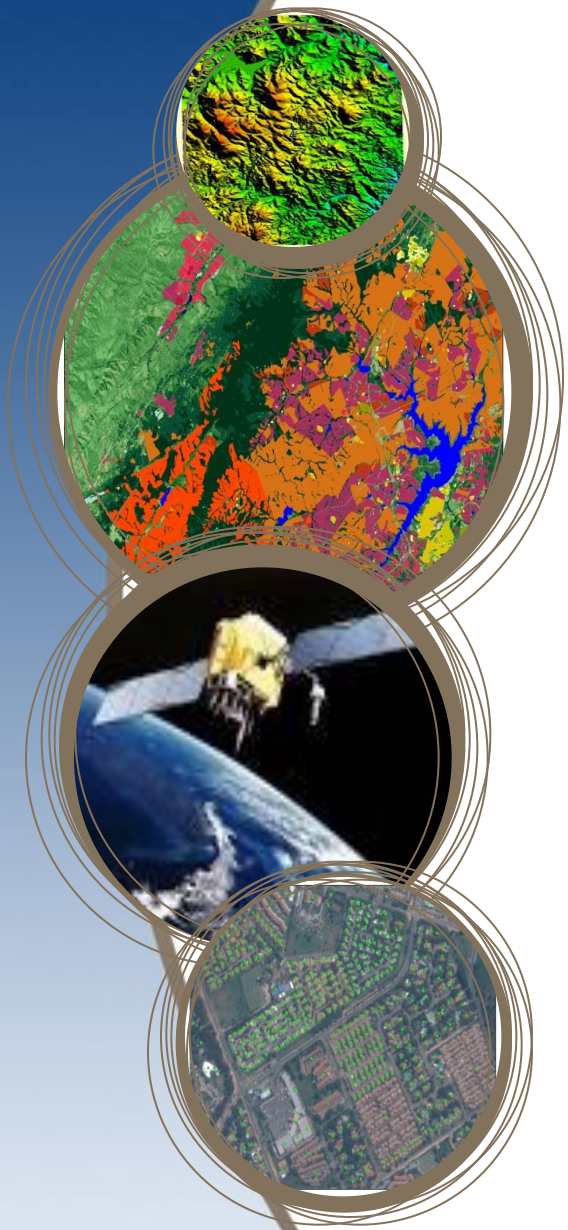

SPOT 5 LAUNCH
SANSA
Innovation Hub
Pretoria

Adri de la Rey
Group Technology
5 September 2014

Powering your world

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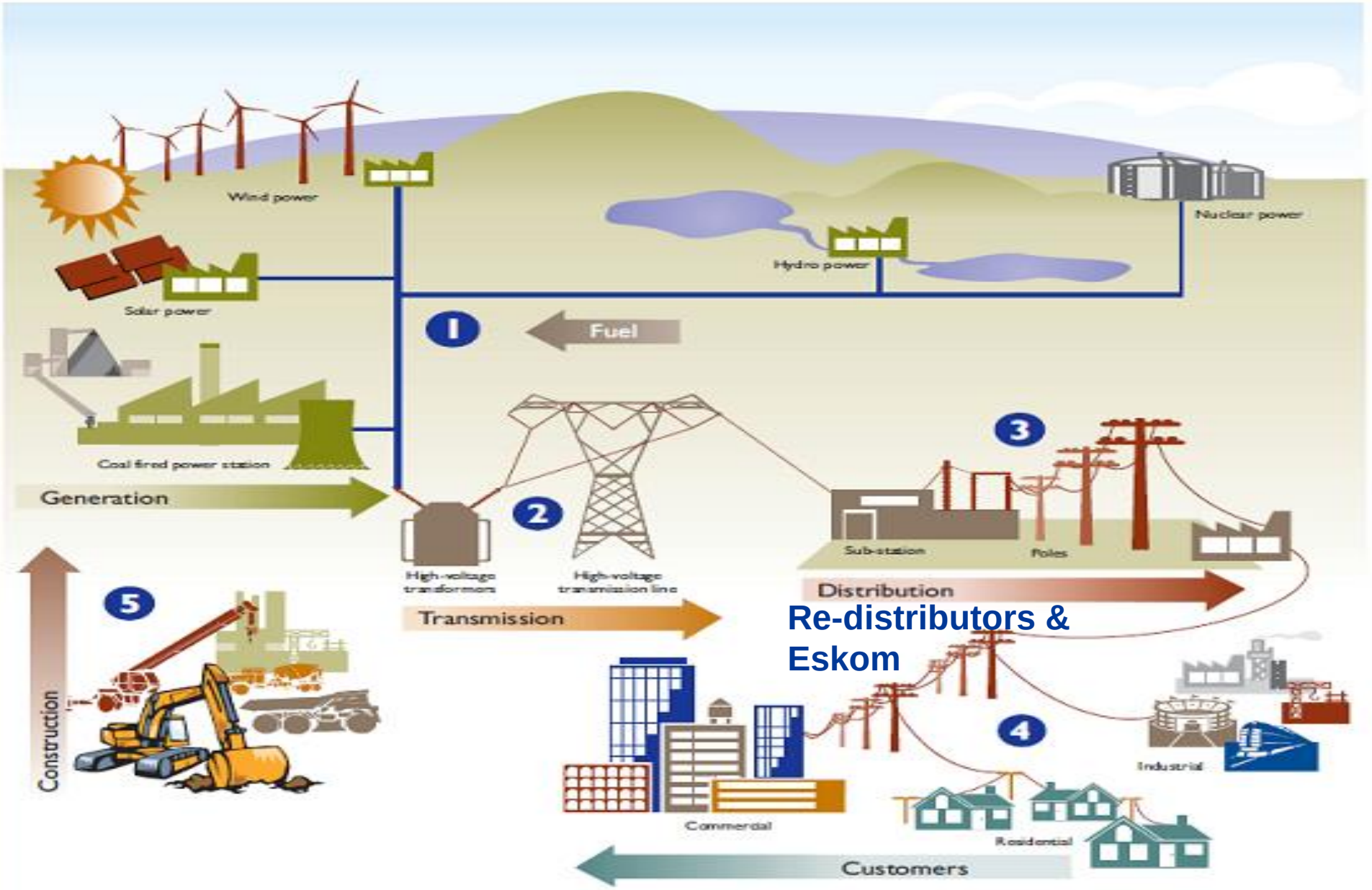
Introduction

