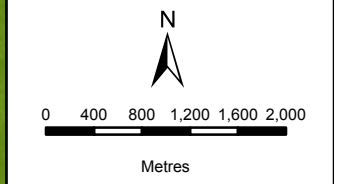


**BIOTHERM ENERGY  
(PTY) LTD**  
STATUS QUO  
MARALLA EAST

**Legend**

- Non-Perennial Rivers
- Maralla East Wind Facility
- NFEPA Wetlands
- Heritage**
- No-Go Areas
- CBA's**
- CBA
- ESA
- Protected Vegetation**
- Western Karoo



DATA SOURCE:  
CHIEF DIRECTORATE: NATIONAL GEO-  
SPATIAL INFORMATION  
NFEPA, SANBI

PROJECTION: WGS HARTEBEEHOCK 94

PROJECT TITLE: WIND AND SOLAR RENEWABLES

PROJECT NO: 47579

SCALE: 1:63,000 AT A4 | DATE: 08/12/2016

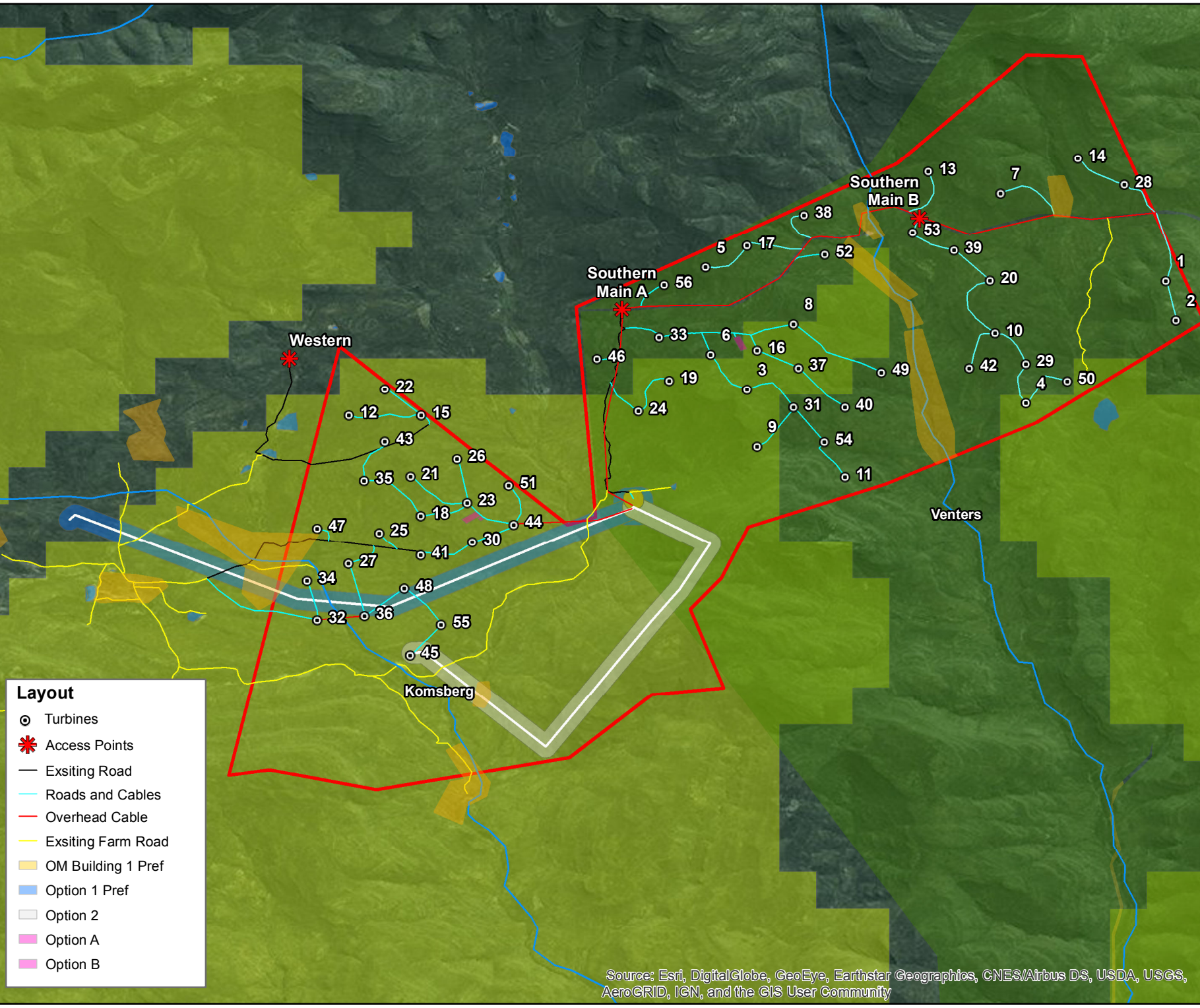
DRAWN BY: SABELO DUBE | FIGURE NO:

