THE PROVINCE OF GAUTENG

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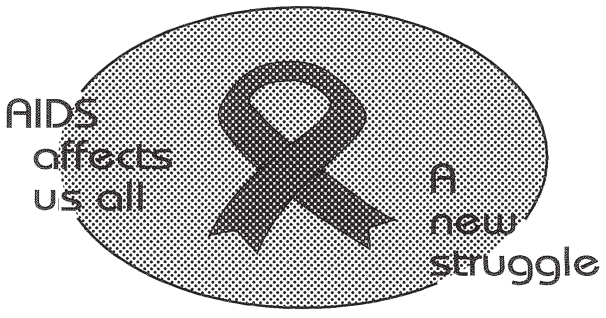
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Vol: 31 **PRETORIA** **No: 449**
26 NOVEMBER 2025
26 NOVEMBER 2025

PART 1 OF 5

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Closing times for **ORDINARY WEEKLY** *GAUTENG PROVINCIAL GAZETTE* 2025

*The closing time is **15:00** sharp on the following days:*

- **18 December,** Wednesday for the issue of Wednesday **01 January 2025**
- **24 December,** Tuesday for the issue of Wednesday **08 January 2025**
- **31 December,** Tuesday for the issue of Wednesday **15 January 2025**
- **08 January,** Wednesday for the issue of Wednesday **22 January 2025**
- **15 January,** Wednesday for the issue of Wednesday **29 January 2025**
- **22 January,** Wednesday for the issue of Wednesday **05 February 2025**
- **29 January,** Wednesday for the issue of Wednesday **12 February 2025**
- **05 February,** Wednesday for the issue of Wednesday **19 February 2025**
- **12 February,** Wednesday for the issue of Wednesday **26 February 2025**
- **19 February,** Wednesday for the issue of Wednesday **05 March 2025**
- **26 February,** Wednesday for the issue of Wednesday **12 March 2025**
- **05 March,** Wednesday for the issue of Wednesday **19 March 2025**
- **12 March,** Wednesday for the issue of Wednesday **26 March 2025**
- **19 March,** Wednesday for the issue of Wednesday **02 April 2025**
- **26 March,** Wednesday for the issue of Wednesday **09 April 2025**
- **02 April,** Wednesday for the issue of Wednesday **16 April 2025**
- **09 April,** Wednesday for the issue of Wednesday **23 April 2025**
- **16 April,** Wednesday for the issue of Wednesday **30 April 2025**
- **23 April,** Wednesday for the issue of Wednesday **07 May 2025**
- **30 April,** Wednesday for the issue of Wednesday **14 May 2025**
- **07 May,** Tuesday for the issue of Wednesday **21 May 2025**
- **14 May,** Wednesday for the issue of Wednesday **28 May 2025**
- **21 May,** Wednesday for the issue of Wednesday **04 June 2025**
- **28 May,** Wednesday for the issue of Wednesday **11 June 2025**
- **04 June,** Wednesday for the issue of Wednesday **18 June 2025**
- **11 June,** Wednesday for the issue of Wednesday **25 June 2025**
- **18 June,** Wednesday for the issue of Wednesday **02 July 2025**
- **25 June,** Wednesday for the issue of Wednesday **09 July 2025**
- **02 July,** Wednesday for the issue of Wednesday **16 July 2025**
- **09 July,** Wednesday for the issue of Wednesday **23 July 2025**
- **16 July,** Wednesday for the issue of Wednesday **30 July 2025**
- **23 July,** Wednesday for the issue of Wednesday **06 August 2025**
- **30 July,** Wednesday for the issue of Wednesday **13 August 2025**
- **06 August,** Tuesday for the issue of Wednesday **20 August 2025**
- **13 August,** Wednesday for the issue of Wednesday **27 August 2025**
- **20 August,** Wednesday for the issue of Wednesday **03 September 2025**
- **27 August,** Wednesday for the issue of Wednesday **10 September 2025**
- **03 September,** Wednesday for the issue of Wednesday **17 September 2025**
- **10 September,** Wednesday for the issue of Wednesday **24 September 2025**
- **17 September,** Wednesday for the issue of Wednesday **01 October 2025**
- **23 September,** Tuesday for the issue of Wednesday **08 October 2025**
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- **10 December,** Wednesday for the issue of Wednesday **24 December 2025**
- **17 December,** Wednesday for the issue of Wednesday **31 December 2025**

General Notices • Algemene Kennisgewings

GENERAL NOTICE 952 OF 2025

CITY OF EKURHULENI METROPOLITAN MUNICIPALITY

NOTICE OF PERMANENT PARK CLOSURE OF PROPOSED PORTION 1 OF ERF 2403 GREENFIELDS TOWNSHIP APPROXIMATELY 8642,39 m² IN EXTENT THE CONSTRUCTION OF THE GREENFIELDS TAXI RANK BY TRANSPORT PLANNING AND PROVISION DEPARTMENT (WARD 58), IN TERMS OF SECTION 67 AND 68 OF LOCAL GOVERNMENT ORDINANCE 17 OF 1939, AS WELL AS SECTIONS 10, 11 AND 12 OF THE CITY OF EKURHULENI METROPOLITAN MUNICIPALITY SPATIAL PLANNING AND LAND USE MANAGEMENT BY-LAW 2019.

I, **Katlego Makhura** being the authorized Agent hereby give notice in terms of the provisions of Section 67 And 68 of the Local Government Ordinance, 1939 (Ordinance 17 of 1939), as amended, as well as Sections 10, 11 and 12 of the City of Ekurhuleni Metropolitan Municipality Spatial Planning and Land Use Management By-Law 2019, that the City of Ekurhuleni Metropolitan Municipality intends to permanently close Proposed Portion 1 of Erf 2403 Greenfields Township.

A plan showing the position and boundaries of Proposed Portion 1 of Erf 2403 Greenfields Township, will be open for inspection for a period of 30 days in the office of the Real Estate Department, Level 3, Alberton Civic Centre, Alwyn Taljaard Street, Alberton from **19 November 2025** to **20 December 2025** on Monday to Fridays from 08:00 to 16:30 after the publication of the first advertisement in the Beeld and Citizen Newspapers.

Any person who has any objection to the proposed closure of the said erf, roads and street or who will have any claim for compensation if the aforesaid closure is carried out, shall lodge their objection or claim in writing with the Manager: Real Estate Department (Alberton), Level 3, Alberton Civic Centre, Alwyn Taljaard Street, Alberton, within a period of 30 days from **19 November 2025** to **20 December 2025**.

Closing date for any objections: **20 December 2025.**
Address of applicant: Quadrum Office Park | Building 4 | 50 Constantia Boulevard | Constantia Kloof Extension 28
Telephone No: 076 452 6853 / 065 974 6799
Email: katlego@epitychia.co.za
Dates on which notice will be published: **19 November 2025**
Notice Number: 07/2025

19-26

GENERAL NOTICE 955 OF 2025

NOTICE OF APPLICATION FOR THE REMOVAL OF RESTRICTIVE TITLE CONDITIONS IN TERMS OF SECTION 50 OF THE CITY OF EKURHULENI METROPOLITAN MUNICIPALITY SPATIAL PLANNING AND LAND USE MANAGEMENT BY-LAW, 2019

ERF 417, RACEVIEW

I, Ciska Bezuidenhout, being the authorised agent of the owner of Erf 417, Raceview, situated at 18 Winnipeg Street, Raceview, hereby give notice in terms of Section 10 read with Section 50 of the City of Ekurhuleni Metropolitan Municipality Spatial Planning and Land Use Management By-Law, 2019, that I have applied to the City of Ekurhuleni Metropolitan Municipality (Alberton Sub Section) for the removal of certain conditions contained in Title Deed T83940/2003.

Particulars of the application will lie for inspection during normal office hours at the office of the Area Manager: City Planning Department, Alberton Sub Section of the City of Ekurhuleni Metropolitan Municipality, 11th Floor, Alberton Civic Centre, Alwyn Taljaard Street, Alberton, and at the offices of the authorised agent, for a period of 28 days from 19 November 2025.

Objections to or representations in respect of the application must be lodged with or made in writing to the Area Manager: City Planning Department, Alberton Sub Section of the City of Ekurhuleni Metropolitan Municipality, 11th Floor, Alberton Civic Centre, Alwyn Taljaard Street, Alberton, or P.O. Box 4, Alberton, 1450, or by email to refiloe.malefane@ekurhuleni.gov.za, within a period of 28 days from 19 November 2025.

Address of the authorised agent: 2 Hornbill Street, Meyersdal, Alberton / Postnet Suite 107, Private Bag X30, Alberton, 1450 / 082-774-4939 / ciska@ciskab.co.za

19-26

GENERAL NOTICE 956 OF 2025

NOTICE OF APPLICATION FOR THE REMOVAL OF RESTRICTIVE TITLE CONDITIONS IN TERMS OF SECTION 50 OF THE CITY OF EKURHULENI METROPOLITAN MUNICIPALITY SPATIAL PLANNING AND LAND USE MANAGEMENT BY-LAW, 2019

ERF 11, RACEVIEW

I, Ciska Bezuidenhout, being the authorised agent of the owner of Erf 11, Raceview, situated at 83 Padstow Street, Raceview, hereby give notice in terms of Section 10 read with Section 50 of the City of Ekurhuleni Metropolitan Municipality Spatial Planning and Land Use Management By-Law, 2019, that I have applied to the City of Ekurhuleni Metropolitan Municipality (Alberton Sub Section) for the removal of certain conditions contained in Title Deed T10039/2023.

Particulars of the application will lie for inspection during normal office hours at the office of the Area Manager: City Planning Department, Alberton Sub Section of the City of Ekurhuleni Metropolitan Municipality, 11th Floor, Alberton Civic Centre, Alwyn Taljaard Street, Alberton, and at the offices of the authorised agent, for a period of 28 days from 19 November 2025.

Objections to or representations in respect of the application must be lodged with or made in writing to the Area Manager: City Planning Department, Alberton Sub Section of the City of Ekurhuleni Metropolitan Municipality, 11th Floor, Alberton Civic Centre, Alwyn Taljaard Street, Alberton, or P.O. Box 4, Alberton, 1450, or by email to refiloe.malefane@ekurhuleni.gov.za, within a period of 28 days from 19 November 2025.

Address of the authorised agent: 2 Hornbill Street, Meyersdal, Alberton / Postnet Suite 107, Private Bag X30, Alberton, 1450 / 082-774-4939 / ciska@ciskab.co.za

19-26

GENERAL NOTICE 963 OF 2025

NOTICE OF APPLICATION FOR THE REMOVAL OF RESTRICTIVE TITLE CONDITIONS IN TERMS OF SECTION 50 OF THE CITY OF EKURHULENI METROPOLITAN MUNICIPALITY SPATIAL PLANNING AND LAND USE MANAGEMENT BY-LAW, 2019

ERF 1063, RANDHART, EXTENSION 1

I, Ciska Bezuidenhout, being the authorised agent of the owner of Erf 1063, Randhart, Extension 1, situated at 10 Grosskopf Street, Randhart, Extension 1, hereby give notice in terms of Section 10 read with Section 50 of the City of Ekurhuleni Metropolitan Municipality Spatial Planning and Land Use Management By-Law, 2019, that I have applied to the City of Ekurhuleni Metropolitan Municipality (Alberton Sub Section) for the removal of certain conditions contained in Title Deed T21024/2024.

Particulars of the application will lie for inspection during normal office hours at the office of the Area Manager: City Planning Department, Alberton Sub Section of the City of Ekurhuleni Metropolitan Municipality, 11th Floor, Alberton Civic Centre, Alwyn Taljaard Street, Alberton, and at the offices of the authorised agent, for a period of 28 days from 19 November 2025.

Objections to or representations in respect of the application must be lodged with or made in writing to the Area Manager: City Planning Department, Alberton Sub Section of the City of Ekurhuleni Metropolitan Municipality, 11th Floor, Alberton Civic Centre, Alwyn Taljaard Street, Alberton, or P.O. Box 4, Alberton, 1450, or by email to refiloe.malefane@ekurhuleni.gov.za, within a period of 28 days from 19 November 2025.

Address of the authorised agent: 2 Hornbill Street, Meyersdal, Alberton / Postnet Suite 107, Private Bag X30, Alberton, 1450 / 082-774-4939 / ciska@ciskab.co.za

19-26

GENERAL NOTICE 964 OF 2025

NOTICE OF APPLICATION FOR THE REMOVAL OF RESTRICTIVE TITLE CONDITIONS IN TERMS OF SECTION 50 OF THE CITY OF EKURHULENI METROPOLITAN MUNICIPALITY SPATIAL PLANNING AND LAND USE MANAGEMENT BY-LAW, 2019

ERF 5629, BENONI, EXTENSION 16

I, Ciska Bezuidenhout, being the authorised agent of the owner of Erf 5629, Benoni, Extension 16, situated at 78 Wordsworth Road, Benoni, Extension 16, hereby give notice in terms of Section 10 read with Section 50 of the City of Ekurhuleni Metropolitan Municipality Spatial Planning and Land Use Management By-Law, 2019, that I have applied to the City of Ekurhuleni Metropolitan Municipality (Benoni Sub Section) for the removal of certain conditions contained in Title Deed T41453/2013.

Particulars of the application will lie for inspection during normal office hours at the office of the Area Manager: City Planning Department, Benoni Sub Section of the City of Ekurhuleni Metropolitan Municipality, 6th Floor, Benoni Civic Centre, corner Tom Jones Street (Amina Cachalia Street) and Elston Avenue, Benoni, and at the offices of the authorised agent, for a period of 28 days from 19 November 2025.

Objections to or representations in respect of the application must be lodged with or made in writing to the Area Manager: City Planning Department, Benoni Sub Section of the City of Ekurhuleni Metropolitan Municipality, 6th Floor, Benoni Civic Centre, corner Tom Jones Street (Amina Cachalia Street) and Elston Avenue, Benoni, or Private Bag X014, Benoni, 1500, or by email to mdumiseni.mkhize@ekurhuleni.gov.za, within a period of 28 days from 19 November 2025.

Address of the authorised agent: 2 Hornbill Street, Meyersdal, Alberton / Postnet Suite 107, Private Bag X30, Alberton, 1450 / 082-774-4939 / ciska@ciskab.co.za

19-26

GENERAL NOTICE 970 OF 2025

CITY OF JOHANNESBURG

NOTICE OF FINAL APPROVAL OF A SECURITY ACCESS RESTRICTION FOR SECURITY REASONS

Notice is hereby given that the City of Johannesburg, pursuant to the provision of Chapter 7 of the Rationalization of Local Government Affairs Act, 1998, has considered and grants the security access restriction applied for by the 8th Ave Residents Association No. 115. The Security Access Restriction was originally advertised for public comment on 10-07-2024 in the Provincial Gazette for a period of 30 days and all comments and objections were considered. The Security Access Restriction shall become effective from date of publication for a period of two years. In terms of the Municipal Systems Act 32 of 2000 appeals may be made to the Office of the City Manager within 21 days of notification at:

Office of the City Manager

Metro Centre

Council Chamber Wing

158 Civic Boulevard

Braamfontein

citymanager@joburg.org.za

The public is duly advised that in terms of the City's policy relating to these restrictions, no person/guard is permitted to deny any other person or vehicle access to or through any roads that are a subject of this approval. No person/guard is entitled to request or demand proof of identification or to sign any register as a condition of access to an area. Any violation of the conditions of approval (as detailed in the approval documents) for the permit will result in the restriction permit being revoked.

GENERAL NOTICE 971 OF 2025

NEWSPAPER ADVERTISEMENT FOR REZONING APPLICATIONS NOTICE OF APPLICATION FOR THE AMENDMENT OF TOWN PLANNING SCHEME APPLICATION IN TERMS OF SECTION 48 OF THE CITY OF EKURHULENI METROPOLITAN MUNICIPALITY SPATIAL PLANNING AND LAND USE MANAGEMENT BY-LAW, 2019

I, Boitumelo Ramathunya being authorized agent of the owner of Erf 87 Alberante Township hereby give notice in terms of Section 10 of the City of Ekurhuleni Metropolitan Municipality Spatial Planning and Land Use Management By-Law, 2019, that I have applied to the City of Ekurhuleni Metropolitan Municipality for the amendment of the Ekurhuleni Town Planning Scheme, 2014, by the rezoning of the property described above, situated at 10 Tulbagh Street Alberante from "Residential 1" to " Residential 1" for purposes of developing a Guesthouse or Boarding House. Particulars of the application will lie for inspection during normal office hours at the office of the Area Manager: City Planning Department, Alberton Customer Care Centre of the City of Ekurhuleni Metropolitan Municipality, 11th floor, Alwyn Taljaard Avenue, Alberton, for a period of 28 days from 26 November 2025. Objections to or representations in respect of the application must be lodged with or made in writing to the Area Manager: City Planning Department, Alberton Customer Care Centre of the City of Ekurhuleni Metropolitan Municipality, 11th floor, Alwyn Taljaard Avenue, Alberton, 1449, within a period of 28 days from 26 November 2025.

Address of the authorised agent: ms.ramathunya@gmail.com

26-03

GENERAL NOTICE 972 OF 2025

CITY OF JOHANNESBURG

NOTICE OF INTENT FOR THE SECURITY ACCESS RESTRICTION OF
Street/Road/Avenue for security reasons pending approval by the City of Johannesburg.

(Notice in terms of Chapter 7 of the Rationalization of Government Affairs Act, 1998)

NOTICE IS HEREBY GIVEN THAT THE CITY OF JOHANNESBURG,
Pursuant to the provision of Chapter 7 of the Rationalization of Government Affairs Act, 1998,
HAS CONSIDERED AND PROVISIONALLY APPROVED the following Security Access Restriction for public consultation.

Notice is given further that this provisional/ interim approval should not be considered and/or construed land [or interpreted and/or deemed to be a final approval.

SPECIFIED RESTRICTIONS FOR CONSIDERATION

Suburb	Applicant	Application Ref. No.	Road Name	Type of Restriction Relaxation Hours
Helderkruin View	HVHOA – Brenden Mokwena	182	Basalt	A 24-hour manned boom with pedestrian gate on Basalt Close near its intersection with Doreen Road

Should there be no objections the restriction will officially come into operation two months from the date of display of the final decision in the Provincial Government Gazette and shall be valid for **2 years**.

Further particulars relating to the application, as well as a plan to indicating the proposed closure, may be inspected by appointment during normal office hours at the URA (PTY) Ltd offices, at the address below.

The public is duly advised that in terms of the City policy relating to these restrictions:

- No person/guard is permitted to deny any other person or vehicle access to or through any roads that are a subject of this approval.
- No person/guard is entitled to request or demand proof of identification or to sign any register as a condition to access to an area,
- All pedestrian gates should be left accessible (and not locked in any way) for 24/7 unless stated pedestrian gates have limited hours operations.
- Any violation to the conditions of approval (as detailed in the approval documents) for the permit will result in restriction permit being revoked.

Any person who has any comments on the conditions of approval in terms of the aforesaid restriction/s may lodge such comments in writing with the:-

Traffic Engineering Department

JRA (PTY) Ltd.

75 Helen Joseph Street
Johannesburg

Email: cmoalusi@ira.org.za
chizam@ioburg.org.za

Traffic Engineering Department

JRA (PTY) Ltd.

Braamfontein X 70
Braamfontein 2107

Comments must be received on or before one month after the first day of the appearance of this notice.

GENERAL NOTICE 973 OF 2025

CITY OF JOHANNESBURG

NOTICE OF FINAL APPROVAL OF A SECURITY ACCESS RESTRICTION FOR SECURITY REASONS

Notice is hereby given that the City of Johannesburg, pursuant to the provision of Chapter 7 of the Rationalization of Local Government Affairs Act, 1998, has considered and grants the security access restriction applied for by the Kelly Park Road Closure No. 487. The Security Access Restriction was originally advertised for public comment on 21-05-2025 in the Provincial Gazette for a period of 30 days and all comments and objections were considered. The Security Access Restriction shall become effective from date of publication for a period of two years. In terms of the Municipal Systems Act 32 of 2000 appeals may be made to the Office of the City Manager within 21 days of notification at:

Office of the City Manager

Metro Centre

Council Chamber Wing

158 Civic Boulevard

Braamfontein

citymanager@joburg.org.za

The public is duly advised that in terms of the City's policy relating to these restrictions, no person/guard is permitted to deny any other person or vehicle access to or through any roads that are a subject of this approval. No person/guard is entitled to request or demand proof of identification or to sign any register as a condition of access to an area. Any violation of the conditions of approval (as detailed in the approval documents) for the permit will result in the restriction permit being revoked.

GENERAL NOTICE 974 OF 2025

CITY OF JOHANNESBURG

NOTICE OF FINAL APPROVAL OF A SECURITY ACCESS RESTRICTION FOR SECURITY REASONS

Notice is hereby given that the City of Johannesburg, pursuant to the provision of Chapter 7 of the Rationalization of Local Government Affairs Act, 1998, has considered and grants the security access restriction applied for by Randridge Residents Association No. 204. The Security Access Restriction was originally advertised for public comment on 30-04-2025 in the Provincial Gazette for a period of 30 days and all comments and objections were considered. The Security Access Restriction shall become effective from date of publication for a period of four years. In terms of the Municipal Systems Act 32 of 2000 appeals may be made to the Office of the City Manager within 21 days of notification at:

Office of the City Manager

Metro Centre

Council Chamber Wing

158 Civic Boulevard

Braamfontein

citymanager@joburg.org.za

The public is duly advised that in terms of the City's policy relating to these restrictions, no person/guard is permitted to deny any other person or vehicle access to or through any roads that are a subject of this approval. No person/guard is entitled to request or demand proof of identification or to sign any register as a condition of access to an area. Any violation of the conditions of approval (as detailed in the approval documents) for the permit will result in the restriction permit being revoked.

GENERAL NOTICE 975 OF 2025

MOGALE CITY LOCAL MUNICIPALITY NOTICE 30 OF 2025

MOGALE CITY LAND USE SCHEME, 2022: AMENDMENT SCHEME 0142

The Mogale City Local Municipality hereby gives notice in terms of:

1. Section 67(4) of the Mogale City Spatial Planning and Land Use Management By-law, 2018, that Mogale City Local Municipality approved the removal of conditions (i) and (m) from the Deed of Transfer T39492/2024 in respect of Erf 368 Monument Township, and
2. Section 46(4) of the Mogale City Spatial Planning and Land Use Management By-law, 2018, that Mogale City Local Municipality has approved the amendment of the Mogale City Land Use Scheme, 2022, by the rezoning of Erf 368 Monument Township from Residential 1 to Business 4 with an Annexure to permit Offices, Dwelling House Offices, Professional Rooms with limited sales, and showrooms.

The documents of the application(s) are filed with the Municipal Manager of Mogale City Local Municipality, Manager: Development Planning, First Floor, Furn City Building, Cnr Human Street and Monument Street, Krugersdorp, 1740, and is open for inspection during normal office hours.

The abovementioned application(s) shall come into effect on the date of publication hereof.

Mr. Makhosana Msezana
Municipal Manager (Authorised Official)
Mogale City Local Municipality

GENERAL NOTICE 976 OF 2025

CITY OF JOHANNESBURG

NOTICE OF FINAL APPROVAL OF A SECURITY ACCESS RESTRICTION FOR SECURITY REASONS

Notice is hereby given that the City of Johannesburg, pursuant to the provision of Chapter 7 of the Rationalization of Local Government Affairs Act, 1998, has considered and grants the security access restriction applied for by the Witney Blackpool Daventry Residents No. 333. The Security Access Restriction was originally advertised for public comment on 07-05-2025 in the Provincial Gazette for a period of 30 days and all comments and objections were considered. The Security Access Restriction shall become effective from date of publication for a period of six years. In terms of the Municipal Systems Act 32 of 2000 appeals may be made to the Office of the City Manager within 21 days of notification at:

Office of the City Manager

Metro Centre

Council Chamber Wing

158 Civic Boulevard

Braamfontein

citymanager@joburg.org.za

The public is duly advised that in terms of the City's policy relating to these restrictions, no person/guard is permitted to deny any other person or vehicle access to or through any roads that are a subject of this approval. No person/guard is entitled to request or demand proof of identification or to sign any register as a condition of access to an area. Any violation of the conditions of approval (as detailed in the approval documents) for the permit will result in the restriction permit being revoked.

PROCLAMATIONS • PROKLAMASIES

PROCLAMATION NOTICE 190 OF 2025

PROCLAMATION NOTICE - EMFULENI LOCAL MUNICIPALITY
EMFULENI LAND USE SCHEME, 2023 – R201
ERF 565 VANDERBIJLPARK SOUTH EAST 6

It is hereby notified in terms of Section 39(4) of the Emfuleni Municipality Spatial Planning and Land Use Management By-Laws, 2018, that the Emfuleni Local Municipality has approved the amendment of Emfuleni Land Use Scheme 2023 by the rezoning of Erf 565 Vanderbijlpark South East 6 from "Residential 1" to "Special", subject to certain conditions.
The above will come into operation on 26 November 2025.
In terms of section 43(1) of the Emfuleni Municipality Spatial Planning and Land Use Management By-Laws, 2018 this approval will lapse after 3 years from the date of approval if conditions are not being complied with.
The amendment scheme is filed with the Manager Land Use Management, 1st floor, Old Trust Bank Building, c/o Pres Kruger and Eric Louw Streets Vanderbijlpark, and are open for inspection at all reasonable times.
This amendment scheme is known as Emfuleni Land Use Scheme, 2023 – R201

APRIL NTULI, MUNICIPAL MANAGER
26 November 2025 Notice Number: LUM82/2025

PROCLAMATION NOTICE 191 OF 2025

PROCLAMATION NOTICE - EMFULENI LOCAL MUNICIPALITY
EMFULENI LAND USE SCHEME, 2023 – R234
REMAINING EXTENT OF ERF 29 VANDERBIJLPARK NORTH EAST 3

It is hereby notified in terms of Section 39(4) of the Emfuleni Municipality Spatial Planning and Land Use Management By-Laws, 2018, that the Emfuleni Local Municipality has approved the amendment of Emfuleni Land Use Scheme 2023 by the rezoning of Remaining Extent of Erf 29 Vanderbijpark North East 3 from "Railway" to "Industrial 2" with an annexure, subject to certain conditions.
The above will come into operation on 26 November 2025.
In terms of section 43(1) of the Emfuleni Municipality Spatial Planning and Land Use Management By-Laws, 2018 this approval will lapse after 3 years from the date of approval if conditions are not being complied with.
The amendment scheme is filed with the Manager Land Use Management, 1st floor, Old Trust Bank Building, c/o Pres Kruger and Eric Louw Streets Vanderbijlpark, and are open for inspection at all reasonable times.
This amendment scheme is known as Emfuleni Land Use Scheme, 2023 – R137

APRIL NTULI, MUNICIPAL MANAGER
26 November 2025 Notice Number: LUM66/2025

PROVINCIAL NOTICES • PROVINSIALE KENNISGEWINGS

PROVINCIAL NOTICE 848 OF 2025

NOTICE OF APPLICATION FOR THE REZONING IN TERMS OF SECTION 48 OF THE CITY OF EKURHULENI METROPOLITAN MUNICIPALITY SPATIAL PLANNING AND LAND USE MANAGEMENT BY-LAW, 2019, READ WITH THE SPLUMA 2013 AND THE CITY OF EKURHULENI LAND USE SCHEME 2021 (VERSION 2024)

I, Danie Harmse, of DH Project Planning CC, being the authorized agent of the owner of Erf 272 Alberante Extension 1 Township, which property is situated at 11 Jacqueline Avenue, Alberante, hereby give notice in terms of Section 48 of the City of Ekurhuleni Metropolitan Municipality Spatial Planning and Land Use Management By-Law, 2019, that I have applied to the City of Ekurhuleni Metropolitan Municipality (Alberton Customer Care Centre) for the application for the amendment of the City of Ekurhuleni Land Use Scheme 2021 by the rezoning of the property from “Residential 1” allowing 1 dwelling house to “Community Facility” allowing 50 Children, subject to certain conditions amendment scheme (A504C).

Particulars of the application will lie for inspection during normal office hours at the office of the Area Manager: City Planning Department, Alberton Customer Care Centre of the City of Ekurhuleni Metropolitan Municipality, Level 11, Alberton Civic Centre, Alwyn Taljaard Avenue, New Redruth, for a period of 28 days from 19 November 2025.

Objections to or representations in respect of the application must be lodged with or made in writing to the Area Manager: City Planning Department, Alberton Customer Care Centre of the City of Ekurhuleni Metropolitan Municipality, Level 11, Alberton Civic Centre, Alwyn Taljaard Avenue, New Redruth or P O Box 4, Alberton, 1450, within a period of 28 days from 19 November 2025 to 17 December 2025.

Address of the authorised agent: DH Project Planning, 44 Agapanthus Street, Brackenhurst.
Tel 083 297 6761. Email danie@dhpp.co.za.

19-26

PROVINCIAL NOTICE 849 OF 2025

NOTICE OF APPLICATION FOR THE REZONING OF REMAINDER ERF 807 SOUTH GERMISTON TOWNSHIP FROM "RESIDENTIAL 4" TO "BUSINESS 1" IN ORDER TO ALLOW A DWELLING HOUSE, 11 BOARDING ROOMS, 330SQM RETAIL, AND APPLICATION FOR PARKING RELAXATION, IN TERMS OF SECTION 68 OF THE COEMM SPATIAL PLANNING AND LAND USE MANAGEMENT BY-LAWS, 2019, READ WITH SPLUMA 2013, READ WITH THE CITY OF EKURHULENI LAND USE SCHEME 2021 (AMENDMENT SCHEME G0581C)

I, Danie Harmse, of DH Project Planning CC, being the authorized agent of the owner of Remainder Erf 807 South Germiston, which property is situated at 166 President Street, South Germiston, hereby give notice in terms of Section 68 of the City of Ekurhuleni Metropolitan Municipality Spatial Planning and Land Use Management By-Laws 2019, read with The SPLUMA 2013, read with the Ekurhuleni Land Use Scheme 2021, that I have applied to the City of Ekurhuleni Metropolitan Municipality (Germiston Customer Care Centre) for the rezoning of Erf from "Residential 4" to "Business 1" in order to allow a dwelling house, 11 boarding rooms, 330sqm retail, including the relaxation of parking, subject to certain conditions.

Particulars of the application will lie for inspection during normal office hours at the office of the Area Manager, City Development Department, Level 5, Corner FH Odendaal and Victoria Street, Germiston, for a period of 28 days from 19 November 2025.

Objections to or representations in respect of the application must be lodged with or made in writing to the Area Manager, City Development Department, at above address or at P O Box 145, Germiston, 1400, within a period of 28 days from 19 November 2025 (by 17 December 2025).

Address of the authorised agent: DH Project Planning, 44 Agapanthus Street, Brackenhurst
Tel 083 297 6761. Email danie@dhpp.co.za.

19-26

PROVINCIAL NOTICE 850 OF 2025

NOTICE OF APPLICATION FOR THE REZONING OF PORTION 1 OF ERF 309 AND PORTION 1 OF ERF 310 SOUTH GERMISTON TOWNSHIP FROM "RESIDENTIAL 4" TO "BUSINESS 1" IN ORDER TO ALLOW A DWELLING HOUSE, 6 BOARDING ROOMS, 85SQM RETAIL, INCLUDING THE CONSOLIDATION OF THE TWO ERVEN IN TERMS OF SECTION 68 OF THE COEMM SPATIAL PLANNING AND LAND USE MANAGEMENT BY-LAWS, 2019, READ WITH SPLUMA 2013, READ WITH THE CITY OF EKURHULENI LAND USE SCHEME 2021 (AMENDMENT SCHEME G0582C)

I, Danie Harmse, of DH Project Planning CC, being the authorized agent of the owners of Portion 1 of Erf 309 and Portion 1 of Erf 310 South Germiston, which properties are situated at 387 & 387A President Street, South Germiston, respectively, hereby give notice in terms of Section 68 of the City of Ekurhuleni Metropolitan Municipality Spatial Planning and Land Use Management By-Laws 2019, read with The SPLUMA 2013, read with the Ekurhuleni Land Use Scheme 2021, that I have applied to the City of Ekurhuleni Metropolitan Municipality (Germiston Customer Care Centre) for the rezoning of erven from "Residential 4" to "Business 1" in order to allow a dwelling house, 6 boarding rooms, 85sqm retail, including the consolidation of the two erven, subject to certain conditions.

Particulars of the application will lie for inspection during normal office hours at the office of the Area Manager, City Development Department, Level 5, Corner FH Odendaal and Victoria Street, Germiston, for a period of 28 days from 19 November 2025.

Objections to or representations in respect of the application must be lodged with or made in writing to the Area Manager, City Development Department, at above address or at P O Box 145, Germiston, 1400, within a period of 28 days from 19 November 2025 (by 17 December 2025).

Address of the authorised agent: DH Project Planning, 44 Agapanthus Street, Brackenhurst
Tel 083 297 6761. Email danie@dhpp.co.za.

19-26

PROVINCIAL NOTICE 851 OF 2025

NOTICE OF APPLICATION FOR THE REZONING OF REMAINDER ERF 310 SOUTH GERMISTON TOWNSHIP FROM "RESIDENTIAL 4" TO "BUSINESS 1" IN ORDER TO ALLOW A DWELLING HOUSE, 15 BOARDING ROOMS, 111SQM SCRAP YARD/RETAIL, AND APPLICATION FOR PARKING RELAXATION, IN TERMS OF SECTION 68 OF THE COEMM SPATIAL PLANNING AND LAND USE MANAGEMENT BY-LAWS, 2019, READ WITH SPLUMA 2013, READ WITH THE CITY OF EKURHULENI LAND USE SCHEME 2021 (AMENDMENT SCHEME G0580C)

I, Danie Harmse, of DH Project Planning CC, being the authorized agent of the owner of Remainder Erf 310 South Germiston, which property is situated at 389 President Street, South Germiston, hereby give notice in terms of Section 68 of the City of Ekurhuleni Metropolitan Municipality Spatial Planning and Land Use Management By-Laws 2019, read with The SPLUMA 2013, read with the Ekurhuleni Land Use Scheme 2021, that I have applied to the City of Ekurhuleni Metropolitan Municipality (Germiston Customer Care Centre) for the rezoning of Erf from "Residential 4" to "Business 1" in order to allow a dwelling house, 15 boarding rooms, 111sqm scrap yard/retail, including the relaxation of parking, subject to certain conditions.

Particulars of the application will lie for inspection during normal office hours at the office of the Area Manager, City Development Department, Level 5, Corner FH Odendaal and Victoria Street, Germiston, for a period of 28 days from 19 November 2025.

Objections to or representations in respect of the application must be lodged with or made in writing to the Area Manager, City Development Department, at above address or at P O Box 145, Germiston, 1400, within a period of 28 days from 19 November 2025 (by 17 December 2025).

Address of the authorised agent: DH Project Planning, 44 Agapanthus Street, Brackenhurst
Tel 083 297 6761. Email danie@dhpp.co.za.

19-26

PROVINCIAL NOTICE 852 OF 2025

NOTICE OF APPLICATION FOR THE REMOVAL OF RESTRICTIVE CONDITIONS 2 (a) to (j) IN DEED OF TRANSFER DOCUMENT T38731/1996 AND THE REZONING OF ERF 36 DELVILLE TOWNSHIP FROM "RESIDENTIAL 1" WITH A DENSITY OF ONE DWELLING UNIT PER ERF TO "RESIDENTIAL 4" IN ORDER TO ALLOW A DWELLING HOUSE AND 18 BOARDING ROOMS IN TERMS OF SECION 68 OF THE COEMM SPATIAL PLANNING AND LAND USE MANAGEMENT BY-LAWS, 2019, READ WITH THE SPLUMA 2013, READ WITH CITY OF EKURHULENI LAND USE SCHEME 2021 (AMENDMENT SCHEME G0579C)

I, Danie Harmse, of DH Project Planning CC, being the authorized agent of the owner of Erf 36 Delville Township, which property is situated at 6 Arras Road, Delville, hereby give notice in terms of Section 68 of the City of Ekurhuleni Metropolitan Municipality Spatial Planning and Land Use Management By-Laws 2019, read with The SPLUMA 2013, read with the Ekurhuleni Land Use Scheme 2021, that I have applied to the City of Ekurhuleni Metropolitan Municipality (Germiston Customer Care Centre) for the application for the removal of restrictive conditions 2 (a) to (j) in Deed of Transfer Document T38731/1996 and the rezoning of Erf 36 Delville Township from "Residential 1" with a density of one dwelling unit per erf to "Residential 4" in order to allow a dwelling house and 18 boarding rooms.

Particulars of the application will lie for inspection during normal office hours at the office of the Area Manager, City Development Department, Level 5, Corner FH Odendaal and Victoria Street, Germiston, for a period of 28 days from 19 November 2025.

Objections to or representations in respect of the application must be lodged with or made in writing to the Area Manager, City Development Department, at above address or at P O Box 145, Germiston, 1400, within a period of 28 days from 19 November 2025 (by 17 December 2025).

Address of the authorised agent: DH Project Planning, 44 Agapanthus Street, Brackenhurst
Tel 083 297 6761. Email danie@dhpp.co.za.

19-26

PROVINCIAL NOTICE 853 OF 2025

NOTICE OF APPLICATION FOR THE AMENDMENT OF TOWN PLANNING SCHEME APPLICATION IN TERMS OF SECTION 48 OF THE CITY OF EKURHULENI METROPOLITAN MUNICIPALITY SPATIAL PLANNING AND LAND USE MANAGEMENT BY-LAW, 2019 FOR ERF 1769 DAWN PARK EXTENSION 31

We, Rondo Consulting, being authorized agents of the owner of Erf 1769 Dawn Park, Extension 31, hereby give notice in terms of Section 10 of the City of Ekurhuleni Metropolitan Municipality Spatial Planning and Land Use Management By-Law, 2019, that we have applied to the City of Ekurhuleni Metropolitan Municipality for the amendment of the City of Ekurhuleni Land Use Scheme, 2021, by the rezoning of the property described above, situated at 9 Linden Cres, Dawn Park, Boksburg from "Residential 1" to "Community Facility," for the purposes of a "Place of Worship". Particulars of the application will lie for inspection during normal office hours at the office of the Manager: Town Planning, Boksburg Sub Section of the City of Ekurhuleni Metropolitan Municipality, 2ND floor. Boksburg Civic Centre, c/o Trichardts Road & Market Street, for a period of 28 days from **19 November 2025**. Objections to or representations in respect of the application must be lodged with or made in writing to the Manager: Town Planning, Boksburg Sub Section of the City of Ekurhuleni Metropolitan Municipality, 2ND floor. Boksburg Civic Centre, c/o Trichardts Road & Market Street or P.O. Box 215 BOKSBURG, 1460, or by email to Francois.Vos@ekurhuleni.gov.za, within a period of 28 days from **19 November 2025** to **17 December 2025**. Date on which notice will be published: **19 November 2025** and **26 November 2025.**

E: info@rondogroup.co.za l C: 067 883 1815 | F: 086 6877 751 I 107 BOARDWALK BLVD, BLOCK N1, 2ND FLOOR, SUITE 115/118, FAERIE GLEN, PRETORIA, 0081

19-26

PROVINCIAL NOTICE 854 OF 2025

CITY OF TSHWANE METROPOLITAN MUNICIPALITY

NOTICE OF A REZONING APPLICATION IN TERMS OF SECTION 16(1) OF THE CITY OF TSHWANE LAND USE MANAGEMENT BY-LAW, 2016 (AMENDED 2024)

I/We, **NGOTI DEVELOPMENT CONSULTANTS**, being the applicant of property **ERF 1041 RAYTON EXTENSION 6** hereby give notice in terms of section 16(1)(f) of the City of Tshwane Land Use Management By-law, 2016, that I/we have applied to the City of Tshwane Metropolitan Municipality for the amendment of the Tshwane Land Use Scheme, 2024, by the rezoning in terms of section 16(1) of the of the City of Tshwane Land Use Management By-law, 2016 (amended 2024) of the property as described above. The property is situated at **3601 NOLTE STREET**. The rezoning is from **"SPECIAL"** to **"RESIDENTIAL 1, EDUCATIONAL, INSTITUTIONAL, MUNICIPAL, PUBLIC OPEN SPACES AND PROPOSED STREETS"**.

The intention of the applicant in this matter is to: **SUBDIVIDE AND REZONE THE PROPERTY ON ERF 1041 RAYTON EXT.6 TO DEVELOP RESIDENTIAL STANDS WITH SOCIAL AMENITIES, FOR THE PURPOSE OF ACCOMMODATING SOME OF THE OCCUPANTS SETTLED WITHIN THE NEARBY PHUMZILE PARK INFORMAL SETTLEMENT. THE PROJECT IS A HUMAN SETTLEMENT INITIATIVE FUNDED BY THE DEPARTMENT OF HUMAN SETTLEMENTS.**

Any objection(s) and/or comment(s), including the grounds for such objection(s) and/or comment(s) with full contact details, and submitted in the prescribed form, without which the Municipality cannot correspond with the person or body submitting the objection(s) and/or comment(s), shall be lodged with, or made in writing to the Strategic Executive Director: City Planning and Development, PO Box 3242, Pretoria, 0001 or to CityP_Registration@tshwane.gov.za from the **19st of NOVEMBER 2025**, until the **17th of DECEMBER 2025**.

Full particulars and plans may be inspected during normal office hours at the Municipal offices as set out below, for a period of 28 days from the date of first publication of the notice in the Provincial Gazette /Pretoria News newspaper.

Should the Municipal Offices be closed or in the case of any other eventualities, the land development application cannot be perused at the Offices of the Municipality, a copy of the application can be requested from the applicant, at the following contact details: nokwanda@ngoti.co.za / info@ngoti.co.za. A copy of this notice and information, as may be available, can be viewed at the following address of the Municipal offices: 7th Floor, Middestad Building, 252 Thabo Sehume Street, Pretoria.

For purposes of obtaining a copy of the application, it must be noted that the interested and affected party must provide the municipality and the applicant with an email address or other means by which to provide the said copy electronically. No part of the documents provided by the municipality or the applicant may be copied, reproduced or in any form published or used in a manner that will infringe on the intellectual property rights of the applicant.

Should any interested and affected party not take any steps to view and or obtain a copy of the land development application, the failure by an interested and affected party to obtain a copy of the application shall not be regarded as grounds to prohibit the processing and consideration of the application.
Please note the requirements for comments and objections contained in the City of Tshwane Land Use Management By-law, 2016 (Amended 2024) in terms of **Schedule 25 and Form COT:**

F/31 for purposes of consideration thereof. The prescribed form to be completed by the objectors can be obtained from the applicant as well as from nokwanda@ngoti.co.za and mulwelit@tshwane.gov.za.

Address of relevant Municipal Offices:
ECONOMIC DEVELOPMENT AND SPATIAL PLANNING DEPARTMENT, 7TH FLOOR, MIDDESTAD BUILDING, 252 THABO SEHUME STREET, PRETORIA, 0002.

Address of Applicant:
Email Address: **nokwanda@ngoti.co.za**
Physical address: **NGOTI DEVELOPMENT CONSULTANTS, UNIT 11 KINGFISHER BUILDING, HAZELDEAN OFFICE PARK, 687 SILVERLAKES ROAD, TYGER VALLEY, PRETORIA**
Telephone No: **012 770 4022**
Dates on which notice will be published: **19 NOVEMBER 2025**
Closing date for any objections and/or comments: **17 DECEMBER 2025**

Reference: Item No: **51033**

19-26

PROVINCIAL NOTICE 858 OF 2025

NOTICE OF APPLICATION IN TERMS OF THE GAMING AND ENTERTAINMENT CONTROL ACT, 2018 (ACT NO. 13 OF 2018) SECTION 45 (2) (a) (i) FOR MANUFACTURER OR SUPPLIER LICENSE

Notice is hereby given of the application for Manufacturer or Supplier license of which the details are given below. Any person who wishes to object to the application in terms of regulation 17 may submit his/her objection in the prescribed manner to the Board not later than 21 days after the publication of this notice.

Name of applicant: umAfrika Gaming Technologies (Pty) Ltd

Type of license: Manufacturer or Supplier license

Name of business where manufacturer or supplier will be conducted:
umAfrika Gaming Technologies (Pty) Ltd

Physical address of premises to which the application applies:
70 Saturn Crescent, Limbo Business Park, Frankenwald Ext 13
Johannesburg, Gauteng
South Africa

PROVINCIAL NOTICE 859 OF 2025

NOTICE OF AN APPLICATION FOR AMENDMENT OF LAND USE SCHEME (REZONING) IN TERMS OF SECTION 21 OF THE CITY OF JOHANNESBURG MUNICIPAL PLANNING BY-LAW 2016, AS AMENDED 2023

APPLICABLE SCHEME: CITY OF JOHANNESBURG LAND USE SCHEME, 2018.
Notice is hereby given, in terms of Section 21 of the City of Johannesburg Municipal Planning By-Law, 2016, as amended 2023, that I, the undersigned, intend to apply to the City of Johannesburg for an amendment of the land use scheme (Rezoning).

SITE DESCRIPTION:
Erf: 1069
Township Name: Florida
Street Address: 106 Shamrock Street 1710

APPLICATION TYPE: Rezoning application from Residential 1 to Institutional.

The above application will be open for inspection from 08:00 to 15:30 at the Registration Counter, Department of Development Planning, Room 8100, 8th Floor A-Block, Metropolitan Centre, 158 Civic Boulevard, Braamfontein. Electronic Copies can be obtained from the applicant on request for a period of 28 days from **26th of November 2025.** Any objection or representation about the application must be submitted to both the owner *I* agent and the Registration Section of the Department of Development Planning at the above address, or posted to P. 0. Box 30733, Braamfontein, 2017, or a facsimile send to (011) 339 4000, or an e-mail send to *ObiectionsPlanning@ioburg.org.za*, by not later than **24th December 2025**.Reference: LUM5057/312027

Any objection/s not fully motivated as required in terms of Section 68 of The City of Johannesburg Municipal Planning By-Law, 2016 (Validity of Objections) may be deemed invalid and may be disregarded during the assessment of the application.

AUTHORISED AGENT

Full name: Reitumetse Selepe, Company: Streit Curv, Postal Address: 246, Atlanta Estate, 4841 Capensis Avenue, Centurion, Code: 0157, Tel No (w): 066 385 0462, Cell: 081 218 6899, E-mail address: info@streit.co.za, Date: 26th November 2025

PROVINCIAL NOTICE 860 OF 2025

NOTICE OF APPLICATION IN TERMS OF SECTION 21 OF THE CITY OF JOHANNESBURG MUNICIPAL PLANNING BY-LAW, 2016

I, Sibusiso Sibiya of Mabutho Town Planning (MTP) being the authorized by the owners of Erf 1030 Auckland Park (hereinafter referred to as "the site") hereby give notice in terms of Section 21 of the City of Johannesburg Municipal Planning By-Law, 2016 for the rezoning of the site from "Residential 1" to "Residential 4" in order to allow the dwelling units/residential buildings on the site. Particulars of the application will lie for inspection during normal office hours at the office of the Executive Director, Development Planning, 1st Floor, New COJ Building (Old Nedbank Building), Newtown Junction, 100 Carr Street, Newtown. Objections to or representations in respect of the application must be lodged with or made in writing to the Executive Director, Development Planning at the above address or an email send to:ObjectionsPlanning@joburg.org.za within a period of 28 days starting from the **26th November 2025** and by no later than the **23rd December 2025.**

NOTICE OF APPLICATION IN TERMS OF SECTION 21 OF THE CITY OF JOHANNESBURG MUNICIPAL PLANNING BY-LAW, 2016

I, Sibusiso Sibiya of Mabutho Town Planning (MTP) being the authorized by the owners of Erf 13 Osummit (hereinafter referred to as "the site") hereby give notice in terms of Section 21 of the City of Johannesburg Municipal Planning By-Law, 2016 for the rezoning of the site from "Residential 1" to "Educational" in order to accommodate sports facilities and medium density residential units aligned with and complementary to the operation/functionality of the existing school on erven 11 and 12 Osummit. Particulars of the application will lie for inspection during normal office hours at the office of the Executive Director, Development Planning, 1st Floor, New COJ Building (Old Nedbank Building), Newtown Junction, 100 Carr Street, Newtown. Objections to or representations in respect of the application must be lodged with or made in writing to the Executive Director, Development Planning at the above address or an email send to:ObjectionsPlanning@joburg.org.za within a period of 28 days starting from the **26th November 2025** and by no later than the **23rd December 2025.**

NOTICE OF APPLICATION IN TERMS OF SECTION 21 OF THE CITY OF JOHANNESBURG MUNICIPAL PLANNING BY-LAW, 2016

I, Sibusiso Sibiya of Mabutho Town Planning (MTP) being the authorized by the owners of Erf 1891 Roodepoort (hereinafter referred to as "the site") hereby give notice in terms of Section 21 of the City of Johannesburg Municipal Planning By-Law, 2016 for the rezoning of the site from "Business 4" to "Business 4" "Business 4" in order to allow the dwelling units/residential buildings as primary rights subject to increase in density and the provisions of the City of Johannesburg Land use scheme, 2018. Particulars of the application will lie for inspection during normal office hours at the office of the Executive Director, Development Planning, 1st Floor, New COJ Building (Old Nedbank Building), Newtown Junction, 100 Carr Street, Newtown. Objections to or representations in respect of the application must be lodged with or made in writing to the Executive Director, Development Planning at the above address or an email send to:ObjectionsPlanning@joburg.org.za within a period of 28 days starting from the **26th November 2025** and by no later than the **23rd December 2025.**

NOTICE OF APPLICATION IN TERMS OF SECTION 21 OF THE CITY OF JOHANNESBURG MUNICIPAL PLANNING BY-LAW, 2016

I, Sibusiso Sibiya of Mabutho Town Planning (MTP) being the authorized by the owners of Erf 637 Mayfair (hereinafter referred to as "the site") hereby give notice in terms of Section 21 of the City of Johannesburg Municipal Planning By-Law, 2016 for the rezoning of the site from "Residential 4" to "Business 2", Height zone A (3 Storeys), Coverage of 70% and F.A.R of 1.2 in order to allow the shops on the site. Particulars of the application will lie for inspection during normal office hours at the office of the Executive Director, Development Planning, 1st Floor, New COJ Building (Old Nedbank Building), Newtown Junction, 100 Carr Street, Newtown. Objections to or representations in respect of the application must be lodged with or made in writing to the Executive Director, Development Planning at the above address or an email send to:ObjectionsPlanning@joburg.org.za within a period of 28 days starting from the **26th November 2025** and by no later than the **23rd December 2025.**

PROVINCIAL NOTICE 861 OF 2025

Petroleum Agency SA

Heron Place · First floor · Heron Close · Century City 7441 · Cape Town · South Africa
Tel: +27 21 938 3500 · Fax: +27 21 938 3520
E-mail: info@petroleumagencysa.com

NOTICE REGARDING CONSULTATION WITH INTERESTED AND AFFECTED PERSONS IN TERMS OF SECTION 10 READ WITH REGULATION 3 OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (ACT NO. 28 OF 2002)

File Ref No: 12/3/388 ER

Notice is hereby given in terms of Section 10 (1) of the abovementioned Act that the Petroleum Agency SA, has on the 06 of November 2025 accepted an application for an Exploration Right for petroleum and gas from H2Au Limited.

APPLICATION DETAILS:	
Date of receipt of application:	17 October 2025
Sketch Plan with co-ordinates, a list of farms depicting the application area and the executive summary are attached as:	Annexure A
Contact Details of the Agency	Acting Chief Executive Officer Heron Place First Floor Heron Close Century City 7441 Tel: 021 938 3500 Fax: 021 938 3520 Email: section10notices@petroleumagencysa.com

Any person wishing to submit comments on the above application should in accordance with Section 10 (1) (b) of the above Act, do so in writing **within 30 days from date of publication**, for the attention of the **Chief Executive Officer** at the address indicated above.

Dated in Cape Town on the **06 of November 2025.**

DR. B SAYIDINI
ACTING CHIEF EXECUTIVE OFFICER

Directors:

S Roopa (Chairperson)
CC Mpelwane | MV Ngwenya | RH Nkambule | P Motsielwa | L Pitsoe
Acting Chief Executive Officer:Dr B Sayidini | Acting Chief Financial Officer: S Mahlambi
Company Secretary: Adv E Hendricks

South African Agency for Promotion of Petroleum Exploration and Exploitation SOC Ltd. Registration No. 1999/015715/30

Annexure A **Ref No: 12/3/388**

EXECUTIVE SUMMARY

APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM IN TERMS OF SECTION 79 OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (ACT NO. 28 OF 2002) ("THE ACT"): VARIOUS FARMS IN THE MAGISTERIAL DISTRICTS OF CULLINAN, BRONKHORSTSPRUIT, WARMBAD, MBIBANA, MDUTJANA, MOUTSE, MKOBOLA, GROBLERSDAL, NEBO, LYDENBURG, MIDDELBURG AND WITBANK IN GAUTENG, LIMPOPO AND MPUMALANGA PROVINCES

On the 06th of November 2025, the Petroleum Agency of South Africa (the Agency) accepted an application fromH2Au Limited (H2Au) for an Exploration right in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) ("the Act") in respect of the areas mentioned herein. The sketch for this area is shown below as **Figure 1.**

The area applied for in this application was previously held by H2Au under the desktop study permit (TCP). The purpose of the desktop studies under the TCP was to determine the prospectivity of the area for natural gas and associated gases. The results from the desktop studies undertaken indicated that the area applied for could be prospective for natural gas and associated gases. Thus, H2Au intends to take the desktop studies further under the exploration right application in order to refine its understanding of the subsurface geology, and intends to undertake the following activities during the three-year period of the exploration right:

- Collate existing geoscientific data sets available in the area from various sources;
- Field work for mapping surface geology, collection and analysis of samples;
- Reprocessing of existing seismic line(s) for improved structural imaging;
- Feasibility studies for the potential acquisition of seismic and airborne geophysics data to improve the imaging and understanding of the subsurface structures;
- Acquisition of airborne geophysics and seismic data if the results of the feasibility studies indicate that this will result in enhancement of the imaging of the subsurface structures;
- Interpretation and integration of the acquired data to refine the subsurface structural model; and
- Identification, risking, ranking and commercial evaluation of the potential drill targets.

The activities to be undertaken by H2Au as outlined above, will largely be desktop studies, however, field based activities such as the acquisition of airborne geophysics and seismic data may be undertaken. If H2Au undertakes these field based activities, it will apply for the environmental authorization, and the communities will be engaged on the activities during consultation processes. The process which the review of this application will follow is outlined below.

ASSESSMENT OF APPLICATION FOR PURPOSE OF APPROVAL/REFUSAL

As already indicated the application was accepted on the 06th of November 2025, it is now subjected to further assessments of several aspects of the Act prior to a decision regarding the approval or refusal thereof. The requirements in terms of the Act, National Environmental Management Act, 1998 and other relevant and applicable legislation will be considered. Amongst other factors that will be considered are:

- Financial and technical ability of the Applicant to conduct the proposed exploration activities optimally;
- Compliance with all the requirements for the granting of Environmental Authorisation;
- Meaningful consultation with interested and affected parties;
- If the granting of the exploration right will substantially and meaningfully expand opportunities for historically disadvantaged persons; and
- If the granting will promote employment and advance social and economic welfare of South Africans.

It is worth noting that the recommendation to grant or refuse the exploration right will only be made after the decision on an application for an environmental authorisation in terms of the Environmental Impact Assessment Regulations, 2014 is taken. H2Au has been advised to commence with the application for the environmental authorisation and interested and affected persons will have further opportunity to comment during the environmental impact assessment process.

PROVINSIALE KENNISGEWING 861 VAN 2025

Petroleum Agency SA

Heron Place · First floor · Heron Close · Century City 7441 · Cape Town · South Africa
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KENNISGEWING RAKENDE KONSULTASIE MET BELANGHEBBENDE EN GEAFFEKTEERDE PERSONE INGEVOLGE ARTIKEL 10 GELEES MET REGULASIE 3 VAN DIE WET OP DIE ONTWIKKELING VAN MINERALE EN PETROLEUM HULPBRONNE, 2002 (WET NO. 28 VAN 2002)

File Ref No: 12/3/388 ER

Kennis word hiermee gegee in terme van Artikel 10 (1) van die Wet dat die Petroleum Agency SA op 06 November 2025 aanvaar het 'n aansoek om 'n eksplorasiereg vir petroleum van H2Au Limited.

APPLICATION DETAILS:	
Datum van ontvangs van aansoek:	17 Oktober 2025
Opsomming tesame met 'n sketsplan met koördinate wat die aansoekarea uitbeeld, is aangeheg as:	Bylaag A
Kontak besonderhede van die Agentskap	Waarnemende Hoof Uitvoerende Beampte Heron Place First Floor Heron Close Century City 7441 Telefoon: 021 938 3500 Faks: 021 938 3520 E-pos: section10notices@petroleumagencysa.com

Enige persoon wat kommentaar op bogenoemde aansoek wil indien, moet ooreenkomstig Artikel 10 (1) (b) van bogenoemde Wet dit skriftelik doen binne 30 dae vanaf datum van publikasie, vir die aandag van die Hoof Uitvoerende Beampte by die adres hierbo aangedui.

Gedateer te Kaapstad op **06 November 2025**.

DR. B SAYIDINI
HOOF UITVOERENDE BEAMPTE

. **Directors:**

S Roopa (Chairperson)
CC Mpelwane | MV Ngwenya | RH Nkambule | P Motsielwa | L Pitsoe
Acting Chief Executive Officer:Dr B Sayidini | Acting Chief Financial Officer: S Mahlambi
Company Secretary: Adv E Hendricks

South African Agency for Promotion of Petroleum Exploration and Exploitation SOC Ltd. Registration No. 1999/015715/30

Aanhangsel A **Verwysings nr:12/3/388**

UITVOERENDE OPSOMMING

AANSOEK OM 'N EKSPLORASIEREG VIR PETROLEUM INGEVOLGE ARTIKEL 79 VAN DIE WET OP DIE ONTWIKKELING VAN MINERALE EN PETROLEUMHULPBRONNE, 2002 (WET NO. 28 VAN 2002) ("DIE WET"): VERSKEIE PLASE IN DIE LANDDROSDISTRIKTE VAN CULLINAN, BRONKHORSTSPRUIT, WARMBAD, MBIBANA, MDUTJANA, MOUTSE, MKOBOLA, GROBLERSDAL, NEBO, LYDENBURG, MIDDELBURG EN WITBANK IN GAUTENG, LIMPOPO EN MPUMALANGA PROVINSIES

Op 6 November 2025 het die Petroleumagentskap van Suid-Afrika (die Agentskap) 'n aansoek van H2Au Beperk (H2Au) aanvaar vir 'n Eksplorasiereg ingevolge artikel 79 van die Wet op die Ontwikkeling van Minerale en Petroleumhulpbronne, 2002 (Wet Nr. 28 van 2002) ("die Wet") met betrekking tot die gebiede wat hierin genoem word. Die skets vir hierdie gebied word hieronder as **Figuur 1 getoon**.

Die gebied waarvoor in hierdie aansoek aansoek gedoen word, is voorheen deur H2Au gehou onder die lessenaarstudiepermit (TCP). Die doel van die lessenaarstudies onder die TCP was om die vooruitsigte van die gebied vir natuurlike gas en geassosieerde gasse te bepaal. Die resultate van die lessenaarstudies wat onderneem is, het aangedui dat die gebied waarvoor aansoek gedoen word, vooruitsigte vir natuurlike gas en geassosieerde gasse kan hê. Dus is H2Au van voorneme om die lessenaarstudies verder te voer onder die eksplorasieregaansoek om sy begrip van die ondergrondse geologie te verfyn, en is van voorneme om die volgende aktiwiteite gedurende die driejaarperiode van die eksplorasiereg te onderneem:

- Versamel bestaande geowetenskaplike datastelle wat in die gebied beskikbaar is uit verskeie bronne;

- Veldwerk vir die kartering van oppervlakgeologie, versameling en analise van monsters;

- Herverwerking van bestaande seismiese lyn(e) vir verbeterde strukturele beeldvorming;

- Uitvoerbaarheidstudies vir die potensiële verkryging van seismiese en luggeofisika-data om die beeldvorming en begrip van die ondergrondse strukture te verbeter;

- Verkryging van luggeofisika- en seismiese data indien die resultate van die uitvoerbaarheidstudies aandui dat dit sal lei tot verbetering van die beeldvorming van die ondergrondse strukture;

- Interpretasie en integrasie van die verkrygde data om die ondergrondse strukturele model te verfyn; en

- Identifisering, risikobepaling, rangskikking en kommersiële evaluering van die potensiële boorteikens.

Die aktiwiteite wat deur H2Au onderneem sal word, soos hierbo uiteengesit, sal grootliks lessenaarstudies wees, maar veldgebaseerde aktiwiteite soos die verkryging van luggeofisika- en seismiese data kan onderneem word. Indien H2Au hierdie veldgebaseerde aktiwiteite onderneem, sal dit aansoek doen vir die omgewingsmagtiging, en die gemeenskappe sal tydens konsultasieprosesse by die aktiwiteite betrokke wees. Die proses wat die hersiening van hierdie aansoek sal volg, word hieronder uiteengesit.

ASSESSERING VAN AANSOEK VIR DIE DOEL VAN GOEDKEURING/WEIERING

Soos reeds aangedui, is die aansoek op 6 November 2025 aanvaar, en word dit nou onderworpe aan verdere assesserings van verskeie aspekte van die Wet voordat 'n besluit oor die goedkeuring of weiering daarvan geneem word. Die vereistes ingevolge die Wet, die Nasionale Omgewingsbestuurswet, 1998 en ander relevante en toepaslike wetgewing sal oorweeg word. Onder andere faktore wat oorweeg sal word, is:

• Finansiële en tegniese vermoë van die Aansoeker om die voorgestelde eksplorasieaktiwiteite optimaal uit te voer;

• Nakoming van al die vereistes vir die toestaan van Omgewingsmagtiging;

• Betekenisvolle konsultasie met belanghebbende en geaffekteerde partye;

• Of die toestaan van die eksplorasiereg geleenthede vir histories benadeelde persone wesenlik en betekenisvol sal uitbrei; en

• Of die toestaan werk sal bevorder en die sosiale en ekonomiese welstand van Suid-Afrikaners sal bevorder.

