

# EGI SEA: Visual Assessment Results

ERG Meeting  
21 July 2015  
MLB ARCHITECTS



# Visual Assessment Principles

- Visual implies the full range of visual, aesthetic, cultural and spiritual aspects of the environment that contribute to sense of place;
- Consideration of both cultural and natural landscape and their inter-relatedness.
- Identification of scenic resources, protected areas and sites of special interest together with their relative importance in the region
- An understanding of landscape processes including geological, vegetation and settlement patterns which give the landscape its particular character or scenic attributes.

# EGI SEA Visual Impact Assessment Background

- Landscape sensitivity was determined as part of this study through the identification of natural, scenic and cultural resources which have aesthetic and economic value to the local community, the region, and society as a whole.
- The resources considered include features of topographic, geological or cultural interest, together with landscape grain or complexity
- Protected landscapes, such as national parks, nature reserves, game parks or game farms, as well as heritage sites, add to the cultural value of an area and were thus considered
- Landscape sensitivity was further determined by taking into account existing receptors in the area including settlements, national roads, arterial roads, scenic routes
- No standardised scenic resource mapping exists for the country as whole, nor the rating of scenic resources in terms of their value or sensitivity
  - Some work on this has been done for the Western Cape.
- The 'context' of both the landscape (the receiving environment) and the community (the receptor) is important in the siting of transmission infrastructure

# Methodology

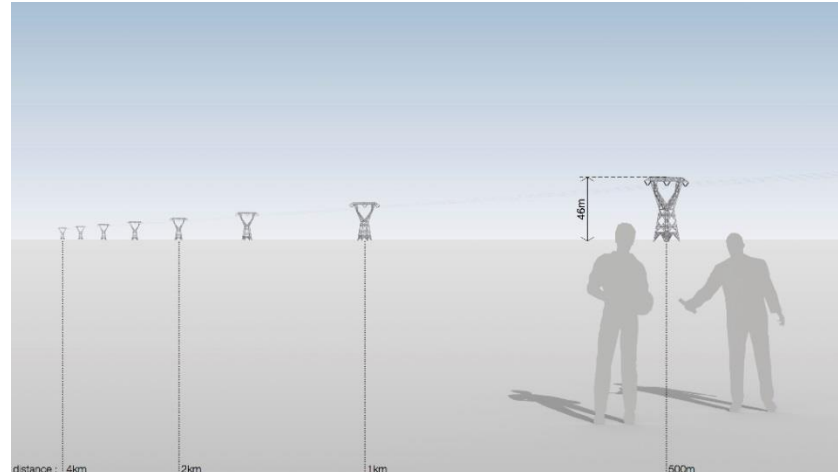
- Methodology involves the 3 broad stages:
- *Stage 1: Landscape description (scenic resources)*
  - Landscape typology, geology and land use (scenic value)
  - Identification of cultural landscapes and historical sites
- *Stage 2: Landscape sensitivity*

*Applying sensitivity rating to the features*

  - Visually sensitive landforms, (e.g. ridgelines, cliffs, scarps, outcrops);
  - Proclaimed or protected areas, (e.g. nature reserves);
  - Visually sensitive receptors, (e.g. settlements, routes);
  - Heritage importance (e.g. national, provincial or local significance)
- *Stage 3: Landscape suitability*
  - The third stage involves strategies for the protection and management of visual / scenic resources :
  - Additional information or assessment requirements;
  - Permit requirements as part of authorization;
  - Mitigation measures to avoid, reduce or offset impacts.