REVIEWED BY: ASHLEA STRONG



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- Layout**
- Turbines
  - \* Access Points
  - Existing Road
  - Roads and Cables
  - Overhead Cable
  - Existing Farm Road
  - OM Building 1 Pref
  - Option 1 Pref
  - Option 2
  - Option A
  - Option B

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community







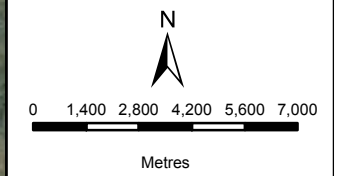
**BIOTERM ENERGY  
(PTY) LTD**  
SLOPE ANALYSIS  
MARALLA EAST

**Legend**

 Maralla East Wind Facility

**Slope**

-  0 - 9%
-  15 - 25%
-  9 - 15%
-  > 25%



DATA SOURCE:  
CHIEF DIRECTORATE: NATIONAL GEO-  
SPATIAL INFORMATION  
NFEPA, SANBI

PROJECTION: WGS HARTEBEEHSHOEK 94

PROJECT TITLE: WIND AND SOLAR RENEWABLES

PROJECT NO: 47579











SCALE: 1:200,000 AT A4 | DATE: 08/12/2016

DRAWN BY: SABELO DUBE | FIGURE NO:

