

Aberdeen 2 Wind Facility Eastern Cape Province

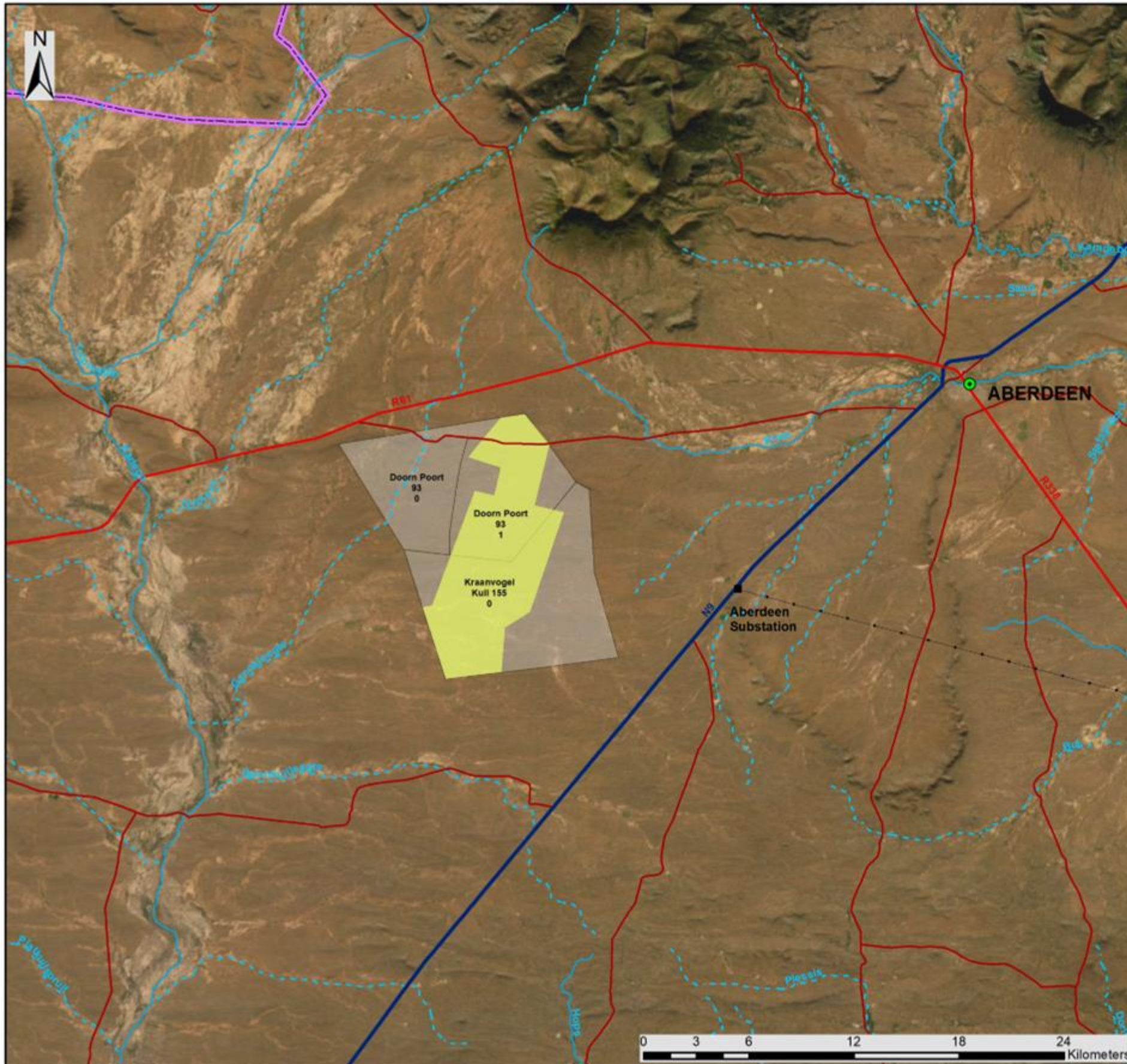
Locality Map

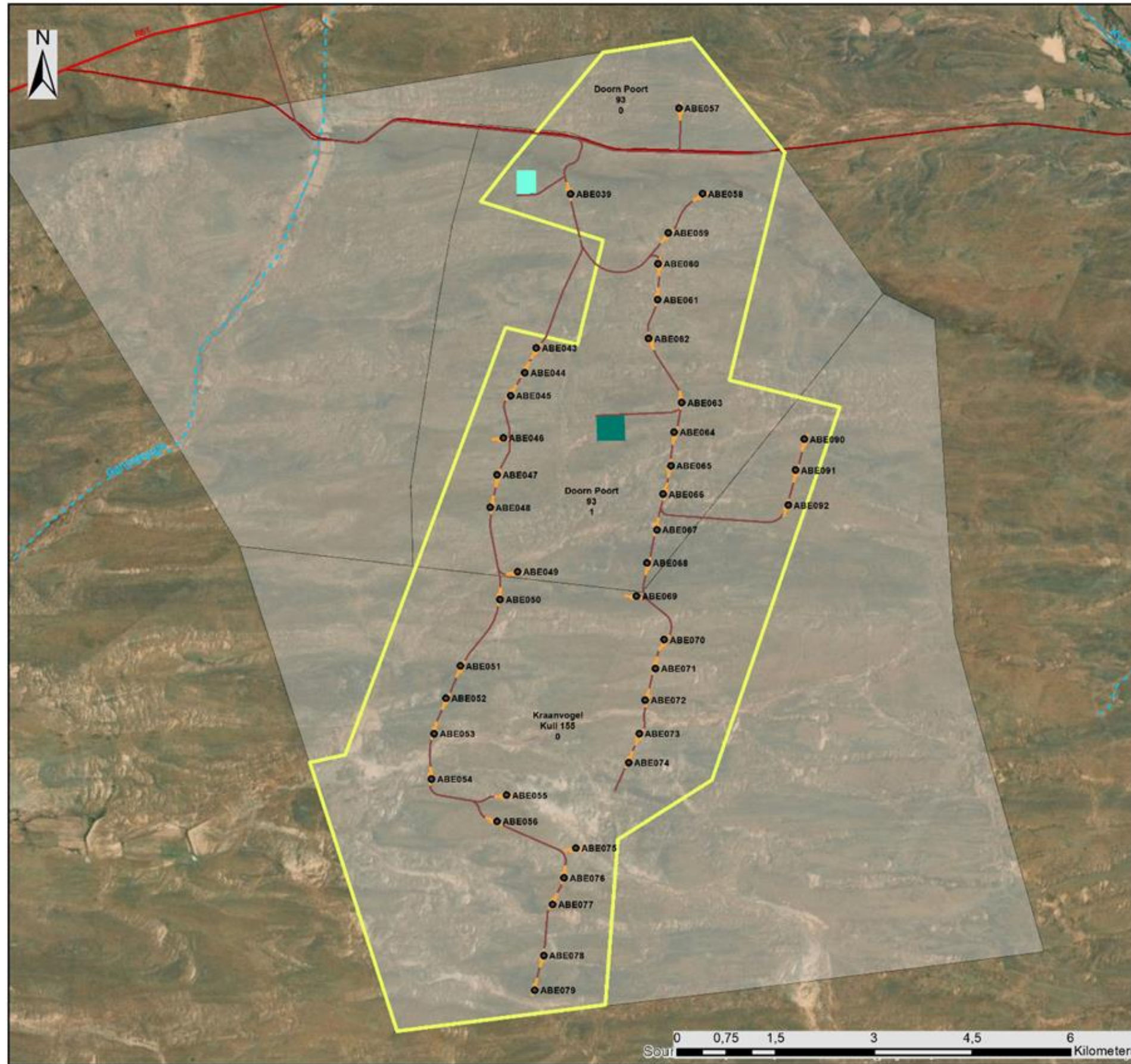
Legend

- Town
- Existing Substation
- Eskom Power Line (Existing)
- Regional Road
- National Road
- Main Road
- Perennial River
- - - Non Perennial River
- ▭ Provincial Boundary
- ▭ Aberdeen Wind Facility 2 Development Area
- ▭ Project Site

Scale: 1:300 000
Projection: GCS_WGS_1984
Map Ref: Aberdeen Locality Map

savannah
environmental





Aberdeen Wind Facility 2 Eastern Cape Province

Layout Map

Legend

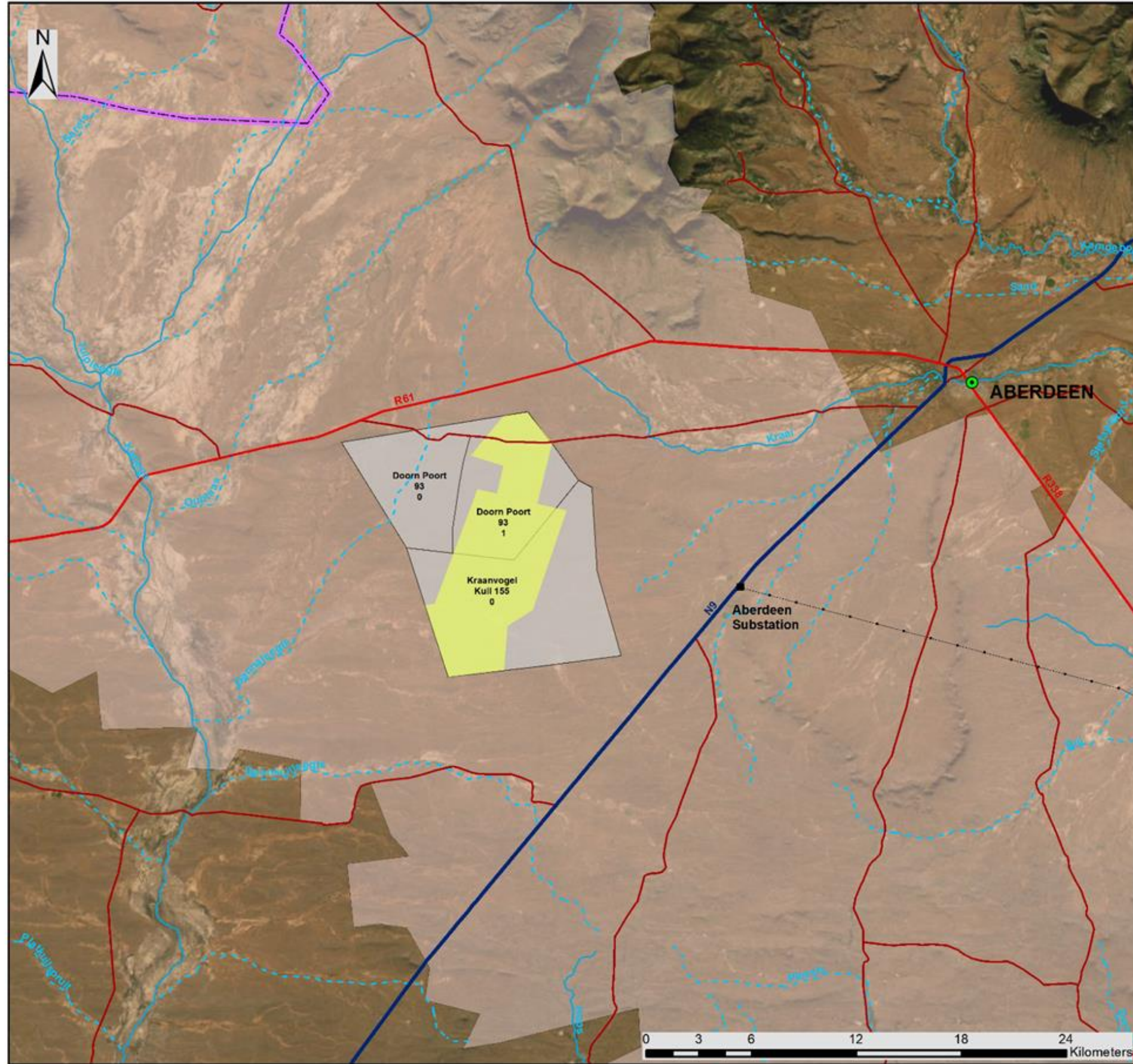
- Town
- Regional Road
- Main Road
- Perennial River
- - - Non Perennial River
- Affected Farm Portions

Proposed Development

- Turbines
- Turbine Hardstands
- Access & Internal Roads
- Substation, BESS and O&M Buildings Hub
- Warehouse, Laydown Area and Site Camp Hub
- Aberdeen Wind Facility 2

Scale: 1:80 000
 Projection: GCS_WGS_1984
 Map Ref: Aberdeen Layout Map





Aberdeen 2 Wind Facility Eastern Cape Province

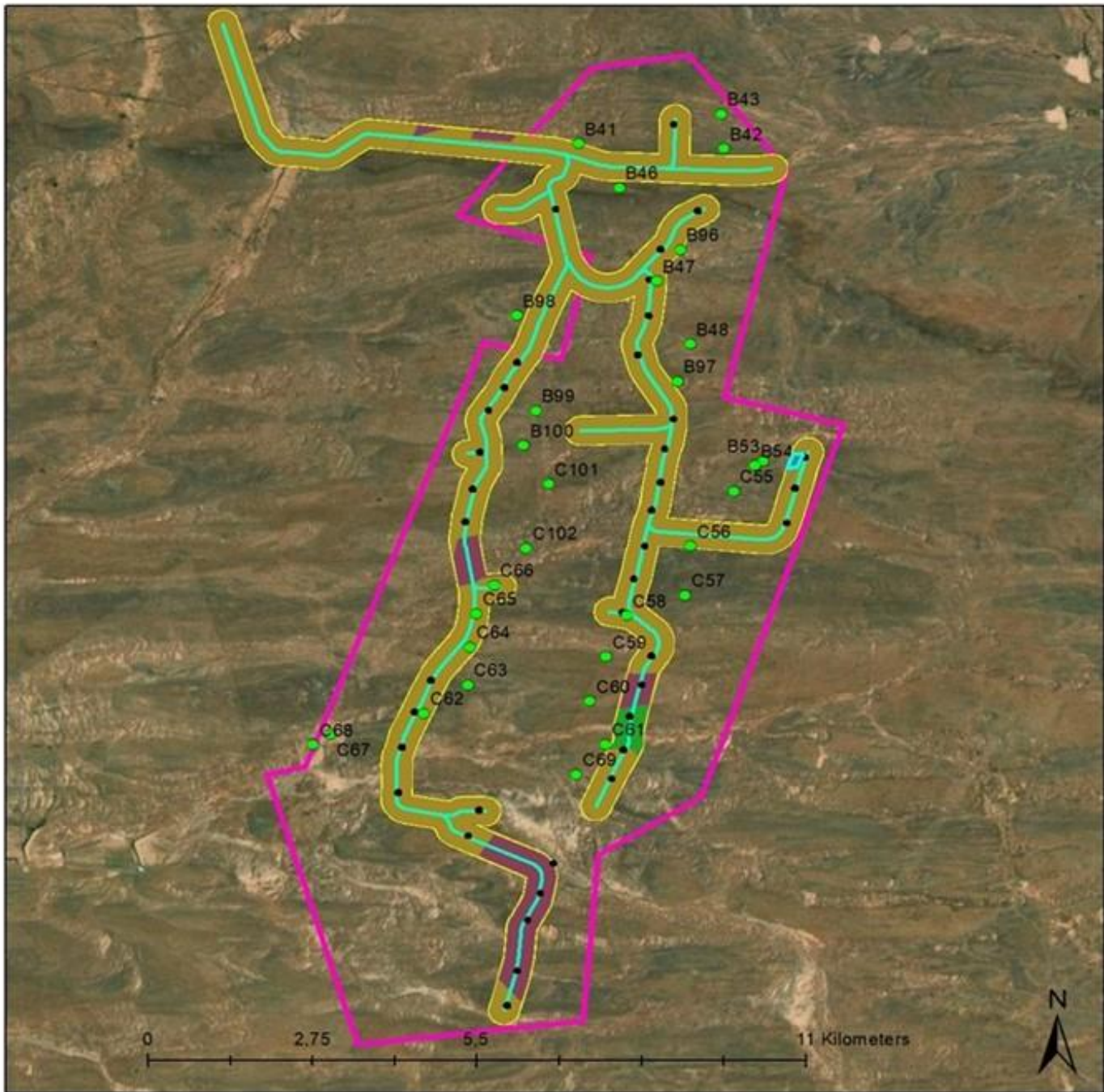
REDZ and Locality Map

Legend

- Town
- Existing Substation
- Eskom Power Line (Existing)
- Regional Road
- National Road
- Main Road
- Perennial River
- - - Non Perennial River
- Provincial Boundary
- Aberdeen Wind Facility 2 Development Area
- Project Site
- Beaufort West REDZ

