |  |
| Komsberg East WEF<br>EIA Report             |                    |  |  |



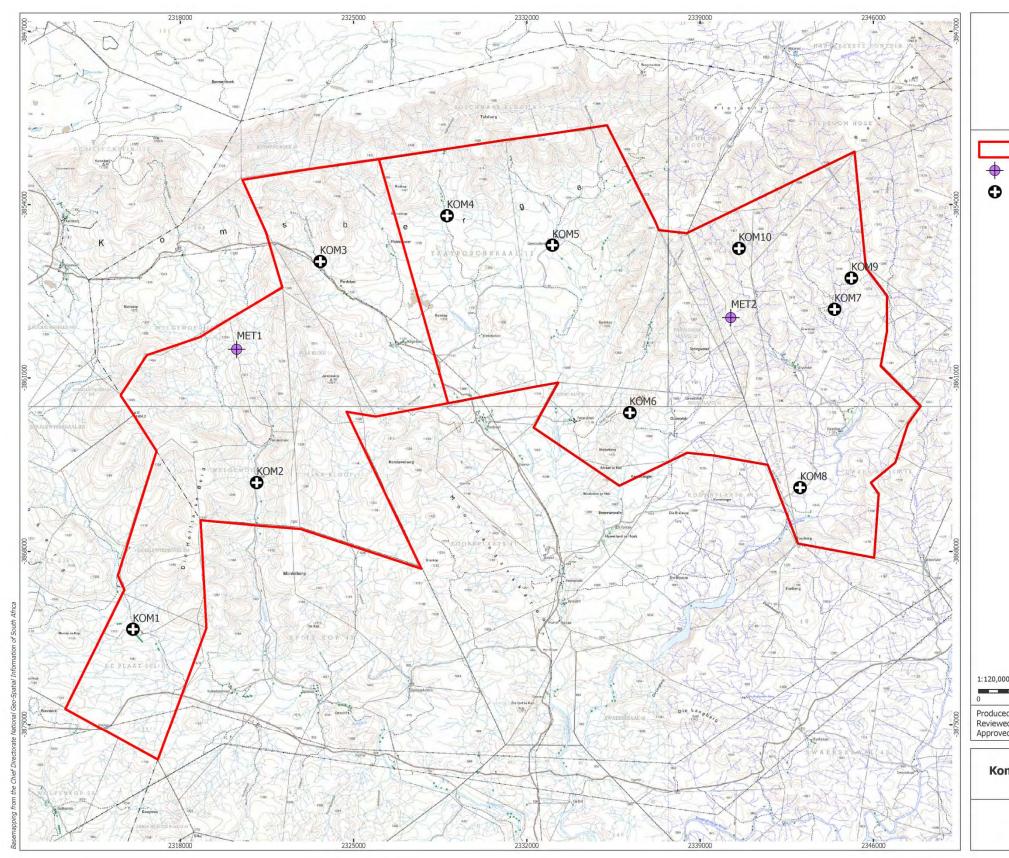
### FIGURE 4.1 FINAL LAYOUT, INCORPORATING SPECIALISTS' FINDINGS.





# **FIGURE 7.1: LOCATION OF BAT DETECTORS.**

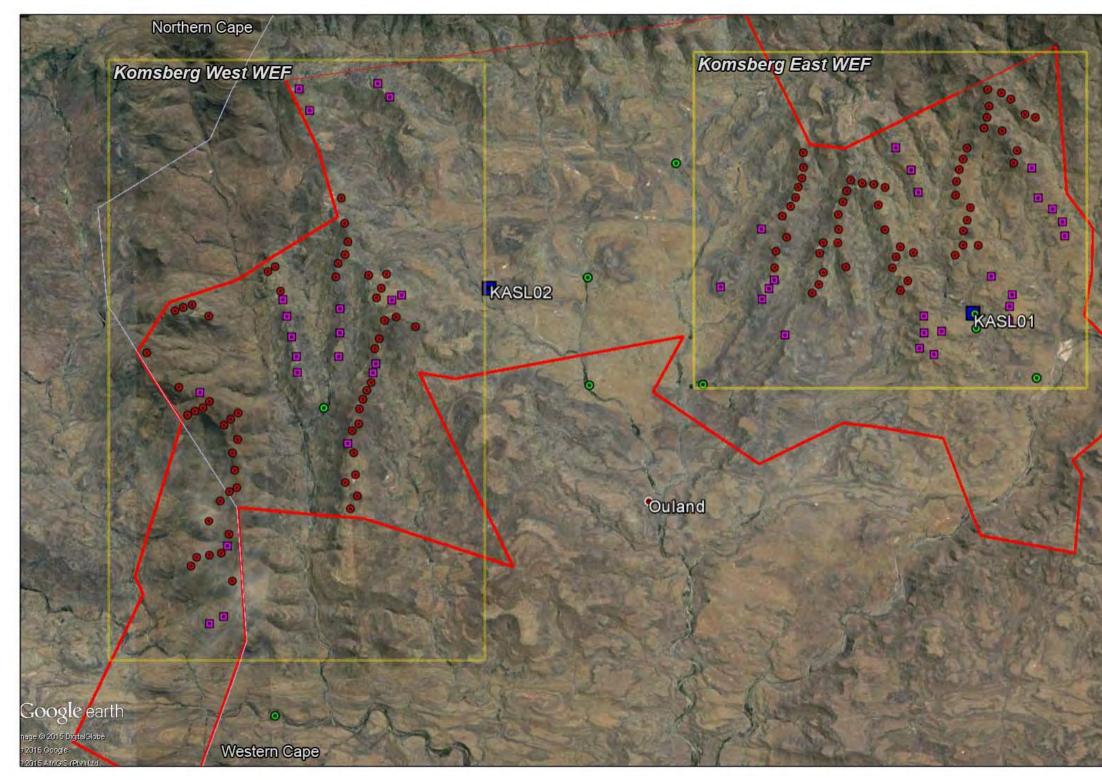
EAST WIND ENERGY FACILITY WESTERN AND NORTHERN CAPE PROVINCES

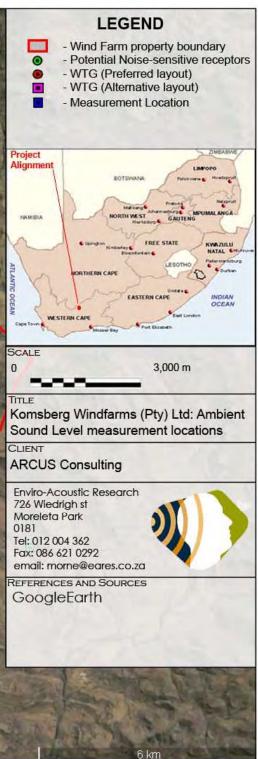


| <b>S</b> ARCUS   |
|--|
| Site Boundary<br>80 m Meteorological Mast<br>Bat Detector Location   |
| 2     4 km       2     4 km       red: JA     Ref: 2023/REP/020       red: AB     Date: 31/03/2016   Dates and West WEFs Bat Detector Locations Komsberg East WEF EIA Report |



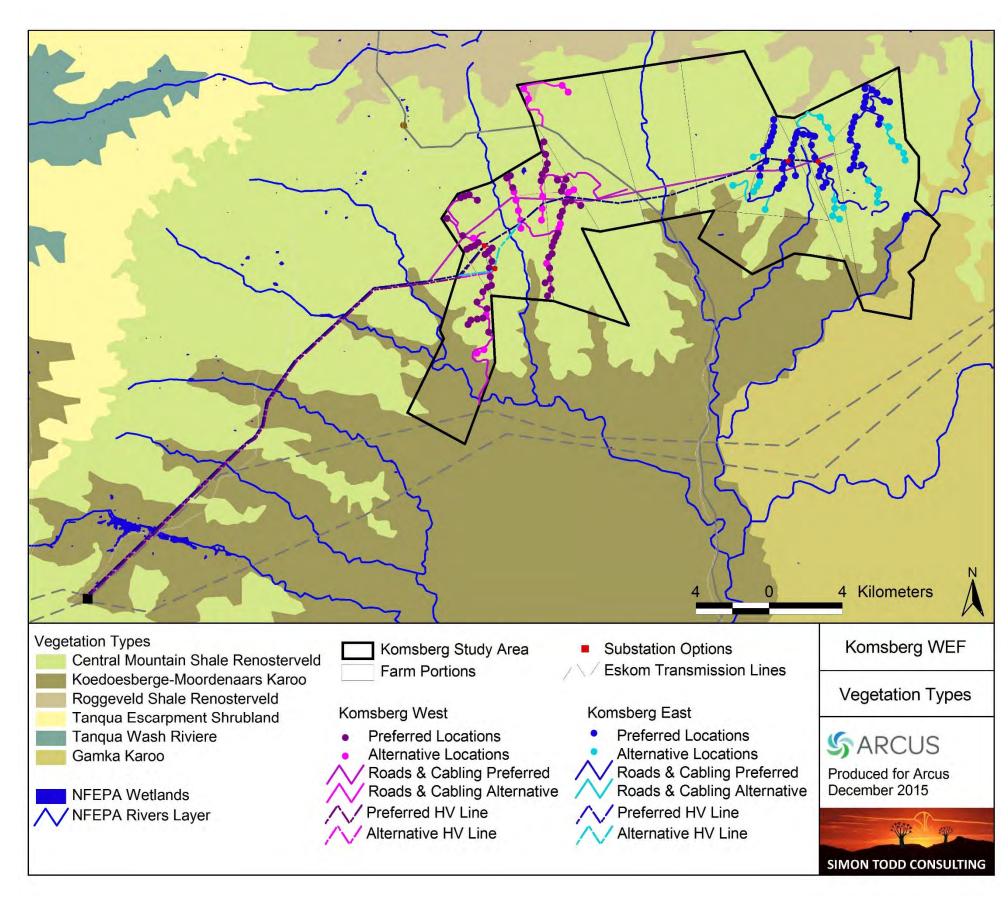
## FIGURE 7.2: LOCATIONS USED TO MEASURE AMBIENT SOUND LEVELS.





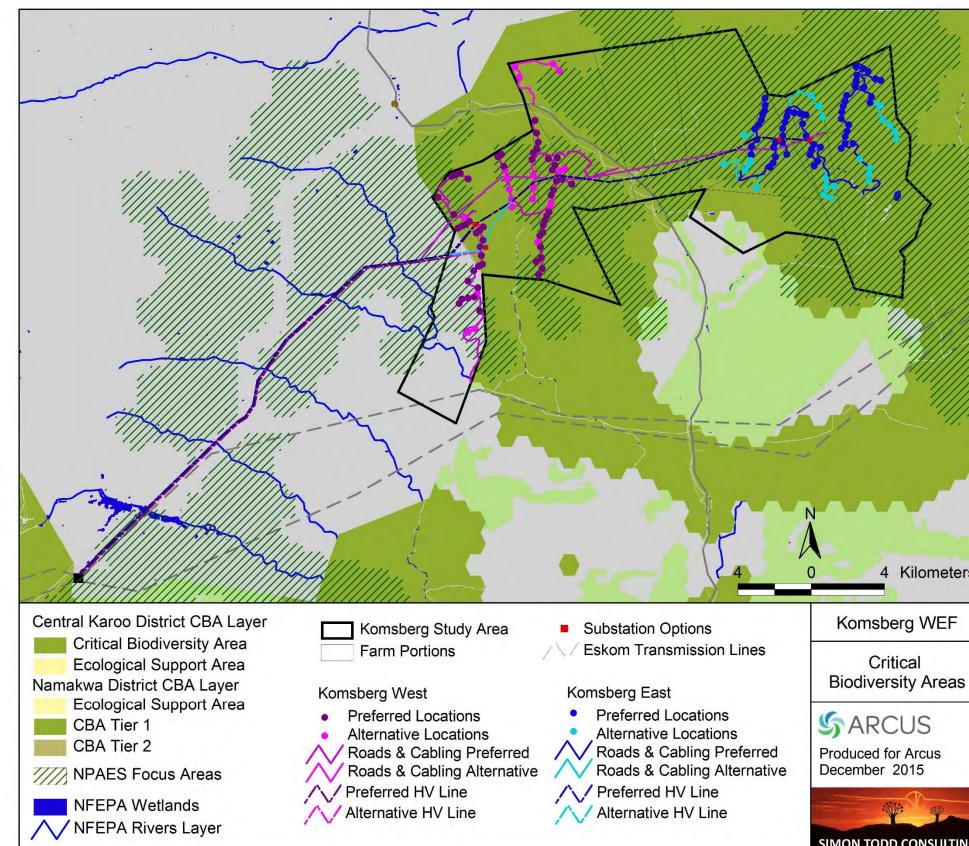


### FIGURE 8.1: VEGETATION TYPES THAT OCCUR WITHIN THE DEVELOPMENT AREA.





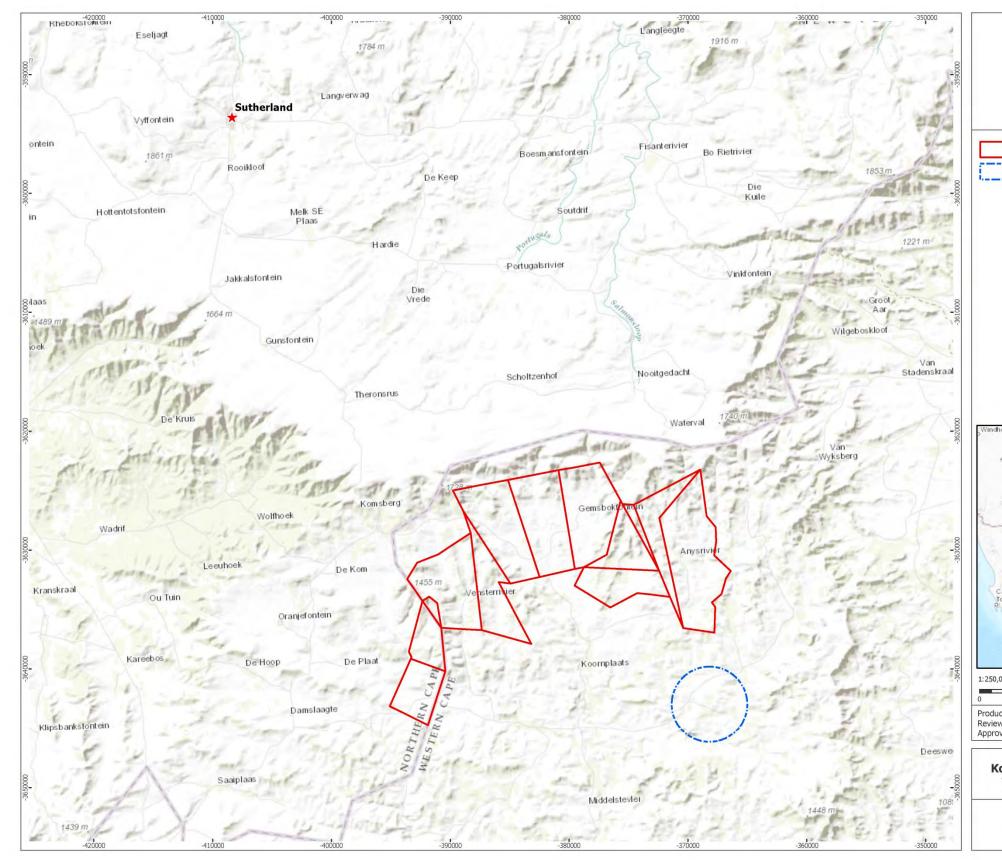
# FIGURE 8.2: CRITICAL BIODIVERSITY AREAS (CBAS) ON SITE.







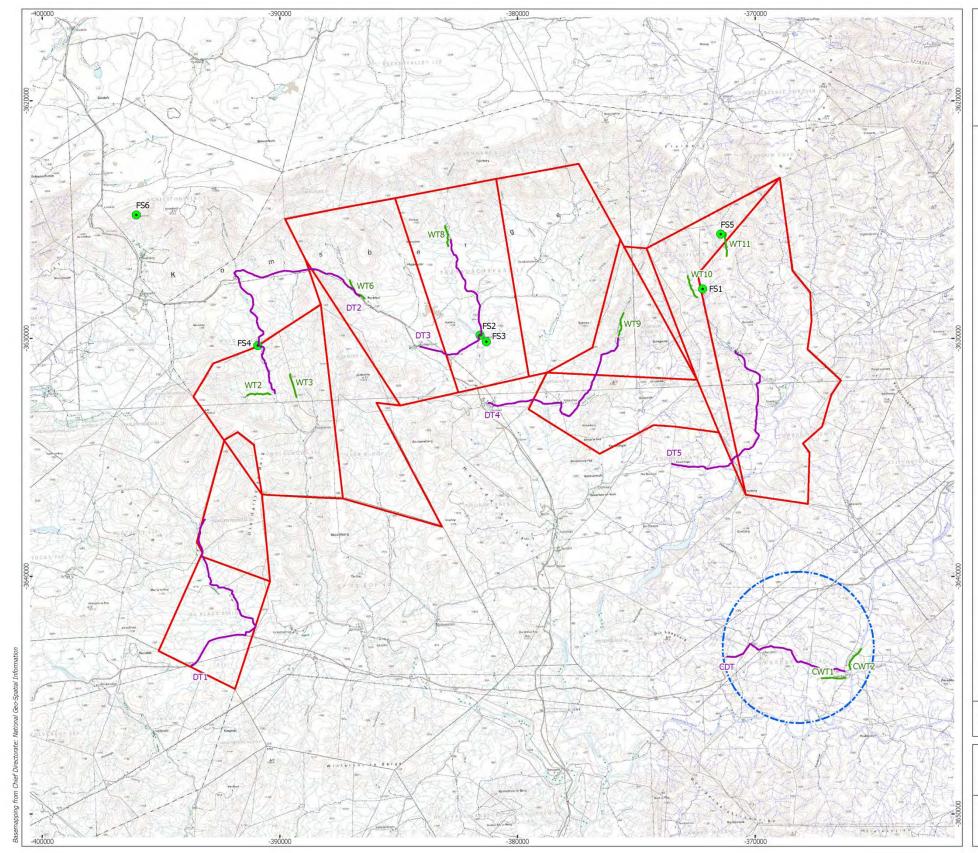
# FIGURE 8.3: WEF AND CONTROL SITE LOCATIONS.





