



Buro Tech Consulting Engineers CC

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To: Bushbuckridge Local Municipality
Tel No: 013 004 0291
For Att: Mr. Lucas Seshabela
Email: lseshabela@yahoo.co.uk
Date: 11 Nov 2022

From: Nico van Wyk
Cell No: 082 600 8328
Email: nicovw@burotech.co.za
Page: 1 of 17
Ref: PL06-X3/DSN

**RE: PROPOSED TOWNSHIP DEVELOPMENT – GREATER SEVILLE EXTENSION 3,
SITUATED ON REMAINDER OF PORTION 1 AND PORTION 2 OF THE FARM
SEVILLE 224 KU
ELECTRICAL SERVICES – BASIC OUTLINE SERVICES REPORT – Version 2**

Dear Mr Baloyi,

Enclosed please find for your information and attention the basic outline services report for the electrical services as requested.

Update Notes

Version

01 :	24 August 2022	Original Issue
02 :	11 November 2022	Report updated to latest Layout, reserved township names & land description.

Kindly contact us should any additional information be required.

Yours Faithfully

Nico van Wyk (Pr. Eng)

Cc: Nil

Enclosed: Report Version 2

Members: NJS van Wyk Pr Eng B Sc (Ing) (Elek) MSAACE MSAIEE MIESSA
CK 92/05979/23



Registered Firm: CESA
Soli Deo Gloria



ELECTRICAL SERVICES

BASIC OUTLINE SERVICES REPORT

PROPOSED TOWNSHIP DEVELOPMENT GREATER SEVILLE X3

SITUATED ON REMAINDER OF PORTION 1 AND
PORTION 2 OF THE FARM SEVILLE 224 KU



PREPARED BY:

BURO TECH CONSULTING ENGINEERS CC
PO Box 59887
KAREN PARK
0118

Tel: 012 542 1010
Email: burotech@burotech.co.za



PREPARED FOR:

Bushbuckridge Local Municipality
R533 Graskop Road (Opposite
Mapulaneng DLTC)
Bushbuckridge
1280

Tel: 013 004 0291
Email: lseshabela@yahoo.co.uk

DATE: 11 Nov 2022
Version 2

PROJECT: PL06-X3

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PROPOSED TOWNSHIP DEVELOPMENT – GREATER SEVILLE X3, SITUATED ON R/PORION 1 AND PORTION 2 OF THE FARM SEVILLE 224 KU ELECTRICAL SERVICES– BASIC OUTLINE SERVICES REPORT

Date: 11 Nov 2022
Version 2

1. Introduction

Buro Tech Consulting Engineers was appointed on 28 July 2022 as specialist electrical engineers by the Bushbuckridge Local Municipality for the proposed development of Greater Seville X3, situated on Remainder of Portion 1 and Portion 2 of the Farm Seville 224 KU.

This report is based on the following information received from:

- Feedback form Eskom dated 08 & 11 August 2022
- Bushbuckridge Local Municipality on 15 August 2022 with updates on 07 November 2022
- Site visit on 23 August 2022

The locality of the site is indicated below.

