



fourth element

## **BACKGROUND INFORMATION DOCUMENT (BID)**

### **ENVIRONMENTAL BASIC ASSESSMENT (BA) PROCESS**

#### **ROODEPOORT STRENGTHENING PROJECT (DEA REF NO 12/12/20/2308)**

The proposed project consists of the following:

- Construction of 3 x 315MVA, 400/88 kV Transmission Substation called Demeter near Cosmo City in the Gauteng Province
- Construction of new proposed 2 x 400kV Transmission turn-ins from the existing Apollo - Pluto 400kV Transmission Lines
- Associated substation and power line infrastructure

#### **BACKGROUND**

Eskom has initiated the proposed project to meet electricity demand in the north-western areas of Johannesburg and north-eastern areas of Mogale City. The proposed Demeter Substation will be fed from the existing Apollo – Pluto 400kV power lines by means of 2 X 400kV turn-ins. Three substation sites (site A,B and C) and three power line routes (route 1, 2 and 3) were initially proposed (see Figures below). However, during the public consultation meetings in October and November 2011, three additional route options (route 4, 5 and 6) and two substation sites were proposed (site D and E). This document is meant to update and give background to Interested and Affected Parties (I&APs) on the proposed project (Please see attached maps for proposed route options and substation sites)

#### **PROJECT DESCRIPTOR**

Demeter Transmission substation will be connected to the transmission network via a loop-in and loop-out (“LILO”) from the existing Apollo – Pluto 400kV network.

The project area straddles City of Johannesburg, Mogale City and City of Tshwane.

#### **ROUTE OPTIONS**

- **Route 1:** 2 x 400kV power lines will connect to Apollo – Pluto 400kV lines on Rietfontein 532JQ. The lines will run in a south-westerly direction up to Nietgedacht 535JQ portion 2 and Zandspruit IQ 191 portion 36 & 4 (Lion Park). The lines will loop in and out of Substation A on these farms.
- **Route 2:** 2 x 400kV power lines will connect to Apollo – Pluto 400kV lines on Rietfontein 532JQ. The lines will run in a south-westerly direction up to Nietgedacht 535JQ portion 2 and Zandspruit IQ 191 portion 36 & 4 (Lion Park). The lines will then loop in and out of substation A, or proceed to Zandspruit portion 56,105 & 121 where they will loop in and out of substation B on Zandspruit portion 56,105 & 121
- **Route 3:** 2 x 400kV lines will connect to the Apollo – Pluto 400kV lines on Tweefontein 523JQ. Then lines will then run south through Zwartkops, Driefontein and Rietfontein 189 IQ portion 3, 53, 142 & Remainder. The lines will then loop in and out of substation C on Rietfontein 189 IQ.

- **Route 4:** 2 x 400kV lines will connect to Apollo – Pluto 400kV lines on Rietfontein 532JQ. The lines will then run south-westerly through Nietgedacht 535JQ, Bultfontein 533JQ. The lines will loop in and out at the substation D on Nietgedacht 535JQ, or alternatively proceed to Rietfontein 189 IQ portion 3, 53,142 & remainder (Whitestone) and will loop in and out of substation C on Rietfontein 189 IQ portion 3, 53,142 & remainder (Whitestone).
- **Route 5:** 2 x 400kV will connect to Apollo – Pluto 400kV lines on the farm Lindley 528JQ. The lines will run underground through the farms Lindley 528JQ, Bultfontein 533 JQ. At 6th Road the lines will emerge on the farm Bultfontein 533LQ. The lines will then loop in and out at substation E on the farm Bultfontein 533JQ. Alternatively the lines will proceed south-westerly through Nooitgedacht 524 IQ IQ to Rietfontein 189 IQ portion 3, 53,142 & remainder (Whitestone) and will loop in and out of substation C on Rietfontein 189 IQ portion 3, 53,142 & remainder (Whitestone)
- **Route 6:** 2 x 400kV power lines will connect to the Apollo – Pluto 400kV lines on Lindley 528JQ. The lines will run south through Lindley 528JQ, Zwartkops 523JQ and Rietfontein 189 IQ portion 3, 53,142 & 121. The lines will loop in and out of substation C on Rietfontein 189 IQ portion 3, 53,142 & remainder (Whitestone)