# Buffering

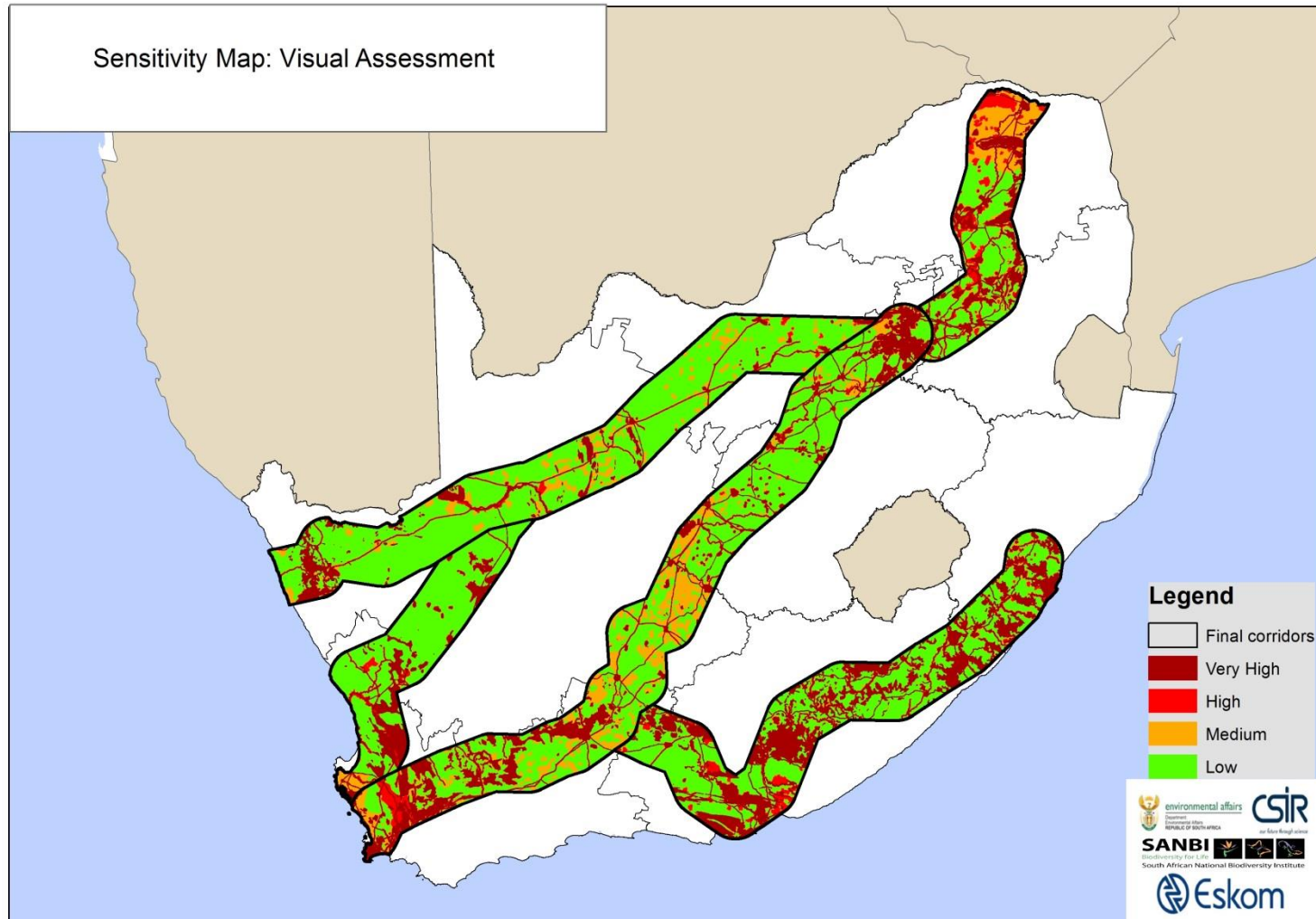
- Viewsheds to be taken into account at the project scale. Buffers could be reduced if proposed transmission infrastructure is outside the viewshed or in a view shadow.
- Significance ratings and buffers are based on a 400kV transmission line 30 to 60m high, and substations of 1 ha. Buffers could be reduced where towers are less than 20m high, or where substations are less than 1 000m<sup>2</sup>.
- Buffers are in response to potential visibility of the proposed transmission infrastructure. Degrees of visibility in relation to distance are indicated below based on field observations. Visibility would be increased by the location of transmission infrastructure on ridges or skylines:
  - High visibility: Clearly noticeable within the observer's viewframe 0 to 0.5 km.
  - Moderate visibility: Noticeable feature within observer's viewframe 0.5 to 1 km.
  - Marginal visibility: Partially noticeable within observer's viewframe 1 to 2 km.
  - Low visibility: Hardly visible unless pointed out to observer 2 to 4 km