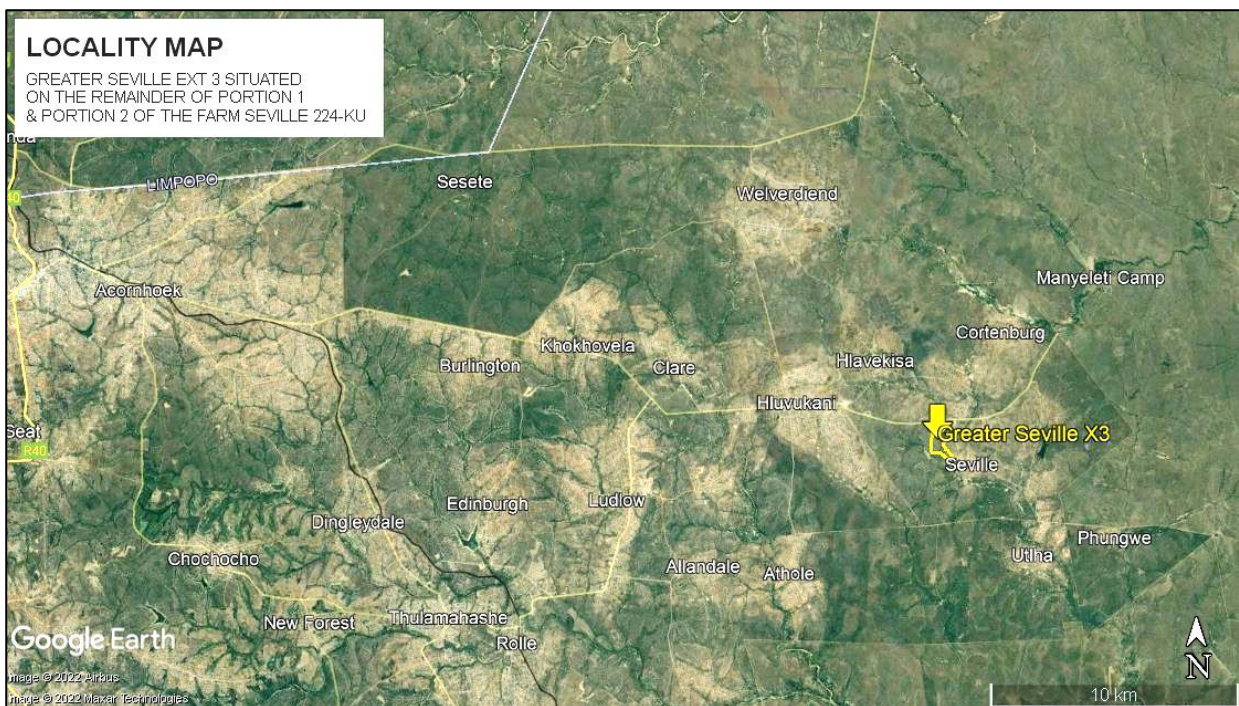
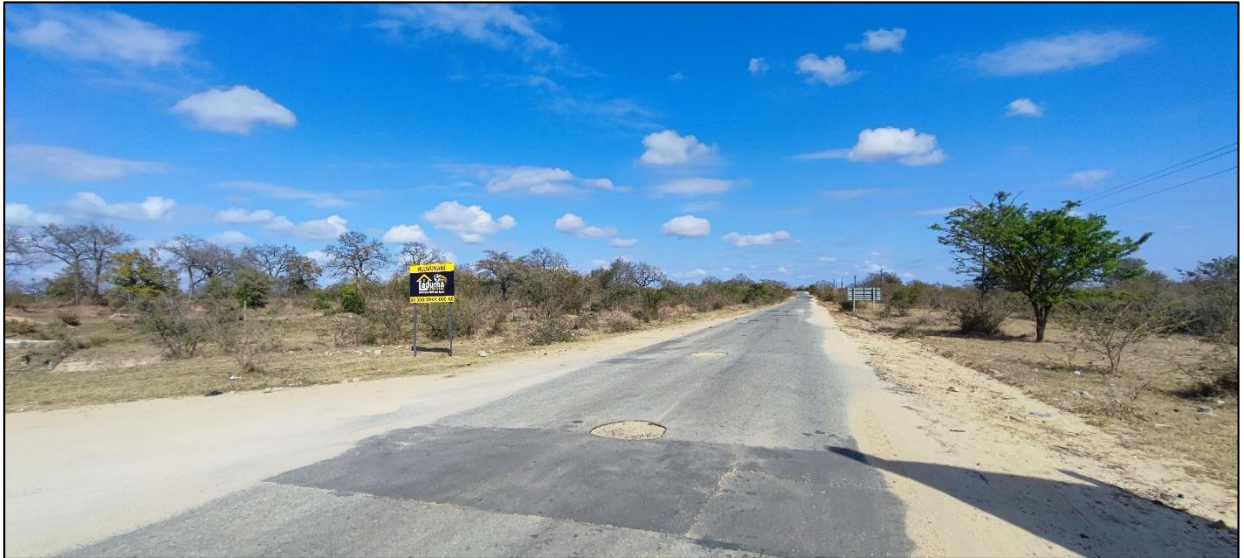


Image 1: Locality Map – Greater Seville Extension 3

2. Brief on Existing Networks

Eskom is the supply authority in the area and have electrical infrastructure servicing adjacent townships in the area.