The Electricity Supply Industry Geographic Information systems (ESI-GIS)

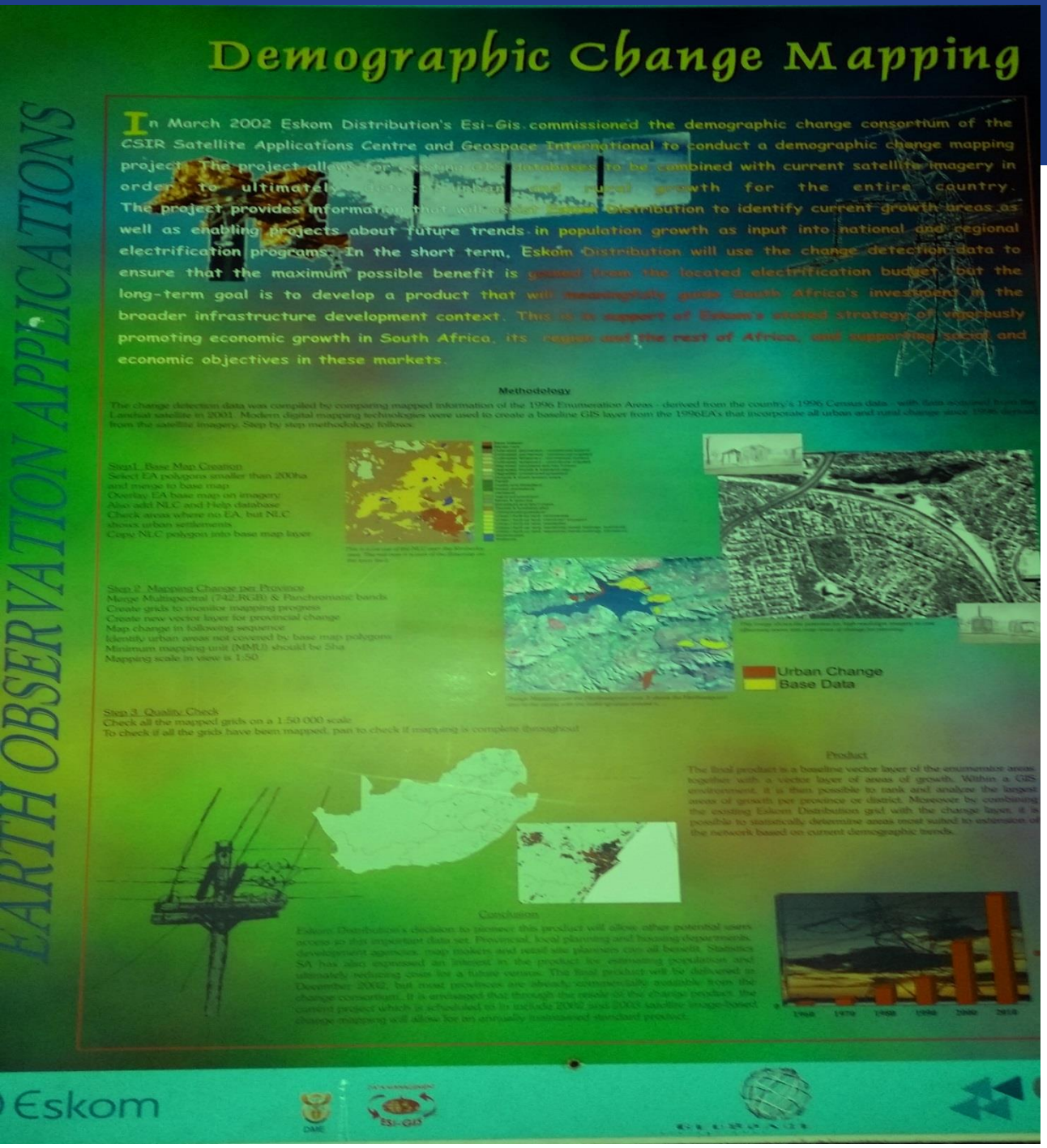
- Formed during 2002
- To develop, manage and supply spatial information solutions within the local and African Electricity Supply Industry (ESI),
- Made up of a diverse team of professionals with the skills, expertise and experience to address the GIS requirements of the ESI business.
- We are committed to develop skills and to provide a platform for growth. - reflected in the ESI-GIS internship & bursar initiatives.
- Now part of the Planning & GIS section, under the Power Delivery Engineering Dept. in the Technology Division
- We work in partnership with a panel of external service providers