REVIEWED BY: ASHLEA STRONG

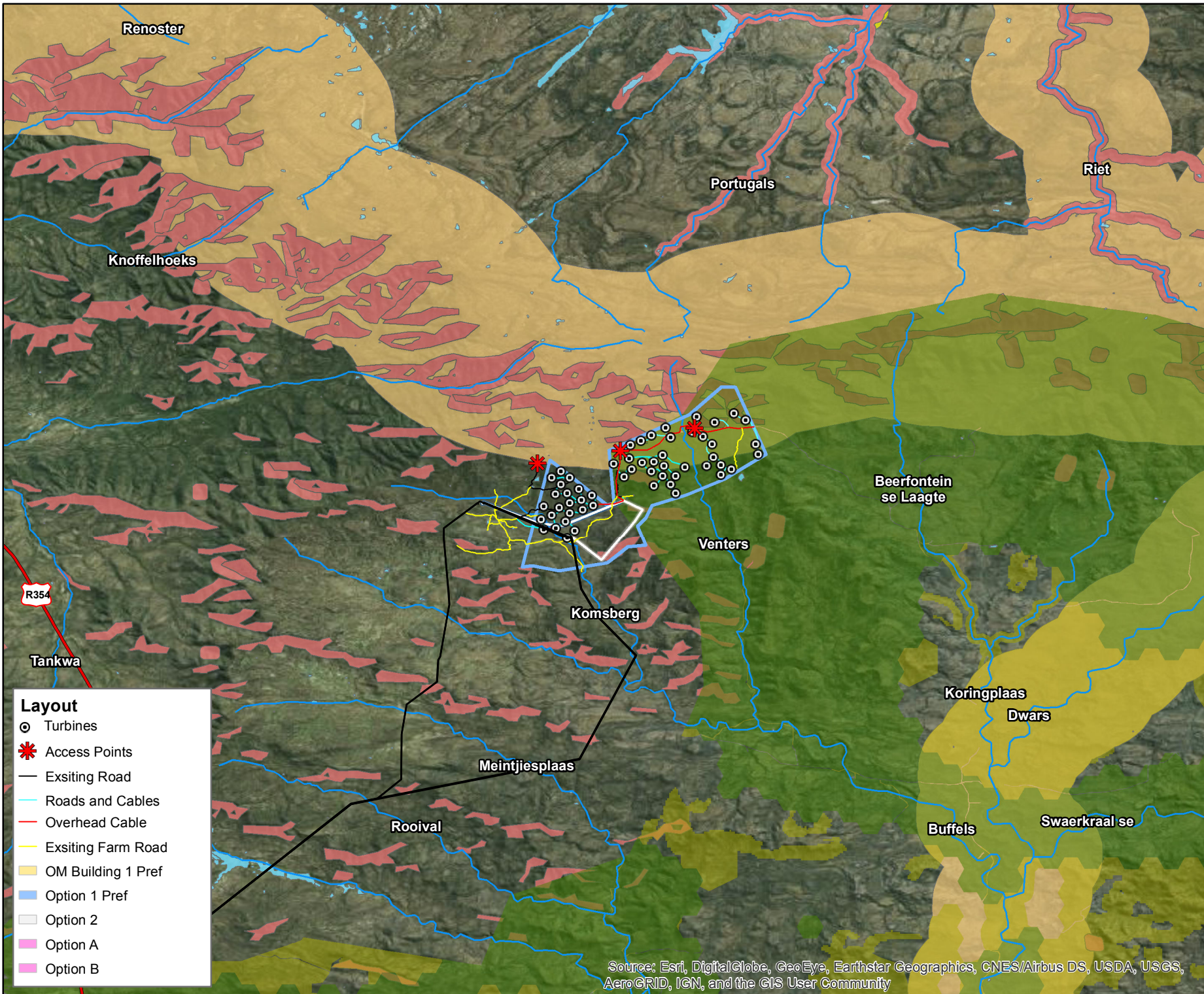


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- Layout**
-  Turbines
  -  Access Points
  -  Roads and Cables
  -  Overhead Cable
  -  Existing Farm Road
  -  OM Building 1 Pref
  -  Option 1 Pref
  -  Option 2
  -  Option A
  -  Option B

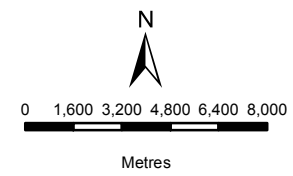
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community





**BIOTHERM ENERGY (PTY) LTD**  
 REGIONAL MAP  
 MARALLA EAST

- Legend**
- Non-Perrenial Rivers
  - Regional Road
  - Powerlines
  - Maralla East Wind Facility
  - NFEPA Wetlands
- CBA Terrestrial**
- CBA Type**
- ESA\_T
  - T1
  - T2
- CBA & ESA CentralKaroo**
- CBA Category**
- CBA
  - CBA (known agric landuse)
  - ESA



DATA SOURCE:  
 CHIEF DIRECTORATE: NATIONAL GEO-SPATIAL INFORMATION  
 NFEPA, SANBI

PROJECTION: WGS HARTBEESHOEK 94

PROJECT TITLE: WIND AND SOLAR RENEWABLES

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PROJECT NO: 47579

SCALE: 1:250,000 AT A4      DATE: 30/01/2017

DRAWN BY: SABELO DUBE      FIGURE NO:

REVIEWED BY: ASHLEA STRONG

- Layout**
- Turbines
  - ★ Access Points
  - Exsiting Road
  - Roads and Cables
  - Overhead Cable
  - Exsiting Farm Road
  - OM Building 1 Pref
  - Option 1 Pref
  - Option 2
  - Option A
  - Option B

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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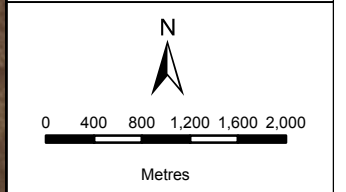
**BIOTERM ENERGY  
(PTY) LTD**  
LAYOUT MAP  
MARALLA EAST