No electrical infrastructure is currently present on the project site.



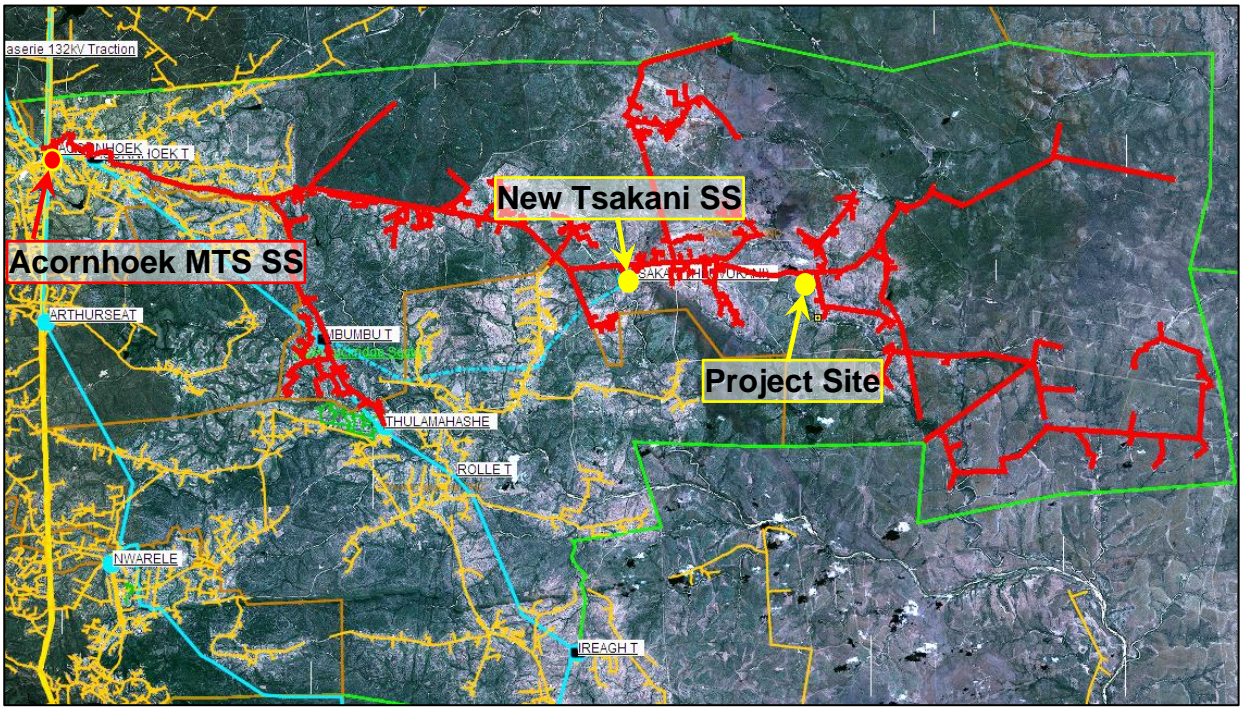
Images 2: Overview of the project site

The area is supplied from the Acornhoek 275/132/22kV MTS Substation via the Acornhoek/Tintswalo 22kV overhead line (shown in red in the image further below).

Refer to images below:



Images 3: The Acornhoek 275/132/22kV MTS Substation



Images 4: Overview of the Acornhoek/Tintswalo 22kV overhead line

Refer to images below for typical medium voltage equipment on the existing Acornhoek/Tintswalo 22kV overhead line in areas adjacent to the project site.