Scale: 1:300 000
 Projection: GCS_WGS_1984
 Map Ref: REDZ and Locality Map



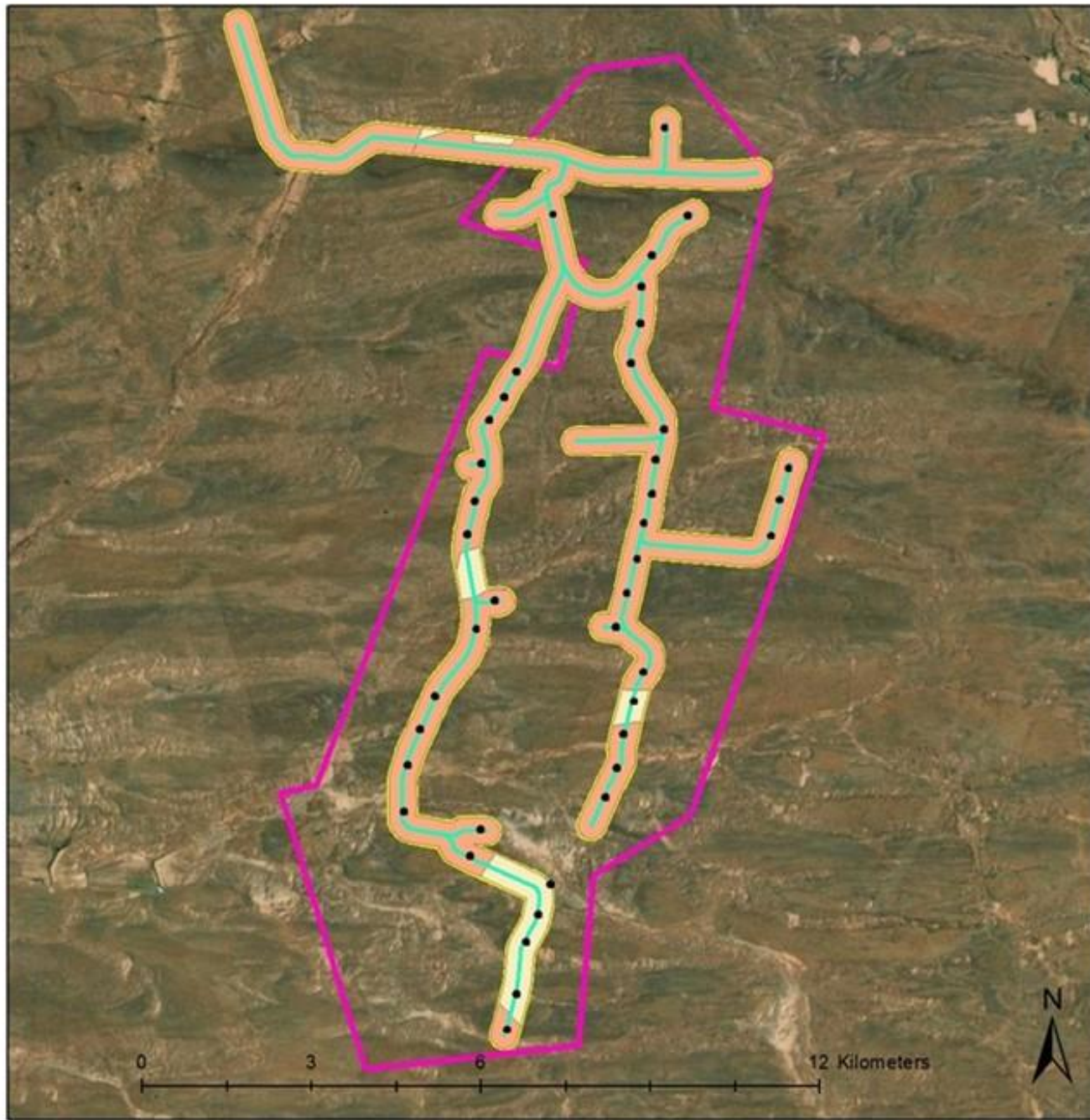


Legend

- | | |
|--|---|
|  Turbines and hardstands |  Glenrosa-1530 ha |
|  Wind Farm 2 Roads |  Nkonkoni-170.2 ha |
|  Study area-1730 ha |  Swartland-26.9 ha |
|  Development area-6475 ha |  Valsrivier-2.8 ha |
|  Observations | |



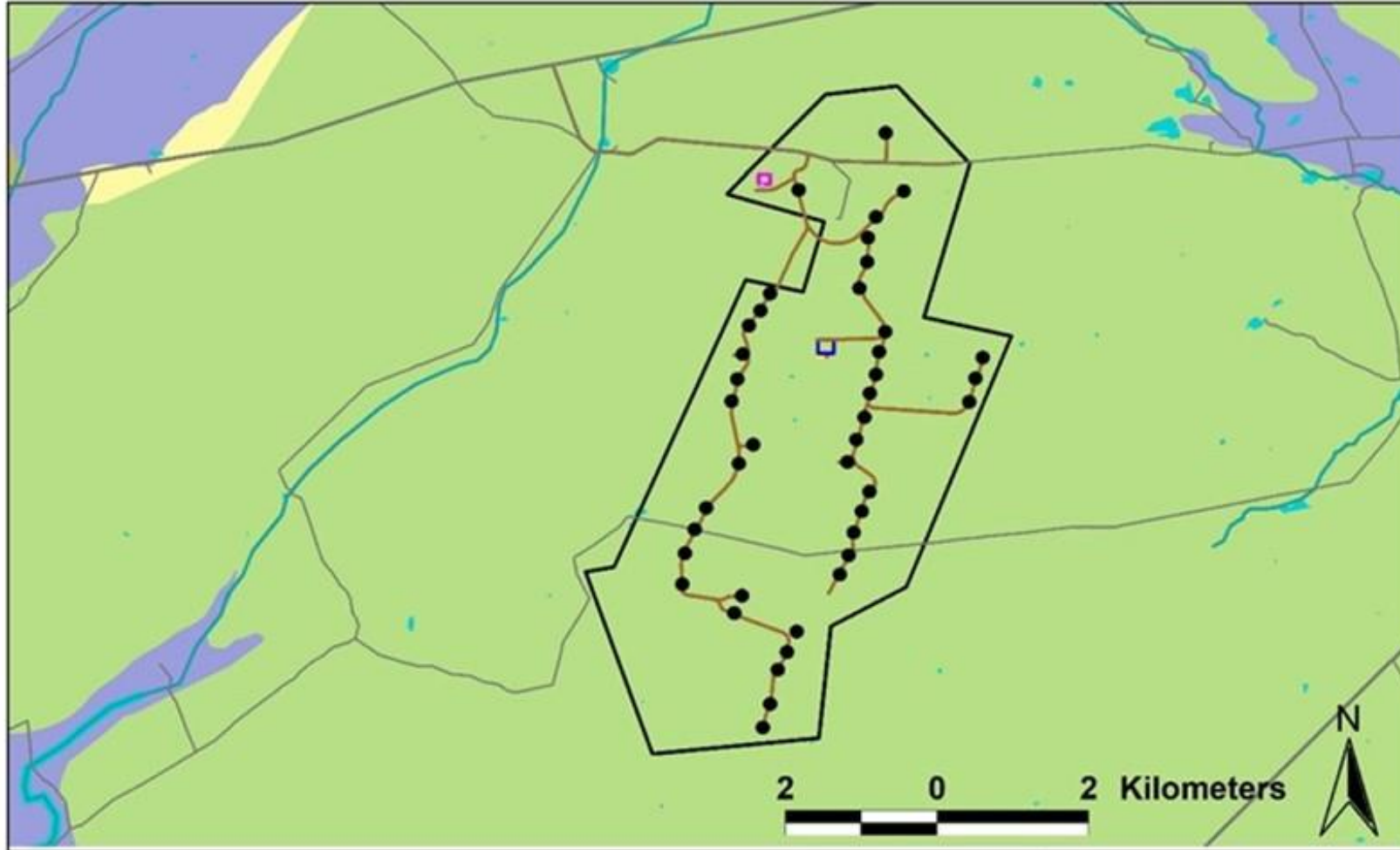
TerraAfrica
SOIL. AGRICULTURE. ENVIRONMENT.




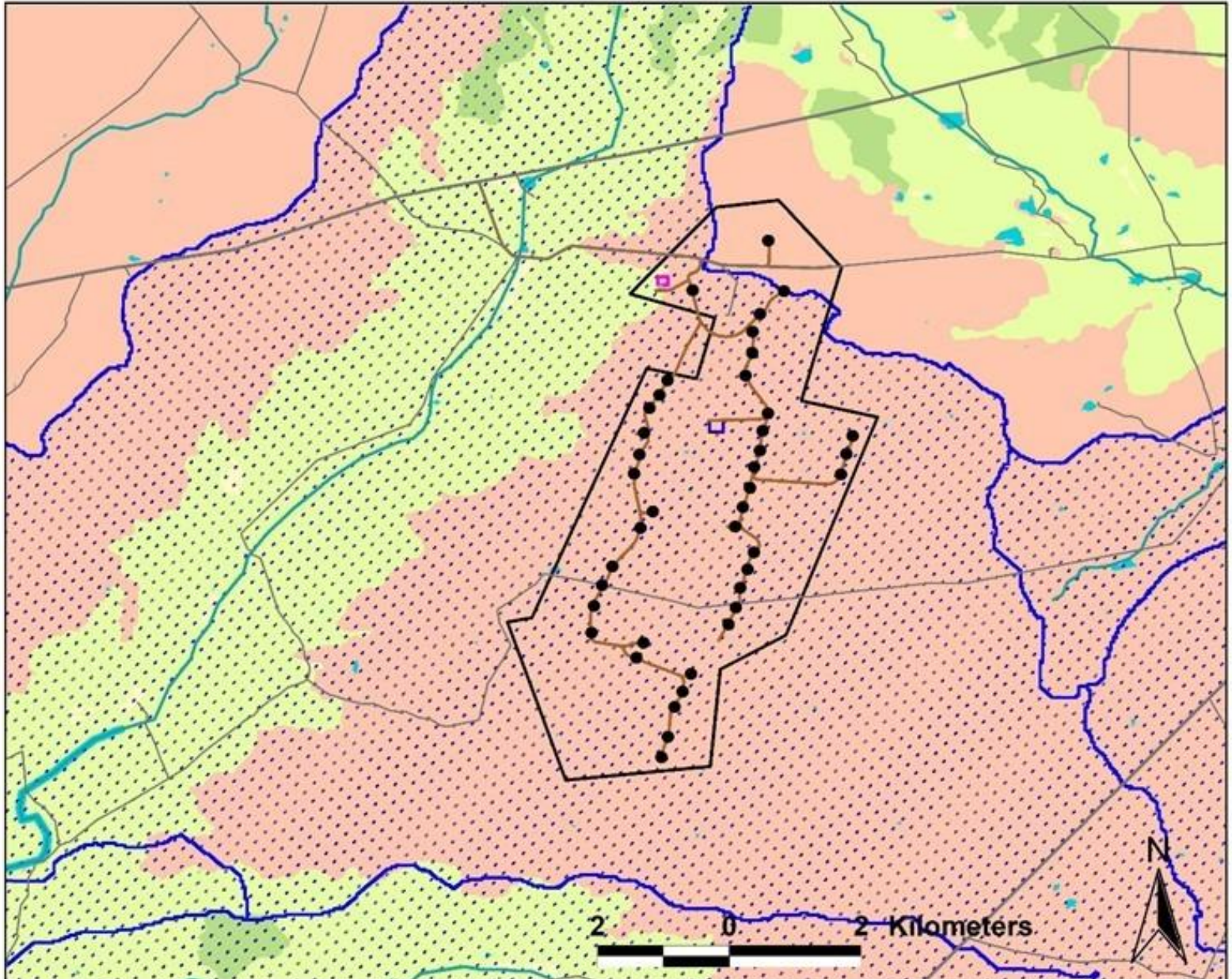
Legend


- | | |
|--|---|
|  Turbines and hardstands | Land capability |
|  Wind Farm 2 Roads |  Low (5)-1560.1 ha |
|  Study area-1730 ha |  Low-Moderate (7)-170.2 ha |
|  Development area-6475 ha | |