Dit is opmerklik dat die aanbeveling om die eksplorasiereg toe te staan of te weier eers gemaak sal word nadat die besluit oor 'n aansoek om omgewingsmagtiging ingevolge die Omgewingsimpakbepalingsregulasies, 2014, geneem is. H2Au is aangeraai om met die aansoek vir die omgewingsmagtiging te begin en belangstellende en geaffekteerde persone sal verdere geleentheid kry om kommentaar te lewer tydens die omgewingsimpakstudieproses.

Petroleum Agency SA

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ISAZISO MALULANA NOKUTHINTANA NABANTU ABANEKAREKO NABATHINTEKAKO NGOKUYA KWESIGABA 10 ESIFUNDWA NOMTHETHO 3 KWEZIMINERALI NE-PHETHROLIYAMU, 2002 (UMTHETHO NO. 28 OF 2020)
Inomboro yefayela: 12/3/388 ER

Isaziso sinikelwa lapha ngokuya kweSigaba 10 (1) somThetho okhulunywe ngehla sokuthi i-Ejensi ye-Petroleum SA, mhla Ka-06 ku Sinyikhaba 2025 yamukele isibawo seLungelo lokuHlola i-petroleum ne rhasi evela ku-H2Au Limited.

IMININGWANE YESIBAWO:	
Ilanga lokwamukelwa kwesibawo:	17 Ku Sewula 2025
Ihlelo lokudweba elinama-coordinates, irhelo lamaplasi atjengisa indawo yokufaka isibawo kanye nesifinyezo esiphezulu kunamathiselwe njenge:	Isithasiselo A
Imininingwana yokuthintana ne-Ejensi	Heron Place First Floor Heron Close Century City 7441 Ifoni: 021 938 3500 Ifeksi: 021 938 3520 i-imeyili: section10notices@petroleumagencysa.com

Nanyana ngubani ofuna ukuletha imibono ngesibawo esingehla kufanele ngokuya kweSigaba 10 (1) (b) somThetho ongehla, enze njalo ngokutlola kungakapheli amalanga ayi-30 kusukela ngelanga lokugadangiswa, ukwenzela bona uMphathi Omkhulu atjhejwe ekhelini elitjengiswe ngehla.

Ibhalwe e-Cape Town mhlazi-06 ku Sinyikhaba 2025.

DR. B SAYIDINI
ISIKHULU ESIPHETHEKO ESIJAMELEKO

Directors:

S Roopa (Chairperson)
CC Mpelwane | MV Ngwenya | RH Nkambule | P Motsielwa | L Pitsoe
Acting Chief Executive Officer:Dr B Sayidini | Acting Chief Financial Officer: S Mahlambi
Company Secretary: Adv E Hendricks

South African Agency for Promotion of Petroleum Exploration and Exploitation SOC Ltd. Registration No. 1999/015715/30

Isithasiselo A **Inomboro:**
12/3/388

ISIFINGQO SESIKHULU ISIBAWO SELUNGELO

LOKUHLOLA I-PETHROLIYUM NGOKUYA KWESIGABA 79 SOMTHETHO WOKUTHUTHUKISWA KWEMININERALI NE-PETHROLIYUMU, 2002 (UMTHETHO NO. 28 OF 2002) ("UMTHETHO"): UMTHETHO WOKUHLOLA NGOKUPHETROLIYAMU WE-CULLINAN, BRONKHORSTSPRUIT, WARMBAD, MBIBANA, MDUTJANA, MOUTSE, MKOBOLA, GROBLERSDAL, NEBO, LYDENBURG, MIDDELBURG KANYE NOWITBANK E-GAUTENG, LIMPOPO NE-MPUMALANGA PROVINCY

Mhlana amalanga ali-06 kuNobayeni 2025, i-Ejensi ye-Petroleum yeSewula Afrika (i-Ejensi) yamukele isibawo esivela ku-H2Au Limited (H2Au) selungelo lokuHlola ngokuya kwesigaba 79 somThetho wokuThuthukiswa kweMithombo yamaMayini ne-Petroleum, 2002 (UmThetho Nomboro 28 ka-2020)" malungana neendawo ezikhulunywe ngazo lapha. Umdwebo wendawo le utjengiswe ngenzasi **njengomfanekiso 1.**

Indawo efakwe isibawo kilesi sicelo gade iphethwe yi-H2Au ngaphasi kwemvumo yokufunda yedeskithophu (TCP). Umnqopho weemfundo zedeskithophu ngaphasi kwe-TCP bekukuthola ubujamo bendawo legesi yemvelo kanye namagesi ahlotjaniswa nawo. Imiphumela evela eemfundweni zedeskithophu ezenziweko itjengise bona indawo efakwe isibawo ingaba yindawo yokuthola irhasi yemvelo negesi ehlobene nayo. Ngalokho-ke, i-H2Au ihlose ukuthatha iimfundo zedeskithophu phambili ngaphasi kwesicelo selungelo lokuhlola ukwenzela bona ithuthukise ukuzwisisa kwayo nge-geology engaphasi kwehlabathi, begodu ihlose ukwenza imisebenzi elandelako ngesikhathi seminyaka emithathu yelungelo lokuhlola:

- Hlanganisa amasethi wedatha yesayensi yephasi akhona endaweni ukusuka emithonjeni ehlukahlukeneko;

- Umsebenzi wensimu wokwenza imephu ye-geology yephasi, ukubuthelela nokuhlaziywa kwamasampula;

- Ukulungiswa kabutjha kwelayini yokusikinyeka kwephasi ekhona ukwenza ngcono ukuthathwa kwemifanekiso yesakhiwo;

- Iimfundo zokukghonakala kokutholwa kwedatha ye-geophysics ye-seismic neyomoya ukwenza ngcono ukuthathwa kwemifanekiso nokuzwisisa izakhiwo ezingaphasi komhlaba;

- Ukutholwa kwe-geophysics ye-airborne kanye nedatha ye-seismic nangabe imiphumela yeemfundo zokubona bona kungenzeka itjengisa bona lokhu kuzokurholela ekuthuthukisweni kwemifanekiso yezakhiwo ezingaphasi komhlaba;

- Ukuhlathulula nokuhlanganiswa kwedatha efunyenweko ukulungisa imodeli yesakhiwo esingaphasi komhlaba; kunye

- Ukukhonjwa, ukubeka engozini, ukubekwa esikhundleni kanye nokuhlolwa kwezokuthengisa kwamathagethi wokubhora angaba khona.

Imisebenzi ezakwenziwa yi-H2Au njengombana kuvezwe ngehla, izakuba ziimfundo zedeskithophu, nanyana kunjalo, imisebenzi esekelwe ensimini efana nokutholwa kwe-geophysics esemoyeni kanye nedatha ye-seismic ingenziwa. Nangabe i-H2Au yenza imisebenzi le, izokufaka isibawo sokugunyazwa kwezebhoduluko, begodu imiphakathi izokuzibandakanya emisebenzini ngesikhathi sokubonisana. Ikambiso yokubuyekezwa kwesibawo lesi ezakulandelwa ivezwe ngenzasi.

UKUHLOLA ISIBAWO NGOKUVUMELWA/UKWALA

Njengombana sele kutjengisiwe isibawo samukelwa mhlazi-06 kuNobayeni 2025, njenganje sizokuhlolisiswa okungeziweko kwezinto ezinengi zomThetho ngaphambi kokuthatha isiqunto malungana nokuvunywa nofana ukwala kwawo. Iimfuneko eziya ngomThetho, umThetho weNarha wokuPhathwa kweBhoduluko, 1998 neminye imithetho efaneleko nesebenzako izokuqalwa. Hlangana nezinye izinto ezizokuqalwa:

• Ikhono lezezimali nelobuchwepheshe loMfakisibawo lokwenza imisebenzi yokuhlola ehlongozwayo ngendlela efaneleko;

• Ukuthobela zoke iimfuneko zokunikelwa kwegunya lezebhoduluko; • Ukubonisana okuhle nabantu abanentshisekelo nabathintekako;

• Nangabe ukunikelwa kwelungelo lokuhlola kuzokwandisa amathuba wabantu abatlhagako ngokomlando; kunye

• Nangabe ukunikela lokhu kuzokukhuthaza ukuqatjhwa begodu kuthuthukise inhlalakahle yezenhlalakahle nezomnotho yamaSewula Afrika.

Kuqakathekile ukutjheja bona isiphakamiso sokunikela nofana ukwala ilungelo lokuhlola sizokwenziwa kwaphela ngemva kokuthi isiqunto sesibawo sokugunyazwa kwebhoduluko ngokuya kwemiThetho yokuHlola uMthelela weBhoduluko, 2014 sithathwe. I-H2Au ilulekwe bona ithome ngokufaka isibawo sokugunyazwa kwebhoduluko begodu abantu abanentshisekelo nabathintekako bazokufumana ithuba lokuphawula ngesikhathi senqubo yokuhlola umthelela webhoduluko.

Petroleum Agency SA

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ISAZISO MAYELANA NEKUXOXISANA NABANTU ABANESHISHINI NABATHINTEKAYO NGOKWESIGABA SE-10 SIFUNDWE NOMTHETHO WESI-3 WOMTHETHO WOKUTHUTHUKISWA KWEZEMBIWO NE-PETROLEUM, 2002 (UMTHETHO NO. 28 KA-2002)

Inombolo Ye nkomba: 12/3/388 ER

Isaziso siyakhishwa ngokweSigaba 10 (1) soMthetho oshiwo ngenhla sokuthi iPetroleum Agency SA, ngo-06 Novemba 2025 isamukele isicelo Selungelo Lokuhlola okwe uwoyela kanye negesi evela ku -H2Au Limited.

IMININGWANE YESICELO:	
Usuku lokutholwa kwesicelo:	17 Okthoba 2025
I-Sketch Plan enezixhumanisi, uhlu lwamapulazi abonisa indawo yesicelo kanye nesifingqo sesigungu sinamathiselwe kanje:	Isithasiselo A
Imininingwane Yokuxhumana Yesikhungo	Ibamba lesiKhulu esiPhezulu Le yindawo ka Heron Isigaba sokuqala I-Heron Vala I-Century City 7441 Ucingo: 021 938 3500 Ifeksi: 021 938 3520 I-imeyili: section10notices@petroleumagencysa.com

Noma yimuphi umuntu ofisa ukudlulisa imibono ngesicelo esingentla kufanele ahambisane neSigaba 10 (1) (b) soMthetho ongentla, kwenze lokho ngokubhala zingakapheli izinsuku ezingama-30 kusukela osukwini lokushicilelwa ngalo, ukuze kuqashelwe IsiKhulu esiPhezulu ekhelini eliboniswe ngentla.

Ihlelelwe eKapa mhla ka- **06 Novemba 2025.**

DR. B SAYIDINI
IBAMBA LESIKHULU ESIPHEZULU

Directors:

S Roopa (Chairperson)
CC Mpelwane | MV Ngwenya | RH Nkambule | P Motsielwa | L Pitsoe
Acting Chief Executive Officer:Dr B Sayidini | Acting Chief Financial Officer: S Mahlambi
Company Secretary: Adv E Hendricks

South African Agency for Promotion of Petroleum Exploration and Exploitation SOC Ltd. Registration No. 1999/015715/30

Inombolo yesijobelelo A : 12/3/388

ISIFINYEZO ESIPHEZULU

ISICELO SELUNGELO LOKUHLOLA KAPETROLEMU NGEMIBANDELA YESIGABA 79 SOMTHETHO WOKUTHUTHUKISA IMINERAL AND PETROLEUM RESOURCES, 2002 (UMTHETHO NO. 28 KA-2002) ("UMTHETHO"): AMAFMU EHLUKENE EMFUNDIWENI ESIFUNDAZWE, EZIFUNDAZWENI ZASE-BKHOMBA MBIBANA, MDUTJANA, MOUTSE, MKOBOLA, GROBLERSDAL, NEBO, LYDENBURG, MIDDELBURG KANYE NEWITBANK EGAUTENG, LIMPOPO KANYE NEMPUMALANGA IZIFUNDAZWE

Ngomhla zi-6 kuLwezi wezi-2025, i-Petroleum Agency of South Africa (I-Ejensi) yamukele isicelo esivela kwa-H2Au Limited (H2Au) selungelo lokuhlola ngokwesigaba sama-79 soMthetho Wokuthuthukiswa KweziNdawo Zombiwa kanye Nophethiloli, 2002 (uMthetho No. 28 ka-2002) ("uMthetho") mayelana nezindawo ezishiwo lapha. Umdwebo wale ndawo uboniswe ngezansi **njengoMfanekiso 1.**

Indawo efakwe isicelo kulesi sicelo ngaphambilini ibiphethwe yi-H2Au ngaphansi kwemvume yokufunda yedeskithophu (TCP). Injongo yezifundo zedeskithophu ngaphansi kwe-TCP kwakuwukuthola ithuba lendawo yegesi yemvelo namagesi ahlobene. Imiphumela yocwaningo lwedeskithophu eyenziwe yabonisa ukuthi indawo efakelwa isicelo ingase ibe negesi yemvelo namagesi ahlobene nawo. Ngakho, i-H2Au ihlose ukuqhubekisela phambili izifundo zedeskithophu ngaphansi kwesicelo selungelo lokuhlola ukuze ithuthukise ukuqonda kwayo kwe-subsurface geology, futhi ihlose ukwenza le misebenzi elandelayo phakathi nenkathi yeminyaka emithathu yelungelo lokuhlola:

- Qoqa amasethi edatha ye-geoscientific ekhona endaweni evela emithonjeni ehlukahlukene;

- Umsebenzi wasensimini wokudweba imephu yendawo yomhlaba, ukuqoqwa nokuhlaziywa kwamasampula;

- Ukucutshungulwa kabusha kwemigqa ekhona yokuzamazama komhlaba ukuze kuthuthukiswe ukubonwa kwesakhiwo;

- Izifundo ezingenzeka zokutholwa okungaba khona kwedatha ye-seismic kanye ne-airborne geophysics ukuthuthukisa ukuthwebula nokuqonda kwezakhiwo ezingaphansi komhlaba;

- Ukutholwa kwedatha ye-geophysics emoyeni kanye ne-seismic uma imiphumela yocwaningo okungenzeka ikhombisa ukuthi lokhu kuzoholela ekuthuthukisweni kokuthwebula izithombe kwezakhiwo ezingaphansi komhlaba;

- Ukuhunyushwa nokuhlanganiswa kwedatha etholiwe ukuze kucwengwe imodeli yesakhiwo esingaphansi komhlaba; futhi

- Ukuhlonzwa, ukubeka engcupheni, izinga kanye nokuhlolwa kwezentengiselwano kwezinhloso ezingase zibe khona zokuprakthiza.

Imisebenzi ezokwenziwa yi-H2Au njengoba kuvezwe ngenhla, ngokuyinhloko izoba izifundo zedeskithophu, nokho, imisebenzi esekelwe emkhakheni efana nokutholwa kwe-airborne geophysics kanye nedatha yokuzamazama komhlaba ingase yenziwe. Uma i-H2Au yenza le misebenzi esekelwe emkhakheni, izofaka isicelo sokugunyazwa kwezemvelo, futhi imiphakathi izozibandakanya emisebenzini ngesikhathi sezinqubo zokubonisana. Inqubo okuzolandelwa ukubuyekezwa kwalesi sicelo ichazwe ngezansi.

UKUHLOLWA KWESICELO NGENHLOSO YOKUVUMELA/UKUNQABA

Njengoba sekubonisiwe ukuthi isicelo samukelwe mhla zi-06 kuLwezi wezi-2025, manje sesingaphansi kokuhlolwa okwengeziwe kwezici ezimbalwa zoMthetho ngaphambi kwesinqumo mayelana nokuvunywa noma ukwenqatshwa kwaso. Izidingo ngokoMthetho, uMthetho Kazwelonke Wokuphathwa Kwemvelo, 1998 kanye neminye imithetho efanele nesebenzayo izobhekwa. Phakathi kwezinye izici ezizocatshangelwa yilezi:

• Ikhono lezezimali nezobuchwepheshe lomfakisicelo ukuze enze imisebenzi yokuhlola ehlongozwayo ngendlela efanele;

• Ukuhambisana nazo zonke izidingo zokunikezwa kweSigunyazo Sezemvelo;

• Ukubonisana okunenjongo nabathintekayo;

• Uma ukunikezwa kwelungelo lokuhlola kuzokwandisa kakhulu futhi ngendlela ephusile amathuba abantu ababencishwe amathuba phambilini; futhi

• Uma ukunikezwa kuzothuthukisa ukuqashwa futhi kuthuthukise inhlalakahle yezenhlalo nezomnotho yabantu baseNingizimu Afrika.

Kuyaphawuleka ukuthi isincomo sokunikeza noma ukwenqatshwa kwelungelo lokuhlola siyokwenziwa kuphela ngemva kwesinqumo sesicelo sokugunyazwa kwezemvelo ngokweMithethonqubo Yokuhlola Impatho Yendawo ka-2014. I-H2Au yelulekwe ukuthi iqale ngokufaka isicelo sokugunyazwa kwezemvelo futhi abantu abanentshisekelo nabathintekayo bazothola elinye ithuba lokuphawula ngesikhathi senqubo yokuhlola umthelela kwezemvelo.

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PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**,

excluding the figures **EX1 to EX78,**

represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 1 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. — M B Straughan G.Pr. LS0907D — 09 October 2025 (date)

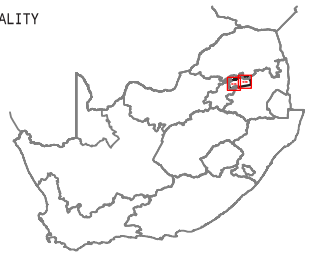
For applicant — Owain Jackson (name) — signature — 09 October 2025 (date)

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

1. Plan prepared from information supplied by National Geo-spatial Information (NGI), Mowbray, Cape Town, the Petroleum Agency South Africa (PASA), the Chief Surveyor General and by the applicant.
2. No verification of any information on which this plan is based has been carried out by survey or by any other means.
3. The registration status of the farms tabulated herein is not known.
4. Datum is WGS84.
5. All sides are rhumblines.
6. Areas are relative to the reference ellipsoid.
7. Projection is Plate Carrée.

LOCALITY



Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation

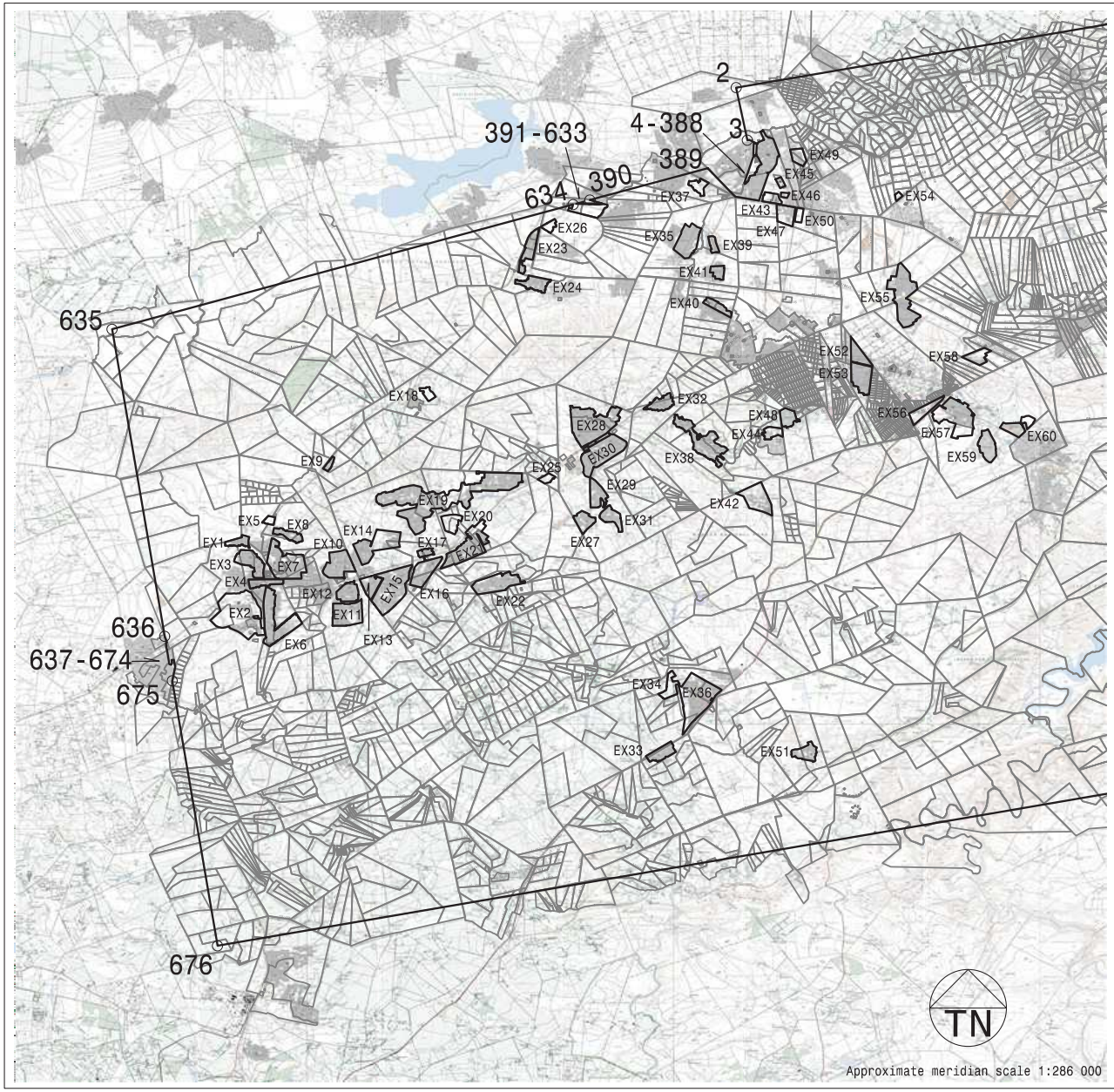
Dwg: reg 2(2) plan er kruis river oct 2025.dwg

Revision:

Date: 09 October 2025

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Sheet 2 of 81 sheets

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PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No.

M B Straughan
G.Pr. LS0907D

09 October 2025
date

For applicant Owain Jackson
name

signature

09 October 2025
date

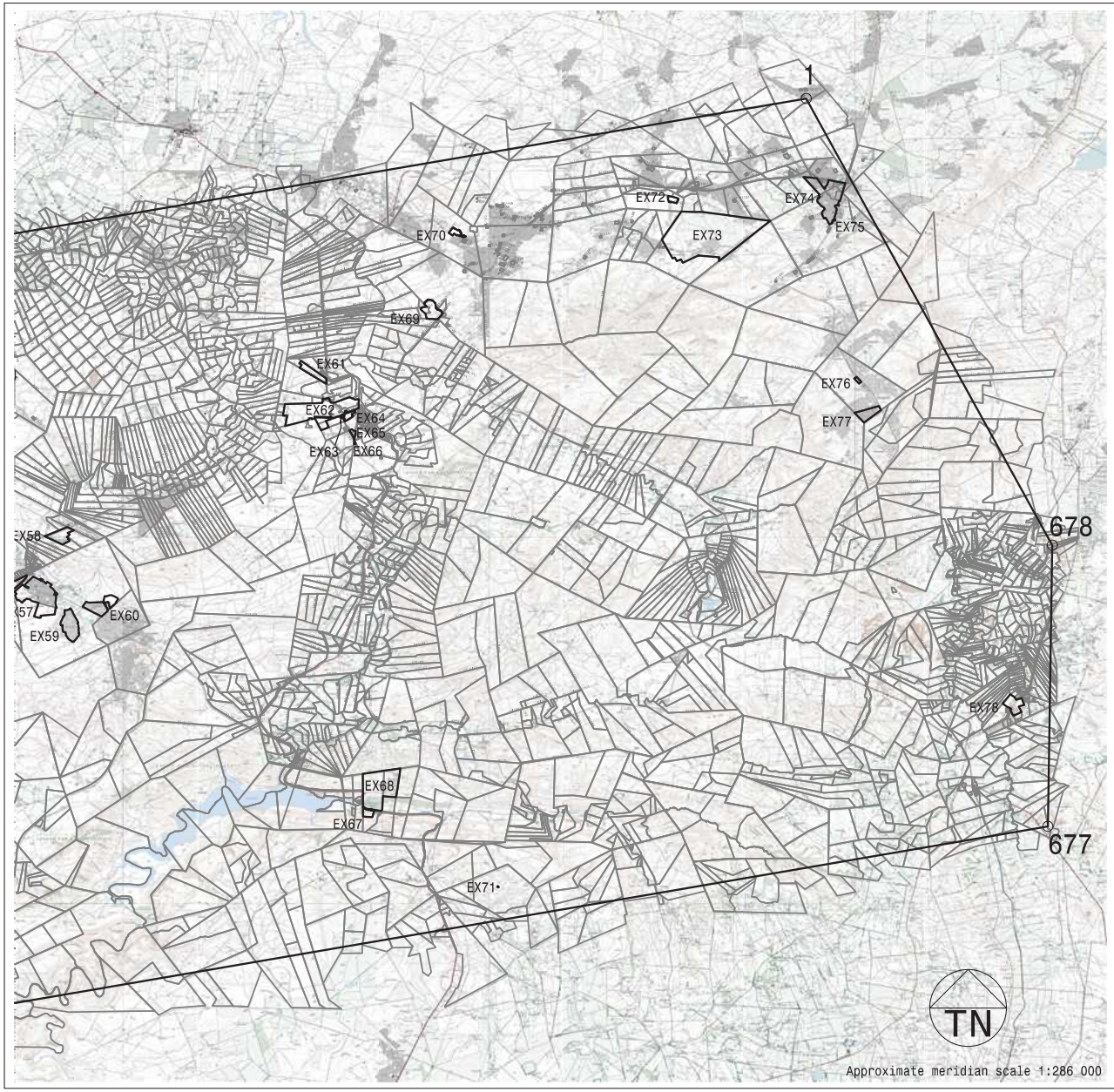
signature

date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	**Dwg:** reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

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The figure defined by the points **1 to 678**,

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Sheet 3 of 81 sheets

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PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. — M B Straughan G.Pr. LSO907D — 09 October 2025 date

For applicant Owain Jackson name

signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	**Dwg:** reg 2(2) plan er kruis river oct 2025.dwg
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Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
GAUTENG	JR	183	1	MELKHOUTFONTEIN 183 JR
GAUTENG	JR	183	3	MELKHOUTFONTEIN 183 JR
GAUTENG	JR	183	4	MELKHOUTFONTEIN 183 JR
GAUTENG	JR	183	5	MELKHOUTFONTEIN 183 JR
GAUTENG	JR	183	7	MELKHOUTFONTEIN 183 JR
GAUTENG	JR	183	8	MELKHOUTFONTEIN 183 JR
GAUTENG	JR	183	15	MELKHOUTFONTEIN 183 JR
GAUTENG	JR	183	16	MELKHOUTFONTEIN 183 JR
GAUTENG	JR	183	18	MELKHOUTFONTEIN 183 JR
GAUTENG	JR	183	19	MELKHOUTFONTEIN 183 JR
GAUTENG	JR	184	13	LEEUWKRAAL 184 JR
GAUTENG	JR	187	3	KLOPPERSDAM 187 JR
GAUTENG	JR	187	14	KLOPPERSDAM 187 JR
GAUTENG	JR	203	0	BOSCHKLOOF 203 JR
GAUTENG	JR	203	1	BOSCHKLOOF 203 JR
GAUTENG	JR	204	1	ZAAGKUILFONTEIN 204 JR
GAUTENG	JR	204	2	ZAAGKUILFONTEIN 204 JR
GAUTENG	JR	207	1	ENKELDOORNSPOORT 207 JR
GAUTENG	JR	207	2	ENKELDOORNSPOORT 207 JR
GAUTENG	JR	207	4	ENKELDOORNSPOORT 207 JR
GAUTENG	JR	208	0	NAAUWPOORT 208 JR
GAUTENG	JR	209	5	KROMDRAAI 209 JR
GAUTENG	JR	440	1	ROOIPOORT 440 JR
GAUTENG	JR	440	2	ROOIPOORT 440 JR
GAUTENG	JR	440	3	ROOIPOORT 440 JR
GAUTENG	JR	440	4	ROOIPOORT 440 JR
GAUTENG	JR	440	5	ROOIPOORT 440 JR
GAUTENG	JR	440	6	ROOIPOORT 440 JR
GAUTENG	JR	440	7	ROOIPOORT 440 JR
GAUTENG	JR	440	8	ROOIPOORT 440 JR
GAUTENG	JR	440	9	ROOIPOORT 440 JR
GAUTENG	JR	440	10	ROOIPOORT 440 JR
GAUTENG	JR	440	11	ROOIPOORT 440 JR
GAUTENG	JR	440	12	ROOIPOORT 440 JR
GAUTENG	JR	440	13	ROOIPOORT 440 JR
GAUTENG	JR	440	14	ROOIPOORT 440 JR
GAUTENG	JR	440	15	ROOIPOORT 440 JR
GAUTENG	JR	440	16	ROOIPOORT 440 JR
GAUTENG	JR	440	17	ROOIPOORT 440 JR
GAUTENG	JR	440	18	ROOIPOORT 440 JR
GAUTENG	JR	442	0	WOLVENGAT 442 JR
GAUTENG	JR	442	1	WOLVENGAT 442 JR
GAUTENG	JR	447	0	ZUSTERSTROOM 447 JR
GAUTENG	JR	447	1	ZUSTERSTROOM 447 JR
GAUTENG	JR	447	5	ZUSTERSTROOM 447 JR
GAUTENG	JR	447	7	ZUSTERSTROOM 447 JR
GAUTENG	JR	447	8	ZUSTERSTROOM 447 JR
GAUTENG	JR	447	9	ZUSTERSTROOM 447 JR

Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
GAUTENG	JR	447	13	ZUSTERSTROOM 447 JR
GAUTENG	JR	447	14	ZUSTERSTROOM 447 JR
GAUTENG	JR	447	17	ZUSTERSTROOM 447 JR
GAUTENG	JR	447	21	ZUSTERSTROOM 447 JR
GAUTENG	JR	447	22	ZUSTERSTROOM 447 JR
GAUTENG	JR	447	23	ZUSTERSTROOM 447 JR
GAUTENG	JR	447	24	ZUSTERSTROOM 447 JR
GAUTENG	JR	447	25	ZUSTERSTROOM 447 JR
GAUTENG	JR	447	38	ZUSTERSTROOM 447 JR
GAUTENG	JR	447	39	ZUSTERSTROOM 447 JR
GAUTENG	JR	451	1	TRIGAARDSPOORT 451 JR
GAUTENG	JR	451	20	TRIGAARDSPOORT 451 JR
GAUTENG	JR	451	21	TRIGAARDSPOORT 451 JR
GAUTENG	JR	451	23	TRIGAARDSPOORT 451 JR
GAUTENG	JR	451	24	TRIGAARDSPOORT 451 JR
GAUTENG	JR	451	36	TRIGAARDSPOORT 451 JR
GAUTENG	JR	451	37	TRIGAARDSPOORT 451 JR
GAUTENG	JR	451	52	TRIGAARDSPOORT 451 JR
GAUTENG	JR	452	0	RHENOSTERKOP 452 JR
GAUTENG	JR	452	1	RHENOSTERKOP 452 JR
GAUTENG	JR	452	2	RHENOSTERKOP 452 JR
GAUTENG	JR	452	3	RHENOSTERKOP 452 JR
GAUTENG	JR	452	4	RHENOSTERKOP 452 JR
GAUTENG	JR	452	5	RHENOSTERKOP 452 JR
GAUTENG	JR	452	6	RHENOSTERKOP 452 JR
GAUTENG	JR	452	7	RHENOSTERKOP 452 JR
GAUTENG	JR	452	8	RHENOSTERKOP 452 JR
GAUTENG	JR	452	9	RHENOSTERKOP 452 JR
GAUTENG	JR	452	10	RHENOSTERKOP 452 JR
GAUTENG	JR	453	1	VLAKFONTEIN 453 JR
GAUTENG	JR	453	3	VLAKFONTEIN 453 JR
GAUTENG	JR	453	4	VLAKFONTEIN 453 JR
GAUTENG	JR	453	11	VLAKFONTEIN 453 JR
GAUTENG	JR	453	12	VLAKFONTEIN 453 JR
GAUTENG	JR	453	13	VLAKFONTEIN 453 JR
GAUTENG	JR	453	14	VLAKFONTEIN 453 JR
GAUTENG	JR	453	15	VLAKFONTEIN 453 JR
GAUTENG	JR	453	16	VLAKFONTEIN 453 JR
GAUTENG	JR	453	18	VLAKFONTEIN 453 JR
GAUTENG	JR	453	23	VLAKFONTEIN 453 JR
GAUTENG	JR	453	26	VLAKFONTEIN 453 JR
GAUTENG	JR	453	27	VLAKFONTEIN 453 JR
GAUTENG	JR	453	28	VLAKFONTEIN 453 JR
GAUTENG	JR	453	29	VLAKFONTEIN 453 JR
GAUTENG	JR	453	30	VLAKFONTEIN 453 JR
GAUTENG	JR	453	31	VLAKFONTEIN 453 JR
GAUTENG	JR	453	32	VLAKFONTEIN 453 JR
GAUTENG	JR	466	19	LEEUWFONTEIN 466 JR

Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
GAUTENG	JR	610	0	EKANGALA 610 JR
GAUTENG	JR	696	0	MTSHAYISE 696 JR
GAUTENG	JS	227	3	WOLVENKOP 227 JS
GAUTENG	JS	227	6	WOLVENKOP 227 JS
GAUTENG	JS	227	10	WOLVENKOP 227 JS
GAUTENG	JS	227	11	WOLVENKOP 227 JS
GAUTENG	JS	228	3	LEEUWFONTEIN 228 JS
GAUTENG	JS	228	12	LEEUWFONTEIN 228 JS
GAUTENG	JS	228	17	LEEUWFONTEIN 228 JS
GAUTENG	JS	228	18	LEEUWFONTEIN 228 JS
GAUTENG	JS	229	9	LANGKLOOF 229 JS
GAUTENG	JS	235	0	LEEUWKLOOF 235 JS
LIMPOPO	JR	180	204	RUST DER WINTER 180 JR
LIMPOPO	JR	180	205	RUST DER WINTER 180 JR
LIMPOPO	JR	180	206	RUST DER WINTER 180 JR
LIMPOPO	JR	180	207	RUST DER WINTER 180 JR
LIMPOPO	JR	180	208	RUST DER WINTER 180 JR
LIMPOPO	JR	180	209	RUST DER WINTER 180 JR
LIMPOPO	JR	180	210	RUST DER WINTER 180 JR
LIMPOPO	JS	1	0	WITFONTEIN 1 JS
LIMPOPO	JS	1	334	WITFONTEIN 1 JS
LIMPOPO	JS	1	369	WITFONTEIN 1 JS
LIMPOPO	JS	1	402	WITFONTEIN 1 JS
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LIMPOPO	JS	1	404	WITFONTEIN 1 JS
LIMPOPO	JS	1	475	WITFONTEIN 1 JS
LIMPOPO	JS	1	476	WITFONTEIN 1 JS
LIMPOPO	JS	2	1	KLIPSYFERING 2 JS
LIMPOPO	JS	6	2	TOITSKRAAL 6 JS
LIMPOPO	JS	6	6	TOITSKRAAL 6 JS
LIMPOPO	JS	6	20	TOITSKRAAL 6 JS
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LIMPOPO	JS	6	30	TOITSKRAAL 6 JS
LIMPOPO	JS	6	31	TOITSKRAAL 6 JS
LIMPOPO	JS	6	32	TOITSKRAAL 6 JS
LIMPOPO	JS	6	33	TOITSKRAAL 6 JS
LIMPOPO	JS	6	34	TOITSKRAAL 6 JS
LIMPOPO	JS	6	35	TOITSKRAAL 6 JS
LIMPOPO	JS	6	36	TOITSKRAAL 6 JS
LIMPOPO	JS	6	37	TOITSKRAAL 6 JS

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Sheet 4 of 81 sheets

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PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. — M B Straughan G.Pr. LS0907D — 09 October 2025 date

For applicant — Owain Jackson name — signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	**Dwg:** reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

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Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
LIMPOPO	JS	6	38	TOITSKRAAL 6 JS
LIMPOPO	JS	6	39	TOITSKRAAL 6 JS
LIMPOPO	JS	6	40	TOITSKRAAL 6 JS
LIMPOPO	JS	6	41	TOITSKRAAL 6 JS
LIMPOPO	JS	6	42	TOITSKRAAL 6 JS
LIMPOPO	JS	6	43	TOITSKRAAL 6 JS
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LIMPOPO	JS	6	79	TOITSKRAAL 6 JS
LIMPOPO	JS	9	7	ELANDSLAAGTE 9 JS
LIMPOPO	JS	9	8	ELANDSLAAGTE 9 JS
LIMPOPO	JS	9	9	ELANDSLAAGTE 9 JS
LIMPOPO	JS	11	4	
LIMPOPO	JS	11	5	
LIMPOPO	JS	11	6	
LIMPOPO	JS	11	7	
LIMPOPO	JS	11	8	
LIMPOPO	JS	11	9	
LIMPOPO	JS	11	10	
LIMPOPO	JS	11	11	
LIMPOPO	JS	12	2	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	3	LOSKOP NOORD 12 JS

Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
LIMPOPO	JS	12	4	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	5	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	6	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	7	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	8	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	9	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	10	LOSKOP NOORD 12 JS
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LIMPOPO	JS	12	48	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	52	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	53	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	54	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	55	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	56	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	57	LOSKOP NOORD 12 JS

Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
LIMPOPO	JS	12	58	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	59	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	60	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	61	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	62	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	63	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	64	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	65	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	66	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	68	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	69	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	70	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	71	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	72	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	73	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	74	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	75	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	76	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	85	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	88	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	89	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	93	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	94	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	95	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	96	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	99	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	100	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	102	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	120	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	121	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	122	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	123	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	124	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	125	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	126	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	132	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	133	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	134	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	135	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	136	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	137	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	138	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	139	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	140	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	141	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	142	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	143	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	144	LOSKOP NOORD 12 JS

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PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 5 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. — M B Straughan G.Pr. LSO907D — 09 October 2025 date

For applicant Owain Jackson name

signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	**Dwg:** reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

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Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
LIMPOPO	JS	12	145	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	147	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	149	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	150	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	151	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	152	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	153	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	154	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	155	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	156	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	157	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	158	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	159	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	160	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	161	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	162	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	163	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	164	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	165	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	166	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	167	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	168	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	169	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	170	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	171	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	173	LOSKOP NOORD 12 JS
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LIMPOPO	JS	12	181	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	182	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	183	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	184	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	185	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	186	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	187	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	188	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	189	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	190	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	193	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	194	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	195	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	196	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	197	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	198	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	199	LOSKOP NOORD 12 JS

Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
LIMPOPO	JS	12	200	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	201	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	202	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	203	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	204	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	205	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	206	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	207	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	212	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	213	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	214	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	215	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	216	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	217	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	218	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	220	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	221	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	222	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	223	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	224	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	225	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	226	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	228	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	229	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	230	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	233	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	235	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	237	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	238	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	239	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	242	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	249	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	250	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	253	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	254	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	255	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	256	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	257	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	258	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	259	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	261	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	262	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	263	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	264	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	266	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	267	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	268	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	269	LOSKOP NOORD 12 JS

Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
LIMPOPO	JS	12	270	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	271	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	272	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	273	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	274	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	275	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	276	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	277	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	278	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	283	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	284	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	285	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	297	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	298	LOSKOP NOORD 12 JS
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LIMPOPO	JS	12	300	LOSKOP NOORD 12 JS
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LIMPOPO	JS	12	302	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	303	LOSKOP NOORD 12 JS
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LIMPOPO	JS	12	306	LOSKOP NOORD 12 JS
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LIMPOPO	JS	12	308	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	309	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	310	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	311	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	312	LOSKOP NOORD 12 JS
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LIMPOPO	JS	12	314	LOSKOP NOORD 12 JS
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LIMPOPO	JS	12	318	LOSKOP NOORD 12 JS
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LIMPOPO	JS	12	337	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	338	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	339	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	341	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	348	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	353	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	354	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	355	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	356	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	357	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	358	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	392	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	393	LOSKOP NOORD 12 JS

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PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 6 of 81 sheets

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PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. — M B Straughan G.Pr. LSO907D — 09 October 2025 date

For applicant — Owain Jackson name — signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation

Dwg: reg 2(2) plan er kruis river oct 2025.dwg

Revision:

Date: 09 October 2025

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Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
LIMPOPO	JS	12	394	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	395	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	396	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	397	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	398	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	405	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	406	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	422	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	423	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	448	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	449	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	451	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	452	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	453	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	454	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	455	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	456	LOSKOP NOORD 12 JS
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LIMPOPO	JS	12	458	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	459	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	460	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	461	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	462	LOSKOP NOORD 12 JS
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LIMPOPO	JS	12	465	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	466	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	467	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	468	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	469	LOSKOP NOORD 12 JS
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LIMPOPO	JS	12	471	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	478	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	479	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	482	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	483	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	484	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	488	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	495	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	496	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	497	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	501	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	508	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	509	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	510	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	512	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	513	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	514	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	530	LOSKOP NOORD 12 JS

Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
LIMPOPO	JS	12	531	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	540	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	542	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	589	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	590	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	591	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	592	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	593	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	594	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	595	LOSKOP NOORD 12 JS
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LIMPOPO	JS	12	599	LOSKOP NOORD 12 JS
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LIMPOPO	JS	12	605	LOSKOP NOORD 12 JS
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LIMPOPO	JS	12	628	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	629	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	630	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	631	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	632	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	633	LOSKOP NOORD 12 JS
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LIMPOPO	JS	12	636	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	637	LOSKOP NOORD 12 JS
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LIMPOPO	JS	12	646	LOSKOP NOORD 12 JS
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LIMPOPO	JS	12	660	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	661	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	662	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	663	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	666	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	667	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	668	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	669	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	670	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	671	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	672	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	673	LOSKOP NOORD 12 JS

Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
LIMPOPO	JS	12	674	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	675	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	676	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	677	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	678	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	679	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	680	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	681	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	682	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	683	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	684	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	685	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	686	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	688	LOSKOP NOORD 12 JS
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LIMPOPO	JS	12	693	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	694	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	695	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	696	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	697	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	698	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	699	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	700	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	701	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	704	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	705	LOSKOP NOORD 12 JS
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LIMPOPO	JS	12	707	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	708	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	709	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	710	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	711	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	712	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	713	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	714	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	715	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	716	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	717	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	718	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	719	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	720	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	721	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	722	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	724	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	725	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	726	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	727	LOSKOP NOORD 12 JS
LIMPOPO	JS	12	728	LOSKOP NOORD 12 JS

H2Au Limited

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PASA reference no._____

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For applicant — Owain Jackson name — signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation

Dwg: reg 2(2) plan er kruis river oct 2025.dwg

Revision:

Date: 09 October 2025

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Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
LIMPOPO	J5	12	729	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	730	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	731	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	732	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	733	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	734	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	735	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	736	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	737	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	738	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	739	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	740	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	741	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	742	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	743	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	744	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	745	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	746	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	747	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	748	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	749	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	750	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	751	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	752	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	753	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	754	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	755	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	756	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	757	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	760	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	768	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	769	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	770	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	771	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	772	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	773	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	774	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	775	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	776	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	777	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	846	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	847	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	848	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	849	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	850	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	855	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	856	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	857	LOSKOP NOORD 12 JS

Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
LIMPOPO	J5	12	858	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	859	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	860	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	861	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	862	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	863	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	867	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	868	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	870	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	871	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	872	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	873	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	874	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	875	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	878	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	892	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	893	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	894	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	895	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	896	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	897	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	898	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	899	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	900	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	901	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	902	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	903	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	904	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	905	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	906	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	907	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	908	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	909	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	910	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	911	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	912	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	913	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	914	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	915	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	916	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	917	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	918	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	919	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	920	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	921	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	922	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	923	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	924	LOSKOP NOORD 12 JS

Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
LIMPOPO	J5	12	925	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	926	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	927	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	928	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	929	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	930	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	931	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	932	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	933	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	934	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	935	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	936	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	937	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	938	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	939	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	940	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	941	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	942	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	943	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	944	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	945	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	946	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	947	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	948	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	949	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	950	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	951	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	952	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	953	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	954	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	955	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	956	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	957	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	960	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	961	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	962	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	963	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	964	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	965	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	966	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	967	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	968	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	969	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	971	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	972	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	973	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	974	LOSKOP NOORD 12 JS
LIMPOPO	J5	12	975	LOSKOP NOORD 12 JS

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PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 8 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. — M B Straughan G.Pr. LSO907D — 09 October 2025 date

For applicant — Owain Jackson name — signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

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Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
LIMPOPO	J5	12	976	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	977	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	981	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	982	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	983	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	984	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	985	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	986	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	987	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	989	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	992	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	993	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	994	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	995	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	997	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	998	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	999	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1000	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1001	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1002	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1003	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1004	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1005	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1006	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1007	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1008	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1009	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1010	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1011	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1012	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1013	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1015	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1016	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1017	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1018	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1019	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1022	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1026	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1030	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1033	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1037	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1038	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1039	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1043	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1044	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1049	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1051	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1055	LOSKOP NOORD 12 J5

Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
LIMPOPO	J5	12	1062	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1064	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1065	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1068	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1069	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1087	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1088	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1091	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1092	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1093	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1094	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1097	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1115	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1116	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1117	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1171	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1178	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1179	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1181	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1190	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1192	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1194	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1195	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1196	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1197	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1198	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1200	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1204	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1205	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1208	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1210	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1215	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1216	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1221	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1222	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1225	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1234	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1235	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1236	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1237	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1238	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1248	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1249	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1250	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1252	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1253	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1256	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1257	LOSKOP NOORD 12 J5

Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
LIMPOPO	J5	12	1258	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1261	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1263	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1264	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1272	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1273	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1283	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1284	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1285	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1286	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1291	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1292	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1293	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1295	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1299	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1300	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1301	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1302	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1308	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1309	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1310	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1312	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1316	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1318	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1322	LOSKOP NOORD 12 J5
LIMPOPO	J5	12	1323	LOSKOP NOORD 12 J5
LIMPOPO	J5	13	7	WOLVENKRAAL 13 J5
LIMPOPO	J5	13	14	WOLVENKRAAL 13 J5
LIMPOPO	J5	13	28	WOLVENKRAAL 13 J5
LIMPOPO	J5	13	32	WOLVENKRAAL 13 J5
LIMPOPO	J5	13	33	WOLVENKRAAL 13 J5
LIMPOPO	J5	13	35	WOLVENKRAAL 13 J5
LIMPOPO	J5	13	36	WOLVENKRAAL 13 J5
LIMPOPO	J5	13	37	WOLVENKRAAL 13 J5
LIMPOPO	J5	13	38	WOLVENKRAAL 13 J5
LIMPOPO	J5	13	41	WOLVENKRAAL 13 J5
LIMPOPO	J5	13	42	WOLVENKRAAL 13 J5
LIMPOPO	J5	13	43	WOLVENKRAAL 13 J5
LIMPOPO	J5	13	44	WOLVENKRAAL 13 J5
LIMPOPO	J5	13	45	WOLVENKRAAL 13 J5
LIMPOPO	J5	14	4	VAALFONTEIN 14 J5
LIMPOPO	J5	14	5	VAALFONTEIN 14 J5
LIMPOPO	J5	14	6	VAALFONTEIN 14 J5
LIMPOPO	J5	14	8	VAALFONTEIN 14 J5
LIMPOPO	J5	14	12	VAALFONTEIN 14 J5
LIMPOPO	J5	14	14	VAALFONTEIN 14 J5
LIMPOPO	J5	14	15	VAALFONTEIN 14 J5
LIMPOPO	J5	14	16	VAALFONTEIN 14 J5

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

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PASA reference no._____

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For applicant — Owain Jackson name — signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

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Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
LIMPOPO	JS	14	19	VAALFONTEIN 14 JS
LIMPOPO	JS	15	0	RAMSHOORN 15 JS
LIMPOPO	JS	15	1	RAMSHOORN 15 JS
LIMPOPO	JS	16	0	BLAUWWILDEBEESTFONTEIN 16 JS
LIMPOPO	JS	16	1	BLAUWWILDEBEESTFONTEIN 16 JS
LIMPOPO	JS	16	2	BLAUWWILDEBEESTFONTEIN 16 JS
LIMPOPO	JS	16	3	BLAUWWILDEBEESTFONTEIN 16 JS
LIMPOPO	JS	16	4	BLAUWWILDEBEESTFONTEIN 16 JS
LIMPOPO	JS	16	7	BLAUWWILDEBEESTFONTEIN 16 JS
LIMPOPO	JS	16	8	BLAUWWILDEBEESTFONTEIN 16 JS
LIMPOPO	JS	16	10	BLAUWWILDEBEESTFONTEIN 16 JS
LIMPOPO	JS	16	11	BLAUWWILDEBEESTFONTEIN 16 JS
LIMPOPO	JS	16	12	BLAUWWILDEBEESTFONTEIN 16 JS
LIMPOPO	JS	16	13	BLAUWWILDEBEESTFONTEIN 16 JS
LIMPOPO	JS	16	14	BLAUWWILDEBEESTFONTEIN 16 JS
LIMPOPO	JS	16	16	BLAUWWILDEBEESTFONTEIN 16 JS
LIMPOPO	JS	16	18	BLAUWWILDEBEESTFONTEIN 16 JS
LIMPOPO	JS	16	19	BLAUWWILDEBEESTFONTEIN 16 JS
LIMPOPO	JS	16	22	BLAUWWILDEBEESTFONTEIN 16 JS
LIMPOPO	JS	16	23	BLAUWWILDEBEESTFONTEIN 16 JS
LIMPOPO	JS	16	24	BLAUWWILDEBEESTFONTEIN 16 JS
LIMPOPO	JS	16	25	BLAUWWILDEBEESTFONTEIN 16 JS
LIMPOPO	JS	16	26	BLAUWWILDEBEESTFONTEIN 16 JS
LIMPOPO	JS	16	28	BLAUWWILDEBEESTFONTEIN 16 JS
LIMPOPO	JS	16	29	BLAUWWILDEBEESTFONTEIN 16 JS
LIMPOPO	JS	16	30	BLAUWWILDEBEESTFONTEIN 16 JS
LIMPOPO	JS	16	31	BLAUWWILDEBEESTFONTEIN 16 JS
LIMPOPO	JS	16	32	BLAUWWILDEBEESTFONTEIN 16 JS
LIMPOPO	JS	17	1	KAMEELKOP 17 JS
LIMPOPO	JS	17	2	KAMEELKOP 17 JS
LIMPOPO	JS	17	6	KAMEELKOP 17 JS
LIMPOPO	JS	17	7	KAMEELKOP 17 JS
LIMPOPO	JS	17	12	KAMEELKOP 17 JS
LIMPOPO	JS	17	13	KAMEELKOP 17 JS
LIMPOPO	JS	17	14	KAMEELKOP 17 JS
LIMPOPO	JS	17	15	KAMEELKOP 17 JS
LIMPOPO	JS	17	16	KAMEELKOP 17 JS
LIMPOPO	JS	17	17	KAMEELKOP 17 JS
LIMPOPO	JS	17	18	KAMEELKOP 17 JS
LIMPOPO	JS	18	0	LEEUWLAAGTE 18 JS
LIMPOPO	JS	18	1	LEEUWLAAGTE 18 JS
LIMPOPO	JS	18	2	LEEUWLAAGTE 18 JS
LIMPOPO	JS	18	3	LEEUWLAAGTE 18 JS
LIMPOPO	JS	18	4	LEEUWLAAGTE 18 JS
LIMPOPO	JS	18	5	LEEUWLAAGTE 18 JS
LIMPOPO	JS	19	0	VARKENSKRAAL 19 JS
LIMPOPO	JS	19	5	VARKENSKRAAL 19 JS
LIMPOPO	JS	19	6	VARKENSKRAAL 19 JS

Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
LIMPOPO	JS	19	7	VARKENSKRAAL 19 JS
LIMPOPO	JS	19	8	VARKENSKRAAL 19 JS
LIMPOPO	JS	19	10	VARKENSKRAAL 19 JS
LIMPOPO	JS	20	0	HARTEBEESTFONTEIN 20 JS
LIMPOPO	JS	20	2	HARTEBEESTFONTEIN 20 JS
LIMPOPO	JS	20	4	HARTEBEESTFONTEIN 20 JS
LIMPOPO	JS	20	5	HARTEBEESTFONTEIN 20 JS
LIMPOPO	JS	20	6	HARTEBEESTFONTEIN 20 JS
LIMPOPO	JS	20	7	HARTEBEESTFONTEIN 20 JS
LIMPOPO	JS	20	11	HARTEBEESTFONTEIN 20 JS
LIMPOPO	JS	21	0	TUSSCHENIN 21 JS
LIMPOPO	JS	21	1	TUSSCHENIN 21 JS
LIMPOPO	JS	21	2	TUSSCHENIN 21 JS
LIMPOPO	JS	21	4	TUSSCHENIN 21 JS
LIMPOPO	JS	21	5	TUSSCHENIN 21 JS
LIMPOPO	JS	21	6	TUSSCHENIN 21 JS
LIMPOPO	JS	21	8	TUSSCHENIN 21 JS
LIMPOPO	JS	21	9	TUSSCHENIN 21 JS
LIMPOPO	JS	23	0	VARSCHWATER 23 JS
LIMPOPO	JS	23	3	VARSCHWATER 23 JS
LIMPOPO	JS	23	5	VARSCHWATER 23 JS
LIMPOPO	JS	23	11	VARSCHWATER 23 JS
LIMPOPO	JS	23	12	VARSCHWATER 23 JS
LIMPOPO	JS	23	13	VARSCHWATER 23 JS
LIMPOPO	JS	23	15	VARSCHWATER 23 JS
LIMPOPO	JS	23	17	VARSCHWATER 23 JS
LIMPOPO	JS	23	20	VARSCHWATER 23 JS
LIMPOPO	JS	24	0	WELVERDIEND 24 JS
LIMPOPO	JS	24	2	WELVERDIEND 24 JS
LIMPOPO	JS	24	5	WELVERDIEND 24 JS
LIMPOPO	JS	24	6	WELVERDIEND 24 JS
LIMPOPO	JS	24	9	WELVERDIEND 24 JS
LIMPOPO	JS	24	10	WELVERDIEND 24 JS
LIMPOPO	JS	24	12	WELVERDIEND 24 JS
LIMPOPO	JS	24	13	WELVERDIEND 24 JS
LIMPOPO	JS	24	14	WELVERDIEND 24 JS
LIMPOPO	JS	24	15	WELVERDIEND 24 JS
LIMPOPO	JS	24	17	WELVERDIEND 24 JS
LIMPOPO	JS	24	18	WELVERDIEND 24 JS
LIMPOPO	JS	24	21	WELVERDIEND 24 JS
LIMPOPO	JS	24	23	WELVERDIEND 24 JS
LIMPOPO	JS	24	24	WELVERDIEND 24 JS
LIMPOPO	JS	24	25	WELVERDIEND 24 JS
LIMPOPO	JS	24	28	WELVERDIEND 24 JS
LIMPOPO	JS	24	29	WELVERDIEND 24 JS
LIMPOPO	JS	24	33	WELVERDIEND 24 JS
LIMPOPO	JS	24	36	WELVERDIEND 24 JS
LIMPOPO	JS	24	41	WELVERDIEND 24 JS

Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
LIMPOPO	JS	24	42	WELVERDIEND 24 JS
LIMPOPO	JS	24	45	WELVERDIEND 24 JS
LIMPOPO	JS	24	46	WELVERDIEND 24 JS
LIMPOPO	JS	24	48	WELVERDIEND 24 JS
LIMPOPO	JS	24	49	WELVERDIEND 24 JS
LIMPOPO	JS	24	58	WELVERDIEND 24 JS
LIMPOPO	JS	24	59	WELVERDIEND 24 JS
LIMPOPO	JS	24	60	WELVERDIEND 24 JS
LIMPOPO	JS	24	62	WELVERDIEND 24 JS
LIMPOPO	JS	24	63	WELVERDIEND 24 JS
LIMPOPO	JS	24	70	WELVERDIEND 24 JS
LIMPOPO	JS	24	72	WELVERDIEND 24 JS
LIMPOPO	JS	24	73	WELVERDIEND 24 JS
LIMPOPO	JS	24	74	WELVERDIEND 24 JS
LIMPOPO	JS	24	75	WELVERDIEND 24 JS
LIMPOPO	JS	24	76	WELVERDIEND 24 JS
LIMPOPO	JS	24	77	WELVERDIEND 24 JS
LIMPOPO	JS	24	78	WELVERDIEND 24 JS
LIMPOPO	JS	24	79	WELVERDIEND 24 JS
LIMPOPO	JS	24	81	WELVERDIEND 24 JS
LIMPOPO	JS	25	0	KROKODILSDRIFT 25 JS
LIMPOPO	JS	25	4	KROKODILSDRIFT 25 JS
LIMPOPO	JS	25	5	KROKODILSDRIFT 25 JS
LIMPOPO	JS	25	6	KROKODILSDRIFT 25 JS
LIMPOPO	JS	25	8	KROKODILSDRIFT 25 JS
LIMPOPO	JS	25	11	KROKODILSDRIFT 25 JS
LIMPOPO	JS	25	12	KROKODILSDRIFT 25 JS
LIMPOPO	JS	25	13	KROKODILSDRIFT 25 JS
LIMPOPO	JS	25	14	KROKODILSDRIFT 25 JS
LIMPOPO	JS	25	15	KROKODILSDRIFT 25 JS
LIMPOPO	JS	25	17	KROKODILSDRIFT 25 JS
LIMPOPO	JS	25	18	KROKODILSDRIFT 25 JS
LIMPOPO	JS	25	19	KROKODILSDRIFT 25 JS
LIMPOPO	JS	25	20	KROKODILSDRIFT 25 JS
LIMPOPO	JS	25	21	KROKODILSDRIFT 25 JS
LIMPOPO	JS	25	23	KROKODILSDRIFT 25 JS
LIMPOPO	JS	25	24	KROKODILSDRIFT 25 JS
LIMPOPO	JS	25	25	KROKODILSDRIFT 25 JS
LIMPOPO	JS	25	27	KROKODILSDRIFT 25 JS
LIMPOPO	JS	25	28	KROKODILSDRIFT 25 JS
LIMPOPO	JS	25	29	KROKODILSDRIFT 25 JS
LIMPOPO	JS	25	33	KROKODILSDRIFT 25 JS
LIMPOPO	JS	25	34	KROKODILSDRIFT 25 JS
LIMPOPO	JS	25	35	KROKODILSDRIFT 25 JS
LIMPOPO	JS	25	37	KROKODILSDRIFT 25 JS
LIMPOPO	JS	25	39	KROKODILSDRIFT 25 JS
LIMPOPO	JS	25	41	KROKODILSDRIFT 25 JS
LIMPOPO	JS	25	42	KROKODILSDRIFT 25 JS

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PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 10 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No.