Eskom Value Chain



Short history of Imagery Acquisition Within Eskom and Value added product

- +/-2000 CSIR, Land Cover Scale 1:50 000
- 2002-2004 Eskom Change detection based on HELP National Land Cover Landsat
- 2006 – Current Spot 5 (Government Consortium)
- Now Spot 6



Eskom

Objectives of Value Added Product

- Demographic Mapping
- Growth rate analysis
- Change detection
- Socio economic trends
- 1996 CSIR Land Cover (NLC) Scale 1:250 000 HELP & Landsat
- +/-2000 CSIR Land Cover Scale 1:50 000
- 2002-2004 Eskom Demographic Change detection based on HELP NLC and Landsat

Short history of Spot 5 Value Added Product (Land Cover)

- CSIR and the Consortium
- 2007 Eskom Spot Building Count only until 2016/7
- 2008 NWP and GTI SPOT5
- 2008 Freestate and GTI SPOT5
- 2009 CSIR Change Detection 1994 – 2000 – 2009
- 2009 Mpumalanga (“light land cover”)
- 2009 KZN Wild Life Society Various Base maps
- 2010 Eskom (Limpopo) SPOT5
- 2011 Gauteng GTI SPOT5

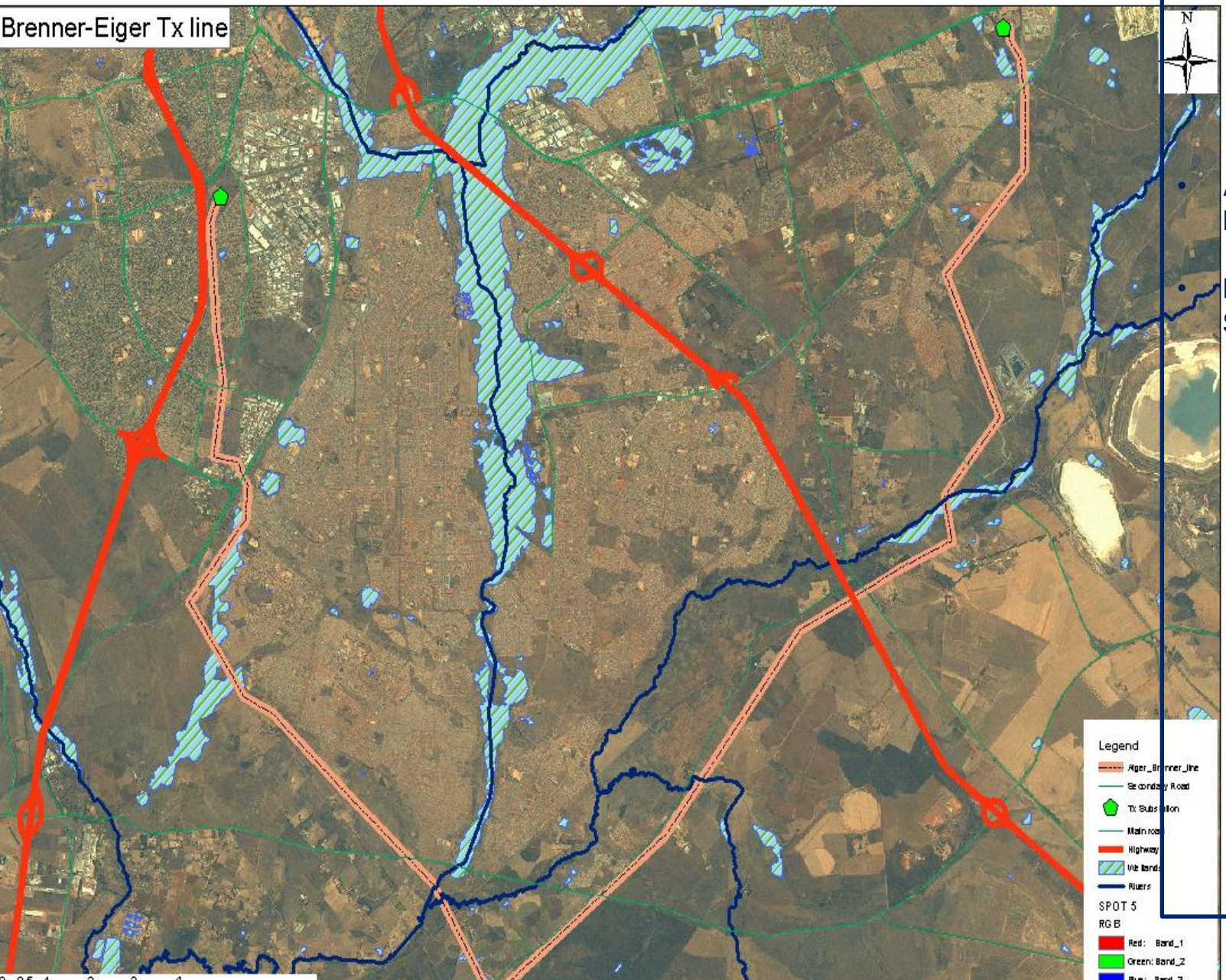
The Benefit of Using Images

- **Electrification**
  - **Planning**
  - **Design**
- **Route and Site Selection**
  - **Environmental**
- **Socio Economic evaluation**
  - **Trends**
- **Change detection**
  - **Trends**
- **Group security**
  - **Encroachments**
  - **Safety**
  - **Theft conductor illegal connections**
- **Planning**
  - **Load forecasting**

The Benefit of Using Images

- **Disaster management**
- **Vulnerability and risk Assessments**
- **Ecological management**
- **Monitoring the effects of climate change**
- **Environmental forecasting**
- **Environmental impact assessment**
- **Policy development**
- **Footprint future evidence**