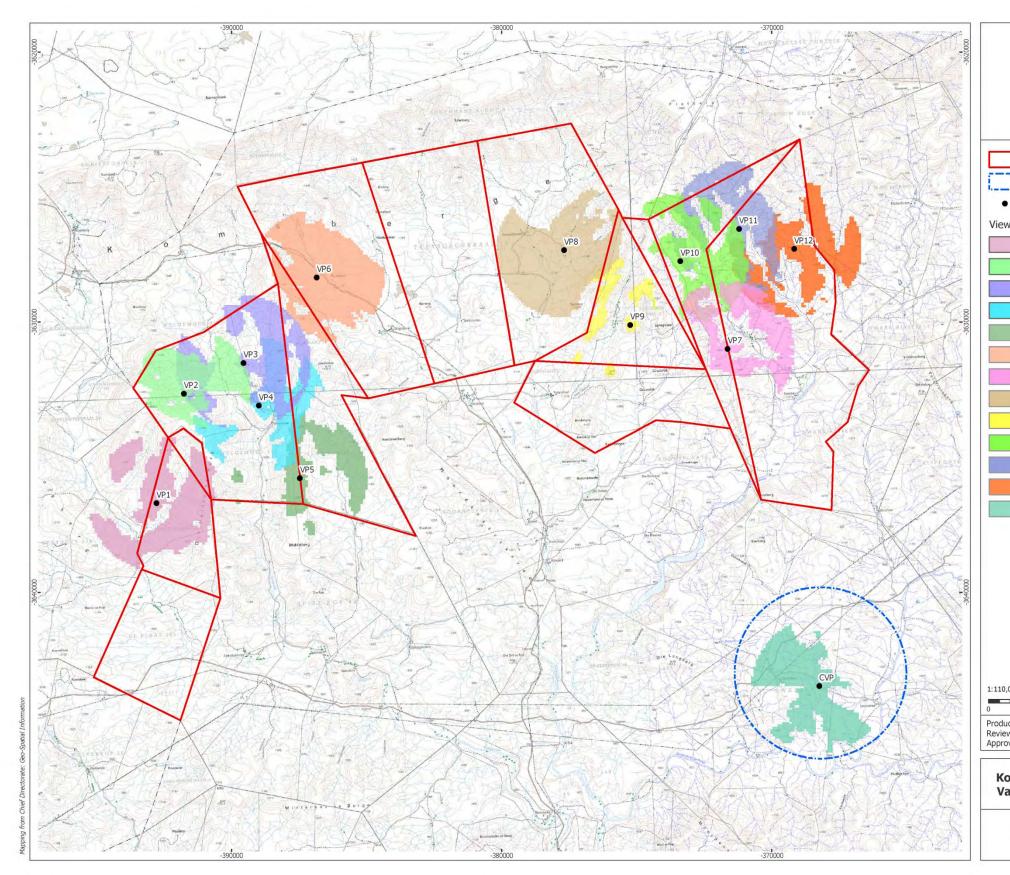


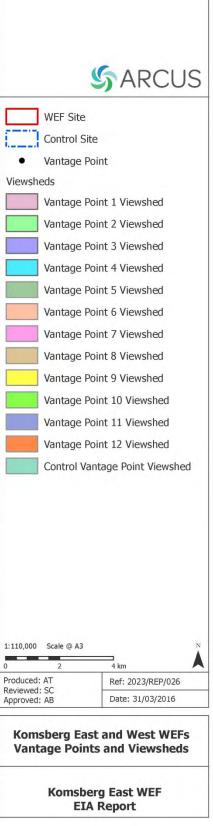
# FIGURE 8.4: FOCAL SITE, DRIVEN AND WALKED TRANSECTS.





# FIGURE 8.5: VANTAGE POINTS AND VIEWSHEDS.

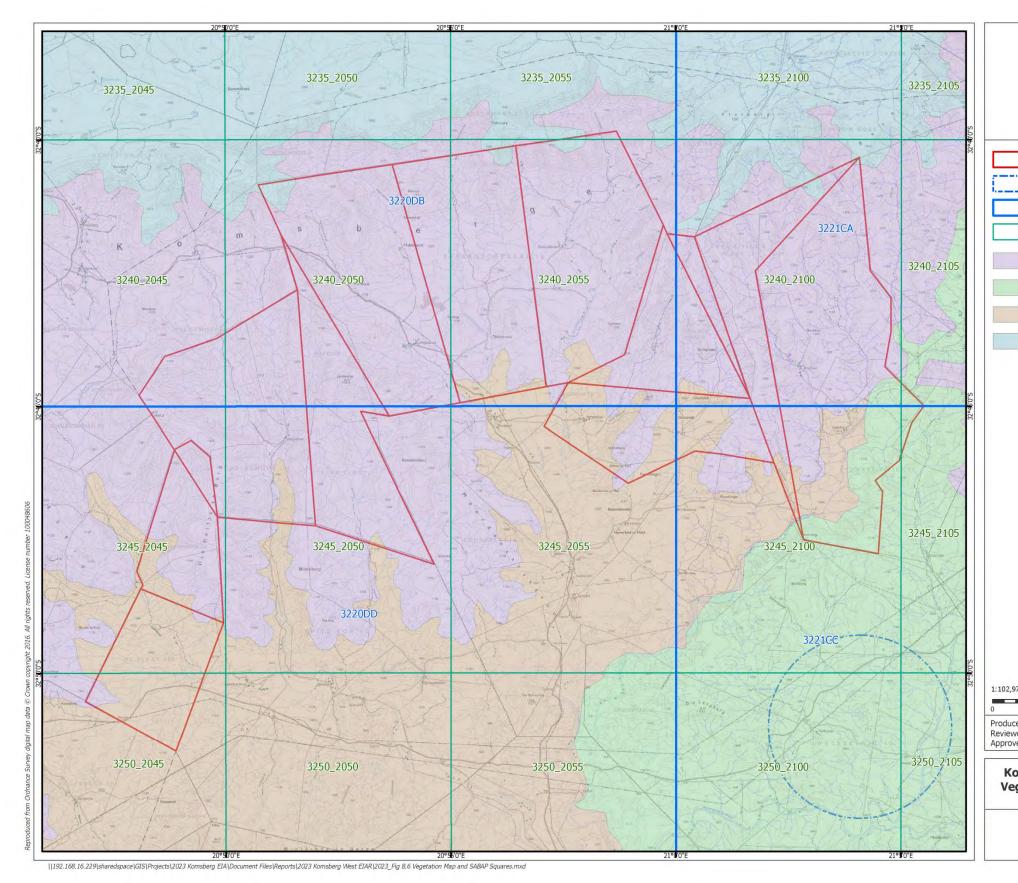






## FIGURE 8.6: VEGETATION MAP AND SABAP GRID SQUARES.

EAST WIND ENERGY FACILITY WESTERN AND NORTHERN CAPE PROVINCES



|  | <b>S</b> ARCUS                        |  |
|--|---------------------------------------|--|
| WEF Site   | e                                     |  |
| Control  | Site                                  |  |
| SABAP1   | Quarter Degree Square                 |  |
| SABAP2   | Pentad                                |  |
| Central<br>Renoste   | Mountain Shale<br>rveld               |  |
| Gamka I  | Karoo                                 |  |
| Koedoes<br>Karoo   | berge-Moordenaars                     |  |
| Roggeve  | eld Shale Renosterveld                |  |
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| 978 Scale @ A3   | N                                     |  |
| 2  | 4 km                                  |  |
| ced: AT<br>ved: SC<br>ved: AB  | Ref: 2023/REP/028<br>Date: 31/03/2016 |  |
|  |                                       |  |
| omsberg East and West WEFs<br>getation Map and SABAP Grid<br>Squares |                                       |  |
| Komsberg East WEF  |                                       |  |
| EIA Report   |                                       |  |



### FIGURE 8.7: SITE LOCATION WITHIN THE NAMA KAROO ECOREGION LOCATED WITHIN THE GOURITZ WATER MANAGEMENT AREA (FINAL LAYOUT).

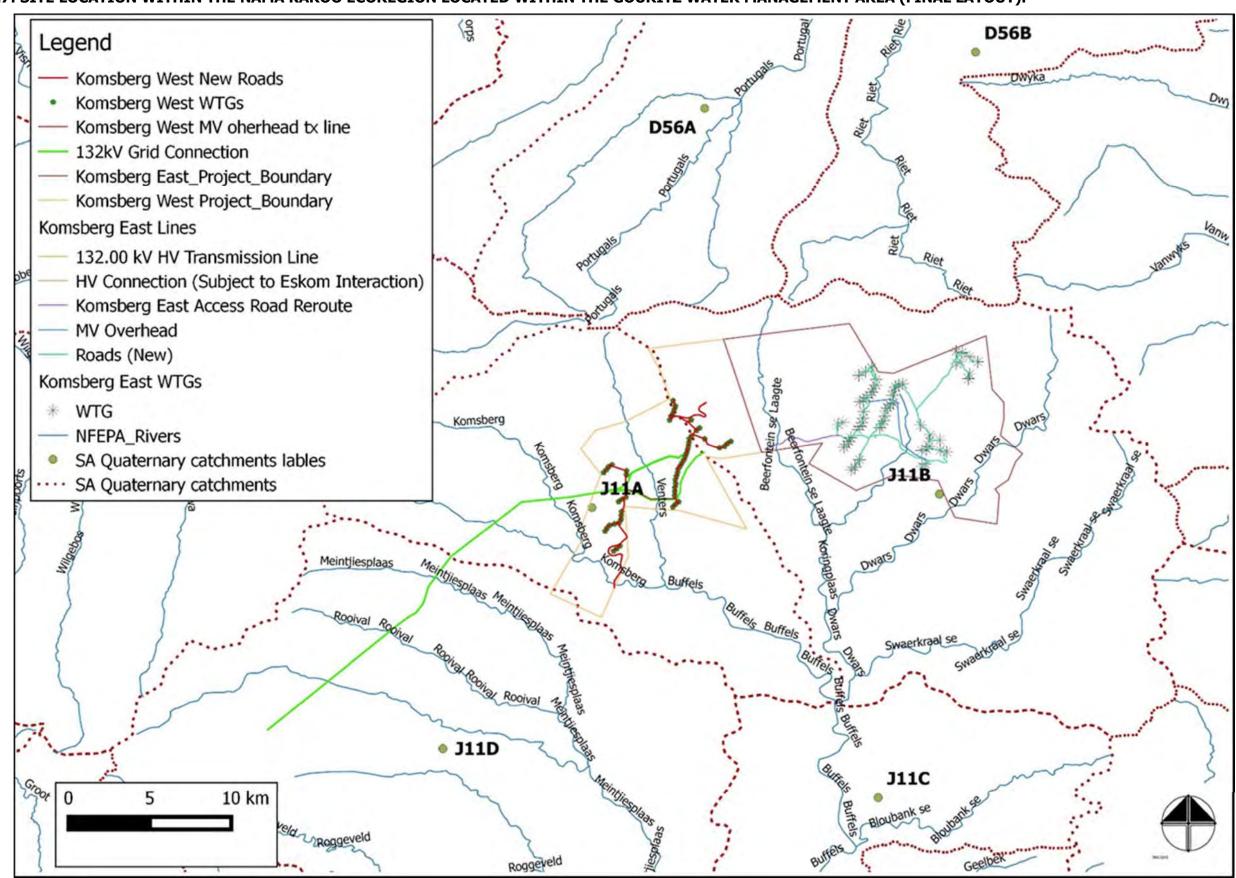
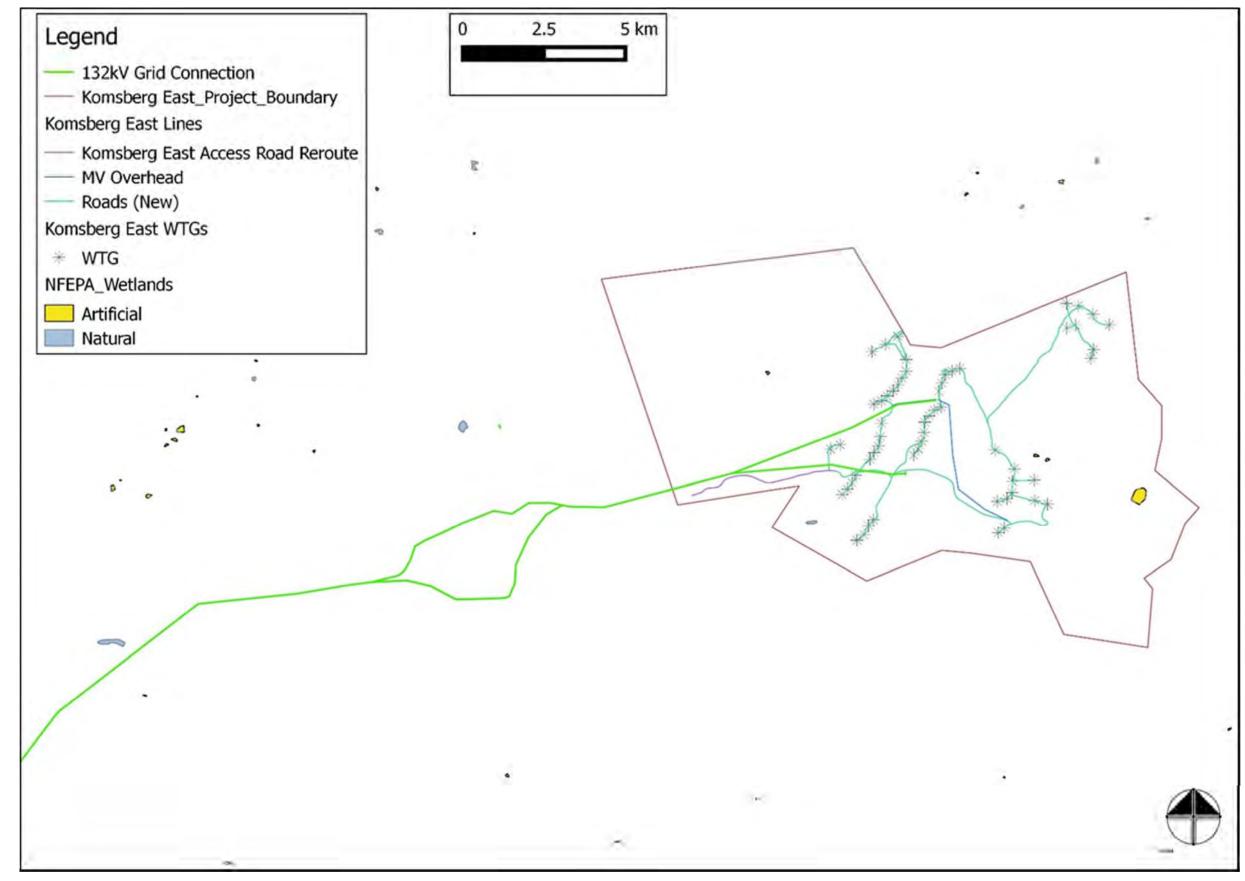




FIGURE 8.8: NATURAL AND ARTIFICIAL WETLANDS (ACCORDING TO THE NATION WETLAND INVENTORY) OCCURRING WITHIN THE SITE BOUNDARY. NONE LOCATED WITHIN THE SITE CONFIRMED (FINAL LAYOUT).