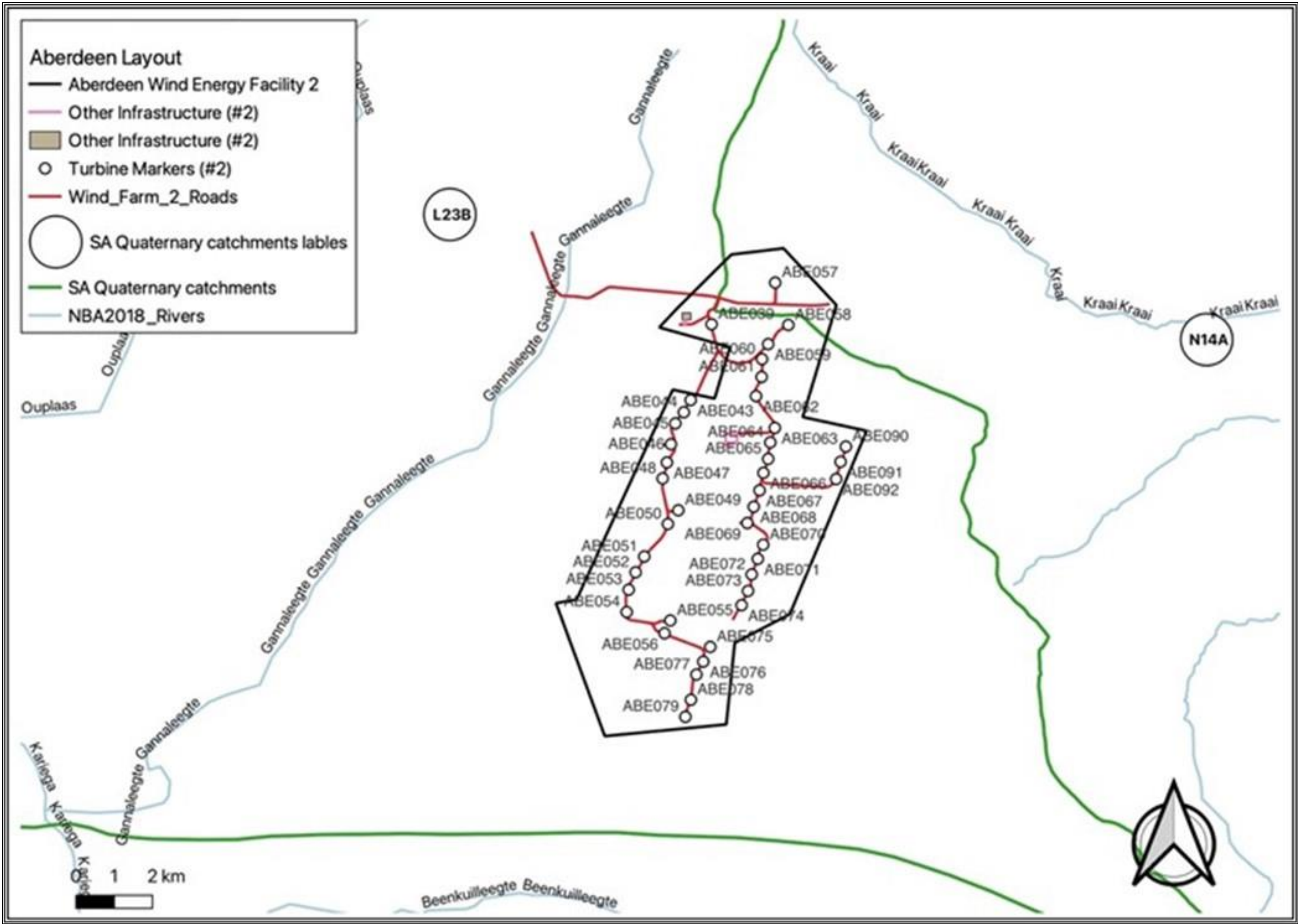
<ul style="list-style-type: none"> Aberdeen WEF 2 Boundary Aberdeen WEF 2 Turbines Aberdeen WEF 2 Roads <p>Aberdeen WEF 2 Infrastructure</p> <ul style="list-style-type: none"> BESS O&M Buildings Construction laydown area Site Camp Warehouse 	<p>Vegetation Types</p> <ul style="list-style-type: none"> Eastern Lower Karoo Eastern Upper Karoo Gamka Karoo Southern Karoo Riviere <p>NFEPA Features</p> <ul style="list-style-type: none"> NFEPA Rivers NFEPA Wetlands <p>Roads</p> <ul style="list-style-type: none"> Major Roads Minor Roads 	<p>Aberdeen WEF 2</p> <hr/> <p>Vegetation Types</p> <hr/>  <p>3Foxes Biodiversity Solutions</p>
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<ul style="list-style-type: none"> Aberdeen WEF 2 Boundary Aberdeen WEF 2 Turbines Aberdeen WEF 2 Roads 	<ul style="list-style-type: none"> EC - CBAs CBA 1 CBA 2 ESA 1 ESA 2 Other Areas 	<p>Aberdeen WEF 2</p> <hr/> <p>Critical Biodiversity Areas</p> <hr/>  <p>3Foxes Biodiversity Solutions</p>
<ul style="list-style-type: none"> Aberdeen WEF 2 Infrastructure BESS O&M Buildings Construction laydown area Site Camp Warehouse Major Roads Minor Roads 	<ul style="list-style-type: none"> NFEPA Rivers NFEPA Wetlands FEPA Subcatchment 	

Aberdeen Layout

- Aberdeen Wind Energy Facility 2
- Other Infrastructure (#2)
- Other Infrastructure (#2)
- Turbine Markers (#2)
- Wind_Farm_2_Roads
- SA Quaternary catchments labels
- SA Quaternary catchments
- NBA2018_Rivers

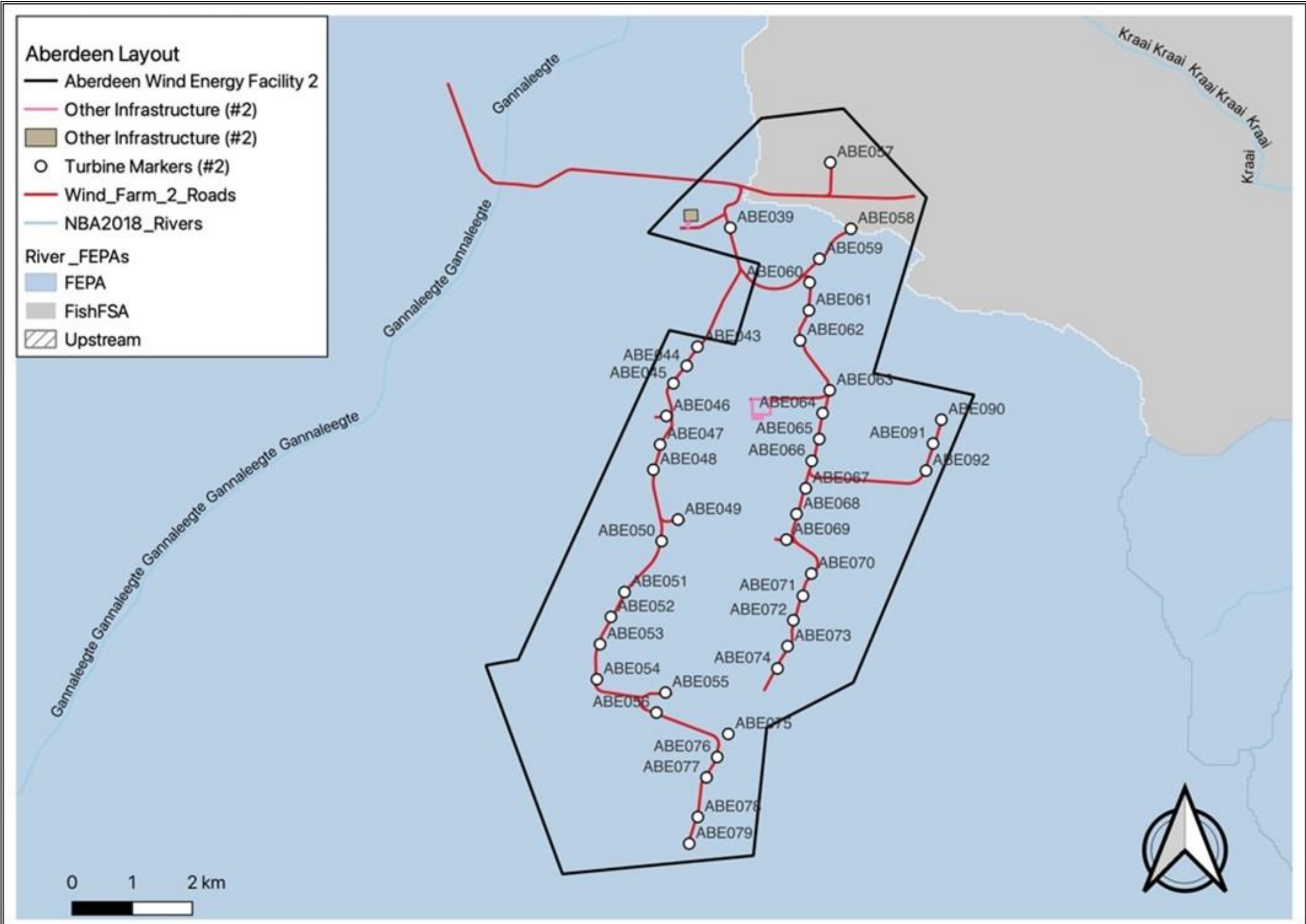


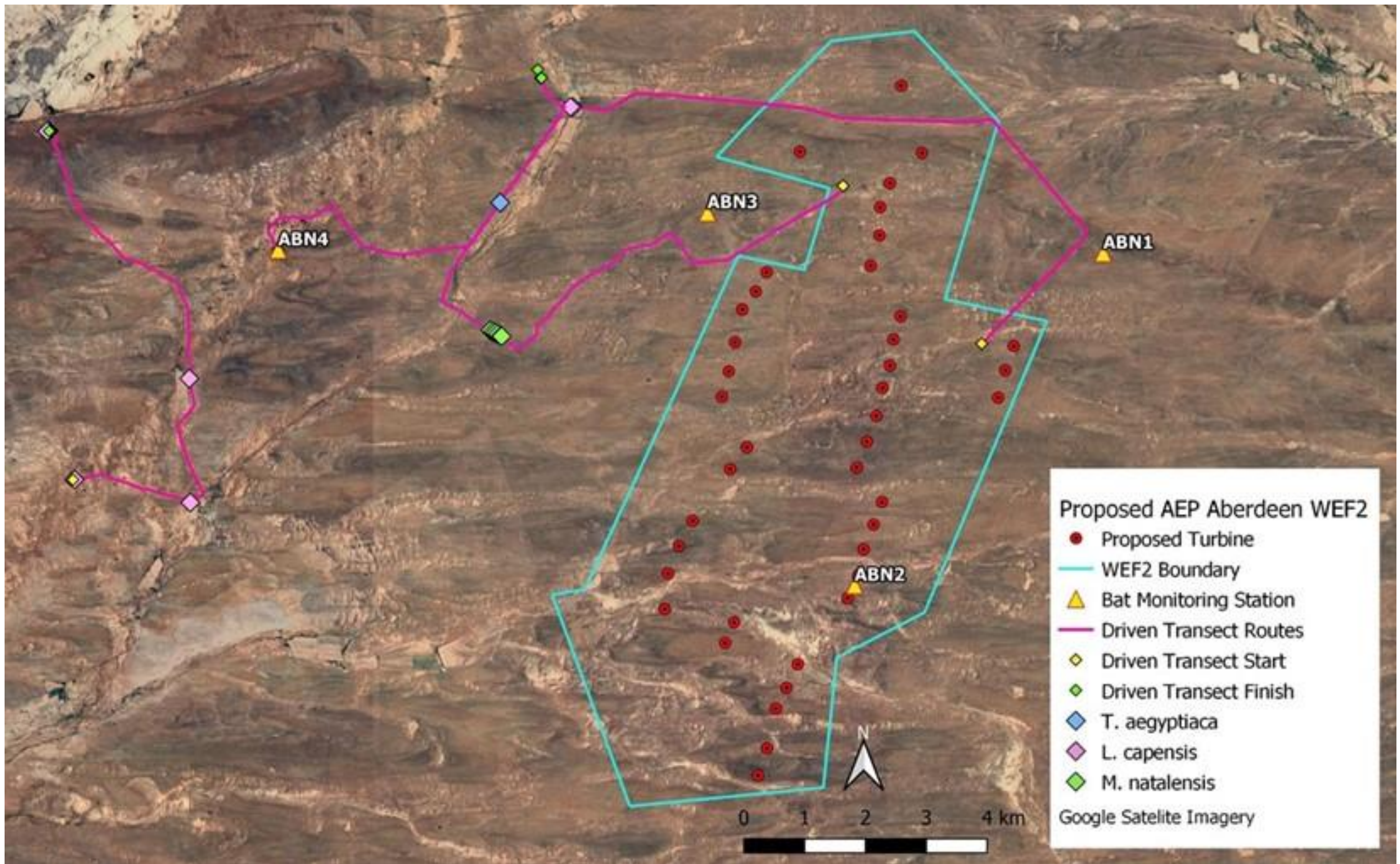
Aberdeen Layout

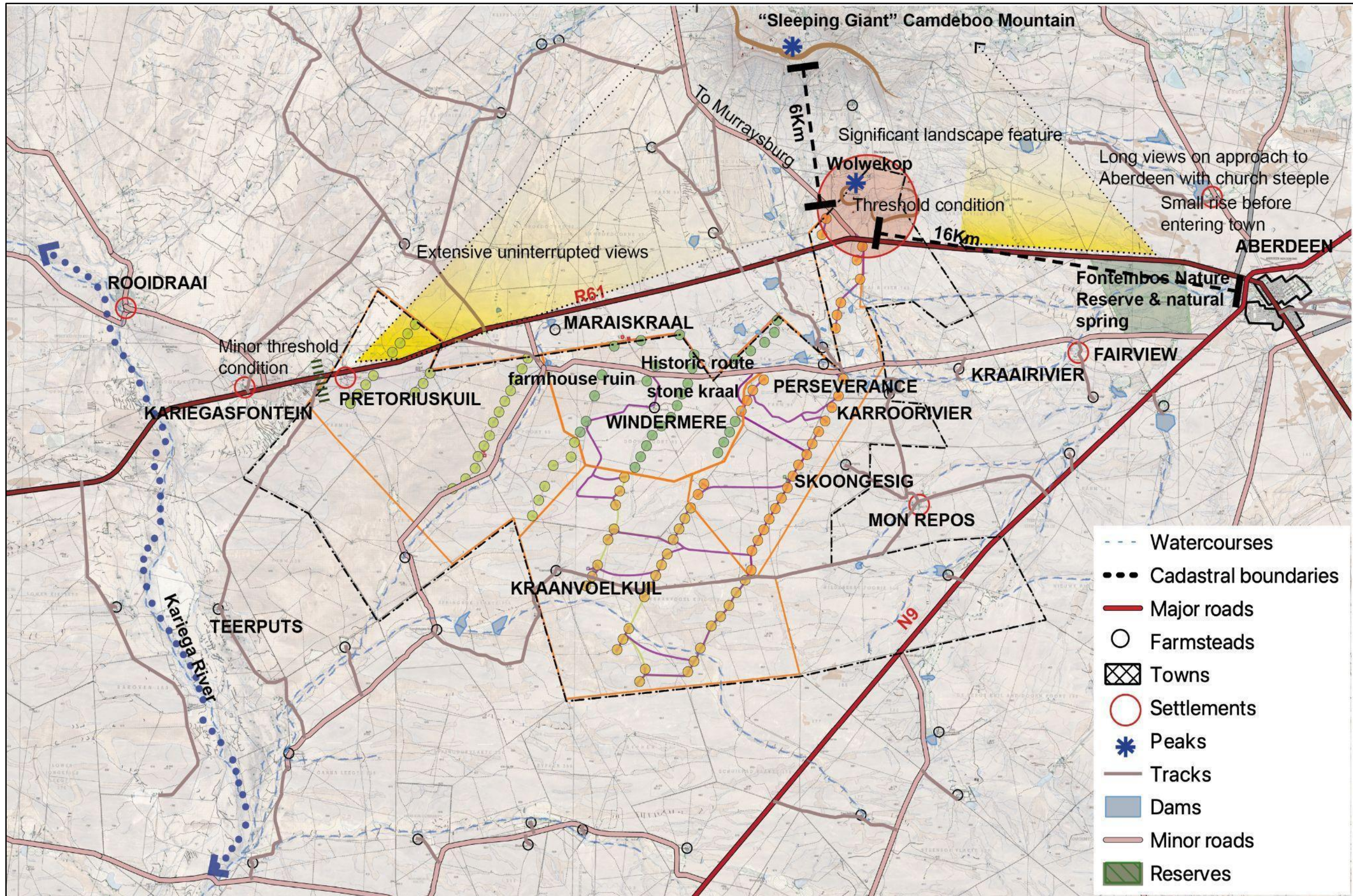
- Aberdeen Wind Energy Facility 2
- Other Infrastructure (#2)
- Other Infrastructure (#2)
- Turbine Markers (#2)
- Wind_Farm_2_Roads
- NBA2018_Rivers