M B Straughan G.Pr. LS0907D

09 October 2025 date

For applicant Owain Jackson name

signature

09 October 2025 date

signature

date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	**Dwg:** reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

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Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
LIMPOPO	JS	25	43	KROKODILSDRIFT 25 JS
LIMPOPO	JS	25	44	KROKODILSDRIFT 25 JS
LIMPOPO	JS	25	45	KROKODILSDRIFT 25 JS
LIMPOPO	JS	25	46	KROKODILSDRIFT 25 JS
LIMPOPO	JS	25	47	KROKODILSDRIFT 25 JS
LIMPOPO	JS	25	48	KROKODILSDRIFT 25 JS
LIMPOPO	JS	25	49	KROKODILSDRIFT 25 JS
LIMPOPO	JS	25	50	KROKODILSDRIFT 25 JS
LIMPOPO	JS	25	51	KROKODILSDRIFT 25 JS
LIMPOPO	JS	25	52	KROKODILSDRIFT 25 JS
LIMPOPO	JS	25	53	KROKODILSDRIFT 25 JS
LIMPOPO	JS	25	54	KROKODILSDRIFT 25 JS
LIMPOPO	JS	25	55	KROKODILSDRIFT 25 JS
LIMPOPO	JS	25	56	KROKODILSDRIFT 25 JS
LIMPOPO	JS	25	57	KROKODILSDRIFT 25 JS
LIMPOPO	JS	25	58	KROKODILSDRIFT 25 JS
LIMPOPO	JS	25	59	KROKODILSDRIFT 25 JS
LIMPOPO	JS	25	64	KROKODILSDRIFT 25 JS
LIMPOPO	JS	25	65	KROKODILSDRIFT 25 JS
LIMPOPO	JS	26	0	KLIPBANK 26 JS
LIMPOPO	JS	26	1	KLIPBANK 26 JS
LIMPOPO	JS	26	2	KLIPBANK 26 JS
LIMPOPO	JS	26	3	KLIPBANK 26 JS
LIMPOPO	JS	26	10	KLIPBANK 26 JS
LIMPOPO	JS	26	11	KLIPBANK 26 JS
LIMPOPO	JS	26	12	KLIPBANK 26 JS
LIMPOPO	JS	26	13	KLIPBANK 26 JS
LIMPOPO	JS	26	16	KLIPBANK 26 JS
LIMPOPO	JS	26	17	KLIPBANK 26 JS
LIMPOPO	JS	26	18	KLIPBANK 26 JS
LIMPOPO	JS	26	19	KLIPBANK 26 JS
LIMPOPO	JS	26	26	KLIPBANK 26 JS
LIMPOPO	JS	26	28	KLIPBANK 26 JS
LIMPOPO	JS	26	30	KLIPBANK 26 JS
LIMPOPO	JS	26	31	KLIPBANK 26 JS
LIMPOPO	JS	26	32	KLIPBANK 26 JS
LIMPOPO	JS	26	41	KLIPBANK 26 JS
LIMPOPO	JS	26	43	KLIPBANK 26 JS
LIMPOPO	JS	26	44	KLIPBANK 26 JS
LIMPOPO	JS	26	46	KLIPBANK 26 JS
LIMPOPO	JS	26	47	KLIPBANK 26 JS
LIMPOPO	JS	26	49	KLIPBANK 26 JS
LIMPOPO	JS	26	51	KLIPBANK 26 JS
LIMPOPO	JS	26	54	KLIPBANK 26 JS
LIMPOPO	JS	26	55	KLIPBANK 26 JS
LIMPOPO	JS	26	56	KLIPBANK 26 JS
LIMPOPO	JS	26	58	KLIPBANK 26 JS
LIMPOPO	JS	26	68	KLIPBANK 26 JS

Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
LIMPOPO	JS	26	69	KLIPBANK 26 JS
LIMPOPO	JS	26	72	KLIPBANK 26 JS
LIMPOPO	JS	26	74	KLIPBANK 26 JS
LIMPOPO	JS	26	75	KLIPBANK 26 JS
LIMPOPO	JS	26	76	KLIPBANK 26 JS
LIMPOPO	JS	26	77	KLIPBANK 26 JS
LIMPOPO	JS	26	78	KLIPBANK 26 JS
LIMPOPO	JS	26	79	KLIPBANK 26 JS
LIMPOPO	JS	26	80	KLIPBANK 26 JS
LIMPOPO	JS	26	81	KLIPBANK 26 JS
LIMPOPO	JS	26	82	KLIPBANK 26 JS
LIMPOPO	JS	26	83	KLIPBANK 26 JS
LIMPOPO	JS	26	86	KLIPBANK 26 JS
LIMPOPO	JS	26	92	KLIPBANK 26 JS
LIMPOPO	JS	26	96	KLIPBANK 26 JS
LIMPOPO	JS	26	104	KLIPBANK 26 JS
LIMPOPO	JS	26	105	KLIPBANK 26 JS
LIMPOPO	JS	27	2	MOSESRIVIERSMOND 27 JS
LIMPOPO	JS	27	14	MOSESRIVIERSMOND 27 JS
LIMPOPO	JS	27	28	MOSESRIVIERSMOND 27 JS
LIMPOPO	JS	28	0	OUDE STAD VAN MELEEUW 28 JS
LIMPOPO	JS	28	3	OUDE STAD VAN MELEEUW 28 JS
LIMPOPO	JS	28	4	OUDE STAD VAN MELEEUW 28 JS
LIMPOPO	JS	28	5	OUDE STAD VAN MELEEUW 28 JS
LIMPOPO	JS	28	9	OUDE STAD VAN MELEEUW 28 JS
LIMPOPO	JS	30	0	TAMBOTIEWATERS 30 JS
LIMPOPO	JS	31	2	KUILSRIVIER 31 JS
LIMPOPO	JS	31	3	KUILSRIVIER 31 JS
LIMPOPO	JS	31	4	KUILSRIVIER 31 JS
LIMPOPO	JS	31	8	KUILSRIVIER 31 JS
LIMPOPO	JS	31	12	KUILSRIVIER 31 JS
LIMPOPO	JS	31	16	KUILSRIVIER 31 JS
LIMPOPO	JS	32	3	ZONDAGSFONTEIN 32 JS
LIMPOPO	JS	32	4	ZONDAGSFONTEIN 32 JS
LIMPOPO	JS	32	5	ZONDAGSFONTEIN 32 JS
LIMPOPO	JS	32	7	ZONDAGSFONTEIN 32 JS
LIMPOPO	JS	32	8	ZONDAGSFONTEIN 32 JS
LIMPOPO	JS	32	9	ZONDAGSFONTEIN 32 JS
LIMPOPO	JS	32	10	ZONDAGSFONTEIN 32 JS
LIMPOPO	JS	32	11	ZONDAGSFONTEIN 32 JS
LIMPOPO	JS	32	12	ZONDAGSFONTEIN 32 JS
LIMPOPO	JS	32	17	ZONDAGSFONTEIN 32 JS
LIMPOPO	JS	33	2	
LIMPOPO	JS	33	15	
LIMPOPO	JS	33	16	
LIMPOPO	JS	33	17	
LIMPOPO	JS	33	19	
LIMPOPO	JS	33	20	

Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
LIMPOPO	JS	35	0	WALKRAAL 35 JS
LIMPOPO	JS	35	1	WALKRAAL 35 JS
LIMPOPO	JS	35	2	WALKRAAL 35 JS
LIMPOPO	JS	35	3	WALKRAAL 35 JS
LIMPOPO	JS	35	4	WALKRAAL 35 JS
LIMPOPO	JS	35	5	WALKRAAL 35 JS
LIMPOPO	JS	35	6	WALKRAAL 35 JS
LIMPOPO	JS	35	7	WALKRAAL 35 JS
LIMPOPO	JS	35	8	WALKRAAL 35 JS
LIMPOPO	JS	35	9	WALKRAAL 35 JS
LIMPOPO	JS	35	23	WALKRAAL 35 JS
LIMPOPO	JS	35	24	WALKRAAL 35 JS
LIMPOPO	JS	35	26	WALKRAAL 35 JS
LIMPOPO	JS	36	0	ZOETMELKSFONTEIN 36 JS
LIMPOPO	JS	36	1	ZOETMELKSFONTEIN 36 JS
LIMPOPO	JS	36	2	ZOETMELKSFONTEIN 36 JS
LIMPOPO	JS	36	17	ZOETMELKSFONTEIN 36 JS
LIMPOPO	JS	36	18	ZOETMELKSFONTEIN 36 JS
LIMPOPO	JS	36	19	ZOETMELKSFONTEIN 36 JS
LIMPOPO	JS	36	20	ZOETMELKSFONTEIN 36 JS
LIMPOPO	JS	36	21	ZOETMELKSFONTEIN 36 JS
LIMPOPO	JS	36	22	ZOETMELKSFONTEIN 36 JS
LIMPOPO	JS	36	23	ZOETMELKSFONTEIN 36 JS
LIMPOPO	JS	36	24	ZOETMELKSFONTEIN 36 JS
LIMPOPO	JS	36	25	ZOETMELKSFONTEIN 36 JS
LIMPOPO	JS	36	26	ZOETMELKSFONTEIN 36 JS
LIMPOPO	JS	36	33	ZOETMELKSFONTEIN 36 JS
LIMPOPO	JS	36	36	ZOETMELKSFONTEIN 36 JS
LIMPOPO	JS	36	38	ZOETMELKSFONTEIN 36 JS
LIMPOPO	JS	36	39	ZOETMELKSFONTEIN 36 JS
LIMPOPO	JS	38	0	UITSPANNING 38 JS
LIMPOPO	JS	38	4	UITSPANNING 38 JS
LIMPOPO	JS	38	5	UITSPANNING 38 JS
LIMPOPO	JS	38	12	UITSPANNING 38 JS
LIMPOPO	JS	38	13	UITSPANNING 38 JS
LIMPOPO	JS	38	14	UITSPANNING 38 JS
LIMPOPO	JS	38	15	UITSPANNING 38 JS
LIMPOPO	JS	38	16	UITSPANNING 38 JS
LIMPOPO	JS	38	17	UITSPANNING 38 JS
LIMPOPO	JS	38	19	UITSPANNING 38 JS
LIMPOPO	JS	38	20	UITSPANNING 38 JS
LIMPOPO	JS	38	21	UITSPANNING 38 JS
LIMPOPO	JS	38	22	UITSPANNING 38 JS
LIMPOPO	JS	38	23	UITSPANNING 38 JS
LIMPOPO	JS	38	24	UITSPANNING 38 JS
LIMPOPO	JS	38	25	UITSPANNING 38 JS
LIMPOPO	JS	38	26	UITSPANNING 38 JS
LIMPOPO	JS	38	27	UITSPANNING 38 JS

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PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

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Sheet 11 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No.

M B Straughan G.Pr. LS0907D — 09 October 2025 date

For applicant Owain Jackson name

signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	**Dwg:** reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

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Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
LIMPOPO	J5	38	28	UITSPANNING 38 J5
LIMPOPO	J5	38	29	UITSPANNING 38 J5
LIMPOPO	J5	38	30	UITSPANNING 38 J5
LIMPOPO	J5	38	31	UITSPANNING 38 J5
LIMPOPO	J5	38	32	UITSPANNING 38 J5
LIMPOPO	J5	38	33	UITSPANNING 38 J5
LIMPOPO	J5	38	34	UITSPANNING 38 J5
LIMPOPO	J5	38	35	UITSPANNING 38 J5
LIMPOPO	J5	38	36	UITSPANNING 38 J5
LIMPOPO	J5	38	37	UITSPANNING 38 J5
LIMPOPO	J5	38	38	UITSPANNING 38 J5
LIMPOPO	J5	38	39	UITSPANNING 38 J5
LIMPOPO	J5	38	40	UITSPANNING 38 J5
LIMPOPO	J5	38	41	UITSPANNING 38 J5
LIMPOPO	J5	38	42	UITSPANNING 38 J5
LIMPOPO	J5	38	43	UITSPANNING 38 J5
LIMPOPO	J5	38	44	UITSPANNING 38 J5
LIMPOPO	J5	38	45	UITSPANNING 38 J5
LIMPOPO	J5	38	46	UITSPANNING 38 J5
LIMPOPO	J5	38	47	UITSPANNING 38 J5
LIMPOPO	J5	38	48	UITSPANNING 38 J5
LIMPOPO	J5	38	49	UITSPANNING 38 J5
LIMPOPO	J5	38	53	UITSPANNING 38 J5
LIMPOPO	J5	38	54	UITSPANNING 38 J5
LIMPOPO	J5	38	55	UITSPANNING 38 J5
LIMPOPO	J5	38	56	UITSPANNING 38 J5
LIMPOPO	J5	38	60	UITSPANNING 38 J5
LIMPOPO	J5	38	61	UITSPANNING 38 J5
LIMPOPO	J5	38	69	UITSPANNING 38 J5
LIMPOPO	J5	38	73	UITSPANNING 38 J5
LIMPOPO	J5	38	74	UITSPANNING 38 J5
LIMPOPO	J5	39	0	BLOEMPOORT 39 J5
LIMPOPO	J5	39	1	BLOEMPOORT 39 J5
LIMPOPO	J5	39	2	BLOEMPOORT 39 J5
LIMPOPO	J5	39	3	BLOEMPOORT 39 J5
LIMPOPO	J5	39	4	BLOEMPOORT 39 J5
LIMPOPO	J5	39	5	BLOEMPOORT 39 J5
LIMPOPO	J5	39	6	BLOEMPOORT 39 J5
LIMPOPO	J5	39	8	BLOEMPOORT 39 J5
LIMPOPO	J5	39	9	BLOEMPOORT 39 J5
LIMPOPO	J5	39	11	BLOEMPOORT 39 J5
LIMPOPO	J5	39	12	BLOEMPOORT 39 J5
LIMPOPO	J5	39	14	BLOEMPOORT 39 J5
LIMPOPO	J5	39	15	BLOEMPOORT 39 J5
LIMPOPO	J5	39	16	BLOEMPOORT 39 J5
LIMPOPO	J5	39	17	BLOEMPOORT 39 J5
LIMPOPO	J5	39	18	BLOEMPOORT 39 J5
LIMPOPO	J5	39	19	BLOEMPOORT 39 J5
LIMPOPO	J5	39	20	BLOEMPOORT 39 J5
LIMPOPO	J5	39	21	BLOEMPOORT 39 J5
LIMPOPO	J5	39	22	BLOEMPOORT 39 J5
LIMPOPO	J5	39	23	BLOEMPOORT 39 J5
LIMPOPO	J5	39	24	BLOEMPOORT 39 J5
LIMPOPO	J5	39	25	BLOEMPOORT 39 J5
LIMPOPO	J5	39	26	BLOEMPOORT 39 J5
LIMPOPO	J5	39	27	BLOEMPOORT 39 J5
LIMPOPO	J5	39	28	BLOEMPOORT 39 J5
LIMPOPO	J5	39	29	BLOEMPOORT 39 J5
LIMPOPO	J5	39	30	BLOEMPOORT 39 J5
LIMPOPO	J5	39	31	BLOEMPOORT 39 J5
LIMPOPO	J5	39	32	BLOEMPOORT 39 J5
LIMPOPO	J5	39	33	BLOEMPOORT 39 J5
LIMPOPO	J5	39	34	BLOEMPOORT 39 J5
LIMPOPO	J5	39	35	BLOEMPOORT 39 J5
LIMPOPO	J5	39	36	BLOEMPOORT 39 J5
LIMPOPO	J5	39	37	BLOEMPOORT 39 J5
LIMPOPO	J5	39	38	BLOEMPOORT 39 J5
LIMPOPO	J5	39	39	BLOEMPOORT 39 J5
LIMPOPO	J5	39	40	BLOEMPOORT 39 J5
LIMPOPO	J5	39	41	BLOEMPOORT 39 J5
LIMPOPO	J5	39	43	BLOEMPOORT 39 J5
LIMPOPO	J5	39	46	BLOEMPOORT 39 J5
LIMPOPO	J5	39	47	BLOEMPOORT 39 J5
LIMPOPO	J5	39	48	BLOEMPOORT 39 J5
LIMPOPO	J5	39	49	BLOEMPOORT 39 J5
LIMPOPO	J5	39	50	BLOEMPOORT 39 J5
LIMPOPO	J5	39	51	BLOEMPOORT 39 J5
LIMPOPO	J5	39	53	BLOEMPOORT 39 J5
LIMPOPO	J5	39	54	BLOEMPOORT 39 J5
LIMPOPO	J5	39	57	BLOEMPOORT 39 J5
LIMPOPO	J5	39	58	BLOEMPOORT 39 J5
LIMPOPO	J5	39	60	BLOEMPOORT 39 J5
LIMPOPO	J5	39	63	BLOEMPOORT 39 J5
LIMPOPO	J5	39	64	BLOEMPOORT 39 J5
LIMPOPO	J5	40	0	WITPENSKLOOF 40 J5
LIMPOPO	J5	40	1	WITPENSKLOOF 40 J5
LIMPOPO	J5	40	2	WITPENSKLOOF 40 J5
LIMPOPO	J5	40	3	WITPENSKLOOF 40 J5
LIMPOPO	J5	40	4	WITPENSKLOOF 40 J5
LIMPOPO	J5	40	5	WITPENSKLOOF 40 J5
LIMPOPO	J5	40	6	WITPENSKLOOF 40 J5
LIMPOPO	J5	40	7	WITPENSKLOOF 40 J5
LIMPOPO	J5	40	8	WITPENSKLOOF 40 J5
LIMPOPO	J5	40	10	WITPENSKLOOF 40 J5
LIMPOPO	J5	40	11	WITPENSKLOOF 40 J5
LIMPOPO	J5	40	12	WITPENSKLOOF 40 J5
LIMPOPO	J5	40	13	WITPENSKLOOF 40 J5
LIMPOPO	J5	41	1	UITZOEK 41 J5
LIMPOPO	J5	42	9	KLEINWATERFONTEIN 42 J5
LIMPOPO	J5	43	0	WITPENSKLOOF 43 J5
LIMPOPO	J5	44	0	DIEPKLOOF 44 J5
LIMPOPO	J5	44	3	DIEPKLOOF 44 J5
LIMPOPO	J5	44	4	DIEPKLOOF 44 J5
LIMPOPO	J5	44	5	DIEPKLOOF 44 J5
LIMPOPO	J5	44	6	DIEPKLOOF 44 J5
LIMPOPO	J5	44	7	DIEPKLOOF 44 J5
LIMPOPO	J5	44	8	DIEPKLOOF 44 J5
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LIMPOPO	J5	44	14	DIEPKLOOF 44 J5
LIMPOPO	J5	44	16	DIEPKLOOF 44 J5
LIMPOPO	J5	44	17	DIEPKLOOF 44 J5
LIMPOPO	J5	44	18	DIEPKLOOF 44 J5
LIMPOPO	J5	44	22	DIEPKLOOF 44 J5
LIMPOPO	J5	44	23	DIEPKLOOF 44 J5
LIMPOPO	J5	44	24	DIEPKLOOF 44 J5
LIMPOPO	J5	44	25	DIEPKLOOF 44 J5
LIMPOPO	J5	44	26	DIEPKLOOF 44 J5
LIMPOPO	J5	44	28	DIEPKLOOF 44 J5
LIMPOPO	J5	44	29	DIEPKLOOF 44 J5
LIMPOPO	J5	44	32	DIEPKLOOF 44 J5
LIMPOPO	J5	44	33	DIEPKLOOF 44 J5
LIMPOPO	J5	44	34	DIEPKLOOF 44 J5
LIMPOPO	J5	44	35	DIEPKLOOF 44 J5
LIMPOPO	J5	44	36	DIEPKLOOF 44 J5
LIMPOPO	J5	44	37	DIEPKLOOF 44 J5
LIMPOPO	J5	44	38	DIEPKLOOF 44 J5
LIMPOPO	J5	44	39	DIEPKLOOF 44 J5
LIMPOPO	J5	44	40	DIEPKLOOF 44 J5
LIMPOPO	J5	44	41	DIEPKLOOF 44 J5
LIMPOPO	J5	44	42	DIEPKLOOF 44 J5
LIMPOPO	J5	44	43	DIEPKLOOF 44 J5
LIMPOPO	J5	44	44	DIEPKLOOF 44 J5
LIMPOPO	J5	44	45	DIEPKLOOF 44 J5
LIMPOPO	J5	44	46	DIEPKLOOF 44 J5
LIMPOPO	J5	44	50	DIEPKLOOF 44 J5
LIMPOPO	J5	44	51	DIEPKLOOF 44 J5
LIMPOPO	J5	44	52	DIEPKLOOF 44 J5
LIMPOPO	J5	44	65	DIEPKLOOF 44 J5
LIMPOPO	J5	44	66	DIEPKLOOF 44 J5
LIMPOPO	J5	44	67	DIEPKLOOF 44 J5
LIMPOPO	J5	45	4	WELGEVONDEN 45 J5
LIMPOPO	J5	45	5	WELGEVONDEN 45 J5
LIMPOPO	J5	45	6	WELGEVONDEN 45 J5
LIMPOPO	J5	45	10	WELGEVONDEN 45 J5

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PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 12 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No.

M B Straughan G.Pr. LSO907D

09 October 2025 date

For applicant Owain Jackson name

signature

09 October 2025 date

signature

date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	**Dwg:** reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

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Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
LIMPOPO	JS	45	11	WELGEVONDEN 45 JS
LIMPOPO	JS	45	12	WELGEVONDEN 45 JS
LIMPOPO	JS	45	14	WELGEVONDEN 45 JS
LIMPOPO	JS	45	15	WELGEVONDEN 45 JS
LIMPOPO	JS	45	16	WELGEVONDEN 45 JS
LIMPOPO	JS	45	17	WELGEVONDEN 45 JS
LIMPOPO	JS	45	20	WELGEVONDEN 45 JS
LIMPOPO	JS	45	21	WELGEVONDEN 45 JS
LIMPOPO	JS	45	22	WELGEVONDEN 45 JS
LIMPOPO	JS	45	23	WELGEVONDEN 45 JS
LIMPOPO	JS	45	30	WELGEVONDEN 45 JS
LIMPOPO	JS	46	0	LEEUKRAAL 46 JS
LIMPOPO	JS	47	1	RHENOSTERKOP 47 JS
LIMPOPO	JS	47	2	RHENOSTERKOP 47 JS
LIMPOPO	JS	47	4	RHENOSTERKOP 47 JS
LIMPOPO	JS	47	5	RHENOSTERKOP 47 JS
LIMPOPO	JS	48	1	ELANDSPLAATS 48 JS
LIMPOPO	JS	48	3	ELANDSPLAATS 48 JS
LIMPOPO	JS	48	4	ELANDSPLAATS 48 JS
LIMPOPO	JS	49	4	KALKFONTEIN 49 JS
LIMPOPO	JS	49	6	KALKFONTEIN 49 JS
LIMPOPO	JS	49	11	KALKFONTEIN 49 JS
LIMPOPO	JS	49	13	KALKFONTEIN 49 JS
LIMPOPO	JS	49	14	KALKFONTEIN 49 JS
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LIMPOPO	JS	49	45	KALKFONTEIN 49 JS
LIMPOPO	JS	49	46	KALKFONTEIN 49 JS
LIMPOPO	JS	49	47	KALKFONTEIN 49 JS
LIMPOPO	JS	49	48	KALKFONTEIN 49 JS

Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
LIMPOPO	JS	49	51	KALKFONTEIN 49 JS
LIMPOPO	JS	49	53	KALKFONTEIN 49 JS
LIMPOPO	JS	52	1	
LIMPOPO	JS	53	0	LOSKOP SUID 53 JS
LIMPOPO	JS	53	4	LOSKOP SUID 53 JS
LIMPOPO	JS	53	5	LOSKOP SUID 53 JS
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LIMPOPO	JS	53	51	LOSKOP SUID 53 JS
LIMPOPO	JS	53	52	LOSKOP SUID 53 JS
LIMPOPO	JS	53	53	LOSKOP SUID 53 JS

Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
LIMPOPO	JS	53	54	LOSKOP SUID 53 JS
LIMPOPO	JS	53	55	LOSKOP SUID 53 JS
LIMPOPO	JS	53	56	LOSKOP SUID 53 JS
LIMPOPO	JS	53	57	LOSKOP SUID 53 JS
LIMPOPO	JS	53	60	LOSKOP SUID 53 JS
LIMPOPO	JS	53	63	LOSKOP SUID 53 JS
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LIMPOPO	JS	53	124	LOSKOP SUID 53 JS
LIMPOPO	JS	53	125	LOSKOP SUID 53 JS
LIMPOPO	JS	53	126	LOSKOP SUID 53 JS
LIMPOPO	JS	53	128	LOSKOP SUID 53 JS

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PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

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Sheet 13 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No.

M B Straughan G.Pr. LS0907D — 09 October 2025 date

For applicant Owain Jackson name

signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	**Dwg:** reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

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Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
LIMPOPO	JS	53	133	LOSKOP SUID 53 JS
LIMPOPO	JS	53	134	LOSKOP SUID 53 JS
LIMPOPO	JS	53	136	LOSKOP SUID 53 JS
LIMPOPO	JS	53	137	LOSKOP SUID 53 JS
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LIMPOPO	JS	53	331	LOSKOP SUID 53 JS
LIMPOPO	JS	53	332	LOSKOP SUID 53 JS
LIMPOPO	JS	53	333	LOSKOP SUID 53 JS
LIMPOPO	JS	53	334	LOSKOP SUID 53 JS
LIMPOPO	JS	53	335	LOSKOP SUID 53 JS
LIMPOPO	JS	53	336	LOSKOP SUID 53 JS
LIMPOPO	JS	53	337	LOSKOP SUID 53 JS
LIMPOPO	JS	53	338	LOSKOP SUID 53 JS
LIMPOPO	JS	53	339	LOSKOP SUID 53 JS
LIMPOPO	JS	53	340	LOSKOP SUID 53 JS
LIMPOPO	JS	53	341	LOSKOP SUID 53 JS
LIMPOPO	JS	53	342	LOSKOP SUID 53 JS
LIMPOPO	JS	53	343	LOSKOP SUID 53 JS
LIMPOPO	JS	53	344	LOSKOP SUID 53 JS
LIMPOPO	JS	53	345	LOSKOP SUID 53 JS
LIMPOPO	JS	53	346	LOSKOP SUID 53 JS
LIMPOPO	JS	53	347	LOSKOP SUID 53 JS
LIMPOPO	JS	53	348	LOSKOP SUID 53 JS
LIMPOPO	JS	53	349	LOSKOP SUID 53 JS
LIMPOPO	JS	53	350	LOSKOP SUID 53 JS
LIMPOPO	JS	53	351	LOSKOP SUID 53 JS
LIMPOPO	JS	53	352	LOSKOP SUID 53 JS
LIMPOPO	JS	53	353	LOSKOP SUID 53 JS
LIMPOPO	JS	53	354	LOSKOP SUID 53 JS
LIMPOPO	JS	53	355	LOSKOP SUID 53 JS
LIMPOPO	JS	53	356	LOSKOP SUID 53 JS
LIMPOPO	JS	53	357	LOSKOP SUID 53 JS

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 14 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No.

M B Straughan G.Pr. LSO907D

09 October 2025 date

For applicant Owain Jackson name

signature

09 October 2025 date

signature

date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation

Dwg: reg 2(2) plan er kruis river oct 2025.dwg

Revision:

Date: 09 October 2025

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Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
LIMPOPO	JS	53	358	LOSKOP SUID 53 JS
LIMPOPO	JS	53	371	LOSKOP SUID 53 JS
LIMPOPO	JS	53	380	LOSKOP SUID 53 JS
LIMPOPO	JS	53	382	LOSKOP SUID 53 JS
LIMPOPO	JS	53	383	LOSKOP SUID 53 JS
LIMPOPO	JS	53	384	LOSKOP SUID 53 JS
LIMPOPO	JS	53	387	LOSKOP SUID 53 JS
LIMPOPO	JS	53	390	LOSKOP SUID 53 JS
LIMPOPO	JS	53	391	LOSKOP SUID 53 JS
LIMPOPO	JS	53	392	LOSKOP SUID 53 JS
LIMPOPO	JS	53	393	LOSKOP SUID 53 JS
LIMPOPO	JS	53	394	LOSKOP SUID 53 JS
LIMPOPO	JS	53	395	LOSKOP SUID 53 JS
LIMPOPO	JS	53	397	LOSKOP SUID 53 JS
LIMPOPO	JS	53	399	LOSKOP SUID 53 JS
LIMPOPO	JS	53	400	LOSKOP SUID 53 JS
LIMPOPO	JS	53	401	LOSKOP SUID 53 JS
LIMPOPO	JS	53	402	LOSKOP SUID 53 JS
LIMPOPO	JS	53	403	LOSKOP SUID 53 JS
LIMPOPO	JS	53	404	LOSKOP SUID 53 JS
LIMPOPO	JS	53	405	LOSKOP SUID 53 JS
LIMPOPO	JS	53	406	LOSKOP SUID 53 JS
LIMPOPO	JS	53	407	LOSKOP SUID 53 JS
LIMPOPO	JS	53	408	LOSKOP SUID 53 JS
LIMPOPO	JS	53	410	LOSKOP SUID 53 JS
LIMPOPO	JS	53	411	LOSKOP SUID 53 JS
LIMPOPO	JS	53	412	LOSKOP SUID 53 JS
LIMPOPO	JS	53	413	LOSKOP SUID 53 JS
LIMPOPO	JS	53	417	LOSKOP SUID 53 JS
LIMPOPO	JS	53	420	LOSKOP SUID 53 JS
LIMPOPO	JS	53	421	LOSKOP SUID 53 JS
LIMPOPO	JS	53	422	LOSKOP SUID 53 JS
LIMPOPO	JS	53	424	LOSKOP SUID 53 JS
LIMPOPO	JS	53	425	LOSKOP SUID 53 JS
LIMPOPO	JS	53	427	LOSKOP SUID 53 JS
LIMPOPO	JS	53	428	LOSKOP SUID 53 JS
LIMPOPO	JS	53	429	LOSKOP SUID 53 JS
LIMPOPO	JS	53	430	LOSKOP SUID 53 JS
LIMPOPO	JS	53	431	LOSKOP SUID 53 JS
LIMPOPO	JS	53	432	LOSKOP SUID 53 JS
LIMPOPO	JS	53	433	LOSKOP SUID 53 JS
LIMPOPO	JS	53	438	LOSKOP SUID 53 JS
LIMPOPO	JS	53	441	LOSKOP SUID 53 JS
LIMPOPO	JS	53	442	LOSKOP SUID 53 JS
LIMPOPO	JS	53	444	LOSKOP SUID 53 JS
LIMPOPO	JS	53	448	LOSKOP SUID 53 JS
LIMPOPO	JS	53	450	LOSKOP SUID 53 JS
LIMPOPO	JS	54	0	KLIPFONTEIN 54 JS

Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
LIMPOPO	JS	55	0	STUKJE 55 JS
LIMPOPO	JS	56	1	ELANDSDOORN 56 JS
LIMPOPO	JS	56	4	ELANDSDOORN 56 JS
LIMPOPO	JS	56	5	ELANDSDOORN 56 JS
LIMPOPO	JS	56	6	ELANDSDOORN 56 JS
LIMPOPO	JS	56	7	ELANDSDOORN 56 JS
LIMPOPO	JS	56	9	ELANDSDOORN 56 JS
LIMPOPO	JS	56	10	ELANDSDOORN 56 JS
LIMPOPO	JS	56	14	ELANDSDOORN 56 JS
LIMPOPO	JS	56	19	ELANDSDOORN 56 JS
LIMPOPO	JS	56	30	ELANDSDOORN 56 JS
LIMPOPO	JS	57	0	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	2	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	3	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	5	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	6	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	7	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	8	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	9	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	11	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	12	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	13	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	14	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	15	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	16	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	17	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	18	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	19	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	20	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	21	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	22	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	23	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	24	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	25	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	26	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	27	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	28	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	29	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	30	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	31	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	32	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	33	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	34	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	35	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	36	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	37	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	38	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	39	KIKVORSCHFONTEIN 57 JS

Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
LIMPOPO	JS	57	41	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	42	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	43	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	44	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	45	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	46	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	47	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	48	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	49	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	50	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	51	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	52	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	53	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	54	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	55	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	56	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	57	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	58	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	59	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	60	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	61	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	62	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	63	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	64	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	65	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	66	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	67	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	68	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	69	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	70	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	71	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	72	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	73	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	74	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	75	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	76	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	77	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	78	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	79	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	80	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	81	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	82	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	83	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	84	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	85	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	86	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	87	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	88	KIKVORSCHFONTEIN 57 JS

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The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 15 of 81 sheets

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PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. — M B Straughan G.Pr. LSO907D — 09 October 2025 date

For applicant — Owain Jackson name — signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	**Dwg:** reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

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Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
LIMPOPO	JS	57	89	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	90	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	91	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	92	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	93	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	94	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	95	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	96	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	97	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	98	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	99	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	100	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	101	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	102	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	103	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	104	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	105	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	106	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	107	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	108	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	109	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	110	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	111	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	112	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	113	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	114	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	115	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	116	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	117	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	118	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	119	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	120	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	121	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	122	KIKVORSCHFONTEIN 57 JS
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LIMPOPO	JS	57	125	KIKVORSCHFONTEIN 57 JS
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LIMPOPO	JS	57	127	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	128	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	129	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	130	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	131	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	132	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	133	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	134	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	135	KIKVORSCHFONTEIN 57 JS
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LIMPOPO	JS	57	137	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	138	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	139	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	140	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	141	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	142	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	143	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	144	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	145	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	146	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	147	KIKVORSCHFONTEIN 57 JS
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LIMPOPO	JS	57	149	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	150	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	151	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	152	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	153	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	154	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	155	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	156	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	157	KIKVORSCHFONTEIN 57 JS
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LIMPOPO	JS	57	159	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	160	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	161	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	162	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	163	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	164	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	165	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	167	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	168	KIKVORSCHFONTEIN 57 JS
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LIMPOPO	JS	57	172	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	173	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	174	KIKVORSCHFONTEIN 57 JS
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LIMPOPO	JS	57	187	KIKVORSCHFONTEIN 57 JS
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LIMPOPO	JS	57	189	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	190	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	191	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	192	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	193	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	196	KIKVORSCHFONTEIN 57 JS
LIMPOPO	JS	57	197	KIKVORSCHFONTEIN 57 JS
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LIMPOPO	JS	60	5	
LIMPOPO	JS	60	6	
LIMPOPO	JS	60	7	
LIMPOPO	JS	60	8	
LIMPOPO	JS	60	9	
LIMPOPO	JS	60	10	
LIMPOPO	JS	60	11	
LIMPOPO	JS	60	12	
LIMPOPO	JS	60	13	
LIMPOPO	JS	60	14	
LIMPOPO	JS	60	15	
LIMPOPO	JS	60	16	
LIMPOPO	JS	60	17	
LIMPOPO	JS	60	18	
LIMPOPO	JS	60	19	
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LIMPOPO	JS	60	25	
LIMPOPO	JS	60	26	
LIMPOPO	JS	60	27	
LIMPOPO	JS	60	28	
LIMPOPO	JS	60	29	
LIMPOPO	JS	60	30	
LIMPOPO	JS	60	31	
LIMPOPO	JS	60	32	
LIMPOPO	JS	60	33	
LIMPOPO	JS	60	34	
LIMPOPO	JS	60	35	
LIMPOPO	JS	60	36	
LIMPOPO	JS	60	37	
LIMPOPO	JS	60	38	
LIMPOPO	JS	60	39	
LIMPOPO	JS	60	40	
LIMPOPO	JS	60	41	
LIMPOPO	JS	60	42	
LIMPOPO	JS	60	43	
LIMPOPO	JS	60	44	

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 16 of 81 sheets

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PASA reference no._____

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Revision:	Date: 09 October 2025

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Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
LIMPOPO	JS	60	45	
LIMPOPO	JS	60	46	
LIMPOPO	JS	60	47	
LIMPOPO	JS	60	48	
LIMPOPO	JS	60	49	
LIMPOPO	JS	60	50	
LIMPOPO	JS	60	51	
LIMPOPO	JS	60	52	
LIMPOPO	JS	60	53	
LIMPOPO	JS	60	54	
LIMPOPO	JS	60	55	
LIMPOPO	JS	60	56	
LIMPOPO	JS	60	57	
LIMPOPO	JS	60	58	
LIMPOPO	JS	60	59	
LIMPOPO	JS	60	60	
LIMPOPO	JS	60	61	
LIMPOPO	JS	60	62	
LIMPOPO	JS	60	63	
LIMPOPO	JS	60	64	
LIMPOPO	JS	60	65	
LIMPOPO	JS	60	66	
LIMPOPO	JS	60	67	
LIMPOPO	JS	60	68	
LIMPOPO	JS	60	69	
LIMPOPO	JS	60	70	
LIMPOPO	JS	60	71	
LIMPOPO	JS	60	72	
LIMPOPO	JS	60	73	
LIMPOPO	JS	60	74	
LIMPOPO	JS	60	75	
LIMPOPO	JS	60	76	
LIMPOPO	JS	60	77	
LIMPOPO	JS	60	78	
LIMPOPO	JS	60	79	
LIMPOPO	JS	60	80	
LIMPOPO	JS	60	81	
LIMPOPO	JS	60	82	
LIMPOPO	JS	60	83	
LIMPOPO	JS	60	84	
LIMPOPO	JS	60	85	
LIMPOPO	JS	60	86	
LIMPOPO	JS	60	87	
LIMPOPO	JS	60	88	
LIMPOPO	JS	60	89	
LIMPOPO	JS	60	90	
LIMPOPO	JS	60	91	
LIMPOPO	JS	60	92	

Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
LIMPOPO	JS	60	93	
LIMPOPO	JS	60	94	
LIMPOPO	JS	60	95	
LIMPOPO	JS	60	96	
LIMPOPO	JS	60	97	
LIMPOPO	JS	60	98	
LIMPOPO	JS	60	99	
LIMPOPO	JS	60	100	
LIMPOPO	JS	60	101	
LIMPOPO	JS	60	102	
LIMPOPO	JS	60	103	
LIMPOPO	JS	60	104	
LIMPOPO	JS	60	106	
LIMPOPO	JS	60	107	
LIMPOPO	JS	60	108	
LIMPOPO	JS	60	109	
LIMPOPO	JS	60	110	
LIMPOPO	JS	60	111	
LIMPOPO	JS	60	112	
LIMPOPO	JS	60	113	
LIMPOPO	JS	60	114	
LIMPOPO	JS	60	115	
LIMPOPO	JS	60	116	
LIMPOPO	JS	60	118	
LIMPOPO	JS	60	119	
LIMPOPO	JS	60	120	
LIMPOPO	JS	60	121	
LIMPOPO	JS	60	122	
LIMPOPO	JS	60	123	
LIMPOPO	JS	60	124	
LIMPOPO	JS	60	125	
LIMPOPO	JS	60	126	
LIMPOPO	JS	60	127	
LIMPOPO	JS	60	128	
LIMPOPO	JS	60	129	
LIMPOPO	JS	60	130	
LIMPOPO	JS	60	131	
LIMPOPO	JS	60	132	
LIMPOPO	JS	60	133	
LIMPOPO	JS	60	134	
LIMPOPO	JS	60	135	
LIMPOPO	JS	60	136	
LIMPOPO	JS	60	137	
LIMPOPO	JS	60	138	
LIMPOPO	JS	60	139	
LIMPOPO	JS	60	140	
LIMPOPO	JS	60	141	
LIMPOPO	JS	60	142	

Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
LIMPOPO	JS	60	143	
LIMPOPO	JS	60	144	
LIMPOPO	JS	60	145	
LIMPOPO	JS	60	146	
LIMPOPO	JS	60	147	
LIMPOPO	JS	60	148	
LIMPOPO	JS	60	149	
LIMPOPO	JS	60	150	
LIMPOPO	JS	60	151	
LIMPOPO	JS	60	152	
LIMPOPO	JS	60	153	
LIMPOPO	JS	60	154	
LIMPOPO	JS	60	155	
LIMPOPO	JS	60	156	
LIMPOPO	JS	60	157	
LIMPOPO	JS	60	158	
LIMPOPO	JS	60	159	
LIMPOPO	JS	60	160	
LIMPOPO	JS	60	161	
LIMPOPO	JS	60	162	
LIMPOPO	JS	60	163	
LIMPOPO	JS	60	164	
LIMPOPO	JS	60	167	
LIMPOPO	JS	60	168	
LIMPOPO	JS	65	0	VREEMDELING 65 JS
LIMPOPO	JS	65	1	VREEMDELING 65 JS
LIMPOPO	JS	66	0	KALKPUT 66 JS
LIMPOPO	JS	66	1	KALKPUT 66 JS
LIMPOPO	JS	67	0	ERASMUS 67 JS
LIMPOPO	JS	68	0	WATERKLOOF 68 JS
LIMPOPO	JS	68	1	WATERKLOOF 68 JS
LIMPOPO	JS	69	0	KWARRIELAAGTE 69 JS
LIMPOPO	JS	70	1	RIETFONTEIN 70 JS
LIMPOPO	JS	70	2	RIETFONTEIN 70 JS
LIMPOPO	JS	70	3	RIETFONTEIN 70 JS
LIMPOPO	JS	70	4	RIETFONTEIN 70 JS
LIMPOPO	JS	70	9	RIETFONTEIN 70 JS
LIMPOPO	JS	70	11	RIETFONTEIN 70 JS
LIMPOPO	JS	70	12	RIETFONTEIN 70 JS
LIMPOPO	JS	70	13	RIETFONTEIN 70 JS
LIMPOPO	JS	70	15	RIETFONTEIN 70 JS
LIMPOPO	JS	70	17	RIETFONTEIN 70 JS
LIMPOPO	JS	70	18	RIETFONTEIN 70 JS
LIMPOPO	JS	70	19	RIETFONTEIN 70 JS
LIMPOPO	JS	70	20	RIETFONTEIN 70 JS
LIMPOPO	JS	70	21	RIETFONTEIN 70 JS
LIMPOPO	JS	70	22	RIETFONTEIN 70 JS
LIMPOPO	JS	70	23	RIETFONTEIN 70 JS

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PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 17 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. — M B Straughan G.Pr. LS0907D — 09 October 2025 date

For applicant — Owain Jackson name — signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	**Dwg:** reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

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Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
LIMPOPO	JS	70	26	RIETFONTEIN 70 JS
LIMPOPO	JS	70	27	RIETFONTEIN 70 JS
LIMPOPO	JS	70	30	RIETFONTEIN 70 JS
LIMPOPO	JS	71	0	KAMEELDOORN 71 JS
LIMPOPO	JS	71	1	KAMEELDOORN 71 JS
LIMPOPO	JS	71	3	KAMEELDOORN 71 JS
LIMPOPO	JS	71	5	KAMEELDOORN 71 JS
LIMPOPO	JS	71	6	KAMEELDOORN 71 JS
LIMPOPO	JS	71	7	KAMEELDOORN 71 JS
LIMPOPO	JS	71	8	KAMEELDOORN 71 JS
LIMPOPO	JS	71	9	KAMEELDOORN 71 JS
LIMPOPO	JS	71	10	KAMEELDOORN 71 JS
LIMPOPO	JS	71	11	KAMEELDOORN 71 JS
LIMPOPO	JS	71	19	KAMEELDOORN 71 JS
LIMPOPO	JS	71	20	KAMEELDOORN 71 JS
LIMPOPO	JS	71	22	KAMEELDOORN 71 JS
LIMPOPO	JS	71	23	KAMEELDOORN 71 JS
LIMPOPO	JS	72	1	GOEDGEDACHT 72 JS
LIMPOPO	JS	72	3	GOEDGEDACHT 72 JS
LIMPOPO	JS	72	4	GOEDGEDACHT 72 JS
LIMPOPO	JS	72	5	GOEDGEDACHT 72 JS
LIMPOPO	JS	73	0	RINGER 73 JS
LIMPOPO	JS	74	0	KRUISRIVIER 74 JS
LIMPOPO	JS	74	1	KRUISRIVIER 74 JS
LIMPOPO	JS	74	4	KRUISRIVIER 74 JS
LIMPOPO	JS	74	6	KRUISRIVIER 74 JS
LIMPOPO	JS	74	7	KRUISRIVIER 74 JS
LIMPOPO	JS	74	8	KRUISRIVIER 74 JS
LIMPOPO	JS	75	0	ROODEPOORT 75 JS
LIMPOPO	JS	75	2	ROODEPOORT 75 JS
LIMPOPO	JS	75	3	ROODEPOORT 75 JS
LIMPOPO	JS	75	4	ROODEPOORT 75 JS
LIMPOPO	JS	75	7	ROODEPOORT 75 JS
LIMPOPO	JS	76	2	LAAGERSDRIFT 76 JS
LIMPOPO	JS	76	3	LAAGERSDRIFT 76 JS
LIMPOPO	JS	76	4	LAAGERSDRIFT 76 JS
LIMPOPO	JS	76	5	LAAGERSDRIFT 76 JS
LIMPOPO	JS	76	6	LAAGERSDRIFT 76 JS
LIMPOPO	JS	77	0	MOORE 77 JS
LIMPOPO	JS	79	1	DE WAGENDRIFT 79 JS
LIMPOPO	JS	79	2	DE WAGENDRIFT 79 JS
LIMPOPO	JS	79	3	DE WAGENDRIFT 79 JS
LIMPOPO	JS	79	5	DE WAGENDRIFT 79 JS
LIMPOPO	JS	79	6	DE WAGENDRIFT 79 JS
LIMPOPO	JS	79	7	DE WAGENDRIFT 79 JS
LIMPOPO	JS	79	8	DE WAGENDRIFT 79 JS
LIMPOPO	JS	79	10	DE WAGENDRIFT 79 JS
LIMPOPO	JS	79	11	DE WAGENDRIFT 79 JS
LIMPOPO	JS	79	12	DE WAGENDRIFT 79 JS
LIMPOPO	JS	79	13	DE WAGENDRIFT 79 JS
LIMPOPO	JS	79	14	DE WAGENDRIFT 79 JS
LIMPOPO	JS	79	15	DE WAGENDRIFT 79 JS
LIMPOPO	JS	79	16	DE WAGENDRIFT 79 JS
LIMPOPO	JS	79	18	DE WAGENDRIFT 79 JS
LIMPOPO	JS	79	20	DE WAGENDRIFT 79 JS
LIMPOPO	JS	79	21	DE WAGENDRIFT 79 JS
LIMPOPO	JS	79	22	DE WAGENDRIFT 79 JS
LIMPOPO	JS	79	23	DE WAGENDRIFT 79 JS
LIMPOPO	JS	79	24	DE WAGENDRIFT 79 JS
LIMPOPO	JS	79	25	DE WAGENDRIFT 79 JS
LIMPOPO	JS	79	26	DE WAGENDRIFT 79 JS
LIMPOPO	JS	79	27	DE WAGENDRIFT 79 JS
LIMPOPO	JS	79	29	DE WAGENDRIFT 79 JS
LIMPOPO	JS	79	30	DE WAGENDRIFT 79 JS
LIMPOPO	JS	79	31	DE WAGENDRIFT 79 JS
LIMPOPO	JS	79	32	DE WAGENDRIFT 79 JS
LIMPOPO	JS	79	33	DE WAGENDRIFT 79 JS
LIMPOPO	JS	79	35	DE WAGENDRIFT 79 JS
LIMPOPO	JS	79	36	DE WAGENDRIFT 79 JS
LIMPOPO	JS	79	38	DE WAGENDRIFT 79 JS
LIMPOPO	JS	79	39	DE WAGENDRIFT 79 JS
LIMPOPO	JS	79	42	DE WAGENDRIFT 79 JS
LIMPOPO	JS	79	43	DE WAGENDRIFT 79 JS
LIMPOPO	JS	79	44	DE WAGENDRIFT 79 JS
LIMPOPO	JS	79	45	DE WAGENDRIFT 79 JS
LIMPOPO	JS	79	46	DE WAGENDRIFT 79 JS
LIMPOPO	JS	79	47	DE WAGENDRIFT 79 JS
LIMPOPO	JS	79	48	DE WAGENDRIFT 79 JS
LIMPOPO	JS	79	49	DE WAGENDRIFT 79 JS
LIMPOPO	JS	79	50	DE WAGENDRIFT 79 JS
LIMPOPO	JS	79	52	DE WAGENDRIFT 79 JS
LIMPOPO	JS	79	53	DE WAGENDRIFT 79 JS
LIMPOPO	JS	79	55	DE WAGENDRIFT 79 JS
LIMPOPO	JS	79	56	DE WAGENDRIFT 79 JS
LIMPOPO	JS	82	0	MOTETEMA 82 JS
LIMPOPO	JS	86	0	KLEINPLAAS 86 JS
LIMPOPO	JS	92	0	
LIMPOPO	JS	119	0	EENSGEVONDEN 119 JS
LIMPOPO	JS	119	1	EENSGEVONDEN 119 JS
LIMPOPO	JS	119	2	EENSGEVONDEN 119 JS
LIMPOPO	JS	119	3	EENSGEVONDEN 119 JS
LIMPOPO	JS	119	4	EENSGEVONDEN 119 JS
LIMPOPO	JS	119	5	EENSGEVONDEN 119 JS
LIMPOPO	JS	119	6	EENSGEVONDEN 119 JS
LIMPOPO	JS	119	15	EENSGEVONDEN 119 JS
LIMPOPO	JS	119	16	EENSGEVONDEN 119 JS
LIMPOPO	JS	119	17	EENSGEVONDEN 119 JS
LIMPOPO	JS	119	18	EENSGEVONDEN 119 JS
LIMPOPO	JS	119	19	EENSGEVONDEN 119 JS
LIMPOPO	JS	119	20	EENSGEVONDEN 119 JS
LIMPOPO	JS	119	21	EENSGEVONDEN 119 JS
LIMPOPO	JS	119	22	EENSGEVONDEN 119 JS
LIMPOPO	JS	119	23	EENSGEVONDEN 119 JS
LIMPOPO	JS	119	25	EENSGEVONDEN 119 JS
LIMPOPO	JS	119	26	EENSGEVONDEN 119 JS
LIMPOPO	JS	120	0	TAFELKOP 120 JS
LIMPOPO	JS	120	1	TAFELKOP 120 JS
LIMPOPO	JS	120	2	TAFELKOP 120 JS
LIMPOPO	JS	120	3	TAFELKOP 120 JS
LIMPOPO	JS	120	4	TAFELKOP 120 JS
LIMPOPO	JS	120	5	TAFELKOP 120 JS
LIMPOPO	JS	120	6	TAFELKOP 120 JS
LIMPOPO	JS	120	7	TAFELKOP 120 JS
LIMPOPO	JS	120	8	TAFELKOP 120 JS
LIMPOPO	JS	120	9	TAFELKOP 120 JS
LIMPOPO	JS	120	20	TAFELKOP 120 JS
LIMPOPO	JS	120	21	TAFELKOP 120 JS
LIMPOPO	JS	120	22	TAFELKOP 120 JS
LIMPOPO	JS	120	23	TAFELKOP 120 JS
LIMPOPO	JS	120	24	TAFELKOP 120 JS
LIMPOPO	JS	120	25	TAFELKOP 120 JS
LIMPOPO	JS	120	26	TAFELKOP 120 JS
LIMPOPO	JS	120	27	TAFELKOP 120 JS
LIMPOPO	JS	120	32	TAFELKOP 120 JS
LIMPOPO	JS	120	33	TAFELKOP 120 JS
LIMPOPO	JS	121	0	MOOIPLAATS 121 JS
LIMPOPO	JS	121	2	MOOIPLAATS 121 JS
LIMPOPO	JS	121	3	MOOIPLAATS 121 JS
LIMPOPO	JS	123	0	WELGELEGEN 123 JS
LIMPOPO	JS	124	0	BOEKENHOUTKLOOF 124 JS
LIMPOPO	JS	124	2	BOEKENHOUTKLOOF 124 JS
LIMPOPO	JS	124	3	BOEKENHOUTKLOOF 124 JS
LIMPOPO	JS	124	4	BOEKENHOUTKLOOF 124 JS
LIMPOPO	JS	125	0	ZUIKERBOSCHPLAATS 125 JS
LIMPOPO	JS	125	1	ZUIKERBOSCHPLAATS 125 JS
LIMPOPO	JS	125	2	ZUIKERBOSCHPLAATS 125 JS
LIMPOPO	JS	125	3	ZUIKERBOSCHPLAATS 125 JS
LIMPOPO	JS	125	4	ZUIKERBOSCHPLAATS 125 JS
LIMPOPO	JS	125	5	ZUIKERBOSCHPLAATS 125 JS
LIMPOPO	JS	125	6	ZUIKERBOSCHPLAATS 125 JS
LIMPOPO	JS	125	7	ZUIKERBOSCHPLAATS 125 JS
LIMPOPO	JS	125	10	ZUIKERBOSCHPLAATS 125 JS
LIMPOPO	JS	125	11	ZUIKERBOSCHPLAATS 125 JS
LIMPOPO	JS	125	12	ZUIKERBOSCHPLAATS 125 JS

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PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 18 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. — M B Straughan G.Pr. LS0907D — 09 October 2025 date

For applicant — Owain Jackson name — signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	**Dwg:** reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

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Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
LIMPOPO	JS	125	13	ZUIKERBOSCHPLAATS 125 JS
LIMPOPO	JS	125	14	ZUIKERBOSCHPLAATS 125 JS
LIMPOPO	JS	125	15	ZUIKERBOSCHPLAATS 125 JS
LIMPOPO	JS	125	16	ZUIKERBOSCHPLAATS 125 JS
LIMPOPO	JS	127	0	LUKAU 127 JS
LIMPOPO	JS	127	1	LUKAU 127 JS
LIMPOPO	JS	127	2	LUKAU 127 JS
LIMPOPO	JS	127	3	LUKAU 127 JS
LIMPOPO	JS	127	5	LUKAU 127 JS
LIMPOPO	JS	127	6	LUKAU 127 JS
LIMPOPO	JS	127	7	LUKAU 127 JS
LIMPOPO	JS	127	8	LUKAU 127 JS
LIMPOPO	JS	127	10	LUKAU 127 JS
LIMPOPO	JS	127	11	LUKAU 127 JS
LIMPOPO	JS	127	12	LUKAU 127 JS
LIMPOPO	JS	127	16	LUKAU 127 JS
LIMPOPO	JS	127	17	LUKAU 127 JS
LIMPOPO	JS	127	18	LUKAU 127 JS
LIMPOPO	JS	127	19	LUKAU 127 JS
LIMPOPO	JS	127	22	LUKAU 127 JS
LIMPOPO	JS	127	23	LUKAU 127 JS
LIMPOPO	JS	127	24	LUKAU 127 JS
LIMPOPO	JS	127	25	LUKAU 127 JS
LIMPOPO	JS	127	28	LUKAU 127 JS
LIMPOPO	JS	127	29	LUKAU 127 JS
LIMPOPO	JS	127	30	LUKAU 127 JS
LIMPOPO	JS	127	31	LUKAU 127 JS
LIMPOPO	JS	127	34	LUKAU 127 JS
LIMPOPO	JS	128	0	STERKFONTEIN 128 JS
LIMPOPO	JS	128	1	STERKFONTEIN 128 JS
LIMPOPO	JS	128	2	STERKFONTEIN 128 JS
LIMPOPO	JS	128	3	STERKFONTEIN 128 JS
LIMPOPO	JS	128	4	STERKFONTEIN 128 JS
LIMPOPO	JS	128	5	STERKFONTEIN 128 JS
LIMPOPO	JS	128	6	STERKFONTEIN 128 JS
LIMPOPO	JS	128	8	STERKFONTEIN 128 JS
LIMPOPO	JS	129	0	AANGEWEZEN 129 JS
LIMPOPO	JS	130	0	VLAKFONTEIN 130 JS
LIMPOPO	JS	130	8	VLAKFONTEIN 130 JS
LIMPOPO	JS	130	9	VLAKFONTEIN 130 JS
LIMPOPO	JS	131	0	FRISCHGEWAAGD 131 JS
LIMPOPO	JS	131	1	FRISCHGEWAAGD 131 JS
LIMPOPO	JS	131	2	FRISCHGEWAAGD 131 JS
LIMPOPO	JS	131	3	FRISCHGEWAAGD 131 JS
LIMPOPO	JS	131	5	FRISCHGEWAAGD 131 JS
LIMPOPO	JS	131	6	FRISCHGEWAAGD 131 JS
LIMPOPO	JS	131	7	FRISCHGEWAAGD 131 JS
LIMPOPO	JS	131	8	FRISCHGEWAAGD 131 JS

Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
LIMPOPO	JS	131	9	FRISCHGEWAAGD 131 JS
LIMPOPO	JS	131	10	FRISCHGEWAAGD 131 JS
LIMPOPO	JS	131	11	FRISCHGEWAAGD 131 JS
LIMPOPO	JS	131	13	FRISCHGEWAAGD 131 JS
LIMPOPO	JS	132	0	GEMSBOKSPRUIT 132 JS
LIMPOPO	JS	132	1	GEMSBOKSPRUIT 132 JS
LIMPOPO	JS	132	2	GEMSBOKSPRUIT 132 JS
LIMPOPO	JS	132	3	GEMSBOKSPRUIT 132 JS
LIMPOPO	JS	132	4	GEMSBOKSPRUIT 132 JS
LIMPOPO	JS	132	5	GEMSBOKSPRUIT 132 JS
LIMPOPO	JS	132	6	GEMSBOKSPRUIT 132 JS
LIMPOPO	JS	132	7	GEMSBOKSPRUIT 132 JS
LIMPOPO	JS	132	8	GEMSBOKSPRUIT 132 JS
LIMPOPO	JS	132	10	GEMSBOKSPRUIT 132 JS
LIMPOPO	JS	132	11	GEMSBOKSPRUIT 132 JS
LIMPOPO	JS	132	12	GEMSBOKSPRUIT 132 JS
LIMPOPO	JS	132	17	GEMSBOKSPRUIT 132 JS
LIMPOPO	JS	132	19	GEMSBOKSPRUIT 132 JS
LIMPOPO	JS	132	21	GEMSBOKSPRUIT 132 JS
LIMPOPO	JS	133	0	VAALKOPFONTEIN 133 JS
LIMPOPO	JS	133	1	VAALKOPFONTEIN 133 JS
LIMPOPO	JS	133	2	VAALKOPFONTEIN 133 JS
LIMPOPO	JS	135	2	PAARDENPLAATS 135 JS
LIMPOPO	JS	135	13	PAARDENPLAATS 135 JS
LIMPOPO	JS	135	15	PAARDENPLAATS 135 JS
LIMPOPO	JS	135	17	PAARDENPLAATS 135 JS
LIMPOPO	JS	135	31	PAARDENPLAATS 135 JS
LIMPOPO	JS	135	32	PAARDENPLAATS 135 JS
LIMPOPO	JS	135	33	PAARDENPLAATS 135 JS
LIMPOPO	JS	135	34	PAARDENPLAATS 135 JS
LIMPOPO	JS	135	36	PAARDENPLAATS 135 JS
LIMPOPO	JS	135	42	PAARDENPLAATS 135 JS
LIMPOPO	JS	136	0	SYFERFONTEIN 136 JS
LIMPOPO	JS	137	0	DWARS-IN-DE-WEG 137 JS
LIMPOPO	JS	137	1	DWARS-IN-DE-WEG 137 JS
LIMPOPO	JS	143	0	
LIMPOPO	JS	145	18	
LIMPOPO	JS	148	1	ONVERWACHT 148 JS
LIMPOPO	JS	148	2	ONVERWACHT 148 JS
LIMPOPO	JS	148	3	ONVERWACHT 148 JS
LIMPOPO	JS	148	4	ONVERWACHT 148 JS
LIMPOPO	JS	148	10	ONVERWACHT 148 JS
LIMPOPO	JS	148	11	ONVERWACHT 148 JS
LIMPOPO	JS	148	12	ONVERWACHT 148 JS
LIMPOPO	JS	148	13	ONVERWACHT 148 JS
LIMPOPO	JS	148	14	ONVERWACHT 148 JS
LIMPOPO	JS	149	1	LUIPERSHOEK 149 JS
LIMPOPO	JS	149	2	LUIPERSHOEK 149 JS

Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
LIMPOPO	JS	149	3	LUIPERSHOEK 149 JS
LIMPOPO	JS	149	4	LUIPERSHOEK 149 JS
LIMPOPO	JS	149	5	LUIPERSHOEK 149 JS
LIMPOPO	JS	149	6	LUIPERSHOEK 149 JS
LIMPOPO	JS	149	7	LUIPERSHOEK 149 JS
LIMPOPO	JS	150	0	DE TOREN 150 JS
LIMPOPO	JS	151	0	KEEROM 151 JS
LIMPOPO	JS	151	1	KEEROM 151 JS
LIMPOPO	JS	151	2	KEEROM 151 JS
LIMPOPO	JS	152	0	GOEDEHOOP 152 JS
LIMPOPO	JS	153	0	HOLNEK 153 JS
LIMPOPO	JS	154	0	VLAKLAAGTE 154 JS
LIMPOPO	JS	154	1	VLAKLAAGTE 154 JS
LIMPOPO	JS	154	2	VLAKLAAGTE 154 JS
LIMPOPO	JS	155	0	ELANDSLAAGTE 155 JS
LIMPOPO	JS	155	1	ELANDSLAAGTE 155 JS
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LIMPOPO	JS	155	6	ELANDSLAAGTE 155 JS
LIMPOPO	JS	155	7	ELANDSLAAGTE 155 JS
LIMPOPO	JS	155	8	ELANDSLAAGTE 155 JS
LIMPOPO	JS	155	9	ELANDSLAAGTE 155 JS
LIMPOPO	JS	157	0	ZAAIPLAATS 157 JS
LIMPOPO	JS	158	0	BANKFONTEIN 158 JS
LIMPOPO	JS	159	0	PAARDENFONTEIN 159 JS
LIMPOPO	JS	159	1	PAARDENFONTEIN 159 JS
LIMPOPO	JS	159	2	PAARDENFONTEIN 159 JS
LIMPOPO	JS	161	0	WATERVAL 161 JS
LIMPOPO	JS	162	0	HARTBEESTLAAGTE 162 JS
LIMPOPO	JS	162	1	HARTBEESTLAAGTE 162 JS
LIMPOPO	JS	162	2	HARTBEESTLAAGTE 162 JS
LIMPOPO	JS	162	3	HARTBEESTLAAGTE 162 JS
LIMPOPO	JS	163	0	KWAGGAVOETPAD 163 JS
LIMPOPO	JS	164	0	PROBEREN 164 JS
LIMPOPO	JS	165	2	WELTEVREDEN 165 JS
LIMPOPO	JS	165	7	WELTEVREDEN 165 JS
LIMPOPO	JS	165	10	WELTEVREDEN 165 JS
LIMPOPO	JS	165	11	WELTEVREDEN 165 JS
LIMPOPO	JS	165	12	WELTEVREDEN 165 JS
LIMPOPO	JS	165	14	WELTEVREDEN 165 JS
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LIMPOPO	JS	166	1	RIETKLOOF 166 JS
LIMPOPO	JS	166	2	RIETKLOOF 166 JS
LIMPOPO	JS	166	3	RIETKLOOF 166 JS
LIMPOPO	JS	166	4	RIETKLOOF 166 JS
LIMPOPO	JS	166	5	RIETKLOOF 166 JS
LIMPOPO	JS	168	0	BLAAUWBANK 168 JS
LIMPOPO	JS	168	2	BLAAUWBANK 168 JS

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PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 19 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

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M B Straughan G.Pr. LS0907D — 09 October 2025 date

For applicant Owain Jackson name

signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	**Dwg:** reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

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Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
LIMPOPO	JS	168	3	BLAAUWBANK 168 JS
LIMPOPO	JS	168	5	BLAAUWBANK 168 JS
LIMPOPO	JS	168	6	BLAAUWBANK 168 JS
LIMPOPO	JS	168	7	BLAAUWBANK 168 JS
LIMPOPO	JS	168	8	BLAAUWBANK 168 JS
LIMPOPO	JS	168	9	BLAAUWBANK 168 JS
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LIMPOPO	JS	178	61	DE LAGERSDRIFT 178 JS
LIMPOPO	JS	178	63	DE LAGERSDRIFT 178 JS

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Sheet 20 of 81 sheets

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PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No.