Arcus Consultancy Services Ltd



## FIGURE 8.9a: WATERCOURSES CROSSED BY THE PROPOSED ROAD LAYOUT (PREFERRED AND ALTERNATIVE LAYOUTS).

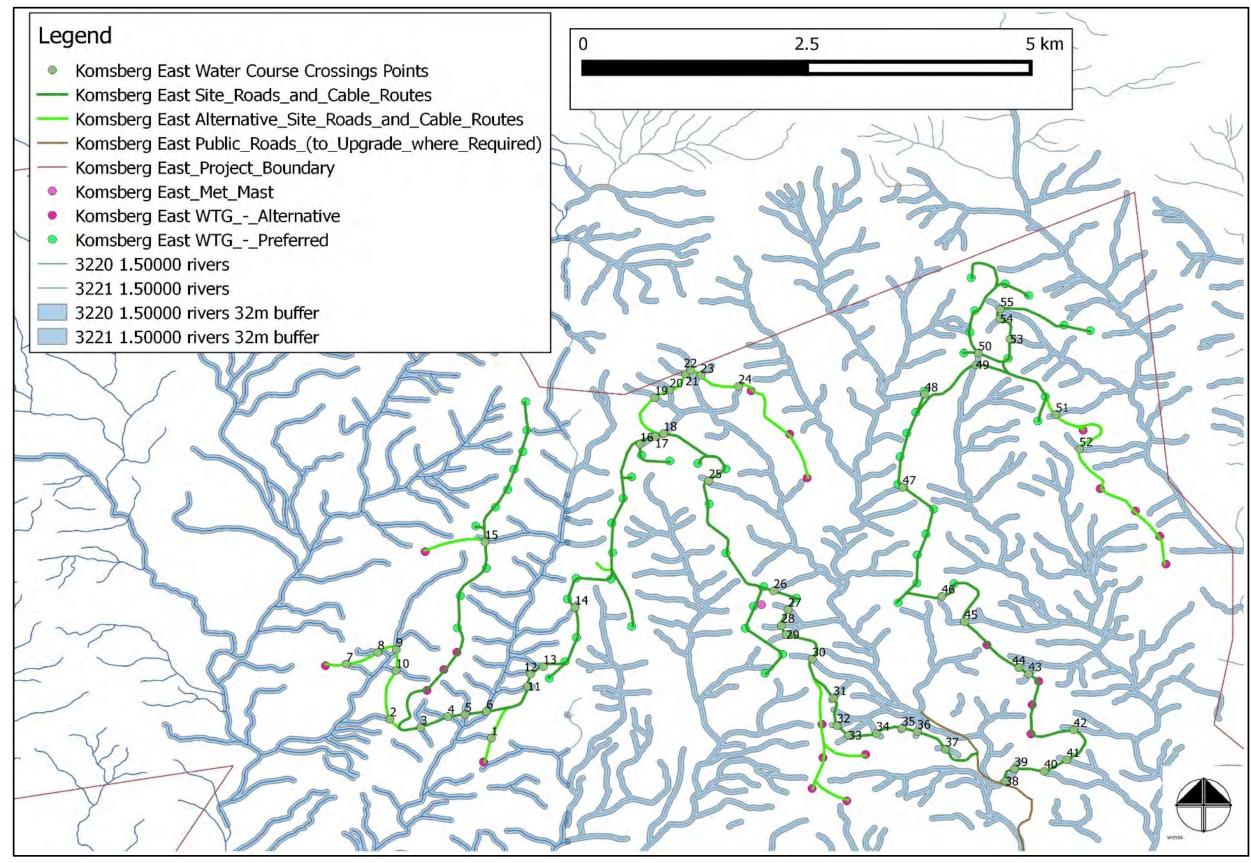




FIGURE 8.9b: FINAL LAYOUT - THE VARIOUS ACTIVITIES IN RELATION TO THE WATER COURSES (INCLUSIVE OF 32M BUFFER) FOR THE ROAD LAYOUT (LIGHT AND DARK GREEN LINES). AND THE 55 WATER COURSE CROSSINGS.

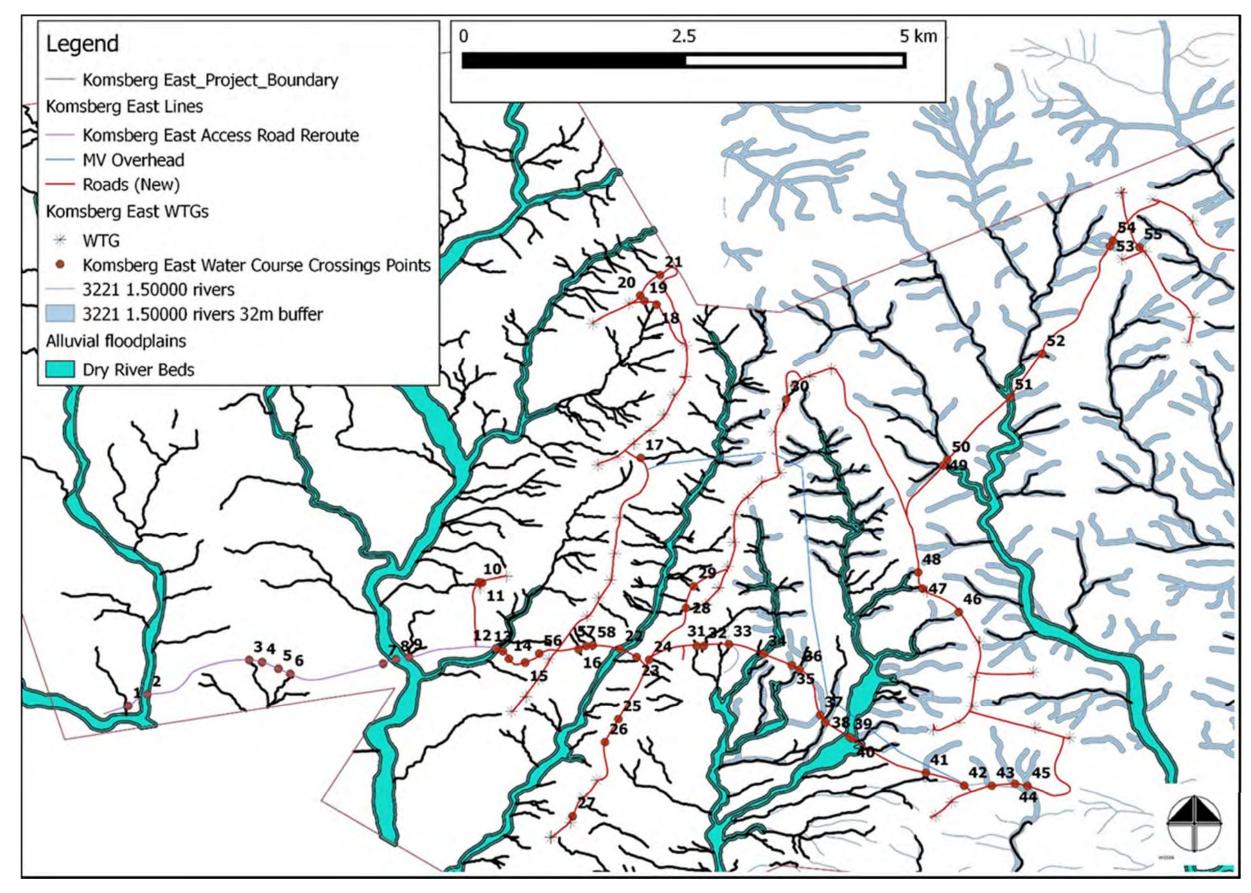




FIGURE 8.10: ARCHAEOLOGICAL OCCURRENCES RECORDED ON THE PROPOSED KOMSBERG EAST SITE.





FIGURE 8.11: PALAEONTOLOGICAL OCCURRENCES RECORDED ON THE PROPOSED KOMSBERG EAST SITE.

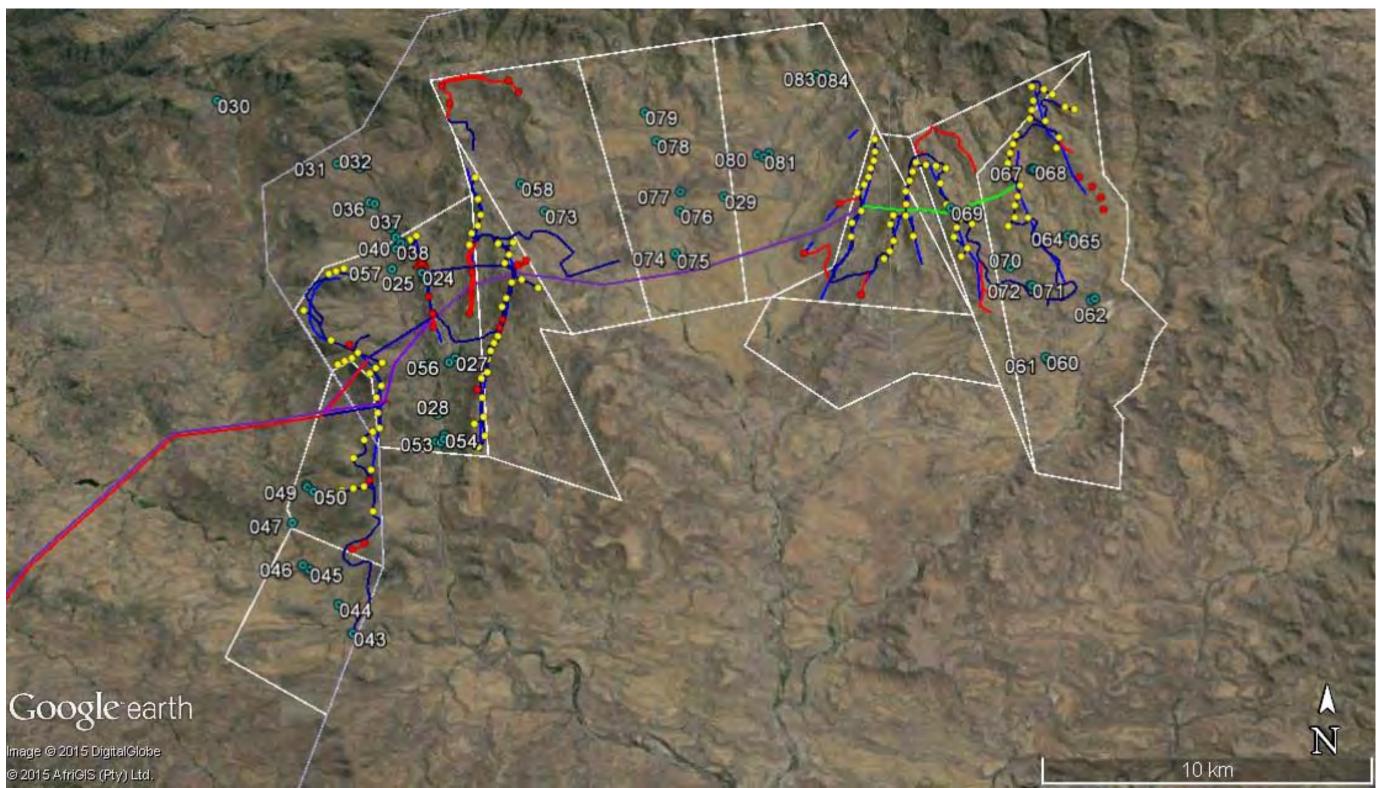
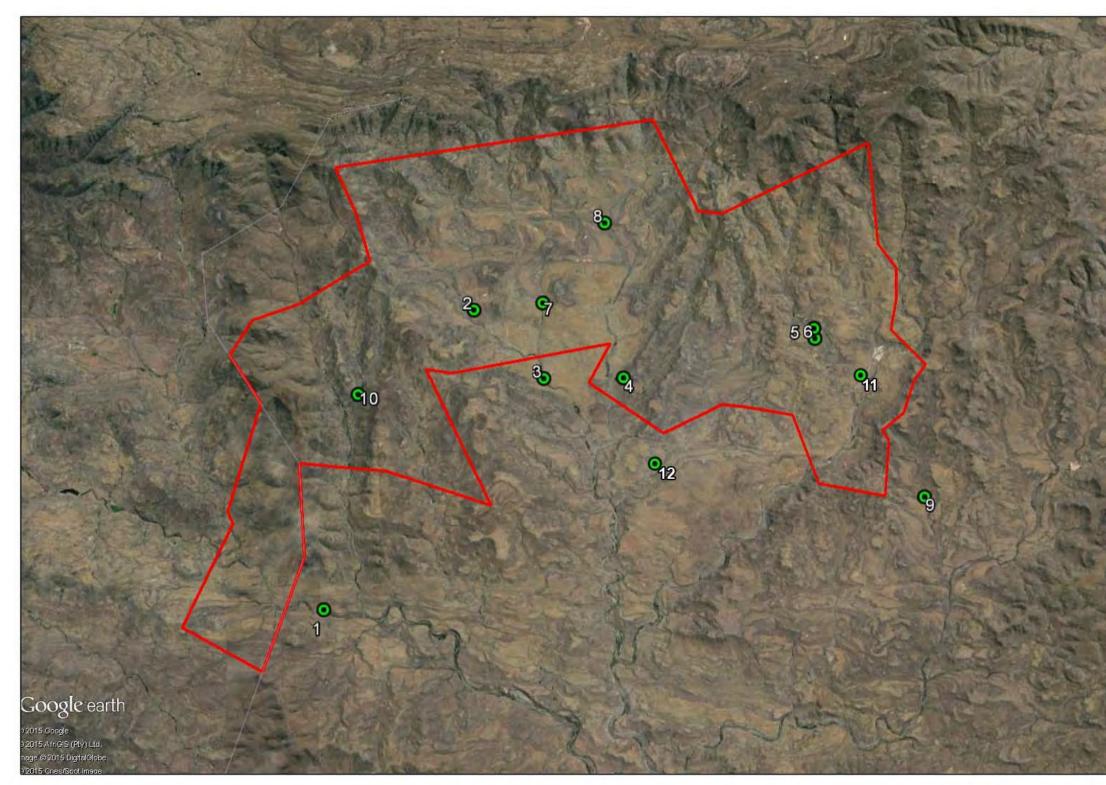
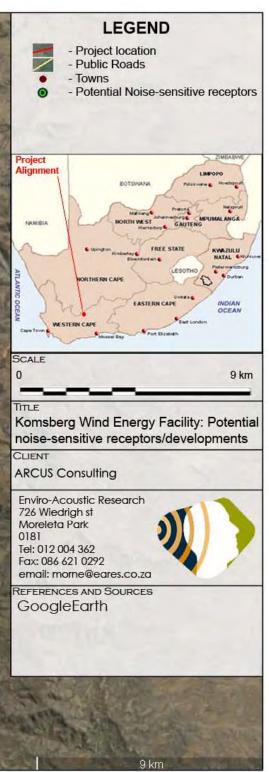


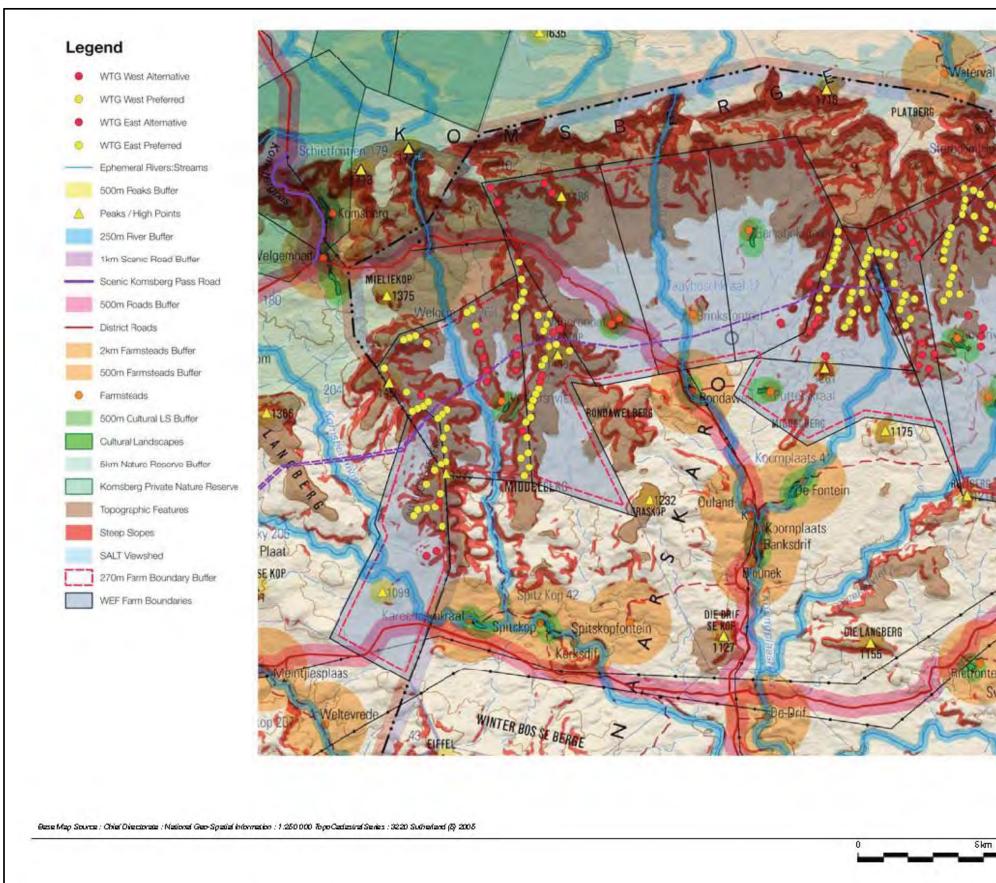


FIGURE 8.12: LOCATION OF NOISE-SENSITIVE DEVELOPMENTS ON SITE.