Images 4: The Site, Typical Overhead Medium Voltage (22kV) Lines

3. Estimated Electricity Demand

The electrical demand for Greater Seville Extension 3 is calculated to be:

GREATER SEVILLE X3 (Remainder of Portion 1 and Portion 2 of the Farm Seville 224 Rev 01)									2022-11-07
Erf #	AREA OF ERF Hectare	PROPOSED ZONING	LAND USE COMPONENTS	Units	FAR	DEVELOPABLE FLOOR AREA (m ²)	kVA/unit or VA/m ²	Unit	Total Load (kVA)
261	12.1100 Ha	Res 1	Dwellign Units(s)	261		—	2.00	kVA[ADMD]	522.00 kVA
2	0.2600 Ha	Bus 1	Shops/Retail		0.50	1 300.00 m ²	80.00	VA/m ²	104.00 kVA
1	0.1200 Ha	Institutional	Place of Worship			—	13.80	kVA	13.80 kVA
2	3.0900 Ha	Educational	Creche			—	13.80	kVA	27.60 kVA
2	5.7100 Ha	Public Open Space	Open Space			—	13.80	kVA	27.60 kVA
	4.2100 Ha	Roads	Roads						
SUB-TOTAL									695.00 kVA
<i>Diversity Factor</i>									<i>75%</i>
SUB-TOTAL									521.25 kVA