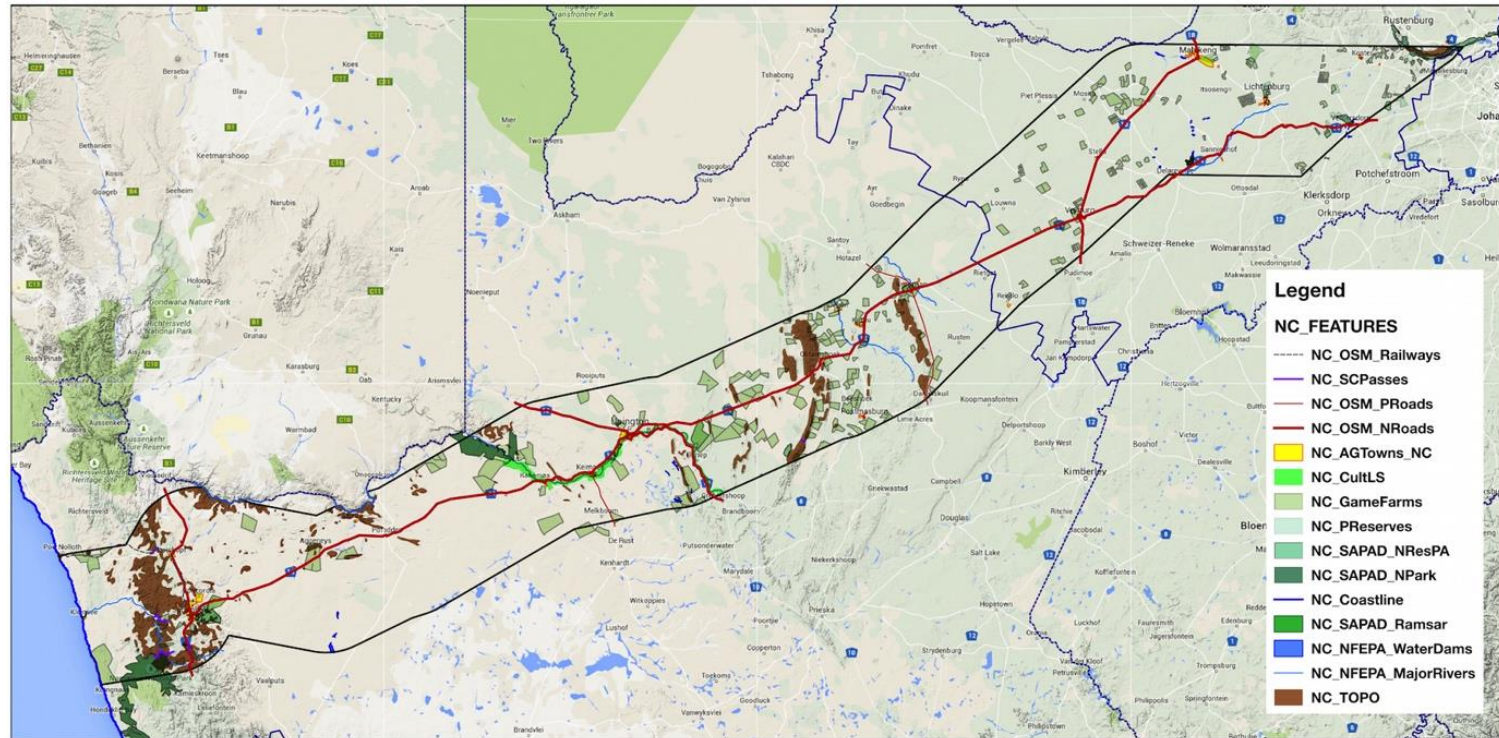
# Feature Sensitivity and Buffering Criteria