River_FEPAs

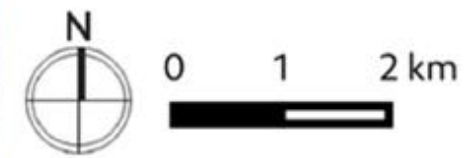
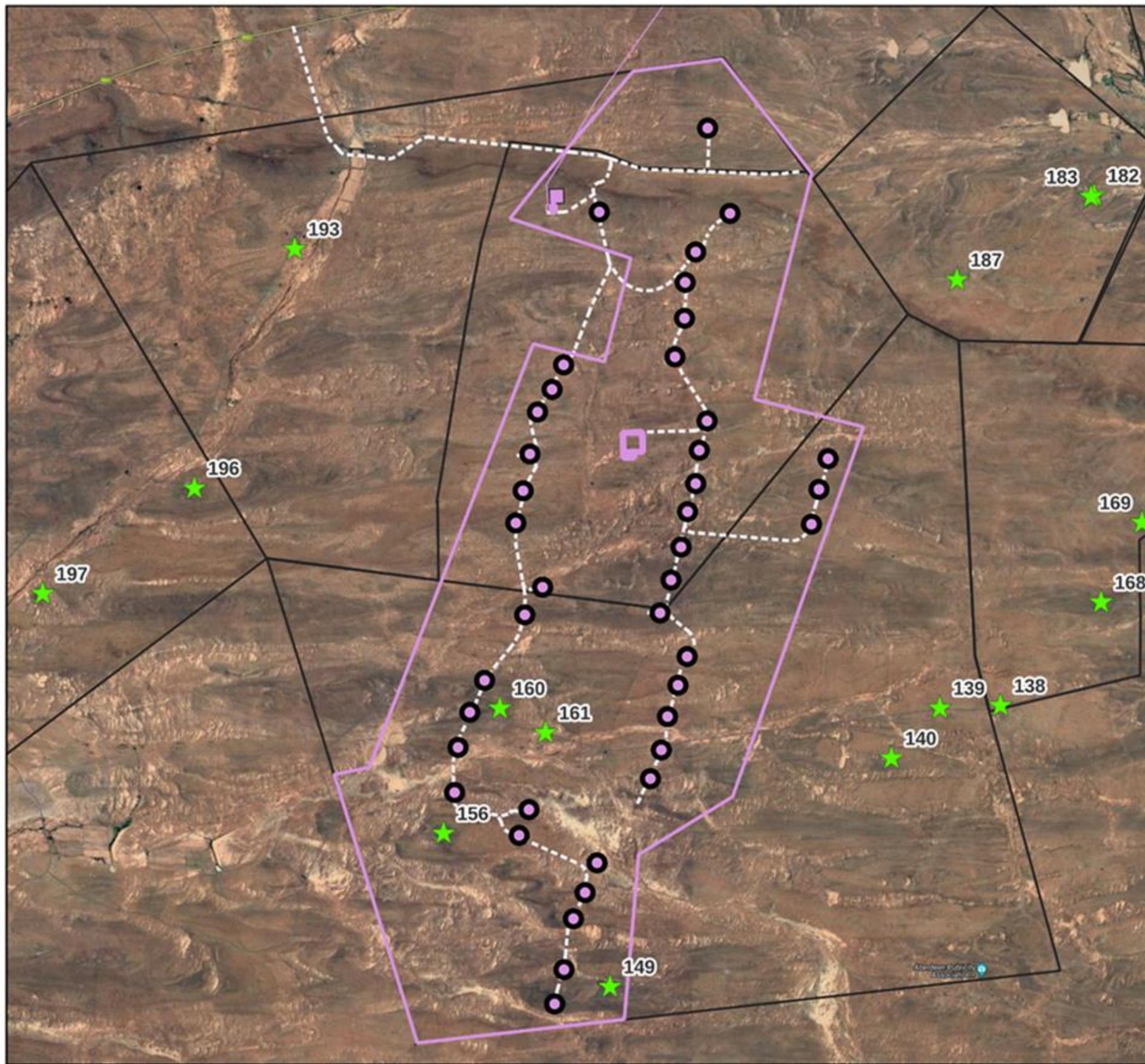
- FEPA
- FishFSA
- ▨ Upstream







- - - Watercourses
- Cadastral boundaries
- Major roads
- Farmsteads
- ▣ Towns
- Settlements
- ★ Peaks
- Tracks
- Dams
- Minor roads
- Reserves



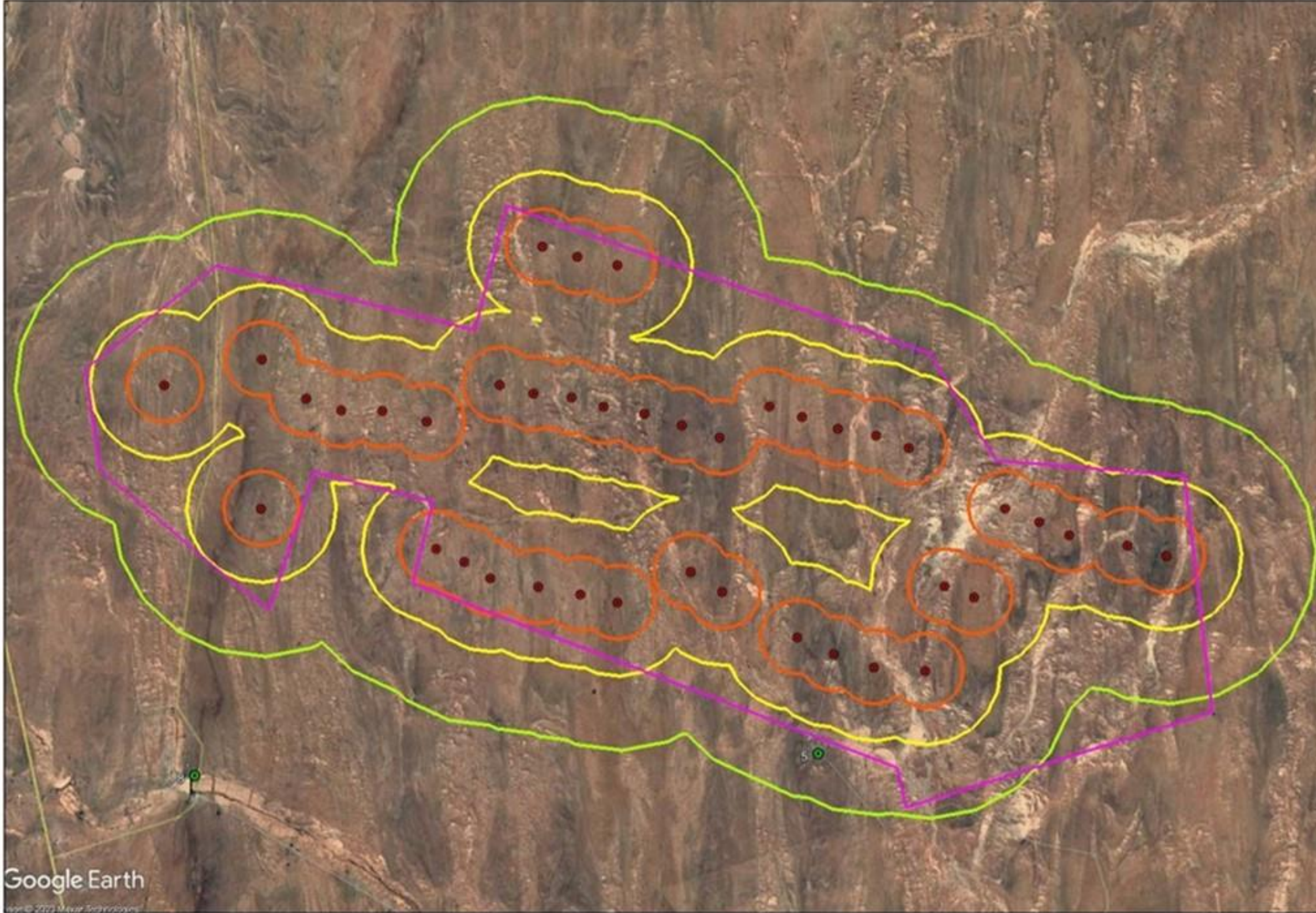
HERITAGE RESOURCES

- ☆ Arch, Bat, Geo, Met, Pal, Und
- ⬠ Structures, Monuments & Memorials
- Liv. Heritage/Sacred sites, Burial Grounds and Graves, Natural Place
- △ Conservation Area, Cultural Landscape
- WEF 2 Turbine Markers
- Aberdeen WEF Access Roads
- 9 km 132 kV SC Twin Tern OHL
- WEF 2 Boundary
- WEF 2 Construction
- WEF 2 BESS
- Aberdeen Properties

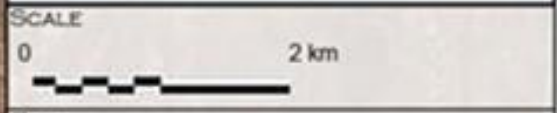
GRADING

- | | |
|-----------------|--------|
| DARK RED | I & II |
| RED | IIIa |
| ORANGE | IIIb |
| GREEN | IIIc |
| WHITE | NCW |





- LEGEND**
-  - Local roads (Google Earth)
 -  - Project Focus Area
 -  - Potential Noise-sensitive receptors
 -  - Conceptual noise source - WTG
 -  - Buffer: 500 m from WTG
 -  - Buffer: 1,000 m from WTG
 -  - Buffer: 2,000 m from WTG



TITLE
Aberdeen WF 2: Closest identified NSR and buffer areas

CLIENT
Savannah Environmental (Pty) Ltd for Aberdeen Wind Facility 2 (Pty) Ltd

Enviro-Acoustic Research
 726 Wiedrich st
 Moreleta Park
 0181
 Tel: 012 004 362
 Fax: 086 621 0292
 email: mome@eares.co.za



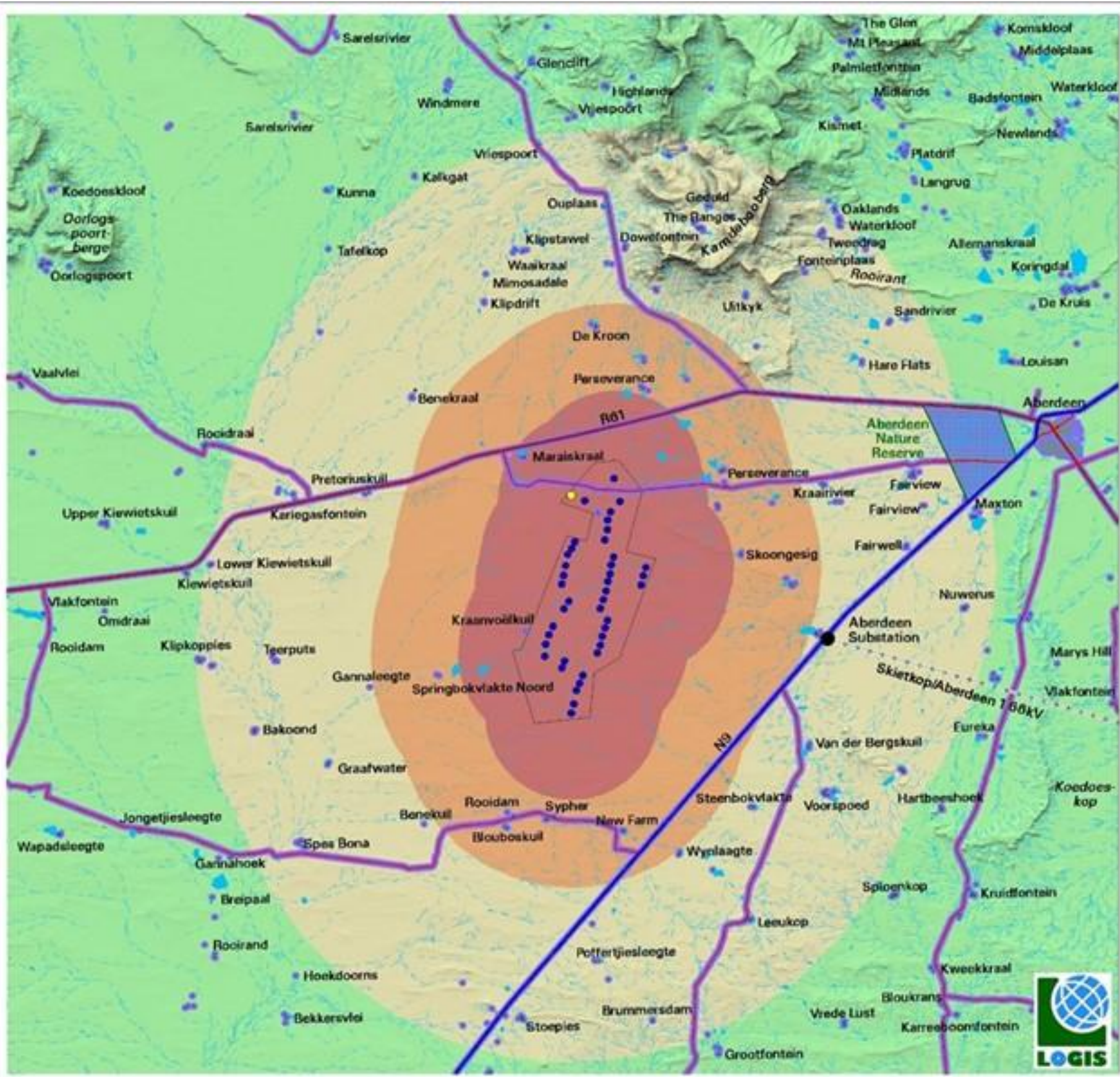
REFERENCES AND SOURCES
 Google Earth



Google Earth

© 2022 Mapbox

4 km



Proposed Aberdeen Wind Energy Facility Cluster

LEGEND

- National Road
- Arterial/Main Road
- Secondary Road
- Power Line
- Substation
- Dam
- Non-perennial River
- Town/Built-up Area
- Homestead/Farm Dwelling
- Aberdeen WEF Cluster
- WEF 2 Turbines
- Battery Energy Storage System (BESS)