M B Straughan G.Pr. LS0907D

09 October 2025 date

For applicant Owain Jackson name

signature

09 October 2025 date

signature

date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	**Dwg:** reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

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Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
LIMPOPO	JS	178	64	DE LAGERSDRIFT 178 JS
LIMPOPO	JS	178	65	DE LAGERSDRIFT 178 JS
LIMPOPO	JS	178	66	DE LAGERSDRIFT 178 JS
LIMPOPO	JS	178	67	DE LAGERSDRIFT 178 JS
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LIMPOPO	JS	179	18	BLAAUWBANK 179 JS

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For applicant — Owain Jackson name — signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	**Dwg:** reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

friedlaender, burger & volkmann

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Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
LIMPOPO	JS	179	22	BLAAUWBANK 179 JS
LIMPOPO	JS	179	23	BLAAUWBANK 179 JS
LIMPOPO	JS	179	27	BLAAUWBANK 179 JS
LIMPOPO	JS	179	28	BLAAUWBANK 179 JS
LIMPOPO	JS	179	29	BLAAUWBANK 179 JS
LIMPOPO	JS	180	1	RHENOSTERHOEK 180 JS
LIMPOPO	JS	180	2	RHENOSTERHOEK 180 JS
LIMPOPO	JS	180	3	RHENOSTERHOEK 180 JS
LIMPOPO	JS	180	4	RHENOSTERHOEK 180 JS
LIMPOPO	JS	181	1	KRAAL 181 JS
LIMPOPO	JS	181	2	KRAAL 181 JS
LIMPOPO	JS	181	3	KRAAL 181 JS
LIMPOPO	JS	181	4	KRAAL 181 JS
LIMPOPO	JS	181	5	KRAAL 181 JS
LIMPOPO	JS	182	0	DRIEVOET 182 JS
LIMPOPO	JS	183	0	OU TOITSVALLEI 183 JS
LIMPOPO	JS	184	4	WATERVAL 184 JS
LIMPOPO	JS	184	12	WATERVAL 184 JS
LIMPOPO	JS	184	13	WATERVAL 184 JS
LIMPOPO	JS	184	14	WATERVAL 184 JS
LIMPOPO	JS	185	0	GROOTKOP 185 JS
LIMPOPO	JS	185	1	GROOTKOP 185 JS
LIMPOPO	JS	185	3	GROOTKOP 185 JS
LIMPOPO	JS	186	0	DIEPKLOOF 186 JS
LIMPOPO	JS	186	2	DIEPKLOOF 186 JS
LIMPOPO	JS	186	3	DIEPKLOOF 186 JS
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LIMPOPO	JS	186	5	DIEPKLOOF 186 JS
LIMPOPO	JS	186	6	DIEPKLOOF 186 JS
LIMPOPO	JS	186	7	DIEPKLOOF 186 JS
LIMPOPO	JS	186	8	DIEPKLOOF 186 JS
LIMPOPO	JS	186	9	DIEPKLOOF 186 JS
LIMPOPO	JS	186	12	DIEPKLOOF 186 JS
LIMPOPO	JS	186	13	DIEPKLOOF 186 JS
LIMPOPO	JS	186	17	DIEPKLOOF 186 JS
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LIMPOPO	JS	187	0	BRAKFONTEIN 187 JS
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LIMPOPO	JS	187	2	BRAKFONTEIN 187 JS
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LIMPOPO	JS	187	4	BRAKFONTEIN 187 JS
LIMPOPO	JS	187	5	BRAKFONTEIN 187 JS
LIMPOPO	JS	187	6	BRAKFONTEIN 187 JS
LIMPOPO	JS	187	7	BRAKFONTEIN 187 JS
LIMPOPO	JS	187	117	BRAKFONTEIN 187 JS
LIMPOPO	JS	187	118	BRAKFONTEIN 187 JS
LIMPOPO	JS	187	119	BRAKFONTEIN 187 JS
LIMPOPO	JS	187	120	BRAKFONTEIN 187 JS

Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
LIMPOPO	JS	187	121	BRAKFONTEIN 187 JS
LIMPOPO	JS	188	2	ROOIKRAAL 188 JS
LIMPOPO	JS	188	4	ROOIKRAAL 188 JS
LIMPOPO	JS	188	5	ROOIKRAAL 188 JS
LIMPOPO	JS	188	6	ROOIKRAAL 188 JS
LIMPOPO	JS	188	7	ROOIKRAAL 188 JS
LIMPOPO	JS	188	8	ROOIKRAAL 188 JS
LIMPOPO	JS	188	9	ROOIKRAAL 188 JS
LIMPOPO	JS	188	10	ROOIKRAAL 188 JS
LIMPOPO	JS	188	11	ROOIKRAAL 188 JS
LIMPOPO	JS	188	12	ROOIKRAAL 188 JS
LIMPOPO	JS	188	13	ROOIKRAAL 188 JS
LIMPOPO	JS	188	14	ROOIKRAAL 188 JS
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LIMPOPO	JS	188	16	ROOIKRAAL 188 JS
LIMPOPO	JS	188	17	ROOIKRAAL 188 JS
LIMPOPO	JS	188	19	ROOIKRAAL 188 JS
LIMPOPO	JS	188	20	ROOIKRAAL 188 JS
LIMPOPO	JS	188	21	ROOIKRAAL 188 JS
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LIMPOPO	JS	188	36	ROOIKRAAL 188 JS
LIMPOPO	JS	188	37	ROOIKRAAL 188 JS
LIMPOPO	JS	188	38	ROOIKRAAL 188 JS
LIMPOPO	JS	188	39	ROOIKRAAL 188 JS
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LIMPOPO	JS	188	41	ROOIKRAAL 188 JS
LIMPOPO	JS	188	42	ROOIKRAAL 188 JS
LIMPOPO	JS	188	43	ROOIKRAAL 188 JS
LIMPOPO	JS	188	44	ROOIKRAAL 188 JS
LIMPOPO	JS	188	45	ROOIKRAAL 188 JS
LIMPOPO	JS	188	46	ROOIKRAAL 188 JS
LIMPOPO	JS	188	47	ROOIKRAAL 188 JS
LIMPOPO	JS	188	48	ROOIKRAAL 188 JS
LIMPOPO	JS	188	49	ROOIKRAAL 188 JS
LIMPOPO	JS	188	50	ROOIKRAAL 188 JS
LIMPOPO	JS	188	51	ROOIKRAAL 188 JS
LIMPOPO	JS	188	52	ROOIKRAAL 188 JS
LIMPOPO	JS	188	53	ROOIKRAAL 188 JS

Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
LIMPOPO	JS	188	54	ROOIKRAAL 188 JS
LIMPOPO	JS	188	55	ROOIKRAAL 188 JS
LIMPOPO	JS	188	56	ROOIKRAAL 188 JS
LIMPOPO	JS	188	57	ROOIKRAAL 188 JS
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LIMPOPO	JS	188	79	ROOIKRAAL 188 JS
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LIMPOPO	JS	188	81	ROOIKRAAL 188 JS
LIMPOPO	JS	188	82	ROOIKRAAL 188 JS
LIMPOPO	JS	188	83	ROOIKRAAL 188 JS
LIMPOPO	JS	189	0	WINTERSHOEK 189 JS
LIMPOPO	JS	190	6	MINERAL RANGE 190 JS
LIMPOPO	JS	192	0	NICOLTON 192 JS
LIMPOPO	JS	193	1	ROODEWAL 193 JS
LIMPOPO	JS	193	4	ROODEWAL 193 JS
LIMPOPO	JS	193	5	ROODEWAL 193 JS
LIMPOPO	JS	193	6	ROODEWAL 193 JS
LIMPOPO	JS	193	10	ROODEWAL 193 JS
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LIMPOPO	JS	193	12	ROODEWAL 193 JS
LIMPOPO	JS	193	13	ROODEWAL 193 JS
LIMPOPO	JS	193	14	ROODEWAL 193 JS
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LIMPOPO	JS	193	16	ROODEWAL 193 JS
LIMPOPO	JS	193	17	ROODEWAL 193 JS
LIMPOPO	JS	193	18	ROODEWAL 193 JS
LIMPOPO	JS	193	19	ROODEWAL 193 JS
LIMPOPO	JS	193	20	ROODEWAL 193 JS
LIMPOPO	JS	193	22	ROODEWAL 193 JS
LIMPOPO	JS	193	25	ROODEWAL 193 JS
LIMPOPO	JS	193	27	ROODEWAL 193 JS

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PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 22 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No.

M B Straughan G.Pr. LS0907D

09 October 2025
date

For applicant Owain Jackson
name

signature

09 October 2025
date

signature

date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

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Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
LIMPOPO	JS	193	28	ROODEWAL 193 JS
LIMPOPO	JS	193	29	ROODEWAL 193 JS
LIMPOPO	JS	193	30	ROODEWAL 193 JS
LIMPOPO	JS	193	32	ROODEWAL 193 JS
LIMPOPO	JS	194	0	WARM PATAT 194 JS
LIMPOPO	JS	217	9	SWARTKOPPIES 217 JS
LIMPOPO	JS	217	12	SWARTKOPPIES 217 JS
LIMPOPO	JS	217	22	SWARTKOPPIES 217 JS
LIMPOPO	JS	222	0	
LIMPOPO	JS	223	0	
LIMPOPO	JS	307	500	
LIMPOPO	JS	500	3	MAPOCHSGRONDE 500 JS
LIMPOPO	JS	500	4	MAPOCHSGRONDE 500 JS
LIMPOPO	JS	500	5	MAPOCHSGRONDE 500 JS
LIMPOPO	JS	500	6	MAPOCHSGRONDE 500 JS
LIMPOPO	JS	500	7	MAPOCHSGRONDE 500 JS
LIMPOPO	JS	500	8	MAPOCHSGRONDE 500 JS
LIMPOPO	JS	500	9	MAPOCHSGRONDE 500 JS
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LIMPOPO	JS	729	0	MAPOCHSGRONDE 729 JS
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LIMPOPO	JS	745	0	MAPOCHSGRONDE 745 JS
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LIMPOPO	JS	757	0	MAPOCHSGRONDE 757 JS
LIMPOPO	JS	757	1	MAPOCHSGRONDE 757 JS
LIMPOPO	JS	757	2	MAPOCHSGRONDE 757 JS
LIMPOPO	JS	758	0	MAPOCHSGRONDE 758 JS
LIMPOPO	JS	759	0	MAPOCHSGRONDE 759 JS
LIMPOPO	JS	760	0	MAPOCHSGRONDE 760 JS
LIMPOPO	JS	761	0	MAPOCHSGRONDE 761 JS
LIMPOPO	JS	762	0	MAPOCHSGRONDE 762 JS
LIMPOPO	JS	763	0	MAPOCHSGRONDE 763 JS
LIMPOPO	JS	764	0	MAPOCHSGRONDE 764 JS
LIMPOPO	JS	765	0	MAPOCHSGRONDE 765 JS
LIMPOPO	JS	766	0	
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LIMPOPO	JS	772	0	MAPOCHSGRONDE 772 JS
LIMPOPO	JS	773	0	MAPOCHSGRONDE 773 JS
LIMPOPO	JS	774	0	MAPOCHSGRONDE 774 JS
LIMPOPO	JS	775	0	
LIMPOPO	JS	776	0	MAPOCHSGRONDE 776 JS
LIMPOPO	JS	777	0	MAPOCHSGRONDE 777 JS

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PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 23 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. — M B Straughan G.Pr. LSO907D — 09 October 2025 (date)

For applicant — Owain Jackson (name) — signature — 09 October 2025 (date)

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

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Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
LIMPOPO	JS	890	0	MAPOCHSGRONDE 890 JS
LIMPOPO	JS	892	0	MAPOCHSGRONDE 892 JS
LIMPOPO	JS	893	0	MAPOCHSGRONDE 893 JS
LIMPOPO	JS	894	0	MAPOCHSGRONDE 894 JS
LIMPOPO	JS	925	0	MAPOCHSGRONDE 925 JS
LIMPOPO	JS	926	0	MAPOCHSGRONDE 926 JS
LIMPOPO	JS	930	0	MAPOCHSGRONDE 930 JS
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LIMPOPO	JS	964	0	MAPOCHSGRONDE 964 JS
LIMPOPO	JS	965	0	MAPOCHSGRONDE 965 JS
LIMPOPO	JS	966	0	MAPOCHSGRONDE 966 JS
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LIMPOPO	JS	1000	1	
LIMPOPO	JS	1001	0	
LIMPOPO	JS	1001	2	
LIMPOPO	JS	1001	3	
LIMPOPO	JS	1015	0	
LIMPOPO	JS	1200	0	
LIMPOPO	JS	1269	0	
LIMPOPO	JS	1271	0	
LIMPOPO	JS	2010	363	
LIMPOPO	JS	2010	365	
LIMPOPO	JS	2022001	121	
LIMPOPO	KS	758	0	POTGIETERSHOOP 758 KS
LIMPOPO	KS	859	2	PAARDENZOEK 859 KS
LIMPOPO	KS	859	4	PAARDENZOEK 859 KS
LIMPOPO	KS	861	0	BUFFELSKLOOF 861 KS
LIMPOPO	KS	861	2	BUFFELSKLOOF 861 KS
LIMPOPO	KS	861	4	BUFFELSKLOOF 861 KS
LIMPOPO	KS	863	1	KLIPSPRUIT 863 KS
LIMPOPO	KS	863	2	KLIPSPRUIT 863 KS
LIMPOPO	KS	864	0	GROENFONTEIN 864 KS
LIMPOPO	KS	864	1	GROENFONTEIN 864 KS
LIMPOPO	KS	868	0	ENKELDEDOORN 868 KS
LIMPOPO	KS	868	1	ENKELDEDOORN 868 KS
LIMPOPO	KS	868	2	ENKELDEDOORN 868 KS
LIMPOPO	KS	868	5	ENKELDEDOORN 868 KS
LIMPOPO	KS	868	6	ENKELDEDOORN 868 KS
LIMPOPO	KS	868	7	ENKELDEDOORN 868 KS
LIMPOPO	KS	868	8	ENKELDEDOORN 868 KS
LIMPOPO	KS	868	9	ENKELDEDOORN 868 KS
LIMPOPO	KS	868	10	ENKELDEDOORN 868 KS
LIMPOPO	KS	868	12	ENKELDEDOORN 868 KS
LIMPOPO	KS	869	1	VLEESCHBOOM 869 KS
LIMPOPO	KS	869	2	VLEESCHBOOM 869 KS
LIMPOPO	KS	870	0	KLIPSPRUIT 870 KS
LIMPOPO	KS	870	1	KLIPSPRUIT 870 KS
LIMPOPO	KS	870	2	KLIPSPRUIT 870 KS
LIMPOPO	KS	870	3	KLIPSPRUIT 870 KS
LIMPOPO	KS	870	4	KLIPSPRUIT 870 KS
LIMPOPO	KS	870	6	KLIPSPRUIT 870 KS
LIMPOPO	KS	870	8	KLIPSPRUIT 870 KS
LIMPOPO	KS	870	10	KLIPSPRUIT 870 KS
LIMPOPO	KS	870	12	KLIPSPRUIT 870 KS
LIMPOPO	KS	870	23	KLIPSPRUIT 870 KS
LIMPOPO	KS	870	24	KLIPSPRUIT 870 KS
LIMPOPO	KS	870	25	KLIPSPRUIT 870 KS
LIMPOPO	KS	870	29	KLIPSPRUIT 870 KS
LIMPOPO	KS	870	31	KLIPSPRUIT 870 KS
LIMPOPO	KS	994	0	
MPUMALANGA	JR	158	2	WELTEVREDEN No. 158 -JR
MPUMALANGA	JR	160	1	KAMEELRIVIER No. 160 -JR
MPUMALANGA	JR	160	3	KAMEELRIVIER No. 160 -JR
MPUMALANGA	JR	160	4	KAMEELRIVIER No. 160 -JR
MPUMALANGA	JR	160	5	KAMEELRIVIER No. 160 -JR
MPUMALANGA	JR	160	6	KAMEELRIVIER No. 160 -JR
MPUMALANGA	JR	160	7	KAMEELRIVIER No. 160 -JR
MPUMALANGA	JR	160	8	KAMEELRIVIER No. 160 -JR
MPUMALANGA	JR	160	9	KAMEELRIVIER No. 160 -JR
MPUMALANGA	JR	160	10	KAMEELRIVIER No. 160 -JR
MPUMALANGA	JR	160	338	KAMEELRIVIER No. 160 -JR
MPUMALANGA	JR	160	339	KAMEELRIVIER No. 160 -JR
MPUMALANGA	JR	160	366	KAMEELRIVIER No. 160 -JR
MPUMALANGA	JR	160	369	KAMEELRIVIER No. 160 -JR
MPUMALANGA	JR	160	370	KAMEELRIVIER No. 160 -JR
MPUMALANGA	JR	160	373	KAMEELRIVIER No. 160 -JR
MPUMALANGA	JR	160	378	KAMEELRIVIER No. 160 -JR
MPUMALANGA	JR	160	379	KAMEELRIVIER No. 160 -JR
MPUMALANGA	JR	160	380	KAMEELRIVIER No. 160 -JR
MPUMALANGA	JR	182	0	CHRISTIAANSRUS No. 182 -JR
MPUMALANGA	JR	185	1	RIETVLEI No. 185 -JR
MPUMALANGA	JR	185	2	RIETVLEI No. 185 -JR
MPUMALANGA	JR	185	3	RIETVLEI No. 185 -JR
MPUMALANGA	JR	186	0	OUGED No. 186 -JR
MPUMALANGA	JR	187	5	KLOPPERSDAM 187 JR
MPUMALANGA	JR	187	8	KLOPPERSDAM 187 JR
MPUMALANGA	JR	187	9	KLOPPERSDAM 187 JR
MPUMALANGA	JR	187	10	KLOPPERSDAM 187 JR
MPUMALANGA	JR	187	11	KLOPPERSDAM 187 JR
MPUMALANGA	JR	188	0	LEEUWFONTEIN No. 188 -JR
MPUMALANGA	JR	188	1	LEEUWFONTEIN No. 188 -JR
MPUMALANGA	JR	188	2	LEEUWFONTEIN No. 188 -JR
MPUMALANGA	JR	188	3	LEEUWFONTEIN No. 188 -JR
MPUMALANGA	JR	188	4	LEEUWFONTEIN No. 188 -JR
MPUMALANGA	JR	188	5	LEEUWFONTEIN No. 188 -JR
MPUMALANGA	JR	188	6	LEEUWFONTEIN No. 188 -JR
MPUMALANGA	JR	188	7	LEEUWFONTEIN No. 188 -JR
MPUMALANGA	JR	188	8	LEEUWFONTEIN No. 188 -JR
MPUMALANGA	JR	188	9	LEEUWFONTEIN No. 188 -JR
MPUMALANGA	JR	188	11	LEEUWFONTEIN No. 188 -JR
MPUMALANGA	JR	188	16	LEEUWFONTEIN No. 188 -JR
MPUMALANGA	JR	189	1	ZANOSPRUIT No. 189 -JR
MPUMALANGA	JR	189	2	ZANOSPRUIT No. 189 -JR
MPUMALANGA	JR	189	3	ZANOSPRUIT No. 189 -JR
MPUMALANGA	JR	189	4	ZANOSPRUIT No. 189 -JR
MPUMALANGA	JR	189	5	ZANOSPRUIT No. 189 -JR
MPUMALANGA	JR	189	6	ZANOSPRUIT No. 189 -JR
MPUMALANGA	JR	189	7	ZANOSPRUIT No. 189 -JR
MPUMALANGA	JR	189	8	ZANOSPRUIT No. 189 -JR
MPUMALANGA	JR	189	9	ZANOSPRUIT No. 189 -JR
MPUMALANGA	JR	189	10	ZANOSPRUIT No. 189 -JR
MPUMALANGA	JR	189	12	ZANOSPRUIT No. 189 -JR
MPUMALANGA	JR	190	0	PITERSKRAAL No. 190 -JR
MPUMALANGA	JR	190	6	PITERSKRAAL No. 190 -JR
MPUMALANGA	JR	190	7	PITERSKRAAL No. 190 -JR
MPUMALANGA	JR	192	0	WOLVENKRAAL No. 192 -JR
MPUMALANGA	JR	192	1	WOLVENKRAAL No. 192 -JR
MPUMALANGA	JR	192	2	WOLVENKRAAL No. 192 -JR
MPUMALANGA	JR	192	3	WOLVENKRAAL No. 192 -JR
MPUMALANGA	JR	192	4	WOLVENKRAAL No. 192 -JR
MPUMALANGA	JR	192	5	WOLVENKRAAL No. 192 -JR
MPUMALANGA	JR	192	6	WOLVENKRAAL No. 192 -JR
MPUMALANGA	JR	192	7	WOLVENKRAAL No. 192 -JR
MPUMALANGA	JR	192	8	WOLVENKRAAL No. 192 -JR
MPUMALANGA	JR	192	9	WOLVENKRAAL No. 192 -JR
MPUMALANGA	JR	192	12	WOLVENKRAAL No. 192 -JR
MPUMALANGA	JR	193	1	KLIPPLAATDRIFT No. 193 -JR
MPUMALANGA	JR	193	4	KLIPPLAATDRIFT No. 193 -JR
MPUMALANGA	JR	193	5	KLIPPLAATDRIFT No. 193 -JR
MPUMALANGA	JR	193	6	KLIPPLAATDRIFT No. 193 -JR
MPUMALANGA	JR	193	7	KLIPPLAATDRIFT No. 193 -JR
MPUMALANGA	JR	193	8	KLIPPLAATDRIFT No. 193 -JR
MPUMALANGA	JR	193	9	KLIPPLAATDRIFT No. 193 -JR
MPUMALANGA	JR	193	10	KLIPPLAATDRIFT No. 193 -JR
MPUMALANGA	JR	193	11	KLIPPLAATDRIFT No. 193 -JR
MPUMALANGA	JR	193	12	KLIPPLAATDRIFT No. 193 -JR
MPUMALANGA	JR	193	13	KLIPPLAATDRIFT No. 193 -JR
MPUMALANGA	JR	193	17	KLIPPLAATDRIFT No. 193 -JR

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PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

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Sheet 24 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No.

M B Straughan G.Pr. LS0907D — 09 October 2025 date

For applicant Owain Jackson name

signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	**Dwg:** reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

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Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
MPUMALANGA	JR	193	18	KLIPPLAATDRIFT No. 193 -JR
MPUMALANGA	JR	193	152	KLIPPLAATDRIFT No. 193 -JR
MPUMALANGA	JR	194	1	HOUTENBEK No. 194 -JR
MPUMALANGA	JR	194	2	HOUTENBEK No. 194 -JR
MPUMALANGA	JR	194	3	HOUTENBEK No. 194 -JR
MPUMALANGA	JR	194	4	HOUTENBEK No. 194 -JR
MPUMALANGA	JR	194	5	HOUTENBEK No. 194 -JR
MPUMALANGA	JR	194	6	HOUTENBEK No. 194 -JR
MPUMALANGA	JR	194	7	HOUTENBEK No. 194 -JR
MPUMALANGA	JR	194	8	HOUTENBEK No. 194 -JR
MPUMALANGA	JR	194	9	HOUTENBEK No. 194 -JR
MPUMALANGA	JR	194	10	HOUTENBEK No. 194 -JR
MPUMALANGA	JR	194	11	HOUTENBEK No. 194 -JR
MPUMALANGA	JR	194	12	HOUTENBEK No. 194 -JR
MPUMALANGA	JR	194	13	HOUTENBEK No. 194 -JR
MPUMALANGA	JR	195	0	MATHYS ZYN LOOP No. 195-JR
MPUMALANGA	JR	198	0	BOEKENHOUTFONTEIN No. 198 -JR
MPUMALANGA	JR	198	1	BOEKENHOUTFONTEIN No. 198 -JR
MPUMALANGA	JR	199	0	GEMSBOKFONTEIN No. 199 -JR
MPUMALANGA	JR	199	1	GEMSBOKFONTEIN No. 199 -JR
MPUMALANGA	JR	199	2	GEMSBOKFONTEIN No. 199 -JR
MPUMALANGA	JR	199	3	GEMSBOKFONTEIN No. 199 -JR
MPUMALANGA	JR	199	4	GEMSBOKFONTEIN No. 199 -JR
MPUMALANGA	JR	199	5	GEMSBOKFONTEIN No. 199 -JR
MPUMALANGA	JR	199	6	GEMSBOKFONTEIN No. 199 -JR
MPUMALANGA	JR	199	7	GEMSBOKFONTEIN No. 199 -JR
MPUMALANGA	JR	199	8	GEMSBOKFONTEIN No. 199 -JR
MPUMALANGA	JR	199	9	GEMSBOKFONTEIN No. 199 -JR
MPUMALANGA	JR	199	10	GEMSBOKFONTEIN No. 199 -JR
MPUMALANGA	JR	199	11	GEMSBOKFONTEIN No. 199 -JR
MPUMALANGA	JR	199	12	GEMSBOKFONTEIN No. 199 -JR
MPUMALANGA	JR	199	13	GEMSBOKFONTEIN No. 199 -JR
MPUMALANGA	JR	199	14	GEMSBOKFONTEIN No. 199 -JR
MPUMALANGA	JR	199	15	GEMSBOKFONTEIN No. 199 -JR
MPUMALANGA	JR	199	16	GEMSBOKFONTEIN No. 199 -JR
MPUMALANGA	JR	199	17	GEMSBOKFONTEIN No. 199 -JR
MPUMALANGA	JR	199	18	GEMSBOKFONTEIN No. 199 -JR
MPUMALANGA	JR	199	19	GEMSBOKFONTEIN No. 199 -JR
MPUMALANGA	JR	199	20	GEMSBOKFONTEIN No. 199 -JR
MPUMALANGA	JR	199	21	GEMSBOKFONTEIN No. 199 -JR
MPUMALANGA	JR	199	22	GEMSBOKFONTEIN No. 199 -JR
MPUMALANGA	JR	199	26	GEMSBOKFONTEIN No. 199 -JR
MPUMALANGA	JR	199	34	GEMSBOKFONTEIN No. 199 -JR
MPUMALANGA	JR	200	1	BRANKFONTEIN No. 200 -JR
MPUMALANGA	JR	200	2	BRANKFONTEIN No. 200 -JR
MPUMALANGA	JR	200	3	BRANKFONTEIN No. 200 -JR
MPUMALANGA	JR	200	4	BRANKFONTEIN No. 200 -JR
MPUMALANGA	JR	202	1	KAMEELPOORT No. 202 -JR
MPUMALANGA	JR	202	3	KAMEELPOORT No. 202 -JR
MPUMALANGA	JR	202	4	KAMEELPOORT No. 202 -JR
MPUMALANGA	JR	202	5	KAMEELPOORT No. 202 -JR
MPUMALANGA	JR	202	10	KAMEELPOORT No. 202 -JR
MPUMALANGA	JR	202	12	KAMEELPOORT No. 202 -JR
MPUMALANGA	JR	202	13	KAMEELPOORT No. 202 -JR
MPUMALANGA	JR	202	16	KAMEELPOORT No. 202 -JR
MPUMALANGA	JR	202	17	KAMEELPOORT No. 202 -JR
MPUMALANGA	JR	202	18	KAMEELPOORT No. 202 -JR
MPUMALANGA	JR	202	20	KAMEELPOORT No. 202 -JR
MPUMALANGA	JR	202	21	KAMEELPOORT No. 202 -JR
MPUMALANGA	JR	202	22	KAMEELPOORT No. 202 -JR
MPUMALANGA	JR	202	23	KAMEELPOORT No. 202 -JR
MPUMALANGA	JR	202	24	KAMEELPOORT No. 202 -JR
MPUMALANGA	JR	202	28	KAMEELPOORT No. 202 -JR
MPUMALANGA	JR	202	29	KAMEELPOORT No. 202 -JR
MPUMALANGA	JR	205	1	KLIPFONTEIN No. 205 -JR
MPUMALANGA	JR	205	3	KLIPFONTEIN No. 205 -JR
MPUMALANGA	JR	205	4	KLIPFONTEIN No. 205 -JR
MPUMALANGA	JR	205	7	KLIPFONTEIN No. 205 -JR
MPUMALANGA	JR	205	8	KLIPFONTEIN No. 205 -JR
MPUMALANGA	JR	205	9	KLIPFONTEIN No. 205 -JR
MPUMALANGA	JR	205	10	KLIPFONTEIN No. 205 -JR
MPUMALANGA	JR	205	11	KLIPFONTEIN No. 205 -JR
MPUMALANGA	JR	205	12	KLIPFONTEIN No. 205 -JR
MPUMALANGA	JR	207	5	ENKELDOORNSPOORT 207 JR
MPUMALANGA	JR	214	0	RIETFONTEIN No. 214 -JR
MPUMALANGA	JR	214	1	RIETFONTEIN No. 214 -JR
MPUMALANGA	JR	214	2	RIETFONTEIN No. 214 -JR
MPUMALANGA	JR	214	3	RIETFONTEIN No. 214 -JR
MPUMALANGA	JR	214	4	RIETFONTEIN No. 214 -JR
MPUMALANGA	JR	214	5	RIETFONTEIN No. 214 -JR
MPUMALANGA	JR	215	0	ENKELDOORN No. 215-JR
MPUMALANGA	JR	215	1	ENKELDOORN No. 215-JR
MPUMALANGA	JR	215	2	ENKELDOORN No. 215-JR
MPUMALANGA	JR	216	0	KWAGGAFONTEIN No. 216 -JR
MPUMALANGA	JR	216	1	KWAGGAFONTEIN No. 216 -JR
MPUMALANGA	JR	216	2	KWAGGAFONTEIN No. 216 -JR
MPUMALANGA	JR	216	3	KWAGGAFONTEIN No. 216 -JR
MPUMALANGA	JR	216	4	KWAGGAFONTEIN No. 216 -JR
MPUMALANGA	JR	216	5	KWAGGAFONTEIN No. 216 -JR
MPUMALANGA	JR	216	6	KWAGGAFONTEIN No. 216 -JR
MPUMALANGA	JR	216	7	KWAGGAFONTEIN No. 216 -JR
MPUMALANGA	JR	216	9	KWAGGAFONTEIN No. 216 -JR
MPUMALANGA	JR	216	10	KWAGGAFONTEIN No. 216 -JR
MPUMALANGA	JR	216	11	KWAGGAFONTEIN No. 216 -JR
MPUMALANGA	JR	216	12	KWAGGAFONTEIN No. 216 -JR
MPUMALANGA	JR	216	18	KWAGGAFONTEIN No. 216 -JR
MPUMALANGA	JR	216	21	KWAGGAFONTEIN No. 216 -JR
MPUMALANGA	JR	216	23	KWAGGAFONTEIN No. 216 -JR
MPUMALANGA	JR	216	25	KWAGGAFONTEIN No. 216 -JR
MPUMALANGA	JR	216	27	KWAGGAFONTEIN No. 216 -JR
MPUMALANGA	JR	216	29	KWAGGAFONTEIN No. 216 -JR
MPUMALANGA	JR	216	36	KWAGGAFONTEIN No. 216 -JR
MPUMALANGA	JR	217	0	ENKELDOORN No. 217 -JR
MPUMALANGA	JR	217	2	ENKELDOORN No. 217 -JR
MPUMALANGA	JR	217	3	ENKELDOORN No. 217 -JR
MPUMALANGA	JR	217	4	ENKELDOORN No. 217 -JR
MPUMALANGA	JR	217	5	ENKELDOORN No. 217 -JR
MPUMALANGA	JR	217	7	ENKELDOORN No. 217 -JR
MPUMALANGA	JR	217	24	ENKELDOORN No. 217 -JR
MPUMALANGA	JR	217	25	ENKELDOORN No. 217 -JR
MPUMALANGA	JR	217	26	ENKELDOORN No. 217 -JR
MPUMALANGA	JR	217	28	ENKELDOORN No. 217 -JR
MPUMALANGA	JR	217	29	ENKELDOORN No. 217 -JR
MPUMALANGA	JR	217	31	ENKELDOORN No. 217 -JR
MPUMALANGA	JR	217	32	ENKELDOORN No. 217 -JR
MPUMALANGA	JR	218	0	KAMEELPOORTNEK No. 218 -JR
MPUMALANGA	JR	218	1	KAMEELPOORTNEK No. 218 -JR
MPUMALANGA	JR	218	2	KAMEELPOORTNEK No. 218 -JR
MPUMALANGA	JR	218	3	KAMEELPOORTNEK No. 218 -JR
MPUMALANGA	JR	218	4	KAMEELPOORTNEK No. 218 -JR
MPUMALANGA	JR	218	5	KAMEELPOORTNEK No. 218 -JR
MPUMALANGA	JR	218	6	KAMEELPOORTNEK No. 218 -JR
MPUMALANGA	JR	218	7	KAMEELPOORTNEK No. 218 -JR
MPUMALANGA	JR	218	8	KAMEELPOORTNEK No. 218 -JR
MPUMALANGA	JR	218	9	KAMEELPOORTNEK No. 218 -JR
MPUMALANGA	JR	218	10	KAMEELPOORTNEK No. 218 -JR
MPUMALANGA	JR	218	11	KAMEELPOORTNEK No. 218 -JR
MPUMALANGA	JR	218	12	KAMEELPOORTNEK No. 218 -JR
MPUMALANGA	JR	218	13	KAMEELPOORTNEK No. 218 -JR
MPUMALANGA	JR	218	14	KAMEELPOORTNEK No. 218 -JR
MPUMALANGA	JR	218	15	KAMEELPOORTNEK No. 218 -JR
MPUMALANGA	JR	218	16	KAMEELPOORTNEK No. 218 -JR
MPUMALANGA	JR	218	17	KAMEELPOORTNEK No. 218 -JR
MPUMALANGA	JR	218	18	KAMEELPOORTNEK No. 218 -JR
MPUMALANGA	JR	218	19	KAMEELPOORTNEK No. 218 -JR
MPUMALANGA	JR	218	20	KAMEELPOORTNEK No. 218 -JR
MPUMALANGA	JR	218	21	KAMEELPOORTNEK No. 218 -JR
MPUMALANGA	JR	218	22	KAMEELPOORTNEK No. 218 -JR
MPUMALANGA	JR	218	23	KAMEELPOORTNEK No. 218 -JR
MPUMALANGA	JR	218	24	KAMEELPOORTNEK No. 218 -JR
MPUMALANGA	JR	218	25	KAMEELPOORTNEK No. 218 -JR
MPUMALANGA	JR	218	26	KAMEELPOORTNEK No. 218 -JR
MPUMALANGA	JR	218	27	KAMEELPOORTNEK No. 218 -JR
MPUMALANGA	JR	218	35	KAMEELPOORTNEK No. 218 -JR

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Sheet 25 of 81 sheets

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PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No.

M B Straughan G.Pr. LS0907D — 09 October 2025 date

For applicant Owain Jackson name

signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	**Dwg:** reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

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Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
MPUMALANGA	JR	218	36	KAMEELPOORTNEK No. 218 -JR
MPUMALANGA	JR	219	0	ENKELDOORNOOG No. 219-JR
MPUMALANGA	JR	219	2	ENKELDOORNOOG No. 219-JR
MPUMALANGA	JR	219	10	ENKELDOORNOOG No. 219-JR
MPUMALANGA	JR	219	15	ENKELDOORNOOG No. 219-JR
MPUMALANGA	JR	219	17	ENKELDOORNOOG No. 219-JR
MPUMALANGA	JR	219	18	ENKELDOORNOOG No. 219-JR
MPUMALANGA	JR	219	19	ENKELDOORNOOG No. 219-JR
MPUMALANGA	JR	219	20	ENKELDOORNOOG No. 219-JR
MPUMALANGA	JR	219	21	ENKELDOORNOOG No. 219-JR
MPUMALANGA	JR	219	22	ENKELDOORNOOG No. 219-JR
MPUMALANGA	JR	219	23	ENKELDOORNOOG No. 219-JR
MPUMALANGA	JR	219	24	ENKELDOORNOOG No. 219-JR
MPUMALANGA	JR	219	25	ENKELDOORNOOG No. 219-JR
MPUMALANGA	JR	219	27	ENKELDOORNOOG No. 219-JR
MPUMALANGA	JR	219	28	ENKELDOORNOOG No. 219-JR
MPUMALANGA	JR	219	29	ENKELDOORNOOG No. 219-JR
MPUMALANGA	JR	219	30	ENKELDOORNOOG No. 219-JR
MPUMALANGA	JR	219	31	ENKELDOORNOOG No. 219-JR
MPUMALANGA	JR	219	32	ENKELDOORNOOG No. 219-JR
MPUMALANGA	JR	219	33	ENKELDOORNOOG No. 219-JR
MPUMALANGA	JR	219	41	ENKELDOORNOOG No. 219-JR
MPUMALANGA	JR	219	42	ENKELDOORNOOG No. 219-JR
MPUMALANGA	JR	219	43	ENKELDOORNOOG No. 219-JR
MPUMALANGA	JR	219	44	ENKELDOORNOOG No. 219-JR
MPUMALANGA	JR	219	45	ENKELDOORNOOG No. 219-JR
MPUMALANGA	JR	219	47	ENKELDOORNOOG No. 219-JR
MPUMALANGA	JR	219	66	ENKELDOORNOOG No. 219-JR
MPUMALANGA	JR	219	69	ENKELDOORNOOG No. 219-JR
MPUMALANGA	JR	219	70	ENKELDOORNOOG No. 219-JR
MPUMALANGA	JR	219	71	ENKELDOORNOOG No. 219-JR
MPUMALANGA	JR	219	72	ENKELDOORNOOG No. 219-JR
MPUMALANGA	JR	219	74	ENKELDOORNOOG No. 219-JR
MPUMALANGA	JR	220	54	TWEEFONTEIN No. 220 -JR
MPUMALANGA	JR	220	55	TWEEFONTEIN No. 220 -JR
MPUMALANGA	JR	220	63	TWEEFONTEIN No. 220 -JR
MPUMALANGA	JR	220	72	TWEEFONTEIN No. 220 -JR
MPUMALANGA	JR	220	79	TWEEFONTEIN No. 220 -JR
MPUMALANGA	JR	221	3	VLAKLAAGTE NO. 221 -JR
MPUMALANGA	JR	221	4	VLAKLAAGTE NO. 221 -JR
MPUMALANGA	JR	221	5	VLAKLAAGTE NO. 221 -JR
MPUMALANGA	JR	221	6	VLAKLAAGTE NO. 221 -JR
MPUMALANGA	JR	221	9	VLAKLAAGTE NO. 221 -JR
MPUMALANGA	JR	221	10	VLAKLAAGTE NO. 221 -JR
MPUMALANGA	JR	221	11	VLAKLAAGTE NO. 221 -JR
MPUMALANGA	JR	221	14	VLAKLAAGTE NO. 221 -JR
MPUMALANGA	JR	221	16	VLAKLAAGTE NO. 221 -JR
MPUMALANGA	JR	221	39	VLAKLAAGTE NO. 221 -JR

Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
MPUMALANGA	JR	221	85	VLAKLAAGTE NO. 221 -JR
MPUMALANGA	JR	224	0	HARTEBEESTFONTEIN 224 JR
MPUMALANGA	JR	224	1	HARTEBEESTFONTEIN 224 JR
MPUMALANGA	JR	224	2	HARTEBEESTFONTEIN 224 JR
MPUMALANGA	JR	225	0	HELOISE No. 225 -JR
MPUMALANGA	JR	226	1	VRISCHGEWAAGD No. 226 -JR
MPUMALANGA	JR	226	4	VRISCHGEWAAGD No. 226 -JR
MPUMALANGA	JR	226	5	VRISCHGEWAAGD No. 226 -JR
MPUMALANGA	JR	226	6	VRISCHGEWAAGD No. 226 -JR
MPUMALANGA	JR	226	7	VRISCHGEWAAGD No. 226 -JR
MPUMALANGA	JR	226	8	VRISCHGEWAAGD No. 226 -JR
MPUMALANGA	JR	226	9	VRISCHGEWAAGD No. 226 -JR
MPUMALANGA	JR	226	10	VRISCHGEWAAGD No. 226 -JR
MPUMALANGA	JR	226	11	VRISCHGEWAAGD No. 226 -JR
MPUMALANGA	JR	226	12	VRISCHGEWAAGD No. 226 -JR
MPUMALANGA	JR	226	13	VRISCHGEWAAGD No. 226 -JR
MPUMALANGA	JR	226	14	VRISCHGEWAAGD No. 226 -JR
MPUMALANGA	JR	226	15	VRISCHGEWAAGD No. 226 -JR
MPUMALANGA	JR	226	16	VRISCHGEWAAGD No. 226 -JR
MPUMALANGA	JR	226	17	VRISCHGEWAAGD No. 226 -JR
MPUMALANGA	JR	226	18	VRISCHGEWAAGD No. 226 -JR
MPUMALANGA	JR	226	19	VRISCHGEWAAGD No. 226 -JR
MPUMALANGA	JR	226	20	VRISCHGEWAAGD No. 226 -JR
MPUMALANGA	JR	226	21	VRISCHGEWAAGD No. 226 -JR
MPUMALANGA	JR	226	22	VRISCHGEWAAGD No. 226 -JR
MPUMALANGA	JR	226	23	VRISCHGEWAAGD No. 226 -JR
MPUMALANGA	JR	226	24	VRISCHGEWAAGD No. 226 -JR
MPUMALANGA	JR	226	25	VRISCHGEWAAGD No. 226 -JR
MPUMALANGA	JR	226	26	VRISCHGEWAAGD No. 226 -JR
MPUMALANGA	JR	227	1	RHENOSTERFONTEIN No. 227 -JR
MPUMALANGA	JR	227	2	RHENOSTERFONTEIN No. 227 -JR
MPUMALANGA	JR	227	3	RHENOSTERFONTEIN No. 227 -JR
MPUMALANGA	JR	227	4	RHENOSTERFONTEIN No. 227 -JR
MPUMALANGA	JR	227	5	RHENOSTERFONTEIN No. 227 -JR
MPUMALANGA	JR	228	1	LEEUWKOP No. 228 -JR
MPUMALANGA	JR	228	2	LEEUWKOP No. 228 -JR
MPUMALANGA	JR	228	4	LEEUWKOP No. 228 -JR
MPUMALANGA	JR	228	5	LEEUWKOP No. 228 -JR
MPUMALANGA	JR	228	6	LEEUWKOP No. 228 -JR
MPUMALANGA	JR	228	7	LEEUWKOP No. 228 -JR
MPUMALANGA	JR	229	1	GEMSBOKSPRUIT No. 229 -JR
MPUMALANGA	JR	229	2	GEMSBOKSPRUIT No. 229 -JR
MPUMALANGA	JR	229	3	GEMSBOKSPRUIT No. 229 -JR
MPUMALANGA	JR	229	4	GEMSBOKSPRUIT No. 229 -JR
MPUMALANGA	JR	229	5	GEMSBOKSPRUIT No. 229 -JR
MPUMALANGA	JR	229	6	GEMSBOKSPRUIT No. 229 -JR
MPUMALANGA	JR	229	7	GEMSBOKSPRUIT No. 229 -JR
MPUMALANGA	JR	229	8	GEMSBOKSPRUIT No. 229 -JR

Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
MPUMALANGA	JR	229	9	GEMSBOKSPRUIT No. 229 -JR
MPUMALANGA	JR	229	10	GEMSBOKSPRUIT No. 229 -JR
MPUMALANGA	JR	229	11	GEMSBOKSPRUIT No. 229 -JR
MPUMALANGA	JR	229	12	GEMSBOKSPRUIT No. 229 -JR
MPUMALANGA	JR	229	13	GEMSBOKSPRUIT No. 229 -JR
MPUMALANGA	JR	229	14	GEMSBOKSPRUIT No. 229 -JR
MPUMALANGA	JR	229	15	GEMSBOKSPRUIT No. 229 -JR
MPUMALANGA	JR	229	16	GEMSBOKSPRUIT No. 229 -JR
MPUMALANGA	JR	229	17	GEMSBOKSPRUIT No. 229 -JR
MPUMALANGA	JR	229	18	GEMSBOKSPRUIT No. 229 -JR
MPUMALANGA	JR	229	19	GEMSBOKSPRUIT No. 229 -JR
MPUMALANGA	JR	229	20	GEMSBOKSPRUIT No. 229 -JR
MPUMALANGA	JR	229	21	GEMSBOKSPRUIT No. 229 -JR
MPUMALANGA	JR	229	22	GEMSBOKSPRUIT No. 229 -JR
MPUMALANGA	JR	229	23	GEMSBOKSPRUIT No. 229 -JR
MPUMALANGA	JR	229	24	GEMSBOKSPRUIT No. 229 -JR
MPUMALANGA	JR	229	25	GEMSBOKSPRUIT No. 229 -JR
MPUMALANGA	JR	229	29	GEMSBOKSPRUIT No. 229 -JR
MPUMALANGA	JR	229	30	GEMSBOKSPRUIT No. 229 -JR
MPUMALANGA	JR	231	1	GERMSBOKFONTEIN No. 231 JR
MPUMALANGA	JR	231	2	GERMSBOKFONTEIN No. 231 JR
MPUMALANGA	JR	231	4	GERMSBOKFONTEIN No. 231 JR
MPUMALANGA	JR	231	7	GERMSBOKFONTEIN No. 231 JR
MPUMALANGA	JR	231	8	GERMSBOKFONTEIN No. 231 JR
MPUMALANGA	JR	231	9	GERMSBOKFONTEIN No. 231 JR
MPUMALANGA	JR	231	10	GERMSBOKFONTEIN No. 231 JR
MPUMALANGA	JR	231	11	GERMSBOKFONTEIN No. 231 JR
MPUMALANGA	JR	231	12	GERMSBOKFONTEIN No. 231 JR
MPUMALANGA	JR	231	13	GERMSBOKFONTEIN No. 231 JR
MPUMALANGA	JR	231	15	GERMSBOKFONTEIN No. 231 JR
MPUMALANGA	JR	231	16	GERMSBOKFONTEIN No. 231 JR
MPUMALANGA	JR	231	18	GERMSBOKFONTEIN No. 231 JR
MPUMALANGA	JR	231	19	GERMSBOKFONTEIN No. 231 JR
MPUMALANGA	JR	231	20	GERMSBOKFONTEIN No. 231 JR
MPUMALANGA	JR	231	21	GERMSBOKFONTEIN No. 231 JR
MPUMALANGA	JR	231	22	GERMSBOKFONTEIN No. 231 JR
MPUMALANGA	JR	231	23	GERMSBOKFONTEIN No. 231 JR
MPUMALANGA	JR	231	24	GERMSBOKFONTEIN No. 231 JR
MPUMALANGA	JR	231	25	GERMSBOKFONTEIN No. 231 JR
MPUMALANGA	JR	231	29	GERMSBOKFONTEIN No. 231 JR
MPUMALANGA	JR	233	0	LANSERIA No. 233 -JR
MPUMALANGA	JR	234	0	PRINS ANNA No. 234-JR
MPUMALANGA	JR	234	3	PRINS ANNA No. 234-JR
MPUMALANGA	JR	234	4	PRINS ANNA No. 234-JR
MPUMALANGA	JR	234	5	PRINS ANNA No. 234-JR
MPUMALANGA	JR	234	6	PRINS ANNA No. 234-JR
MPUMALANGA	JR	234	8	PRINS ANNA No. 234-JR
MPUMALANGA	JR	234	9	PRINS ANNA No. 234-JR

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PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 26 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. — M B Straughan G.Pr. LSO907D — 09 October 2025 date

For applicant — Owain Jackson name — signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	Dwg: reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

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Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
MPUMALANGA	JR	234	10	PRINS ANNA No. 234-JR
MPUMALANGA	JR	234	11	PRINS ANNA No. 234-JR
MPUMALANGA	JR	234	12	PRINS ANNA No. 234-JR
MPUMALANGA	JR	234	13	PRINS ANNA No. 234-JR
MPUMALANGA	JR	234	14	PRINS ANNA No. 234-JR
MPUMALANGA	JR	234	15	PRINS ANNA No. 234-JR
MPUMALANGA	JR	234	16	PRINS ANNA No. 234-JR
MPUMALANGA	JR	234	17	PRINS ANNA No. 234-JR
MPUMALANGA	JR	234	18	PRINS ANNA No. 234-JR
MPUMALANGA	JR	234	19	PRINS ANNA No. 234-JR
MPUMALANGA	JR	235	1	HARTEBEESTSPRUIT No. 235-JR
MPUMALANGA	JR	235	26	HARTEBEESTSPRUIT No. 235-JR
MPUMALANGA	JR	235	29	HARTEBEESTSPRUIT No. 235-JR
MPUMALANGA	JR	235	59	HARTEBEESTSPRUIT No. 235-JR
MPUMALANGA	JR	244	2	SYBRANDSKRAAL No. 244-JR
MPUMALANGA	JR	244	4	SYBRANDSKRAAL No. 244-JR
MPUMALANGA	JR	244	8	SYBRANDSKRAAL No. 244-JR
MPUMALANGA	JR	244	9	SYBRANDSKRAAL No. 244-JR
MPUMALANGA	JR	244	14	SYBRANDSKRAAL No. 244-JR
MPUMALANGA	JR	244	17	SYBRANDSKRAAL No. 244-JR
MPUMALANGA	JR	244	19	SYBRANDSKRAAL No. 244-JR
MPUMALANGA	JR	245	3	KLIPSPRUIT No. 245 -JR
MPUMALANGA	JR	245	6	KLIPSPRUIT No. 245 -JR
MPUMALANGA	JR	245	10	KLIPSPRUIT No. 245 -JR
MPUMALANGA	JR	245	11	KLIPSPRUIT No. 245 -JR
MPUMALANGA	JR	245	12	KLIPSPRUIT No. 245 -JR
MPUMALANGA	JR	245	13	KLIPSPRUIT No. 245 -JR
MPUMALANGA	JR	245	14	KLIPSPRUIT No. 245 -JR
MPUMALANGA	JR	245	15	KLIPSPRUIT No. 245 -JR
MPUMALANGA	JR	245	16	KLIPSPRUIT No. 245 -JR
MPUMALANGA	JR	245	17	KLIPSPRUIT No. 245 -JR
MPUMALANGA	JR	245	18	KLIPSPRUIT No. 245 -JR
MPUMALANGA	JR	245	20	KLIPSPRUIT No. 245 -JR
MPUMALANGA	JR	245	21	KLIPSPRUIT No. 245 -JR
MPUMALANGA	JR	245	22	KLIPSPRUIT No. 245 -JR
MPUMALANGA	JR	245	23	KLIPSPRUIT No. 245 -JR
MPUMALANGA	JR	245	24	KLIPSPRUIT No. 245 -JR
MPUMALANGA	JR	245	26	KLIPSPRUIT No. 245 -JR
MPUMALANGA	JR	246	0	ZUSTERSHOEK No. 246 -JR
MPUMALANGA	JR	246	2	ZUSTERSHOEK No. 246 -JR
MPUMALANGA	JR	246	3	ZUSTERSHOEK No. 246 -JR
MPUMALANGA	JR	246	4	ZUSTERSHOEK No. 246 -JR
MPUMALANGA	JR	246	5	ZUSTERSHOEK No. 246 -JR
MPUMALANGA	JR	246	6	ZUSTERSHOEK No. 246 -JR
MPUMALANGA	JR	246	7	ZUSTERSHOEK No. 246 -JR
MPUMALANGA	JR	246	8	ZUSTERSHOEK No. 246 -JR
MPUMALANGA	JR	246	16	ZUSTERSHOEK No. 246 -JR
MPUMALANGA	JR	248	0	LEEUWFONTEIN No. 248 -JR
MPUMALANGA	JR	248	1	LEEUWFONTEIN No. 248 -JR
MPUMALANGA	JR	248	2	LEEUWFONTEIN No. 248 -JR
MPUMALANGA	JR	248	4	LEEUWFONTEIN No. 248 -JR
MPUMALANGA	JR	248	5	LEEUWFONTEIN No. 248 -JR
MPUMALANGA	JR	248	6	LEEUWFONTEIN No. 248 -JR
MPUMALANGA	JR	248	7	LEEUWFONTEIN No. 248 -JR
MPUMALANGA	JR	248	8	LEEUWFONTEIN No. 248 -JR
MPUMALANGA	JR	248	9	LEEUWFONTEIN No. 248 -JR
MPUMALANGA	JR	248	10	LEEUWFONTEIN No. 248 -JR
MPUMALANGA	JR	248	11	LEEUWFONTEIN No. 248 -JR
MPUMALANGA	JR	248	12	LEEUWFONTEIN No. 248 -JR
MPUMALANGA	JR	248	13	LEEUWFONTEIN No. 248 -JR
MPUMALANGA	JR	248	14	LEEUWFONTEIN No. 248 -JR
MPUMALANGA	JR	248	15	LEEUWFONTEIN No. 248 -JR
MPUMALANGA	JR	248	16	LEEUWFONTEIN No. 248 -JR
MPUMALANGA	JR	248	17	LEEUWFONTEIN No. 248 -JR
MPUMALANGA	JR	248	18	LEEUWFONTEIN No. 248 -JR
MPUMALANGA	JR	248	19	LEEUWFONTEIN No. 248 -JR
MPUMALANGA	JR	248	20	LEEUWFONTEIN No. 248 -JR
MPUMALANGA	JR	248	21	LEEUWFONTEIN No. 248 -JR
MPUMALANGA	JR	248	23	LEEUWFONTEIN No. 248 -JR
MPUMALANGA	JR	249	1	WELVERDIEND No. 249 -JR
MPUMALANGA	JR	249	2	WELVERDIEND No. 249 -JR
MPUMALANGA	JR	249	3	WELVERDIEND No. 249 -JR
MPUMALANGA	JR	249	4	WELVERDIEND No. 249 -JR
MPUMALANGA	JR	249	5	WELVERDIEND No. 249 -JR
MPUMALANGA	JR	249	7	WELVERDIEND No. 249 -JR
MPUMALANGA	JR	249	8	WELVERDIEND No. 249 -JR
MPUMALANGA	JR	249	9	WELVERDIEND No. 249 -JR
MPUMALANGA	JR	249	10	WELVERDIEND No. 249 -JR
MPUMALANGA	JR	249	11	WELVERDIEND No. 249 -JR
MPUMALANGA	JR	249	12	WELVERDIEND No. 249 -JR
MPUMALANGA	JR	249	13	WELVERDIEND No. 249 -JR
MPUMALANGA	JR	249	14	WELVERDIEND No. 249 -JR
MPUMALANGA	JR	250	0	ROODEPOORTJE No. 250-JR
MPUMALANGA	JR	250	1	ROODEPOORTJE No. 250-JR
MPUMALANGA	JR	250	2	ROODEPOORTJE No. 250-JR
MPUMALANGA	JR	250	3	ROODEPOORTJE No. 250-JR
MPUMALANGA	JR	250	5	ROODEPOORTJE No. 250-JR
MPUMALANGA	JR	250	6	ROODEPOORTJE No. 250-JR
MPUMALANGA	JR	250	7	ROODEPOORTJE No. 250-JR
MPUMALANGA	JR	250	8	ROODEPOORTJE No. 250-JR
MPUMALANGA	JR	250	9	ROODEPOORTJE No. 250-JR
MPUMALANGA	JR	250	10	ROODEPOORTJE No. 250-JR
MPUMALANGA	JR	250	11	ROODEPOORTJE No. 250-JR
MPUMALANGA	JR	250	12	ROODEPOORTJE No. 250-JR
MPUMALANGA	JR	250	13	ROODEPOORTJE No. 250-JR
MPUMALANGA	JR	250	14	ROODEPOORTJE No. 250-JR
MPUMALANGA	JR	250	15	ROODEPOORTJE No. 250-JR
MPUMALANGA	JR	250	16	ROODEPOORTJE No. 250-JR
MPUMALANGA	JR	250	17	ROODEPOORTJE No. 250-JR
MPUMALANGA	JR	250	18	ROODEPOORTJE No. 250-JR
MPUMALANGA	JR	250	19	ROODEPOORTJE No. 250-JR
MPUMALANGA	JR	250	20	ROODEPOORTJE No. 250-JR
MPUMALANGA	JR	250	21	ROODEPOORTJE No. 250-JR
MPUMALANGA	JR	250	22	ROODEPOORTJE No. 250-JR
MPUMALANGA	JR	250	23	ROODEPOORTJE No. 250-JR
MPUMALANGA	JR	250	24	ROODEPOORTJE No. 250-JR
MPUMALANGA	JR	250	25	ROODEPOORTJE No. 250-JR
MPUMALANGA	JR	250	26	ROODEPOORTJE No. 250-JR
MPUMALANGA	JR	250	27	ROODEPOORTJE No. 250-JR
MPUMALANGA	JR	250	28	ROODEPOORTJE No. 250-JR
MPUMALANGA	JR	250	29	ROODEPOORTJE No. 250-JR
MPUMALANGA	JR	250	30	ROODEPOORTJE No. 250-JR
MPUMALANGA	JR	250	31	ROODEPOORTJE No. 250-JR
MPUMALANGA	JR	250	32	ROODEPOORTJE No. 250-JR
MPUMALANGA	JR	250	33	ROODEPOORTJE No. 250-JR
MPUMALANGA	JR	250	34	ROODEPOORTJE No. 250-JR
MPUMALANGA	JR	250	35	ROODEPOORTJE No. 250-JR
MPUMALANGA	JR	250	36	ROODEPOORTJE No. 250-JR
MPUMALANGA	JR	252	1	KLIPDRIFT No. 252 -JR
MPUMALANGA	JR	252	2	KLIPDRIFT No. 252 -JR
MPUMALANGA	JR	252	3	KLIPDRIFT No. 252 -JR
MPUMALANGA	JR	252	4	KLIPDRIFT No. 252 -JR
MPUMALANGA	JR	252	5	KLIPDRIFT No. 252 -JR
MPUMALANGA	JR	252	6	KLIPDRIFT No. 252 -JR
MPUMALANGA	JR	252	8	KLIPDRIFT No. 252 -JR
MPUMALANGA	JR	252	9	KLIPDRIFT No. 252 -JR
MPUMALANGA	JR	252	11	KLIPDRIFT No. 252 -JR
MPUMALANGA	JR	252	12	KLIPDRIFT No. 252 -JR
MPUMALANGA	JR	252	13	KLIPDRIFT No. 252 -JR
MPUMALANGA	JR	252	14	KLIPDRIFT No. 252 -JR
MPUMALANGA	JR	252	15	KLIPDRIFT No. 252 -JR
MPUMALANGA	JR	252	16	KLIPDRIFT No. 252 -JR
MPUMALANGA	JR	252	18	KLIPDRIFT No. 252 -JR
MPUMALANGA	JR	252	19	KLIPDRIFT No. 252 -JR
MPUMALANGA	JR	253	0	SILVERHILL No. 253 -JR
MPUMALANGA	JR	255	1	WOLVENGATEN No. 255 -JR
MPUMALANGA	JR	255	2	WOLVENGATEN No. 255 -JR
MPUMALANGA	JR	255	3	WOLVENGATEN No. 255 -JR
MPUMALANGA	JR	255	4	WOLVENGATEN No. 255 -JR
MPUMALANGA	JR	255	5	WOLVENGATEN No. 255 -JR
MPUMALANGA	JR	255	6	WOLVENGATEN No. 255 -JR
MPUMALANGA	JR	255	7	WOLVENGATEN No. 255 -JR
MPUMALANGA	JR	255	8	WOLVENGATEN No. 255 -JR
MPUMALANGA	JR	255	11	WOLVENGATEN No. 255 -JR

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The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 27 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. — M B Straughan G.Pr. LS0907D — 09 October 2025 date

For applicant — Owain Jackson name — signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	**Dwg:** reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