Feature Type	Very high sensitivity	Sensitive	Mod. sensitive	Corridor
Topographic features incl. steep slopes	0 m	-	-	All
Major rivers	500 m	1 km	2 km	All
Water bodies, dams, wetlands, pans	500 m	1 km	2 km	All
Ramsar Sites	1 km	2 km	3 km	All
Coastal zone	1 km	2 km	3 km	Western, Central, Eastern
National Parks	2 km	3 km *	4 km *	All
Nature Reserves / biosphere core	1 km	2 km *	4 km *	All
Mountain Catchments / biosphere buffer	n/a	n/a	1 km	All
Private reserves and game farms	n/a	1 km *	2 km *	All
Cultural landscapes	0 m	500 m *	1 km *	All
Heritage sites	0 m	500 m *	1 km *	All
Historical towns / villages	500 m	1 km	2 km	All
Other towns / settlements	250 m	500 m	1 km	All
National roads	500 m	1 km *	2 km *	All
Provincial routes	250 m	500 m *	1 km *	All
Scenic routes	1 km	2 km *	3 km *	All
Passenger rail lines	250 m	500 m *	1 km *	All except Western Corridor
SA Large telescope (SALT)	5 km	-	-	Central Corridor

# Visual Sensitivity Map: All Corridors



# Mapping Outputs Example: Northern Corridor Feature Map

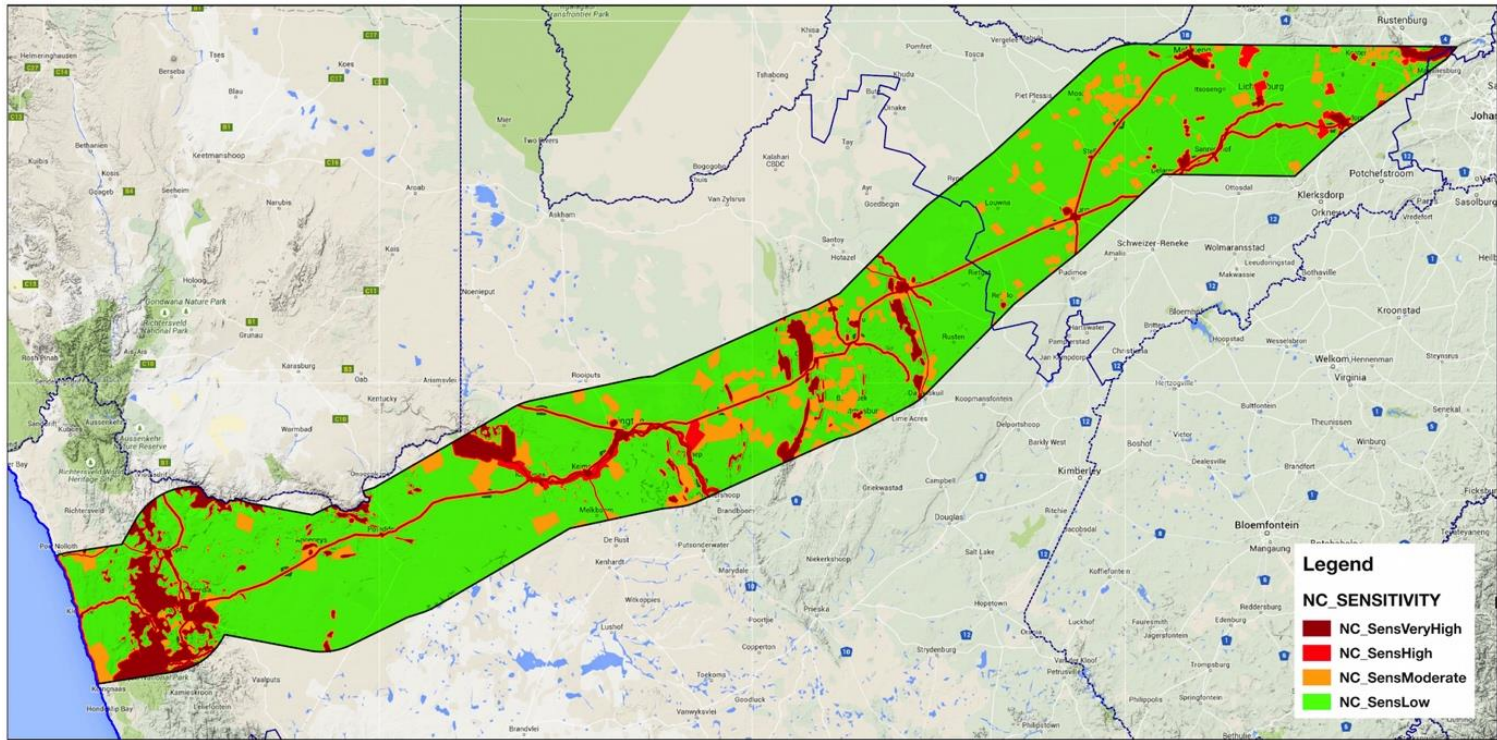


0 100 200 km

NORTHERN CORRIDOR



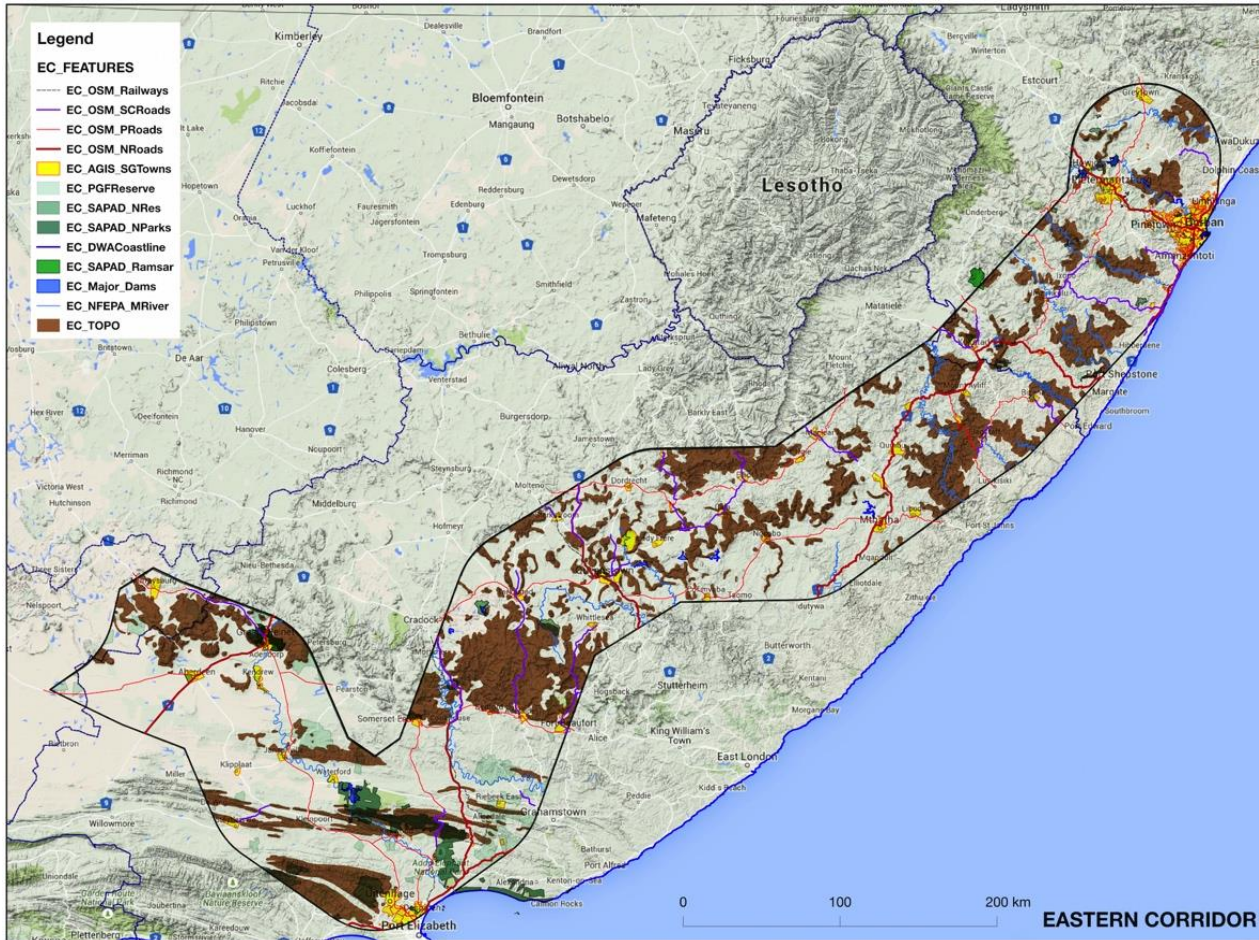
# Mapping Outputs Example: Northern Corridor Sensitivity Map