### FIGURE 8.13: VISUAL INFORMANTS MAP (PREFERRED AND ALTERNATIVE LAYOUTS).



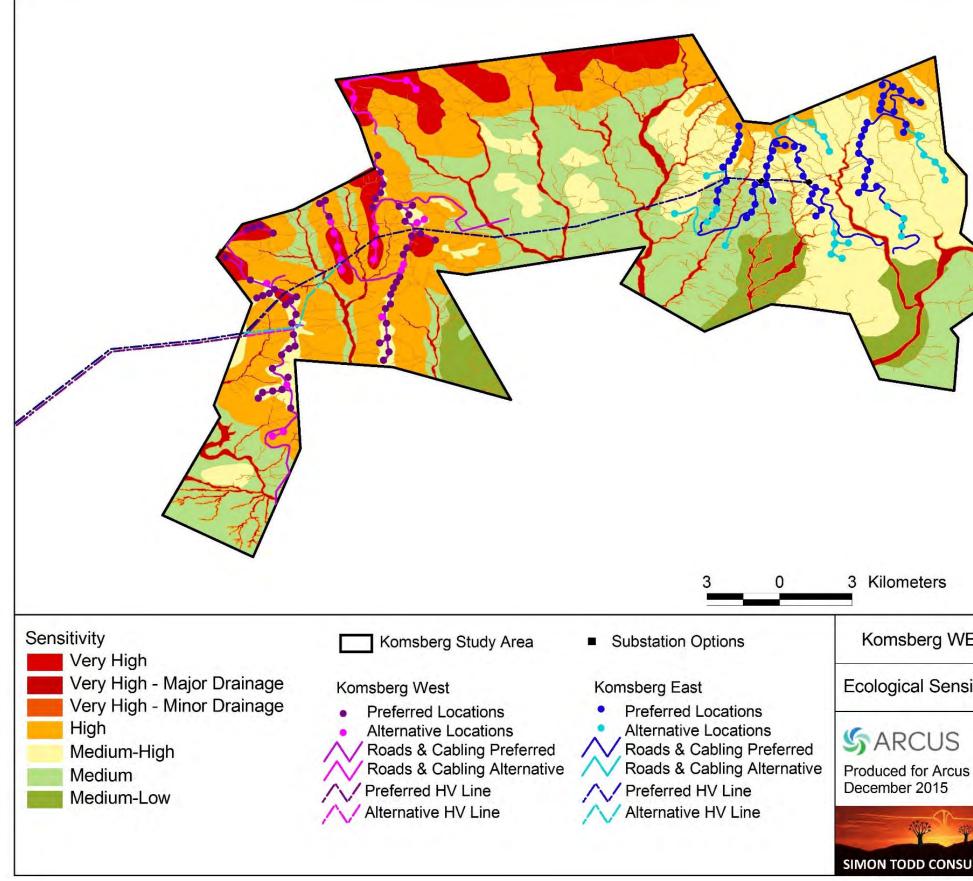
S

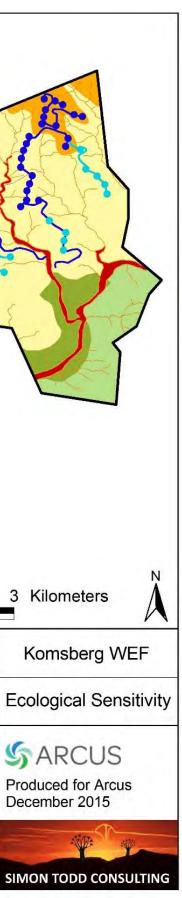
ARCUS





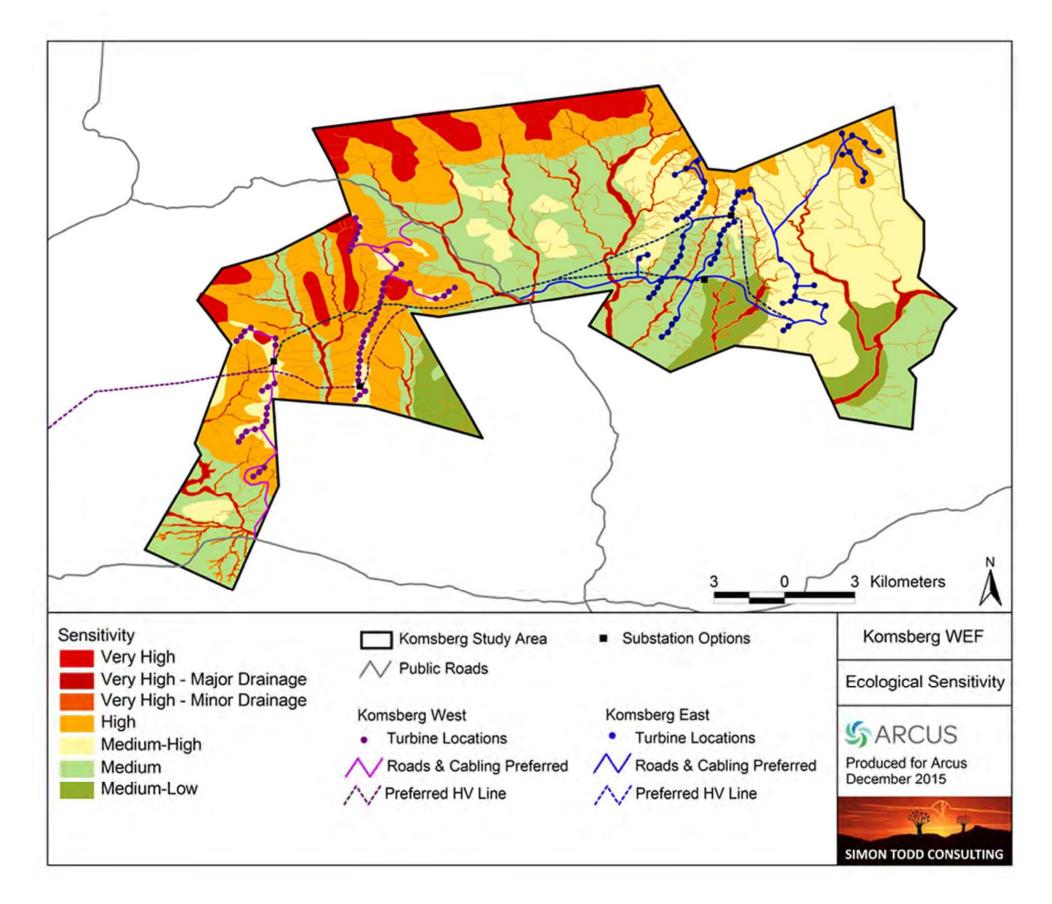
FIGURE 9.1a: ECOLOGICAL SENSITIVITY MAP (PREFERRED AND ALTERNATIVE LAYOUTS).





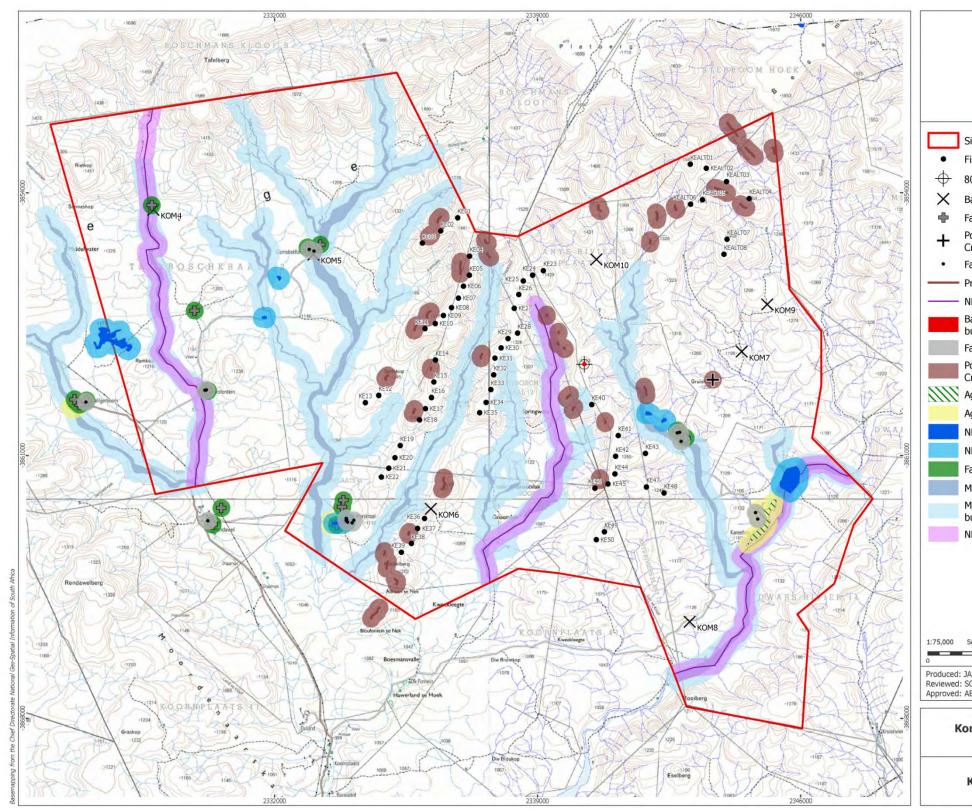


# FIGURE 9.1b: ECOLOGICAL SENSITIVITY MAP (FINAL LAYOUT).





### FIGURE 9.2: KOMSBERG EAST BAT CONSTRAINTS MAP.





- Site Boundary
- Final Turbine Layout
  - 80 m Meteorological Mast
- X Bat Detector Location
  - Farm Dam
  - Potential Bat Roost (Rocky Crevice)
  - Farm Building
- Prominent Dolerite Sill
  - NFEPA River
  - Bat Monitoring Location 50 m buffer
- Farm Building 200 m buffer Potential Bat Roost (Rocky Crevice) 200 m buffer
- Agricultural Field
  - Agricultural Field 200 m buffer
  - NFEPA Wetland
    - NFEPA Wetland 200 m buffer
  - Farm Dam 200 m buffer
  - Major Drainage Area
  - Major Drainage Ares 200 m buffer
  - NFEPA River 200 m buffer

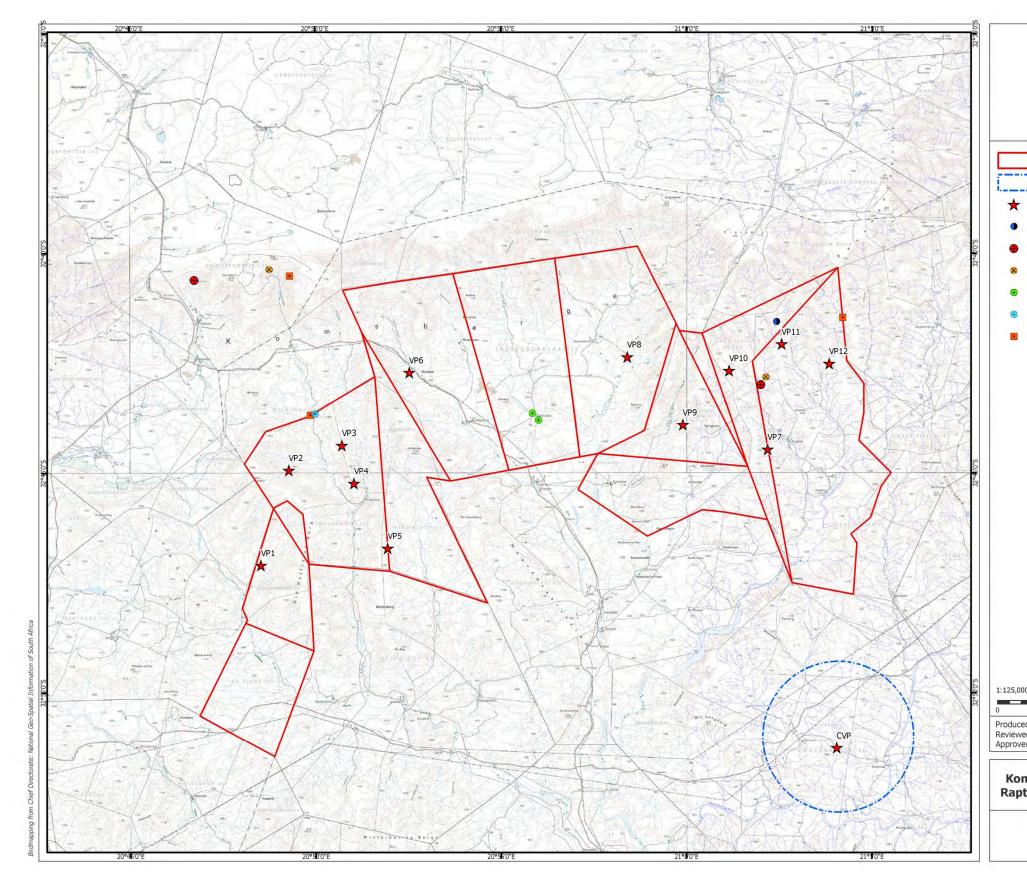
| icale @ A3 |                   | N |
|------------|-------------------|---|
| 1.5        | 3 km              | A |
| 4          | Ref: 2023/REP/030 |   |
| В          | Date: 31/03/2016  |   |

Komsberg East WEF Site Bat Constraints

Komsberg East WEF EIA Report



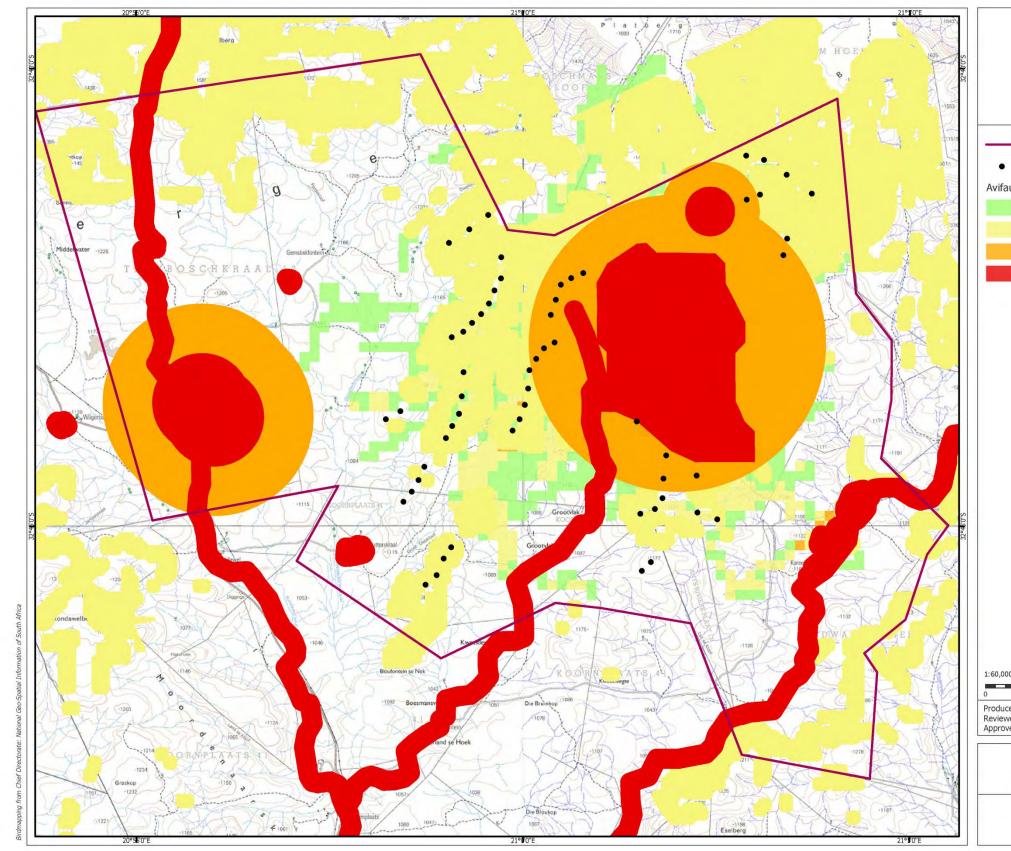
# FIGURE 9.3: RAPTOR NEST AND ROOST LOCATIONS.



|       | S                       | AF         | RCU       | S    |
|-------|-------------------------|------------|-----------|------|
|       | WEF Site                |            |           |      |
|       | Control Site            |            |           |      |
| 1     | Vantage Point           |            |           |      |
| 1     | Active African          | Harrier    | Hawk Ne   | st   |
| ,     | Active Verrea           | ux's Eag   | le Nest   |      |
| 1     | Inactive Verre          | aux's Ea   | igle Nest |      |
| 1     | Verreaux's Ea           | gle Roos   | st Site   |      |
| r     | Martial Eagle           | Roost Si   | te        |      |
| 1     | Inactive Unide          | entified I | Raptor Ne | ests |
|       |                         |            |           |      |
|       |                         |            |           |      |
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|       |                         |            |           |      |
|       |                         |            |           |      |
|       |                         |            |           |      |
| 00    | Scale @ A3              |            |           | N    |
|       | 2.5                     | 5 km       |           |      |
| ed: A | SC -                    |            | 3/REP/032 | _    |
| ed: A | AB                      | Date: 31/  | 03/2016   |      |
|       | berg East a<br>Nest and |            |           |      |
|       | Komsberg<br>EIA Re      |            | /EF       |      |
|       |                         |            |           |      |



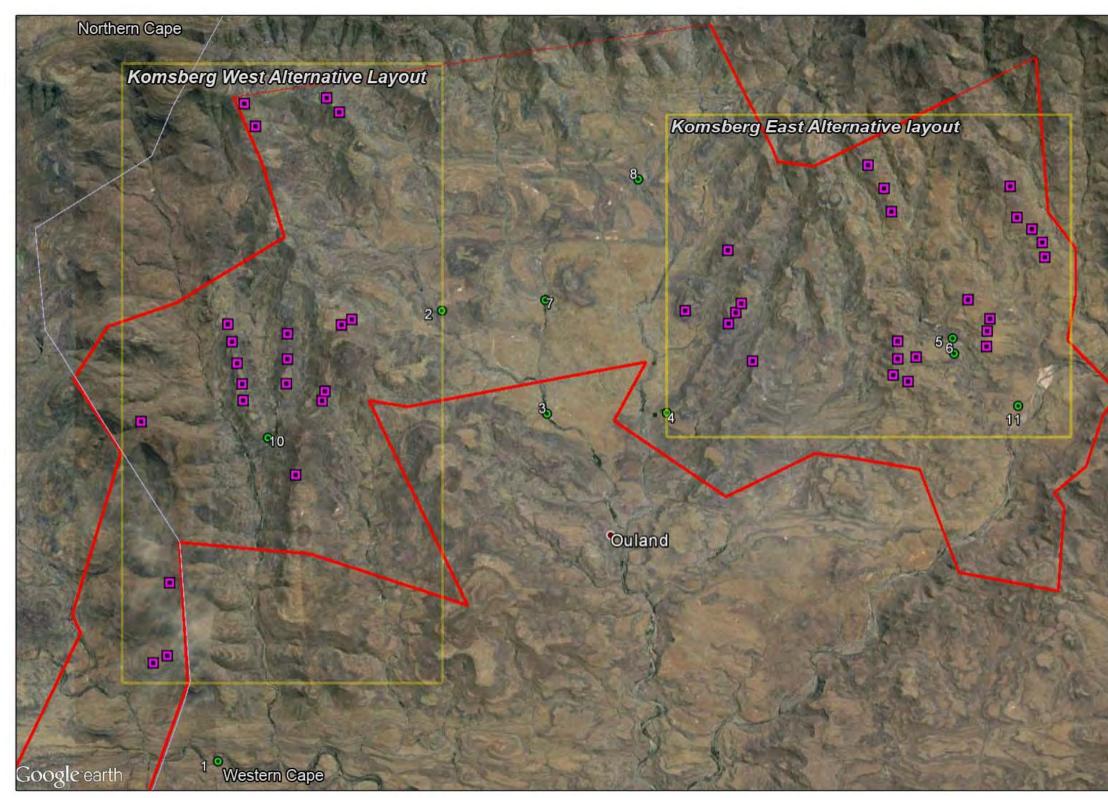
# FIGURE 9.4: AVIFAUNAL SENSITIVITIES AND NO GO AREAS.