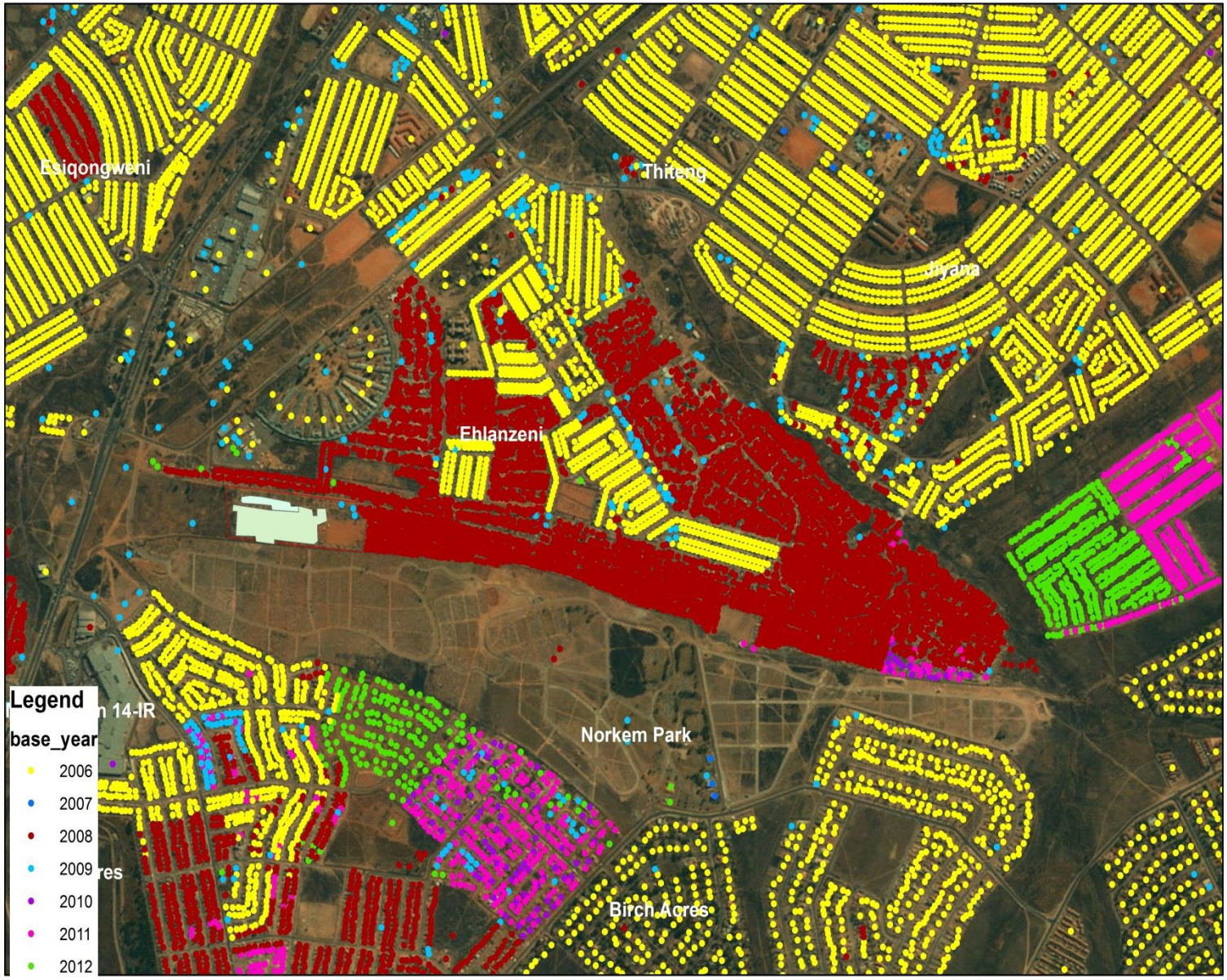
Power Line Maintenance



Objective

- Access road Planning
- Identification of Security threat

Current Use of SPOT 5