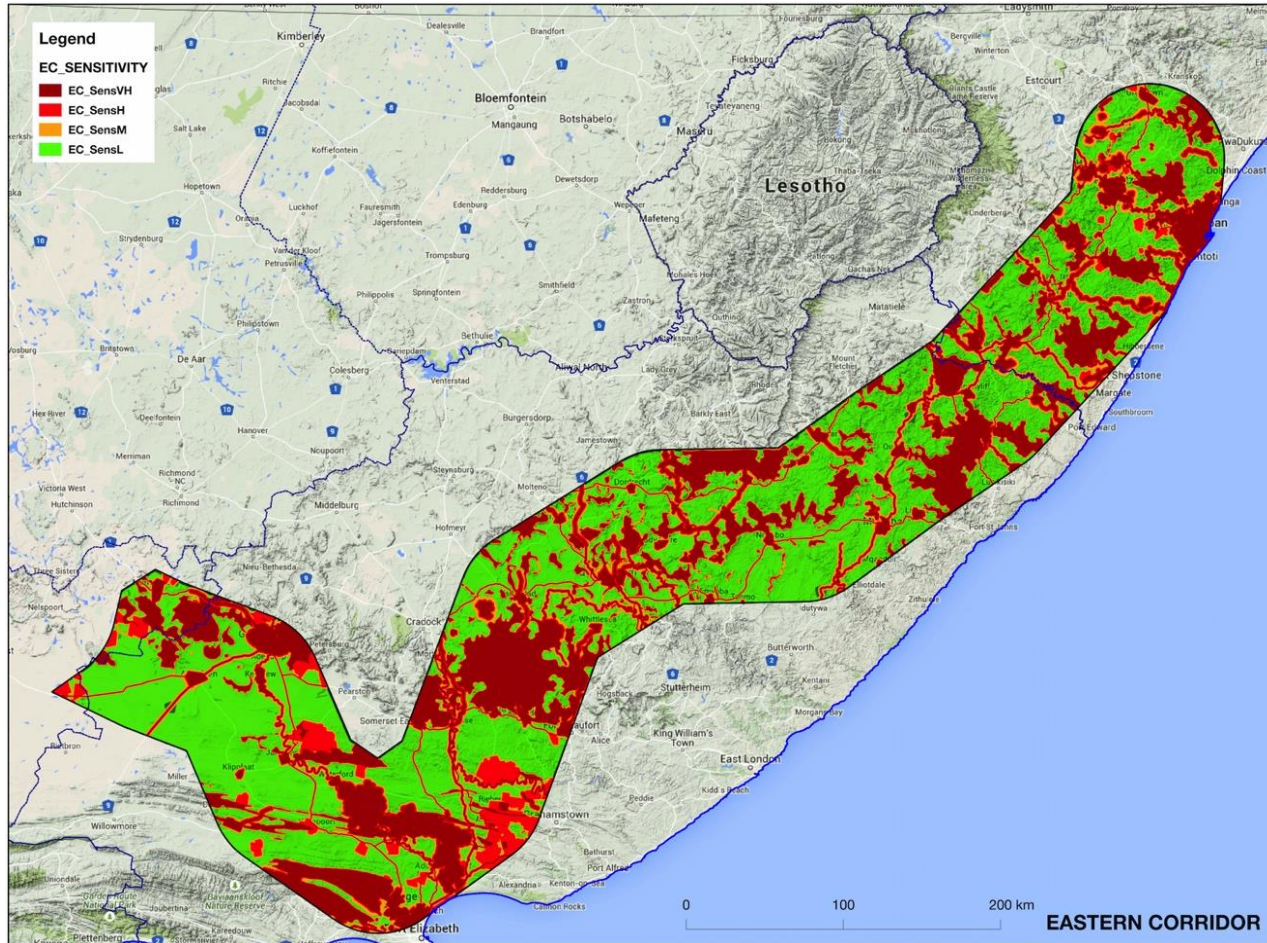
0 100 200 km

**NORTHERN CORRIDOR**

# Mapping Outputs: Eastern Corridor Feature Map



# Mapping Outputs: Easter Corridor Feature Map



# Sensitivity and Assessment Criteria

Sensitivity Class	Interpretation (see Note 1 below)	Assessments at project level (see Note 2 below)	Permit requirements
<i>Very High (dark red)</i>	Visually sensitive resources with major visual constraints and/or protected areas or sensitive receptors. (Very high potential visual impact).	A <b>Level 4</b> specialist visual assessment. (VIA with alternatives, mitigations and 3D modeling / montages. Independent review if necessary).	Permit from SAHRA or appropriate provincial heritage agency if heritage features are affected.
<i>High (red)</i>	High level of visual constraints and/or proximity of protected areas or sensitive receptors. (High potential visual impact).	A <b>Level 3</b> specialist visual assessment. (VIA with recommended mitigations).	Permit from SAHRA or appropriate provincial heritage agency if heritage features are affected.
<i>Medium (orange)</i>	Moderate level visual constraints and intermediate proximity of protected areas / sensitive receptors. (Moderate potential visual impact).	A <b>Level 2</b> specialist visual assessment. (Basic assessment with recommended mitigations).	Comment from SAHRA or appropriate provincial heritage agency if heritage features are affected.
<i>Low (green)</i>	Few visual constraints and/or sensitive receptors. Disturbed or transformed land. (Minimal potential visual impact).	A <b>Level 1</b> specialist visual assessment. (Site visit and statement by a visual specialist).	

# Assessment requirements

## Provincial Government of the Western Cape: Department of Environmental Affairs and Development Planning Guideline for Involving Specialists in EIA Processes

### **Level 1 assessment:**

#### **Approach:**

Visual screening report by EIA Practitioner / visual specialist.

#### **Method:**

Identification of issues raised in scoping phase, and site visit;

Brief comment on visual influence of the project, and assessment of expected impacts / benefits.