#### SUBSTATION LOCATION

Substation Option	Farm Name and portions
Site A	Zandspruit 191 IQ (4 & RE 36) and Nietgedacht 535 JQ (2)
Site B	Zandspruit 191 IQ (42,56,67,105 and 121)
Site C	Rietfontein 189 IQ (3,49,305 and Reminder)
Site D	Nietgedacht 535 IQ (22,68 and 69)
Site E	Bultfontein 533 JQ (58, 59 and Reminder)

#### TECHNICAL DETAILS

- 3 x 315 MVA, 400kV/88kV Demeter Substation with a footprint of approximately 500m x 500m (25ha)
- 2 x 400kV power lines which will loop in and out of the existing 400kV Apollo – Pluto power line to the proposed Demeter Substation
  - The power line tower will be a steel structure
  - The height of the poles will be between 29 and 32m above ground
  - The average distance between the poles will be 300-350 meters
  - The servitude will be 27.5m on each side of the pole = 55m per line, the total servitude for the two lines will be 110m
- Telecommunications tower within the substation yard, approximately 45m
- Access road to the newly proposed substation
- Control building and an oil dam

## APPLICANT

### Eskom SOC Holdings Limited

Megawatt Park

Maxwell Drive

Sunninghill

## ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)

### Fourth Element (Pty) Ltd

18 Clamart Road

Richmond

Johannesburg 2092

## SPECIALIST STUDIES

- Biodiversity
- Social
- Visual
- Economy
- Avifauna (Birds)
- Wetland and Rivers
- Heritage

## HOW TO GET INVOLVED

- Respond to relevant newspaper advertisements that were placed in your area
- Complete and submit the registration sheet that are provided to at meeting and attached to documents.
- Provide us with your contact details via telephone, E-mail, fax or posted
- Attend the public participation events that will be held during the process
- Review the project documentation that will be placed at suitable venues in the area.