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Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
MPUMALANGA	JR	255	12	WOLVENGATEN No. 255 -JR
MPUMALANGA	JR	255	13	WOLVENGATEN No. 255 -JR
MPUMALANGA	JR	255	14	WOLVENGATEN No. 255 -JR
MPUMALANGA	JR	255	15	WOLVENGATEN No. 255 -JR
MPUMALANGA	JR	255	16	WOLVENGATEN No. 255 -JR
MPUMALANGA	JR	255	17	WOLVENGATEN No. 255 -JR
MPUMALANGA	JR	255	18	WOLVENGATEN No. 255 -JR
MPUMALANGA	JR	255	19	WOLVENGATEN No. 255 -JR
MPUMALANGA	JR	255	20	WOLVENGATEN No. 255 -JR
MPUMALANGA	JR	255	21	WOLVENGATEN No. 255 -JR
MPUMALANGA	JR	255	22	WOLVENGATEN No. 255 -JR
MPUMALANGA	JR	431	4	VAN DYKSPRUIT No. 431 -JR
MPUMALANGA	JR	431	16	VAN DYKSPRUIT No. 431 -JR
MPUMALANGA	JR	431	17	VAN DYKSPRUIT No. 431 -JR
MPUMALANGA	JR	431	18	VAN DYKSPRUIT No. 431 -JR
MPUMALANGA	JR	431	19	VAN DYKSPRUIT No. 431 -JR
MPUMALANGA	JR	431	20	VAN DYKSPRUIT No. 431 -JR
MPUMALANGA	JR	431	21	VAN DYKSPRUIT No. 431 -JR
MPUMALANGA	JR	431	22	VAN DYKSPRUIT No. 431 -JR
MPUMALANGA	JR	431	23	VAN DYKSPRUIT No. 431 -JR
MPUMALANGA	JR	431	24	VAN DYKSPRUIT No. 431 -JR
MPUMALANGA	JR	431	25	VAN DYKSPRUIT No. 431 -JR
MPUMALANGA	JR	431	26	VAN DYKSPRUIT No. 431 -JR
MPUMALANGA	JR	431	27	VAN DYKSPRUIT No. 431 -JR
MPUMALANGA	JR	431	29	VAN DYKSPRUIT No. 431 -JR
MPUMALANGA	JR	431	31	VAN DYKSPRUIT No. 431 -JR
MPUMALANGA	JR	431	34	VAN DYKSPRUIT No. 431 -JR
MPUMALANGA	JR	431	35	VAN DYKSPRUIT No. 431 -JR
MPUMALANGA	JR	431	42	VAN DYKSPRUIT No. 431 -JR
MPUMALANGA	JR	431	45	VAN DYKSPRUIT No. 431 -JR
MPUMALANGA	JR	431	48	VAN DYKSPRUIT No. 431 -JR
MPUMALANGA	JR	432	0	BOSCHBULT No. 432 -JR
MPUMALANGA	JR	434	0	HARTEBEESTSPRUIT No. 434 -JR
MPUMALANGA	JR	434	2	HARTEBEESTSPRUIT No. 434 -JR
MPUMALANGA	JR	434	3	HARTEBEESTSPRUIT No. 434 -JR
MPUMALANGA	JR	434	4	HARTEBEESTSPRUIT No. 434 -JR
MPUMALANGA	JR	434	5	HARTEBEESTSPRUIT No. 434 -JR
MPUMALANGA	JR	434	6	HARTEBEESTSPRUIT No. 434 -JR
MPUMALANGA	JR	434	7	HARTEBEESTSPRUIT No. 434 -JR
MPUMALANGA	JR	434	8	HARTEBEESTSPRUIT No. 434 -JR
MPUMALANGA	JR	434	9	HARTEBEESTSPRUIT No. 434 -JR
MPUMALANGA	JR	434	10	HARTEBEESTSPRUIT No. 434 -JR
MPUMALANGA	JR	434	11	HARTEBEESTSPRUIT No. 434 -JR
MPUMALANGA	JR	434	12	HARTEBEESTSPRUIT No. 434 -JR
MPUMALANGA	JR	434	13	HARTEBEESTSPRUIT No. 434 -JR
MPUMALANGA	JR	434	14	HARTEBEESTSPRUIT No. 434 -JR
MPUMALANGA	JR	434	15	HARTEBEESTSPRUIT No. 434 -JR
MPUMALANGA	JR	434	17	HARTEBEESTSPRUIT No. 434 -JR
MPUMALANGA	JR	434	20	HARTEBEESTSPRUIT No. 434 -JR
MPUMALANGA	JR	434	21	HARTEBEESTSPRUIT No. 434 -JR
MPUMALANGA	JR	434	22	HARTEBEESTSPRUIT No. 434 -JR
MPUMALANGA	JR	434	23	HARTEBEESTSPRUIT No. 434 -JR
MPUMALANGA	JR	434	24	HARTEBEESTSPRUIT No. 434 -JR
MPUMALANGA	JR	434	25	HARTEBEESTSPRUIT No. 434 -JR
MPUMALANGA	JR	434	26	HARTEBEESTSPRUIT No. 434 -JR
MPUMALANGA	JR	434	27	HARTEBEESTSPRUIT No. 434 -JR
MPUMALANGA	JR	434	29	HARTEBEESTSPRUIT No. 434 -JR
MPUMALANGA	JR	434	30	HARTEBEESTSPRUIT No. 434 -JR
MPUMALANGA	JR	434	31	HARTEBEESTSPRUIT No. 434 -JR
MPUMALANGA	JR	434	32	HARTEBEESTSPRUIT No. 434 -JR
MPUMALANGA	JR	434	33	HARTEBEESTSPRUIT No. 434 -JR
MPUMALANGA	JR	434	34	HARTEBEESTSPRUIT No. 434 -JR
MPUMALANGA	JR	434	35	HARTEBEESTSPRUIT No. 434 -JR
MPUMALANGA	JR	434	36	HARTEBEESTSPRUIT No. 434 -JR
MPUMALANGA	JR	434	37	HARTEBEESTSPRUIT No. 434 -JR
MPUMALANGA	JR	434	38	HARTEBEESTSPRUIT No. 434 -JR
MPUMALANGA	JR	435	1	LOOPSPRUIT No. 435 -JR
MPUMALANGA	JR	435	4	LOOPSPRUIT No. 435 -JR
MPUMALANGA	JR	435	5	LOOPSPRUIT No. 435 -JR
MPUMALANGA	JR	435	6	LOOPSPRUIT No. 435 -JR
MPUMALANGA	JR	435	7	LOOPSPRUIT No. 435 -JR
MPUMALANGA	JR	435	8	LOOPSPRUIT No. 435 -JR
MPUMALANGA	JR	435	9	LOOPSPRUIT No. 435 -JR
MPUMALANGA	JR	435	10	LOOPSPRUIT No. 435 -JR
MPUMALANGA	JR	435	11	LOOPSPRUIT No. 435 -JR
MPUMALANGA	JR	435	12	LOOPSPRUIT No. 435 -JR
MPUMALANGA	JR	435	13	LOOPSPRUIT No. 435 -JR
MPUMALANGA	JR	435	14	LOOPSPRUIT No. 435 -JR
MPUMALANGA	JR	435	15	LOOPSPRUIT No. 435 -JR
MPUMALANGA	JR	435	16	LOOPSPRUIT No. 435 -JR
MPUMALANGA	JR	435	22	LOOPSPRUIT No. 435 -JR
MPUMALANGA	JR	436	0	NOOITGEDACHT No. 436 -JR
MPUMALANGA	JR	436	2	NOOITGEDACHT No. 436 -JR
MPUMALANGA	JR	436	3	NOOITGEDACHT No. 436 -JR
MPUMALANGA	JR	436	4	NOOITGEDACHT No. 436 -JR
MPUMALANGA	JR	436	5	NOOITGEDACHT No. 436 -JR
MPUMALANGA	JR	436	6	NOOITGEDACHT No. 436 -JR
MPUMALANGA	JR	436	8	NOOITGEDACHT No. 436 -JR
MPUMALANGA	JR	436	9	NOOITGEDACHT No. 436 -JR
MPUMALANGA	JR	436	10	NOOITGEDACHT No. 436 -JR
MPUMALANGA	JR	436	11	NOOITGEDACHT No. 436 -JR
MPUMALANGA	JR	436	12	NOOITGEDACHT No. 436 -JR
MPUMALANGA	JR	436	13	NOOITGEDACHT No. 436 -JR
MPUMALANGA	JR	436	14	NOOITGEDACHT No. 436 -JR
MPUMALANGA	JR	436	15	NOOITGEDACHT No. 436 -JR
MPUMALANGA	JR	436	16	NOOITGEDACHT No. 436 -JR
MPUMALANGA	JR	436	17	NOOITGEDACHT No. 436 -JR
MPUMALANGA	JR	436	18	NOOITGEDACHT No. 436 -JR
MPUMALANGA	JR	436	19	NOOITGEDACHT No. 436 -JR
MPUMALANGA	JR	436	20	NOOITGEDACHT No. 436 -JR
MPUMALANGA	JR	436	21	NOOITGEDACHT No. 436 -JR
MPUMALANGA	JR	436	22	NOOITGEDACHT No. 436 -JR
MPUMALANGA	JR	436	23	NOOITGEDACHT No. 436 -JR
MPUMALANGA	JR	436	24	NOOITGEDACHT No. 436 -JR
MPUMALANGA	JR	436	25	NOOITGEDACHT No. 436 -JR
MPUMALANGA	JR	436	26	NOOITGEDACHT No. 436 -JR
MPUMALANGA	JR	436	27	NOOITGEDACHT No. 436 -JR
MPUMALANGA	JR	436	28	NOOITGEDACHT No. 436 -JR
MPUMALANGA	JR	436	29	NOOITGEDACHT No. 436 -JR
MPUMALANGA	JR	436	31	NOOITGEDACHT No. 436 -JR
MPUMALANGA	JR	436	35	NOOITGEDACHT No. 436 -JR
MPUMALANGA	JR	436	38	NOOITGEDACHT No. 436 -JR
MPUMALANGA	JR	436	39	NOOITGEDACHT No. 436 -JR
MPUMALANGA	JR	436	40	NOOITGEDACHT No. 436 -JR
MPUMALANGA	JR	436	41	NOOITGEDACHT No. 436 -JR
MPUMALANGA	JR	436	42	NOOITGEDACHT No. 436 -JR
MPUMALANGA	JR	436	43	NOOITGEDACHT No. 436 -JR
MPUMALANGA	JR	436	44	NOOITGEDACHT No. 436 -JR
MPUMALANGA	JR	436	45	NOOITGEDACHT No. 436 -JR
MPUMALANGA	JR	436	46	NOOITGEDACHT No. 436 -JR
MPUMALANGA	JR	438	0	DROOGVELD No. 438 -JR
MPUMALANGA	JR	439	0	ROODEPOORT No. 439 -JR
MPUMALANGA	JR	439	1	ROODEPOORT No. 439 -JR
MPUMALANGA	JR	439	2	ROODEPOORT No. 439 -JR
MPUMALANGA	JR	439	3	ROODEPOORT No. 439 -JR
MPUMALANGA	JR	439	4	ROODEPOORT No. 439 -JR
MPUMALANGA	JR	439	5	ROODEPOORT No. 439 -JR
MPUMALANGA	JR	439	6	ROODEPOORT No. 439 -JR
MPUMALANGA	JR	439	7	ROODEPOORT No. 439 -JR
MPUMALANGA	JR	439	8	ROODEPOORT No. 439 -JR
MPUMALANGA	JR	439	9	ROODEPOORT No. 439 -JR
MPUMALANGA	JR	439	10	ROODEPOORT No. 439 -JR
MPUMALANGA	JR	439	11	ROODEPOORT No. 439 -JR
MPUMALANGA	JR	439	12	ROODEPOORT No. 439 -JR
MPUMALANGA	JR	439	13	ROODEPOORT No. 439 -JR
MPUMALANGA	JR	441	0	HARTEBEESFONTEIN No. 441 -JR
MPUMALANGA	JR	441	3	HARTEBEESFONTEIN No. 441 -JR
MPUMALANGA	JR	441	4	HARTEBEESFONTEIN No. 441 -JR
MPUMALANGA	JR	441	7	HARTEBEESFONTEIN No. 441 -JR
MPUMALANGA	JR	444	0	ZWARTKOPJE No. 444 -JR
MPUMALANGA	JR	444	1	ZWARTKOPJE No. 444 -JR
MPUMALANGA	JR	444	2	ZWARTKOPJE No. 444 -JR
MPUMALANGA	JR	444	3	ZWARTKOPJE No. 444 -JR
MPUMALANGA	JR	444	4	ZWARTKOPJE No. 444 -JR

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PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 28 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. — M B Straughan G.Pr. LS0907D — 09 October 2025 date

For applicant Owain Jackson name

signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	**Dwg:** reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

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Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
MPUMALANGA	JR	446	1	RIETFONTEIN No. 446 -JR
MPUMALANGA	JR	446	2	RIETFONTEIN No. 446 -JR
MPUMALANGA	JR	446	3	RIETFONTEIN No. 446 -JR
MPUMALANGA	JR	446	4	RIETFONTEIN No. 446 -JR
MPUMALANGA	JR	446	5	RIETFONTEIN No. 446 -JR
MPUMALANGA	JR	446	6	RIETFONTEIN No. 446 -JR
MPUMALANGA	JR	446	7	RIETFONTEIN No. 446 -JR
MPUMALANGA	JR	446	9	RIETFONTEIN No. 446 -JR
MPUMALANGA	JR	446	10	RIETFONTEIN No. 446 -JR
MPUMALANGA	JR	446	11	RIETFONTEIN No. 446 -JR
MPUMALANGA	JR	446	12	RIETFONTEIN No. 446 -JR
MPUMALANGA	JR	446	13	RIETFONTEIN No. 446 -JR
MPUMALANGA	JR	446	14	RIETFONTEIN No. 446 -JR
MPUMALANGA	JR	446	15	RIETFONTEIN No. 446 -JR
MPUMALANGA	JR	446	16	RIETFONTEIN No. 446 -JR
MPUMALANGA	JR	446	17	RIETFONTEIN No. 446 -JR
MPUMALANGA	JR	446	18	RIETFONTEIN No. 446 -JR
MPUMALANGA	JR	446	19	RIETFONTEIN No. 446 -JR
MPUMALANGA	JR	446	20	RIETFONTEIN No. 446 -JR
MPUMALANGA	JR	446	21	RIETFONTEIN No. 446 -JR
MPUMALANGA	JR	446	22	RIETFONTEIN No. 446 -JR
MPUMALANGA	JR	446	23	RIETFONTEIN No. 446 -JR
MPUMALANGA	JR	446	24	RIETFONTEIN No. 446 -JR
MPUMALANGA	JR	446	25	RIETFONTEIN No. 446 -JR
MPUMALANGA	JR	446	26	RIETFONTEIN No. 446 -JR
MPUMALANGA	JR	446	28	RIETFONTEIN No. 446 -JR
MPUMALANGA	JR	446	30	RIETFONTEIN No. 446 -JR
MPUMALANGA	JR	446	32	RIETFONTEIN No. 446 -JR
MPUMALANGA	JR	446	33	RIETFONTEIN No. 446 -JR
MPUMALANGA	JR	446	34	RIETFONTEIN No. 446 -JR
MPUMALANGA	JR	446	36	RIETFONTEIN No. 446 -JR
MPUMALANGA	JR	446	37	RIETFONTEIN No. 446 -JR
MPUMALANGA	JR	446	38	RIETFONTEIN No. 446 -JR
MPUMALANGA	JR	459	0	BLESBOKFONTEIN No. 459-JR
MPUMALANGA	JR	459	1	BLESBOKFONTEIN No. 459-JR
MPUMALANGA	JR	459	2	BLESBOKFONTEIN No. 459-JR
MPUMALANGA	JR	459	4	BLESBOKFONTEIN No. 459-JR
MPUMALANGA	JR	459	5	BLESBOKFONTEIN No. 459-JR
MPUMALANGA	JR	460	0	BULTPLAATS No. 460-JR
MPUMALANGA	JR	461	0	TAAIFONTEIN No. 461 -JR
MPUMALANGA	JR	461	1	TAAIFONTEIN No. 461 -JR
MPUMALANGA	JR	461	2	TAAIFONTEIN No. 461 -JR
MPUMALANGA	JR	461	3	TAAIFONTEIN No. 461 -JR
MPUMALANGA	JR	461	4	TAAIFONTEIN No. 461 -JR
MPUMALANGA	JR	467	0	YZERVARKFONTEIN No. 467 -JR
MPUMALANGA	JR	467	1	YZERVARKFONTEIN No. 467 -JR
MPUMALANGA	JR	467	2	YZERVARKFONTEIN No. 467 -JR
MPUMALANGA	JR	467	3	YZERVARKFONTEIN No. 467 -JR
MPUMALANGA	JR	467	4	YZERVARKFONTEIN No. 467 -JR
MPUMALANGA	JR	467	5	YZERVARKFONTEIN No. 467 -JR
MPUMALANGA	JR	467	6	YZERVARKFONTEIN No. 467 -JR
MPUMALANGA	JR	467	7	YZERVARKFONTEIN No. 467 -JR
MPUMALANGA	JR	467	8	YZERVARKFONTEIN No. 467 -JR
MPUMALANGA	JR	467	9	YZERVARKFONTEIN No. 467 -JR
MPUMALANGA	JR	467	10	YZERVARKFONTEIN No. 467 -JR
MPUMALANGA	JR	467	11	YZERVARKFONTEIN No. 467 -JR
MPUMALANGA	JR	467	12	YZERVARKFONTEIN No. 467 -JR
MPUMALANGA	JR	467	13	YZERVARKFONTEIN No. 467 -JR
MPUMALANGA	JR	467	14	YZERVARKFONTEIN No. 467 -JR
MPUMALANGA	JR	467	15	YZERVARKFONTEIN No. 467 -JR
MPUMALANGA	JR	467	16	YZERVARKFONTEIN No. 467 -JR
MPUMALANGA	JR	467	17	YZERVARKFONTEIN No. 467 -JR
MPUMALANGA	JR	469	0	PAPKUILFONTEIN No. 469 -JR
MPUMALANGA	JR	469	1	PAPKUILFONTEIN No. 469 -JR
MPUMALANGA	JR	469	2	PAPKUILFONTEIN No. 469 -JR
MPUMALANGA	JR	469	3	PAPKUILFONTEIN No. 469 -JR
MPUMALANGA	JR	469	4	PAPKUILFONTEIN No. 469 -JR
MPUMALANGA	JR	469	7	PAPKUILFONTEIN No. 469 -JR
MPUMALANGA	JR	469	8	PAPKUILFONTEIN No. 469 -JR
MPUMALANGA	JR	469	9	PAPKUILFONTEIN No. 469 -JR
MPUMALANGA	JR	469	10	PAPKUILFONTEIN No. 469 -JR
MPUMALANGA	JR	470	1	RIETFONTEIN No. 470 -JR
MPUMALANGA	JR	470	3	RIETFONTEIN No. 470 -JR
MPUMALANGA	JR	470	5	RIETFONTEIN No. 470 -JR
MPUMALANGA	JR	470	6	RIETFONTEIN No. 470 -JR
MPUMALANGA	JR	470	10	RIETFONTEIN No. 470 -JR
MPUMALANGA	JR	470	11	RIETFONTEIN No. 470 -JR
MPUMALANGA	JR	617	0	KWAMHLANGA No. 617 -JR
MPUMALANGA	JR	617	5	KWAMHLANGA No. 617 -JR
MPUMALANGA	JR	617	21	KWAMHLANGA No. 617 -JR
MPUMALANGA	JR	617	22	KWAMHLANGA No. 617 -JR
MPUMALANGA	JR	640	0	WOLVENKOP No. 640-JR
MPUMALANGA	JR	640	1	WOLVENKOP No. 640-JR
MPUMALANGA	JR	640	3	WOLVENKOP No. 640-JR
MPUMALANGA	JR	640	4	WOLVENKOP No. 640-JR
MPUMALANGA	JR	651	0	ENKELDORINGOOG No. 651-JR
MPUMALANGA	JR	651	3	ENKELDORINGOOG No. 651-JR
MPUMALANGA	JR	651	4	ENKELDORINGOOG No. 651-JR
MPUMALANGA	JR	651	5	ENKELDORINGOOG No. 651-JR
MPUMALANGA	JR	651	6	ENKELDORINGOOG No. 651-JR
MPUMALANGA	JR	651	12	ENKELDORINGOOG No. 651-JR
MPUMALANGA	JR	651	13	ENKELDORINGOOG No. 651-JR
MPUMALANGA	JR	651	15	ENKELDORINGOOG No. 651-JR
MPUMALANGA	JR	653	0	SINGLETHORN No. 653 -JR
MPUMALANGA	JR	656	0	GEMSBOKSPRUIT 656 -JR
MPUMALANGA	JR	657	0	ENKELPOORTNEK No. 657 - JR
MPUMALANGA	JR	669	0	LEEUWFONTEIN No. 669 -JR
MPUMALANGA	JR	671	0	MATHYS ZYN No. 671 -JR
MPUMALANGA	JR	674	0	VLAKLAAGTE NO. 674 -JR
MPUMALANGA	JR	675	0	TWEEFONTEIN No. 675 -JR
MPUMALANGA	JR	675	12	TWEEFONTEIN No. 675 -JR
MPUMALANGA	JR	675	15	TWEEFONTEIN No. 675 -JR
MPUMALANGA	JR	675	17	TWEEFONTEIN No. 675 -JR
MPUMALANGA	JR	680	0	TWEEFONTEIN No. 680 -JR
MPUMALANGA	JR	684	0	
MPUMALANGA	JR	747	0	MOUNTAIN VIEW No.747 JR
MPUMALANGA	JR	749	0	ENKELDOORN No. 749 -JR
MPUMALANGA	JR	758	0	MANDELA No. 758 -JR
MPUMALANGA	JR	2019	11	
MPUMALANGA	JS	3	0	MATIESGOEDKUL No 3 JS
MPUMALANGA	JS	4	0	VRIESKRAAL No 4 JS
MPUMALANGA	JS	4	1	VRIESKRAAL No 4 JS
MPUMALANGA	JS	4	5	VRIESKRAAL No 4 JS
MPUMALANGA	JS	33	0	
MPUMALANGA	JS	33	11	
MPUMALANGA	JS	33	12	
MPUMALANGA	JS	33	13	
MPUMALANGA	JS	33	14	
MPUMALANGA	JS	33	18	
MPUMALANGA	JS	33	23	
MPUMALANGA	JS	33	24	
MPUMALANGA	JS	33	25	
MPUMALANGA	JS	33	26	
MPUMALANGA	JS	33	27	
MPUMALANGA	JS	33	28	
MPUMALANGA	JS	33	29	
MPUMALANGA	JS	33	30	
MPUMALANGA	JS	33	31	
MPUMALANGA	JS	33	32	
MPUMALANGA	JS	33	33	
MPUMALANGA	JS	33	34	
MPUMALANGA	JS	33	35	
MPUMALANGA	JS	33	36	
MPUMALANGA	JS	33	37	
MPUMALANGA	JS	33	38	
MPUMALANGA	JS	33	39	
MPUMALANGA	JS	33	40	
MPUMALANGA	JS	33	41	
MPUMALANGA	JS	33	42	
MPUMALANGA	JS	33	43	
MPUMALANGA	JS	33	44	
MPUMALANGA	JS	33	45	
MPUMALANGA	JS	33	46	
MPUMALANGA	JS	33	47	

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PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

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Sheet 29 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. — M B Straughan G.Pr. LS0907D — 09 October 2025 date

For applicant — Owain Jackson name — signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation

Dwg: reg 2(2) plan er kruis river oct 2025.dwg

Revision:

Date: 09 October 2025

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Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
MPUMALANGA	JS	33	48	
MPUMALANGA	JS	33	67	
MPUMALANGA	JS	33	68	
MPUMALANGA	JS	33	72	
MPUMALANGA	JS	33	73	
MPUMALANGA	JS	33	96	
MPUMALANGA	JS	33	97	
MPUMALANGA	JS	33	98	
MPUMALANGA	JS	33	103	
MPUMALANGA	JS	33	105	
MPUMALANGA	JS	33	107	
MPUMALANGA	JS	33	110	
MPUMALANGA	JS	33	111	
MPUMALANGA	JS	33	115	
MPUMALANGA	JS	34	0	WATERVAL NO. 34-JS
MPUMALANGA	JS	34	1	WATERVAL NO. 34-JS
MPUMALANGA	JS	34	2	WATERVAL NO. 34-JS
MPUMALANGA	JS	34	5	WATERVAL NO. 34-JS
MPUMALANGA	JS	34	10	WATERVAL NO. 34-JS
MPUMALANGA	JS	34	12	WATERVAL NO. 34-JS
MPUMALANGA	JS	58	0	MALOEKZIJNKOP No. 58 -JS
MPUMALANGA	JS	58	1	MALOEKZIJNKOP No. 58 -JS
MPUMALANGA	JS	58	2	MALOEKZIJNKOP No. 58 -JS
MPUMALANGA	JS	58	3	MALOEKZIJNKOP No. 58 -JS
MPUMALANGA	JS	59	0	SIMPKINSVALE No. 59 -JS
MPUMALANGA	JS	60	166	
MPUMALANGA	JS	60	169	
MPUMALANGA	JS	60	170	
MPUMALANGA	JS	60	174	
MPUMALANGA	JS	60	175	
MPUMALANGA	JS	60	176	
MPUMALANGA	JS	60	177	
MPUMALANGA	JS	60	178	
MPUMALANGA	JS	60	179	
MPUMALANGA	JS	60	181	
MPUMALANGA	JS	60	182	
MPUMALANGA	JS	60	183	
MPUMALANGA	JS	60	184	
MPUMALANGA	JS	60	186	
MPUMALANGA	JS	60	187	
MPUMALANGA	JS	60	188	
MPUMALANGA	JS	60	189	
MPUMALANGA	JS	61	0	BOEKENHOUTHOEK No. 61 -JS
MPUMALANGA	JS	61	1	BOEKENHOUTHOEK No. 61 -JS
MPUMALANGA	JS	61	2	BOEKENHOUTHOEK No. 61 -JS
MPUMALANGA	JS	61	3	BOEKENHOUTHOEK No. 61 -JS
MPUMALANGA	JS	61	4	BOEKENHOUTHOEK No. 61 -JS
MPUMALANGA	JS	61	5	BOEKENHOUTHOEK No. 61 -JS
MPUMALANGA	JS	61	8	BOEKENHOUTHOEK No. 61 -JS
MPUMALANGA	JS	61	9	BOEKENHOUTHOEK No. 61 -JS
MPUMALANGA	JS	62	1	KLIPSDRIFT No. 62 -JS
MPUMALANGA	JS	62	4	KLIPSDRIFT No. 62 -JS
MPUMALANGA	JS	62	5	KLIPSDRIFT No. 62 -JS
MPUMALANGA	JS	62	6	KLIPSDRIFT No. 62 -JS
MPUMALANGA	JS	62	8	KLIPSDRIFT No. 62 -JS
MPUMALANGA	JS	62	9	KLIPSDRIFT No. 62 -JS
MPUMALANGA	JS	62	10	KLIPSDRIFT No. 62 -JS
MPUMALANGA	JS	62	11	KLIPSDRIFT No. 62 -JS
MPUMALANGA	JS	62	12	KLIPSDRIFT No. 62 -JS
MPUMALANGA	JS	62	13	KLIPSDRIFT No. 62 -JS
MPUMALANGA	JS	62	14	KLIPSDRIFT No. 62 -JS
MPUMALANGA	JS	62	15	KLIPSDRIFT No. 62 -JS
MPUMALANGA	JS	62	16	KLIPSDRIFT No. 62 -JS
MPUMALANGA	JS	62	17	KLIPSDRIFT No. 62 -JS
MPUMALANGA	JS	62	18	KLIPSDRIFT No. 62 -JS
MPUMALANGA	JS	62	19	KLIPSDRIFT No. 62 -JS
MPUMALANGA	JS	62	20	KLIPSDRIFT No. 62 -JS
MPUMALANGA	JS	63	0	RHENOSTERKUIL No. 63 -JS
MPUMALANGA	JS	63	1	RHENOSTERKUIL No. 63 -JS
MPUMALANGA	JS	63	2	RHENOSTERKUIL No. 63 -JS
MPUMALANGA	JS	63	4	RHENOSTERKUIL No. 63 -JS
MPUMALANGA	JS	63	5	RHENOSTERKUIL No. 63 -JS
MPUMALANGA	JS	64	0	BREYTENBACHSRUS No. 64 -JS
MPUMALANGA	JS	64	1	BREYTENBACHSRUS No. 64 -JS
MPUMALANGA	JS	78	1	RIETVALLEI No. 78- JS
MPUMALANGA	JS	78	6	RIETVALLEI No. 78- JS
MPUMALANGA	JS	78	7	RIETVALLEI No. 78- JS
MPUMALANGA	JS	78	8	RIETVALLEI No. 78- JS
MPUMALANGA	JS	78	11	RIETVALLEI No. 78- JS
MPUMALANGA	JS	78	12	RIETVALLEI No. 78- JS
MPUMALANGA	JS	78	17	RIETVALLEI No. 78- JS
MPUMALANGA	JS	78	24	RIETVALLEI No. 78- JS
MPUMALANGA	JS	78	25	RIETVALLEI No. 78- JS
MPUMALANGA	JS	78	26	RIETVALLEI No. 78- JS
MPUMALANGA	JS	78	29	RIETVALLEI No. 78- JS
MPUMALANGA	JS	78	31	RIETVALLEI No. 78- JS
MPUMALANGA	JS	78	33	RIETVALLEI No. 78- JS
MPUMALANGA	JS	78	34	RIETVALLEI No. 78- JS
MPUMALANGA	JS	78	35	RIETVALLEI No. 78- JS
MPUMALANGA	JS	78	36	RIETVALLEI No. 78- JS
MPUMALANGA	JS	78	40	RIETVALLEI No. 78- JS
MPUMALANGA	JS	78	41	RIETVALLEI No. 78- JS
MPUMALANGA	JS	78	45	RIETVALLEI No. 78- JS
MPUMALANGA	JS	78	48	RIETVALLEI No. 78- JS
MPUMALANGA	JS	78	49	RIETVALLEI No. 78- JS
MPUMALANGA	JS	78	50	RIETVALLEI No. 78- JS
MPUMALANGA	JS	78	52	RIETVALLEI No. 78- JS
MPUMALANGA	JS	78	53	RIETVALLEI No. 78- JS
MPUMALANGA	JS	78	54	RIETVALLEI No. 78- JS
MPUMALANGA	JS	78	55	RIETVALLEI No. 78- JS
MPUMALANGA	JS	78	56	RIETVALLEI No. 78- JS
MPUMALANGA	JS	78	70	RIETVALLEI No. 78- JS
MPUMALANGA	JS	78	71	RIETVALLEI No. 78- JS
MPUMALANGA	JS	78	72	RIETVALLEI No. 78- JS
MPUMALANGA	JS	78	74	RIETVALLEI No. 78- JS
MPUMALANGA	JS	78	75	RIETVALLEI No. 78- JS
MPUMALANGA	JS	78	76	RIETVALLEI No. 78- JS
MPUMALANGA	JS	78	77	RIETVALLEI No. 78- JS
MPUMALANGA	JS	78	78	RIETVALLEI No. 78- JS
MPUMALANGA	JS	80	0	VERGELEDEN No. 80 -JS
MPUMALANGA	JS	80	1	VERGELEDEN No. 80 -JS
MPUMALANGA	JS	80	3	VERGELEDEN No. 80 -JS
MPUMALANGA	JS	80	5	VERGELEDEN No. 80 -JS
MPUMALANGA	JS	80	7	VERGELEDEN No. 80 -JS
MPUMALANGA	JS	80	8	VERGELEDEN No. 80 -JS
MPUMALANGA	JS	80	9	VERGELEDEN No. 80 -JS
MPUMALANGA	JS	80	10	VERGELEDEN No. 80 -JS
MPUMALANGA	JS	81	0	LOSKOP No. 81 -JS
MPUMALANGA	JS	83	0	WELTEVREDEN No. 83 -JS
MPUMALANGA	JS	83	1	WELTEVREDEN No. 83 -JS
MPUMALANGA	JS	84	0	PARYS No. 84 JS
MPUMALANGA	JS	84	3	PARYS No. 84 JS
MPUMALANGA	JS	84	6	PARYS No. 84 JS
MPUMALANGA	JS	84	7	PARYS No. 84 JS
MPUMALANGA	JS	84	8	PARYS No. 84 JS
MPUMALANGA	JS	84	9	PARYS No. 84 JS
MPUMALANGA	JS	85	0	RHENOSTERHOEK No. 85 -JS
MPUMALANGA	JS	87	0	NOOITGEDACHT No. 87 -JS
MPUMALANGA	JS	87	4	NOOITGEDACHT No. 87 -JS
MPUMALANGA	JS	87	5	NOOITGEDACHT No. 87 -JS
MPUMALANGA	JS	88	1	DOORNNEK No. 88 -JS
MPUMALANGA	JS	88	2	DOORNNEK No. 88 -JS
MPUMALANGA	JS	88	3	DOORNNEK No. 88 -JS
MPUMALANGA	JS	88	4	DOORNNEK No. 88 -JS
MPUMALANGA	JS	88	5	DOORNNEK No. 88 -JS
MPUMALANGA	JS	88	6	DOORNNEK No. 88 -JS
MPUMALANGA	JS	89	0	ZWARTFONTEIN No. 89 -JS
MPUMALANGA	JS	89	1	ZWARTFONTEIN No. 89 -JS
MPUMALANGA	JS	89	2	ZWARTFONTEIN No. 89 -JS
MPUMALANGA	JS	90	2	RIETFONTEIN No. 90 -JS
MPUMALANGA	JS	90	3	RIETFONTEIN No. 90 -JS
MPUMALANGA	JS	90	5	RIETFONTEIN No. 90 -JS
MPUMALANGA	JS	90	7	RIETFONTEIN No. 90 -JS
MPUMALANGA	JS	90	9	RIETFONTEIN No. 90 -JS

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PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 30 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No.

M B Straughan G.Pr. LS0907D — 09 October 2025 date

For applicant Owain Jackson name

signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	**Dwg:** reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

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Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
MPUMALANGA	JS	90	10	RIETFONTEIN No. 90 -JS
MPUMALANGA	JS	90	15	RIETFONTEIN No. 90 -JS
MPUMALANGA	JS	90	16	RIETFONTEIN No. 90 -JS
MPUMALANGA	JS	90	17	RIETFONTEIN No. 90 -JS
MPUMALANGA	JS	90	18	RIETFONTEIN No. 90 -JS
MPUMALANGA	JS	90	19	RIETFONTEIN No. 90 -JS
MPUMALANGA	JS	90	20	RIETFONTEIN No. 90 -JS
MPUMALANGA	JS	90	22	RIETFONTEIN No. 90 -JS
MPUMALANGA	JS	90	29	RIETFONTEIN No. 90 -JS
MPUMALANGA	JS	90	30	RIETFONTEIN No. 90 -JS
MPUMALANGA	JS	90	33	RIETFONTEIN No. 90 -JS
MPUMALANGA	JS	91	1	BUFFELSHOEK No. 91 -JS
MPUMALANGA	JS	91	2	BUFFELSHOEK No. 91 -JS
MPUMALANGA	JS	91	3	BUFFELSHOEK No. 91 -JS
MPUMALANGA	JS	91	5	BUFFELSHOEK No. 91 -JS
MPUMALANGA	JS	91	13	BUFFELSHOEK No. 91 -JS
MPUMALANGA	JS	91	15	BUFFELSHOEK No. 91 -JS
MPUMALANGA	JS	91	16	BUFFELSHOEK No. 91 -JS
MPUMALANGA	JS	91	17	BUFFELSHOEK No. 91 -JS
MPUMALANGA	JS	91	19	BUFFELSHOEK No. 91 -JS
MPUMALANGA	JS	93	0	HARTBEESTFONTEIN No.93 -JS
MPUMALANGA	JS	93	1	HARTBEESTFONTEIN No.93 -JS
MPUMALANGA	JS	93	2	HARTBEESTFONTEIN No.93 -JS
MPUMALANGA	JS	93	3	HARTBEESTFONTEIN No.93 -JS
MPUMALANGA	JS	93	4	HARTBEESTFONTEIN No.93 -JS
MPUMALANGA	JS	94	1	BULFONTEIN No. 94 -JS
MPUMALANGA	JS	94	2	BULFONTEIN No. 94 -JS
MPUMALANGA	JS	94	4	BULFONTEIN No. 94 -JS
MPUMALANGA	JS	94	5	BULFONTEIN No. 94 -JS
MPUMALANGA	JS	94	7	BULFONTEIN No. 94 -JS
MPUMALANGA	JS	94	10	BULFONTEIN No. 94 -JS
MPUMALANGA	JS	94	12	BULFONTEIN No. 94 -JS
MPUMALANGA	JS	94	14	BULFONTEIN No. 94 -JS
MPUMALANGA	JS	94	15	BULFONTEIN No. 94 -JS
MPUMALANGA	JS	94	16	BULFONTEIN No. 94 -JS
MPUMALANGA	JS	94	17	BULFONTEIN No. 94 -JS
MPUMALANGA	JS	94	18	BULFONTEIN No. 94 -JS
MPUMALANGA	JS	94	23	BULFONTEIN No. 94 -JS
MPUMALANGA	JS	94	24	BULFONTEIN No. 94 -JS
MPUMALANGA	JS	94	25	BULFONTEIN No. 94 -JS
MPUMALANGA	JS	94	26	BULFONTEIN No. 94 -JS
MPUMALANGA	JS	94	28	BULFONTEIN No. 94 -JS
MPUMALANGA	JS	94	29	BULFONTEIN No. 94 -JS
MPUMALANGA	JS	94	34	BULFONTEIN No. 94 -JS
MPUMALANGA	JS	94	35	BULFONTEIN No. 94 -JS
MPUMALANGA	JS	94	36	BULFONTEIN No. 94 -JS
MPUMALANGA	JS	94	37	BULFONTEIN No. 94 -JS
MPUMALANGA	JS	94	47	BULFONTEIN No. 94 -JS
MPUMALANGA	JS	95	1	ENGELSCHE DOORNBOOM No. 95 -JS
MPUMALANGA	JS	95	2	ENGELSCHE DOORNBOOM No. 95 -JS
MPUMALANGA	JS	95	3	ENGELSCHE DOORNBOOM No. 95 -JS
MPUMALANGA	JS	95	4	ENGELSCHE DOORNBOOM No. 95 -JS
MPUMALANGA	JS	96	0	STROOMWATER No. 96 -JS
MPUMALANGA	JS	96	1	STROOMWATER No. 96 -JS
MPUMALANGA	JS	96	2	STROOMWATER No. 96 -JS
MPUMALANGA	JS	96	5	STROOMWATER No. 96 -JS
MPUMALANGA	JS	97	0	WORSTAL No. 97- JS
MPUMALANGA	JS	98	1	DOORNFONTEIN No. 98 -JS
MPUMALANGA	JS	98	9	DOORNFONTEIN No. 98 -JS
MPUMALANGA	JS	98	11	DOORNFONTEIN No. 98 -JS
MPUMALANGA	JS	98	13	DOORNFONTEIN No. 98 -JS
MPUMALANGA	JS	98	14	DOORNFONTEIN No. 98 -JS
MPUMALANGA	JS	98	18	DOORNFONTEIN No. 98 -JS
MPUMALANGA	JS	98	19	DOORNFONTEIN No. 98 -JS
MPUMALANGA	JS	99	0	NEBO No. 99 -JS
MPUMALANGA	JS	100	0	GREENBUSHES No. 100 -JS
MPUMALANGA	JS	102	0	ZAAGKUIL No. 102 -JS
MPUMALANGA	JS	103	0	DONKERKOEK No. 103 -JS
MPUMALANGA	JS	104	1	FONTEIN ZODER END No. 104 -JS
MPUMALANGA	JS	104	2	FONTEIN ZODER END No. 104 -JS
MPUMALANGA	JS	105	0	HARTEBEESTPLAAT No. 105 -JS
MPUMALANGA	JS	105	1	HARTEBEESTPLAAT No. 105 -JS
MPUMALANGA	JS	105	2	HARTEBEESTPLAAT No. 105 -JS
MPUMALANGA	JS	105	3	HARTEBEESTPLAAT No. 105 -JS
MPUMALANGA	JS	105	4	HARTEBEESTPLAAT No. 105 -JS
MPUMALANGA	JS	105	5	HARTEBEESTPLAAT No. 105 -JS
MPUMALANGA	JS	105	6	HARTEBEESTPLAAT No. 105 -JS
MPUMALANGA	JS	105	7	HARTEBEESTPLAAT No. 105 -JS
MPUMALANGA	JS	105	8	HARTEBEESTPLAAT No. 105 -JS
MPUMALANGA	JS	105	9	HARTEBEESTPLAAT No. 105 -JS
MPUMALANGA	JS	106	1	TWEEFONTEIN No. 106 JS
MPUMALANGA	JS	106	2	TWEEFONTEIN No. 106 JS
MPUMALANGA	JS	109	0	WATERVAL No. 109 -JS
MPUMALANGA	JS	109	2	WATERVAL No. 109 -JS
MPUMALANGA	JS	109	3	WATERVAL No. 109 -JS
MPUMALANGA	JS	109	4	WATERVAL No. 109 -JS
MPUMALANGA	JS	109	7	WATERVAL No. 109 -JS
MPUMALANGA	JS	113	0	VOETPADSKLOOF No. 113 -JS
MPUMALANGA	JS	113	1	VOETPADSKLOOF No. 113 -JS
MPUMALANGA	JS	113	3	VOETPADSKLOOF No. 113 -JS
MPUMALANGA	JS	113	5	VOETPADSKLOOF No. 113 -JS
MPUMALANGA	JS	113	7	VOETPADSKLOOF No. 113 -JS
MPUMALANGA	JS	114	0	ALFA No. 14 -JS
MPUMALANGA	JS	114	1	ALFA No. 14 -JS
MPUMALANGA	JS	115	1	ZEEKOEGAT No. 115 -JS
MPUMALANGA	JS	115	2	ZEEKOEGAT No. 115 -JS
MPUMALANGA	JS	115	3	ZEEKOEGAT No. 115 -JS
MPUMALANGA	JS	115	4	ZEEKOEGAT No. 115 -JS
MPUMALANGA	JS	115	5	ZEEKOEGAT No. 115 -JS
MPUMALANGA	JS	115	8	ZEEKOEGAT No. 115 -JS
MPUMALANGA	JS	115	9	ZEEKOEGAT No. 115 -JS
MPUMALANGA	JS	115	10	ZEEKOEGAT No. 115 -JS
MPUMALANGA	JS	115	11	ZEEKOEGAT No. 115 -JS
MPUMALANGA	JS	115	12	ZEEKOEGAT No. 115 -JS
MPUMALANGA	JS	115	13	ZEEKOEGAT No. 115 -JS
MPUMALANGA	JS	115	14	ZEEKOEGAT No. 115 -JS
MPUMALANGA	JS	115	15	ZEEKOEGAT No. 115 -JS
MPUMALANGA	JS	115	16	ZEEKOEGAT No. 115 -JS
MPUMALANGA	JS	115	17	ZEEKOEGAT No. 115 -JS
MPUMALANGA	JS	115	18	ZEEKOEGAT No. 115 -JS
MPUMALANGA	JS	115	19	ZEEKOEGAT No. 115 -JS
MPUMALANGA	JS	116	0	BETA No. 116 -JS
MPUMALANGA	JS	117	0	GAMMA No. 117 -JS
MPUMALANGA	JS	118	0	POLFONTEIN No. 118 -JS
MPUMALANGA	JS	118	1	POLFONTEIN No. 118 -JS
MPUMALANGA	JS	118	2	POLFONTEIN No. 118 -JS
MPUMALANGA	JS	118	5	POLFONTEIN No. 118 -JS
MPUMALANGA	JS	118	7	POLFONTEIN No. 118 -JS
MPUMALANGA	JS	118	8	POLFONTEIN No. 118 -JS
MPUMALANGA	JS	195	0	AVONTUUR No. 195 -JS
MPUMALANGA	JS	195	1	AVONTUUR No. 195 -JS
MPUMALANGA	JS	195	2	AVONTUUR No. 195 -JS
MPUMALANGA	JS	195	4	AVONTUUR No. 195 -JS
MPUMALANGA	JS	195	5	AVONTUUR No. 195 -JS
MPUMALANGA	JS	195	6	AVONTUUR No. 195 -JS
MPUMALANGA	JS	195	7	AVONTUUR No. 195 -JS
MPUMALANGA	JS	195	8	AVONTUUR No. 195 -JS
MPUMALANGA	JS	195	9	AVONTUUR No. 195 -JS
MPUMALANGA	JS	195	10	AVONTUUR No. 195 -JS
MPUMALANGA	JS	195	11	AVONTUUR No. 195 -JS
MPUMALANGA	JS	195	13	AVONTUUR No. 195 -JS
MPUMALANGA	JS	195	14	AVONTUUR No. 195 -JS
MPUMALANGA	JS	195	15	AVONTUUR No. 195 -JS
MPUMALANGA	JS	195	16	AVONTUUR No. 195 -JS
MPUMALANGA	JS	195	17	AVONTUUR No. 195 -JS
MPUMALANGA	JS	195	19	AVONTUUR No. 195 -JS
MPUMALANGA	JS	195	20	AVONTUUR No. 195 -JS
MPUMALANGA	JS	195	21	AVONTUUR No. 195 -JS
MPUMALANGA	JS	195	22	AVONTUUR No. 195 -JS
MPUMALANGA	JS	195	23	AVONTUUR No. 195 -JS
MPUMALANGA	JS	195	25	AVONTUUR No. 195 -JS
MPUMALANGA	JS	195	41	AVONTUUR No. 195 -JS
MPUMALANGA	JS	196	0	KLUITJESFONTEIN No. 196 -JS
MPUMALANGA	JS	196	1	KLUITJESFONTEIN No. 196 -JS

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PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 31 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. — M B Straughan G.Pr. LS0907D — 09 October 2025 (date)

For applicant — Owain Jackson (name) — signature — 09 October 2025 (date)

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	**Dwg:** reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

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Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
MPUMALANGA	JS	196	2	KLUITJESFONTEIN No. 196 -JS
MPUMALANGA	JS	198	0	ONVERWACHT No. 198 -JS
MPUMALANGA	JS	199	0	KLIPNEK No. 199 -JS
MPUMALANGA	JS	199	1	KLIPNEK No. 199 -JS
MPUMALANGA	JS	199	2	KLIPNEK No. 199 -JS
MPUMALANGA	JS	199	3	KLIPNEK No. 199 -JS
MPUMALANGA	JS	199	4	KLIPNEK No. 199 -JS
MPUMALANGA	JS	199	5	KLIPNEK No. 199 -JS
MPUMALANGA	JS	199	6	KLIPNEK No. 199 -JS
MPUMALANGA	JS	199	7	KLIPNEK No. 199 -JS
MPUMALANGA	JS	199	8	KLIPNEK No. 199 -JS
MPUMALANGA	JS	199	9	KLIPNEK No. 199 -JS
MPUMALANGA	JS	199	10	KLIPNEK No. 199 -JS
MPUMALANGA	JS	199	11	KLIPNEK No. 199 -JS
MPUMALANGA	JS	199	12	KLIPNEK No. 199 -JS
MPUMALANGA	JS	199	13	KLIPNEK No. 199 -JS
MPUMALANGA	JS	199	14	KLIPNEK No. 199 -JS
MPUMALANGA	JS	199	15	KLIPNEK No. 199 -JS
MPUMALANGA	JS	199	20	KLIPNEK No. 199 -JS
MPUMALANGA	JS	200	4	NAAUWPOORT No. 200 -JS
MPUMALANGA	JS	200	5	NAAUWPOORT No. 200 -JS
MPUMALANGA	JS	200	6	NAAUWPOORT No. 200 -JS
MPUMALANGA	JS	200	11	NAAUWPOORT No. 200 -JS
MPUMALANGA	JS	200	14	NAAUWPOORT No. 200 -JS
MPUMALANGA	JS	200	15	NAAUWPOORT No. 200 -JS
MPUMALANGA	JS	200	18	NAAUWPOORT No. 200 -JS
MPUMALANGA	JS	200	19	NAAUWPOORT No. 200 -JS
MPUMALANGA	JS	200	20	NAAUWPOORT No. 200 -JS
MPUMALANGA	JS	200	29	NAAUWPOORT No. 200 -JS
MPUMALANGA	JS	200	30	NAAUWPOORT No. 200 -JS
MPUMALANGA	JS	201	0	WELVERDIEND No. 201 -JS
MPUMALANGA	JS	201	6	WELVERDIEND No. 201 -JS
MPUMALANGA	JS	201	7	WELVERDIEND No. 201 -JS
MPUMALANGA	JS	201	8	WELVERDIEND No. 201 -JS
MPUMALANGA	JS	201	9	WELVERDIEND No. 201 -JS
MPUMALANGA	JS	201	10	WELVERDIEND No. 201 -JS
MPUMALANGA	JS	202	0	DOORNKLOOF No. 202 -JS
MPUMALANGA	JS	202	1	DOORNKLOOF No. 202 -JS
MPUMALANGA	JS	202	3	DOORNKLOOF No. 202 -JS
MPUMALANGA	JS	202	5	DOORNKLOOF No. 202 -JS
MPUMALANGA	JS	202	6	DOORNKLOOF No. 202 -JS
MPUMALANGA	JS	202	7	DOORNKLOOF No. 202 -JS
MPUMALANGA	JS	202	8	DOORNKLOOF No. 202 -JS
MPUMALANGA	JS	203	0	KLEINFONTEIN No. 203 -JS
MPUMALANGA	JS	203	2	KLEINFONTEIN No. 203 -JS
MPUMALANGA	JS	203	8	KLEINFONTEIN No. 203 -JS
MPUMALANGA	JS	203	11	KLEINFONTEIN No. 203 -JS
MPUMALANGA	JS	203	12	KLEINFONTEIN No. 203 -JS

Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
MPUMALANGA	JS	203	13	KLEINFONTEIN No. 203 -JS
MPUMALANGA	JS	203	14	KLEINFONTEIN No. 203 -JS
MPUMALANGA	JS	203	15	KLEINFONTEIN No. 203 -JS
MPUMALANGA	JS	203	16	KLEINFONTEIN No. 203 -JS
MPUMALANGA	JS	203	17	KLEINFONTEIN No. 203 -JS
MPUMALANGA	JS	203	18	KLEINFONTEIN No. 203 -JS
MPUMALANGA	JS	205	1	HOOGENOEG No. 205 -JS
MPUMALANGA	JS	205	2	HOOGENOEG No. 205 -JS
MPUMALANGA	JS	205	3	HOOGENOEG No. 205 -JS
MPUMALANGA	JS	205	4	HOOGENOEG No. 205 -JS
MPUMALANGA	JS	206	0	DOORNKLOOF No. 206 -JS
MPUMALANGA	JS	206	1	DOORNKLOOF No. 206 -JS
MPUMALANGA	JS	206	2	DOORNKLOOF No. 206 -JS
MPUMALANGA	JS	206	3	DOORNKLOOF No. 206 -JS
MPUMALANGA	JS	206	5	DOORNKLOOF No. 206 -JS
MPUMALANGA	JS	206	6	DOORNKLOOF No. 206 -JS
MPUMALANGA	JS	206	7	DOORNKLOOF No. 206 -JS
MPUMALANGA	JS	206	8	DOORNKLOOF No. 206 -JS
MPUMALANGA	JS	206	9	DOORNKLOOF No. 206 -JS
MPUMALANGA	JS	206	10	DOORNKLOOF No. 206 -JS
MPUMALANGA	JS	206	11	DOORNKLOOF No. 206 -JS
MPUMALANGA	JS	206	12	DOORNKLOOF No. 206 -JS
MPUMALANGA	JS	206	15	DOORNKLOOF No. 206 -JS
MPUMALANGA	JS	208	0	NOOITGEDACHT No. 208 -JS
MPUMALANGA	JS	208	1	NOOITGEDACHT No. 208 -JS
MPUMALANGA	JS	208	2	NOOITGEDACHT No. 208 -JS
MPUMALANGA	JS	210	0	GROOTRIETVLEY No. 210 -JS
MPUMALANGA	JS	210	1	GROOTRIETVLEY No. 210 -JS
MPUMALANGA	JS	210	3	GROOTRIETVLEY No. 210 -JS
MPUMALANGA	JS	210	4	GROOTRIETVLEY No. 210 -JS
MPUMALANGA	JS	210	5	GROOTRIETVLEY No. 210 -JS
MPUMALANGA	JS	210	7	GROOTRIETVLEY No. 210 -JS
MPUMALANGA	JS	210	8	GROOTRIETVLEY No. 210 -JS
MPUMALANGA	JS	210	9	GROOTRIETVLEY No. 210 -JS
MPUMALANGA	JS	210	10	GROOTRIETVLEY No. 210 -JS
MPUMALANGA	JS	210	11	GROOTRIETVLEY No. 210 -JS
MPUMALANGA	JS	210	13	GROOTRIETVLEY No. 210 -JS
MPUMALANGA	JS	210	14	GROOTRIETVLEY No. 210 -JS
MPUMALANGA	JS	211	0	ARENSKRANS No. 211 -JS
MPUMALANGA	JS	212	0	SCHIETPAD No. 212 -JS
MPUMALANGA	JS	212	2	SCHIETPAD No. 212 -JS
MPUMALANGA	JS	212	3	SCHIETPAD No. 212 -JS
MPUMALANGA	JS	212	5	SCHIETPAD No. 212 -JS
MPUMALANGA	JS	212	8	SCHIETPAD No. 212 -JS
MPUMALANGA	JS	212	9	SCHIETPAD No. 212 -JS
MPUMALANGA	JS	212	10	SCHIETPAD No. 212 -JS
MPUMALANGA	JS	212	12	SCHIETPAD No. 212 -JS
MPUMALANGA	JS	212	13	SCHIETPAD No. 212 -JS

Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
MPUMALANGA	JS	212	14	SCHIETPAD No. 212 -JS
MPUMALANGA	JS	212	15	SCHIETPAD No. 212 -JS
MPUMALANGA	JS	212	16	SCHIETPAD No. 212 -JS
MPUMALANGA	JS	212	17	SCHIETPAD No. 212 -JS
MPUMALANGA	JS	212	18	SCHIETPAD No. 212 -JS
MPUMALANGA	JS	212	19	SCHIETPAD No. 212 -JS
MPUMALANGA	JS	213	0	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	4	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	5	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	8	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	9	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	10	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	12	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	13	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	16	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	17	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	19	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	20	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	21	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	22	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	23	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	26	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	27	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	28	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	29	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	30	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	32	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	36	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	38	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	39	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	40	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	41	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	42	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	43	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	44	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	45	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	47	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	48	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	49	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	50	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	51	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	54	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	57	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	58	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	59	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	66	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	70	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	72	BLINKWATER No.213 -JS

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PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 32 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. — M B Straughan G.Pr. LS0907D — 09 October 2025 (date)

For applicant — Owain Jackson (name) — signature — 09 October 2025 (date)

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	**Dwg:** reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

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Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
MPUMALANGA	JS	213	73	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	77	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	82	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	85	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	86	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	87	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	93	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	92	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	94	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	97	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	100	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	107	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	108	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	109	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	110	BLINKWATER No.213 -JS
MPUMALANGA	JS	213	111	BLINKWATER No.213 -JS
MPUMALANGA	JS	214	2	ENKELDOORN No. 214 -JS
MPUMALANGA	JS	214	4	ENKELDOORN No. 214 -JS
MPUMALANGA	JS	214	5	ENKELDOORN No. 214 -JS
MPUMALANGA	JS	214	7	ENKELDOORN No. 214 -JS
MPUMALANGA	JS	214	9	ENKELDOORN No. 214 -JS
MPUMALANGA	JS	214	10	ENKELDOORN No. 214 -JS
MPUMALANGA	JS	214	11	ENKELDOORN No. 214 -JS
MPUMALANGA	JS	214	13	ENKELDOORN No. 214 -JS
MPUMALANGA	JS	214	25	ENKELDOORN No. 214 -JS
MPUMALANGA	JS	215	3	WELGEVONDEN No. 215 -JS
MPUMALANGA	JS	215	6	WELGEVONDEN No. 215 -JS
MPUMALANGA	JS	215	8	WELGEVONDEN No. 215 -JS
MPUMALANGA	JS	215	9	WELGEVONDEN No. 215 -JS
MPUMALANGA	JS	215	16	WELGEVONDEN No. 215 -JS
MPUMALANGA	JS	215	17	WELGEVONDEN No. 215 -JS
MPUMALANGA	JS	215	21	WELGEVONDEN No. 215 -JS
MPUMALANGA	JS	217	2	SWARTKOPPIES 217 JS
MPUMALANGA	JS	217	3	SWARTKOPPIES 217 JS
MPUMALANGA	JS	217	4	SWARTKOPPIES 217 JS
MPUMALANGA	JS	217	8	SWARTKOPPIES 217 JS
MPUMALANGA	JS	217	10	SWARTKOPPIES 217 JS
MPUMALANGA	JS	217	13	SWARTKOPPIES 217 JS
MPUMALANGA	JS	217	14	SWARTKOPPIES 217 JS
MPUMALANGA	JS	217	15	SWARTKOPPIES 217 JS
MPUMALANGA	JS	217	16	SWARTKOPPIES 217 JS
MPUMALANGA	JS	217	17	SWARTKOPPIES 217 JS
MPUMALANGA	JS	217	18	SWARTKOPPIES 217 JS
MPUMALANGA	JS	217	19	SWARTKOPPIES 217 JS
MPUMALANGA	JS	217	20	SWARTKOPPIES 217 JS
MPUMALANGA	JS	217	21	SWARTKOPPIES 217 JS
MPUMALANGA	JS	220	0	NOOITGEDACHT No. 220 -JS
MPUMALANGA	JS	226	0	GELUK No. 226 -JS

Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
MPUMALANGA	JS	227	2	WOLVENKOP 227 JS
MPUMALANGA	JS	227	5	WOLVENKOP 227 JS
MPUMALANGA	JS	227	7	WOLVENKOP 227 JS
MPUMALANGA	JS	227	8	WOLVENKOP 227 JS
MPUMALANGA	JS	227	12	WOLVENKOP 227 JS
MPUMALANGA	JS	227	13	WOLVENKOP 227 JS
MPUMALANGA	JS	228	1	LEEUWFONTEIN 228 JS
MPUMALANGA	JS	228	2	LEEUWFONTEIN 228 JS
MPUMALANGA	JS	228	4	LEEUWFONTEIN 228 JS
MPUMALANGA	JS	228	5	LEEUWFONTEIN 228 JS
MPUMALANGA	JS	228	6	LEEUWFONTEIN 228 JS
MPUMALANGA	JS	228	7	LEEUWFONTEIN 228 JS
MPUMALANGA	JS	228	10	LEEUWFONTEIN 228 JS
MPUMALANGA	JS	228	11	LEEUWFONTEIN 228 JS
MPUMALANGA	JS	228	14	LEEUWFONTEIN 228 JS
MPUMALANGA	JS	228	15	LEEUWFONTEIN 228 JS
MPUMALANGA	JS	228	16	LEEUWFONTEIN 228 JS
MPUMALANGA	JS	228	19	LEEUWFONTEIN 228 JS
MPUMALANGA	JS	229	5	LANGKLOOF 229 JS
MPUMALANGA	JS	229	7	LANGKLOOF 229 JS
MPUMALANGA	JS	229	16	LANGKLOOF 229 JS
MPUMALANGA	JS	229	17	LANGKLOOF 229 JS
MPUMALANGA	JS	229	18	LANGKLOOF 229 JS
MPUMALANGA	JS	229	19	LANGKLOOF 229 JS
MPUMALANGA	JS	230	6	WATERVAL No. 230 -JS
MPUMALANGA	JS	230	8	WATERVAL No. 230 -JS
MPUMALANGA	JS	230	10	WATERVAL No. 230 -JS
MPUMALANGA	JS	230	11	WATERVAL No. 230 -JS
MPUMALANGA	JS	230	12	WATERVAL No. 230 -JS
MPUMALANGA	JS	230	13	WATERVAL No. 230 -JS
MPUMALANGA	JS	230	14	WATERVAL No. 230 -JS
MPUMALANGA	JS	230	26	WATERVAL No. 230 -JS
MPUMALANGA	JS	230	27	WATERVAL No. 230 -JS
MPUMALANGA	JS	230	28	WATERVAL No. 230 -JS
MPUMALANGA	JS	230	29	WATERVAL No. 230 -JS
MPUMALANGA	JS	230	30	WATERVAL No. 230 -JS
MPUMALANGA	JS	230	31	WATERVAL No. 230 -JS
MPUMALANGA	JS	230	32	WATERVAL No. 230 -JS
MPUMALANGA	JS	230	33	WATERVAL No. 230 -JS
MPUMALANGA	JS	230	34	WATERVAL No. 230 -JS
MPUMALANGA	JS	230	35	WATERVAL No. 230 -JS
MPUMALANGA	JS	230	36	WATERVAL No. 230 -JS
MPUMALANGA	JS	230	37	WATERVAL No. 230 -JS
MPUMALANGA	JS	230	38	WATERVAL No. 230 -JS
MPUMALANGA	JS	230	39	WATERVAL No. 230 -JS
MPUMALANGA	JS	230	40	WATERVAL No. 230 -JS
MPUMALANGA	JS	230	42	WATERVAL No. 230 -JS
MPUMALANGA	JS	230	43	WATERVAL No. 230 -JS

Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
MPUMALANGA	JS	230	44	WATERVAL No. 230 -JS
MPUMALANGA	JS	230	45	WATERVAL No. 230 -JS
MPUMALANGA	JS	230	46	WATERVAL No. 230 -JS
MPUMALANGA	JS	230	47	WATERVAL No. 230 -JS
MPUMALANGA	JS	230	48	WATERVAL No. 230 -JS
MPUMALANGA	JS	230	49	WATERVAL No. 230 -JS
MPUMALANGA	JS	231	0	RIETVLALLEI No. 231 -JS
MPUMALANGA	JS	231	1	RIETVLALLEI No. 231 -JS
MPUMALANGA	JS	232	0	VOGELSTRUITSPLAAT No. 232 -JS
MPUMALANGA	JS	232	1	VOGELSTRUITSPLAAT No. 232 -JS
MPUMALANGA	JS	232	2	VOGELSTRUITSPLAAT No. 232 -JS
MPUMALANGA	JS	233	0	GROENVALLEI No. 233 -JS
MPUMALANGA	JS	233	1	GROENVALLEI No. 233 -JS
MPUMALANGA	JS	234	0	HONDEKRAAL No. 234 J-S
MPUMALANGA	JS	234	1	HONDEKRAAL No. 234 J-S
MPUMALANGA	JS	234	2	HONDEKRAAL No. 234 J-S
MPUMALANGA	JS	235	1	LEEUWKLOOF 235 JS
MPUMALANGA	JS	235	2	LEEUWKLOOF 235 JS
MPUMALANGA	JS	236	2	TWEEFONTEIN No. 236 -JS
MPUMALANGA	JS	236	3	TWEEFONTEIN No. 236 -JS
MPUMALANGA	JS	237	0	MOOIKOPJE No. 237 -JS
MPUMALANGA	JS	237	1	MOOIKOPJE No. 237 -JS
MPUMALANGA	JS	237	2	MOOIKOPJE No. 237 -JS
MPUMALANGA	JS	237	3	MOOIKOPJE No. 237 -JS
MPUMALANGA	JS	237	4	MOOIKOPJE No. 237 -JS
MPUMALANGA	JS	238	0	KLIPFONTEIN No. 238 -JS
MPUMALANGA	JS	238	1	KLIPFONTEIN No. 238 -JS
MPUMALANGA	JS	239	1	BANKPLAATS No. 239 -JS
MPUMALANGA	JS	239	4	BANKPLAATS No. 239 -JS
MPUMALANGA	JS	239	5	BANKPLAATS No. 239 -JS
MPUMALANGA	JS	239	6	BANKPLAATS No. 239 -JS
MPUMALANGA	JS	239	7	BANKPLAATS No. 239 -JS
MPUMALANGA	JS	239	8	BANKPLAATS No. 239 -JS
MPUMALANGA	JS	239	9	BANKPLAATS No. 239 -JS
MPUMALANGA	JS	240	0	DRIEFONTEIN No. 240 -JS
MPUMALANGA	JS	240	1	DRIEFONTEIN No. 240 -JS
MPUMALANGA	JS	240	3	DRIEFONTEIN No. 240 -JS
MPUMALANGA	JS	240	6	DRIEFONTEIN No. 240 -JS
MPUMALANGA	JS	240	7	DRIEFONTEIN No. 240 -JS
MPUMALANGA	JS	242	0	MOOIPLAATS No. 242 -JS
MPUMALANGA	JS	242	1	MOOIPLAATS No. 242 -JS
MPUMALANGA	JS	242	6	MOOIPLAATS No. 242 -JS
MPUMALANGA	JS	242	8	MOOIPLAATS No. 242 -JS
MPUMALANGA	JS	242	12	MOOIPLAATS No. 242 -JS
MPUMALANGA	JS	242	13	MOOIPLAATS No. 242 -JS
MPUMALANGA	JS	242	14	MOOIPLAATS No. 242 -JS
MPUMALANGA	JS	242	29	MOOIPLAATS No. 242 -JS
MPUMALANGA	JS	242	30	MOOIPLAATS No. 242 -JS

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PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 33 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. — M B Straughan G.Pr. LSO907D — 09 October 2025 date

For applicant Owain Jackson name

signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	**Dwg:** reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