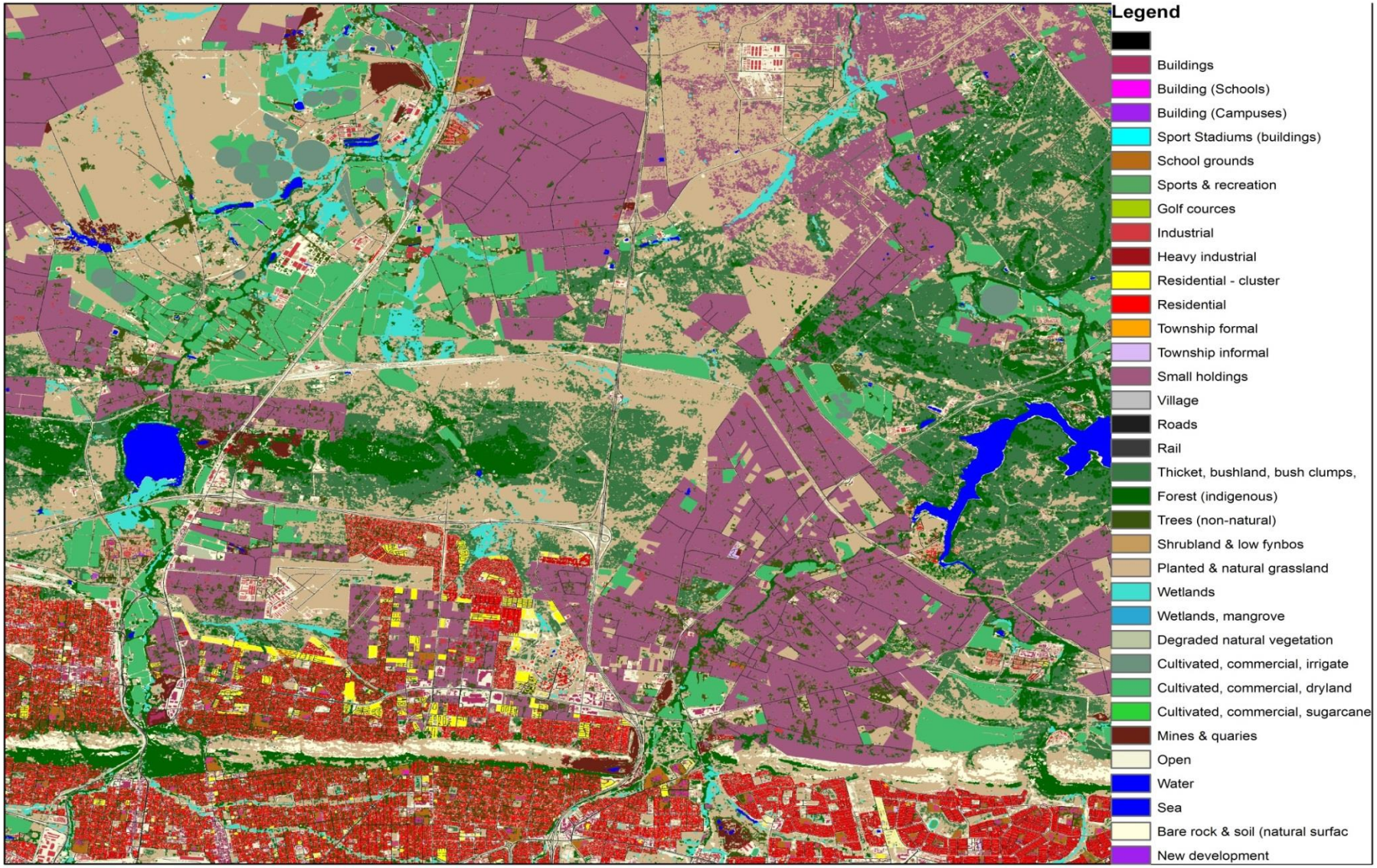
Objective

Use Spot 5 images for SBC project;

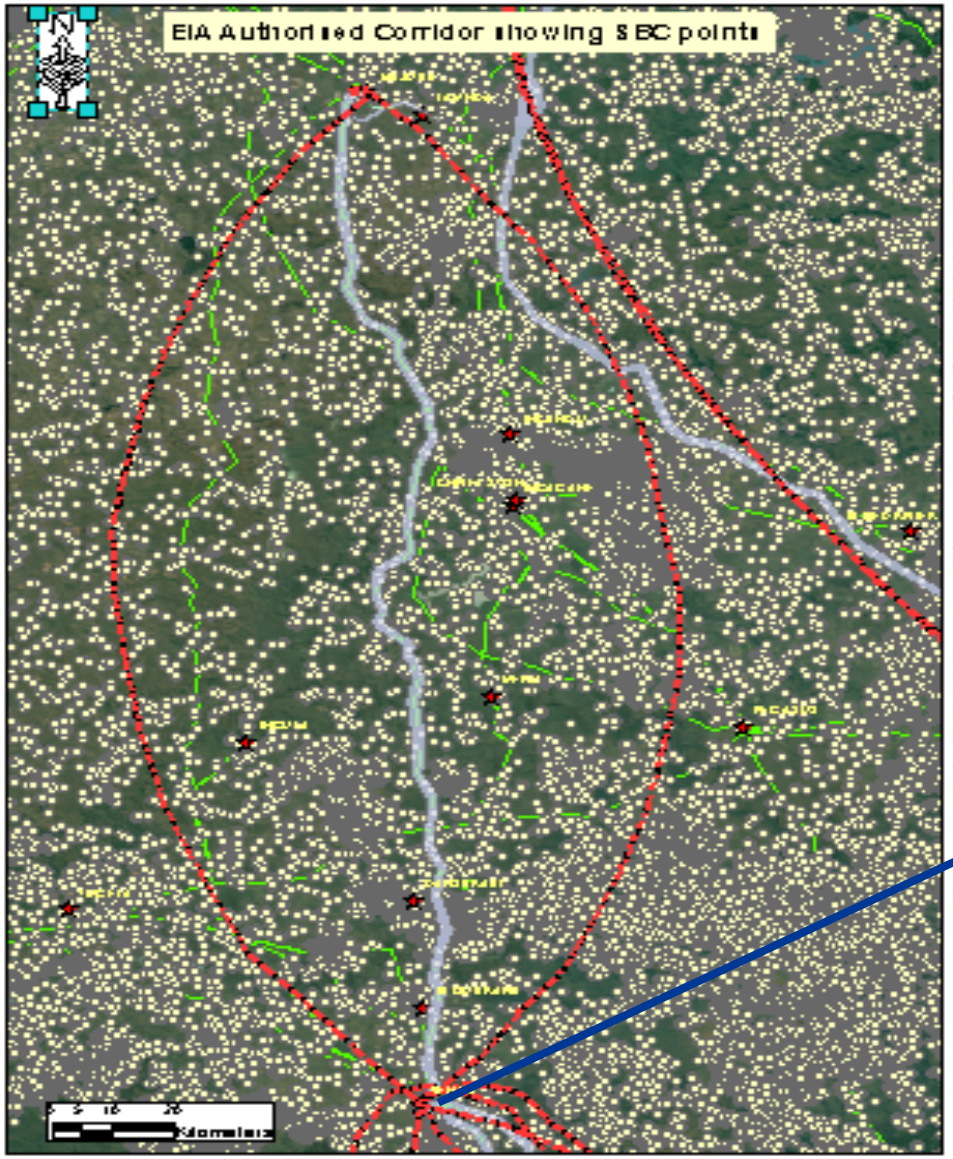
Capture each Dwelling in SA as a point;