## CONTACT INFORMATION

### Fourth Element (Pty) Ltd

PO Box 3300

Houghton 2041

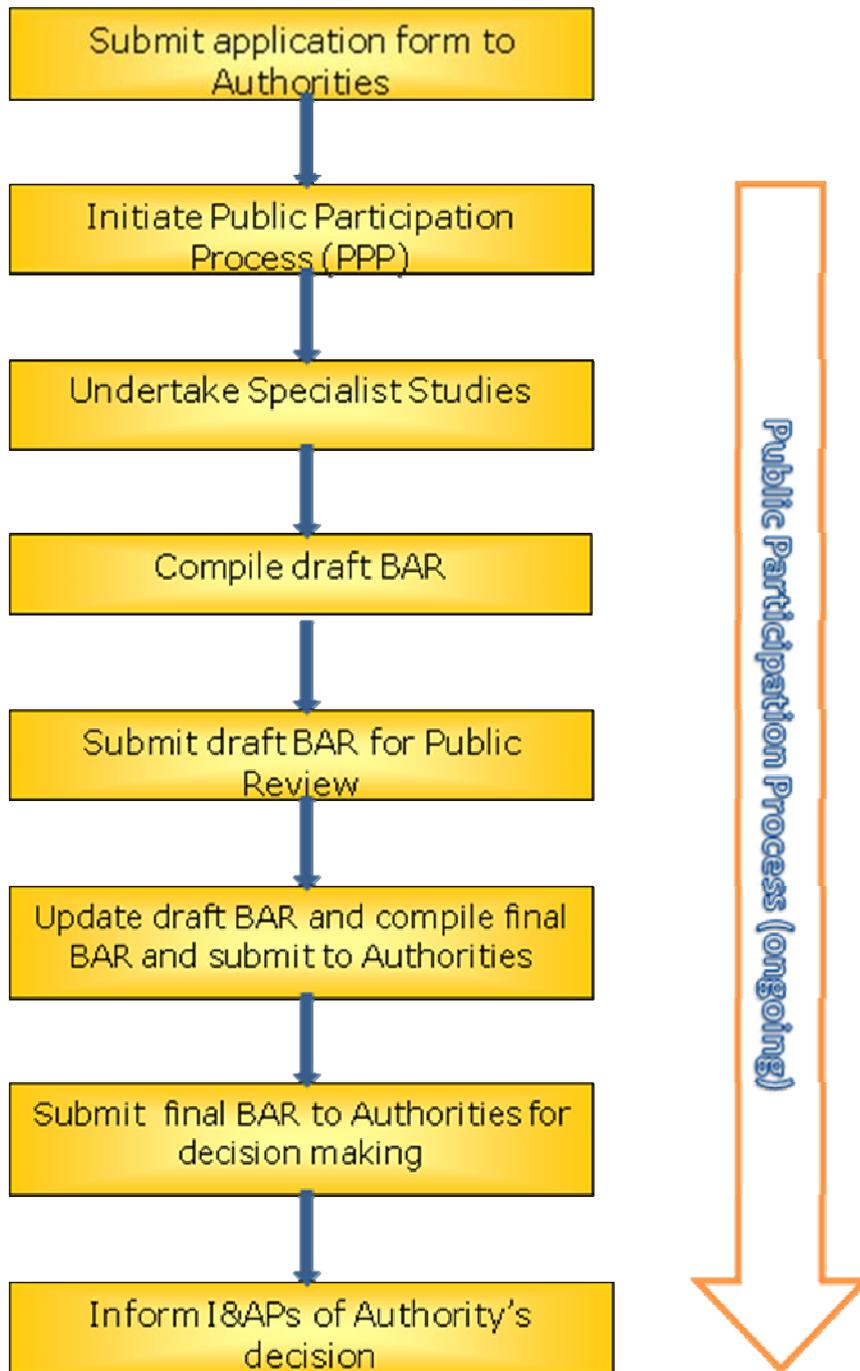
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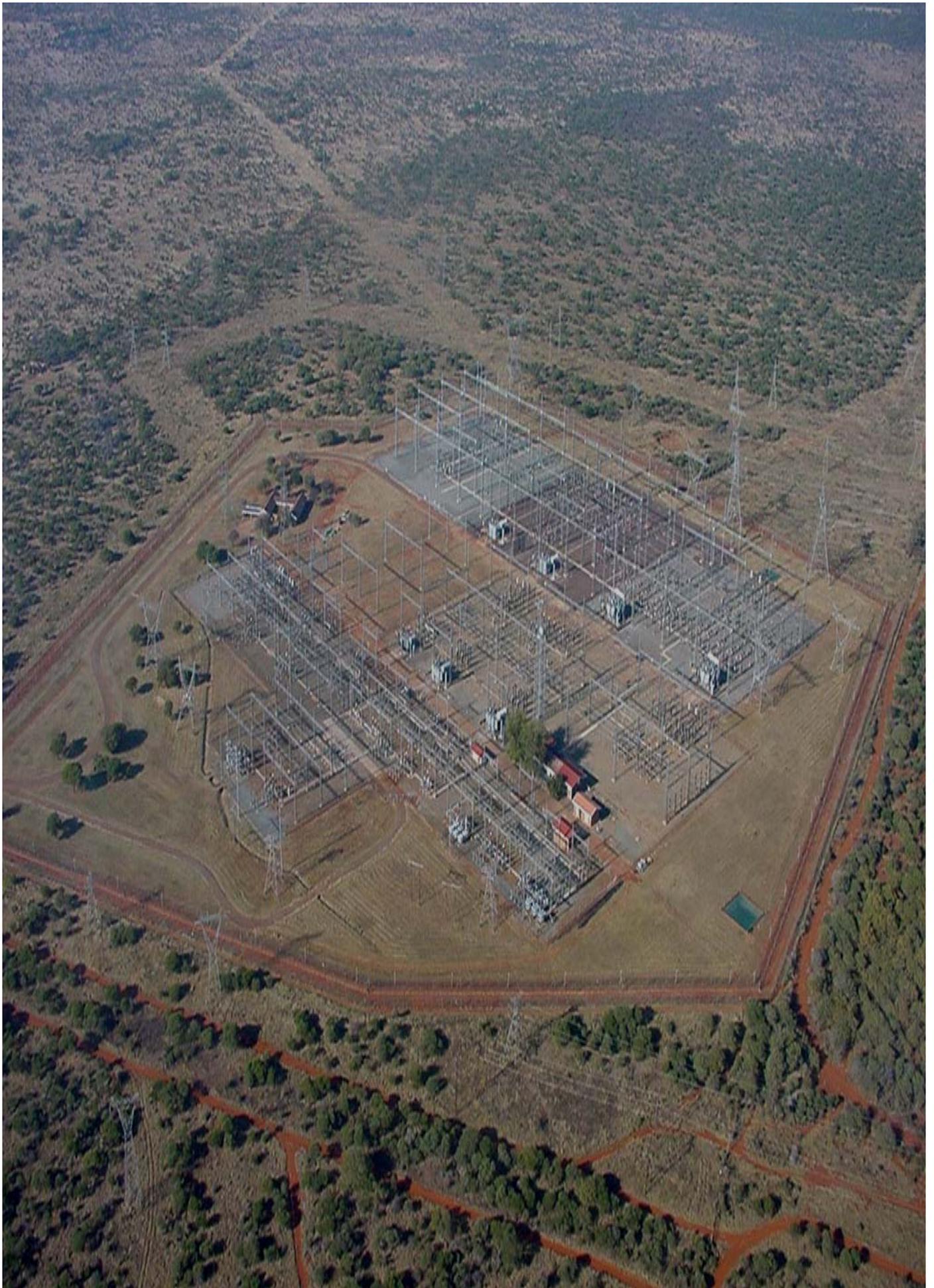
Fax: 011 726 3134