TOTAL CALCULATED DEMAND 0.52 MVA

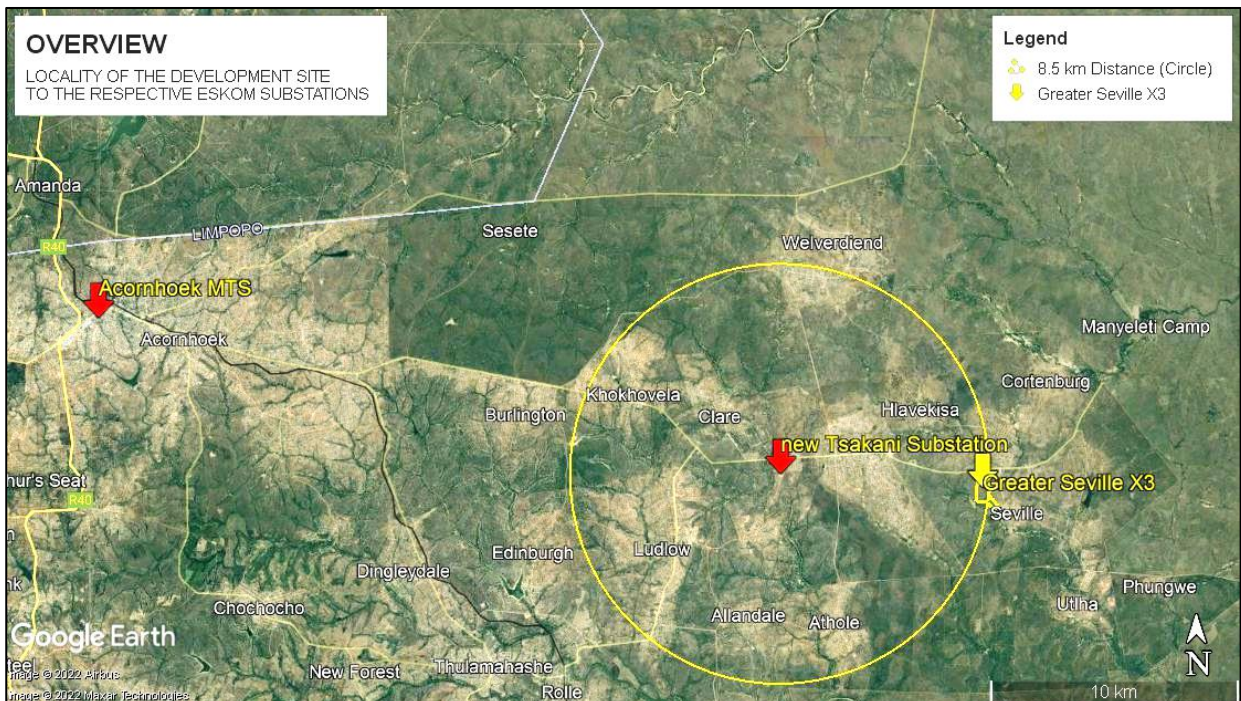
4. Available capacity

Eskom indicated that the Acornhoek MTS Substation have an installed capacity of 2x 40MVA and is currently loaded to 93.9% of firm capacity (thus 37.56MVA).

Eskom indicated that the Acornhoek/Tintswalo 22kV overhead feeder have no spare capacity available.

Eskom indicated that the new Tsakani substation is currently being constructed to:

- De-load the existing Acornhoek/Tintswalo 22kV feeder, and
- unlock additional capacity to the area.



Images 5: Locality of the Project Site with relation to the Eskom Substations

The new Tsakani substation will be located towards Hluvukani have an installed capacity of 1x 20MVA and is scheduled for completion by the end of the 2023/24 financial year.

Refer to Annexure 01 for Eskom correspondence dated 08 & 11 August 2022.

5. Conclusion

The final maximum demand to the new development is calculated to be 0.52 MVA.

The new 1× 20MVA Tsakani substation scheduled for completion in the 2023/24 financial year is intended to unlock additional capacity to the region.

Eskom will require a formal application process to be followed for official feedback and to reserve capacity in this regard.

Annexures:

Annexure 01: Township Layout Plan (Updated) (1 Page)

Annexure 02: Eskom Feedback dated 08 & 11 August 2022 (4 Pages)

Annexure 03: Overview of the Eskom 22kV overhead distribution feeders (1 Page)

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ANNEXURE 01

Township Layout Plan (1 Page)

GREATER SEVILLE EXTENSION 3 TOWNSHIP LAYOUT PLAN

SITUATED ON A PORTION OF THE REMAINDER OF PORTION 1 AND THE REMAINDER OF PORTION 2 OF THE FARM SEVILLE 224 KU

LOCALITY MAP



LEGEND

ZONING	LAND USES	NO. OF ERF	AREA (HA)	AREA (%)	NOTATION
RESIDENTIAL 1	DWELLING UNIT/S	261	12.11	47.49	
BUSINESS 1	SHOPS/RETAIL	2	0.26	1.02	
INSTITUTIONAL	CHURCH	1	0.12	0.47	
EDUCATIONAL	SECONDARY SCHOOL/CRECHE	2	3.09	12.12	
PUBLIC OPEN SPACE	OPEN SPACE	2	5.71	22.39	
ROAD PURPOSES	PROPOSED ROADS		4.21	16.51	
TOTAL DEVELOPABLE AREA		268	25.50	100%	

NOTES:

1. Represents Proposed Township Boundary.
2. Road Reserves: 12m & 15m
3. 1:100 Year Floodline
4. 20m Floodline Buffer

SURVEY NOTES:

CONTOUR INTERVALS 1 M IN ACCORDANCE TO REG. ORDINANCE SURVEYOR GENERAL SYSTEM WGS 84

CLIENT:

BUSHBUCKRIDGE LOCAL MUNICIPALITY



CONSULTANTS NAME SIGNATURE

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DESIGNED: NYIKO BALOYI
Pr.Pln A/3125/2022
CHECKED: SAMUEL CHAUKE
Pr.Pln A/3130/2022
DRAWING No: 202206-SEV/EXT2/REV1
DATE: 04/11/2022

SOIL CLASSIFICATION

GEOTECHNICAL INFORMATION

LAND INFORMATION

SCALE

SITE CLASS	DESCRIPTION	DEVELOPMENT POTENTIAL	CONSTRUCTION TYPE	FOUNDATION RECOMMENDATION

SIGNED:

SIGNED:

1 : 750 (A1 Format)
1 : 1 500 (A2 Format)
1 : 3 000 (A3 Format)
1 : 6 000 (A4 Format)



COMPILED BY:

ANNEXURE 02

Eskom Feedback (4 Pages)

Ralph Gordon

From: Cyril Thete <TheteC@eskom.co.za>
Sent: 11 August 2022 09:12
To: Ralph Gordon
Subject: RE: Seville - Overview of Electrical networks

Sensitivity: Confidential

Good day Ralph,

The installed capacity will be 1x20MVA
The substation should be completed by the end of 2023/24 Financial Year.