**Legend**

- Non-Perennial Rivers
- Maralla East Wind Facility
- NFEPA Wetlands

**SANBI Wetland Vegetation**

- Karoo Shale Renosterveld
- Rainshadow Valley Karoo (Skv)



DATA SOURCE:  
CHIEF DIRECTORATE: NATIONAL GEO-  
SPATIAL INFORMATION  
NFEPA, SANBI

PROJECTION: WGS HARTEBEESHOEK 94

PROJECT TITLE: WIND AND SOLAR RENEWABLES

PROJECT NO: 47579

SCALE: 1:63,000 AT A4      DATE: 30/01/2017

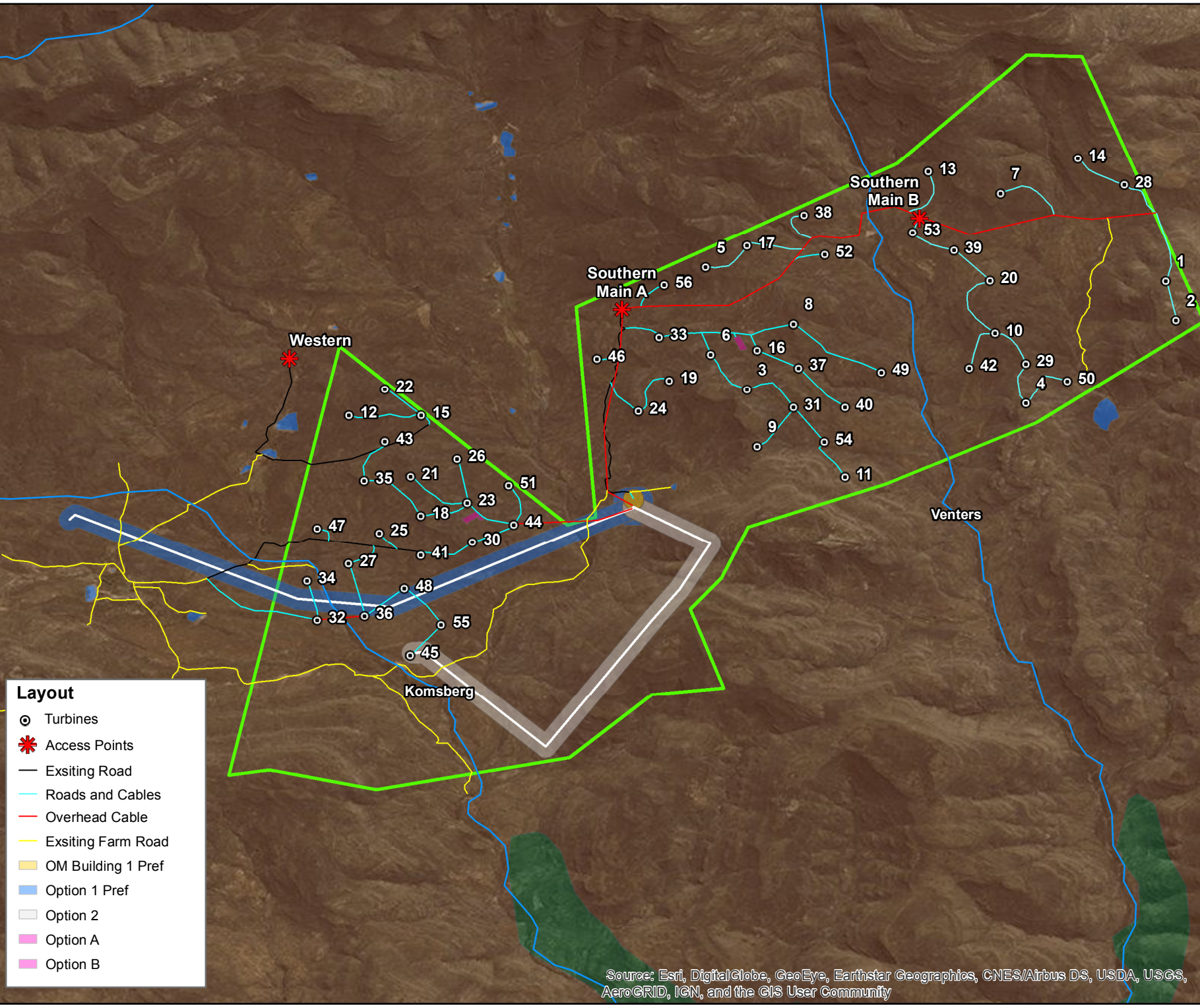
DRAWN BY: SABELO DUBE      FIGURE NO:

REVIEWED BY: ASHLEA STRONG



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- Layout**
- Turbines
  - ✱ Access Points
  - Existing Road
  - Roads and Cables
  - Overhead Cable
  - Existing Farm Road
  - OM Building 1 Pref
  - Option 1 Pref
  - Option 2
  - Option A
  - Option B

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



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(PTY) LTD**

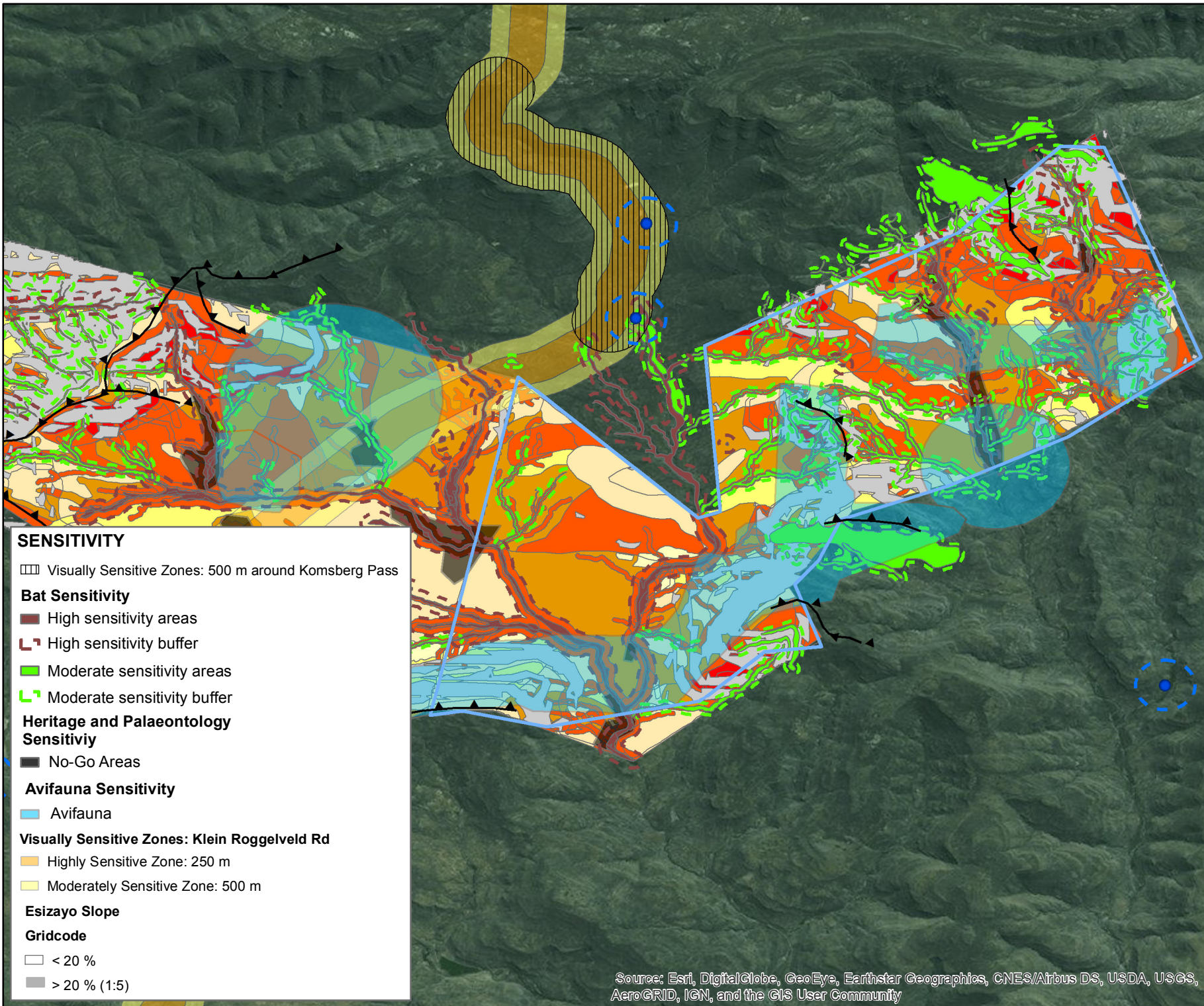
**COMBINED SENSITIVITY  
MAP**

**Legend**

- ▲ Ridgelines
- Homesteads
- ⌚ Homesteads Buffers
- ▭ Maralla West Wind Facility

**Biodiversity**

- Medium Low Sensitivity
- Medium Sensitivity
- Medium High Sensitivity
- High Sensitivity
- Very High Sensitivity



**SENSITIVITY**

▨ Visually Sensitive Zones: 500 m around Komsberg Pass

**Bat Sensitivity**

- High sensitivity areas
- High sensitivity buffer
- Moderate sensitivity areas
- Moderate sensitivity buffer

**Heritage and Palaeontology Sensitivity**

No-Go Areas

**Avifauna Sensitivity**

Avifauna

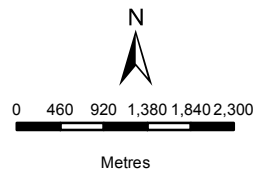
**Visually Sensitive Zones: Klein Roggeveld Rd**

- Highly Sensitive Zone: 250 m
- Moderately Sensitive Zone: 500 m

**Esizayo Slope**

**Gridcode**

- < 20 %
- > 20 % (1:5)



DATA SOURCE: CHIEF DIRECTORATE: NATIONAL GEO-SPATIAL INFORMATION	
PROJECTION: WGS HARTEBEESHOEK 94	