Chris le Roux: [chris@fourthelement.co.za](mailto:chris@fourthelement.co.za)

Sheila Muniongo: [sheila@fourthelement.co.za](mailto:sheila@fourthelement.co.za)

## BASIC ASSESSMENT REPORT (BAR) PROCESS





An Example of a 400 kV Substation (Spitskop Substation)

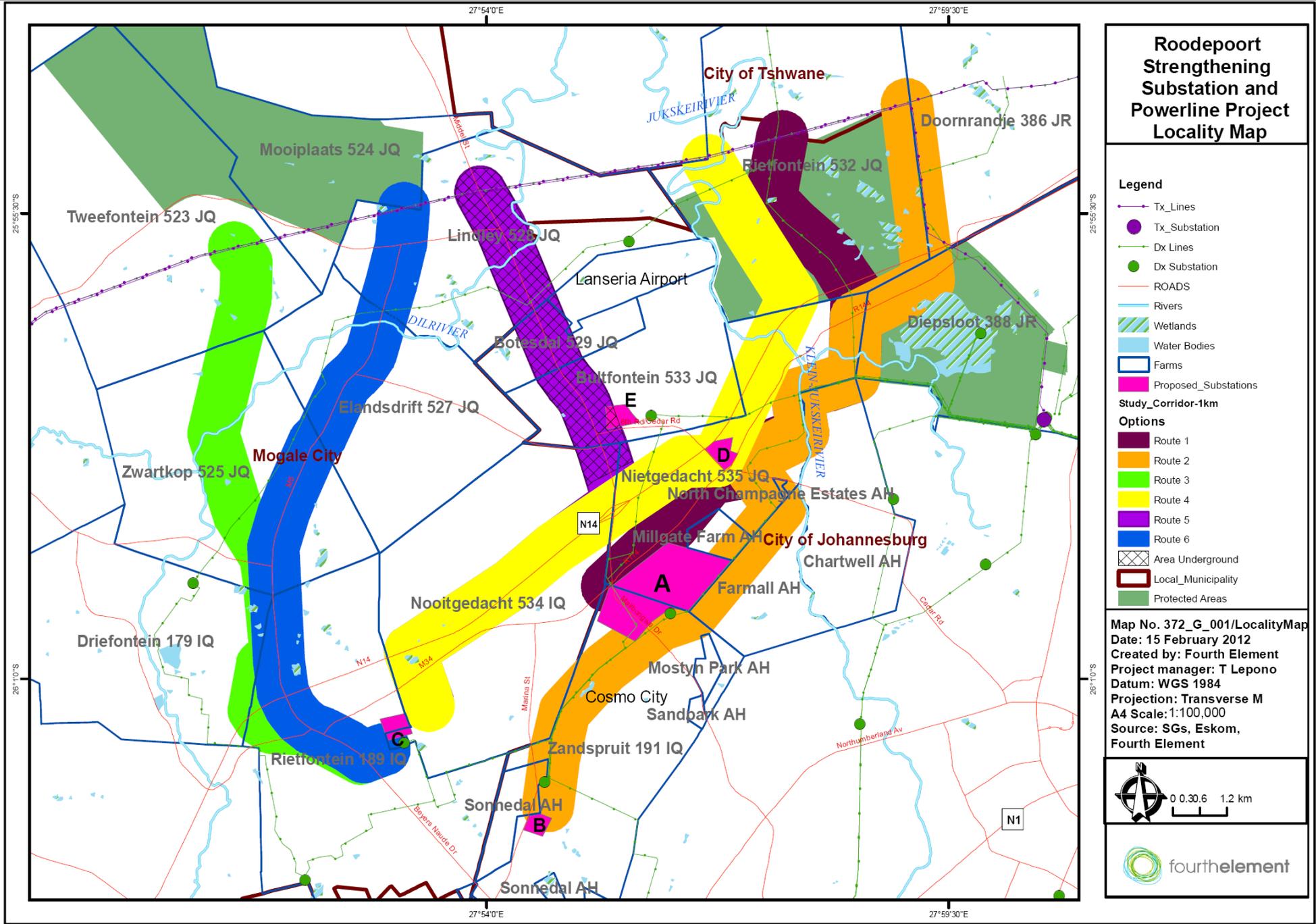


Figure 1: Roodepoort Strengthening Locality Map

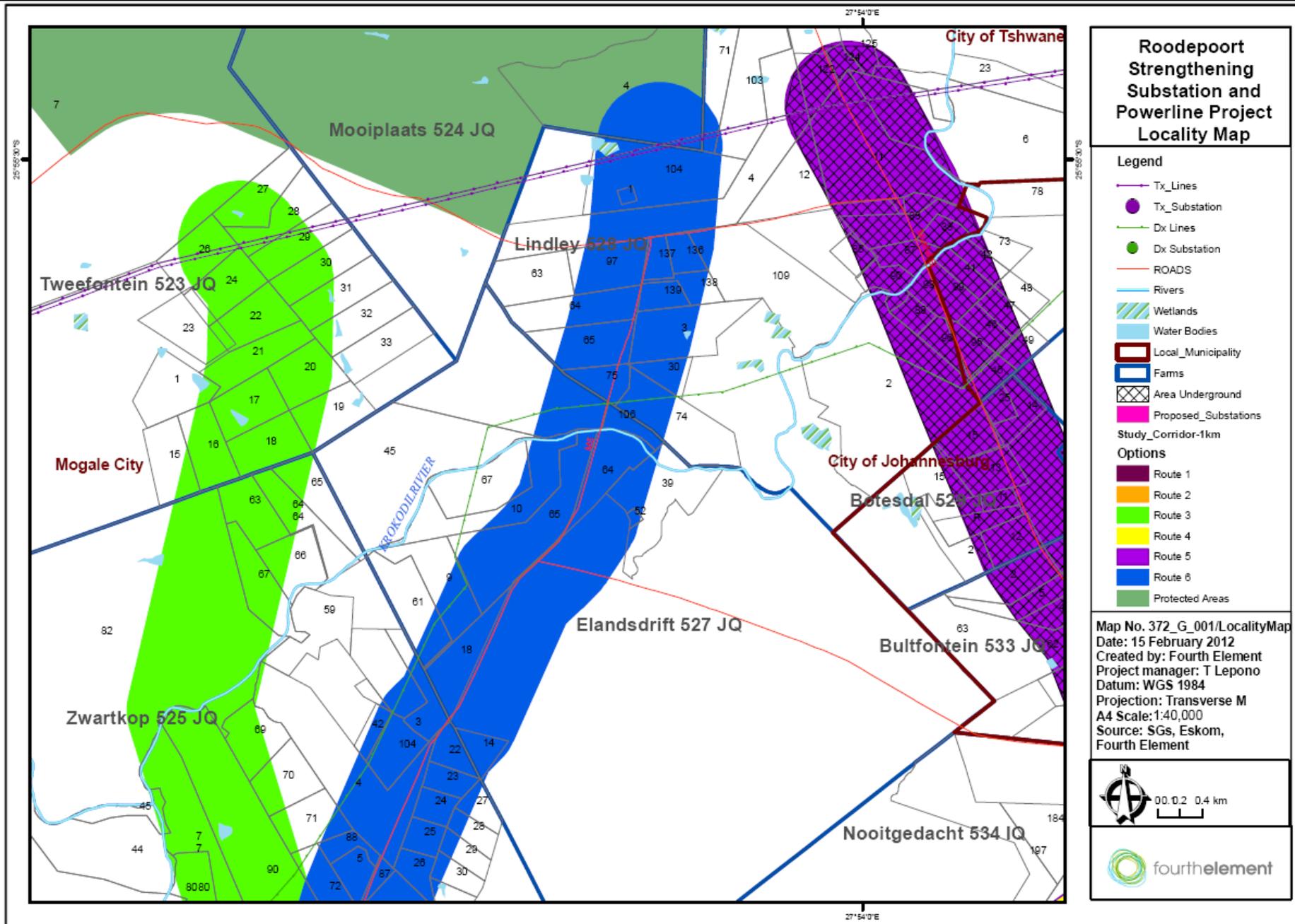