Regards
Cyril Thete

From: Ralph Gordon <ralphg@burotech.co.za>
Sent: Monday, 08 August 2022 16:01
To: Cyril Thete <TheteC@eskom.co.za>
Subject: [CAUTION:EXTERNAL EMAIL] - RE: Seville - Overview of Electrical networks
Sensitivity: Confidential

Good day Cyril,

Thank you for your fast response, much appreciated!

Regarding the Tsakani Substation:
What will be the installed capacity?
When is the substation expected to be commissioned?

Best Regards,



Ralph Gordon
Buro Tech Consulting Engineers
Tel: +27 (012) 542 1010
Cell: 082 600 2537
Ralphg@burotech.co.za
www.burotech.co.za

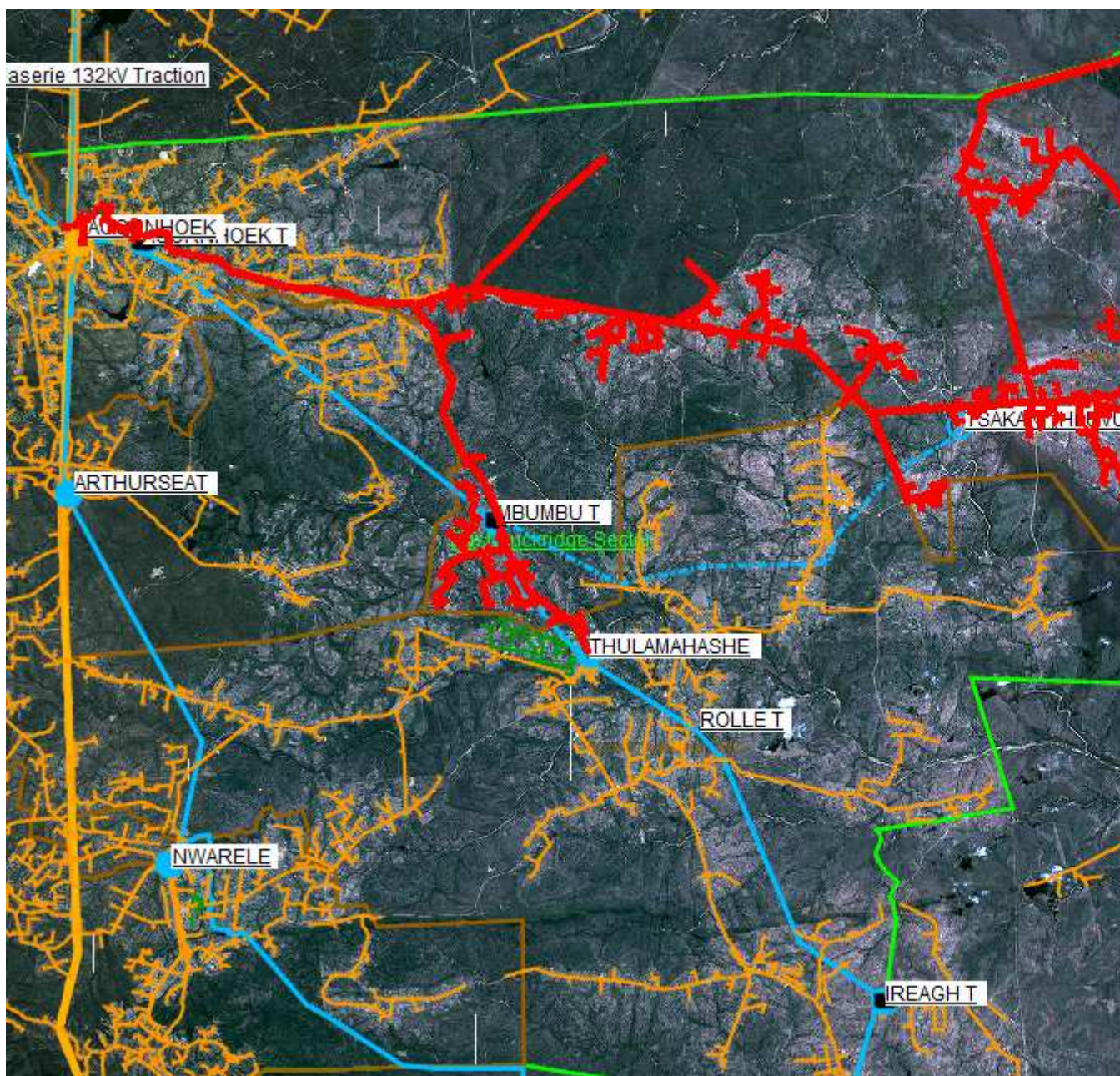
From: Cyril Thete [<mailto:TheteC@eskom.co.za>]
Sent: 08 August 2022 14:21
To: Ralph Gordon <ralphg@burotech.co.za>
Subject: RE: Seville - Overview of Electrical networks
Sensitivity: Confidential