|  |                   | ~ |
|--|-------------------|---|
| 5  | <b>SARCU</b>      | 5 |
| - Site Boundar                               | γ                 |   |
| Final Turbine                                | e Layout          |   |
| unal Sensitivity                             |                   |   |
| Low  |                   |   |
| Medium                                       |                   |   |
| Medium/Higl                                  | n                 |   |
| High (No-Go                                  | Area)             |   |
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|  |                   |   |
| 00 Scale @ A3                                | ⊐<br>2 km         | Ň |
| ced: AT                                      | Ref: 2023/REP/036 | - |
| ved: SC<br>ved: AB                           | Date: 31/03/2016  |   |
| Komshera                                     | East WEE          |   |
| Komsberg East WEF<br>Avifaunal Sensitivities |                   |   |
| and No-go Areas Map                          |                   |   |
| Komsberg East WEF<br>EIA Report              |                   |   |
| ста кероп                                    |                   |   |



## FIGURE 9.5: LOCATION OF PROPOSED WTGS IN RELATION TO NOISE SENSITIVE RECEPTORS (ALTERNATIVE LAYOUT).



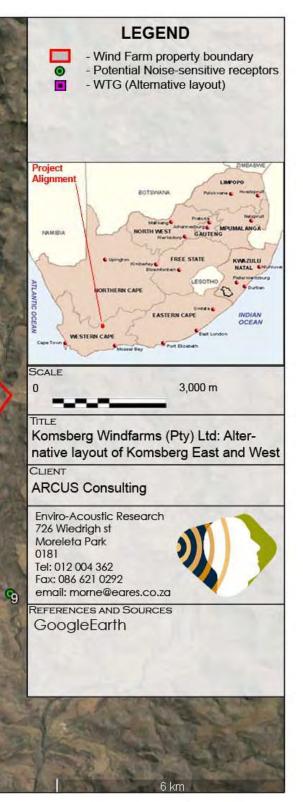
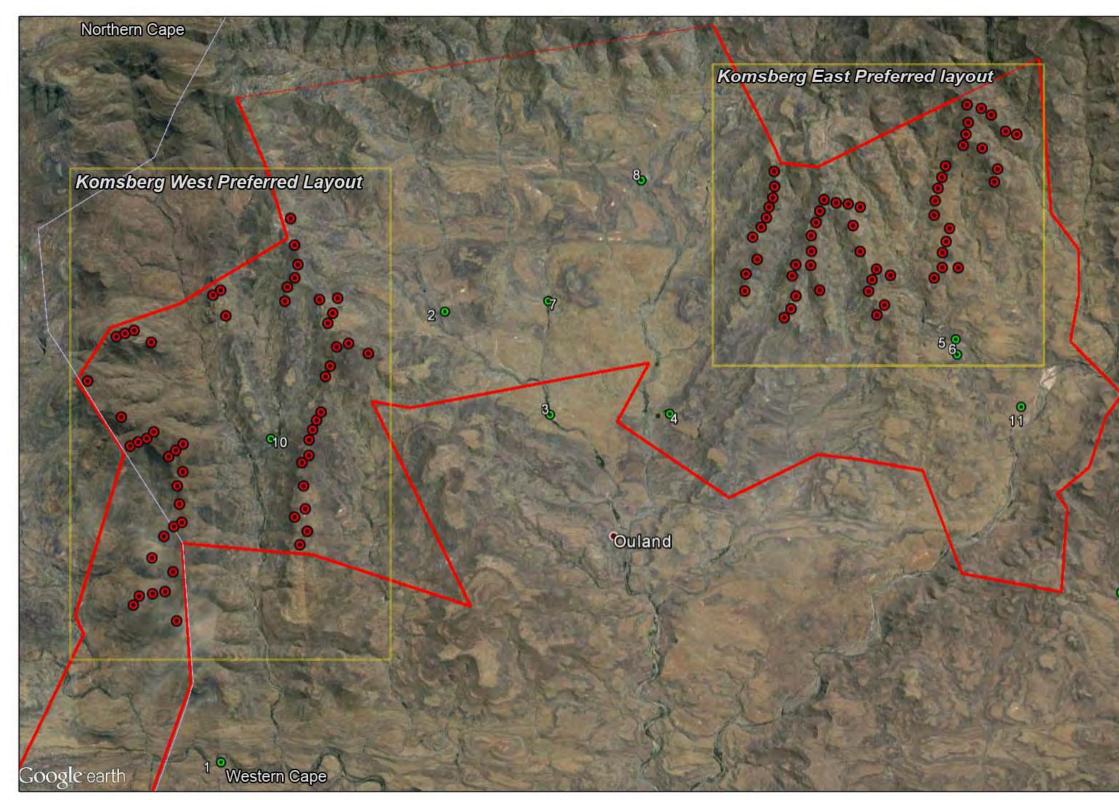




FIGURE 9.6: LOCATION OF PROPOSED WTGS IN RELATION TO NOISE SENSITIVE RECEPTORS (PREFERRED LAYOUT).



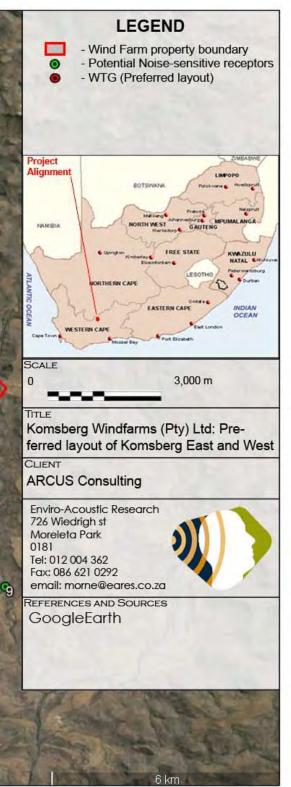
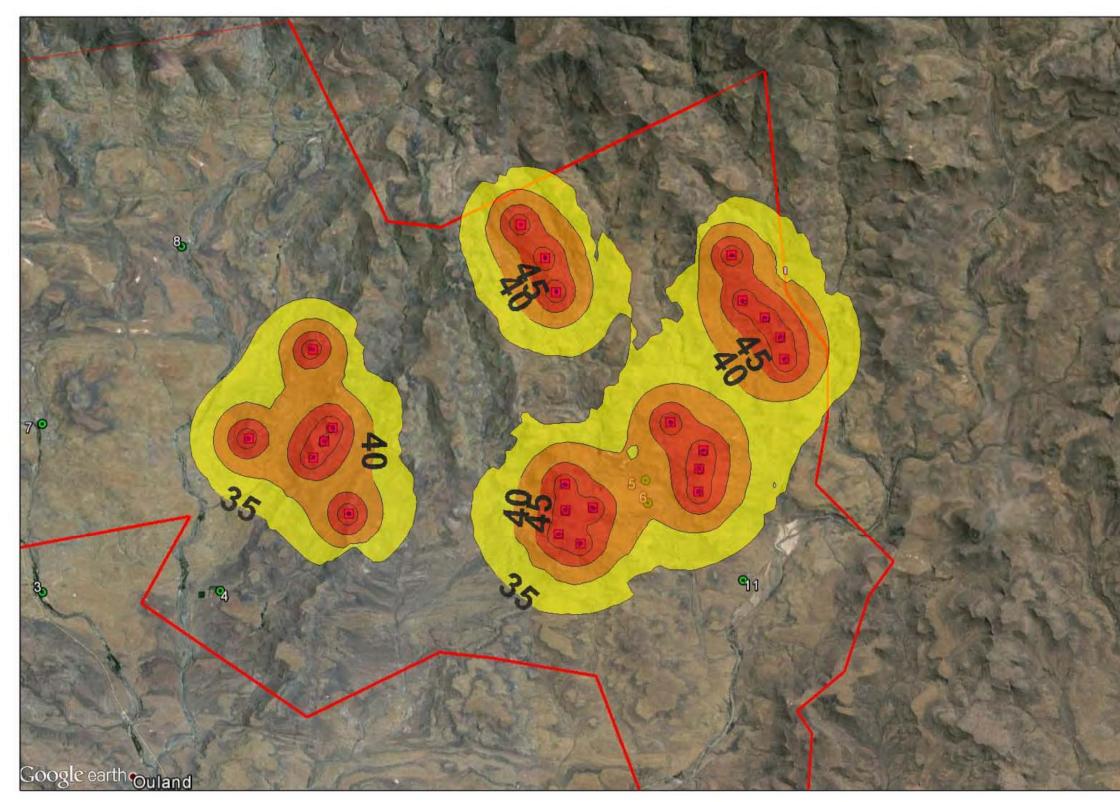




FIGURE 9.7: PROJECTED CONCEPTUAL NIGHT-TIME NOISE RATING LEVELS DURING OPERATION – ALTERNATIVE LAYOUT (VESTAS WTG).



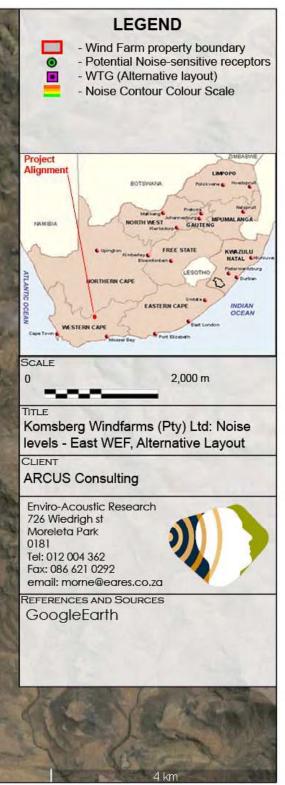




FIGURE 9.8: PROJECTED CONCEPTUAL NIGHT-TIME NOISE RATING LEVELS DURING OPERATION – PREFERRED LAYOUT (VESTAS WTG).

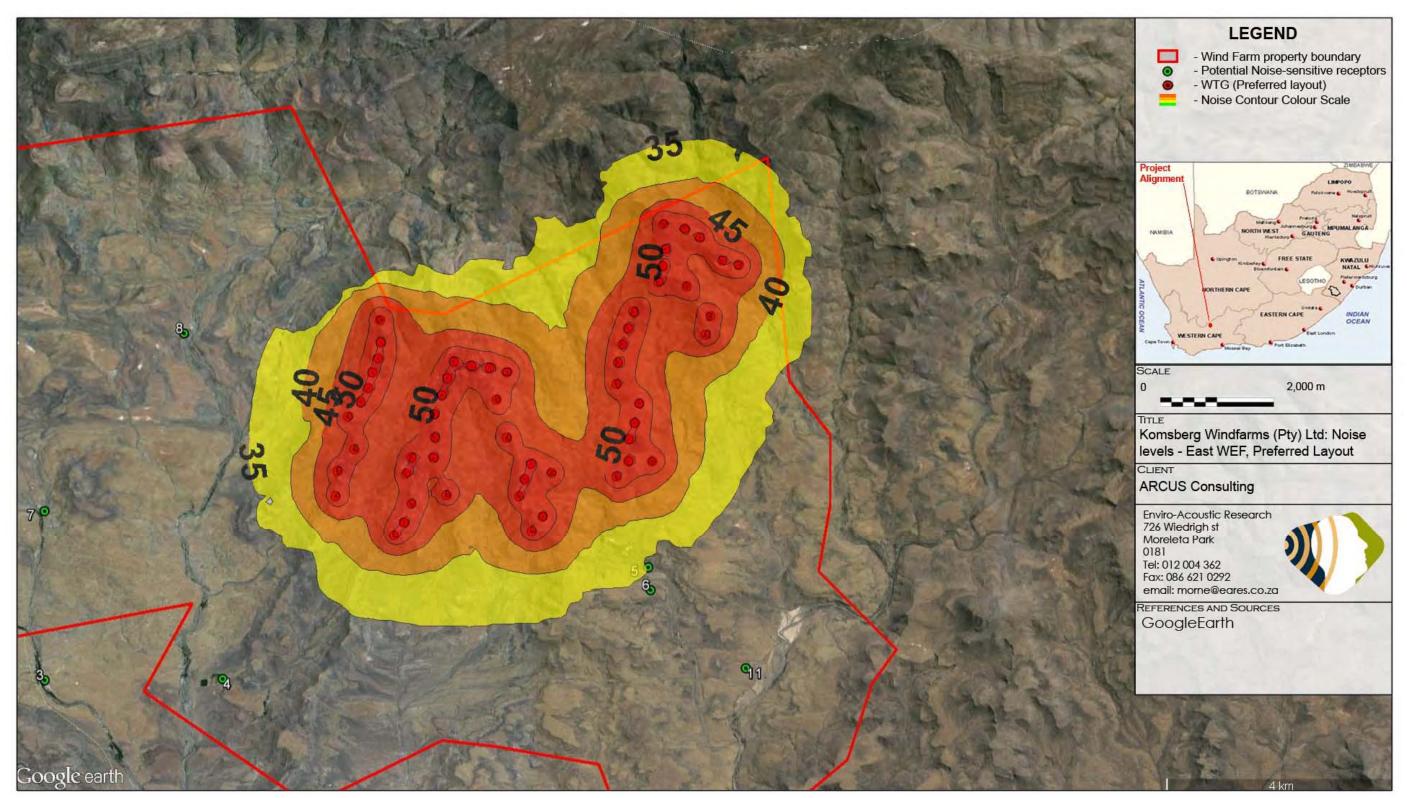
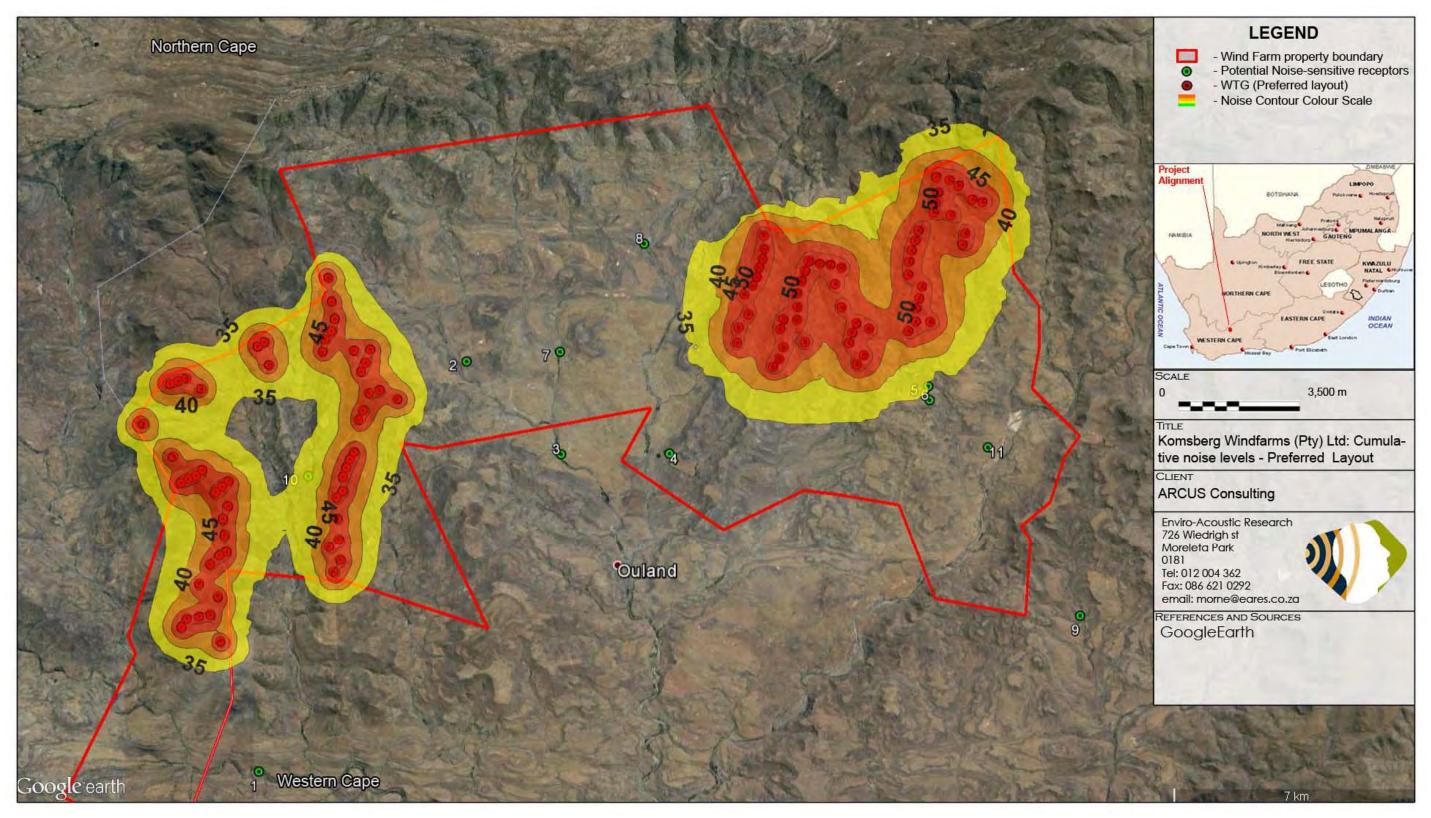