Current Use of SPOT 5 (continue)

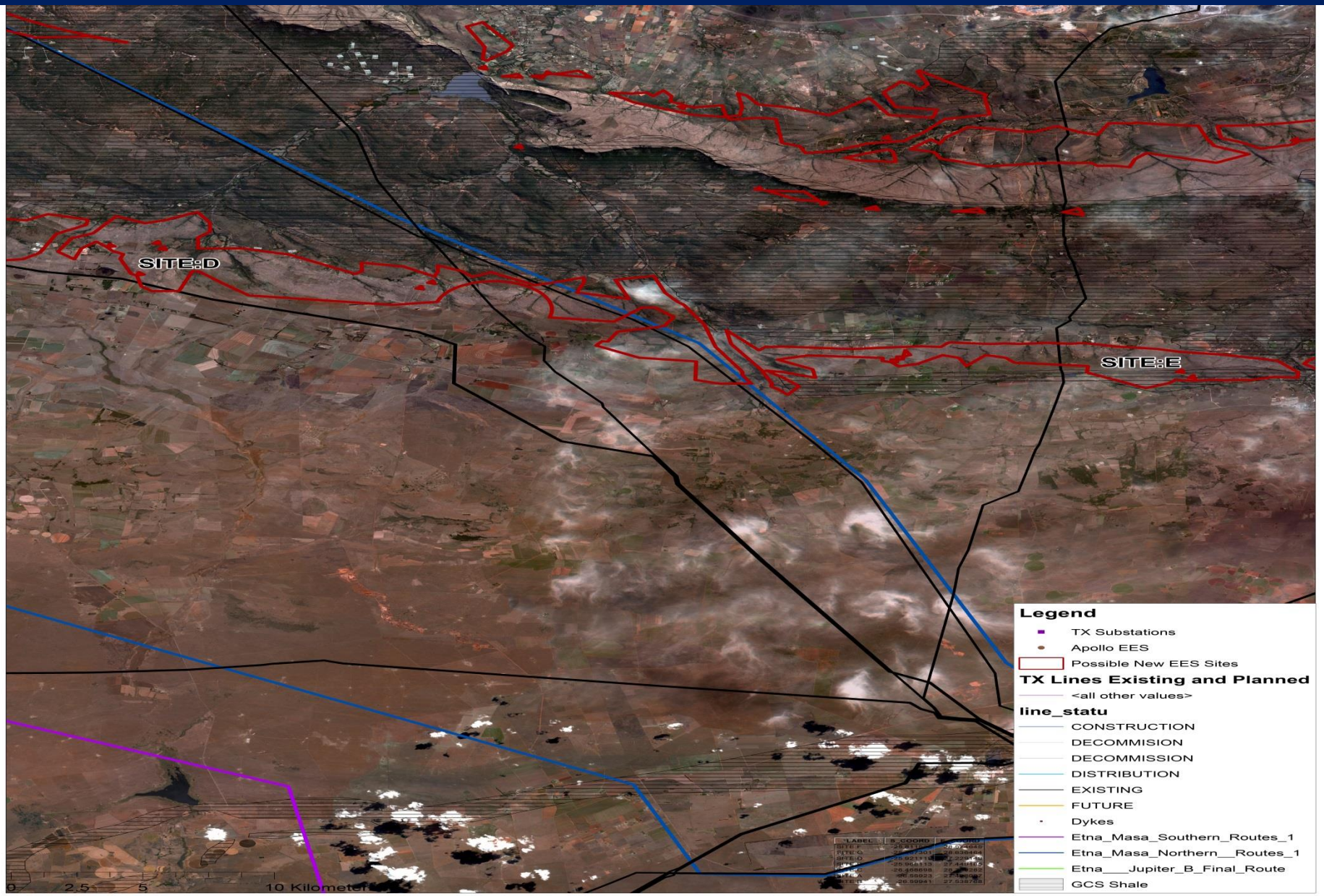
Limpopo Land Cover



Route Selection



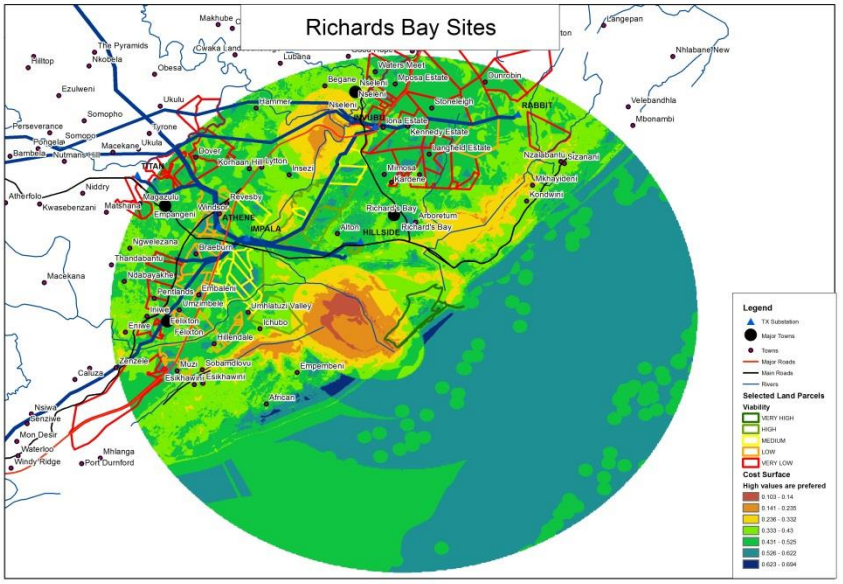
Magalies Earth Electrode Site Selection DC