PROXIMITY ANALYSIS (Visual Distance)

- Short distance (0 - 5km)
- Medium distance (5 - 10km)
- Medium to longer distance (10 - 20km)
- Long distance (> 20km)

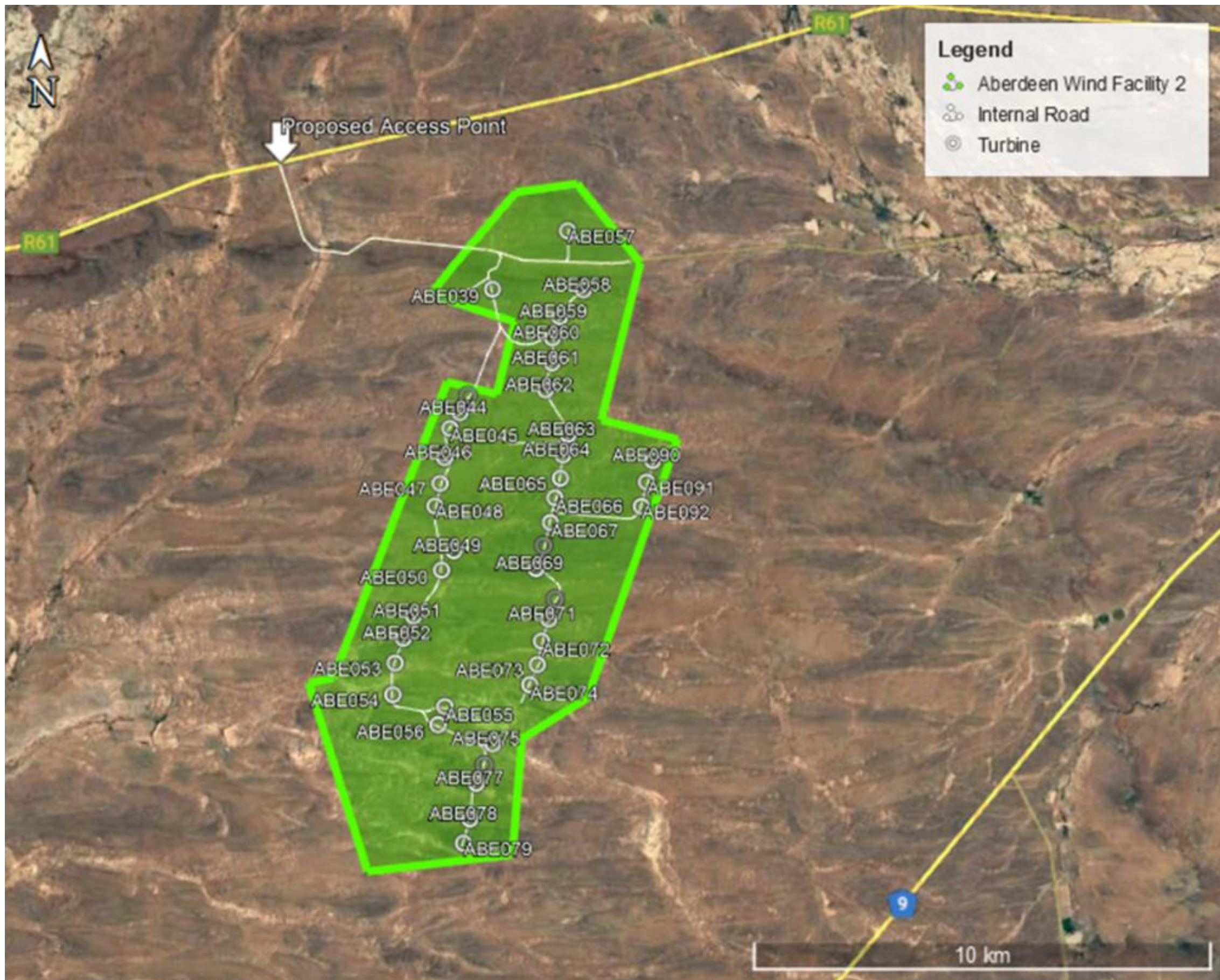
POTENTIAL SENSITIVE VISUAL RECEPTORS

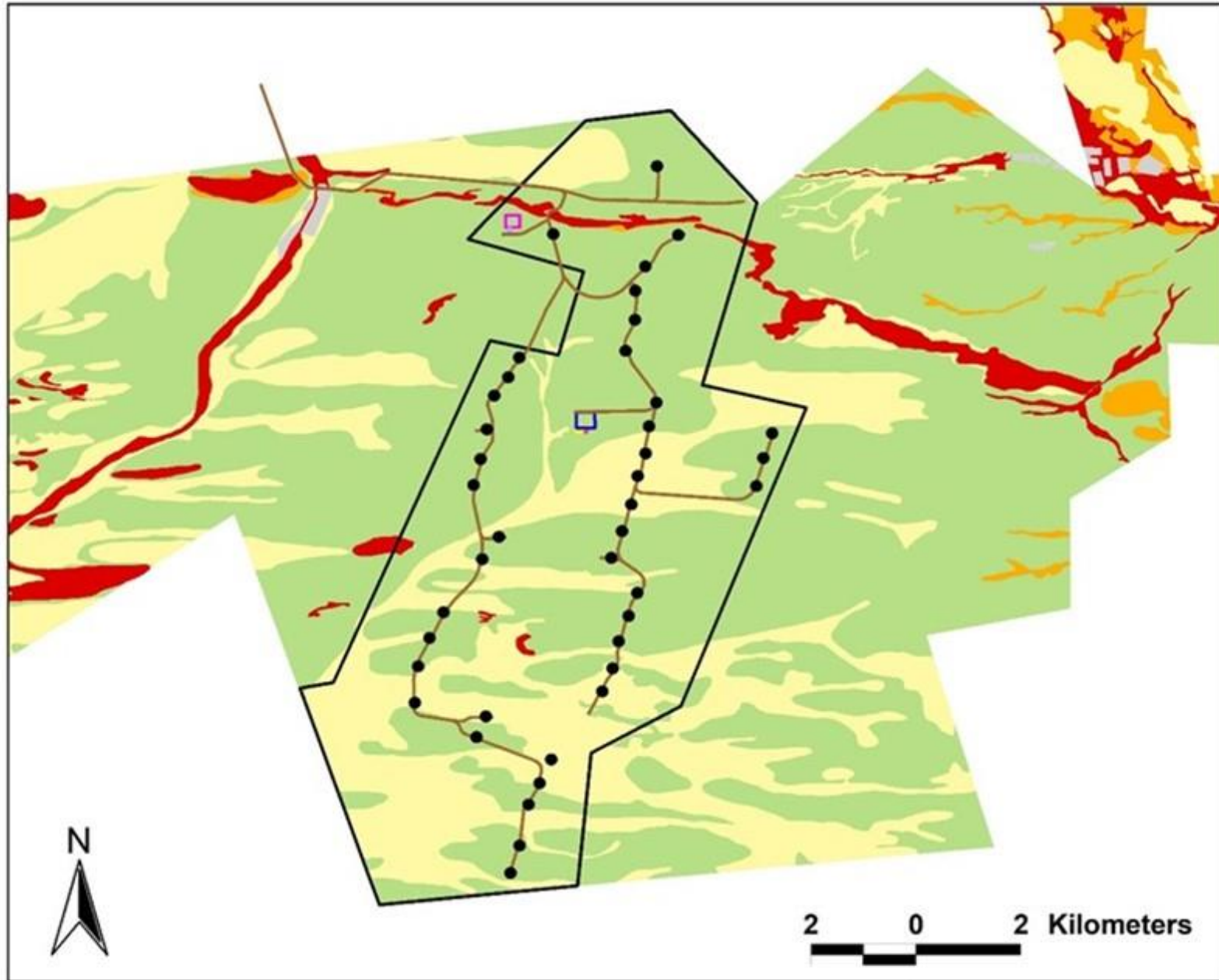
- Residents of farm dwellings/homesteads
- Observers travelling along local roads
- Protected/Conservation Areas

Scale: 10 0 10km

Compass Rose: N, S, E, W


LOGIS





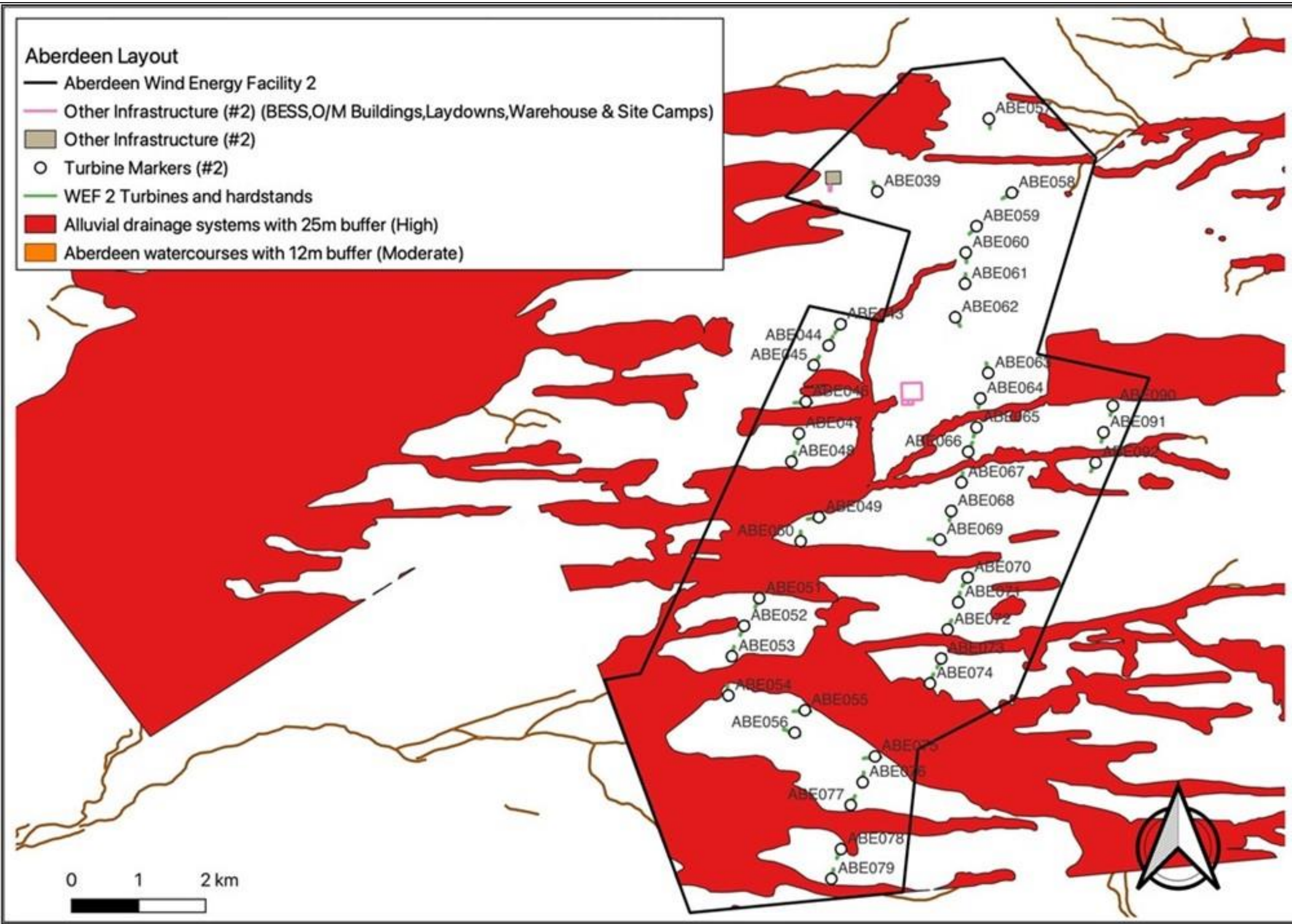
- Aberdeen WEF 2 Boundary
- Aberdeen WEF 2 Turbines
- Aberdeen WEF 2 Roads
- Aberdeen WEF 2 Infrastructure**
- BESS
- O&M Buildings
- Construction laydown ar
- Site Camp
- Warehouse