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Province	Admin. Dist.	Farm No.	Ptn. No.	Farm name
MPUMALANGA	JS	242	36	MOOIPLAATS No. 242 -JS
MPUMALANGA	JS	242	37	MOOIPLAATS No. 242 -JS
MPUMALANGA	JS	242	41	MOOIPLAATS No. 242 -JS
MPUMALANGA	JS	242	45	MOOIPLAATS No. 242 -JS
MPUMALANGA	JS	242	46	MOOIPLAATS No. 242 -JS
MPUMALANGA	JS	242	59	MOOIPLAATS No. 242 -JS
MPUMALANGA	JS	242	63	MOOIPLAATS No. 242 -JS
MPUMALANGA	JS	242	68	MOOIPLAATS No. 242 -JS
MPUMALANGA	JS	242	69	MOOIPLAATS No. 242 -JS
MPUMALANGA	JS	242	72	MOOIPLAATS No. 242 -JS
MPUMALANGA	JS	242	73	MOOIPLAATS No. 242 -JS
MPUMALANGA	JS	250	2	SLAGTHOEK No. 250 -JS
MPUMALANGA	JS	254	0	BOOY ZYN KRAAL No. 254 -JS
MPUMALANGA	JS	256	2	KLIPFONTEIN No. 256 -JS
MPUMALANGA	JS	256	12	KLIPFONTEIN No. 256 -JS
MPUMALANGA	JS	256	13	KLIPFONTEIN No. 256 -JS
MPUMALANGA	JS	256	14	KLIPFONTEIN No. 256 -JS
MPUMALANGA	JS	256	15	KLIPFONTEIN No. 256 -JS
MPUMALANGA	JS	256	16	KLIPFONTEIN No. 256 -JS
MPUMALANGA	JS	256	17	KLIPFONTEIN No. 256 -JS
MPUMALANGA	JS	256	27	KLIPFONTEIN No. 256 -JS
MPUMALANGA	JS	341	0	STILLERUS No. 341 -JS
MPUMALANGA	JS	341	2	STILLERUS No. 341 -JS
MPUMALANGA	JS	341	3	STILLERUS No. 341 -JS
MPUMALANGA	JS	341	4	STILLERUS No. 341 -JS
MPUMALANGA	JS	341	10	STILLERUS No. 341 -JS
MPUMALANGA	JS	341	11	STILLERUS No. 341 -JS
MPUMALANGA	JS	341	12	STILLERUS No. 341 -JS
MPUMALANGA	JS	341	13	STILLERUS No. 341 -JS
MPUMALANGA	JS	341	16	STILLERUS No. 341 -JS
MPUMALANGA	JS	341	17	STILLERUS No. 341 -JS
MPUMALANGA	JS	342	3	BUFFELSKLOOF No. 342 - JS
MPUMALANGA	JS	342	4	BUFFELSKLOOF No. 342 - JS
MPUMALANGA	JS	342	7	BUFFELSKLOOF No. 342 - JS
MPUMALANGA	JS	342	8	BUFFELSKLOOF No. 342 - JS
MPUMALANGA	JS	342	9	BUFFELSKLOOF No. 342 - JS
MPUMALANGA	JS	342	10	BUFFELSKLOOF No. 342 - JS
MPUMALANGA	JS	342	11	BUFFELSKLOOF No. 342 - JS
MPUMALANGA	JS	342	12	BUFFELSKLOOF No. 342 - JS
MPUMALANGA	JS	993	0	DE VOETPADKLOOF No. 993 -JS
MPUMALANGA	JS	993	1	DE VOETPADKLOOF No. 993 -JS
MPUMALANGA	JS	993	2	DE VOETPADKLOOF No. 993 -JS
MPUMALANGA	JS	993	3	DE VOETPADKLOOF No. 993 -JS
MPUMALANGA	JS	993	4	DE VOETPADKLOOF No. 993 -JS
MPUMALANGA	JS	993	5	DE VOETPADKLOOF No. 993 -JS
MPUMALANGA	JS	1209	0	BUFFELSKLOF No. 1209 -JS

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The figure defined by the points **1 to 678**,

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Sheet 34 of 81 sheets

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PASA reference no._____

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For applicant — Owain Jackson (name) — signature — 09 October 2025 (date)

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	**Dwg:** reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

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Point	Latitude	Longitude
1	24° 57' 03.6000" S	29° 43' 01.2000" E
2	25° 03' 57.6000" S	29° 02' 34.8000" E
3	25° 06' 06.7609" S	29° 03' 02.2811" E
4	25° 06' 06.1195" S	29° 03' 07.1268" E
5	25° 06' 15.5150" S	29° 03' 26.4540" E
6	25° 06' 15.3145" S	29° 03' 27.1785" E
7	25° 06' 17.0347" S	29° 03' 26.1699" E
8	25° 06' 16.3751" S	29° 03' 25.9498" E
9	25° 06' 12.6292" S	29° 03' 18.2438" E
10	25° 06' 13.7147" S	29° 03' 18.2026" E
11	25° 06' 45.1708" S	29° 03' 17.0098" E
12	25° 06' 45.1651" S	29° 03' 18.4172" E
13	25° 06' 42.7681" S	29° 03' 23.6181" E
14	25° 06' 41.8247" S	29° 03' 24.2812" E
15	25° 06' 42.4744" S	29° 03' 24.2551" E
16	25° 06' 43.9242" S	29° 03' 25.0610" E
17	25° 06' 43.6379" S	29° 03' 24.1018" E
18	25° 06' 45.9455" S	29° 03' 19.0946" E
19	25° 06' 48.7059" S	29° 03' 16.5334" E
20	25° 06' 56.3869" S	29° 03' 13.9174" E
21	25° 07' 26.7808" S	29° 03' 03.5654" E
22	25° 07' 32.5145" S	29° 03' 01.6122" E
23	25° 07' 35.7720" S	29° 03' 00.4839" E
24	25° 07' 36.8252" S	29° 03' 00.1180" E
25	25° 07' 37.9170" S	29° 02' 59.7387" E
26	25° 07' 41.7753" S	29° 02' 58.3981" E
27	25° 07' 43.1821" S	29° 02' 57.9094" E
28	25° 07' 44.1867" S	29° 02' 57.5604" E
29	25° 07' 45.1111" S	29° 02' 57.2392" E
30	25° 07' 46.6384" S	29° 02' 56.7085" E
31	25° 07' 47.6430" S	29° 02' 56.3595" E
32	25° 07' 48.5673" S	29° 02' 56.0384" E
33	25° 07' 51.9518" S	29° 02' 54.8624" E
34	25° 07' 54.4155" S	29° 02' 55.9562" E
35	25° 07' 53.2363" S	29° 02' 56.1269" E
36	25° 07' 53.5192" S	29° 02' 58.6945" E
37	25° 07' 49.9657" S	29° 02' 59.0426" E
38	25° 07' 50.5455" S	29° 03' 02.6456" E
39	25° 07' 45.9220" S	29° 03' 03.4887" E
40	25° 07' 46.1343" S	29° 03' 05.2034" E
41	25° 07' 39.2947" S	29° 03' 06.2140" E
42	25° 07' 39.4875" S	29° 03' 07.6994" E
43	25° 07' 34.4490" S	29° 03' 08.4855" E
44	25° 07' 32.3581" S	29° 03' 21.3233" E
45	25° 07' 31.5583" S	29° 03' 21.1667" E
46	25° 07' 30.7587" S	29° 03' 21.0099" E
47	25° 07' 30.4386" S	29° 03' 20.9469" E
48	25° 07' 29.7987" S	29° 03' 20.8209" E

Point	Latitude	Longitude
49	25° 07' 29.1588" S	29° 03' 20.6953" E
50	25° 07' 28.4040" S	29° 03' 20.5473" E
51	25° 07' 28.3000" S	29° 03' 20.5268" E
52	25° 07' 27.6597" S	29° 03' 21.0166" E
53	25° 07' 27.2061" S	29° 03' 21.3633" E
54	25° 07' 26.7531" S	29° 03' 21.7102" E
55	25° 07' 26.4863" S	29° 03' 21.9143" E
56	25° 07' 26.0328" S	29° 03' 22.2610" E
57	25° 07' 25.6065" S	29° 03' 22.5874" E
58	25° 07' 25.1267" S	29° 03' 22.9546" E
59	25° 07' 25.0416" S	29° 03' 23.4764" E
60	25° 07' 24.9500" S	29° 03' 24.0386" E
61	25° 07' 24.8584" S	29° 03' 24.6009" E
62	25° 07' 24.7669" S	29° 03' 25.1629" E
63	25° 07' 24.6751" S	29° 03' 25.7254" E
64	25° 07' 24.4193" S	29° 03' 25.6750" E
65	25° 07' 23.8758" S	29° 03' 25.5681" E
66	25° 07' 23.5556" S	29° 03' 25.5054" E
67	25° 07' 22.9674" S	29° 03' 25.3899" E
68	25° 07' 22.4556" S	29° 03' 25.2894" E
69	25° 07' 21.9438" S	29° 03' 25.1888" E
70	25° 07' 21.6180" S	29° 03' 25.1247" E
71	25° 07' 21.0722" S	29° 03' 25.5315" E
72	25° 07' 20.5879" S	29° 03' 25.8920" E
73	25° 07' 20.1041" S	29° 03' 26.2527" E
74	25° 07' 19.6201" S	29° 03' 26.6134" E
75	25° 07' 19.1359" S	29° 03' 26.9740" E
76	25° 07' 18.6519" S	29° 03' 27.3347" E
77	25° 07' 18.1679" S	29° 03' 27.6954" E
78	25° 07' 17.9944" S	29° 03' 27.4148" E
79	25° 07' 17.7026" S	29° 03' 26.9419" E
80	25° 07' 17.4105" S	29° 03' 26.4691" E
81	25° 07' 17.0730" S	29° 03' 25.9233" E
82	25° 07' 16.4008" S	29° 03' 26.4241" E
83	25° 07' 15.9704" S	29° 03' 26.7448" E
84	25° 07' 15.5134" S	29° 03' 27.0855" E
85	25° 07' 15.0830" S	29° 03' 27.4062" E
86	25° 07' 14.6527" S	29° 03' 27.7270" E
87	25° 07' 14.2222" S	29° 03' 28.0476" E
88	25° 07' 13.8457" S	29° 03' 28.3284" E
89	25° 07' 13.4692" S	29° 03' 28.6090" E
90	25° 07' 13.0389" S	29° 03' 28.9299" E
91	25° 07' 12.6084" S	29° 03' 29.2506" E
92	25° 07' 12.1780" S	29° 03' 29.5712" E
93	25° 07' 11.7213" S	29° 03' 29.9112" E
94	25° 07' 11.4524" S	29° 03' 30.1114" E
95	25° 07' 11.0221" S	29° 03' 30.4323" E
96	25° 07' 10.6054" S	29° 03' 30.7430" E

Point	Latitude	Longitude
97	25° 07' 10.1885" S	29° 03' 31.0537" E
98	25° 07' 09.7717" S	29° 03' 31.3646" E
99	25° 07' 09.3552" S	29° 03' 31.6753" E
100	25° 07' 08.9148" S	29° 03' 32.0034" E
101	25° 07' 08.8197" S	29° 03' 32.2086" E
102	25° 07' 08.7760" S	29° 03' 32.3044" E
103	25° 07' 08.5411" S	29° 03' 32.8138" E
104	25° 07' 08.3062" S	29° 03' 33.3234" E
105	25° 07' 08.0714" S	29° 03' 33.8332" E
106	25° 07' 07.8365" S	29° 03' 34.3428" E
107	25° 07' 07.6018" S	29° 03' 34.8524" E
108	25° 07' 07.3670" S	29° 03' 35.3620" E
109	25° 07' 07.1321" S	29° 03' 35.8717" E
110	25° 07' 06.8971" S	29° 03' 36.3814" E
111	25° 07' 06.6552" S	29° 03' 36.9063" E
112	25° 07' 06.2900" S	29° 03' 37.6968" E
113	25° 06' 49.6641" S	29° 03' 28.4525" E
114	25° 06' 42.4385" S	29° 03' 24.4350" E
115	25° 06' 18.7123" S	29° 03' 25.3887" E
116	25° 06' 11.4651" S	29° 03' 29.6377" E
117	25° 06' 07.2004" S	29° 03' 41.1276" E
118	25° 06' 07.0498" S	29° 03' 41.0602" E
119	25° 06' 06.1472" S	29° 03' 40.6561" E
120	25° 06' 05.4109" S	29° 03' 42.6390" E
121	25° 06' 06.3139" S	29° 03' 43.0431" E
122	25° 06' 06.4643" S	29° 03' 43.1106" E
123	25° 06' 06.2802" S	29° 03' 43.6064" E
124	25° 05' 46.0263" S	29° 03' 34.2518" E
125	25° 05' 46.0129" S	29° 03' 34.2689" E
126	25° 05' 45.9998" S	29° 03' 34.2856" E
127	25° 05' 45.9811" S	29° 03' 34.3086" E
128	25° 05' 45.9692" S	29° 03' 34.3222" E
129	25° 05' 45.9528" S	29° 03' 34.3389" E
130	25° 05' 45.9388" S	29° 03' 34.3530" E
131	25° 05' 45.9281" S	29° 03' 34.3635" E
132	25° 05' 45.9142" S	29° 03' 34.3842" E
133	25° 05' 45.9027" S	29° 03' 34.3987" E
134	25° 05' 45.8908" S	29° 03' 34.4212" E
135	25° 05' 45.8765" S	29° 03' 34.4432" E
136	25° 05' 45.8670" S	29° 03' 34.4593" E
137	25° 05' 45.8532" S	29° 03' 34.4889" E
138	25° 05' 45.8418" S	29° 03' 34.5100" E
139	25° 05' 45.8260" S	29° 03' 34.5431" E
140	25° 05' 45.8164" S	29° 03' 34.5614" E
141	25° 05' 45.8013" S	29° 03' 34.5853" E
142	25° 05' 45.7843" S	29° 03' 34.6126" E
143	25° 05' 45.7732" S	29° 03' 34.6347" E
144	25° 05' 45.7598" S	29° 03' 34.6702" E

Point	Latitude	Longitude
145	25° 05' 45.7498" S	29° 03' 34.6898" E
146	25° 05' 45.7375" S	29° 03' 34.7150" E
147	25° 05' 45.7251" S	29° 03' 34.7408" E
148	25° 05' 45.7169" S	29° 03' 34.7626" E
149	25° 05' 45.7044" S	29° 03' 34.8008" E
150	25° 05' 45.6955" S	29° 03' 34.8245" E
151	25° 05' 45.6829" S	29° 03' 34.8649" E
152	25° 05' 45.6721" S	29° 03' 34.8936" E
153	25° 05' 45.6542" S	29° 03' 34.9410" E
154	25° 05' 45.6378" S	29° 03' 34.9913" E
155	25° 05' 45.6256" S	29° 03' 35.0238" E
156	25° 05' 45.6104" S	29° 03' 35.0783" E
157	25° 05' 45.5988" S	29° 03' 35.1177" E
158	25° 05' 45.5823" S	29° 03' 35.1774" E
159	25° 05' 45.5673" S	29° 03' 35.2349" E
160	25° 05' 45.5605" S	29° 03' 35.2706" E
161	25° 05' 45.5480" S	29° 03' 35.3285" E
162	25° 05' 45.5402" S	29° 03' 35.3688" E
163	25° 05' 45.5317" S	29° 03' 35.4286" E
164	25° 05' 45.5244" S	29° 03' 35.4676" E
165	25° 05' 45.5205" S	29° 03' 35.5258" E
166	25° 05' 45.5135" S	29° 03' 35.5781" E
167	25° 05' 45.5074" S	29° 03' 35.6119" E
168	25° 05' 45.4949" S	29° 03' 35.6647" E
169	25° 05' 45.4842" S	29° 03' 35.7001" E
170	25° 05' 45.4649" S	29° 03' 35.7564" E
171	25° 05' 45.4508" S	29° 03' 35.7938" E
172	25° 05' 45.4323" S	29° 03' 35.8498" E
173	25° 05' 45.4179" S	29° 03' 35.9076" E
174	25° 05' 45.4092" S	29° 03' 35.9482" E
175	25° 05' 45.3976" S	29° 03' 36.0110" E
176	25° 05' 45.3893" S	29° 03' 36.0525" E
177	25° 05' 45.3823" S	29° 03' 36.1173" E
178	25° 05' 45.3783" S	29° 03' 36.1812" E
179	25° 05' 45.3772" S	29° 03' 36.2231" E
180	25° 05' 45.3764" S	29° 03' 36.2768" E
181	25° 05' 45.3760" S	29° 03' 36.3117" E
182	25° 05' 45.3708" S	29° 03' 36.3628" E
183	25° 05' 45.3661" S	29° 03' 36.3965" E
184	25° 05' 45.3630" S	29° 03' 36.4491" E
185	25° 05' 45.3627" S	29° 03' 36.5016" E
186	25° 05' 45.3570" S	29° 03' 36.5363" E
187	25° 05' 45.3518" S	29° 03' 36.5961" E
188	25° 05' 45.3464" S	29° 03' 36.6353" E
189	25° 05' 45.3366" S	29° 03' 36.6951" E
190	25° 05' 45.3266" S	29° 03' 36.7534" E
191	25° 05' 45.3197" S	29° 03' 36.7912" E
192	25° 05' 45.3102" S	29° 03' 36.8483" E

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 35 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. — M B Straughan G.Pr. LSO907D — 09 October 2025 date

For applicant — Owain Jackson name — signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation

Dwg: reg 2(2) plan er kruis river oct 2025.dwg

Revision:

Date: 09 October 2025

friedlaender, burger & volkmann

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Point	Latitude	Longitude
193	25° 05' 45.3039" S	29° 03' 36.8864" E
194	25° 05' 45.2950" S	29° 03' 36.9437" E
195	25° 05' 45.2883" S	29° 03' 36.9846" E
196	25° 05' 45.2754" S	29° 03' 37.0489" E
197	25° 05' 45.2617" S	29° 03' 37.1136" E
198	25° 05' 45.2529" S	29° 03' 37.1564" E
199	25° 05' 45.2377" S	29° 03' 37.2145" E
200	25° 05' 45.2289" S	29° 03' 37.2537" E
201	25° 05' 45.2129" S	29° 03' 37.3122" E
202	25° 05' 45.1932" S	29° 03' 37.3713" E
203	25° 05' 45.1820" S	29° 03' 37.4100" E
204	25° 05' 45.1671" S	29° 03' 37.4654" E
205	25° 05' 45.1577" S	29° 03' 37.4991" E
206	25° 05' 45.1447" S	29° 03' 37.5495" E
207	25° 05' 45.1358" S	29° 03' 37.5820" E
208	25° 05' 45.1231" S	29° 03' 37.6296" E
209	25° 05' 45.1119" S	29° 03' 37.6772" E
210	25° 05' 45.1036" S	29° 03' 37.7063" E
211	25° 05' 45.0909" S	29° 03' 37.7488" E
212	25° 05' 45.0820" S	29° 03' 37.7776" E
213	25° 05' 45.0655" S	29° 03' 37.8213" E
214	25° 05' 45.0567" S	29° 03' 37.8517" E
215	25° 05' 45.0427" S	29° 03' 37.8958" E
216	25° 05' 45.0269" S	29° 03' 37.9376" E
217	25° 05' 45.0183" S	29° 03' 37.9658" E
218	25° 05' 45.0027" S	29° 03' 38.0070" E
219	25° 05' 44.9919" S	29° 03' 38.0357" E
220	25° 05' 44.9743" S	29° 03' 38.0804" E
221	25° 05' 44.9571" S	29° 03' 38.1259" E
222	25° 05' 44.9458" S	29° 03' 38.1559" E
223	25° 05' 44.9272" S	29° 03' 38.1979" E
224	25° 05' 44.9134" S	29° 03' 38.2275" E
225	25° 05' 44.8926" S	29° 03' 38.2736" E
226	25° 05' 44.8775" S	29° 03' 38.3047" E
227	25° 05' 44.8516" S	29° 03' 38.3500" E
228	25° 05' 44.8265" S	29° 03' 38.3934" E
229	25° 05' 44.8083" S	29° 03' 38.4239" E
230	25° 05' 44.7802" S	29° 03' 38.4697" E
231	25° 05' 44.7628" S	29° 03' 38.4998" E
232	25° 05' 44.7364" S	29° 03' 38.5412" E
233	25° 05' 44.7136" S	29° 03' 38.5784" E
234	25° 05' 44.6988" S	29° 03' 38.6016" E
235	25° 05' 44.6764" S	29° 03' 38.6361" E
236	25° 05' 44.6652" S	29° 03' 38.6587" E
237	25° 05' 44.6441" S	29° 03' 38.6879" E
238	25° 05' 44.6341" S	29° 03' 38.7053" E
239	25° 05' 44.6187" S	29° 03' 38.7284" E
240	25° 05' 44.6033" S	29° 03' 38.7513" E
241	25° 05' 44.5936" S	29° 03' 38.7681" E
242	25° 05' 44.5767" S	29° 03' 38.7933" E
243	25° 05' 44.5648" S	29° 03' 38.8070" E
244	25° 05' 44.5505" S	29° 03' 38.8290" E
245	25° 05' 44.5349" S	29° 03' 38.8541" E
246	25° 05' 44.5218" S	29° 03' 38.8730" E
247	25° 05' 44.4984" S	29° 03' 38.9048" E
248	25° 05' 44.4829" S	29° 03' 38.9262" E
249	25° 05' 44.4588" S	29° 03' 38.9614" E
250	25° 05' 44.4440" S	29° 03' 38.9846" E
251	25° 05' 44.4192" S	29° 03' 39.0202" E
252	25° 05' 44.3935" S	29° 03' 39.0597" E
253	25° 05' 44.3764" S	29° 03' 39.0871" E
254	25° 05' 44.3495" S	29° 03' 39.1282" E
255	25° 05' 44.3293" S	29° 03' 39.1548" E
256	25° 05' 44.2960" S	29° 03' 39.1932" E
257	25° 05' 44.2775" S	29° 03' 39.2191" E
258	25° 05' 44.2419" S	29° 03' 39.2563" E
259	25° 05' 44.1968" S	29° 03' 39.2995" E
260	25° 05' 44.1656" S	29° 03' 39.3270" E
261	25° 05' 44.1245" S	29° 03' 39.3610" E
262	25° 05' 44.1139" S	29° 03' 39.3767" E
263	25° 05' 44.1011" S	29° 03' 39.3928" E
264	25° 05' 44.0850" S	29° 03' 39.4089" E
265	25° 05' 44.0746" S	29° 03' 39.4203" E
266	25° 05' 44.0631" S	29° 03' 39.4348" E
267	25° 05' 44.0549" S	29° 03' 39.4421" E
268	25° 05' 44.0386" S	29° 03' 39.4551" E
269	25° 05' 44.0247" S	29° 03' 39.4671" E
270	25° 05' 43.9961" S	29° 03' 39.4841" E
271	25° 05' 43.9695" S	29° 03' 39.4976" E
272	25° 05' 43.9552" S	29° 03' 39.5051" E
273	25° 05' 43.9326" S	29° 03' 39.5153" E
274	25° 05' 43.9208" S	29° 03' 39.5253" E
275	25° 05' 43.8975" S	29° 03' 39.5388" E
276	25° 05' 43.8759" S	29° 03' 39.5517" E
277	25° 05' 43.8600" S	29° 03' 39.5599" E
278	25° 05' 43.8343" S	29° 03' 39.5745" E
279	25° 05' 43.8170" S	29° 03' 39.5850" E
280	25° 05' 43.7898" S	29° 03' 39.5982" E
281	25° 05' 43.7722" S	29° 03' 39.6056" E
282	25° 05' 43.7462" S	29° 03' 39.6158" E
283	25° 05' 43.7129" S	29° 03' 39.6241" E
284	25° 05' 43.6896" S	29° 03' 39.6288" E
285	25° 05' 43.6566" S	29° 03' 39.6380" E
286	25° 05' 43.6327" S	29° 03' 39.6425" E
287	25° 05' 43.5987" S	29° 03' 39.6490" E
288	25° 05' 43.5695" S	29° 03' 39.6570" E
289	25° 05' 43.5500" S	29° 03' 39.6606" E
290	25° 05' 43.5198" S	29° 03' 39.6659" E
291	25° 05' 43.4995" S	29° 03' 39.6699" E
292	25° 05' 43.4695" S	29° 03' 39.6746" E
293	25° 05' 43.4480" S	29° 03' 39.6765" E
294	25° 05' 43.4125" S	29° 03' 39.6816" E
295	25° 05' 43.3787" S	29° 03' 39.6875" E
296	25° 05' 43.3575" S	29° 03' 39.6903" E
297	25° 05' 43.3299" S	29° 03' 39.6976" E
298	25° 05' 43.3114" S	29° 03' 39.6987" E
299	25° 05' 43.2725" S	29° 03' 39.7038" E
300	25° 05' 43.2355" S	29° 03' 39.7111" E
301	25° 05' 43.2130" S	29° 03' 39.7155" E
302	25° 05' 43.1795" S	29° 03' 39.7223" E
303	25° 05' 43.1566" S	29° 03' 39.7280" E
304	25° 05' 43.1169" S	29° 03' 39.7407" E
305	25° 05' 43.0897" S	29° 03' 39.7503" E
306	25° 05' 43.0571" S	29° 03' 39.7655" E
307	25° 05' 43.0279" S	29° 03' 39.7823" E
308	25° 05' 42.9995" S	29° 03' 39.7935" E
309	25° 05' 42.9522" S	29° 03' 39.8123" E
310	25° 05' 42.9230" S	29° 03' 39.8254" E
311	25° 05' 42.8798" S	29° 03' 39.8474" E
312	25° 05' 42.8476" S	29° 03' 39.8650" E
313	25° 05' 42.7956" S	29° 03' 39.8926" E
314	25° 05' 42.7515" S	29° 03' 39.9150" E
315	25° 05' 42.7273" S	29° 03' 39.9275" E
316	25° 05' 42.6962" S	29° 03' 39.9477" E
317	25° 05' 42.6776" S	29° 03' 39.9612" E
318	25° 05' 42.6528" S	29° 03' 39.9807" E
319	25° 05' 42.6240" S	29° 03' 40.0071" E
320	25° 05' 42.6045" S	29° 03' 40.0268" E
321	25° 05' 42.5764" S	29° 03' 40.0550" E
322	25° 05' 42.5569" S	29° 03' 40.0710" E
323	25° 05' 42.5359" S	29° 03' 40.0929" E
324	25° 05' 42.5186" S	29° 03' 40.1084" E
325	25° 05' 42.4897" S	29° 03' 40.1370" E
326	25° 05' 42.4617" S	29° 03' 40.1631" E
327	25° 05' 42.4472" S	29° 03' 40.1821" E
328	25° 05' 42.4225" S	29° 03' 40.2115" E
329	25° 05' 42.4071" S	29° 03' 40.2312" E
330	25° 05' 42.3831" S	29° 03' 40.2627" E
331	25° 05' 42.3594" S	29° 03' 40.2951" E
332	25° 05' 42.3431" S	29° 03' 40.3170" E
333	25° 05' 42.3218" S	29° 03' 40.3467" E
334	25° 05' 42.3086" S	29° 03' 40.3656" E
335	25° 05' 42.2886" S	29° 03' 40.3938" E
336	25° 05' 42.2777" S	29° 03' 40.4137" E
337	25° 05' 42.2560" S	29° 03' 40.4463" E
338	25° 05' 42.2359" S	29° 03' 40.4818" E
339	25° 05' 42.2208" S	29° 03' 40.5056" E
340	25° 05' 42.1981" S	29° 03' 40.5392" E
341	25° 05' 42.1834" S	29° 03' 40.5603" E
342	25° 05' 42.1638" S	29° 03' 40.5924" E
343	25° 05' 42.1426" S	29° 03' 40.6273" E
344	25° 05' 42.1274" S	29° 03' 40.6497" E
345	25° 05' 42.1057" S	29° 03' 40.6822" E
346	25° 05' 42.0926" S	29° 03' 40.7011" E
347	25° 05' 42.0724" S	29° 03' 40.7315" E
348	25° 05' 42.0615" S	29° 03' 40.7514" E
349	25° 05' 42.0489" S	29° 03' 40.7756" E
350	25° 05' 42.0379" S	29° 03' 40.7977" E
351	25° 05' 42.0316" S	29° 03' 40.8145" E
352	25° 05' 42.0203" S	29° 03' 40.8372" E
353	25° 05' 42.0126" S	29° 03' 40.8505" E
354	25° 05' 42.0028" S	29° 03' 40.8695" E
355	25° 05' 41.9987" S	29° 03' 40.8801" E
356	25° 05' 41.9891" S	29° 03' 40.8984" E
357	25° 05' 41.9792" S	29° 03' 40.9158" E
358	25° 05' 41.9750" S	29° 03' 40.9270" E
359	25° 05' 41.9688" S	29° 03' 40.9381" E
360	25° 05' 41.9659" S	29° 03' 40.9456" E
361	25° 05' 41.9619" S	29° 03' 40.9562" E
362	25° 05' 41.9555" S	29° 03' 40.9691" E
363	25° 05' 55.9774" S	29° 03' 47.9798" E
364	25° 06' 00.3653" S	29° 03' 54.1257" E
365	25° 06' 01.8200" S	29° 04' 03.5566" E
366	25° 06' 04.7835" S	29° 04' 06.6404" E
367	25° 06' 32.5506" S	29° 04' 17.0872" E
368	25° 06' 39.6218" S	29° 04' 19.7481" E
369	25° 06' 42.1692" S	29° 04' 20.7067" E
370	25° 06' 44.9401" S	29° 04' 21.7495" E
371	25° 06' 45.6832" S	29° 04' 21.3890" E
372	25° 06' 45.2632" S	29° 04' 20.3444" E
373	25° 06' 47.1957" S	29° 04' 19.4071" E
374	25° 06' 46.8672" S	29° 04' 16.6153" E
375	25° 07' 05.1007" S	29° 04' 14.0267" E
376	25° 07' 17.5942" S	29° 04' 06.0759" E
377	25° 07' 25.0472" S	29° 03' 58.3755" E
378	25° 07' 26.8692" S	29° 03' 54.4222" E
379	25° 07' 27.3167" S	29° 03' 52.8921" E
380	25° 07' 27.1618" S	29° 03' 50.6505" E
381	25° 07' 27.8863" S	29° 03' 52.7797" E
382	25° 07' 28.2965" S	29° 03' 54.3103" E
383	25° 08' 35.5148" S	29° 03' 30.8125" E
384	25° 08' 25.8094" S	29° 02' 32.9208" E

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PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 36 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. — M B Straughan G.Pr. LS0907D — 09 October 2025 date

For applicant — Owain Jackson name — signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	**Dwg:** reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

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Point	Latitude	Longitude
385	25° 08' 12.8701" S	29° 02' 20.3236" E
386	25° 08' 12.8690" S	29° 02' 20.3241" E
387	25° 07' 41.4638" S	29° 01' 49.7626" E
388	25° 07' 15.7969" S	29° 01' 24.7822" E
389	25° 07' 15.3394" S	29° 01' 25.3494" E
390	25° 08' 33.8349" S	28° 56' 35.3153" E
391	25° 08' 41.0152" S	28° 57' 00.8628" E
392	25° 08' 42.4627" S	28° 57' 06.0140" E
393	25° 08' 42.8808" S	28° 57' 02.9330" E
394	25° 08' 43.1008" S	28° 57' 00.1608" E
395	25° 08' 43.1431" S	28° 56' 59.6255" E
396	25° 08' 43.1541" S	28° 56' 59.3937" E
397	25° 08' 43.1975" S	28° 56' 58.4759" E
398	25° 08' 43.2402" S	28° 56' 57.5749" E
399	25° 08' 43.2689" S	28° 56' 56.9688" E
400	25° 08' 43.3012" S	28° 56' 56.2874" E
401	25° 08' 43.3110" S	28° 56' 56.0803" E
402	25° 08' 43.2999" S	28° 56' 55.7331" E
403	25° 08' 43.2834" S	28° 56' 55.2157" E
404	25° 08' 43.2669" S	28° 56' 54.6983" E
405	25° 08' 43.2503" S	28° 56' 54.1810" E
406	25° 08' 43.2338" S	28° 56' 53.6636" E
407	25° 08' 43.2109" S	28° 56' 52.9457" E
408	25° 08' 43.1914" S	28° 56' 52.3376" E
409	25° 08' 43.1751" S	28° 56' 51.8274" E
410	25° 08' 43.1588" S	28° 56' 51.3171" E
411	25° 08' 43.1425" S	28° 56' 50.8069" E
412	25° 08' 43.1262" S	28° 56' 50.2967" E
413	25° 08' 43.1099" S	28° 56' 49.7864" E
414	25° 08' 43.0936" S	28° 56' 49.2762" E
415	25° 08' 43.0765" S	28° 56' 48.7409" E
416	25° 08' 43.0560" S	28° 56' 48.0987" E
417	25° 08' 43.0347" S	28° 56' 47.4328" E
418	25° 08' 43.0176" S	28° 56' 46.8976" E
419	25° 08' 43.0005" S	28° 56' 46.3624" E
420	25° 08' 42.9834" S	28° 56' 45.8272" E
421	25° 08' 42.9663" S	28° 56' 45.2919" E
422	25° 08' 42.9492" S	28° 56' 44.7567" E
423	25° 08' 42.9320" S	28° 56' 44.2215" E
424	25° 08' 42.9149" S	28° 56' 43.6863" E
425	25° 08' 42.8990" S	28° 56' 43.1867" E
426	25° 08' 42.8170" S	28° 56' 40.7260" E
427	25° 08' 42.8147" S	28° 56' 40.6547" E
428	25° 08' 42.7825" S	28° 56' 39.6556" E
429	25° 08' 42.7658" S	28° 56' 39.1382" E
430	25° 08' 42.7491" S	28° 56' 38.6208" E
431	25° 08' 42.7324" S	28° 56' 38.1035" E
432	25° 08' 42.7157" S	28° 56' 37.5861" E

Point	Latitude	Longitude
433	25° 08' 42.6990" S	28° 56' 37.0687" E
434	25° 08' 42.6823" S	28° 56' 36.5513" E
435	25° 08' 42.6656" S	28° 56' 36.0340" E
436	25° 08' 42.6489" S	28° 56' 35.5166" E
437	25° 08' 42.6322" S	28° 56' 34.9992" E
438	25° 08' 42.6156" S	28° 56' 34.4818" E
439	25° 08' 42.5989" S	28° 56' 33.9644" E
440	25° 08' 42.5822" S	28° 56' 33.4471" E
441	25° 08' 42.5655" S	28° 56' 32.9297" E
442	25° 08' 42.5488" S	28° 56' 32.4123" E
443	25° 08' 42.5321" S	28° 56' 31.8949" E
444	25° 08' 42.5154" S	28° 56' 31.3775" E
445	25° 08' 42.4987" S	28° 56' 30.8602" E
446	25° 08' 42.4820" S	28° 56' 30.3428" E
447	25° 08' 42.4653" S	28° 56' 29.8254" E
448	25° 08' 42.4486" S	28° 56' 29.3080" E
449	25° 08' 42.4319" S	28° 56' 28.7907" E
450	25° 08' 42.4158" S	28° 56' 28.2911" E
451	25° 08' 42.1330" S	28° 56' 19.4606" E
452	25° 08' 41.9525" S	28° 56' 19.1265" E
453	25° 08' 41.6297" S	28° 56' 18.9681" E
454	25° 08' 39.5305" S	28° 56' 19.1529" E
455	25° 08' 38.0022" S	28° 56' 19.9172" E
456	25° 08' 43.0110" S	28° 56' 01.4103" E
457	25° 08' 43.4806" S	28° 56' 18.8986" E
458	25° 08' 43.4687" S	28° 56' 18.9396" E
459	25° 08' 43.5255" S	28° 56' 20.7027" E
460	25° 08' 43.5422" S	28° 56' 21.2201" E
461	25° 08' 43.5588" S	28° 56' 21.7375" E
462	25° 08' 43.5755" S	28° 56' 22.2548" E
463	25° 08' 43.5921" S	28° 56' 22.7722" E
464	25° 08' 43.6088" S	28° 56' 23.2896" E
465	25° 08' 43.6255" S	28° 56' 23.8070" E
466	25° 08' 43.6421" S	28° 56' 24.3243" E
467	25° 08' 43.6588" S	28° 56' 24.8417" E
468	25° 08' 43.6754" S	28° 56' 25.3591" E
469	25° 08' 43.6921" S	28° 56' 25.8764" E
470	25° 08' 43.7087" S	28° 56' 26.3938" E
471	25° 08' 43.7254" S	28° 56' 26.9112" E
472	25° 08' 43.7420" S	28° 56' 27.4286" E
473	25° 08' 43.7753" S	28° 56' 28.4633" E
474	25° 08' 43.7903" S	28° 56' 28.9272" E
475	25° 08' 43.8272" S	28° 56' 30.0765" E
476	25° 08' 43.8439" S	28° 56' 30.5938" E
477	25° 08' 43.8605" S	28° 56' 31.1112" E
478	25° 08' 43.8772" S	28° 56' 31.6286" E
479	25° 08' 43.8938" S	28° 56' 32.1460" E
480	25° 08' 43.9105" S	28° 56' 32.6633" E

Point	Latitude	Longitude
481	25° 08' 43.9271" S	28° 56' 33.1807" E
482	25° 08' 43.9438" S	28° 56' 33.6981" E
483	25° 08' 43.9604" S	28° 56' 34.2155" E
484	25° 08' 43.9771" S	28° 56' 34.7328" E
485	25° 08' 43.9937" S	28° 56' 35.2502" E
486	25° 08' 44.0104" S	28° 56' 35.7676" E
487	25° 08' 44.0270" S	28° 56' 36.2850" E
488	25° 08' 44.0436" S	28° 56' 36.8023" E
489	25° 08' 44.0603" S	28° 56' 37.3197" E
490	25° 08' 44.0769" S	28° 56' 37.8371" E
491	25° 08' 44.0936" S	28° 56' 38.3545" E
492	25° 08' 44.1102" S	28° 56' 38.8718" E
493	25° 08' 44.1268" S	28° 56' 39.3892" E
494	25° 08' 44.1435" S	28° 56' 39.9066" E
495	25° 08' 44.1664" S	28° 56' 40.6202" E
496	25° 08' 44.1699" S	28° 56' 40.7273" E
497	25° 08' 44.2456" S	28° 56' 43.0822" E
498	25° 08' 44.2628" S	28° 56' 43.6174" E
499	25° 08' 44.3319" S	28° 56' 45.7665" E
500	25° 08' 44.3485" S	28° 56' 46.2839" E
501	25° 08' 44.3652" S	28° 56' 46.8013" E
502	25° 08' 44.3818" S	28° 56' 47.3186" E
503	25° 08' 44.3984" S	28° 56' 47.8360" E
504	25° 08' 44.4151" S	28° 56' 48.3534" E
505	25° 08' 44.4317" S	28° 56' 48.8708" E
506	25° 08' 44.4483" S	28° 56' 49.3881" E
507	25° 08' 44.4650" S	28° 56' 49.9055" E
508	25° 08' 44.4816" S	28° 56' 50.4229" E
509	25° 08' 44.5101" S	28° 56' 51.3089" E
510	25° 08' 44.5251" S	28° 56' 51.7756" E
511	25° 08' 44.5417" S	28° 56' 52.2929" E
512	25° 08' 44.5583" S	28° 56' 52.8103" E
513	25° 08' 44.5750" S	28° 56' 53.3277" E
514	25° 08' 44.5916" S	28° 56' 53.8451" E
515	25° 08' 44.6082" S	28° 56' 54.3625" E
516	25° 08' 44.6248" S	28° 56' 54.8798" E
517	25° 08' 44.6415" S	28° 56' 55.3972" E
518	25° 08' 44.6581" S	28° 56' 55.9146" E
519	25° 08' 44.6638" S	28° 56' 56.0930" E
520	25° 08' 44.6477" S	28° 56' 56.4331" E
521	25° 08' 44.6231" S	28° 56' 56.9523" E
522	25° 08' 44.5583" S	28° 56' 58.3211" E
523	25° 08' 44.4916" S	28° 56' 59.7298" E
524	25° 08' 44.2786" S	28° 57' 02.4153" E
525	25° 08' 44.2236" S	28° 57' 03.1088" E
526	25° 08' 43.3800" S	28° 57' 09.3257" E
527	25° 08' 44.8658" S	28° 57' 14.6135" E
528	25° 08' 45.6204" S	28° 57' 17.2990" E

Point	Latitude	Longitude
529	25° 08' 45.9559" S	28° 57' 18.5069" E
530	25° 08' 47.1541" S	28° 57' 18.5183" E
531	25° 08' 50.8594" S	28° 57' 17.9998" E
532	25° 08' 51.6378" S	28° 57' 16.8461" E
533	25° 08' 51.7399" S	28° 57' 16.6314" E
534	25° 08' 52.1592" S	28° 57' 15.0918" E
535	25° 08' 52.3689" S	28° 57' 13.8550" E
536	25° 08' 53.0789" S	28° 57' 12.6096" E
537	25° 08' 53.1549" S	28° 57' 12.5215" E
538	25° 08' 53.2670" S	28° 57' 12.4059" E
539	25° 08' 54.1741" S	28° 57' 11.8144" E
540	25° 08' 54.2341" S	28° 57' 11.7928" E
541	25° 08' 54.2988" S	28° 57' 11.7285" E
542	25° 08' 54.3325" S	28° 57' 11.6598" E
543	25° 08' 55.4496" S	28° 57' 10.3659" E
544	25° 08' 58.6538" S	28° 57' 08.3399" E
545	25° 08' 58.8189" S	28° 57' 08.2857" E
546	25° 08' 59.3694" S	28° 57' 08.1771" E
547	25° 09' 01.8845" S	28° 57' 07.5497" E
548	25° 09' 03.5535" S	28° 57' 06.8623" E
549	25° 09' 05.0343" S	28° 57' 06.0861" E
550	25° 09' 05.0709" S	28° 57' 06.0646" E
551	25° 09' 05.9306" S	28° 57' 05.0682" E
552	25° 09' 05.9834" S	28° 57' 05.0250" E
553	25° 09' 06.1818" S	28° 57' 04.8845" E
554	25° 09' 07.8029" S	28° 57' 03.8247" E
555	25° 09' 07.8337" S	28° 57' 03.8167" E
556	25° 09' 11.6159" S	28° 57' 00.4696" E
557	25° 09' 13.2700" S	28° 56' 58.7297" E
558	25° 09' 13.3625" S	28° 56' 58.6557" E
559	25° 09' 13.4628" S	28° 56' 58.4781" E
560	25° 09' 14.0424" S	28° 56' 57.0503" E
561	25° 09' 14.0957" S	28° 56' 56.9539" E
562	25° 09' 14.1696" S	28° 56' 56.8406" E
563	25° 09' 14.2039" S	28° 56' 56.7971" E
564	25° 09' 14.4479" S	28° 56' 56.5684" E
565	25° 09' 15.7717" S	28° 56' 55.3279" E
566	25° 09' 15.9720" S	28° 56' 55.1713" E
567	25° 09' 16.0429" S	28° 56' 55.1513" E
568	25° 09' 17.4686" S	28° 56' 54.4328" E
569	25° 09' 17.6336" S	28° 56' 54.3648" E
570	25° 09' 18.0886" S	28° 56' 54.2204" E
571	25° 09' 16.9043" S	28° 56' 49.4621" E
572	25° 09' 16.8786" S	28° 56' 49.3588" E
573	25° 09' 16.5846" S	28° 56' 48.1778" E
574	25° 09' 16.4603" S	28° 56' 47.6784" E
575	25° 09' 16.3360" S	28° 56' 47.1790" E
576	25° 09' 16.2117" S	28° 56' 46.6796" E

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PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**,

excluding the figures **EX1 to EX78,**

represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 37 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. — M B Straughan G.Pr. LSO907D — 09 October 2025 date

For applicant — Owain Jackson name

signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	**Dwg:** reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

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Point	Latitude	Longitude
577	25° 09' 16.0874" S	28° 56' 46.1802" E
578	25° 09' 15.9631" S	28° 56' 45.6808" E
579	25° 09' 15.8388" S	28° 56' 45.1814" E
580	25° 09' 15.7145" S	28° 56' 44.6820" E
581	25° 09' 15.3587" S	28° 56' 43.2527" E
582	25° 09' 15.0647" S	28° 56' 42.0717" E
583	25° 09' 14.9404" S	28° 56' 41.5723" E
584	25° 09' 14.8161" S	28° 56' 41.0729" E
585	25° 09' 14.6918" S	28° 56' 40.5735" E
586	25° 09' 14.5675" S	28° 56' 40.0741" E
587	25° 09' 14.4432" S	28° 56' 39.5747" E
588	25° 09' 14.3188" S	28° 56' 39.0753" E
589	25° 09' 14.1945" S	28° 56' 38.5760" E
590	25° 09' 14.0702" S	28° 56' 38.0766" E
591	25° 09' 13.9459" S	28° 56' 37.5772" E
592	25° 09' 13.6630" S	28° 56' 36.4406" E
593	25° 09' 13.3586" S	28° 56' 35.2180" E
594	25° 09' 13.2343" S	28° 56' 34.7186" E
595	25° 09' 13.1100" S	28° 56' 34.2192" E
596	25° 09' 12.9857" S	28° 56' 33.7198" E
597	25° 09' 12.8613" S	28° 56' 33.2204" E
598	25° 09' 12.7370" S	28° 56' 32.7210" E
599	25° 09' 12.6127" S	28° 56' 32.2216" E
600	25° 09' 12.4884" S	28° 56' 31.7222" E
601	25° 09' 12.3641" S	28° 56' 31.2229" E
602	25° 09' 12.2397" S	28° 56' 30.7235" E
603	25° 09' 12.1154" S	28° 56' 30.2241" E
604	25° 09' 11.9911" S	28° 56' 29.7247" E
605	25° 09' 11.6824" S	28° 56' 28.4848" E
606	25° 09' 11.3695" S	28° 56' 27.2278" E
607	25° 09' 11.2452" S	28° 56' 26.7284" E
608	25° 09' 11.1208" S	28° 56' 26.2290" E
609	25° 09' 10.9965" S	28° 56' 25.7296" E
610	25° 09' 10.8722" S	28° 56' 25.2302" E
611	25° 09' 10.7479" S	28° 56' 24.7308" E
612	25° 09' 10.6235" S	28° 56' 24.2314" E
613	25° 09' 10.4992" S	28° 56' 23.7321" E
614	25° 09' 10.3749" S	28° 56' 23.2327" E
615	25° 09' 10.2505" S	28° 56' 22.7333" E
616	25° 09' 09.9333" S	28° 56' 21.4590" E
617	25° 09' 09.6389" S	28° 56' 20.2767" E
618	25° 09' 09.5146" S	28° 56' 19.7773" E
619	25° 09' 09.3903" S	28° 56' 19.2779" E
620	25° 09' 09.2659" S	28° 56' 18.7785" E
621	25° 09' 09.1416" S	28° 56' 18.2791" E
622	25° 09' 09.0173" S	28° 56' 17.7798" E
623	25° 09' 08.8929" S	28° 56' 17.2804" E
624	25° 09' 08.7686" S	28° 56' 16.7810" E

Point	Latitude	Longitude
625	25° 09' 08.6443" S	28° 56' 16.2816" E
626	25° 09' 08.5199" S	28° 56' 15.7822" E
627	25° 09' 08.3956" S	28° 56' 15.2829" E
628	25° 09' 08.2713" S	28° 56' 14.7835" E
629	25° 09' 07.9712" S	28° 56' 13.5785" E
630	25° 09' 07.9845" S	28° 56' 13.5781" E
631	25° 09' 00.0466" S	28° 55' 41.7072" E
632	25° 08' 53.1751" S	28° 55' 44.1266" E
633	25° 08' 53.5228" S	28° 55' 51.5735" E
634	25° 08' 44.9851" S	28° 55' 54.1160" E
635	25° 13' 51.6000" S	28° 37' 01.2000" E
636	25° 26' 26.5191" S	28° 39' 10.3073" E
637	25° 26' 26.7220" S	28° 39' 10.3844" E
638	25° 26' 27.3978" S	28° 39' 10.6413" E
639	25° 26' 28.0737" S	28° 39' 10.8982" E
640	25° 26' 28.7495" S	28° 39' 11.1551" E
641	25° 26' 29.4253" S	28° 39' 11.4119" E
642	25° 26' 30.0857" S	28° 39' 11.6630" E
643	25° 26' 30.8537" S	28° 39' 11.9549" E
644	25° 26' 31.6216" S	28° 39' 12.2469" E
645	25° 26' 32.4090" S	28° 39' 12.5462" E
646	25° 26' 33.0695" S	28° 39' 12.7972" E
647	25° 26' 33.7300" S	28° 39' 13.0482" E
648	25° 26' 34.3904" S	28° 39' 13.2992" E
649	25° 26' 35.0509" S	28° 39' 13.5503" E
650	25° 26' 35.7113" S	28° 39' 13.8013" E
651	25° 26' 36.3718" S	28° 39' 14.0523" E
652	25° 26' 37.0322" S	28° 39' 14.3033" E
653	25° 26' 37.6927" S	28° 39' 14.5544" E
654	25° 26' 37.7848" S	28° 39' 14.5894" E
655	25° 26' 38.4145" S	28° 39' 14.8287" E
656	25° 26' 39.0443" S	28° 39' 15.0681" E
657	25° 26' 39.6740" S	28° 39' 15.3075" E
658	25° 26' 40.6269" S	28° 39' 15.6696" E
659	25° 26' 41.1780" S	28° 39' 15.8791" E
660	25° 26' 41.7096" S	28° 39' 15.1117" E
661	25° 26' 41.7687" S	28° 39' 15.0263" E
662	25° 26' 42.1383" S	28° 39' 14.4928" E
663	25° 26' 42.5079" S	28° 39' 13.9593" E
664	25° 26' 42.8775" S	28° 39' 13.4258" E
665	25° 26' 43.0762" S	28° 39' 13.1389" E
666	25° 27' 34.5360" S	28° 39' 21.9397" E
667	25° 27' 36.4730" S	28° 39' 26.0718" E
668	25° 27' 32.6698" S	28° 39' 28.3635" E
669	25° 27' 24.7460" S	28° 39' 27.4690" E
670	25° 27' 23.9539" S	28° 39' 33.0712" E
671	25° 27' 41.7865" S	28° 39' 36.1088" E
672	25° 28' 13.7335" S	28° 39' 29.4464" E

Point	Latitude	Longitude
673	25° 28' 14.5266" S	28° 39' 29.2906" E
674	25° 28' 15.3953" S	28° 39' 29.1094" E
675	25° 28' 15.8745" S	28° 39' 29.0094" E
676	25° 39' 07.2000" S	28° 41' 20.4000" E
677	25° 26' 52.8000" S	29° 52' 55.2000" E
678	25° 15' 21.6000" S	29° 53' 06.0000" E
	Excluded	
EX1-1	25° 22' 22.8077" S	28° 42' 19.7368" E
EX1-2	25° 22' 17.6811" S	28° 42' 19.5950" E
EX1-3	25° 22' 17.6443" S	28° 42' 21.2040" E
EX1-4	25° 22' 19.3402" S	28° 42' 28.1100" E
EX1-5	25° 22' 22.5368" S	28° 42' 38.5501" E
EX1-6	25° 22' 25.6339" S	28° 42' 37.4671" E
EX1-7	25° 22' 26.7319" S	28° 42' 37.1405" E
EX1-8	25° 22' 27.8396" S	28° 42' 36.8562" E
EX1-9	25° 22' 28.9517" S	28° 42' 36.5933" E
EX1-10	25° 22' 30.0747" S	28° 42' 36.3948" E
EX1-11	25° 22' 31.2033" S	28° 42' 36.2395" E
EX1-12	25° 22' 32.3342" S	28° 42' 36.1059" E
EX1-13	25° 22' 33.4670" S	28° 42' 35.9941" E
EX1-14	25° 22' 34.6044" S	28° 42' 35.9914" E
EX1-15	25° 22' 36.2594" S	28° 42' 36.0909" E
EX1-16	25° 22' 36.9266" S	28° 42' 36.1311" E
EX1-17	25° 22' 37.9145" S	28° 42' 36.1905" E
EX1-18	25° 22' 39.5921" S	28° 42' 36.4132" E
EX1-19	25° 22' 40.7091" S	28° 42' 36.6495" E
EX1-20	25° 22' 42.9267" S	28° 42' 37.2074" E
EX1-21	25° 22' 44.7824" S	28° 42' 37.8662" E
EX1-22	25° 22' 45.8451" S	28° 42' 38.3124" E
EX1-23	25° 22' 46.8852" S	28° 42' 38.8191" E
EX1-24	25° 22' 48.3887" S	28° 42' 39.5866" E
EX1-25	25° 22' 48.6621" S	28° 42' 38.9375" E
EX1-26	25° 22' 48.8028" S	28° 42' 38.4405" E
EX1-27	25° 22' 49.1953" S	28° 42' 37.0595" E
EX1-28	25° 22' 44.2643" S	28° 42' 35.6177" E
EX1-29	25° 22' 44.9120" S	28° 42' 32.3683" E
EX1-30	25° 22' 45.1993" S	28° 42' 27.9841" E
EX1-31	25° 22' 44.3890" S	28° 42' 27.9197" E
EX1-32	25° 22' 44.4123" S	28° 42' 27.5630" E
EX1-33	25° 22' 44.2620" S	28° 42' 27.3717" E
EX1-34	25° 22' 43.7758" S	28° 42' 27.3331" E
EX1-35	25° 22' 43.7992" S	28° 42' 26.9763" E
EX1-36	25° 22' 43.7757" S	28° 42' 25.6631" E
EX1-37	25° 22' 43.4902" S	28° 42' 24.4143" E
EX1-38	25° 22' 42.1311" S	28° 42' 22.5419" E
EX1-39	25° 22' 40.9916" S	28° 42' 22.9045" E
EX1-40	25° 22' 40.5845" S	28° 42' 21.2467" E
EX1-41	25° 22' 40.4559" S	28° 42' 19.2843" E

Point	Latitude	Longitude
EX1-42	25° 22' 40.5689" S	28° 42' 18.9913" E
EX1-43	25° 22' 44.5467" S	28° 42' 15.3333" E
EX1-44	25° 22' 43.3257" S	28° 42' 13.7246" E
EX1-45	25° 22' 43.3463" S	28° 42' 13.4727" E
EX1-46	25° 22' 43.6206" S	28° 42' 13.2204" E
EX1-47	25° 22' 43.4331" S	28° 42' 12.9734" E
EX1-48	25° 22' 43.2042" S	28° 42' 12.9508" E
EX1-49	25° 22' 42.8282" S	28° 42' 12.4553" E
EX1-50	25° 22' 43.6262" S	28° 42' 11.7214" E
EX1-51	25° 22' 43.0741" S	28° 42' 10.9939" E
EX1-52	25° 22' 45.4183" S	28° 42' 08.8381" E
EX1-53	25° 22' 45.3388" S	28° 42' 08.6988" E
EX1-54	25° 22' 44.6752" S	28° 42' 07.5357" E
EX1-55	25° 22' 42.4239" S	28° 42' 01.8260" E
EX1-56	25° 22' 43.3270" S	28° 42' 01.4218" E
EX1-57	25° 22' 42.4726" S	28° 41' 59.1089" E
EX1-58	25° 22' 43.7111" S	28° 41' 58.4982" E
EX1-59	25° 22' 42.9768" S	28° 41' 56.4065" E
EX1-60	25° 22' 44.3784" S	28° 41' 55.8103" E
EX1-61	25° 22' 44.0241" S	28° 41' 54.1381" E
EX1-62	25° 22' 43.2702" S	28° 41' 54.1448" E
EX1-63	25° 22' 43.1220" S	28° 41' 53.8265" E
EX1-64	25° 22' 42.8906" S	28° 41' 53.9570" E
EX1-65	25° 22' 42.4801" S	28° 41' 52.7240" E
EX1-66	25° 22' 42.7657" S	28° 41' 52.6211" E
EX1-67	25° 22' 42.3158" S	28° 41' 51.1083" E
EX1-68	25° 22' 43.3642" S	28° 41' 50.8602" E
EX1-69	25° 22' 43.2074" S	28° 41' 49.9828" E
EX1-70	25° 22' 42.8207" S	28° 41' 48.6017" E
EX1-71	25° 22' 45.1350" S	28° 41' 47.6172" E
EX1-72	25° 22' 45.2280" S	28° 41' 47.3859" E
EX1-73	25° 22' 45.1108" S	28° 41' 47.0522" E
EX1-74	25° 22' 44.9007" S	28° 41' 46.9499" E
EX1-75	25° 22' 43.5444" S	28° 41' 43.0868" E
EX1-76	25° 22' 43.5363" S	28° 41' 39.1877" E
EX1-77	25° 22' 34.5905" S	28° 41' 38.9237" E
EX1-78	25° 22' 27.3029" S	28° 42' 04.1672" E
EX2-1	25° 25' 23.9742" S	28° 41' 27.7959" E
EX2-2	25° 25' 03.2345" S	28° 41' 20.7867" E
EX2-3	25° 24' 40.7734" S	28° 41' 40.9690" E
EX2-4	25° 24' 41.1194" S	28° 41' 44.2012" E
EX2-5	25° 24' 41.5610" S	28° 41' 48.4580" E
EX2-6	25° 24' 41.4400" S	28° 41' 53.6201" E
EX2-7	25° 24' 40.9899" S	28° 42' 02.0201" E
EX2-8	25° 24' 41.2998" S	28° 42' 05.5001" E
EX2-9	25° 24' 40.8134" S	28° 42' 09.5188" E
EX2-10	25° 24' 40.6140" S	28° 42' 14.4302" E
EX2-11	25° 24' 39.4693" S	28° 42' 16.2829" E

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 38 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No.