Figure 2: Roodepoort Strengthening Locality Map (North-West of study area)

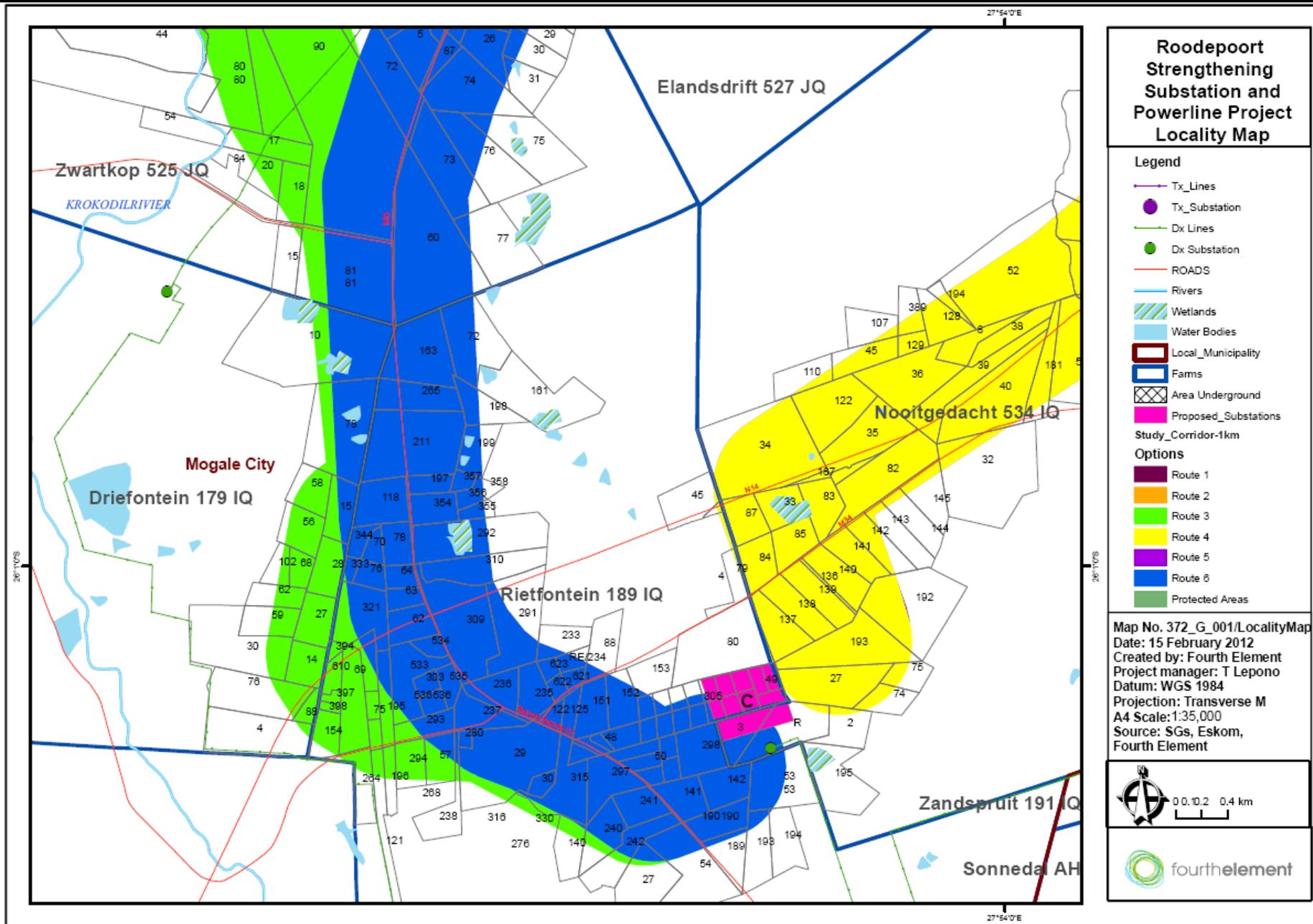


Figure 3: Roodepoort Strengthening Locality Map (South-West of study area)