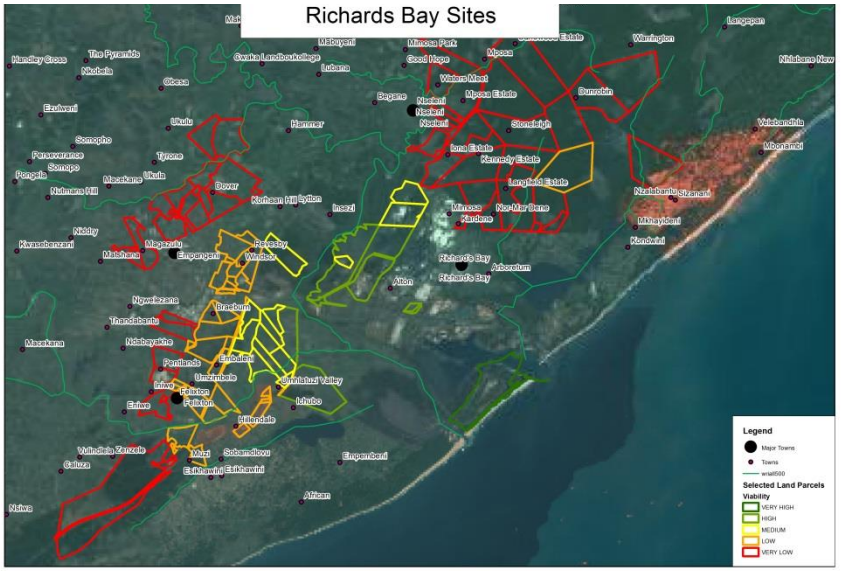


Combined Cycle Gas Turbine Site

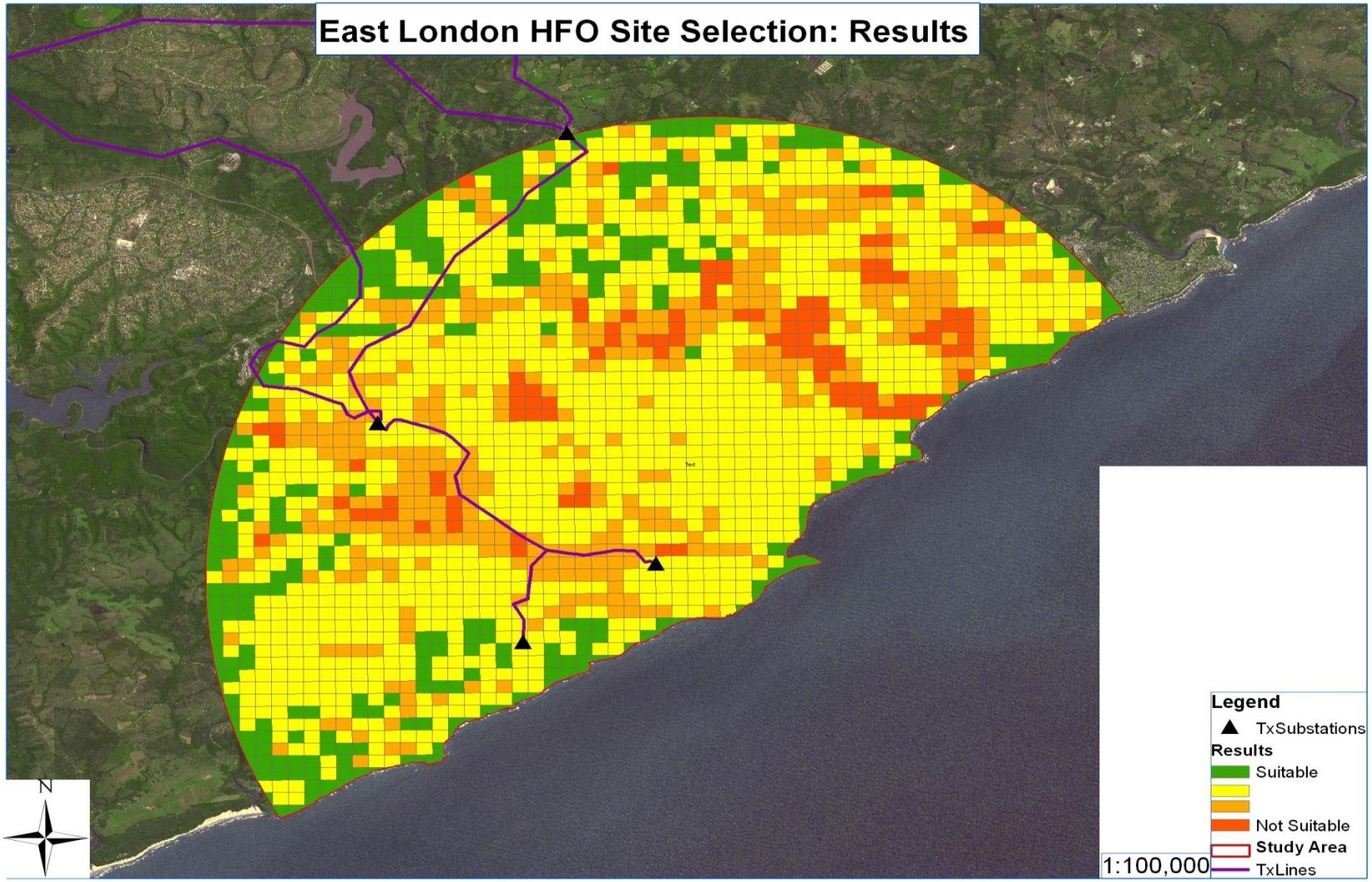
- **Objective**
  - **Identify possible sites for the development of a CCGT plant of 2500 MW**