### **Level 2 assessment:**

#### **Approach:**

Visual scoping report by visual specialist or competent professional.

#### **Method:**

Identification of issues raised in scoping phase, and site visit;

Description of the receiving environment and the proposed project;

Establishment of view catchment area and receptors;

Brief indication of potential visual impacts, and possible mitigation measures.

### **Level 3 assessment:**

#### **Approach:**

Visual impact assessment report by visual specialist or competent professional/s.

Review by independent, experienced visual specialist (if required).

#### **Method:**

Identification of issues raised in scoping phase, and site visit;

Description of the receiving environment and the proposed project;

Establishment of view catchment area, view corridors, viewpoints and receptors;

Indication of potential visual impacts using established criteria;

Inclusion of potential lighting impacts at night;

Description of alternatives, mitigation measures and monitoring programmes.

### **Level 4 assessment:**

#### **Approach:**

Visual impact assessment report by independent visual specialist.

Review by independent, experienced visual specialist (if required).

#### **Method:**

As per Level 3 assessment, plus complete 3D modeling and simulations, with and without mitigation.

# Limitations

Limitation	Included in the scope of this study	Excluded from the scope of this study	Assumption
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# Conclusions

- The mapping revealed that for the most part opportunities exist for the alignment of transmission lines, although many pinch-points occur;
- Appropriate mitigation measures will therefore play an important role;
- At the project scale additional more detailed field work and mapping will be necessary, as well as viewshed analyses in very high, high sensitive areas;
- This will help to identify both smaller scale features and opportunities for powerline alignments, particularly where pinch-points occur;
- Outputs of this exercise to be used to focus the assessment process and include visual considerations at the earliest stage of planning.

# Thank you

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