- Ecological Sensitivity**
- Very High
 - High
 - Medium
 - Low
 - Transformed

Aberdeen WEF 2
Ecological Sensitivity

3Foxes Biodiversity Solutions

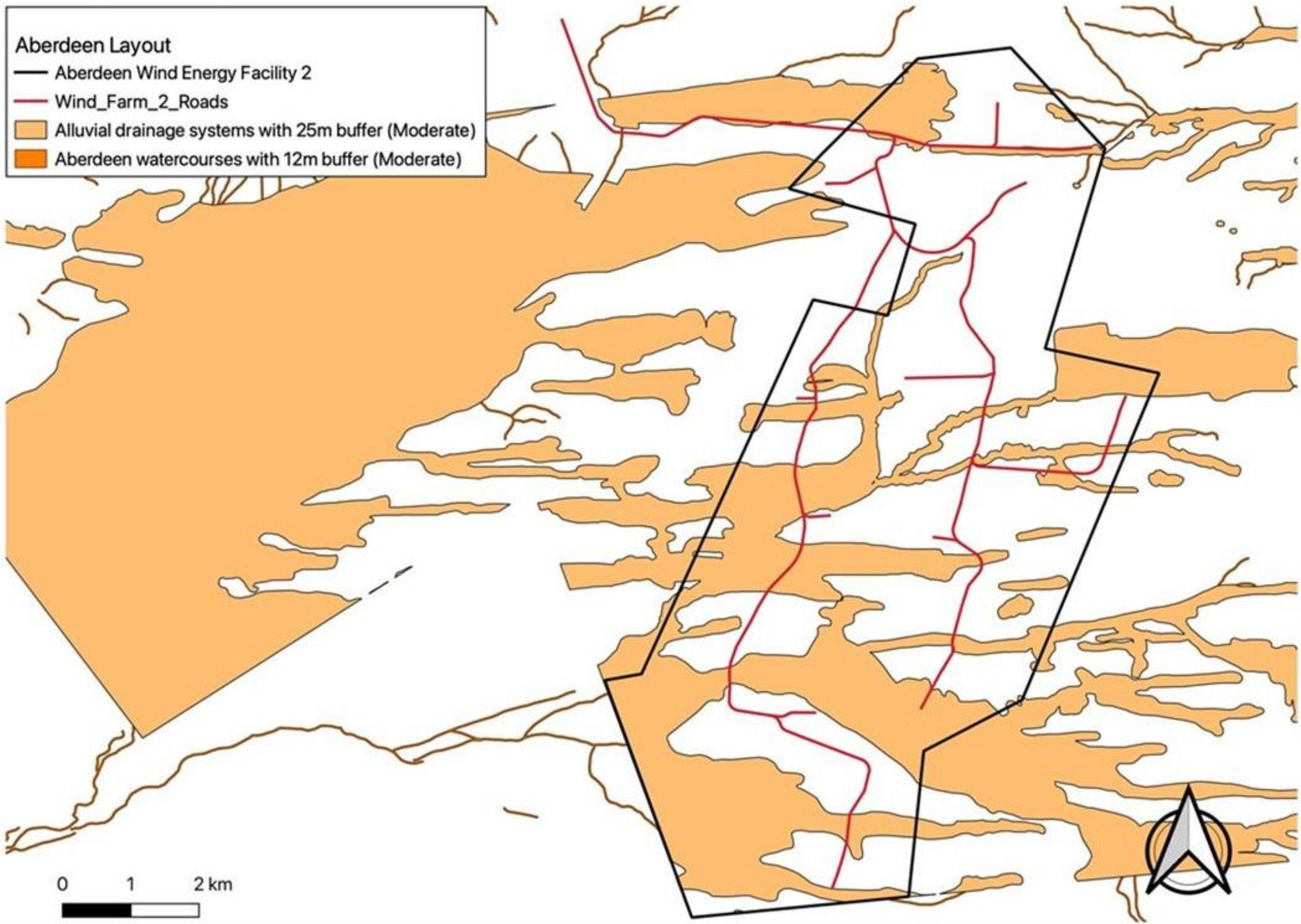
Aberdeen Layout

- Aberdeen Wind Energy Facility 2
- Other Infrastructure (#2) (BESS, O/M Buildings, Laydowns, Warehouse & Site Camps)
- Other Infrastructure (#2)
- Turbine Markers (#2)
- WEF 2 Turbines and hardstands
- Alluvial drainage systems with 25m buffer (High)
- Aberdeen watercourses with 12m buffer (Moderate)



Aberdeen Layout

- Aberdeen Wind Energy Facility 2
- Wind_Farm_2_Roads
- Alluvial drainage systems with 25m buffer (Moderate)
- Aberdeen watercourses with 12m buffer (Moderate)

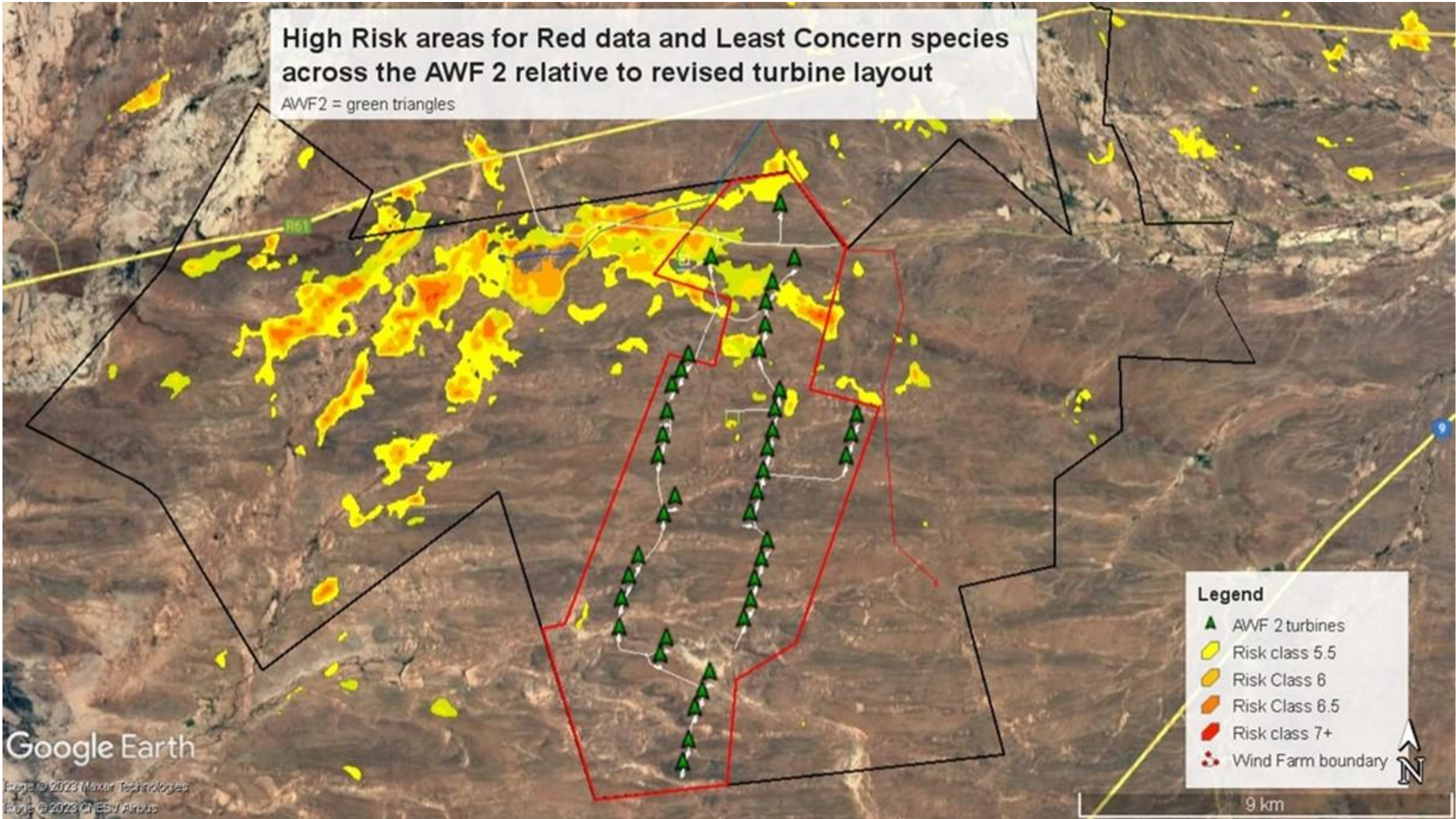


0 1 2 km



High Risk areas for Red data and Least Concern species across the AWF 2 relative to revised turbine layout

AWF2 = green triangles



Google Earth

Image © 2023 Maxar Technologies
Map © 2023 CNES/Airbus

9 km

Legend

-  WEF
-  Bat Monitoring Stations
-  Confirmed Bat Roost
-  Potential Bat Roost
- Infrastructure**
-  Proposed Turbines
-  Existing Roads
-  New Roads
-  Construction laydown area
-  O&M Buildings
-  Site Camp (including batching plant)
-  Warehouse
-  BESS
- Hydrology**
-  Non-Perennial River
-  Furrow
-  Wind Pump
-  Water Supply Point
-  Reservoir
-  Dam
-  Non-perennial Pan



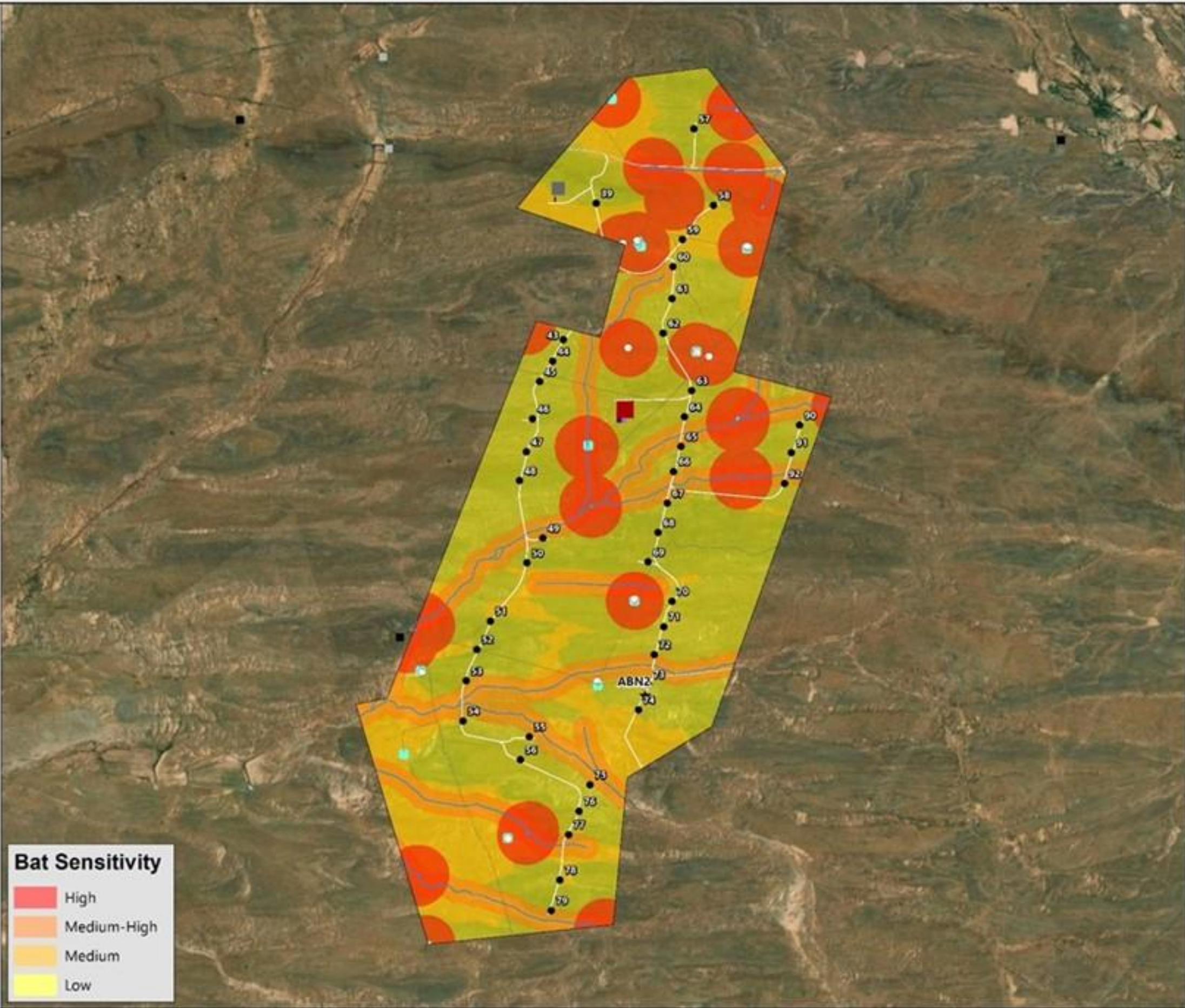
Map Produced by
Wilding Geospatial Solutions
Data sources:
Infrastructure Data - IWS, 2022
SANLC Data - 2020, Dept. Forest,
Fisheries & the Environment, Available
https://legis.environment.gov.za/data_egis
Topographic Data - CDNGI, 2020, Available
<http://www.cdngportal.co.za/cdngportal/>

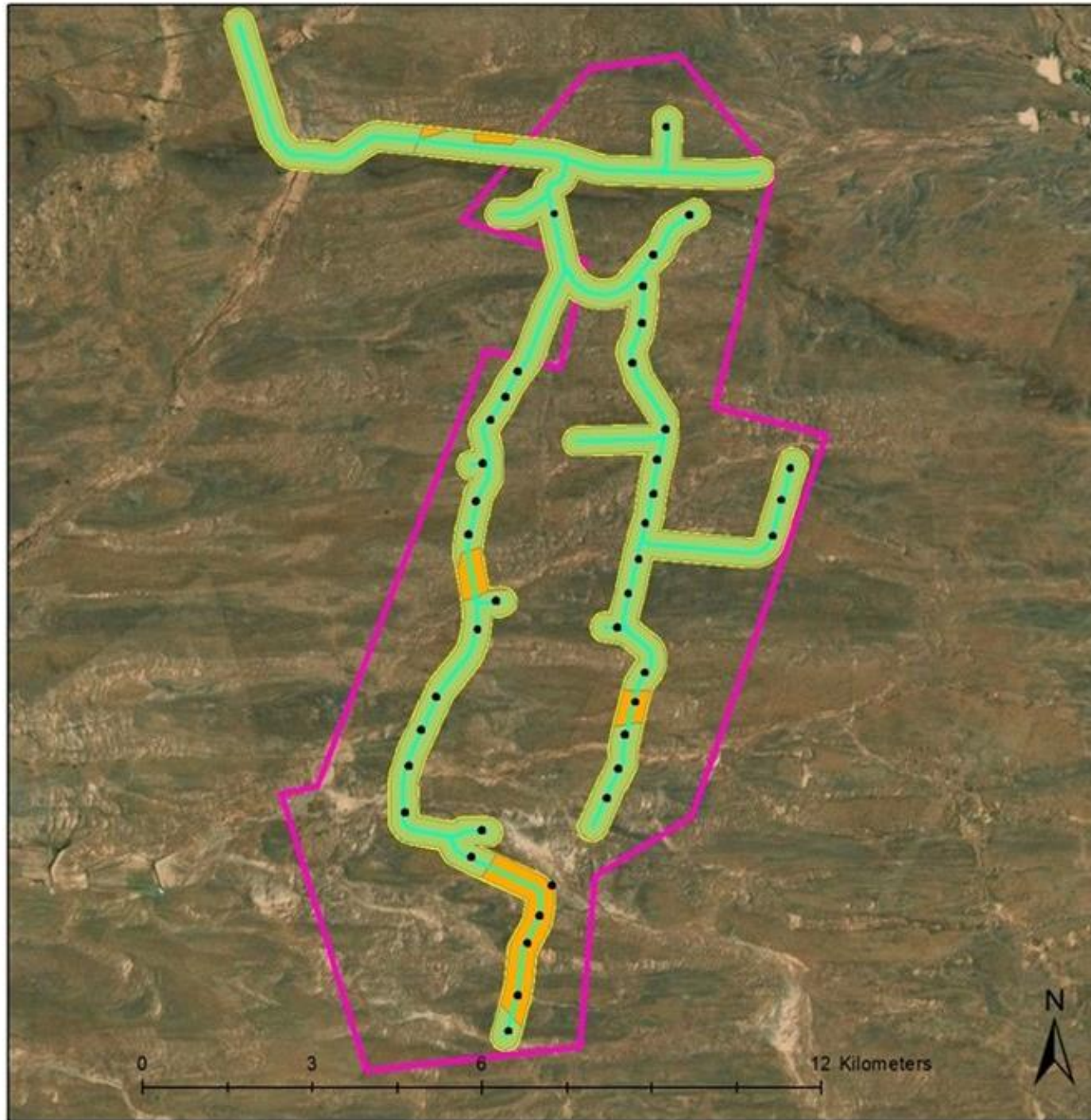
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Datum: WGS84
Central Meridian: 23
Units: Meter
Date of Print: 1/20/2023