- **The sites selection is done 3 locations; Richards Bay, Saldanha and Coega.**
- **These are possible location for Liquid Natural Gas to be brought into the country.**
- **10 to 15 layers make up the site selection.**
- **Fuzzy logic is applied to generate the final selected sites.**
- **All the required criteria and requirements for sites are built into a set of interlinked modules.**

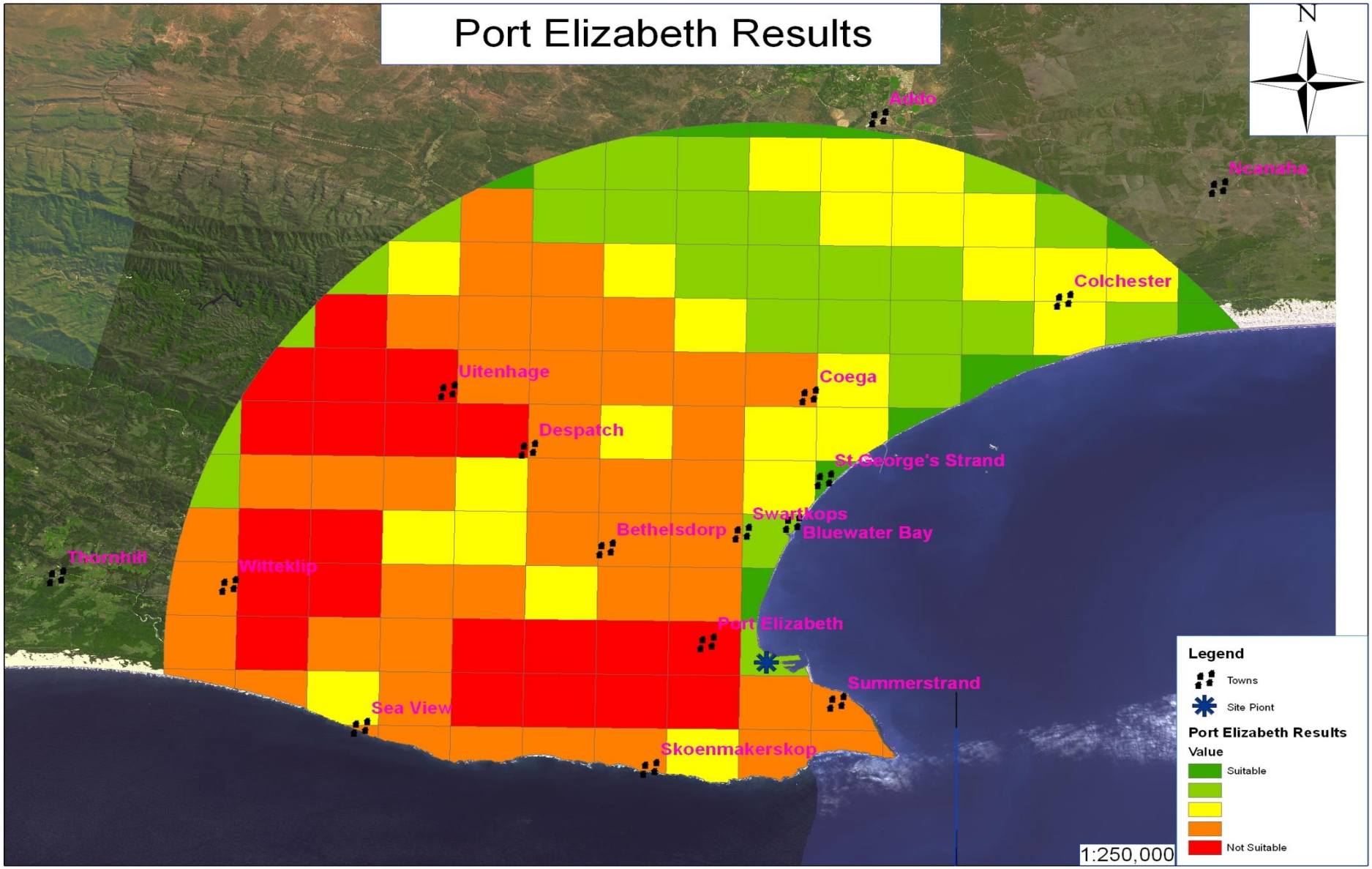




Heavy Fuel Oil Site Selection



Coastal Power Station Site Selection



The Objective