Good day Ralph

Below is the information I managed to gather as per your request.

- Line name - Acornhoek/Tintswalo 22kV Overhead Line
- Line code - AT

- Operating voltage – 22kV
- Installed capacity – (Not available – Please see the next point)
- Spare capacity – **The feeder is currently overloading.**
- Substation Name & Voltage Levels - Acornhoek 275/132/22kV MTS Substation
- Substation Installed Capacity – 2x40MVA
- Substation spare capacity – **The substation is currently loaded at 37.56MVA**
- *We have **Tsakani Substation** that is under construction at the moment and it is In Hluvukani, about 10km from Seville, this substation is going to solve the capacity constraints in that area including de-loading **AT feeder** and I am not aware of any upgrades planned at Acornhoek MTS (if that is what you are asking).*
- I have attached a snapshot of the AT feeder for you. AT Feeder is highlighted In red and in the attachment I have also indicated where Seville Project area is and that will show you how far is it from the feeder.



Regards
Cyril Thete

From: Ralph Gordon <ralphg@burotech.co.za>
Sent: Monday, 08 August 2022 11:09

To: Cyril Thete <TheteC@eskom.co.za>

Subject: [CAUTION:EXTERNAL EMAIL] - Seville - Overview of Electrical networks

Sensitivity: Confidential

Good morning Cyril,

I request your assistance with the following:

Introduction

Buro Tech has been appointed to submit a report giving an overview of the electrical services in the vicinity of the project, capacity availability & an overview of the Eskom masterplan for upgrades in the area to unlock capacity (if available).

Background

The area is earmarked for the development of residential erven with complimentary business, educational & municipal facilities.
The demand will be calculated once the proposed rights are available.