1:60,000



Mobile: +27 (0)79 313 3479
Email: info@iws-za.co.za





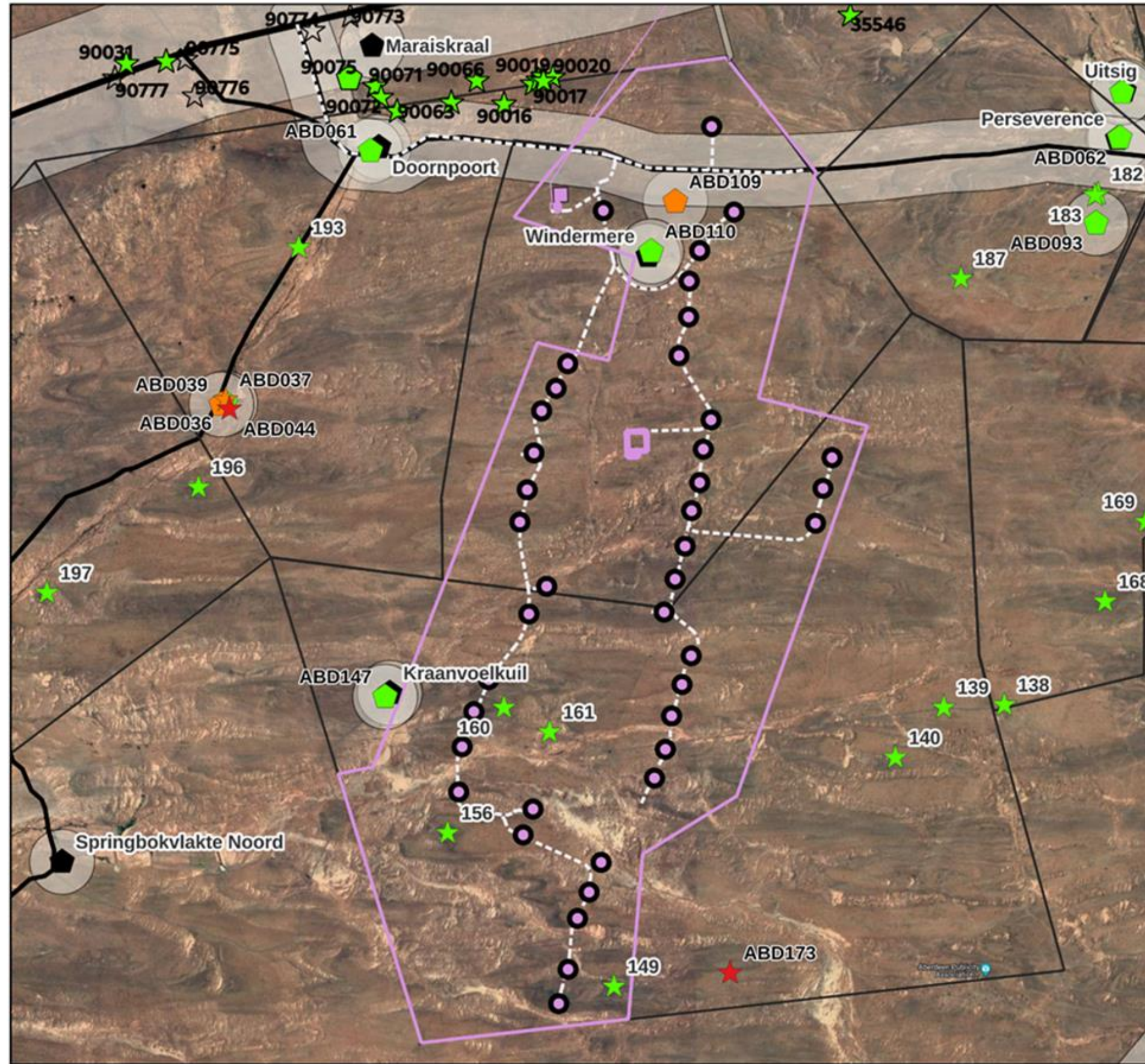
Legend

- Turbines and hardstands
- Wind Farm 2 Roads
- Study area-1730 ha
- Development area-6475 ha

Sensitivity

- Low-1560.1 ha
- Medium-170.2 ha





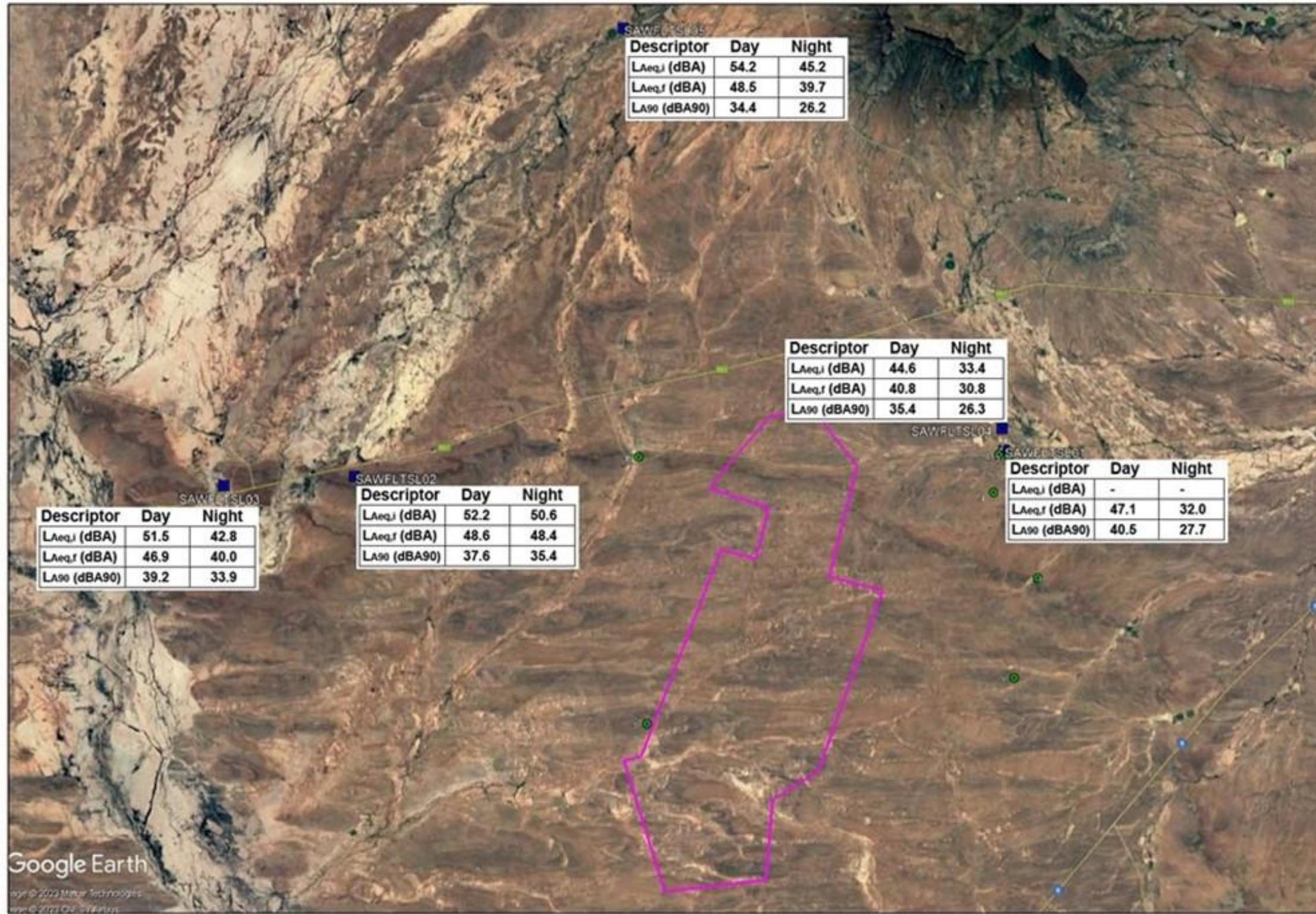
HERITAGE RESOURCES

- ☆ Arch, Bat, Geo, Met, Pal, Und
- ⬠ Structures, Monuments & Memorials
- Liv. Heritage/Sacred sites, Burial Grounds and Graves, Natural Place
- △ Conservation Area, Cultural Landscape
- WEF 2 Turbine Markers
- ⬠ Farms
- Scenic Routes
- Road
- Aberdeen WEF Access Roads
- 9 km 132 kV SC Twin Tern OHL
- WEF 2 Boundary
- WEF 2 Construction
- WEF 2 BESS
- Aberdeen Properties
- Recommended Buffers

GRADING

- | | |
|-----------------|--------|
| DARK RED | I & II |
| RED | IIIa |
| ORANGE | IIIb |
| GREEN | IIIc |
| WHITE | NCW |





Descriptor	Day	Night
L _{Aeq,L} (dBA)	54.2	45.2
L _{Aeq,T} (dBA)	48.5	39.7
L _{A90} (dBA90)	34.4	26.2

Descriptor	Day	Night
L _{Aeq,L} (dBA)	44.6	33.4
L _{Aeq,T} (dBA)	40.8	30.8
L _{A90} (dBA90)	35.4	26.3

Descriptor	Day	Night
L _{Aeq,L} (dBA)	-	-
L _{Aeq,T} (dBA)	47.1	32.0
L _{A90} (dBA90)	40.5	27.7

Descriptor	Day	Night
L _{Aeq,L} (dBA)	52.2	50.6
L _{Aeq,T} (dBA)	48.6	48.4
L _{A90} (dBA90)	37.6	35.4

Descriptor	Day	Night
L _{Aeq,L} (dBA)	51.5	42.8
L _{Aeq,T} (dBA)	46.9	40.0
L _{A90} (dBA90)	39.2	33.9

LEGEND

- Local roads (Google Earth)
- Project Focus Area
- Potential Noise-sensitive receptors
- Measurement Locations



TITLE
Aberdeen WF 2: Locations where ambient sound levels were measured

CLIENT
Savannah Environmental (Pty) Ltd for Aberdeen Wind Facility 2 (Pty) Ltd

Enviro-Acoustic Research
726 Wiedrigh st
Moreleta Park
0181
Tel: 012 004 362
Fax: 086 621 0292
email: mome@eares.co.za