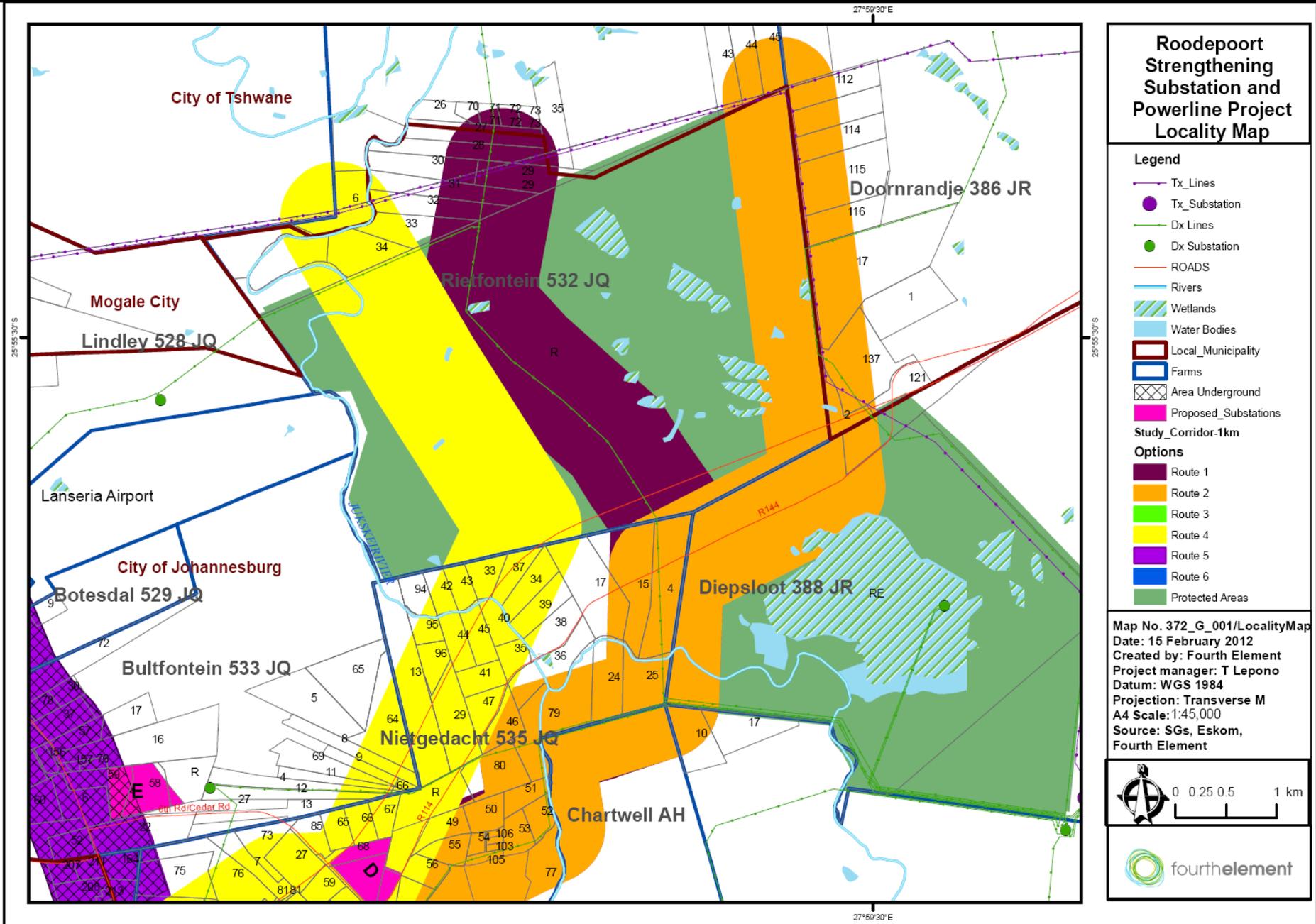


Figure 4: Roodepoort Strengthening Locality Map (North-East of study area)