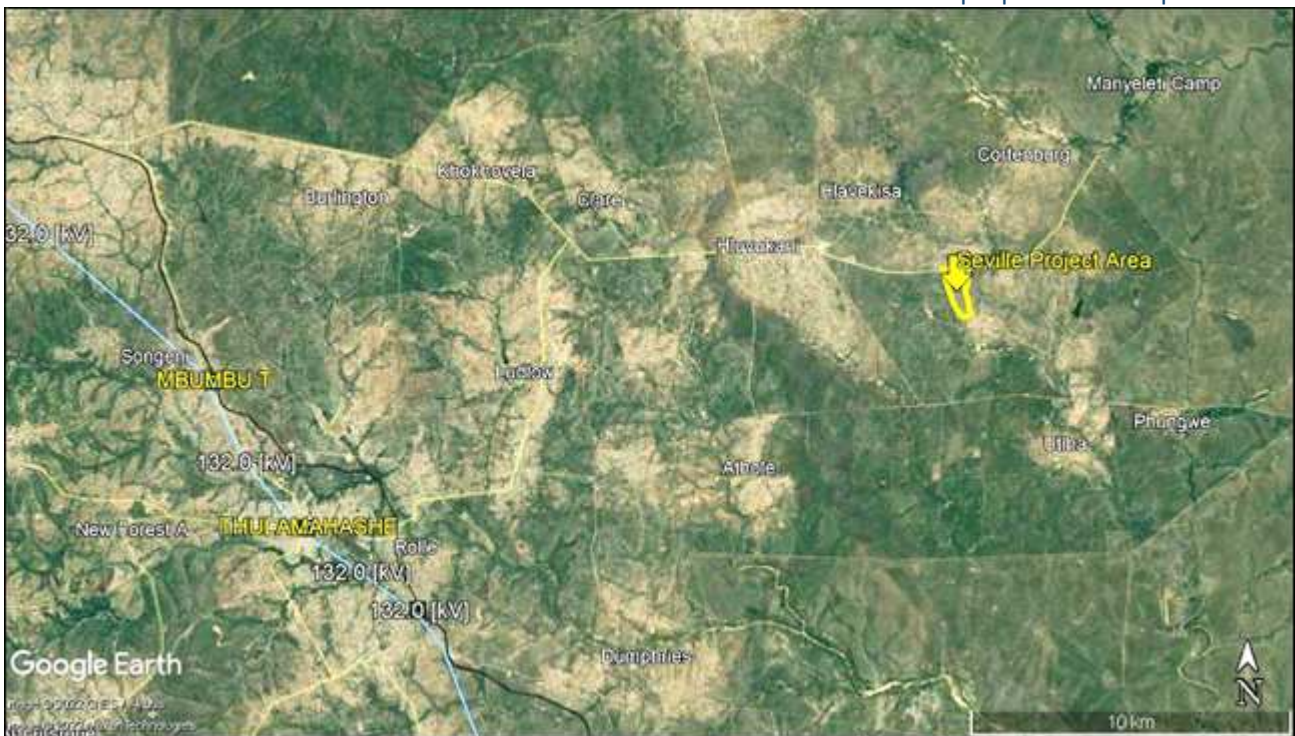
Locality

The proposed development is located at the following coordinates:

24°39'34.24"S

31°24'33.81"E

The Thulamahashe 132kV substation is located ±22km to the South-West of the proposed development.



Information requested

We request Eskom input in terms of the following:

Overview of the feeder line that will be supplying this development,

- Line name,
- line code,
- operating voltage,
- installed capacity,
- spare capacity (if any)
- A drawing indicating the line route if available.

We do not require feedback up to the detail of a planning proposal with network voltage studies, thermal capacity studies, fault levels, etc.

Overview of the distribution substation supplying this area,

- Substation Name & Voltage Levels (*example: Thulamahashe 132/11kV substation*)
- Substation Installed Capacity (*example: 2x10MVA*)
- Substation spare capacity (if any?), Perhaps the substation is loaded over firm capacity already? (*please advise*)
- Any substation upgrades envisaged in term of the Eskom masterplan for the area? (*if any*)

I acknowledge for more detailed studies & cost estimates the formal application process need to be followed, and will initiate the applications with Eskom, once the project reach this stage.

I look forward to your assistance in this regard.
Many thanks.

Best Regards,



Ralph Gordon
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www.burotech.co.za

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ANNEXURE 03

OVERVIEW:

**Eskom Acornhoek/Tintswalo 22kV overhead feeder
(1 Page)**

aserie 132kV Traction

ACORNHOEK IOEKT

ARTHURSEAT

MBUMBUT

THULAMAHASHE

ROLLET

NWARELE

IREAGHT

ISAKA THERMOPUR

Seville