PROJECT TITLE: WIND AND SOLAR RENEWABLES	
PROJECT NO: 47579	
SCALE: 1:80,000 AT A4	DATE: 16/01/2017
DRAWN BY: SABELO DUBE	FIGURE NO: 5
REVIEWED BY: ASHLEA STRONG	



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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



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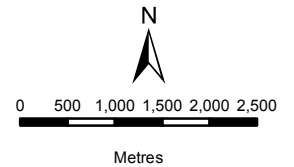
**COMBINED SENSITIVITY  
MAP**

**Legend**

- Turbines
- Ridgelines
- Homesteads
- Acces Points
- Exsiting Road
- Roads and Cable
- Overhead Cable
- Exsiting Farm Road
- OM Building 1 Pref
- Option 1 Pref
- Option 2
- Option A & B
- Homesteads Buffers
- Maralla West Wind Facility

**Biodiversity**

- Medium Low Sensitivity
- Medium Sensitivity
- Medium High Sensitivity
- High Sensitivity
- Very High Sensitivity



**DATA SOURCE:**

CHIEF DIRECTORATE: NATIONAL GEO-SPATIAL INFORMATION

PROJECTION: WGS HARTEBEESHOEK 94

PROJECT TITLE: WIND AND SOLAR RENEWABLES

PROJECT NO: 47579

SCALE: 1:80,000 AT A4 DATE: 16/01/2017

DRAWN BY: SABELO DUBE FIGURE NO:

REVIEWED BY: ASHLEA STRONG



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**SENSITIVITY**

Visually Sensitive Zones: 500 m around Komsberg Pass

**Bat Sensitivity**

- High sensitivity areas
- High sensitivity buffer
- Moderate sensitivity areas
- Moderate sensitivity buffer