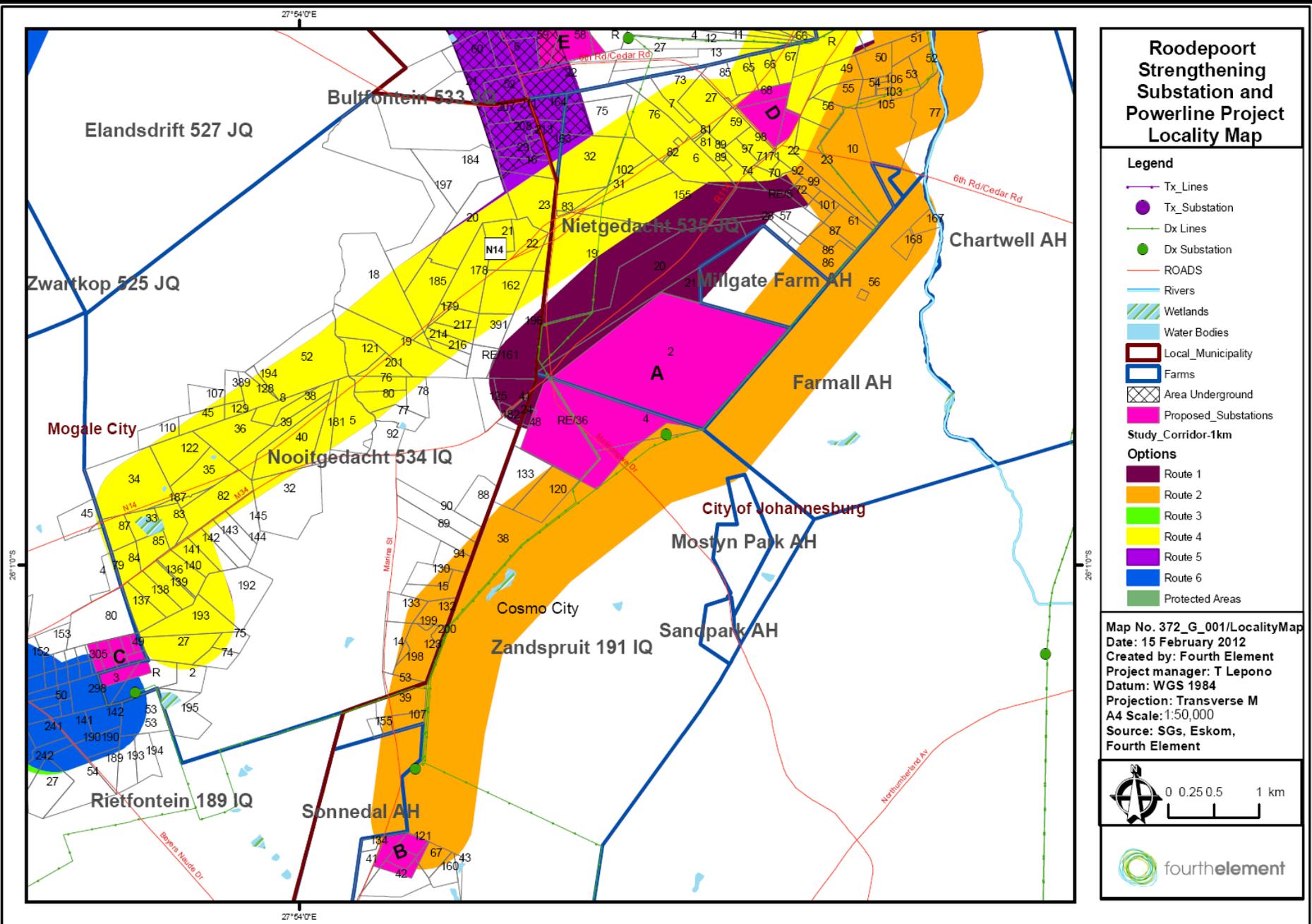


Figure 5: Roodepoort Strengthening Locality Map (South-East of study area)