M B Straughan
G.Pr. LSO907D

09 October 2025
date

For applicant

Owain Jackson
name

signature

09 October 2025
date

signature

date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	**Dwg:** reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

friedlaender, burger & volkmann

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Point	Latitude	Longitude
EX2-12	25° 24' 38.1800" S	28° 42' 16.5501" E
EX2-13	25° 24' 37.2244" S	28° 42' 17.4194" E
EX2-14	25° 24' 37.3270" S	28° 42' 21.9235" E
EX2-15	25° 24' 36.1638" S	28° 42' 25.4314" E
EX2-16	25° 24' 33.3999" S	28° 42' 27.8200" E
EX2-17	25° 24' 32.4999" S	28° 42' 29.3900" E
EX2-18	25° 24' 34.6753" S	28° 42' 34.2073" E
EX2-19	25° 24' 38.2373" S	28° 42' 40.2808" E
EX2-20	25° 24' 38.0499" S	28° 42' 42.4900" E
EX2-21	25° 24' 41.8399" S	28° 42' 44.4500" E
EX2-22	25° 24' 49.8600" S	28° 42' 48.0299" E
EX2-23	25° 24' 54.6696" S	28° 42' 53.1014" E
EX2-24	25° 25' 08.9201" S	28° 42' 58.6400" E
EX2-25	25° 25' 18.6699" S	28° 43' 06.2599" E
EX2-26	25° 25' 22.5721" S	28° 43' 06.6270" E
EX2-27	25° 25' 26.4945" S	28° 43' 07.3003" E
EX2-28	25° 25' 42.6065" S	28° 43' 08.3701" E
EX2-29	25° 25' 42.0672" S	28° 43' 00.6408" E
EX2-30	25° 25' 35.9265" S	28° 43' 00.1030" E
EX2-31	25° 25' 36.7889" S	28° 42' 48.1526" E
EX2-32	25° 25' 37.3853" S	28° 42' 48.0435" E
EX2-33	25° 25' 38.2435" S	28° 42' 48.1182" E
EX2-34	25° 25' 38.2486" S	28° 42' 48.1017" E
EX2-35	25° 25' 40.5611" S	28° 42' 48.3050" E
EX2-36	25° 25' 40.5170" S	28° 42' 50.0936" E
EX2-37	25° 25' 41.1472" S	28° 42' 50.8657" E
EX2-38	25° 25' 42.0856" S	28° 42' 50.9478" E
EX2-39	25° 25' 42.7678" S	28° 42' 51.0064" E
EX2-40	25° 25' 42.6285" S	28° 42' 56.6632" E
EX2-41	25° 25' 42.8708" S	28° 43' 04.8021" E
EX2-42	25° 25' 42.8013" S	28° 43' 05.7316" E
EX2-43	25° 25' 44.1380" S	28° 43' 05.8498" E
EX2-44	25° 25' 49.9347" S	28° 43' 06.3576" E
EX2-45	25° 25' 50.5529" S	28° 43' 05.7771" E
EX2-46	25° 25' 51.0109" S	28° 43' 05.8172" E
EX2-47	25° 25' 51.5378" S	28° 43' 06.4977" E
EX2-48	25° 26' 02.7425" S	28° 43' 07.4771" E
EX2-49	25° 26' 05.6579" S	28° 43' 07.7341" E
EX2-50	25° 26' 06.7920" S	28° 43' 07.8317" E
EX2-51	25° 26' 06.4424" S	28° 43' 08.1603" E
EX2-52	25° 26' 06.0305" S	28° 43' 13.8619" E
EX2-53	25° 26' 06.6231" S	28° 43' 14.6719" E
EX2-54	25° 26' 21.1763" S	28° 43' 16.8534" E
EX2-55	25° 26' 23.1026" S	28° 43' 17.1421" E
EX2-56	25° 26' 22.5296" S	28° 43' 16.3340" E
EX2-57	25° 26' 24.1164" S	28° 43' 00.4141" E
EX2-58	25° 26' 24.0977" S	28° 42' 59.5574" E
EX2-59	25° 26' 23.8745" S	28° 42' 58.7366" E

Point	Latitude	Longitude
EX2-60	25° 26' 23.4630" S	28° 42' 58.0095" E
EX2-61	25° 26' 22.8915" S	28° 42' 57.4279" E
EX2-62	25° 26' 22.2015" S	28° 42' 57.0326" E
EX2-63	25° 26' 21.4411" S	28° 42' 56.8518" E
EX2-64	25° 26' 18.6855" S	28° 42' 56.6107" E
EX2-65	25° 26' 19.0615" S	28° 42' 51.4018" E
EX2-66	25° 26' 34.2493" S	28° 42' 36.0076" E
EX2-67	25° 26' 20.3302" S	28° 42' 19.6412" E
EX2-68	25° 26' 20.3153" S	28° 42' 19.6522" E
EX2-69	25° 26' 19.7298" S	28° 42' 18.6974" E
EX2-70	25° 26' 18.7298" S	28° 42' 17.0666" E
EX2-71	25° 26' 18.2752" S	28° 42' 16.3251" E
EX2-72	25° 26' 17.8205" S	28° 42' 15.5836" E
EX2-73	25° 26' 17.3658" S	28° 42' 14.8421" E
EX2-74	25° 26' 16.9112" S	28° 42' 14.1007" E
EX2-75	25° 26' 16.8384" S	28° 42' 13.9820" E
EX2-76	25° 26' 16.3838" S	28° 42' 13.2406" E
EX2-77	25° 26' 15.9291" S	28° 42' 12.4991" E
EX2-78	25° 26' 15.4744" S	28° 42' 11.7576" E
EX2-79	25° 26' 14.9305" S	28° 42' 10.8707" E
EX2-80	25° 26' 14.4537" S	28° 42' 10.0930" E
EX2-81	25° 26' 14.2991" S	28° 42' 09.8409" E
EX2-82	25° 26' 14.1265" S	28° 42' 09.4358" E
EX2-83	25° 26' 13.7816" S	28° 42' 08.6257" E
EX2-84	25° 26' 13.4918" S	28° 42' 07.9453" E
EX2-85	25° 26' 13.4366" S	28° 42' 07.8157" E
EX2-86	25° 26' 13.0916" S	28° 42' 07.0056" E
EX2-87	25° 26' 12.7466" S	28° 42' 06.1956" E
EX2-88	25° 26' 12.4016" S	28° 42' 05.3855" E
EX2-89	25° 26' 12.0566" S	28° 42' 04.5756" E
EX2-90	25° 26' 11.7117" S	28° 42' 03.7655" E
EX2-91	25° 26' 11.3667" S	28° 42' 02.9555" E
EX2-92	25° 26' 11.0217" S	28° 42' 02.1455" E
EX2-93	25° 26' 10.6767" S	28° 42' 01.3354" E
EX2-94	25° 26' 10.3248" S	28° 42' 00.5092" E
EX2-95	25° 26' 10.1592" S	28° 42' 00.1203" E
EX2-96	25° 26' 09.6817" S	28° 41' 58.9992" E
EX2-97	25° 26' 09.4707" S	28° 41' 58.5039" E
EX2-98	25° 26' 08.6303" S	28° 41' 56.5309" E
EX2-99	25° 26' 08.1774" S	28° 41' 55.4674" E
EX2-100	25° 26' 07.8738" S	28° 41' 54.7545" E
EX2-101	25° 26' 07.8186" S	28° 41' 54.6249" E
EX2-102	25° 26' 07.5150" S	28° 41' 53.9121" E
EX2-103	25° 26' 07.2113" S	28° 41' 53.1993" E
EX2-104	25° 26' 06.9076" S	28° 41' 52.4866" E
EX2-105	25° 26' 06.6039" S	28° 41' 51.7738" E
EX2-106	25° 26' 06.3002" S	28° 41' 51.0610" E
EX2-107	25° 26' 06.0602" S	28° 41' 50.4976" E

Point	Latitude	Longitude
EX2-108	25° 26' 05.1644" S	28° 41' 50.1795" E
EX2-109	25° 26' 04.4839" S	28° 41' 49.9379" E
EX2-110	25° 26' 03.8035" S	28° 41' 49.6963" E
EX2-111	25° 26' 03.1231" S	28° 41' 49.4547" E
EX2-112	25° 26' 01.6374" S	28° 41' 48.9273" E
EX2-113	25° 26' 01.6275" S	28° 41' 48.9237" E
EX2-114	25° 26' 01.9290" S	28° 41' 47.9024" E
EX2-115	25° 26' 02.2277" S	28° 41' 47.4626" E
EX2-116	25° 26' 02.5316" S	28° 41' 46.4208" E
EX2-117	25° 26' 02.5247" S	28° 41' 45.8693" E
EX2-118	25° 26' 02.8083" S	28° 41' 44.9038" E
EX2-119	25° 26' 04.2283" S	28° 41' 40.0425" E
EX2-120	25° 26' 04.5856" S	28° 41' 38.7586" E
EX2-121	25° 26' 05.0927" S	28° 41' 36.0824" E
EX2-122	25° 26' 05.3449" S	28° 41' 33.3402" E
EX2-123	25° 26' 05.3363" S	28° 41' 30.7037" E
EX2-124	25° 26' 05.0823" S	28° 41' 27.9808" E
EX2-125	25° 26' 04.5480" S	28° 41' 25.2608" E
EX2-126	25° 26' 03.7891" S	28° 41' 22.7363" E
EX2-127	25° 26' 02.7399" S	28° 41' 20.2108" E
EX2-128	25° 26' 01.5237" S	28° 41' 17.9180" E
EX2-129	25° 26' 00.0467" S	28° 41' 15.7088" E
EX2-130	25° 25' 58.4223" S	28° 41' 13.7443" E
EX2-131	25° 25' 47.0709" S	28° 41' 02.5931" E
EX2-132	25° 25' 34.3952" S	28° 41' 16.4304" E
EX2-133	25° 25' 25.0506" S	28° 41' 26.6722" E
EX3-1	25° 23' 38.0170" S	28° 42' 50.3286" E
EX3-2	25° 23' 37.7126" S	28° 42' 47.9436" E
EX3-3	25° 23' 37.0550" S	28° 42' 47.1402" E
EX3-4	25° 23' 36.9392" S	28° 42' 46.1064" E
EX3-5	25° 23' 36.8169" S	28° 42' 45.0144" E
EX3-6	25° 23' 36.7229" S	28° 42' 44.1755" E
EX3-7	25° 23' 36.6617" S	28° 42' 43.8239" E
EX3-8	25° 23' 36.2441" S	28° 42' 41.4243" E
EX3-9	25° 23' 35.1689" S	28° 42' 41.6166" E
EX3-10	25° 23' 34.0462" S	28° 42' 41.8174" E
EX3-11	25° 23' 32.9678" S	28° 42' 42.0103" E
EX3-12	25° 23' 32.2362" S	28° 42' 37.2063" E
EX3-13	25° 23' 31.6496" S	28° 42' 32.0522" E
EX3-14	25° 23' 31.4369" S	28° 42' 30.1827" E
EX3-15	25° 23' 31.3225" S	28° 42' 29.1775" E
EX3-16	25° 23' 31.2034" S	28° 42' 28.1316" E
EX3-17	25° 23' 31.1061" S	28° 42' 27.2764" E
EX3-18	25° 23' 30.9927" S	28° 42' 26.2804" E
EX3-19	25° 23' 30.8603" S	28° 42' 25.1170" E
EX3-20	25° 23' 30.7256" S	28° 42' 23.9334" E
EX3-21	25° 23' 30.5941" S	28° 42' 22.7778" E
EX3-22	25° 23' 30.5534" S	28° 42' 22.4207" E

Point	Latitude	Longitude
EX3-23	25° 23' 30.3181" S	28° 42' 20.3533" E
EX3-24	25° 23' 30.2770" S	28° 42' 19.9921" E
EX3-25	25° 23' 28.9107" S	28° 42' 16.6529" E
EX3-26	25° 23' 28.4943" S	28° 42' 15.6351" E
EX3-27	25° 23' 27.7906" S	28° 42' 13.9153" E
EX3-28	25° 23' 26.8939" S	28° 42' 11.7237" E
EX3-29	25° 23' 26.2233" S	28° 42' 10.0847" E
EX3-30	25° 23' 25.7261" S	28° 42' 08.8695" E
EX3-31	25° 23' 25.5900" S	28° 42' 08.5370" E
EX3-32	25° 23' 24.5696" S	28° 42' 06.0432" E
EX3-33	25° 23' 24.4335" S	28° 42' 05.7107" E
EX3-34	25° 23' 22.5422" S	28° 42' 01.0886" E
EX3-35	25° 23' 21.5109" S	28° 42' 01.2552" E
EX3-36	25° 23' 20.4641" S	28° 42' 01.4243" E
EX3-37	25° 23' 19.8157" S	28° 42' 01.5290" E
EX3-38	25° 23' 19.1825" S	28° 42' 01.6313" E
EX3-39	25° 23' 18.3605" S	28° 42' 01.7641" E
EX3-40	25° 23' 17.9729" S	28° 42' 01.8267" E
EX3-41	25° 23' 17.5916" S	28° 42' 01.8883" E
EX3-42	25° 23' 17.3406" S	28° 42' 01.9838" E
EX3-43	25° 23' 16.7279" S	28° 42' 02.2375" E
EX3-44	25° 23' 16.1152" S	28° 42' 02.4853" E
EX3-45	25° 23' 15.5026" S	28° 42' 02.7330" E
EX3-46	25° 23' 14.3723" S	28° 42' 03.1901" E
EX3-47	25° 23' 13.7596" S	28° 42' 03.4378" E
EX3-48	25° 23' 13.1470" S	28° 42' 03.6855" E
EX3-49	25° 23' 12.5369" S	28° 42' 03.9322" E
EX3-50	25° 23' 11.9244" S	28° 42' 04.1799" E
EX3-51	25° 23' 11.1944" S	28° 42' 04.4751" E
EX3-52	25° 23' 10.4344" S	28° 42' 04.7824" E
EX3-53	25° 23' 09.5337" S	28° 42' 05.1466" E
EX3-54	25° 23' 09.2286" S	28° 42' 05.2699" E
EX3-55	25° 23' 09.0806" S	28° 42' 05.3298" E
EX3-56	25° 23' 08.4792" S	28° 42' 05.6544" E
EX3-57	25° 23' 07.7975" S	28° 42' 06.0224" E
EX3-58	25° 23' 06.6654" S	28° 42' 06.6335" E
EX3-59	25° 23' 06.5779" S	28° 42' 06.6808" E
EX3-60	25° 23' 05.7562" S	28° 42' 07.1243" E
EX3-61	25° 23' 05.0379" S	28° 42' 07.5120" E
EX3-62	25° 23' 04.7435" S	28° 42' 07.6709" E
EX3-63	25° 23' 03.5313" S	28° 42' 08.3253" E
EX3-64	25° 23' 02.6054" S	28° 42' 08.8251" E
EX3-65	25° 23' 02.7885" S	28° 42' 09.6299" E
EX3-66	25° 23' 02.9632" S	28° 42' 10.3979" E
EX3-67	25° 23' 03.1322" S	28° 42' 11.1409" E
EX3-68	25° 23' 03.3395" S	28° 42' 12.0524" E
EX3-69	25° 23' 03.5740" S	28° 42' 13.0829" E
EX3-70	25° 23' 03.6218" S	28° 42' 13.2934" E

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**,

excluding the figures **EX1 to EX78,**

represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 39 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. — M B Straughan G.Pr. LSO907D — 09 October 2025 date

For applicant — Owain Jackson name

signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	Dwg: reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

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Point	Latitude	Longitude
EX3-71	25° 23' 03.2679" S	28° 42' 13.4148" E
EX3-72	25° 23' 02.1240" S	28° 42' 13.8071" E
EX3-73	25° 23' 01.1019" S	28° 42' 14.1576" E
EX3-74	25° 23' 00.3177" S	28° 42' 14.4265" E
EX3-75	25° 22' 59.4959" S	28° 42' 14.7083" E
EX3-76	25° 22' 58.2520" S	28° 42' 15.1349" E
EX3-77	25° 22' 57.8712" S	28° 42' 15.2655" E
EX3-78	25° 22' 56.8372" S	28° 42' 15.6201" E
EX3-79	25° 22' 55.9079" S	28° 42' 15.9387" E
EX3-80	25° 22' 55.5265" S	28° 42' 16.0695" E
EX3-81	25° 22' 54.6496" S	28° 42' 16.3702" E
EX3-82	25° 22' 54.0796" S	28° 42' 16.5657" E
EX3-83	25° 22' 54.1205" S	28° 42' 17.3530" E
EX3-84	25° 22' 54.1632" S	28° 42' 18.1747" E
EX3-85	25° 22' 54.2022" S	28° 42' 18.9249" E
EX3-86	25° 22' 54.2356" S	28° 42' 19.5680" E
EX3-87	25° 22' 54.2672" S	28° 42' 20.1753" E
EX3-88	25° 22' 54.2987" S	28° 42' 20.7826" E
EX3-89	25° 22' 54.3303" S	28° 42' 21.3900" E
EX3-90	25° 22' 54.3619" S	28° 42' 21.9973" E
EX3-91	25° 22' 54.3897" S	28° 42' 22.5332" E
EX3-92	25° 22' 54.4175" S	28° 42' 23.0691" E
EX3-93	25° 22' 54.4454" S	28° 42' 23.6050" E
EX3-94	25° 22' 54.4732" S	28° 42' 24.1409" E
EX3-95	25° 22' 54.4984" S	28° 42' 24.6256" E
EX3-96	25° 22' 54.5233" S	28° 42' 25.1055" E
EX3-97	25° 22' 54.5540" S	28° 42' 25.6950" E
EX3-98	25° 22' 54.5846" S	28° 42' 26.2840" E
EX3-99	25° 22' 54.6144" S	28° 42' 26.8583" E
EX3-100	25° 22' 54.6443" S	28° 42' 27.4332" E
EX3-101	25° 22' 54.6741" S	28° 42' 28.0082" E
EX3-102	25° 22' 54.7040" S	28° 42' 28.5824" E
EX3-103	25° 22' 54.7318" S	28° 42' 29.1182" E
EX3-104	25° 22' 54.7596" S	28° 42' 29.6539" E
EX3-105	25° 22' 54.7856" S	28° 42' 30.1539" E
EX3-106	25° 22' 54.8079" S	28° 42' 30.5824" E
EX3-107	25° 22' 54.8484" S	28° 42' 31.3632" E
EX3-108	25° 22' 54.8911" S	28° 42' 32.1847" E
EX3-109	25° 22' 54.9307" S	28° 42' 32.9472" E
EX3-110	25° 22' 54.9708" S	28° 42' 33.7204" E
EX3-111	25° 22' 55.0097" S	28° 42' 34.4688" E
EX3-112	25° 22' 55.4330" S	28° 42' 42.6210" E
EX3-113	25° 22' 55.4588" S	28° 42' 43.1179" E
EX3-114	25° 22' 55.6279" S	28° 42' 46.3751" E
EX3-115	25° 23' 03.6003" S	28° 42' 53.1938" E
EX3-116	25° 23' 04.1482" S	28° 42' 53.7886" E
EX3-117	25° 23' 04.3249" S	28° 42' 53.9804" E
EX3-118	25° 23' 04.4978" S	28° 42' 56.7291" E
EX3-119	25° 23' 08.6807" S	28° 42' 56.9743" E
EX3-120	25° 23' 09.0062" S	28° 42' 56.9934" E
EX3-121	25° 23' 09.4294" S	28° 42' 57.0182" E
EX3-122	25° 23' 09.4302" S	28° 42' 57.0220" E
EX3-123	25° 23' 10.0476" S	28° 42' 57.0323" E
EX3-124	25° 23' 10.0311" S	28° 42' 58.2082" E
EX3-125	25° 23' 10.6414" S	28° 42' 58.2184" E
EX3-126	25° 23' 11.2591" S	28° 42' 58.2288" E
EX3-127	25° 23' 11.8780" S	28° 42' 58.2392" E
EX3-128	25° 23' 12.4975" S	28° 42' 58.2496" E
EX3-129	25° 23' 12.5006" S	28° 42' 58.2496" E
EX3-130	25° 23' 12.4942" S	28° 42' 58.7117" E
EX3-131	25° 23' 12.4840" S	28° 42' 59.4505" E
EX3-132	25° 23' 12.4738" S	28° 43' 00.1824" E
EX3-133	25° 23' 12.4637" S	28° 43' 00.9141" E
EX3-134	25° 23' 12.4535" S	28° 43' 01.6496" E
EX3-135	25° 23' 12.4410" S	28° 43' 02.5477" E
EX3-136	25° 23' 13.4021" S	28° 43' 03.6125" E
EX3-137	25° 23' 14.3522" S	28° 43' 03.6070" E
EX3-138	25° 23' 15.0015" S	28° 43' 03.6023" E
EX3-139	25° 23' 15.1018" S	28° 43' 03.6016" E
EX3-140	25° 23' 15.4282" S	28° 43' 03.3844" E
EX3-141	25° 23' 15.7795" S	28° 43' 03.8546" E
EX3-142	25° 23' 16.1685" S	28° 43' 04.4305" E
EX3-143	25° 23' 16.5557" S	28° 43' 05.0038" E
EX3-144	25° 23' 16.9423" S	28° 43' 05.5769" E
EX3-145	25° 23' 17.3296" S	28° 43' 06.1506" E
EX3-146	25° 23' 17.7197" S	28° 43' 06.7282" E
EX3-147	25° 23' 18.1063" S	28° 43' 07.3009" E
EX3-148	25° 23' 18.6012" S	28° 43' 08.0307" E
EX3-149	25° 23' 19.3031" S	28° 43' 08.4212" E
EX3-150	25° 23' 19.8829" S	28° 43' 08.7438" E
EX3-151	25° 23' 20.4625" S	28° 43' 09.0662" E
EX3-152	25° 23' 21.3444" S	28° 43' 09.5569" E
EX3-153	25° 23' 22.1594" S	28° 43' 09.6556" E
EX3-154	25° 23' 22.1668" S	28° 43' 09.6566" E
EX3-155	25° 23' 22.4481" S	28° 43' 10.0733" E
EX3-156	25° 23' 22.7278" S	28° 43' 10.4879" E
EX3-157	25° 23' 23.1360" S	28° 43' 11.0923" E
EX3-158	25° 23' 24.1627" S	28° 43' 11.0542" E
EX3-159	25° 23' 24.9904" S	28° 43' 10.3661" E
EX3-160	25° 23' 25.2033" S	28° 43' 10.6803" E
EX3-161	25° 23' 25.5544" S	28° 43' 11.1984" E
EX3-162	25° 23' 25.9038" S	28° 43' 11.7139" E
EX3-163	25° 23' 26.2547" S	28° 43' 12.2318" E
EX3-164	25° 23' 26.7435" S	28° 43' 12.9537" E
EX3-165	25° 23' 26.8394" S	28° 43' 13.5121" E
EX3-166	25° 23' 26.9610" S	28° 43' 14.2201" E
EX3-167	25° 23' 27.9988" S	28° 43' 14.0042" E
EX3-168	25° 23' 28.1496" S	28° 43' 14.8833" E
EX3-169	25° 23' 28.5294" S	28° 43' 15.1681" E
EX3-170	25° 23' 29.6628" S	28° 43' 14.9323" E
EX3-171	25° 23' 29.8466" S	28° 43' 16.0028" E
EX3-172	25° 23' 30.5159" S	28° 43' 15.8574" E
EX3-173	25° 23' 31.1537" S	28° 43' 15.7227" E
EX3-174	25° 23' 31.7983" S	28° 43' 15.5865" E
EX3-175	25° 23' 32.4337" S	28° 43' 15.4523" E
EX3-176	25° 23' 33.0732" S	28° 43' 15.3172" E
EX3-177	25° 23' 33.7116" S	28° 43' 15.1823" E
EX3-178	25° 23' 34.3562" S	28° 43' 15.0461" E
EX3-179	25° 23' 34.9925" S	28° 43' 14.9117" E
EX3-180	25° 23' 35.6381" S	28° 43' 14.7753" E
EX3-181	25° 23' 36.2755" S	28° 43' 14.6406" E
EX3-182	25° 23' 36.9210" S	28° 43' 14.5042" E
EX3-183	25° 23' 37.5561" S	28° 43' 14.3700" E
EX3-184	25° 23' 38.4584" S	28° 43' 14.1794" E
EX3-185	25° 23' 38.8105" S	28° 43' 14.1261" E
EX3-186	25° 23' 39.6527" S	28° 43' 13.9486" E
EX3-187	25° 23' 39.6767" S	28° 43' 13.9435" E
EX3-188	25° 23' 40.3071" S	28° 43' 13.8106" E
EX3-189	25° 23' 41.2586" S	28° 43' 13.6101" E
EX3-190	25° 23' 41.4908" S	28° 43' 13.5612" E
EX3-191	25° 23' 42.6522" S	28° 43' 13.3940" E
EX3-192	25° 23' 43.3003" S	28° 43' 13.3008" E
EX3-193	25° 23' 43.9419" S	28° 43' 13.2084" E
EX3-194	25° 23' 44.5883" S	28° 43' 13.1154" E
EX3-195	25° 23' 45.2368" S	28° 43' 13.0221" E
EX3-196	25° 23' 45.8849" S	28° 43' 12.9288" E
EX3-197	25° 23' 46.5305" S	28° 43' 12.8359" E
EX3-198	25° 23' 46.6093" S	28° 43' 12.8245" E
EX3-199	25° 23' 46.6410" S	28° 43' 12.8220" E
EX3-200	25° 23' 47.1282" S	28° 43' 12.8157" E
EX3-201	25° 23' 47.7795" S	28° 43' 12.8073" E
EX3-202	25° 23' 48.4317" S	28° 43' 12.7989" E
EX3-203	25° 23' 49.0780" S	28° 43' 12.7906" E
EX3-204	25° 23' 49.7242" S	28° 43' 12.7823" E
EX3-205	25° 23' 50.3751" S	28° 43' 12.7739" E
EX3-206	25° 23' 51.0247" S	28° 43' 12.7655" E
EX3-207	25° 23' 51.6709" S	28° 43' 12.7572" E
EX3-208	25° 23' 51.7561" S	28° 43' 12.7568" E
EX3-209	25° 23' 52.2406" S	28° 43' 12.8118" E
EX3-210	25° 23' 52.8906" S	28° 43' 12.8856" E
EX3-211	25° 23' 53.5429" S	28° 43' 12.9596" E
EX3-212	25° 23' 54.1929" S	28° 43' 13.0334" E
EX3-213	25° 23' 54.8422" S	28° 43' 13.1071" E
EX3-214	25° 23' 55.4926" S	28° 43' 13.1809" E
EX3-215	25° 23' 56.1328" S	28° 43' 13.2535" E
EX3-216	25° 23' 56.6372" S	28° 43' 13.3108" E
EX3-217	25° 23' 56.7487" S	28° 43' 13.3311" E
EX3-218	25° 23' 57.3915" S	28° 43' 13.4485" E
EX3-219	25° 23' 58.0327" S	28° 43' 13.5656" E
EX3-220	25° 23' 58.6762" S	28° 43' 13.6831" E
EX3-221	25° 23' 59.3204" S	28° 43' 13.8008" E
EX3-222	25° 23' 59.9666" S	28° 43' 13.9187" E
EX3-223	25° 24' 02.7259" S	28° 43' 14.4226" E
EX3-224	25° 24' 02.7369" S	28° 43' 10.5932" E
EX3-225	25° 24' 02.7385" S	28° 43' 10.0015" E
EX3-226	25° 24' 02.7403" S	28° 43' 09.4098" E
EX3-227	25° 24' 02.7419" S	28° 43' 08.8112" E
EX3-228	25° 24' 02.7436" S	28° 43' 08.2189" E
EX3-229	25° 24' 02.7453" S	28° 43' 07.6279" E
EX3-230	25° 24' 02.7470" S	28° 43' 07.0364" E
EX3-231	25° 24' 02.7487" S	28° 43' 06.4408" E
EX3-232	25° 24' 02.7504" S	28° 43' 05.8453" E
EX3-233	25° 24' 02.7521" S	28° 43' 05.2504" E
EX3-234	25° 24' 02.7537" S	28° 43' 04.6623" E
EX3-235	25° 24' 02.7554" S	28° 43' 04.0676" E
EX3-236	25° 24' 02.7571" S	28° 43' 03.4751" E
EX3-237	25° 24' 02.7588" S	28° 43' 02.8809" E
EX3-238	25° 24' 02.7605" S	28° 43' 02.2922" E
EX3-239	25° 24' 02.7621" S	28° 43' 01.7012" E
EX3-240	25° 24' 02.7638" S	28° 43' 01.1091" E
EX3-241	25° 24' 02.7655" S	28° 43' 00.5139" E
EX3-242	25° 24' 02.7672" S	28° 42' 59.9219" E
EX3-243	25° 24' 02.7688" S	28° 42' 59.3306" E
EX3-244	25° 24' 02.7705" S	28° 42' 58.7392" E
EX3-245	25° 24' 02.7722" S	28° 42' 58.1479" E
EX3-246	25° 24' 02.7739" S	28° 42' 57.5522" E
EX3-247	25° 24' 02.7756" S	28° 42' 56.9573" E
EX3-248	25° 24' 02.7772" S	28° 42' 56.3654" E
EX3-249	25° 24' 02.7789" S	28° 42' 55.7735" E
EX3-250	25° 24' 02.7806" S	28° 42' 55.1825" E
EX3-251	25° 24' 02.7822" S	28° 42' 54.5905" E
EX3-252	25° 24' 02.7839" S	28° 42' 53.9990" E
EX3-253	25° 24' 02.7856" S	28° 42' 53.4078" E
EX3-254	25° 24' 02.7872" S	28° 42' 52.8197" E
EX3-255	25° 24' 02.7889" S	28° 42' 52.2241" E
EX3-256	25° 24' 02.7903" S	28° 42' 51.7176" E
EX3-257	25° 24' 02.3560" S	28° 42' 51.2658" E
EX3-258	25° 24' 01.9761" S	28° 42' 50.8706" E
EX3-259	25° 24' 01.5980" S	28° 42' 50.4772" E
EX3-260	25° 24' 01.2160" S	28° 42' 50.0799" E
EX3-261	25° 24' 00.8372" S	28° 42' 49.6858" E
EX3-262	25° 24' 00.4553" S	28° 42' 49.2885" E

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 40 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. — M B Straughan G.Pr. LS0907D — 09 October 2025 date

For applicant — Owain Jackson name — signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	**Dwg:** reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

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Point	Latitude	Longitude
EX3-263	25° 24' 00.0756" S	28° 42' 48.8935" E
EX3-264	25° 23' 59.6969" S	28° 42' 48.4996" E
EX3-265	25° 23' 59.3197" S	28° 42' 48.1072" E
EX3-266	25° 23' 58.9383" S	28° 42' 47.7104" E
EX3-267	25° 23' 58.4242" S	28° 42' 47.1756" E
EX3-268	25° 23' 58.1019" S	28° 42' 47.1749" E
EX3-269	25° 23' 57.5898" S	28° 42' 47.1739" E
EX3-270	25° 23' 57.0858" S	28° 42' 47.1729" E
EX3-271	25° 23' 56.5859" S	28° 42' 47.1719" E
EX3-272	25° 23' 56.0889" S	28° 42' 47.1710" E
EX3-273	25° 23' 55.5918" S	28° 42' 47.1700" E
EX3-274	25° 23' 55.1042" S	28° 42' 47.1690" E
EX3-275	25° 23' 54.5194" S	28° 42' 47.1679" E
EX3-276	25° 23' 54.1436" S	28° 42' 47.1671" E
EX3-277	25° 23' 47.5494" S	28° 42' 47.1542" E
EX3-278	25° 23' 47.5065" S	28° 42' 51.8579" E
EX3-279	25° 23' 46.3631" S	28° 42' 51.8448" E
EX3-280	25° 23' 46.3732" S	28° 42' 50.6084" E
EX3-281	25° 23' 46.3458" S	28° 42' 50.5846" E
EX3-282	25° 23' 45.7186" S	28° 42' 50.5781" E
EX3-283	25° 23' 45.0670" S	28° 42' 50.5713" E
EX3-284	25° 23' 44.4104" S	28° 42' 50.5644" E
EX3-285	25° 23' 43.7552" S	28° 42' 50.5576" E
EX3-286	25° 23' 42.6664" S	28° 42' 50.5462" E
EX3-287	25° 23' 41.5186" S	28° 42' 51.0859" E
EX3-288	25° 23' 40.5062" S	28° 42' 50.3576" E
EX3-289	25° 23' 39.8584" S	28° 42' 50.3501" E
EX3-290	25° 23' 39.0179" S	28° 42' 50.3403" E
EX3-291	25° 23' 38.8123" S	28° 42' 50.3379" E
EX4-1	25° 24' 21.5025" S	28° 43' 18.4866" E
EX4-2	25° 24' 21.4352" S	28° 43' 18.3175" E
EX4-3	25° 24' 21.2413" S	28° 43' 09.3621" E
EX4-4	25° 24' 21.5332" S	28° 43' 09.0677" E
EX4-5	25° 24' 21.4807" S	28° 43' 06.2713" E
EX4-6	25° 24' 22.0345" S	28° 43' 06.3004" E
EX4-7	25° 24' 24.0666" S	28° 43' 03.7779" E
EX4-8	25° 24' 25.6349" S	28° 43' 03.8229" E
EX4-9	25° 24' 25.8127" S	28° 43' 00.3085" E
EX4-10	25° 24' 24.7282" S	28° 43' 00.2649" E
EX4-11	25° 24' 24.9727" S	28° 42' 55.4366" E
EX4-12	25° 24' 26.4557" S	28° 42' 55.5215" E
EX4-13	25° 24' 27.0298" S	28° 42' 48.1374" E
EX4-14	25° 24' 28.7821" S	28° 42' 48.1941" E
EX4-15	25° 24' 28.7692" S	28° 42' 43.4737" E
EX4-16	25° 24' 29.0329" S	28° 42' 39.9212" E
EX4-17	25° 24' 15.3042" S	28° 42' 37.3343" E
EX4-18	25° 24' 13.4931" S	28° 42' 36.8517" E
EX4-19	25° 24' 11.3319" S	28° 42' 36.5861" E

Point	Latitude	Longitude
EX4-20	25° 24' 09.9630" S	28° 42' 36.3257" E
EX4-21	25° 24' 07.3004" S	28° 42' 36.2851" E
EX4-22	25° 24' 06.5777" S	28° 42' 36.2741" E
EX4-23	25° 24' 06.5431" S	28° 42' 47.1195" E
EX4-24	25° 24' 06.5416" S	28° 42' 47.6562" E
EX4-25	25° 24' 06.4535" S	28° 43' 15.1904" E
EX4-26	25° 24' 06.4311" S	28° 43' 22.0444" E
EX4-27	25° 24' 06.4009" S	28° 43' 23.5965" E
EX4-28	25° 24' 06.3862" S	28° 43' 29.0759" E
EX4-29	25° 24' 06.3635" S	28° 43' 34.5003" E
EX4-30	25° 24' 06.3296" S	28° 43' 39.8645" E
EX4-31	25° 24' 06.2634" S	28° 44' 01.9726" E
EX4-32	25° 24' 16.4138" S	28° 44' 02.3306" E
EX4-33	25° 24' 16.4458" S	28° 44' 00.4696" E
EX4-34	25° 24' 16.6112" S	28° 44' 00.2993" E
EX4-35	25° 24' 18.0799" S	28° 44' 00.3751" E
EX4-36	25° 24' 18.5905" S	28° 43' 28.8317" E
EX4-37	25° 24' 21.5841" S	28° 43' 29.3611" E
EX4-38	25° 24' 22.1343" S	28° 43' 20.0759" E
EX4-39	25° 24' 22.0425" S	28° 43' 19.8450" E
EX5-1	25° 21' 50.3146" S	28° 43' 24.9533" E
EX5-2	25° 21' 50.2021" S	28° 43' 24.3216" E
EX5-3	25° 21' 50.0897" S	28° 43' 23.6898" E
EX5-4	25° 21' 49.9773" S	28° 43' 23.0577" E
EX5-5	25° 21' 49.8651" S	28° 43' 22.4259" E
EX5-6	25° 21' 49.7324" S	28° 43' 21.6794" E
EX5-7	25° 21' 49.6325" S	28° 43' 21.1178" E
EX5-8	25° 21' 49.5281" S	28° 43' 20.5307" E
EX5-9	25° 21' 49.4157" S	28° 43' 19.8986" E
EX5-10	25° 21' 49.3034" S	28° 43' 19.2669" E
EX5-11	25° 21' 49.1911" S	28° 43' 18.6351" E
EX5-12	25° 21' 49.0787" S	28° 43' 18.0034" E
EX5-13	25° 21' 48.9664" S	28° 43' 17.3713" E
EX5-14	25° 21' 48.0862" S	28° 43' 17.6358" E
EX5-15	25° 21' 46.2854" S	28° 43' 11.7227" E
EX5-16	25° 21' 47.2096" S	28° 43' 11.3819" E
EX5-17	25° 21' 46.7243" S	28° 43' 09.7885" E
EX5-18	25° 21' 45.9120" S	28° 43' 10.4968" E
EX5-19	25° 21' 45.5599" S	28° 43' 10.8034" E
EX5-20	25° 21' 44.8381" S	28° 43' 11.4324" E
EX5-21	25° 21' 44.3797" S	28° 43' 11.8323" E
EX5-22	25° 21' 43.9212" S	28° 43' 12.2318" E
EX5-23	25° 21' 43.4625" S	28° 43' 12.6316" E
EX5-24	25° 21' 43.0041" S	28° 43' 13.0315" E
EX5-25	25° 21' 42.5453" S	28° 43' 13.4309" E
EX5-26	25° 21' 42.4091" S	28° 43' 13.5500" E
EX5-27	25° 21' 42.0697" S	28° 43' 13.8709" E
EX5-28	25° 21' 41.6260" S	28° 43' 14.2907" E

Point	Latitude	Longitude
EX5-29	25° 21' 41.1825" S	28° 43' 14.7102" E
EX5-30	25° 21' 40.7388" S	28° 43' 15.1301" E
EX5-31	25° 21' 40.2953" S	28° 43' 15.5495" E
EX5-32	25° 21' 39.8516" S	28° 43' 15.9694" E
EX5-33	25° 21' 39.4081" S	28° 43' 16.3889" E
EX5-34	25° 21' 38.9644" S	28° 43' 16.8087" E
EX5-35	25° 21' 38.5209" S	28° 43' 17.2282" E
EX5-36	25° 21' 38.0775" S	28° 43' 17.6480" E
EX5-37	25° 21' 37.6337" S	28° 43' 18.0675" E
EX5-38	25° 21' 37.2049" S	28° 43' 18.4737" E
EX5-39	25° 21' 35.9472" S	28° 43' 19.6629" E
EX5-40	25° 21' 35.3065" S	28° 43' 20.2692" E
EX5-41	25° 21' 31.3178" S	28° 43' 24.0426" E
EX5-42	25° 21' 30.5934" S	28° 43' 24.7278" E
EX5-43	25° 21' 30.1993" S	28° 43' 25.1010" E
EX5-44	25° 21' 30.7250" S	28° 43' 25.7740" E
EX5-45	25° 21' 33.4499" S	28° 43' 41.0984" E
EX5-46	25° 21' 33.6245" S	28° 43' 42.0810" E
EX5-47	25° 21' 34.2242" S	28° 43' 41.9518" E
EX5-48	25° 21' 34.8245" S	28° 43' 41.8224" E
EX5-49	25° 21' 35.4245" S	28° 43' 41.6931" E
EX5-50	25° 21' 36.0248" S	28° 43' 41.5640" E
EX5-51	25° 21' 36.6251" S	28° 43' 41.4346" E
EX5-52	25° 21' 37.2254" S	28° 43' 41.3053" E
EX5-53	25° 21' 37.8254" S	28° 43' 41.1761" E
EX5-54	25° 21' 38.4257" S	28° 43' 41.0467" E
EX5-55	25° 21' 39.0260" S	28° 43' 40.9174" E
EX5-56	25° 21' 39.6260" S	28° 43' 40.7885" E
EX5-57	25° 21' 40.0668" S	28° 43' 40.6937" E
EX5-58	25° 21' 40.8961" S	28° 43' 40.5152" E
EX5-59	25° 21' 42.4885" S	28° 43' 40.1722" E
EX5-60	25° 21' 43.0723" S	28° 43' 40.0464" E
EX5-61	25° 21' 43.6563" S	28° 43' 39.9206" E
EX5-62	25° 21' 44.2404" S	28° 43' 39.7948" E
EX5-63	25° 21' 44.8241" S	28° 43' 39.6691" E
EX5-64	25° 21' 45.0155" S	28° 43' 39.6279" E
EX5-65	25° 21' 45.6258" S	28° 43' 39.4963" E
EX5-66	25° 21' 46.2372" S	28° 43' 39.3647" E
EX5-67	25° 21' 46.8485" S	28° 43' 39.2332" E
EX5-68	25° 21' 47.4599" S	28° 43' 39.1013" E
EX5-69	25° 21' 48.0712" S	28° 43' 38.9697" E
EX5-70	25° 21' 48.6826" S	28° 43' 38.8381" E
EX5-71	25° 21' 49.2939" S	28° 43' 38.7062" E
EX5-72	25° 21' 49.9053" S	28° 43' 38.5747" E
EX5-73	25° 21' 50.5166" S	28° 43' 38.4431" E
EX5-74	25° 21' 51.1280" S	28° 43' 38.3112" E
EX5-75	25° 21' 51.7393" S	28° 43' 38.1796" E
EX5-76	25° 21' 52.6323" S	28° 43' 37.9873" E

Point	Latitude	Longitude
EX5-77	25° 21' 52.4008" S	28° 43' 36.6852" E
EX5-78	25° 21' 52.2849" S	28° 43' 36.0334" E
EX5-79	25° 21' 52.1689" S	28° 43' 35.3813" E
EX5-80	25° 21' 52.0530" S	28° 43' 34.7295" E
EX5-81	25° 21' 51.9371" S	28° 43' 34.0777" E
EX5-82	25° 21' 51.8212" S	28° 43' 33.4260" E
EX5-83	25° 21' 51.7053" S	28° 43' 32.7742" E
EX5-84	25° 21' 51.5893" S	28° 43' 32.1224" E
EX5-85	25° 21' 51.4734" S	28° 43' 31.4703" E
EX5-86	25° 21' 51.3575" S	28° 43' 30.8185" E
EX5-87	25° 21' 51.2419" S	28° 43' 30.1667" E
EX5-88	25° 21' 51.0951" S	28° 43' 29.3419" E
EX5-89	25° 21' 51.0140" S	28° 43' 28.8857" E
EX5-90	25° 21' 50.8942" S	28° 43' 28.2125" E
EX5-91	25° 21' 50.7782" S	28° 43' 27.5607" E
EX5-92	25° 21' 50.6622" S	28° 43' 26.9086" E
EX5-93	25° 21' 50.5462" S	28° 43' 26.2568" E
EX5-94	25° 21' 50.4303" S	28° 43' 25.6051" E
EX6-1	25° 26' 29.7121" S	28° 43' 19.5429" E
EX6-2	25° 26' 29.6174" S	28° 43' 19.5295" E
EX6-3	25° 26' 24.7240" S	28° 43' 18.8353" E
EX6-4	25° 26' 08.7314" S	28° 43' 16.4466" E
EX6-5	25° 26' 04.4295" S	28° 43' 15.9154" E
EX6-6	25° 25' 59.7077" S	28° 43' 15.5727" E
EX6-7	25° 25' 46.1702" S	28° 43' 15.0395" E
EX6-8	25° 25' 43.5664" S	28° 43' 15.3419" E
EX6-9	25° 25' 43.0390" S	28° 43' 15.8738" E
EX6-10	25° 25' 41.9380" S	28° 43' 15.6645" E
EX6-11	25° 25' 41.5947" S	28° 43' 15.2605" E
EX6-12	25° 25' 38.9930" S	28° 43' 14.5816" E
EX6-13	25° 25' 36.5146" S	28° 43' 14.4531" E
EX6-14	25° 25' 10.3018" S	28° 43' 13.3312" E
EX6-15	25° 25' 01.1385" S	28° 43' 13.4336" E
EX6-16	25° 24' 50.4201" S	28° 43' 14.8044" E
EX6-17	25° 24' 23.7137" S	28° 43' 19.9036" E
EX6-18	25° 24' 24.2174" S	28° 43' 22.8232" E
EX6-19	25° 24' 25.8064" S	28° 43' 22.4303" E
EX6-20	25° 24' 26.5194" S	28° 43' 25.8943" E
EX6-21	25° 24' 27.5330" S	28° 43' 27.0806" E
EX6-22	25° 24' 30.6612" S	28° 43' 33.3965" E
EX6-23	25° 24' 31.7201" S	28° 43' 33.1100" E
EX6-24	25° 24' 31.7818" S	28° 43' 33.4119" E
EX6-25	25° 24' 32.5577" S	28° 43' 33.3489" E
EX6-26	25° 24' 33.0509" S	28° 43' 33.3095" E
EX6-27	25° 24' 33.2821" S	28° 43' 38.8117" E
EX6-28	25° 24' 34.4783" S	28° 43' 41.6192" E
EX6-29	25° 24' 38.2381" S	28° 43' 40.3148" E
EX6-30	25° 24' 39.7937" S	28° 43' 39.7753" E

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 41 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No.

M B Straughan
G.Pr. LS0907D

09 October 2025
date

For applicant

Owain Jackson
name

signature

09 October 2025
date

signature

date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation

Dwg: reg 2(2) plan er kruis river oct 2025.dwg

Revision:

Date: 09 October 2025

friedlaender, burger & volkmann

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Point	Latitude	Longitude
EX6-31	25° 24' 42.3813" S	28° 43' 38.8778" E
EX6-32	25° 24' 43.7203" S	28° 43' 38.4136" E
EX6-33	25° 24' 44.2065" S	28° 43' 38.2450" E
EX6-34	25° 24' 45.0761" S	28° 43' 43.3172" E
EX6-35	25° 24' 51.7705" S	28° 43' 42.1250" E
EX6-36	25° 24' 52.9843" S	28° 43' 41.9745" E
EX6-37	25° 25' 00.8237" S	28° 43' 40.8413" E
EX6-38	25° 25' 01.0771" S	28° 43' 40.6253" E
EX6-39	25° 25' 06.5293" S	28° 43' 40.3679" E
EX6-40	25° 25' 06.5757" S	28° 43' 41.5644" E
EX6-41	25° 25' 11.8152" S	28° 43' 41.7398" E
EX6-42	25° 25' 14.6780" S	28° 43' 39.0553" E
EX6-43	25° 25' 18.4146" S	28° 43' 38.7625" E
EX6-44	25° 25' 19.2156" S	28° 43' 38.6998" E
EX6-45	25° 25' 21.4844" S	28° 43' 38.4528" E
EX6-46	25° 25' 22.3381" S	28° 43' 38.4570" E
EX6-47	25° 25' 23.1739" S	28° 43' 38.4608" E
EX6-48	25° 25' 23.9522" S	28° 43' 38.4648" E
EX6-49	25° 25' 25.5212" S	28° 43' 38.8560" E
EX6-50	25° 25' 26.4007" S	28° 43' 38.9152" E
EX6-51	25° 25' 27.4966" S	28° 43' 38.9900" E
EX6-52	25° 25' 29.3537" S	28° 43' 39.1136" E
EX6-53	25° 25' 32.5347" S	28° 43' 39.0456" E
EX6-54	25° 25' 32.5614" S	28° 43' 38.0436" E
EX6-55	25° 25' 33.5964" S	28° 43' 38.0230" E
EX6-56	25° 25' 34.5719" S	28° 43' 38.0040" E
EX6-57	25° 25' 35.7671" S	28° 43' 37.9802" E
EX6-58	25° 25' 36.6669" S	28° 43' 37.9620" E
EX6-59	25° 25' 38.1049" S	28° 43' 37.9334" E
EX6-60	25° 25' 38.3642" S	28° 43' 37.9561" E
EX6-61	25° 25' 39.4024" S	28° 43' 38.0439" E
EX6-62	25° 25' 40.1795" S	28° 43' 38.1098" E
EX6-63	25° 25' 41.0723" S	28° 43' 38.1844" E
EX6-64	25° 25' 42.6568" S	28° 43' 38.3204" E
EX6-65	25° 25' 50.7255" S	28° 43' 40.6309" E
EX6-66	25° 25' 51.3431" S	28° 43' 40.7386" E
EX6-67	25° 25' 52.1402" S	28° 43' 40.8775" E
EX6-68	25° 25' 53.3852" S	28° 43' 41.0951" E
EX6-69	25° 25' 53.6420" S	28° 43' 41.1407" E
EX6-70	25° 25' 54.4316" S	28° 43' 41.2785" E
EX6-71	25° 25' 55.2342" S	28° 43' 41.4181" E
EX6-72	25° 25' 56.0615" S	28° 43' 41.5619" E
EX6-73	25° 25' 56.9230" S	28° 43' 41.7124" E
EX6-74	25° 25' 57.8553" S	28° 43' 41.8763" E
EX6-75	25° 25' 58.8724" S	28° 43' 42.0537" E
EX6-76	25° 25' 59.6152" S	28° 43' 42.1845" E
EX6-77	25° 26' 00.5670" S	28° 43' 42.3498" E
EX6-78	25° 26' 01.3674" S	28° 43' 42.4897" E

Point	Latitude	Longitude
EX6-79	25° 26' 01.4027" S	28° 43' 41.3781" E
EX6-80	25° 26' 01.4113" S	28° 43' 41.0914" E
EX6-81	25° 26' 01.4046" S	28° 43' 39.9720" E
EX6-82	25° 26' 02.2055" S	28° 43' 40.0729" E
EX6-83	25° 26' 03.1514" S	28° 43' 40.1928" E
EX6-84	25° 26' 04.0092" S	28° 43' 40.3008" E
EX6-85	25° 26' 04.8985" S	28° 43' 40.4122" E
EX6-86	25° 26' 05.8688" S	28° 43' 40.5349" E
EX6-87	25° 26' 12.7318" S	28° 43' 39.4949" E
EX6-88	25° 26' 12.8179" S	28° 43' 39.4847" E
EX6-89	25° 26' 11.9142" S	28° 43' 40.5514" E
EX6-90	25° 26' 11.8956" S	28° 43' 41.7572" E
EX6-91	25° 26' 11.0690" S	28° 43' 41.6130" E
EX6-92	25° 26' 11.0787" S	28° 43' 42.8330" E
EX6-93	25° 26' 10.0332" S	28° 43' 42.7713" E
EX6-94	25° 26' 09.8780" S	28° 43' 42.9545" E
EX6-95	25° 26' 08.9280" S	28° 43' 44.0759" E
EX6-96	25° 26' 08.7997" S	28° 43' 44.2274" E
EX6-97	25° 26' 08.6693" S	28° 43' 44.8791" E
EX6-98	25° 26' 08.3087" S	28° 43' 44.8069" E
EX6-99	25° 26' 08.1242" S	28° 43' 45.0245" E
EX6-100	25° 26' 08.4006" S	28° 43' 45.0804" E
EX6-101	25° 26' 08.3069" S	28° 43' 46.2627" E
EX6-102	25° 26' 07.3668" S	28° 43' 46.1131" E
EX6-103	25° 26' 07.2601" S	28° 43' 47.2775" E
EX6-104	25° 26' 06.3680" S	28° 43' 47.0973" E
EX6-105	25° 26' 06.1842" S	28° 43' 47.3143" E
EX6-106	25° 26' 06.3968" S	28° 43' 47.3582" E
EX6-107	25° 26' 06.2141" S	28° 43' 48.5489" E
EX6-108	25° 26' 05.3862" S	28° 43' 48.4376" E
EX6-109	25° 26' 05.4025" S	28° 43' 48.6545" E
EX6-110	25° 26' 05.3262" S	28° 43' 49.4166" E
EX6-111	25° 26' 04.5664" S	28° 43' 49.2236" E
EX6-112	25° 26' 04.3877" S	28° 43' 49.4348" E
EX6-113	25° 26' 04.3297" S	28° 43' 49.5032" E
EX6-114	25° 26' 04.0755" S	28° 43' 49.8030" E
EX6-115	25° 26' 03.9679" S	28° 43' 50.6689" E
EX6-116	25° 26' 03.3361" S	28° 43' 50.6757" E
EX6-117	25° 26' 02.9285" S	28° 43' 51.1569" E
EX6-118	25° 26' 02.8708" S	28° 43' 51.7597" E
EX6-119	25° 26' 02.8072" S	28° 43' 53.1917" E
EX6-120	25° 26' 01.3429" S	28° 43' 53.0282" E
EX6-121	25° 26' 01.1482" S	28° 43' 53.2580" E
EX6-122	25° 26' 00.4117" S	28° 43' 54.1272" E
EX6-123	25° 25' 59.6756" S	28° 43' 54.9961" E
EX6-124	25° 25' 59.6535" S	28° 43' 55.6022" E
EX6-125	25° 25' 59.1731" S	28° 43' 55.5531" E
EX6-126	25° 25' 58.9463" S	28° 43' 55.8321" E

Point	Latitude	Longitude
EX6-127	25° 25' 58.6638" S	28° 43' 56.1795" E
EX6-128	25° 25' 58.4481" S	28° 43' 56.4448" E
EX6-129	25° 25' 58.4334" S	28° 43' 57.6222" E
EX6-130	25° 25' 57.4630" S	28° 43' 57.6072" E
EX6-131	25° 25' 57.4150" S	28° 43' 57.6642" E
EX6-132	25° 25' 57.4012" S	28° 43' 58.6627" E
EX6-133	25° 25' 56.5907" S	28° 43' 58.6369" E
EX6-134	25° 25' 56.3843" S	28° 43' 58.8805" E
EX6-135	25° 25' 56.1665" S	28° 43' 59.1374" E
EX6-136	25° 25' 56.2081" S	28° 44' 00.1988" E
EX6-137	25° 25' 55.1937" S	28° 44' 00.2855" E
EX6-138	25° 25' 54.9846" S	28° 44' 00.5321" E
EX6-139	25° 25' 55.0172" S	28° 44' 01.4879" E
EX6-140	25° 25' 54.0977" S	28° 44' 01.5791" E
EX6-141	25° 25' 54.0636" S	28° 44' 01.6193" E
EX6-142	25° 25' 53.8321" S	28° 44' 01.8924" E
EX6-143	25° 25' 53.8793" S	28° 44' 03.5743" E
EX6-144	25° 25' 52.4824" S	28° 44' 03.6536" E
EX6-145	25° 25' 52.4324" S	28° 44' 04.9145" E
EX6-146	25° 25' 51.3572" S	28° 44' 04.8131" E
EX6-147	25° 25' 50.9321" S	28° 44' 05.3146" E
EX6-148	25° 25' 50.8786" S	28° 44' 05.9056" E
EX6-149	25° 25' 50.4661" S	28° 44' 05.8646" E
EX6-150	25° 25' 49.8477" S	28° 44' 06.5944" E
EX6-151	25° 25' 49.0263" S	28° 44' 07.5637" E
EX6-152	25° 25' 48.7883" S	28° 44' 09.1063" E
EX6-153	25° 25' 47.7892" S	28° 44' 09.0236" E
EX6-154	25° 25' 47.5882" S	28° 44' 09.2607" E
EX6-155	25° 25' 47.5879" S	28° 44' 09.2611" E
EX6-156	25° 25' 47.3825" S	28° 44' 09.5033" E
EX6-157	25° 25' 47.2516" S	28° 44' 10.6180" E
EX6-158	25° 25' 46.5368" S	28° 44' 10.5015" E
EX6-159	25° 25' 46.4788" S	28° 44' 10.5700" E
EX6-160	25° 25' 46.3931" S	28° 44' 11.5654" E
EX6-161	25° 25' 45.7229" S	28° 44' 11.4620" E
EX6-162	25° 25' 45.5328" S	28° 44' 11.6864" E
EX6-163	25° 25' 45.1953" S	28° 44' 12.0847" E
EX6-164	25° 25' 45.0854" S	28° 44' 12.7978" E
EX6-165	25° 25' 44.6307" S	28° 44' 12.7512" E
EX6-166	25° 25' 43.9244" S	28° 44' 13.5845" E
EX6-167	25° 25' 43.4639" S	28° 44' 14.1279" E
EX6-168	25° 25' 43.5923" S	28° 44' 14.1488" E
EX6-169	25° 25' 43.3030" S	28° 44' 16.2636" E
EX6-170	25° 25' 42.1749" S	28° 44' 16.0317" E
EX6-171	25° 25' 41.7816" S	28° 44' 18.5415" E
EX6-172	25° 25' 39.9474" S	28° 44' 18.2774" E
EX6-173	25° 25' 39.7570" S	28° 44' 18.5022" E
EX6-174	25° 25' 40.5722" S	28° 44' 18.6196" E

Point	Latitude	Longitude
EX6-175	25° 25' 40.3020" S	28° 44' 19.9940" E
EX6-176	25° 25' 38.6865" S	28° 44' 19.7652" E
EX6-177	25° 25' 38.2731" S	28° 44' 20.2532" E
EX6-178	25° 25' 37.9614" S	28° 44' 20.6210" E
EX6-179	25° 25' 37.9135" S	28° 44' 20.9002" E
EX6-180	25° 25' 37.7451" S	28° 44' 20.8763" E
EX6-181	25° 25' 37.4876" S	28° 44' 21.1799" E
EX6-182	25° 25' 37.8578" S	28° 44' 21.2235" E
EX6-183	25° 25' 37.5799" S	28° 44' 22.8366" E
EX6-184	25° 25' 36.4899" S	28° 44' 22.8159" E
EX6-185	25° 25' 36.1075" S	28° 44' 22.8086" E
EX6-186	25° 25' 35.1868" S	28° 44' 23.8950" E
EX6-187	25° 25' 34.8622" S	28° 44' 24.2782" E
EX6-188	25° 25' 34.7552" S	28° 44' 25.7366" E
EX6-189	25° 25' 33.6613" S	28° 44' 25.6953" E
EX6-190	25° 25' 33.5952" S	28° 44' 25.7731" E
EX6-191	25° 25' 33.5419" S	28° 44' 26.7062" E
EX6-192	25° 25' 32.9294" S	28° 44' 26.5586" E
EX6-193	25° 25' 32.5842" S	28° 44' 26.9659" E
EX6-194	25° 25' 32.3174" S	28° 44' 27.2806" E
EX6-195	25° 25' 32.1855" S	28° 44' 28.3953" E
EX6-196	25° 25' 31.4889" S	28° 44' 28.2583" E
EX6-197	25° 25' 31.3040" S	28° 44' 28.4765" E
EX6-198	25° 25' 31.1393" S	28° 44' 28.6709" E
EX6-199	25° 25' 30.8823" S	28° 44' 30.9603" E
EX6-200	25° 25' 30.8094" S	28° 44' 31.6099" E
EX6-201	25° 25' 29.8527" S	28° 44' 31.4155" E
EX6-202	25° 25' 29.6091" S	28° 44' 33.7034" E
EX6-203	25° 25' 30.0798" S	28° 44' 33.9804" E
EX6-204	25° 25' 30.5535" S	28° 44' 34.0896" E
EX6-205	25° 25' 30.7811" S	28° 44' 31.9335" E
EX6-206	25° 25' 34.0858" S	28° 44' 32.5820" E
EX6-207	25° 25' 33.6796" S	28° 44' 36.0992" E
EX6-208	25° 25' 35.9629" S	28° 44' 37.4431" E
EX6-209	25° 25' 35.9799" S	28° 44' 37.3282" E
EX6-210	25° 25' 36.9600" S	28° 44' 37.5258" E
EX6-211	25° 25' 38.0539" S	28° 44' 37.7464" E
EX6-212	25° 25' 37.9404" S	28° 44' 38.6069" E
EX6-213	25° 25' 38.0809" S	28° 44' 38.6896" E
EX6-214	25° 25' 38.3168" S	28° 44' 38.8284" E
EX6-215	25° 25' 39.0877" S	28° 44' 38.9655" E
EX6-216	25° 25' 40.1856" S	28° 44' 39.1608" E
EX6-217	25° 25' 40.0972" S	28° 44' 39.8764" E
EX6-218	25° 25' 40.3096" S	28° 44' 40.0015" E
EX6-219	25° 25' 40.4035" S	28° 44' 39.2430" E
EX6-220	25° 25' 41.5340" S	28° 44' 39.3981" E
EX6-221	25° 25' 41.3190" S	28° 44' 40.3916" E
EX6-222	25° 25' 42.5955" S	28° 44' 40.5965" E

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 42 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. — M B Straughan G.Pr. LS0907D — 09 October 2025 date

For applicant — Owain Jackson name — signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	**Dwg:** reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

friedlaender, burger & volkmann

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Point	Latitude	Longitude
EX6-223	25° 25' 42.5268" S	28° 44' 41.3063" E
EX6-224	25° 25' 45.4510" S	28° 44' 43.0275" E
EX6-225	25° 25' 45.9771" S	28° 44' 43.3372" E
EX6-226	25° 25' 46.8157" S	28° 44' 43.8308" E
EX6-227	25° 25' 46.8185" S	28° 44' 43.8325" E
EX6-228	25° 25' 48.9262" S	28° 44' 45.0730" E
EX6-229	25° 25' 53.2093" S	28° 44' 47.5941" E
EX6-230	25° 25' 54.1488" S	28° 44' 48.1472" E
EX6-231	25° 26' 11.9760" S	28° 44' 24.3928" E
EX6-232	25° 26' 13.0120" S	28° 44' 22.9011" E
EX6-233	25° 26' 14.5015" S	28° 44' 20.7566" E
EX6-234	25° 26' 17.0883" S	28° 44' 17.0319" E
EX6-235	25° 26' 17.2355" S	28° 44' 16.8416" E
EX6-236	25° 26' 18.4954" S	28° 44' 14.9968" E
EX6-237	25° 26' 18.6047" S	28° 44' 14.8338" E
EX6-238	25° 26' 19.9618" S	28° 44' 12.8931" E
EX6-239	25° 26' 20.6875" S	28° 44' 11.8344" E
EX6-240	25° 26' 21.3860" S	28° 44' 10.8547" E
EX6-241	25° 26' 21.8050" S	28° 44' 10.1935" E
EX6-242	25° 26' 23.6386" S	28° 44' 07.5416" E
EX6-243	25° 26' 24.0278" S	28° 44' 05.8499" E
EX6-244	25° 26' 24.2896" S	28° 44' 04.7159" E
EX6-245	25° 26' 25.4776" S	28° 44' 04.8525" E
EX6-246	25° 26' 25.7557" S	28° 44' 04.4450" E
EX6-247	25° 26' 25.8810" S	28° 44' 03.4723" E
EX6-248	25° 26' 26.3852" S	28° 44' 03.5481" E
EX6-249	25° 26' 26.4532" S	28° 44' 03.4503" E
EX6-250	25° 26' 26.5975" S	28° 44' 02.3859" E
EX6-251	25° 26' 27.1410" S	28° 44' 02.4660" E
EX6-252	25° 26' 27.2995" S	28° 44' 02.2376" E
EX6-253	25° 26' 28.4258" S	28° 44' 00.6074" E
EX6-254	25° 26' 28.4542" S	28° 44' 00.4918" E
EX6-255	25° 26' 28.5056" S	28° 44' 00.5028" E
EX6-256	25° 26' 28.6560" S	28° 44' 00.2805" E
EX6-257	25° 26' 28.5077" S	28° 44' 00.2472" E
EX6-258	25° 26' 28.7234" S	28° 43' 59.2786" E
EX6-259	25° 26' 29.2406" S	28° 43' 59.4121" E
EX6-260	25° 26' 29.5159" S	28° 43' 58.5392" E
EX6-261	25° 26' 29.7783" S	28° 43' 58.6349" E
EX6-262	25° 26' 29.9262" S	28° 43' 58.4216" E
EX6-263	25° 26' 30.1912" S	28° 43' 57.3094" E
EX6-264	25° 26' 30.5669" S	28° 43' 57.4915" E
EX6-265	25° 26' 30.7896" S	28° 43' 57.1739" E
EX6-266	25° 26' 35.4615" S	28° 43' 50.3394" E
EX6-267	25° 26' 35.6552" S	28° 43' 48.5677" E
EX6-268	25° 26' 36.6478" S	28° 43' 48.6715" E
EX6-269	25° 26' 36.8144" S	28° 43' 48.4256" E
EX6-270	25° 26' 36.9196" S	28° 43' 47.1083" E

Point	Latitude	Longitude
EX6-271	25° 26' 37.6557" S	28° 43' 47.1696" E
EX6-272	25° 26' 37.8064" S	28° 43' 46.9309" E
EX6-273	25° 26' 37.8068" S	28° 43' 45.8969" E
EX6-274	25° 26' 38.5727" S	28° 43' 45.9124" E
EX6-275	25° 26' 38.6768" S	28° 43' 44.7328" E
EX6-276	25° 26' 39.3407" S	28° 43' 44.7410" E
EX6-277	25° 26' 39.7530" S	28° 43' 44.1531" E
EX6-278	25° 26' 39.9815" S	28° 43' 43.8140" E
EX6-279	25° 26' 39.9857" S	28° 43' 43.4457" E
EX6-280	25° 26' 40.8340" S	28° 43' 43.3676" E
EX6-281	25° 26' 40.8903" S	28° 43' 42.1846" E
EX6-282	25° 26' 40.9400" S	28° 43' 40.9107" E
EX6-284	25° 26' 42.6235" S	28° 43' 41.0297" E
EX6-285	25° 26' 43.3724" S	28° 43' 41.0824" E
EX6-286	25° 26' 43.3803" S	28° 43' 38.1894" E
EX6-287	25° 26' 43.3804" S	28° 43' 38.2441" E
EX6-288	25° 26' 44.6033" S	28° 43' 38.2718" E
EX6-289	25° 26' 44.7667" S	28° 43' 38.0399" E
EX6-290	25° 26' 44.6220" S	28° 43' 36.0914" E
EX6-291	25° 26' 46.0334" S	28° 43' 36.1440" E
EX6-292	25° 26' 46.2879" S	28° 43' 35.7859" E
EX6-293	25° 26' 46.2535" S	28° 43' 34.7767" E
EX6-294	25° 26' 46.3434" S	28° 43' 34.5213" E
EX6-295	25° 26' 46.4924" S	28° 43' 34.0782" E
EX6-296	25° 26' 47.4527" S	28° 43' 34.1279" E
EX6-297	25° 26' 47.6650" S	28° 43' 33.8264" E
EX6-298	25° 26' 47.4139" S	28° 43' 30.7604" E
EX6-299	25° 26' 48.3684" S	28° 43' 30.7708" E
EX6-300	25° 26' 49.8845" S	28° 43' 30.6707" E
EX6-301	25° 26' 49.9058" S	28° 43' 30.7436" E
EX6-302	25° 26' 51.2913" S	28° 43' 28.7762" E
EX6-303	25° 26' 48.2379" S	28° 43' 23.5695" E
EX6-304	25° 26' 47.8284" S	28° 43' 22.8710" E
EX6-305	25° 26' 47.3449" S	28° 43' 22.0464" E
EX6-306	25° 26' 46.4996" S	28° 43' 20.6053" E
EX6-307	25° 26' 41.7077" S	28° 43' 12.4341" E
EX6-308	25° 26' 34.0666" S	28° 43' 14.4027" E
EX6-309	25° 26' 30.6946" S	28° 43' 18.3831" E
EX7-1	25° 23' 39.1504" S	28° 43' 31.5565" E
EX7-2	25° 23' 39.0213" S	28° 43' 31.4657" E
EX7-3	25° 23' 38.4426" S	28° 43' 31.0589" E
EX7-4	25° 23' 37.8982" S	28° 43' 30.6761" E
EX7-5	25° 23' 37.3514" S	28° 43' 30.2917" E
EX7-6	25° 23' 36.8007" S	28° 43' 29.9047" E
EX7-7	25° 23' 36.2564" S	28° 43' 29.5220" E
EX7-8	25° 23' 35.5986" S	28° 43' 29.0596" E
EX7-9	25° 23' 35.4886" S	28° 43' 28.9822" E
EX7-10	25° 23' 34.8007" S	28° 43' 28.4986" E