**Heritage and Palaeontology Sensitivity**

No-Go Areas

**Avifauna Sensitivity**

Avifauna

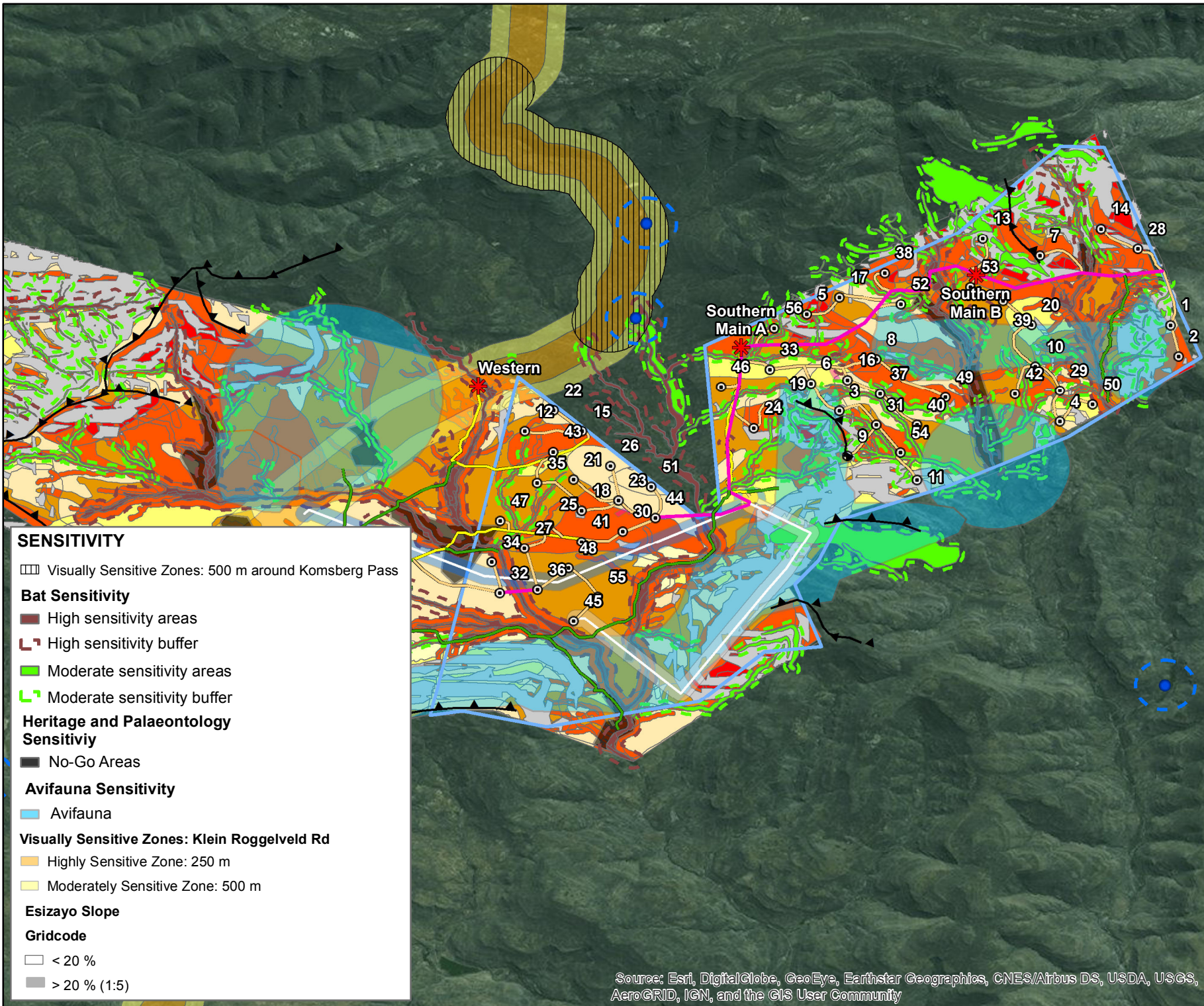
**Visually Sensitive Zones: Klein Roggeveld Rd**

- Highly Sensitive Zone: 250 m
- Moderately Sensitive Zone: 500 m

**Esizayo Slope**

**Gridcode**

- < 20 %
- > 20 % (1:5)



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community