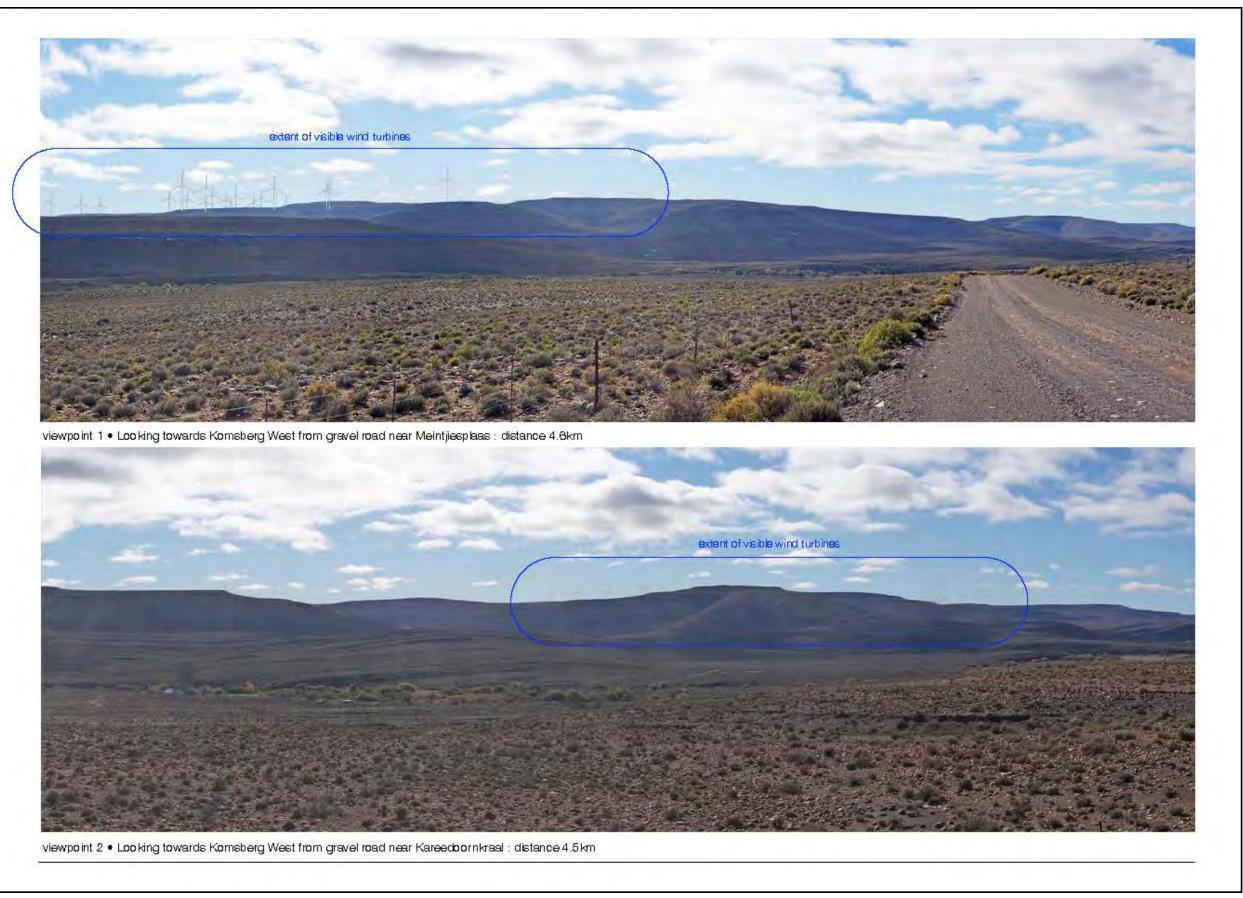


FIGURE 9.9: PROJECTED CONCEPTUAL NIGHT-TIME NOISE RATING LEVELS DURING OPERATION - CUMULATIVE EFFECTS - PREFERRED LAYOUT (VESTAS WTG).