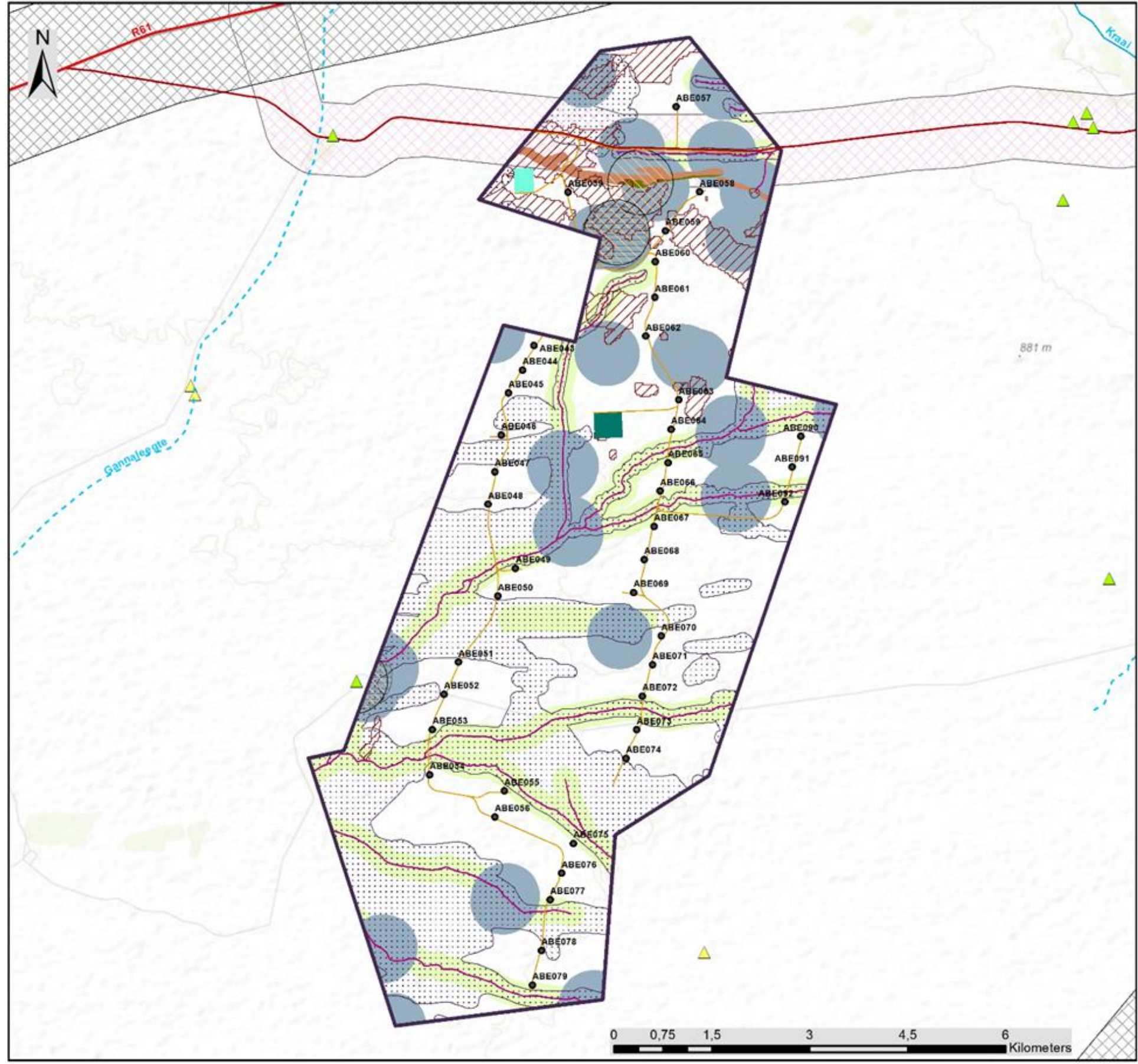
REFERENCES AND SOURCES
Google Earth



Google Earth

© 2013 Mapbox
© 2013 Google

9 km



Aberdeen Wind Facility 2 Eastern Cape Province

Sensitivity and Layout Map

Legend

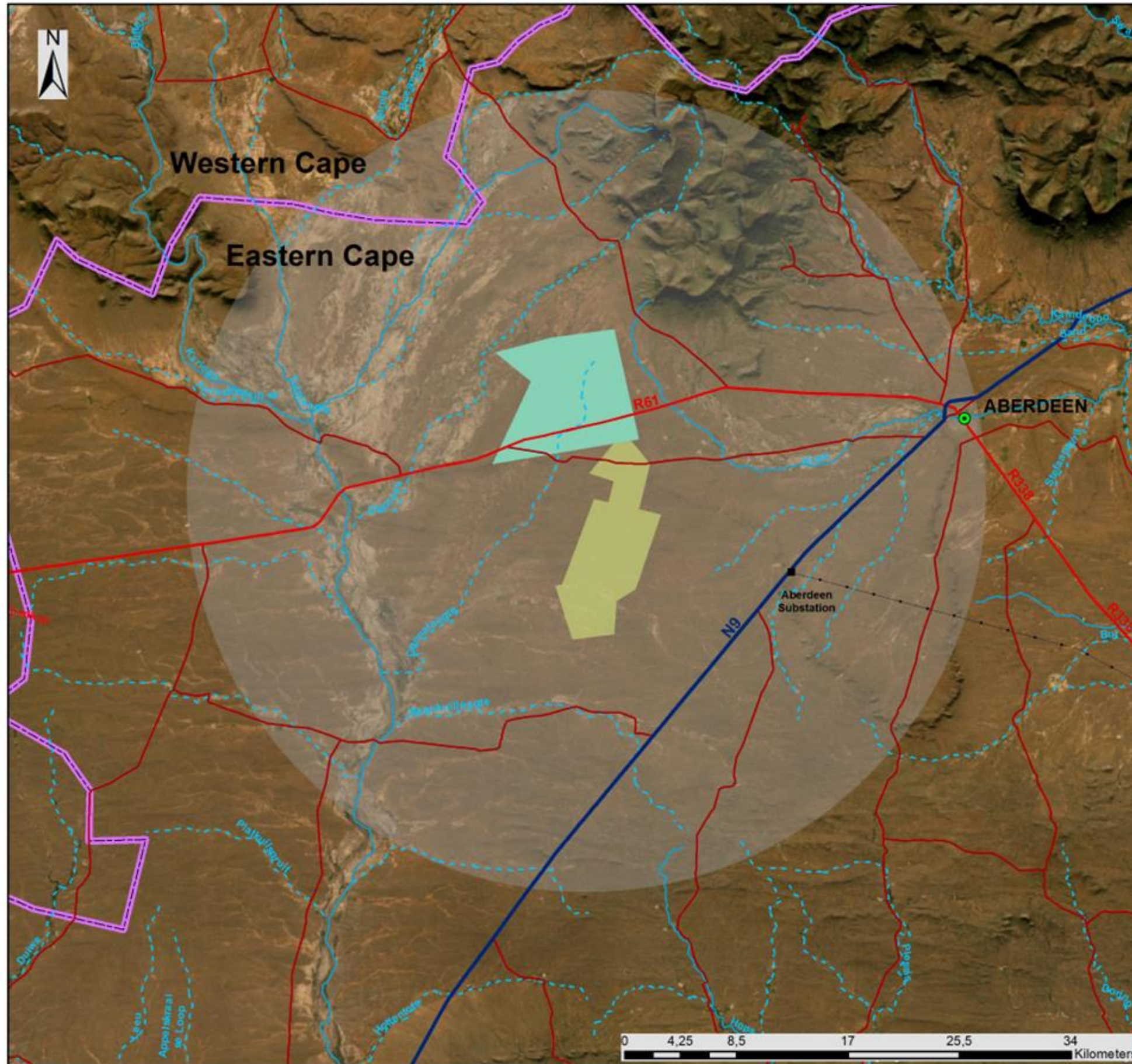
- Regional Road
- Main Road
- Perennial River
- - - Non Perennial River
- Turbines
- Access & Internal Roads with Cabling
- Substation, BESS and O&M Buildings Hub
- Warehouse, Laydown Area and Site Camp Hub
- Aberdeen Wind Facility 2 Development Area

Environmental Sensitivity

- ▲ Noise Sensitive Receptors
- ▲ Heritage sites
- 500m Structures Buffer (High Heritage Sensitivity)
- Farm Werf Buffers (High Heritage Sensitivity)
- SAHRA site buffer (High Heritage Sensitivity)
- R61/N9 Road 1km Buffer (High Heritage Sensitivity)
- Historical route 500m Buffer (High Heritage Sensitivity)
- Minor Drainage (High Aquatic Sensitivity for all infrastructure except Roads and MV)
- Major Drainage (High Aquatic Sensitivity for all infrastructure except Roads and MV)
- Avifauna (High Avifauna Sensitivity applicable to turbines)
- Ridge (Very High Terrestrial Ecology Sensitivity)
- Minor slopes and drainage (High Terrestrial Ecology Sensitivity)
- Bat (Medium-High Bat Sensitivity)
- Bat (High Bat Sensitivity)

Scale: 1:80 000
 Projection: GCS_WGS_1984
 Map Ref: Aberdeen Sensitivity Map





Aberdeen Wind Facility 2 Eastern Cape Province

Cumulative Map

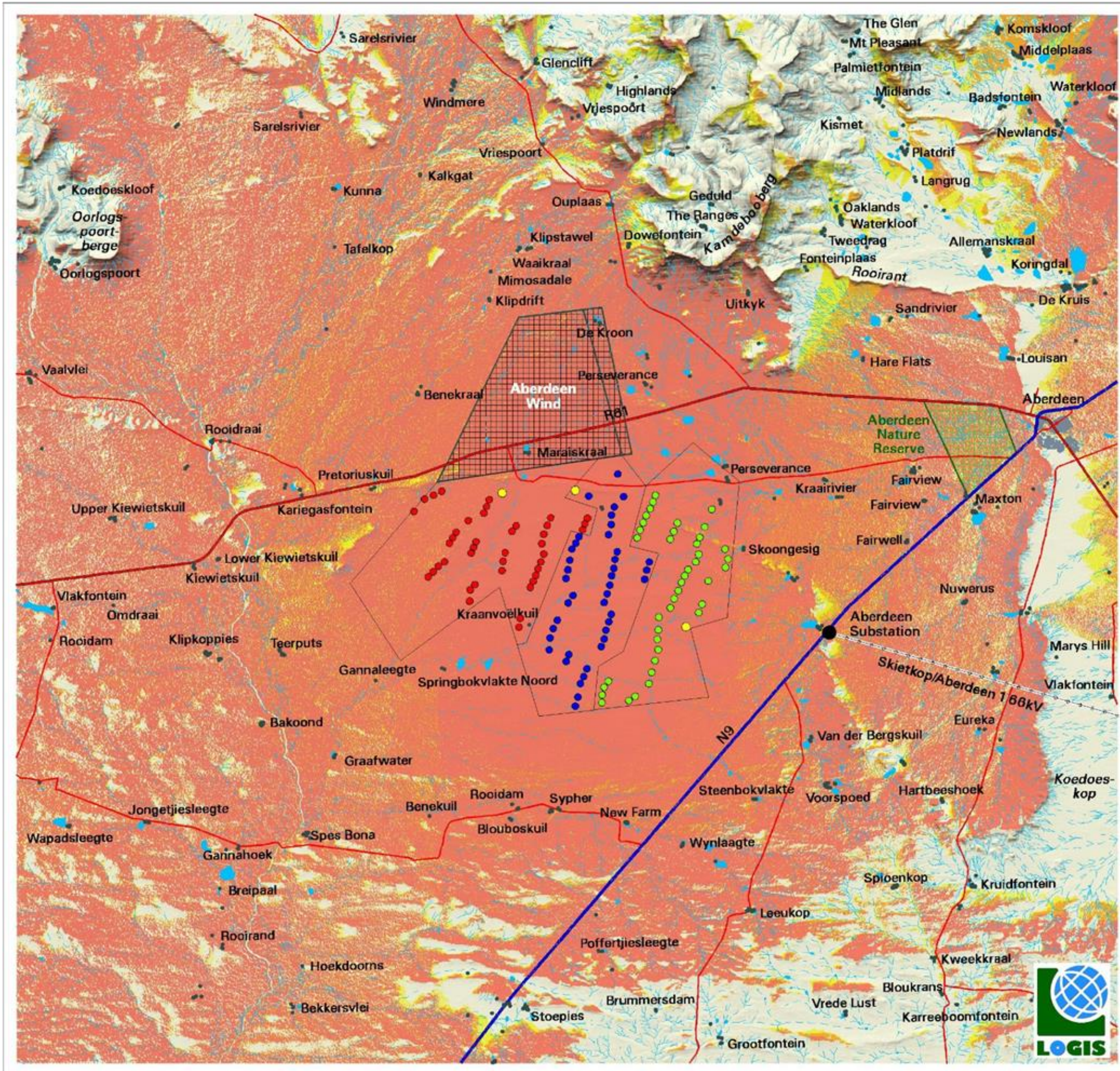
Legend

- Town
- Existing Substation
- Eskom Power Line (Existing)
- National Road
- Regional Road
- Main Road
- Perennial River
- - - Non Perennial River
- Provincial Boundary
- Facility 30km Radius
- Aberdeen Wind Facility 2 Development Area
- Properties linked to Renewable Energy Facilities (REEA 2022 Q3)
- Eskom Aberdeen Wind

Scale: 1:400 000
 Projection: GCS_WGS_1984
 Map Ref: Aberdeen Cumulative Map

savannah
 environmental





Proposed Aberdeen Wind Energy Facility Cluster

- LEGEND**
- National Road
 - Arterial/Main Road
 - Secondary Road
 - Power Line
 - Substation
 - Dam
 - Non-perennial River
 - Town/Built-up Area
 - Homestead/Farm Dwelling
- Aberdeen WEF Cluster**
- WEF 1 Turbines
 - WEF 2 Turbines
 - WEF 3 Turbines
 - Battery Energy Storage System (BESS)

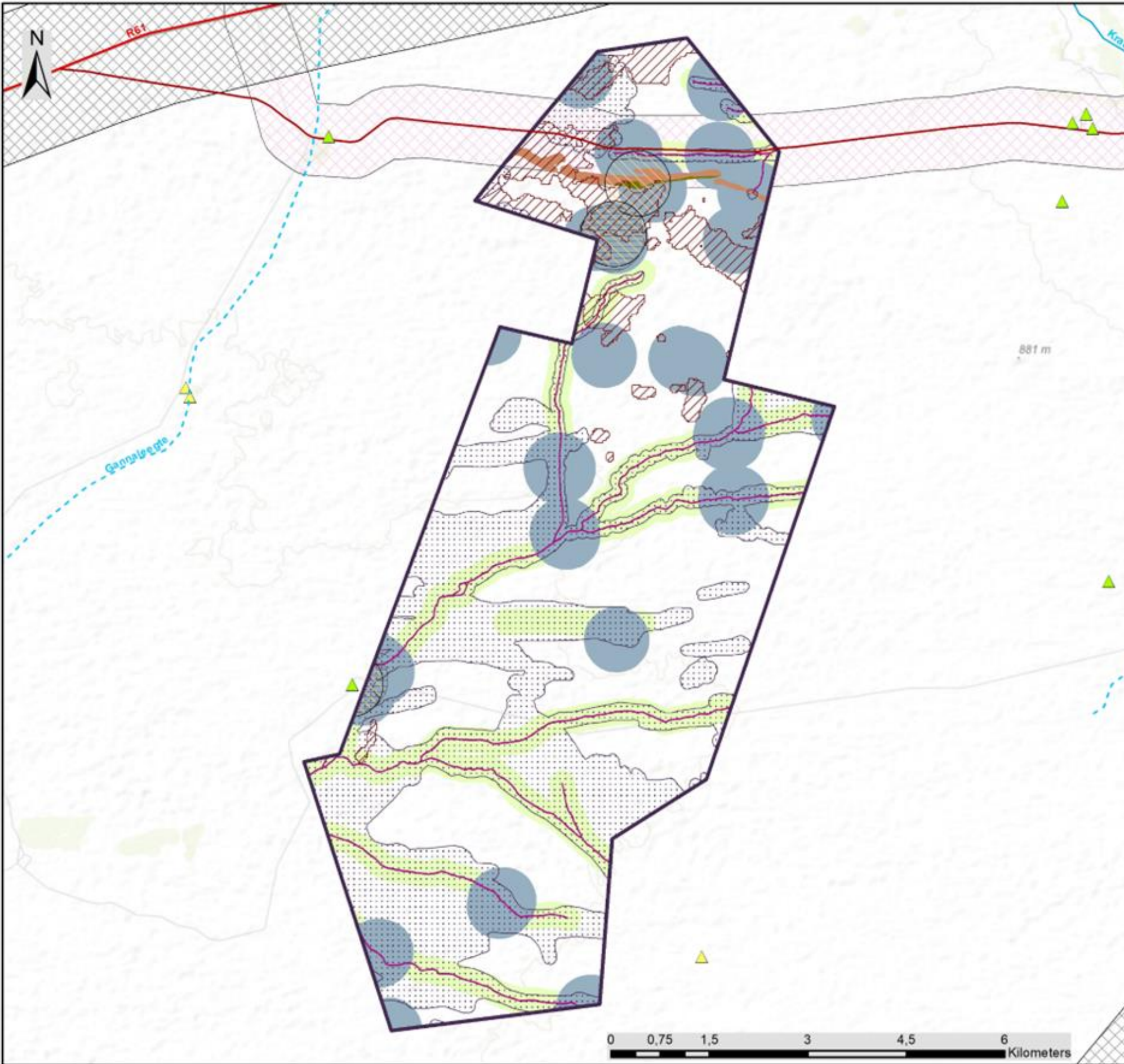
- CUMULATIVE VIEWSHED ANALYSIS**
- Not Visible
 - Turbines from only one WEF visible
 - Turbines from two WEFs visible
 - Turbines from three WEFs visible

Notes:
Visibility calculated at 300m above ground level

- RENEWABLE ENERGY PROJECTS**
- Approved

Source:
Department Forestry, Fisheries and the Environment (DFFE), Renewable Energy EIA Applications Database (REEA 2021 Q4)





Aberdeen Wind Facility 2 Eastern Cape Province

Sensitivity Map

Legend

- Regional Road
- Main Road
- Perennial River
- Non Perennial River
- Aberdeen Wind Facility 2 Development Area

Environmental Sensitivity

- Noise Sensitive Receptors
- Heritage sites
- 500m Structures Buffer (High Heritage Sensitivity)
- Farm Werf Buffers (High Heritage Sensitivity)
- SAHRA site buffer (High Heritage Sensitivity)
- R61/N9 Road 1km Buffer (High Heritage Sensitivity)
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- Minor slopes and drainage (High Terrestrial Ecology Sensitivity)
- Bat (Medium-High Bat Sensitivity)
- Bat (High Bat Sensitivity)

Scale: 1:80 000
 Projection: GCS_WGS_1984
 Map Ref: Aberdeen Sensitivity Map