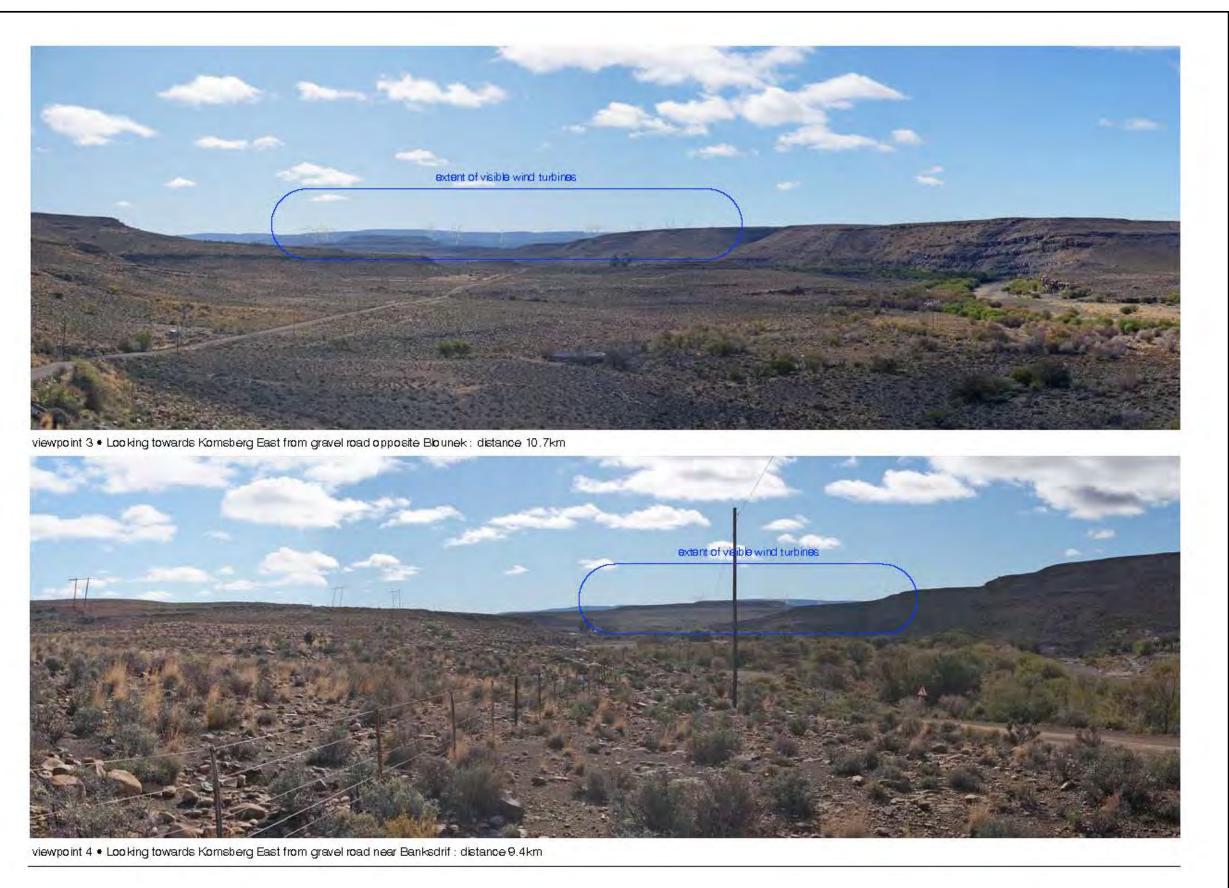


# FIGURE 9.10: PHOTOMONTAGES: VIEWPOINTS 1 AND 2.



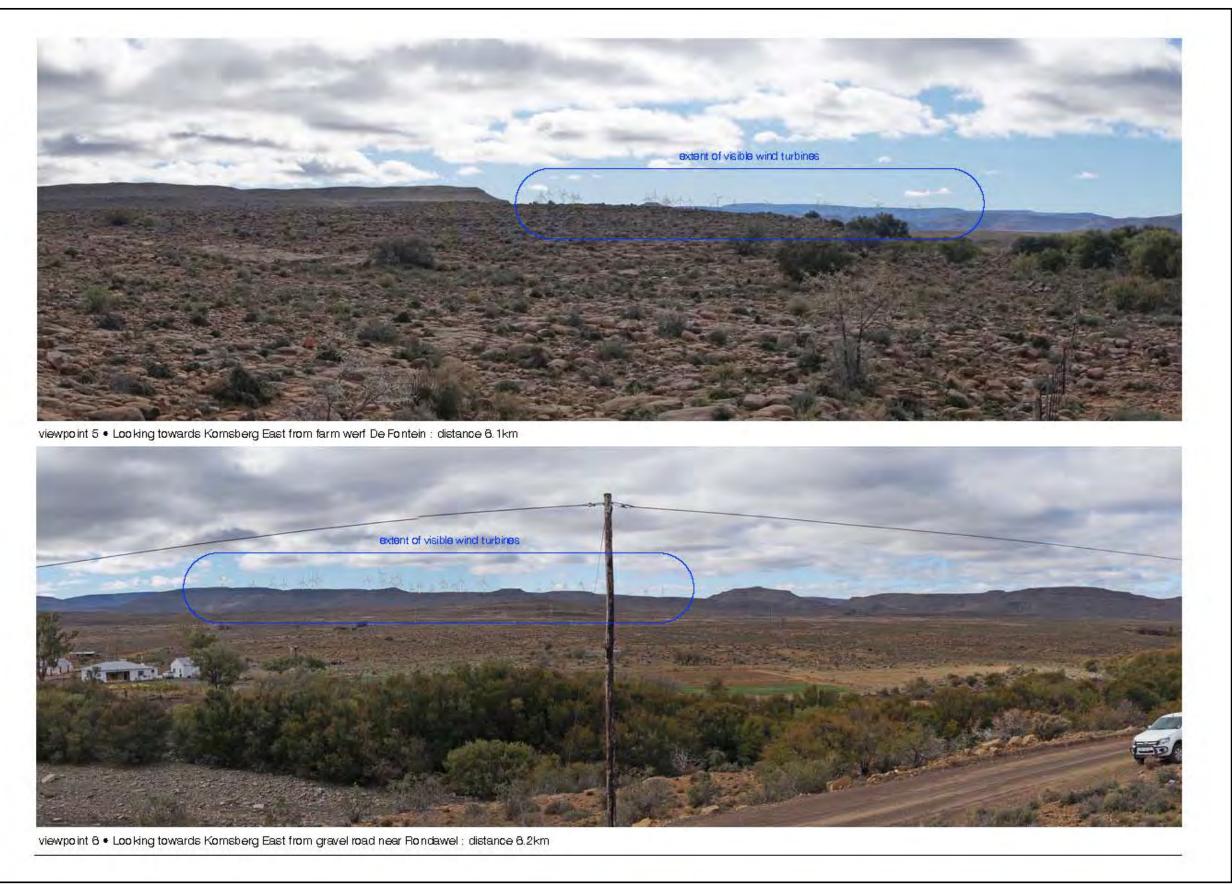


# FIGURE 9.11: PHOTOMONTAGES: VIEWPOINTS 3 AND 4.



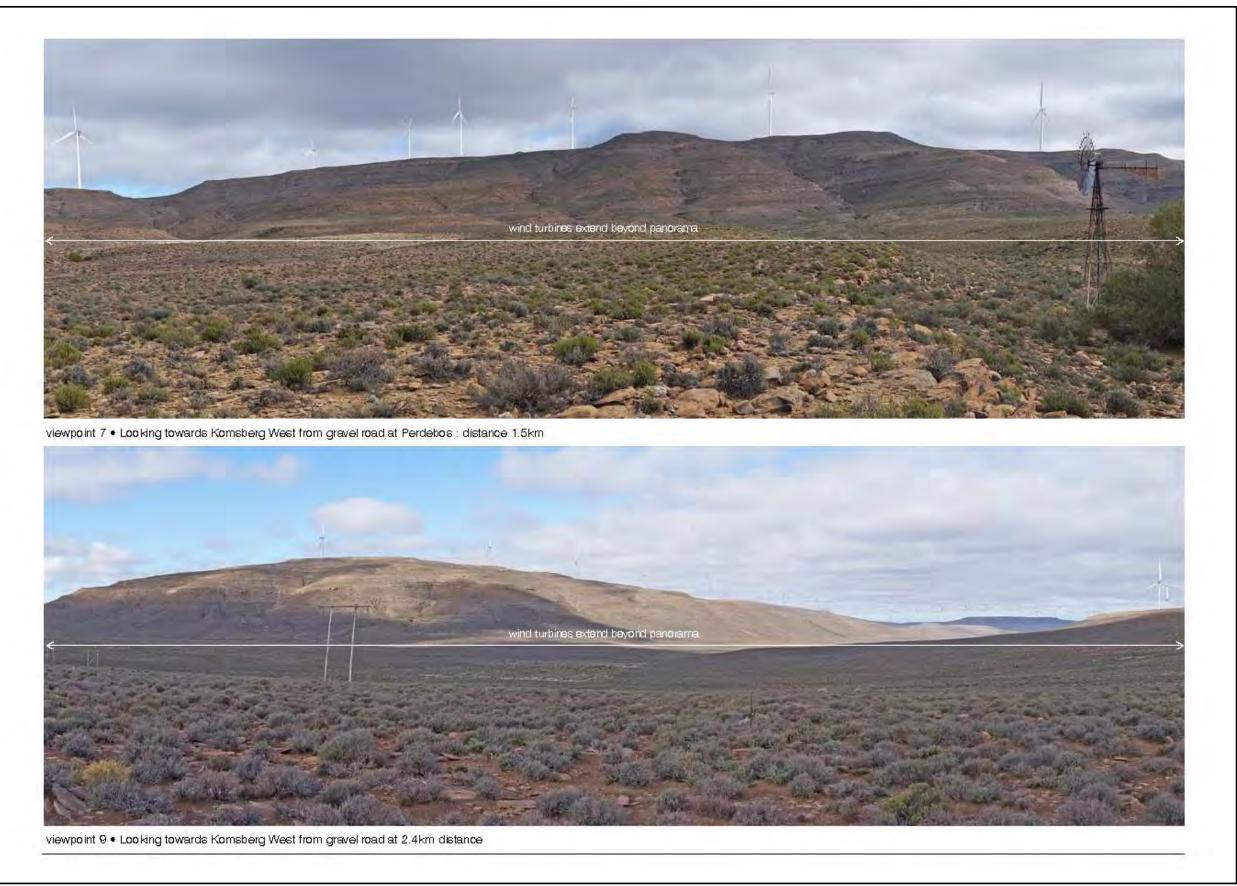


# FIGURE 9.12: PHOTOMONTAGES: VIEWPOINTS 5 AND 6.



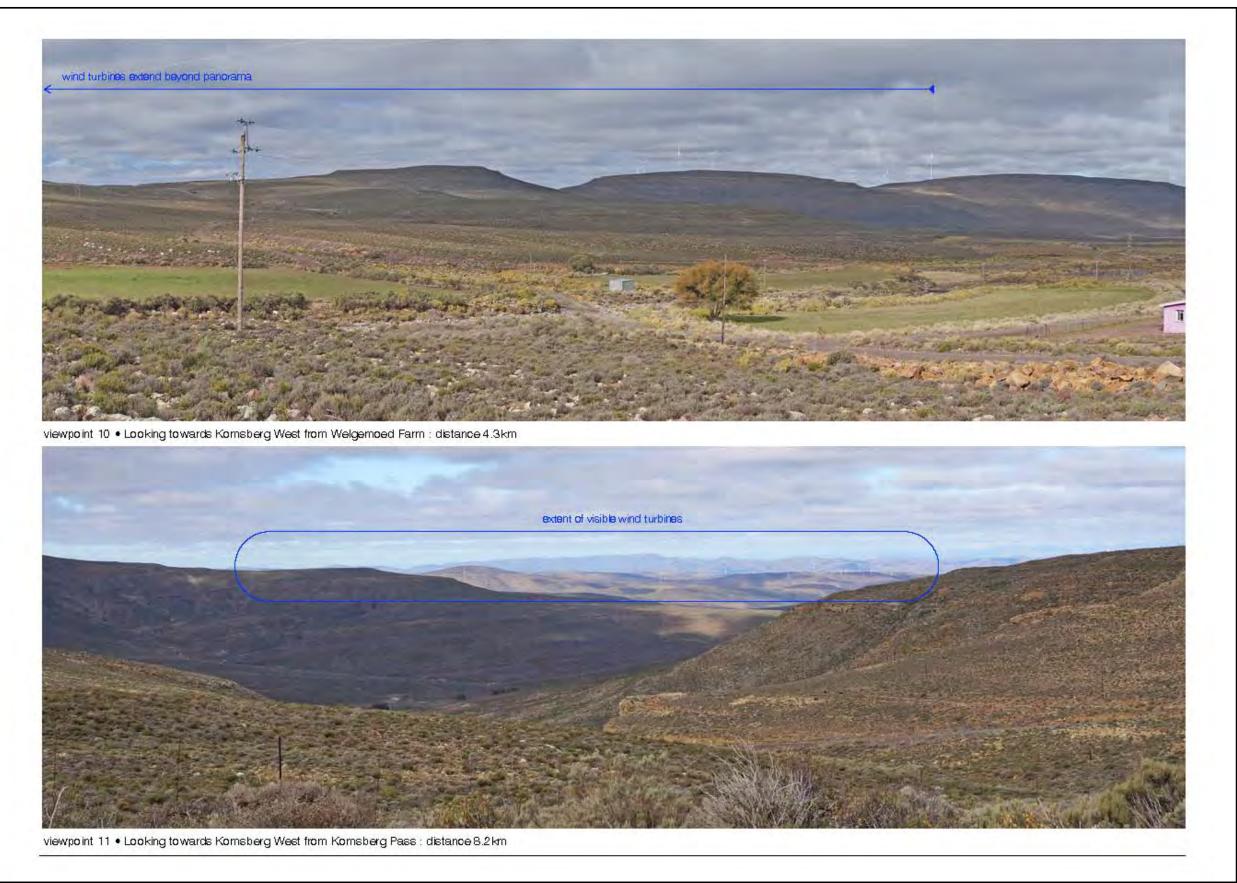


# FIGURE 9.13: PHOTOMONTAGES: VIEWPOINTS 7 AND 9.



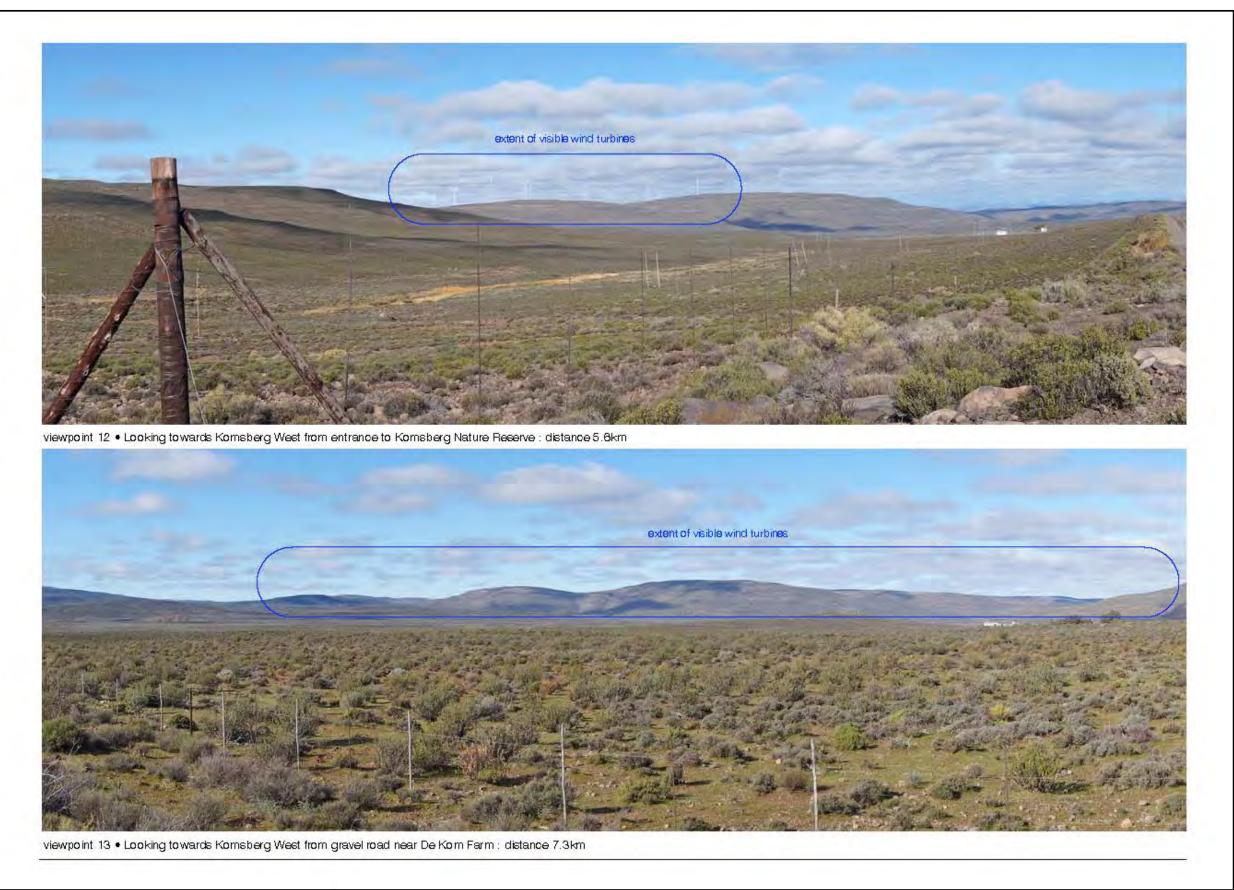


# FIGURE 9.14: PHOTOMONTAGES: VIEWPOINTS 10 AND 11.





# FIGURE 9.15: PHOTOMONTAGES: VIEWPOINTS 12 AND 13.



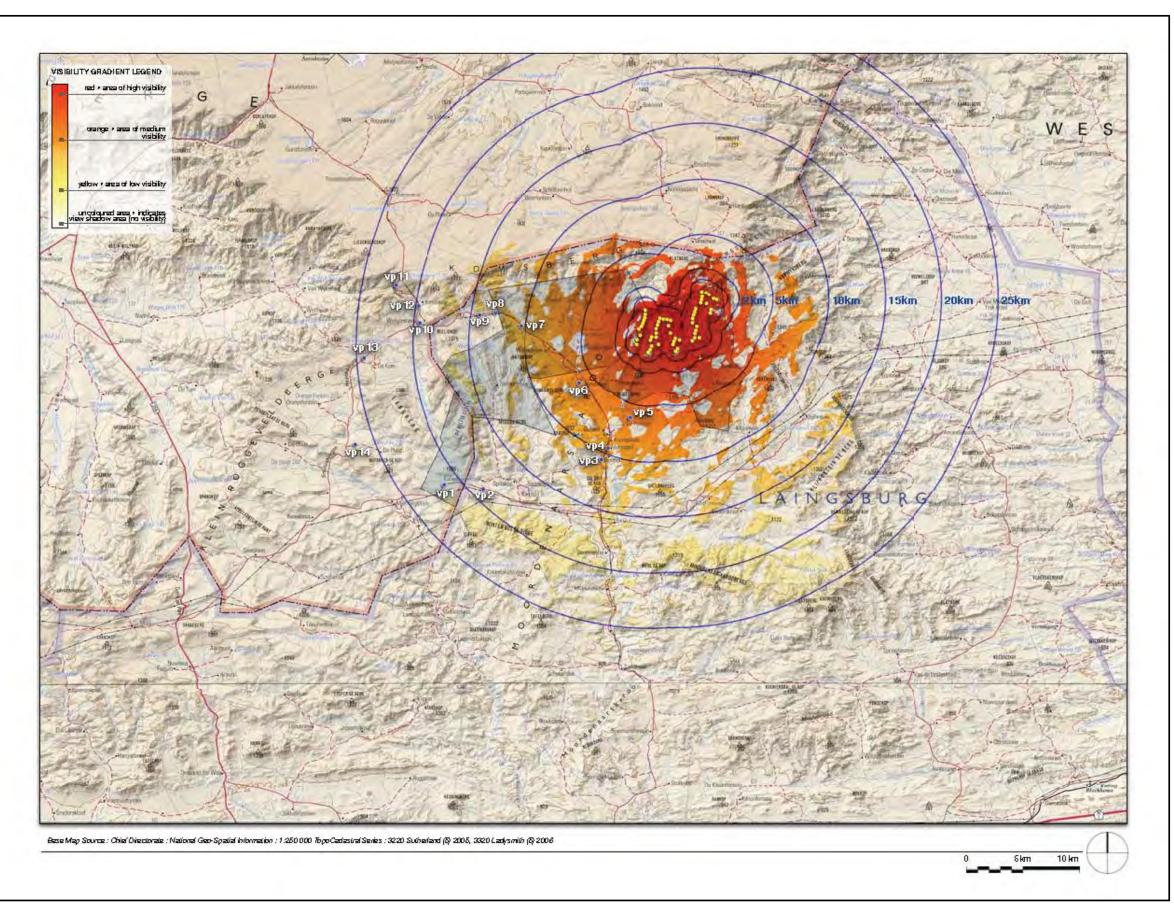


# FIGURE 9.16: PHOTOMONTAGES: VIEWPOINT 14.





### FIGURE 9.17: VISUAL EXPOSURE – VIEWSHED AND DISTANCE RADII.





### FIGURE 9.18: LOCAL CONTEXT – VIEWPOINTS AND DISTANCE RADII.

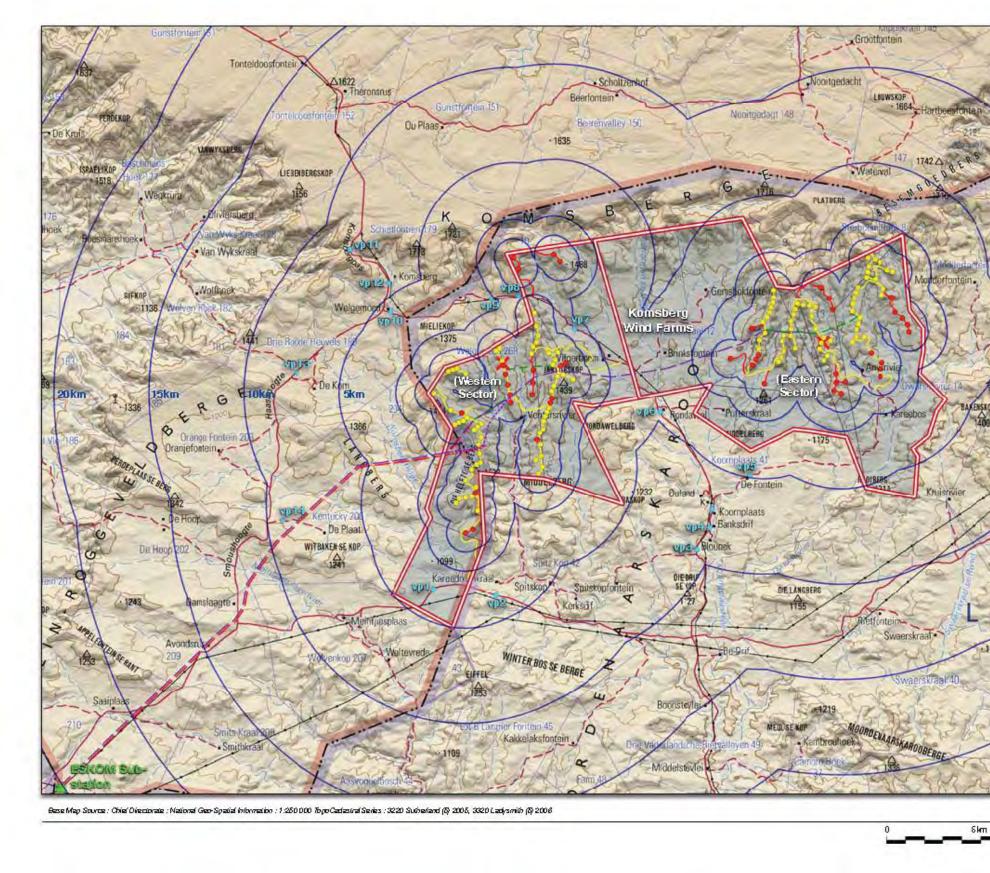
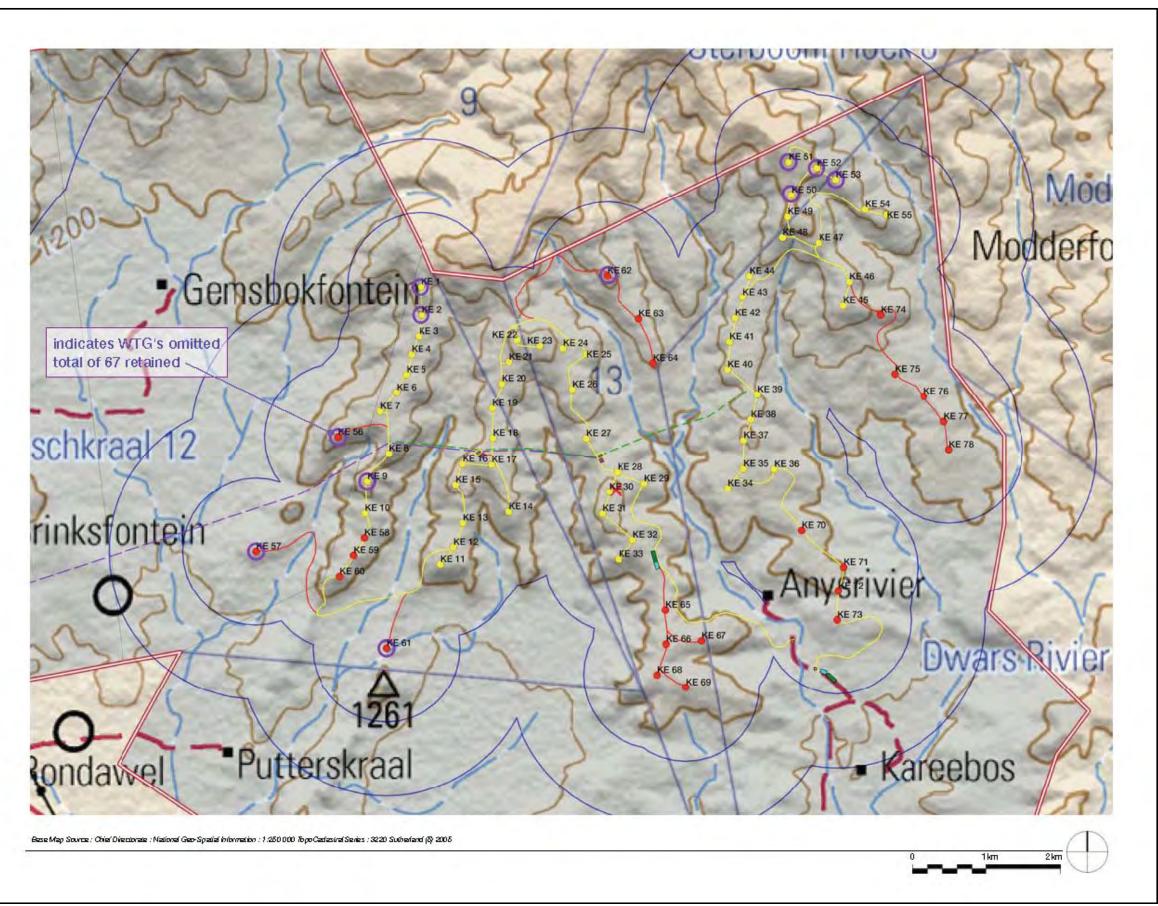




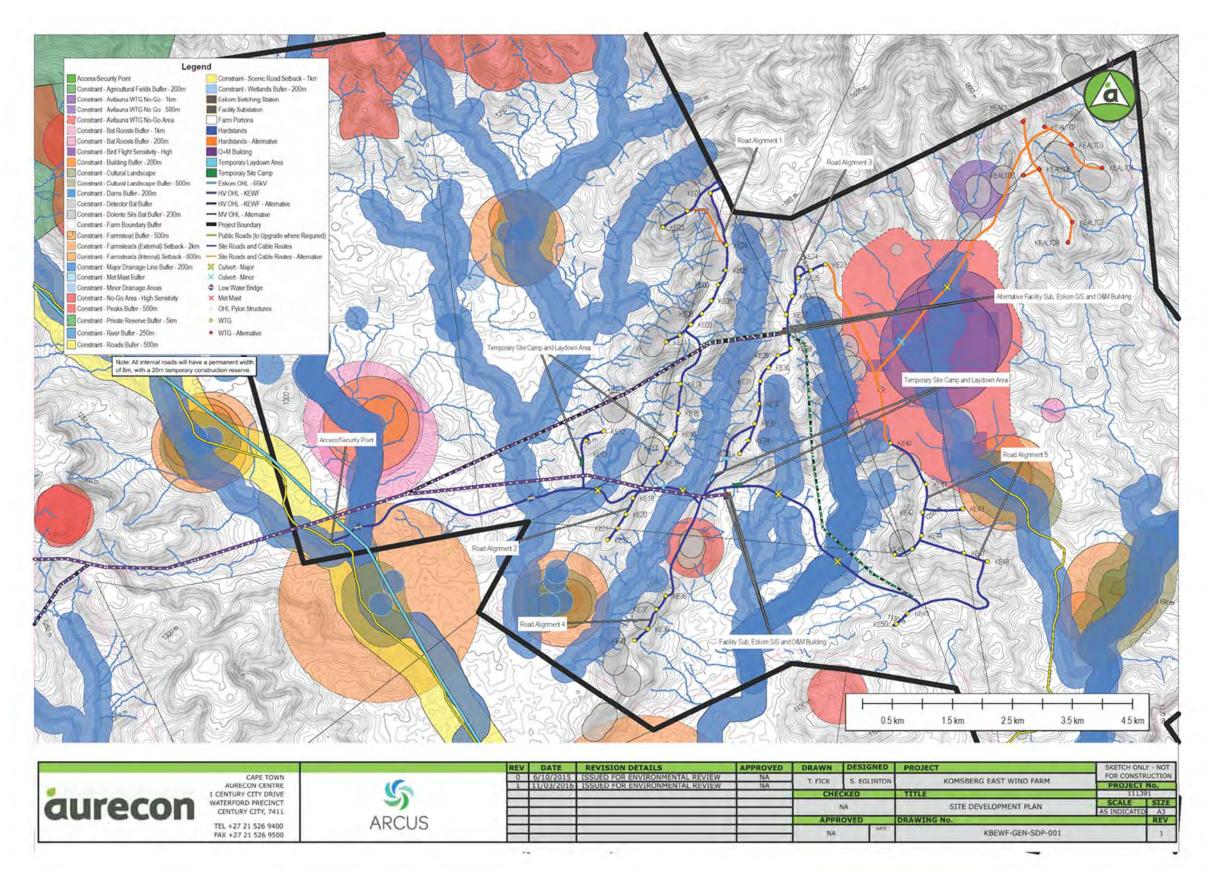


FIGURE 9.19a: PROPOSED AMENDED LAYOUT BASED ON VISUAL CONSTRAINTS (PREFERRED AND ALTERNATE LAYOUTS).



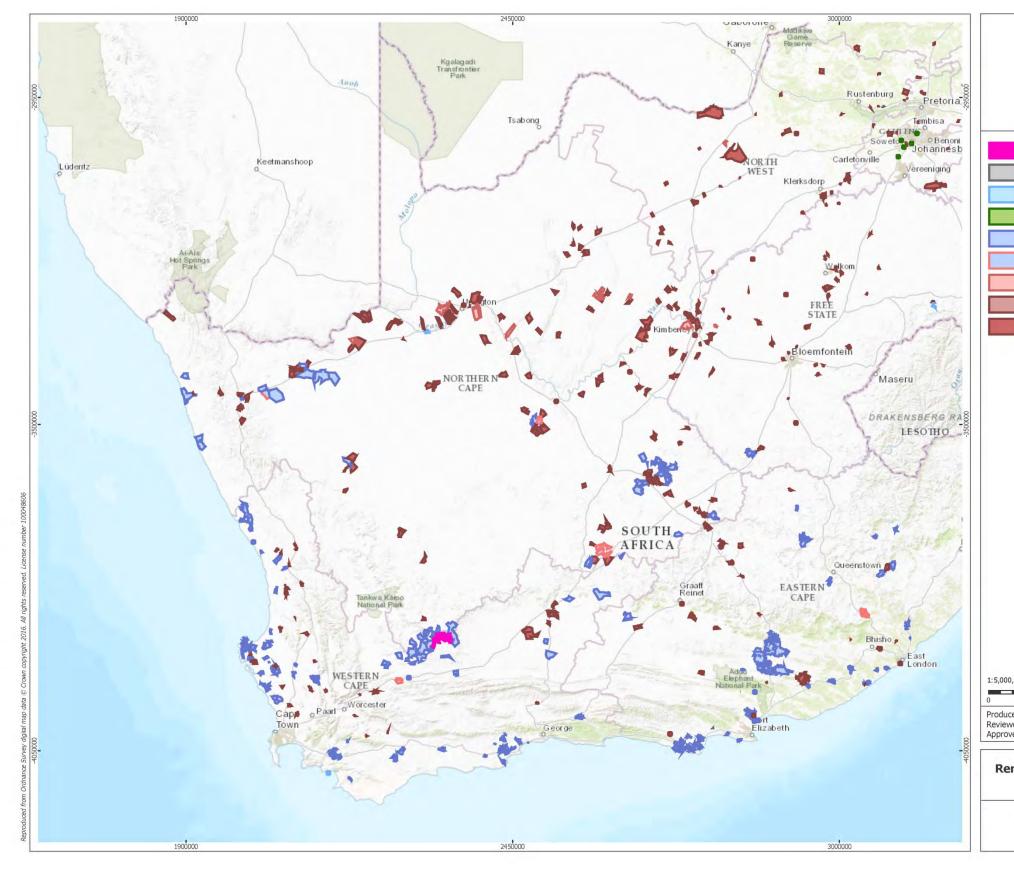


#### FIGURE 9.19b: FINAL LAYOUT DEPICTING RELOCATION OF TURBINES POST INPUT FROM VISUAL SPECIALISTS<sup>1</sup>





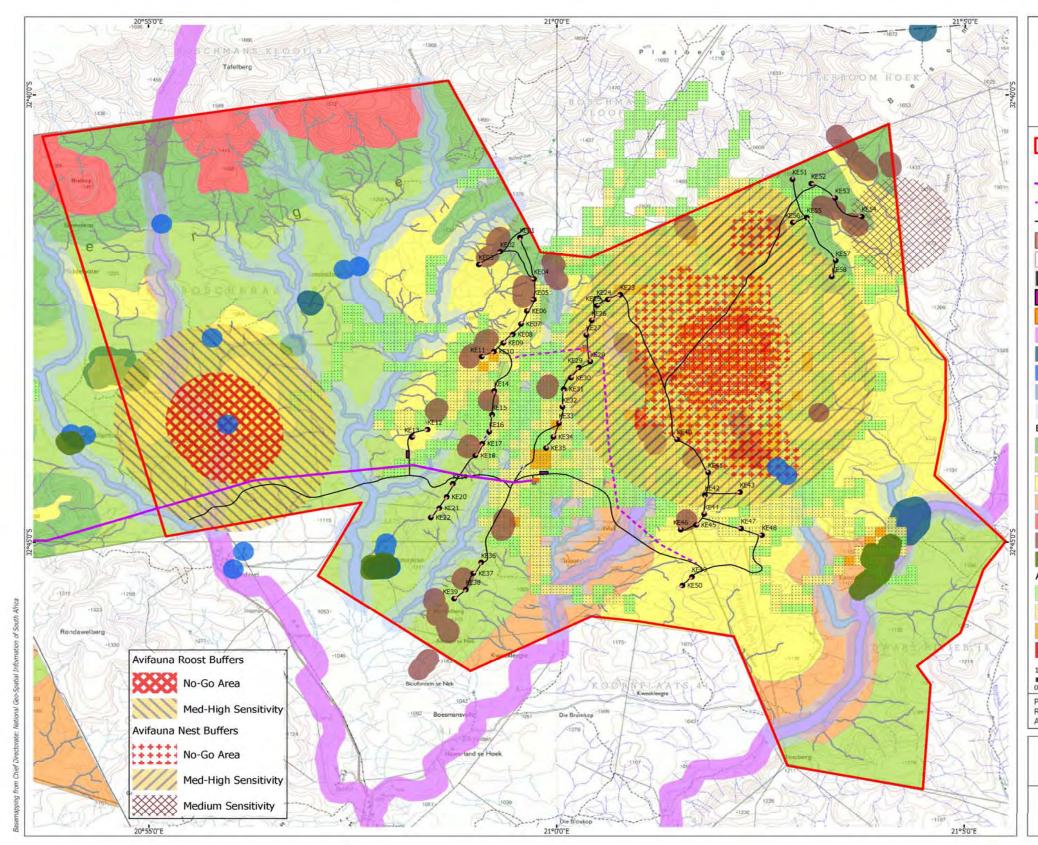
# FIGURE 9.20: DEA MAP INDICATING NUMBER OF RENEWABLE ENERGY APPLICATIONS 2015.



|  | ٩            | ARCUS             |  |
|--|--------------|-------------------|--|
|  | Komsberg W   | EF Site           |  |
|  | Co-Generatio | on                |  |
|  | Hydro        |                   |  |
|  | Landfill Gas |                   |  |
|  | Onshore Win  | nd                |  |
| ٦  | Onshore Win  | nd and Solar PV   |  |
|  | Solar CSP    |                   |  |
|  | Solar CSP an | d PV              |  |
|  | Solar PV     |                   |  |
|  |              |                   |  |
|  |              |                   |  |
|  |              |                   |  |
|  |              |                   |  |
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|  |              |                   |  |
|  |              |                   |  |
|  |              |                   |  |
|  |              |                   |  |
|  |              |                   |  |
| ,00  | 0 Scale @ A3 | N                 |  |
|  | 100          | 200 km            |  |
| ed:  | SC<br>: RMc  | Ref: 2023/REP/034 |  |
|  | : AB         | Date: 31/03/2016  |  |
| newable Energy Applications<br>in South Africa |              |                   |  |
| Komsberg East WEF<br>EIA Report                |              |                   |  |



# FIGURE 9.21: OVERALL ENVIRONMENTAL SENSITIVITY MAP.



# S ARCUS

|          | Site Boundary                            |  |  |
|----------|--|--|--|
| •        | Final Turbine Layout                     |  |  |
|          | 132.00 kV HV Transmission Line           |  |  |
|          | MV Overhead Transmission Line            |  |  |
|          | Roads                                    |  |  |
| -        | Building                                 |  |  |
|          | Hardstand                                |  |  |
|          | Laydown Area                             |  |  |
|          | Site Camp                                |  |  |
|          | Substation                               |  |  |
|          | NFEPA River 250 m Buffer                 |  |  |
|          | NFEPA Wetlands 200 m Buffer              |  |  |
|          | Farm Dam 200 m Buffer                    |  |  |
|          | Drainage Areas                           |  |  |
|          | Major Drainage Areas 200 m Buffer        |  |  |
| Ecologie | cal Sensitivity                          |  |  |
| - 1)     | High                                     |  |  |
|          | Medium                                   |  |  |
|          | Medium-High (Infrastructure Permissible) |  |  |
|          | Medium-Low                               |  |  |
|          | Very High                                |  |  |
|          | Potential Bat Roost 200 m Buffer         |  |  |
| 1        | Agricultural Fields 200 m Buffer         |  |  |
| Avifaun  | al Sensitivity                           |  |  |
|          | Low                                      |  |  |
|          | Medium                                   |  |  |
|          | Medium/High (Infrastructure Permissible) |  |  |
|          | High (No-Go Area)                        |  |  |
| :60,000  | Scale @ A3                               |  |  |
|          | 1 2 km                                   |  |  |
| Produced | d: SC                                    |  |  |
| Approved | d: AB Date: 12/04/2016                   |  |  |
|          | Overall Environmental<br>Sensitivity     |  |  |
|          | Komsberg East WEF<br>EIA Report          |  |  |



FIGURE 9.22: INFRASTRUCTURE LOCATIONS – LOCATIONS WHERE CONSTRUCTION ACTIVITIES MAY TAKE PLACE.

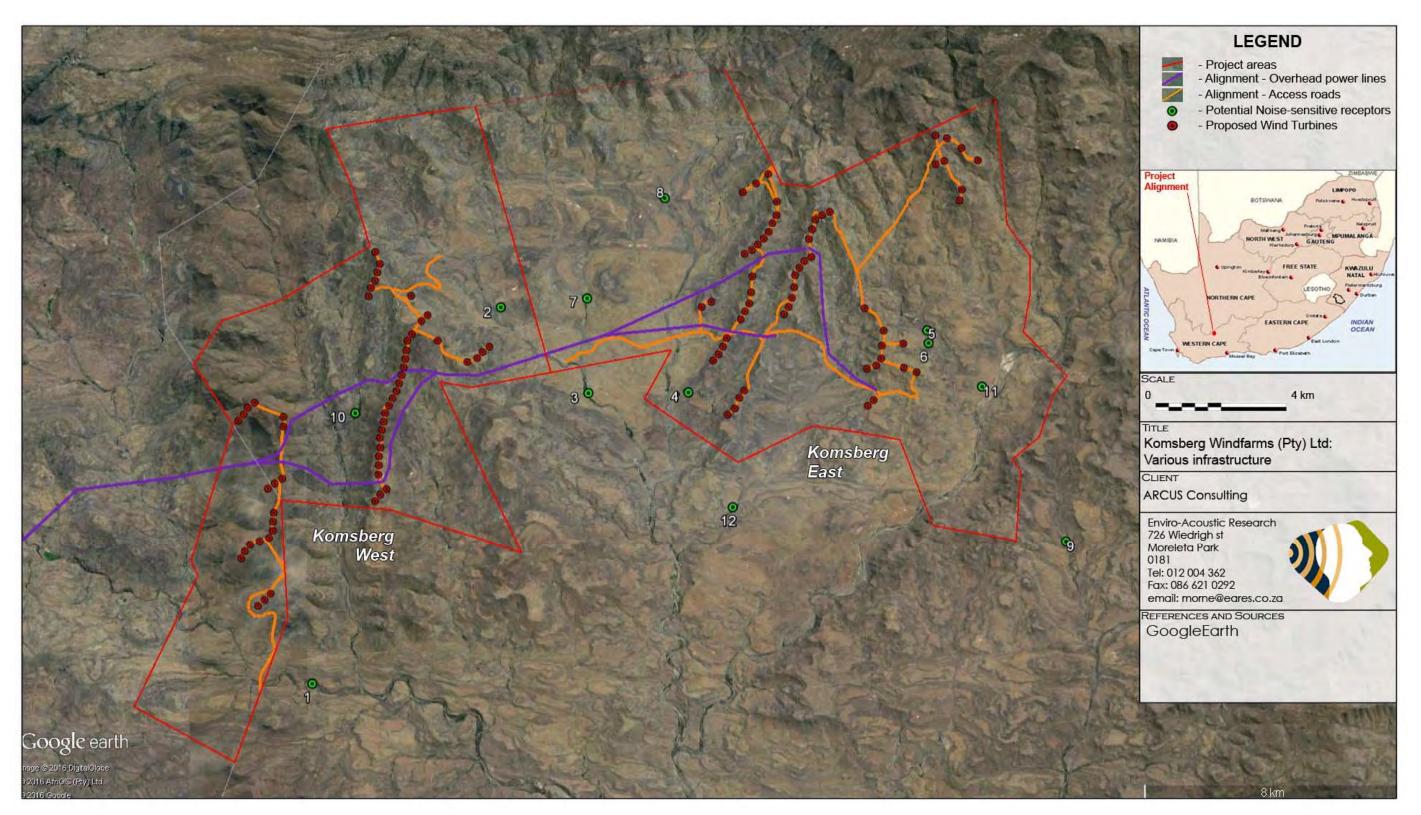
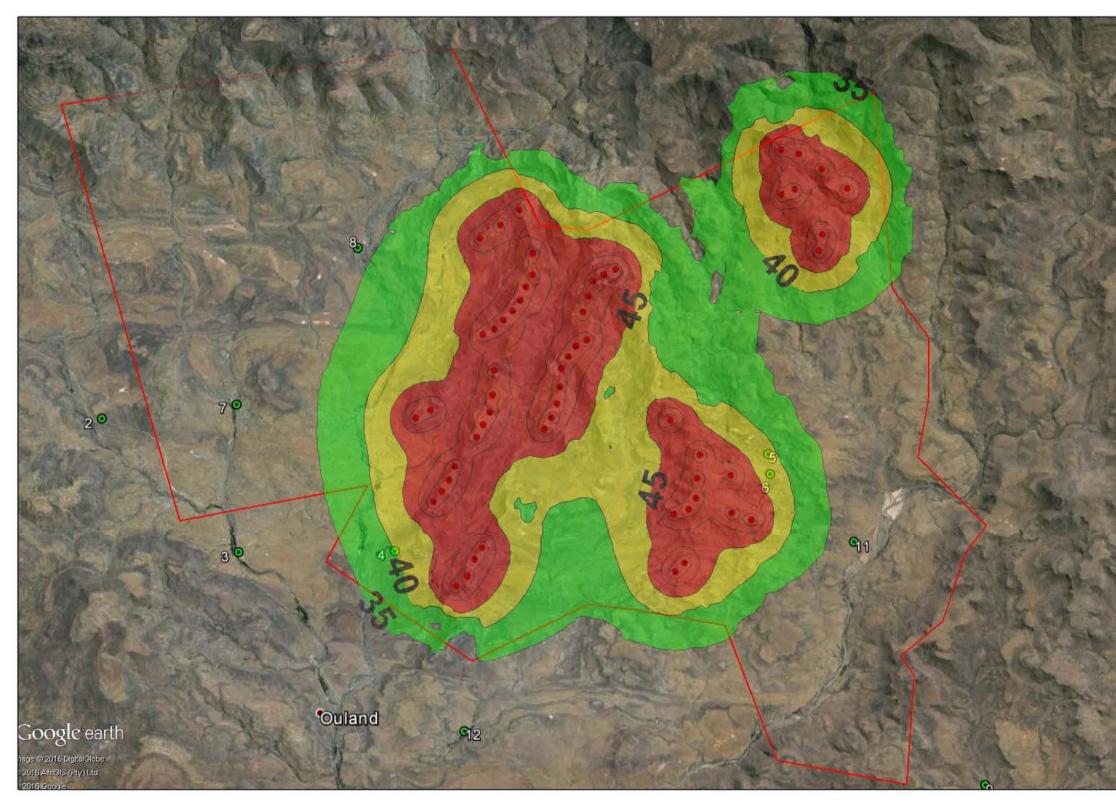




FIGURE 9.23: PROJECTED CONCEPTUAL NIGHT-TIME NOISE RATING LEVELS DURING OPERATION – EAST WEF (ACCIONA WTG).



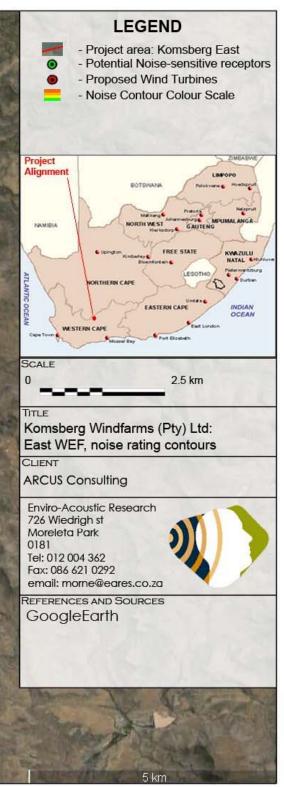




FIGURE 9.24: PROJECTED CONCEPTUAL NIGHT-TIME NOISE RATING LEVELS DURING OPERATION – KOMSBERG CUMULATIVE (ACCIONA WTG).