Point	Latitude	Longitude
EX7-11	25° 23' 34.2541" S	28° 43' 28.1144" E
EX7-12	25° 23' 33.7033" S	28° 43' 27.7272" E
EX7-13	25° 23' 33.1498" S	28° 43' 27.3381" E
EX7-14	25° 23' 32.6034" S	28° 43' 26.9540" E
EX7-15	25° 23' 32.0537" S	28° 43' 26.5675" E
EX7-16	25° 23' 31.5027" S	28° 43' 26.1802" E
EX7-17	25° 23' 30.9525" S	28° 43' 25.7934" E
EX7-18	25° 23' 30.3939" S	28° 43' 25.4007" E
EX7-19	25° 23' 29.8002" S	28° 43' 24.9834" E
EX7-20	25° 23' 29.0075" S	28° 43' 24.4261" E
EX7-21	25° 23' 28.9407" S	28° 43' 24.3792" E
EX7-22	25° 23' 28.0284" S	28° 43' 23.7379" E
EX7-23	25° 23' 26.1253" S	28° 43' 22.5407" E
EX7-24	25° 23' 25.8703" S	28° 43' 21.0155" E
EX7-25	25° 23' 25.1046" S	28° 43' 21.1767" E
EX7-26	25° 23' 24.4867" S	28° 43' 21.3068" E
EX7-27	25° 23' 23.3216" S	28° 43' 21.5522" E
EX7-28	25° 23' 21.5928" S	28° 43' 21.9162" E
EX7-29	25° 23' 19.2572" S	28° 43' 22.4081" E
EX7-30	25° 23' 16.8628" S	28° 43' 22.9122" E
EX7-31	25° 23' 15.0272" S	28° 43' 23.2988" E
EX7-32	25° 23' 13.4580" S	28° 43' 23.6292" E
EX7-33	25° 23' 13.3537" S	28° 43' 23.6511" E
EX7-34	25° 23' 03.3505" S	28° 43' 25.7391" E
EX7-35	25° 23' 02.4078" S	28° 43' 25.9370" E
EX7-36	25° 23' 01.4505" S	28° 43' 26.1379" E
EX7-37	25° 23' 01.3270" S	28° 43' 26.1651" E
EX7-38	25° 23' 00.7070" S	28° 43' 26.3013" E
EX7-39	25° 23' 00.0900" S	28° 43' 26.4309" E
EX7-40	25° 22' 59.3653" S	28° 43' 26.5831" E
EX7-41	25° 22' 58.6329" S	28° 43' 26.7369" E
EX7-42	25° 22' 57.9001" S	28° 43' 26.8907" E
EX7-43	25° 22' 57.1683" S	28° 43' 27.0444" E
EX7-44	25° 22' 56.4298" S	28° 43' 27.1995" E
EX7-45	25° 22' 55.6652" S	28° 43' 27.3601" E
EX7-46	25° 22' 54.9286" S	28° 43' 27.5147" E
EX7-47	25° 22' 54.1955" S	28° 43' 27.6687" E
EX7-48	25° 22' 53.4917" S	28° 43' 27.8164" E
EX7-49	25° 22' 52.8822" S	28° 43' 27.9444" E
EX7-50	25° 22' 52.2800" S	28° 43' 28.0709" E
EX7-51	25° 22' 52.1513" S	28° 43' 28.0979" E
EX7-52	25° 22' 51.1889" S	28° 43' 28.3000" E
EX7-53	25° 22' 50.9072" S	28° 43' 28.3592" E
EX7-54	25° 22' 49.0666" S	28° 43' 28.7150" E
EX7-55	25° 22' 48.7329" S	28° 43' 28.7812" E
EX7-56	25° 22' 47.7640" S	28° 43' 28.9734" E
EX7-57	25° 22' 47.1170" S	28° 43' 29.1016" E
EX7-58	25° 22' 46.4665" S	28° 43' 29.2306" E

Point	Latitude	Longitude
EX7-59	25° 22' 45.8355" S	28° 43' 29.3558" E
EX7-60	25° 22' 45.1859" S	28° 43' 29.4846" E
EX7-61	25° 22' 44.5388" S	28° 43' 29.6129" E
EX7-62	25° 22' 43.9093" S	28° 43' 29.7377" E
EX7-63	25° 22' 43.2576" S	28° 43' 29.8669" E
EX7-64	25° 22' 42.6180" S	28° 43' 29.9937" E
EX7-65	25° 22' 41.9783" S	28° 43' 30.1206" E
EX7-66	25° 22' 41.3371" S	28° 43' 30.2477" E
EX7-67	25° 22' 40.6970" S	28° 43' 30.3747" E
EX7-68	25° 22' 40.0623" S	28° 43' 30.5005" E
EX7-69	25° 22' 38.7972" S	28° 43' 30.7513" E
EX7-70	25° 22' 35.7991" S	28° 43' 31.3458" E
EX7-71	25° 22' 35.5290" S	28° 43' 31.3994" E
EX7-72	25° 22' 34.6756" S	28° 43' 31.5686" E
EX7-73	25° 22' 34.0300" S	28° 43' 31.6966" E
EX7-74	25° 22' 33.3948" S	28° 43' 31.8226" E
EX7-75	25° 22' 33.2634" S	28° 43' 31.8486" E
EX7-76	25° 22' 32.2933" S	28° 43' 32.0410" E
EX7-77	25° 22' 32.0477" S	28° 43' 32.0897" E
EX7-78	25° 22' 30.9773" S	28° 43' 32.3019" E
EX7-79	25° 22' 30.6577" S	28° 43' 32.4093" E
EX7-80	25° 22' 30.1142" S	28° 43' 32.5920" E
EX7-81	25° 22' 29.1707" S	28° 43' 32.9091" E
EX7-82	25° 22' 28.5587" S	28° 43' 33.0369" E
EX7-83	25° 22' 28.1988" S	28° 43' 33.1121" E
EX7-84	25° 22' 27.9440" S	28° 43' 33.1654" E
EX7-85	25° 22' 27.3392" S	28° 43' 33.2917" E
EX7-86	25° 22' 26.7252" S	28° 43' 33.4200" E
EX7-87	25° 22' 26.6011" S	28° 43' 33.4459" E
EX7-88	25° 22' 25.6396" S	28° 43' 33.6469" E
EX7-89	25° 22' 25.8204" S	28° 43' 34.7020" E
EX7-90	25° 22' 25.9545" S	28° 43' 35.4838" E
EX7-91	25° 22' 26.0743" S	28° 43' 36.1825" E
EX7-92	25° 22' 26.1983" S	28° 43' 36.9050" E
EX7-93	25° 22' 26.3166" S	28° 43' 37.5951" E
EX7-94	25° 22' 26.4397" S	28° 43' 38.3130" E
EX7-95	25° 22' 26.5225" S	28° 43' 38.7953" E
EX7-96	25° 22' 26.7987" S	28° 43' 39.2007" E
EX7-97	25° 22' 27.1871" S	28° 43' 39.7707" E
EX7-98	25° 22' 27.5807" S	28° 43' 40.3483" E
EX7-99	25° 22' 27.9746" S	28° 43' 40.9265" E
EX7-100	25° 22' 28.3609" S	28° 43' 41.4934" E
EX7-101	25° 22' 28.7488" S	28° 43' 42.0626" E
EX7-102	25° 22' 29.1394" S	28° 43' 42.6359" E
EX7-103	25° 22' 29.7262" S	28° 43' 43.4971" E
EX7-104	25° 22' 30.3078" S	28° 43' 44.3506" E
EX7-105	25° 22' 30.3852" S	28° 43' 44.4642" E
EX7-106	25° 22' 30.7766" S	28° 43' 45.0386" E

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 43 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. — M B Straughan G.Pr. LS0907D — 09 October 2025 date

For applicant — Owain Jackson name — signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	Dwg: reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

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Point	Latitude	Longitude
EX7-107	25° 22' 31.1685" S	28° 43' 45.6138" E
EX7-108	25° 22' 31.5567" S	28° 43' 46.1836" E
EX7-109	25° 22' 31.9450" S	28° 43' 46.7533" E
EX7-110	25° 22' 32.3388" S	28° 43' 47.3314" E
EX7-111	25° 22' 32.7225" S	28° 43' 47.8945" E
EX7-112	25° 22' 33.1199" S	28° 43' 48.4777" E
EX7-113	25° 22' 33.5049" S	28° 43' 49.0429" E
EX7-114	25° 22' 33.8938" S	28° 43' 49.6136" E
EX7-115	25° 22' 34.2861" S	28° 43' 50.1893" E
EX7-116	25° 22' 34.2938" S	28° 43' 50.2007" E
EX7-117	25° 22' 34.6743" S	28° 43' 50.7591" E
EX7-118	25° 22' 35.0681" S	28° 43' 51.3370" E
EX7-119	25° 22' 35.4613" S	28° 43' 51.9141" E
EX7-120	25° 22' 36.0061" S	28° 43' 52.1443" E
EX7-121	25° 22' 36.8848" S	28° 43' 52.5157" E
EX7-122	25° 22' 37.1570" S	28° 43' 52.4581" E
EX7-123	25° 22' 37.7976" S	28° 43' 52.3225" E
EX7-124	25° 22' 38.4362" S	28° 43' 52.1873" E
EX7-125	25° 22' 39.0770" S	28° 43' 52.0516" E
EX7-126	25° 22' 39.7141" S	28° 43' 51.9167" E
EX7-127	25° 22' 40.3523" S	28° 43' 51.7816" E
EX7-128	25° 22' 40.9886" S	28° 43' 51.6469" E
EX7-129	25° 22' 41.6301" S	28° 43' 51.5111" E
EX7-130	25° 22' 42.2642" S	28° 43' 51.3768" E
EX7-131	25° 22' 42.9103" S	28° 43' 51.2400" E
EX7-132	25° 22' 43.5442" S	28° 43' 51.1058" E
EX7-133	25° 22' 44.3032" S	28° 43' 50.9451" E
EX7-134	25° 22' 45.2612" S	28° 43' 50.7423" E
EX7-135	25° 22' 45.0783" S	28° 43' 49.6844" E
EX7-136	25° 22' 44.9573" S	28° 43' 48.9856" E
EX7-137	25° 22' 44.8943" S	28° 43' 48.6212" E
EX7-138	25° 22' 44.8372" S	28° 43' 48.2910" E
EX7-139	25° 22' 44.7170" S	28° 43' 47.5961" E
EX7-140	25° 22' 44.5952" S	28° 43' 46.8927" E
EX7-141	25° 22' 44.4735" S	28° 43' 46.1889" E
EX7-142	25° 22' 44.3517" S	28° 43' 45.4850" E
EX7-143	25° 22' 44.2315" S	28° 43' 44.7905" E
EX7-144	25° 22' 44.1089" S	28° 43' 44.0822" E
EX7-145	25° 22' 43.9865" S	28° 43' 43.3747" E
EX7-146	25° 22' 43.8046" S	28° 43' 42.3232" E
EX7-147	25° 22' 46.3546" S	28° 43' 41.8006" E
EX7-148	25° 22' 46.4944" S	28° 43' 42.6052" E
EX7-149	25° 22' 46.6162" S	28° 43' 43.3059" E
EX7-150	25° 22' 46.7376" S	28° 43' 44.0047" E
EX7-151	25° 22' 46.8599" S	28° 43' 44.7087" E
EX7-152	25° 22' 46.9831" S	28° 43' 45.4176" E
EX7-153	25° 22' 47.1031" S	28° 43' 46.1084" E
EX7-154	25° 22' 47.2884" S	28° 43' 47.1747" E

Point	Latitude	Longitude
EX7-155	25° 22' 47.6572" S	28° 43' 47.9122" E
EX7-156	25° 22' 47.9709" S	28° 43' 48.5396" E
EX7-157	25° 22' 48.2864" S	28° 43' 49.1704" E
EX7-158	25° 22' 48.3496" S	28° 43' 49.2968" E
EX7-159	25° 22' 48.6677" S	28° 43' 49.9138" E
EX7-160	25° 22' 48.9848" S	28° 43' 50.5288" E
EX7-161	25° 22' 49.3020" S	28° 43' 51.1439" E
EX7-162	25° 22' 49.7640" S	28° 43' 52.0401" E
EX7-163	25° 22' 50.5877" S	28° 43' 52.6078" E
EX7-164	25° 22' 51.1496" S	28° 43' 52.9823" E
EX7-165	25° 22' 51.6938" S	28° 43' 53.3762" E
EX7-166	25° 22' 52.2438" S	28° 43' 53.7482" E
EX7-167	25° 22' 52.7979" S	28° 43' 54.1022" E
EX7-168	25° 22' 53.3656" S	28° 43' 54.4730" E
EX7-169	25° 22' 53.9126" S	28° 43' 54.8773" E
EX7-170	25° 22' 54.4853" S	28° 43' 55.2227" E
EX7-171	25° 22' 55.2975" S	28° 43' 55.8143" E
EX7-172	25° 22' 56.1404" S	28° 43' 56.3434" E
EX7-173	25° 22' 56.6922" S	28° 43' 56.7259" E
EX7-174	25° 22' 57.2308" S	28° 43' 57.1223" E
EX7-175	25° 22' 57.7837" S	28° 43' 57.4964" E
EX7-176	25° 22' 58.3478" S	28° 43' 57.8508" E
EX7-177	25° 22' 58.9108" S	28° 43' 58.2298" E
EX7-178	25° 22' 59.4601" S	28° 43' 58.5954" E
EX7-179	25° 22' 59.9966" S	28° 43' 58.9936" E
EX7-180	25° 23' 00.5646" S	28° 43' 59.3420" E
EX7-181	25° 23' 01.1152" S	28° 43' 59.7198" E
EX7-182	25° 23' 01.9387" S	28° 44' 00.3076" E
EX7-183	25° 23' 02.0632" S	28° 44' 00.3919" E
EX7-184	25° 23' 03.3105" S	28° 44' 00.2405" E
EX7-185	25° 23' 03.9574" S	28° 44' 00.1586" E
EX7-186	25° 23' 04.6057" S	28° 44' 00.0765" E
EX7-187	25° 23' 05.2525" S	28° 43' 59.9947" E
EX7-188	25° 23' 05.8998" S	28° 43' 59.9127" E
EX7-189	25° 23' 06.5471" S	28° 43' 59.8308" E
EX7-190	25° 23' 07.1941" S	28° 43' 59.7489" E
EX7-191	25° 23' 07.8370" S	28° 43' 59.6675" E
EX7-192	25° 23' 08.4838" S	28° 43' 59.5856" E
EX7-193	25° 23' 09.1316" S	28° 43' 59.5036" E
EX7-194	25° 23' 09.8006" S	28° 43' 59.4189" E
EX7-195	25° 23' 10.7661" S	28° 43' 59.2613" E
EX7-196	25° 23' 10.7699" S	28° 43' 59.2910" E
EX7-197	25° 23' 10.5541" S	28° 43' 59.7823" E
EX7-198	25° 23' 07.2781" S	28° 44' 08.8298" E
EX7-199	25° 23' 02.7274" S	28° 44' 10.0152" E
EX7-200	25° 23' 02.9820" S	28° 44' 11.3782" E
EX7-201	25° 23' 03.0543" S	28° 44' 11.7650" E
EX7-202	25° 23' 04.2777" S	28° 44' 18.3147" E

Point	Latitude	Longitude
EX7-203	25° 23' 04.4030" S	28° 44' 18.9853" E
EX7-204	25° 23' 04.5367" S	28° 44' 19.7015" E
EX7-205	25° 23' 04.7024" S	28° 44' 20.5884" E
EX7-206	25° 23' 04.9167" S	28° 44' 21.7360" E
EX7-207	25° 23' 05.8853" S	28° 44' 26.9219" E
EX7-208	25° 23' 05.8422" S	28° 44' 28.2653" E
EX7-209	25° 23' 05.8003" S	28° 44' 29.5741" E
EX7-210	25° 23' 05.2309" S	28° 44' 47.3194" E
EX7-211	25° 23' 05.7249" S	28° 44' 47.3456" E
EX7-212	25° 23' 06.4676" S	28° 44' 47.3851" E
EX7-213	25° 23' 06.4646" S	28° 44' 47.5815" E
EX7-214	25° 23' 06.4605" S	28° 44' 47.8391" E
EX7-215	25° 23' 06.4445" S	28° 44' 48.8996" E
EX7-216	25° 23' 06.4304" S	28° 44' 49.8282" E
EX7-217	25° 23' 06.4194" S	28° 44' 50.5533" E
EX7-218	25° 23' 06.4127" S	28° 44' 50.9854" E
EX7-219	25° 23' 35.1972" S	28° 44' 56.8500" E
EX7-220	25° 23' 45.0228" S	28° 44' 58.8521" E
EX7-221	25° 23' 48.8802" S	28° 44' 59.6381" E
EX7-222	25° 23' 49.3025" S	28° 44' 59.7241" E
EX7-223	25° 23' 49.3104" S	28° 44' 45.1902" E
EX7-224	25° 23' 50.3371" S	28° 44' 45.2784" E
EX7-225	25° 23' 51.3039" S	28° 44' 45.3615" E
EX7-226	25° 23' 52.0685" S	28° 44' 45.4272" E
EX7-227	25° 23' 53.7914" S	28° 44' 45.5752" E
EX7-228	25° 23' 54.5739" S	28° 44' 45.6425" E
EX7-229	25° 23' 55.3793" S	28° 44' 45.7117" E
EX7-230	25° 23' 56.2864" S	28° 44' 45.7896" E
EX7-231	25° 23' 57.0659" S	28° 44' 45.8566" E
EX7-232	25° 23' 57.9119" S	28° 44' 45.9293" E
EX7-233	25° 23' 58.8971" S	28° 44' 46.0140" E
EX7-234	25° 24' 00.0968" S	28° 44' 46.1171" E
EX7-235	25° 24' 00.1097" S	28° 44' 46.4130" E
EX7-236	25° 24' 01.4325" S	28° 44' 46.4703" E
EX7-237	25° 24' 02.2962" S	28° 44' 46.5077" E
EX7-238	25° 24' 02.6303" S	28° 44' 46.5222" E
EX7-239	25° 24' 02.6347" S	28° 44' 46.8105" E
EX7-240	25° 24' 03.6171" S	28° 44' 46.8348" E
EX7-241	25° 24' 04.4813" S	28° 44' 46.8562" E
EX7-242	25° 24' 04.6762" S	28° 44' 46.8610" E
EX7-243	25° 24' 05.2804" S	28° 43' 50.2044" E
EX7-244	25° 24' 03.9778" S	28° 43' 50.1876" E
EX7-245	25° 24' 03.9667" S	28° 43' 44.1251" E
EX7-246	25° 24' 02.4335" S	28° 43' 44.1196" E
EX7-247	25° 24' 02.4386" S	28° 43' 42.4817" E
EX7-248	25° 23' 40.0237" S	28° 43' 29.2940" E
EX8-1	25° 22' 06.9037" S	28° 44' 09.3492" E
EX8-2	25° 22' 06.3388" S	28° 44' 09.9149" E

Point	Latitude	Longitude
EX8-3	25° 22' 05.8580" S	28° 44' 10.3963" E
EX8-4	25° 22' 05.3774" S	28° 44' 10.8776" E
EX8-5	25° 22' 08.7888" S	28° 44' 15.0050" E
EX8-6	25° 22' 08.0674" S	28° 44' 15.7269" E
EX8-7	25° 22' 08.5023" S	28° 44' 20.1251" E
EX8-8	25° 22' 08.5146" S	28° 44' 20.6615" E
EX8-9	25° 22' 08.5433" S	28° 44' 21.9130" E
EX8-10	25° 22' 08.5596" S	28° 44' 22.6281" E
EX8-11	25° 22' 08.5760" S	28° 44' 23.3432" E
EX8-12	25° 22' 08.5924" S	28° 44' 24.0584" E
EX8-13	25° 22' 08.6088" S	28° 44' 24.7735" E
EX8-14	25° 22' 08.6252" S	28° 44' 25.4887" E
EX8-15	25° 22' 08.6531" S	28° 44' 26.7044" E
EX8-16	25° 22' 09.3979" S	28° 44' 27.4311" E
EX8-17	25° 22' 10.0059" S	28° 44' 28.0243" E
EX8-18	25° 22' 10.0108" S	28° 44' 28.2389" E
EX8-19	25° 22' 10.0415" S	28° 44' 29.5762" E
EX8-20	25° 22' 10.0567" S	28° 44' 30.2413" E
EX8-21	25° 22' 09.8072" S	28° 44' 30.9018" E
EX8-22	25° 22' 09.5577" S	28° 44' 31.5624" E
EX8-23	25° 22' 09.3082" S	28° 44' 32.2229" E
EX8-24	25° 22' 08.9223" S	28° 44' 33.2448" E
EX8-25	25° 22' 09.1442" S	28° 44' 33.3556" E
EX8-26	25° 22' 10.2541" S	28° 44' 33.9095" E
EX8-27	25° 22' 10.8461" S	28° 44' 34.2049" E
EX8-28	25° 22' 11.4380" S	28° 44' 34.5003" E
EX8-29	25° 22' 12.0300" S	28° 44' 34.7957" E
EX8-30	25° 22' 12.6219" S	28° 44' 35.0911" E
EX8-31	25° 22' 13.2138" S	28° 44' 35.3865" E
EX8-32	25° 22' 13.8058" S	28° 44' 35.6819" E
EX8-33	25° 22' 14.9157" S	28° 44' 36.2358" E
EX8-34	25° 22' 15.1379" S	28° 44' 36.3467" E
EX8-35	25° 22' 15.9104" S	28° 44' 38.5490" E
EX8-36	25° 22' 15.8045" S	28° 44' 38.5974" E
EX8-37	25° 22' 15.2043" S	28° 44' 38.8720" E
EX8-38	25° 22' 14.6041" S	28° 44' 39.1465" E
EX8-39	25° 22' 13.5538" S	28° 44' 39.6270" E
EX8-40	25° 22' 13.9049" S	28° 44' 40.6280" E
EX8-41	25° 22' 14.1390" S	28° 44' 41.2954" E
EX8-42	25° 22' 14.3731" S	28° 44' 41.9628" E
EX8-43	25° 22' 14.9349" S	28° 44' 43.5645" E
EX8-44	25° 22' 15.1690" S	28° 44' 44.2318" E
EX8-45	25° 22' 15.4030" S	28° 44' 44.8992" E
EX8-46	25° 22' 15.7542" S	28° 44' 45.9003" E
EX8-47	25° 22' 15.9057" S	28° 44' 45.8359" E
EX8-48	25° 22' 16.8152" S	28° 44' 45.4494" E
EX8-49	25° 22' 17.4216" S	28° 44' 45.1918" E
EX8-50	25° 22' 18.0279" S	28° 44' 44.9341" E

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 44 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. — M B Straughan G.Pr. LSO907D — 09 October 2025 date

For applicant — Owain Jackson name — signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation

Dwg: reg 2(2) plan er kruis river oct 2025.dwg

Revision:

Date: 09 October 2025

friedlaender, burger & volkmann

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Point	Latitude	Longitude
EX8-51	25° 22' 18.2620" S	28° 44' 45.6014" E
EX8-52	25° 22' 18.5631" S	28° 44' 45.9433" E
EX8-53	25° 22' 19.0155" S	28° 44' 46.4569" E
EX8-54	25° 22' 19.4679" S	28° 44' 46.9705" E
EX8-55	25° 22' 20.1465" S	28° 44' 47.7410" E
EX8-56	25° 22' 20.1620" S	28° 44' 47.7586" E
EX8-57	25° 22' 20.9657" S	28° 44' 47.8970" E
EX8-58	25° 22' 21.6079" S	28° 44' 48.0076" E
EX8-59	25° 22' 22.2500" S	28° 44' 48.1182" E
EX8-60	25° 22' 22.8921" S	28° 44' 48.2288" E
EX8-61	25° 22' 23.5342" S	28° 44' 48.3393" E
EX8-62	25° 22' 24.1764" S	28° 44' 48.4499" E
EX8-63	25° 22' 24.8185" S	28° 44' 48.5605" E
EX8-64	25° 22' 25.4606" S	28° 44' 48.6711" E
EX8-65	25° 22' 26.1027" S	28° 44' 48.7817" E
EX8-66	25° 22' 26.7449" S	28° 44' 48.8922" E
EX8-67	25° 22' 27.3870" S	28° 44' 49.0028" E
EX8-68	25° 22' 28.0291" S	28° 44' 49.1134" E
EX8-69	25° 22' 28.6713" S	28° 44' 49.2240" E
EX8-70	25° 22' 29.3134" S	28° 44' 49.3346" E
EX8-71	25° 22' 29.9555" S	28° 44' 49.4451" E
EX8-72	25° 22' 30.5976" S	28° 44' 49.5557" E
EX8-73	25° 22' 31.2956" S	28° 44' 49.6759" E
EX8-74	25° 22' 32.1384" S	28° 44' 49.8211" E
EX8-75	25° 22' 32.4118" S	28° 44' 48.9892" E
EX8-76	25° 22' 32.4450" S	28° 44' 48.8883" E
EX8-77	25° 22' 32.6537" S	28° 44' 48.2533" E
EX8-78	25° 22' 32.8624" S	28° 44' 47.6185" E
EX8-79	25° 22' 33.0835" S	28° 44' 46.9458" E
EX8-80	25° 22' 33.3435" S	28° 44' 46.1547" E
EX8-81	25° 22' 33.3774" S	28° 44' 46.0518" E
EX8-82	25° 22' 33.6752" S	28° 44' 45.1455" E
EX8-83	25° 22' 33.1061" S	28° 44' 44.9189" E
EX8-84	25° 22' 33.3796" S	28° 44' 44.0869" E
EX8-85	25° 22' 33.4127" S	28° 44' 43.9860" E
EX8-86	25° 22' 33.6216" S	28° 44' 43.3506" E
EX8-87	25° 22' 33.8301" S	28° 44' 42.7162" E
EX8-88	25° 22' 34.0512" S	28° 44' 42.0434" E
EX8-89	25° 22' 34.3112" S	28° 44' 41.2523" E
EX8-90	25° 22' 34.3450" S	28° 44' 41.1494" E
EX8-91	25° 22' 34.7111" S	28° 44' 40.0353" E
EX8-92	25° 22' 35.3333" S	28° 44' 40.1331" E
EX8-93	25° 22' 35.3462" S	28° 44' 40.0935" E
EX8-94	25° 22' 35.3800" S	28° 44' 39.9902" E
EX8-95	25° 22' 35.7009" S	28° 44' 39.0087" E
EX8-96	25° 22' 35.7347" S	28° 44' 38.9054" E
EX8-97	25° 22' 36.0556" S	28° 44' 37.9240" E
EX8-98	25° 22' 36.2756" S	28° 44' 37.2508" E

Point	Latitude	Longitude
EX8-99	25° 22' 36.4957" S	28° 44' 36.5777" E
EX8-100	25° 22' 36.5287" S	28° 44' 36.4767" E
EX8-101	25° 22' 36.8439" S	28° 44' 35.5128" E
EX8-102	25° 22' 37.0811" S	28° 44' 34.7871" E
EX8-103	25° 22' 37.3183" S	28° 44' 34.0618" E
EX8-104	25° 22' 36.5214" S	28° 44' 33.7454" E
EX8-105	25° 22' 36.4016" S	28° 44' 33.6978" E
EX8-106	25° 22' 36.4100" S	28° 44' 33.6286" E
EX8-107	25° 22' 36.5307" S	28° 44' 32.6333" E
EX8-108	25° 22' 35.8381" S	28° 44' 32.5315" E
EX8-109	25° 22' 35.1777" S	28° 44' 32.4344" E
EX8-110	25° 22' 34.5174" S	28° 44' 32.3373" E
EX8-111	25° 22' 33.8571" S	28° 44' 32.2402" E
EX8-112	25° 22' 33.9517" S	28° 44' 31.4602" E
EX8-113	25° 22' 34.0464" S	28° 44' 30.6802" E
EX8-114	25° 22' 33.0150" S	28° 44' 30.5382" E
EX8-115	25° 22' 33.2802" S	28° 44' 28.8894" E
EX8-116	25° 22' 32.3441" S	28° 44' 26.6046" E
EX8-117	25° 22' 32.4732" S	28° 44' 25.5408" E
EX8-118	25° 22' 31.8291" S	28° 44' 25.4462" E
EX8-119	25° 22' 31.1849" S	28° 44' 25.3516" E
EX8-120	25° 22' 31.0882" S	28° 44' 25.3374" E
EX8-121	25° 22' 30.7017" S	28° 44' 25.2807" E
EX8-122	25° 22' 29.7340" S	28° 44' 23.8501" E
EX8-123	25° 22' 29.7384" S	28° 44' 23.1346" E
EX8-124	25° 22' 29.7427" S	28° 44' 22.4192" E
EX8-125	25° 22' 29.7471" S	28° 44' 21.7038" E
EX8-126	25° 22' 29.7478" S	28° 44' 21.5965" E
EX8-127	25° 22' 29.7521" S	28° 44' 20.8812" E
EX8-128	25° 22' 29.7576" S	28° 44' 19.9798" E
EX8-129	25° 22' 30.4442" S	28° 44' 19.7788" E
EX8-130	25° 22' 31.1193" S	28° 44' 19.5813" E
EX8-131	25° 22' 30.8648" S	28° 44' 18.5283" E
EX8-132	25° 22' 30.6144" S	28° 44' 17.4912" E
EX8-133	25° 22' 29.6292" S	28° 44' 16.2993" E
EX8-134	25° 22' 28.0006" S	28° 44' 14.3290" E
EX8-135	25° 22' 27.3445" S	28° 44' 13.5353" E
EX8-136	25° 22' 27.2789" S	28° 44' 13.4559" E
EX8-137	25° 22' 26.8006" S	28° 44' 12.8773" E
EX8-138	25° 22' 26.3632" S	28° 44' 12.3481" E
EX8-139	25° 22' 25.9258" S	28° 44' 11.8190" E
EX8-140	25° 22' 25.4885" S	28° 44' 11.2898" E
EX8-141	25° 22' 25.0511" S	28° 44' 10.7607" E
EX8-142	25° 22' 24.9855" S	28° 44' 10.6813" E
EX8-143	25° 22' 24.3294" S	28° 44' 09.8876" E
EX8-144	25° 22' 23.9248" S	28° 44' 09.3981" E
EX8-145	25° 22' 23.5202" S	28° 44' 08.9086" E
EX8-146	25° 22' 23.4546" S	28° 44' 08.8293" E

Point	Latitude	Longitude
EX8-147	25° 22' 22.7985" S	28° 44' 08.0356" E
EX8-148	25° 22' 22.1424" S	28° 44' 07.2418" E
EX8-149	25° 22' 22.0768" S	28° 44' 07.1625" E
EX8-150	25° 22' 21.6722" S	28° 44' 06.6730" E
EX8-151	25° 22' 21.2676" S	28° 44' 06.1836" E
EX8-152	25° 22' 20.8630" S	28° 44' 05.6941" E
EX8-153	25° 22' 20.4584" S	28° 44' 05.2046" E
EX8-154	25° 22' 20.3928" S	28° 44' 05.1253" E
EX8-155	25° 22' 19.7367" S	28° 44' 04.3316" E
EX8-156	25° 22' 17.4583" S	28° 44' 01.9996" E
EX8-157	25° 22' 17.0494" S	28° 43' 59.9803" E
EX8-158	25° 22' 15.8130" S	28° 43' 57.1960" E
EX8-159	25° 22' 15.3152" S	28° 43' 54.3871" E
EX8-160	25° 22' 15.4746" S	28° 43' 54.3531" E
EX8-161	25° 22' 15.6338" S	28° 43' 54.3190" E
EX8-162	25° 22' 15.4471" S	28° 43' 53.2658" E
EX8-163	25° 22' 15.7664" S	28° 43' 53.1972" E
EX8-164	25° 22' 15.9600" S	28° 43' 53.1556" E
EX8-165	25° 22' 16.0521" S	28° 43' 52.3911" E
EX8-166	25° 22' 16.0649" S	28° 43' 52.2847" E
EX8-167	25° 22' 16.1503" S	28° 43' 51.5756" E
EX8-168	25° 22' 16.2357" S	28° 43' 50.8664" E
EX8-169	25° 22' 16.3211" S	28° 43' 50.1572" E
EX8-170	25° 22' 16.4421" S	28° 43' 49.1527" E
EX8-171	25° 22' 16.4556" S	28° 43' 49.0403" E
EX8-172	25° 22' 16.2689" S	28° 43' 47.9870" E
EX8-173	25° 22' 16.7473" S	28° 43' 47.8843" E
EX8-174	25° 22' 16.5313" S	28° 43' 47.0067" E
EX8-175	25° 22' 16.3428" S	28° 43' 46.2406" E
EX8-176	25° 22' 16.3172" S	28° 43' 46.1367" E
EX8-177	25° 22' 16.1455" S	28° 43' 45.4393" E
EX8-178	25° 22' 15.9756" S	28° 43' 44.7488" E
EX8-179	25° 22' 15.8053" S	28° 43' 44.0569" E
EX8-180	25° 22' 15.6307" S	28° 43' 43.3474" E
EX8-181	25° 22' 15.4677" S	28° 43' 42.6852" E
EX8-182	25° 22' 15.2967" S	28° 43' 41.9906" E
EX8-183	25° 22' 15.1264" S	28° 43' 41.2988" E
EX8-184	25° 22' 14.9578" S	28° 43' 40.6138" E
EX8-185	25° 22' 14.7850" S	28° 43' 39.9116" E
EX8-186	25° 22' 14.6313" S	28° 43' 39.2874" E
EX8-187	25° 22' 14.4463" S	28° 43' 38.5358" E
EX8-188	25° 22' 14.2768" S	28° 43' 37.8470" E
EX8-189	25° 22' 14.1069" S	28° 43' 37.1569" E
EX8-190	25° 22' 13.8526" S	28° 43' 36.1236" E
EX8-191	25° 22' 12.9906" S	28° 43' 36.3040" E
EX8-192	25° 22' 12.8948" S	28° 43' 36.3240" E
EX8-193	25° 22' 11.8480" S	28° 43' 36.5431" E
EX8-194	25° 22' 11.2095" S	28° 43' 36.6767" E

Point	Latitude	Longitude
EX8-195	25° 22' 10.5700" S	28° 43' 36.8105" E
EX8-196	25° 22' 09.9315" S	28° 43' 36.9441" E
EX8-197	25° 22' 09.2930" S	28° 43' 37.0777" E
EX8-198	25° 22' 08.6545" S	28° 43' 37.2113" E
EX8-199	25° 22' 07.4599" S	28° 43' 37.4613" E
EX8-200	25° 22' 07.1406" S	28° 43' 37.5281" E
EX8-201	25° 22' 06.3939" S	28° 43' 37.6843" E
EX8-202	25° 22' 06.2985" S	28° 43' 37.7043" E
EX8-203	25° 22' 05.7079" S	28° 43' 37.8278" E
EX8-204	25° 22' 05.1172" S	28° 43' 37.9514" E
EX8-205	25° 22' 04.7976" S	28° 43' 38.0183" E
EX8-206	25° 22' 03.2016" S	28° 43' 38.3524" E
EX8-207	25° 22' 02.5631" S	28° 43' 38.4860" E
EX8-208	25° 22' 00.0091" S	28° 43' 39.0206" E
EX8-209	25° 22' 00.6690" S	28° 43' 42.7428" E
EX8-210	25° 22' 00.7624" S	28° 43' 43.2694" E
EX8-211	25° 22' 00.9491" S	28° 43' 44.3225" E
EX8-212	25° 22' 01.0736" S	28° 43' 45.0247" E
EX8-213	25° 22' 01.1980" S	28° 43' 45.7268" E
EX8-214	25° 22' 01.3225" S	28° 43' 46.4289" E
EX8-215	25° 22' 01.4470" S	28° 43' 47.1310" E
EX8-216	25° 22' 01.5715" S	28° 43' 47.8331" E
EX8-217	25° 22' 01.6959" S	28° 43' 48.5352" E
EX8-218	25° 22' 01.8204" S	28° 43' 49.2373" E
EX8-219	25° 22' 01.9449" S	28° 43' 49.9395" E
EX8-220	25° 22' 02.0693" S	28° 43' 50.6416" E
EX8-221	25° 22' 02.1938" S	28° 43' 51.3437" E
EX8-222	25° 22' 02.3183" S	28° 43' 52.0460" E
EX8-223	25° 22' 01.3613" S	28° 43' 52.2513" E
EX8-224	25° 22' 01.5170" S	28° 43' 53.1290" E
EX8-225	25° 22' 00.2031" S	28° 43' 55.0534" E
EX8-226	25° 22' 01.2104" S	28° 44' 00.7382" E
EX8-227	25° 22' 01.0818" S	28° 44' 00.9481" E
EX8-228	25° 22' 01.1816" S	28° 44' 01.5098" E
EX8-229	25° 22' 03.8928" S	28° 44' 00.9276" E
EX8-230	25° 22' 04.0483" S	28° 44' 01.8053" E
EX8-231	25° 22' 04.1851" S	28° 44' 02.5776" E
EX8-232	25° 22' 04.3219" S	28° 44' 03.3500" E
EX8-233	25° 22' 04.4132" S	28° 44' 03.8652" E
EX8-234	25° 22' 04.8501" S	28° 44' 04.3938" E
EX8-235	25° 22' 05.3313" S	28° 44' 04.9758" E
EX8-236	25° 22' 05.8124" S	28° 44' 05.5578" E
EX8-237	25° 22' 06.2936" S	28° 44' 06.1398" E
EX8-238	25° 22' 06.9497" S	28° 44' 06.9335" E
EX8-239	25° 22' 07.2778" S	28° 44' 07.3304" E
EX8-240	25° 22' 08.0214" S	28° 44' 08.2299" E
EX8-241	25° 22' 07.4565" S	28° 44' 08.7956" E
EX9-1	25° 19' 15.1583" S	28° 45' 54.3782" E

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 45 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. M B Straughan G.Pr. LSO907D — 09 October 2025 date

For applicant Owain Jackson name

signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation

Dwg: reg 2(2) plan er kruis river oct 2025.dwg

Revision:

Date: 09 October 2025

friedlaender, burger & volkmann

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Point	Latitude	Longitude
EX9-2	25° 19' 14.6292" S	28° 45' 54.7936" E
EX9-3	25° 19' 14.2058" S	28° 45' 55.1258" E
EX9-4	25° 19' 12.9953" S	28° 45' 56.0761" E
EX9-5	25° 19' 12.2017" S	28° 45' 56.6990" E
EX9-6	25° 19' 11.6727" S	28° 45' 57.1144" E
EX9-7	25° 19' 11.1303" S	28° 45' 57.5401" E
EX9-8	25° 19' 10.6044" S	28° 45' 57.9529" E
EX9-9	25° 19' 10.0759" S	28° 45' 58.3678" E
EX9-10	25° 19' 09.5573" S	28° 45' 58.7748" E
EX9-11	25° 19' 09.0283" S	28° 45' 59.1901" E
EX9-12	25° 19' 08.5002" S	28° 45' 59.6046" E
EX9-13	25° 19' 07.9672" S	28° 46' 00.0230" E
EX9-14	25° 19' 07.4394" S	28° 46' 00.4373" E
EX9-15	25° 19' 06.9092" S	28° 46' 00.8534" E
EX9-16	25° 19' 06.3823" S	28° 46' 01.2670" E
EX9-17	25° 19' 05.8508" S	28° 46' 01.6842" E
EX9-18	25° 19' 05.3217" S	28° 46' 02.0995" E
EX9-19	25° 19' 04.6471" S	28° 46' 02.6290" E
EX9-20	25° 19' 04.1426" S	28° 46' 03.0250" E
EX9-21	25° 19' 04.7157" S	28° 46' 03.9220" E
EX9-22	25° 19' 04.7173" S	28° 46' 03.9247" E
EX9-23	25° 19' 06.2065" S	28° 46' 06.2556" E
EX9-24	25° 19' 06.2082" S	28° 46' 06.2583" E
EX9-25	25° 19' 06.7725" S	28° 46' 07.1417" E
EX9-26	25° 19' 06.9968" S	28° 46' 07.4927" E
EX9-27	25° 19' 12.9115" S	28° 46' 05.9666" E
EX9-28	25° 19' 17.0780" S	28° 46' 04.7758" E
EX9-29	25° 19' 20.3877" S	28° 46' 03.4483" E
EX9-30	25° 19' 25.0460" S	28° 46' 01.4542" E
EX9-31	25° 19' 26.8818" S	28° 46' 01.2962" E
EX9-32	25° 19' 27.2746" S	28° 46' 00.8389" E
EX9-33	25° 19' 28.5042" S	28° 46' 00.3447" E
EX9-34	25° 19' 29.1147" S	28° 46' 00.0994" E
EX9-35	25° 19' 29.7251" S	28° 45' 59.8540" E
EX9-36	25° 19' 30.3356" S	28° 45' 59.6087" E
EX9-37	25° 19' 30.9461" S	28° 45' 59.3633" E
EX9-38	25° 19' 31.2209" S	28° 45' 59.2529" E
EX9-39	25° 19' 31.2322" S	28° 45' 59.2484" E
EX9-40	25° 19' 31.6464" S	28° 45' 58.9731" E
EX9-41	25° 19' 32.2028" S	28° 45' 58.6033" E
EX9-42	25° 19' 32.7591" S	28° 45' 58.2336" E
EX9-43	25° 19' 33.3154" S	28° 45' 57.8639" E
EX9-44	25° 19' 33.8717" S	28° 45' 57.4941" E
EX9-45	25° 19' 34.5672" S	28° 45' 57.0320" E
EX9-46	25° 19' 34.5684" S	28° 45' 57.0312" E
EX9-47	25° 19' 34.1487" S	28° 45' 56.2657" E
EX9-48	25° 19' 34.0649" S	28° 45' 56.1128" E
EX9-49	25° 19' 39.9081" S	28° 45' 52.2340" E

Point	Latitude	Longitude
EX9-50	25° 19' 40.7210" S	28° 45' 51.6943" E
EX9-51	25° 19' 40.3865" S	28° 45' 51.0814" E
EX9-52	25° 19' 40.0518" S	28° 45' 50.4683" E
EX9-53	25° 19' 39.6503" S	28° 45' 49.7326" E
EX9-54	25° 19' 39.2655" S	28° 45' 49.0276" E
EX9-55	25° 19' 38.8807" S	28° 45' 48.3226" E
EX9-56	25° 19' 38.5461" S	28° 45' 47.7095" E
EX9-57	25° 19' 38.2114" S	28° 45' 47.0965" E
EX9-58	25° 19' 37.7095" S	28° 45' 46.1769" E
EX9-59	25° 19' 37.2075" S	28° 45' 45.2573" E
EX9-60	25° 19' 36.8729" S	28° 45' 44.6442" E
EX9-61	25° 19' 36.5383" S	28° 45' 44.0312" E
EX9-62	25° 19' 36.1702" S	28° 45' 43.3568" E
EX9-63	25° 19' 35.8021" S	28° 45' 42.6825" E
EX9-64	25° 19' 35.4340" S	28° 45' 42.0081" E
EX9-65	25° 19' 35.0659" S	28° 45' 41.3337" E
EX9-66	25° 19' 34.6662" S	28° 45' 40.6015" E
EX9-67	25° 19' 34.0787" S	28° 45' 39.5253" E
EX9-68	25° 19' 33.2827" S	28° 45' 40.1501" E
EX9-69	25° 19' 32.7521" S	28° 45' 40.5668" E
EX9-70	25° 19' 32.2214" S	28° 45' 40.9834" E
EX9-71	25° 19' 31.6907" S	28° 45' 41.3999" E
EX9-72	25° 19' 31.1601" S	28° 45' 41.8165" E
EX9-73	25° 19' 26.2783" S	28° 45' 45.6490" E
EX9-74	25° 19' 25.4823" S	28° 45' 46.2739" E
EX9-75	25° 19' 24.9516" S	28° 45' 46.6904" E
EX9-76	25° 19' 24.4210" S	28° 45' 47.1070" E
EX9-77	25° 19' 23.8903" S	28° 45' 47.5236" E
EX9-78	25° 19' 23.3596" S	28° 45' 47.9402" E
EX9-79	25° 19' 22.5636" S	28° 45' 48.5651" E
EX10-1	25° 23' 30.8214" S	28° 46' 53.2898" E
EX10-2	25° 23' 47.2615" S	28° 47' 00.7265" E
EX10-3	25° 23' 47.4274" S	28° 46' 42.7781" E
EX10-4	25° 23' 47.4469" S	28° 46' 31.0689" E
EX10-5	25° 23' 55.1394" S	28° 46' 31.1225" E
EX10-6	25° 24' 01.3938" S	28° 46' 31.9287" E
EX10-7	25° 24' 03.6517" S	28° 46' 32.2213" E
EX10-8	25° 24' 04.0793" S	28° 46' 32.9981" E
EX10-9	25° 24' 04.2677" S	28° 46' 30.6755" E
EX10-10	25° 24' 03.7261" S	28° 46' 31.3288" E
EX10-11	25° 24' 01.7949" S	28° 46' 31.0795" E
EX10-12	25° 24' 01.8722" S	28° 46' 29.8249" E
EX10-13	25° 24' 01.9170" S	28° 46' 29.0971" E
EX10-14	25° 24' 01.9565" S	28° 46' 28.2261" E
EX10-15	25° 24' 01.9889" S	28° 46' 27.5094" E
EX10-16	25° 24' 02.0002" S	28° 46' 27.2606" E
EX10-17	25° 24' 02.0141" S	28° 46' 26.7933" E
EX10-18	25° 24' 02.0355" S	28° 46' 26.0749" E

Point	Latitude	Longitude
EX10-19	25° 24' 02.0562" S	28° 46' 25.3804" E
EX10-20	25° 24' 02.0565" S	28° 46' 25.3589" E
EX10-21	25° 24' 02.0658" S	28° 46' 24.6436" E
EX10-22	25° 24' 02.0724" S	28° 46' 24.1431" E
EX10-23	25° 24' 02.0728" S	28° 46' 23.9384" E
EX10-24	25° 24' 02.0741" S	28° 46' 23.2297" E
EX10-25	25° 24' 02.0754" S	28° 46' 22.5145" E
EX10-26	25° 24' 02.0768" S	28° 46' 21.8000" E
EX10-27	25° 24' 02.0781" S	28° 46' 21.0868" E
EX10-28	25° 24' 02.0795" S	28° 46' 20.3663" E
EX10-29	25° 24' 02.0808" S	28° 46' 19.6519" E
EX10-30	25° 24' 02.0822" S	28° 46' 18.9353" E
EX10-31	25° 24' 02.0835" S	28° 46' 18.2168" E
EX10-32	25° 24' 02.0989" S	28° 46' 17.4996" E
EX10-33	25° 24' 02.1144" S	28° 46' 16.7812" E
EX10-34	25° 24' 02.1295" S	28° 46' 16.0733" E
EX10-35	25° 24' 02.1309" S	28° 46' 15.3560" E
EX10-36	25° 24' 02.1323" S	28° 46' 14.6361" E
EX10-37	25° 24' 02.1337" S	28° 46' 13.9188" E
EX10-38	25° 24' 02.1339" S	28° 46' 13.8111" E
EX10-39	25° 24' 02.1452" S	28° 46' 07.8991" E
EX10-40	25° 24' 02.1463" S	28° 46' 07.3067" E
EX10-41	25° 24' 02.1473" S	28° 46' 06.7508" E
EX10-42	25° 24' 02.1479" S	28° 46' 06.4588" E
EX10-43	25° 24' 02.1497" S	28° 46' 05.5324" E
EX10-44	25° 24' 02.1510" S	28° 46' 04.8109" E
EX10-45	25° 24' 02.1524" S	28° 46' 04.0899" E
EX10-46	25° 24' 02.1538" S	28° 46' 03.3743" E
EX10-47	25° 24' 02.1551" S	28° 46' 02.6534" E
EX10-48	25° 24' 02.1565" S	28° 46' 01.9381" E
EX10-49	25° 24' 02.1578" S	28° 46' 01.2168" E
EX10-50	25° 24' 02.1681" S	28° 46' 00.5007" E
EX10-51	25° 24' 02.1710" S	28° 45' 59.8069" E
EX10-52	25° 24' 02.1712" S	28° 45' 59.7834" E
EX10-53	25° 24' 02.1741" S	28° 45' 59.0876" E
EX10-54	25° 24' 02.1772" S	28° 45' 58.3717" E
EX10-55	25° 24' 02.1802" S	28° 45' 57.6557" E
EX10-56	25° 24' 02.1832" S	28° 45' 56.9400" E
EX10-57	25° 24' 02.1862" S	28° 45' 56.2237" E
EX10-58	25° 24' 02.1898" S	28° 45' 55.3643" E
EX10-59	25° 24' 02.1902" S	28° 45' 55.2617" E
EX10-60	25° 24' 01.6446" S	28° 45' 53.6442" E
EX10-61	25° 24' 01.1305" S	28° 45' 52.0609" E
EX10-62	25° 24' 01.0768" S	28° 45' 51.9610" E
EX10-63	25° 24' 00.9178" S	28° 45' 51.4895" E
EX10-64	25° 24' 00.6554" S	28° 45' 51.1381" E
EX10-65	25° 24' 00.2408" S	28° 45' 50.5829" E
EX10-66	25° 23' 59.8283" S	28° 45' 50.0304" E

Point	Latitude	Longitude
EX10-67	25° 23' 59.4170" S	28° 45' 49.4796" E
EX10-68	25° 23' 59.0042" S	28° 45' 48.9267" E
EX10-69	25° 23' 58.5900" S	28° 45' 48.3720" E
EX10-70	25° 23' 58.1778" S	28° 45' 47.8200" E
EX10-71	25° 23' 57.7628" S	28° 45' 47.2642" E
EX10-72	25° 23' 57.3530" S	28° 45' 46.7153" E
EX10-73	25° 23' 56.9400" S	28° 45' 46.1622" E
EX10-74	25° 23' 56.5267" S	28° 45' 45.6088" E
EX10-75	25° 23' 56.1144" S	28° 45' 45.0565" E
EX10-76	25° 23' 55.7022" S	28° 45' 44.5044" E
EX10-77	25° 23' 55.2910" S	28° 45' 43.9501" E
EX10-78	25° 23' 54.4093" S	28° 45' 42.7616" E
EX10-79	25° 23' 53.8315" S	28° 45' 41.9816" E
EX10-80	25° 23' 53.7747" S	28° 45' 41.9048" E
EX10-81	25° 23' 52.2724" S	28° 45' 40.9471" E
EX10-82	25° 23' 50.7572" S	28° 45' 39.9565" E
EX10-83	25° 23' 50.6680" S	28° 45' 39.9275" E
EX10-84	25° 23' 50.0727" S	28° 45' 39.7345" E
EX10-85	25° 23' 49.4819" S	28° 45' 39.5430" E
EX10-86	25° 23' 48.8836" S	28° 45' 39.3491" E
EX10-87	25° 23' 48.2920" S	28° 45' 39.1573" E
EX10-88	25° 23' 47.7006" S	28° 45' 38.9656" E
EX10-89	25° 23' 46.9160" S	28° 45' 38.7112" E
EX10-90	25° 23' 46.5896" S	28° 45' 38.8491" E
EX10-91	25° 23' 46.4996" S	28° 45' 38.8871" E
EX10-92	25° 23' 45.8924" S	28° 45' 39.1436" E
EX10-93	25° 23' 45.2861" S	28° 45' 39.3998" E
EX10-94	25° 23' 44.6807" S	28° 45' 39.6555" E
EX10-95	25° 23' 44.0760" S	28° 45' 39.9109" E
EX10-96	25° 23' 43.4778" S	28° 45' 40.1636" E
EX10-97	25° 23' 42.8713" S	28° 45' 40.4198" E
EX10-98	25° 23' 42.2622" S	28° 45' 40.6771" E
EX10-99	25° 23' 41.6559" S	28° 45' 40.9333" E
EX10-100	25° 23' 41.0476" S	28° 45' 41.1902" E
EX10-101	25° 23' 40.4396" S	28° 45' 41.4470" E
EX10-102	25° 23' 39.8303" S	28° 45' 41.7044" E
EX10-103	25° 23' 39.2225" S	28° 45' 41.9611" E
EX10-104	25° 23' 38.6140" S	28° 45' 42.2182" E
EX10-105	25° 23' 38.0061" S	28° 45' 42.4749" E
EX10-106	25° 23' 37.3086" S	28° 45' 42.7696" E
EX10-107	25° 23' 37.2186" S	28° 45' 42.8076" E
EX10-108	25° 23' 36.1525" S	28° 45' 43.2579" E
EX10-109	25° 23' 35.3923" S	28° 45' 44.5823" E
EX10-110	25° 23' 24.2920" S	28° 45' 49.3746" E
EX10-111	25° 23' 26.9055" S	28° 45' 57.2497" E
EX10-112	25° 23' 19.8472" S	28° 45' 56.6061" E
EX10-113	25° 23' 00.6331" S	28° 45' 54.8480" E
EX10-114	25° 22' 59.5990" S	28° 46' 02.5850" E

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PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 46 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. M B Straughan G.Pr. LSO907D — 09 October 2025 date

For applicant Owain Jackson name

signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation

Dwg: reg 2(2) plan er kruis river oct 2025.dwg

Revision:

Date: 09 October 2025

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Point	Latitude	Longitude
EX10-115	25° 22' 59.2507" S	28° 46' 05.1912" E
EX10-116	25° 22' 57.5937" S	28° 46' 17.3613" E
EX10-117	25° 22' 56.7381" S	28° 46' 23.5881" E
EX10-118	25° 22' 53.9637" S	28° 46' 32.5133" E
EX10-119	25° 22' 53.7330" S	28° 46' 34.0345" E
EX10-120	25° 22' 54.5922" S	28° 46' 37.0461" E
EX10-121	25° 23' 07.9471" S	28° 46' 42.9453" E
EX10-122	25° 23' 23.7679" S	28° 46' 50.1251" E
EX11-1	25° 25' 27.2030" S	28° 46' 04.2081" E
EX11-2	25° 25' 27.0745" S	28° 46' 04.2085" E
EX11-3	25° 25' 26.1013" S	28° 46' 04.2120" E
EX11-4	25° 25' 25.6105" S	28° 46' 04.2138" E
EX11-5	25° 25' 25.1190" S	28° 46' 04.2156" E
EX11-6	25° 25' 24.6370" S	28° 46' 04.2173" E
EX11-7	25° 25' 24.1488" S	28° 46' 04.2191" E
EX11-8	25° 25' 23.6652" S	28° 46' 04.2208" E
EX11-9	25° 25' 23.2741" S	28° 46' 04.2222" E
EX11-10	25° 25' 23.1724" S	28° 46' 04.2226" E
EX11-11	25° 25' 22.7773" S	28° 46' 04.2078" E
EX11-12	25° 25' 22.2747" S	28° 46' 04.1890" E
EX11-13	25° 25' 21.7860" S	28° 46' 04.1902" E
EX11-14	25° 25' 21.2973" S	28° 46' 04.1914" E
EX11-15	25° 25' 20.8133" S	28° 46' 04.1926" E
EX11-16	25° 25' 20.3132" S	28° 46' 04.1938" E
EX11-17	25° 25' 19.8323" S	28° 46' 04.1951" E
EX11-18	25° 25' 19.3374" S	28° 46' 04.1963" E
EX11-19	25° 25' 18.8448" S	28° 46' 04.1975" E
EX11-20	25° 25' 18.1065" S	28° 46' 04.1993" E
EX11-21	25° 25' 17.7722" S	28° 46' 04.2002" E
EX11-22	25° 25' 16.4550" S	28° 46' 04.2035" E
EX11-23	25° 25' 15.8778" S	28° 46' 04.2049" E
EX11-24	25° 25' 15.3847" S	28° 46' 04.2061" E
EX11-25	25° 25' 14.8939" S	28° 46' 04.2074" E
EX11-26	25° 25' 14.4123" S	28° 46' 04.2086" E
EX11-27	25° 25' 13.9230" S	28° 46' 04.2098" E
EX11-28	25° 25' 13.4389" S	28° 46' 04.2110" E
EX11-29	25° 25' 12.9443" S	28° 46' 04.2122" E
EX11-30	25° 25' 12.4653" S	28° 46' 04.2134" E
EX11-31	25° 25' 11.9753" S	28° 46' 04.2146" E
EX11-32	25° 25' 11.4855" S	28° 46' 04.2158" E
EX11-33	25° 25' 10.9965" S	28° 46' 04.2170" E
EX11-34	25° 25' 10.5067" S	28° 46' 04.2183" E
EX11-35	25° 25' 09.7403" S	28° 46' 04.2202" E
EX11-36	25° 25' 05.7011" S	28° 46' 04.2303" E
EX11-37	25° 25' 05.7034" S	28° 46' 05.6202" E
EX11-38	25° 25' 05.7040" S	28° 46' 07.8936" E
EX11-39	25° 25' 05.7041" S	28° 46' 08.0646" E
EX11-40	25° 25' 05.7045" S	28° 46' 09.1512" E
EX11-41	25° 25' 05.7047" S	28° 46' 09.6887" E
EX11-42	25° 25' 05.7049" S	28° 46' 10.2279" E
EX11-43	25° 25' 05.7051" S	28° 46' 10.7605" E
EX11-44	25° 25' 05.7053" S	28° 46' 11.3057" E
EX11-45	25° 25' 05.7055" S	28° 46' 11.8428" E
EX11-46	25° 25' 05.7059" S	28° 46' 12.7721" E
EX11-47	25° 25' 05.7059" S	28° 46' 12.9526" E
EX11-48	25° 25' 05.7063" S	28° 46' 14.0374" E
EX11-49	25° 25' 05.7067" S	28° 46' 15.1054" E
EX11-50	25° 25' 05.7067" S	28° 46' 15.2305" E
EX11-51	25° 25' 05.7071" S	28° 46' 15.9966" E
EX11-52	25° 25' 05.7073" S	28° 46' 16.7010" E
EX11-53	25° 25' 05.7075" S	28° 46' 17.2492" E
EX11-54	25° 25' 05.7077" S	28° 46' 17.7840" E
EX11-55	25° 25' 05.7079" S	28° 46' 18.3295" E
EX11-56	25° 25' 05.7081" S	28° 46' 18.8491" E
EX11-57	25° 25' 05.7083" S	28° 46' 19.3888" E
EX11-58	25° 25' 05.7085" S	28° 46' 20.0336" E
EX11-59	25° 25' 05.7087" S	28° 46' 20.6805" E
EX11-60	25° 25' 05.7088" S	28° 46' 20.8177" E
EX11-61	25° 25' 05.7090" S	28° 46' 21.3570" E
EX11-62	25° 25' 05.7092" S	28° 46' 21.9085" E
EX11-63	25° 25' 05.7094" S	28° 46' 22.4417" E
EX11-64	25° 25' 05.7096" S	28° 46' 22.9728" E
EX11-65	25° 25' 05.7098" S	28° 46' 23.8335" E
EX11-66	25° 25' 05.7099" S	28° 46' 23.9695" E
EX11-67	25° 25' 05.7099" S	28° 46' 25.0479" E
EX11-68	25° 25' 05.2152" S	28° 46' 25.0483" E
EX11-69	25° 25' 05.2239" S	28° 46' 31.2616" E
EX11-70	25° 25' 06.8587" S	28° 46' 31.2596" E
EX11-71	25° 25' 06.8614" S	28° 46' 32.0226" E
EX11-72	25° 25' 06.8737" S	28° 46' 35.6010" E
EX11-73	25° 25' 06.8805" S	28° 46' 37.5875" E
EX11-74	25° 25' 06.8837" S	28° 46' 38.5218" E
EX11-75	25° 25' 06.8917" S	28° 46' 40.8664" E
EX11-76	25° 25' 06.8956" S	28° 46' 41.9810" E
EX11-77	25° 25' 06.8978" S	28° 46' 42.6310" E
EX11-78	25° 25' 06.9002" S	28° 46' 43.3437" E
EX11-79	25° 25' 06.9027" S	28° 46' 44.0565" E
EX11-80	25° 25' 06.9051" S	28° 46' 44.7651" E
EX11-81	25° 25' 06.9076" S	28° 46' 45.4824" E
EX11-82	25° 25' 06.9100" S	28° 46' 46.1954" E
EX11-83	25° 25' 05.7033" S	28° 46' 46.2060" E
EX11-84	25° 25' 05.2156" S	28° 46' 46.2102" E
EX11-85	25° 25' 05.2446" S	28° 46' 51.5146" E
EX11-86	25° 25' 05.0231" S	28° 46' 54.0449" E
EX11-87	25° 25' 04.5457" S	28° 46' 57.2350" E
EX11-88	25° 25' 03.7183" S	28° 47' 00.4363" E
EX11-89	25° 25' 02.5736" S	28° 47' 03.4796" E
EX11-90	25° 25' 01.0875" S	28° 47' 06.4102" E
EX11-91	25° 24' 59.3281" S	28° 47' 09.1066" E
EX11-92	25° 24' 57.3478" S	28° 47' 11.5108" E
EX11-93	25° 24' 57.2838" S	28° 47' 11.5799" E
EX11-94	25° 24' 55.0601" S	28° 47' 13.7392" E
EX11-95	25° 24' 54.5877" S	28° 47' 14.1002" E
EX11-96	25° 24' 58.3400" S	28° 47' 14.2785" E
EX11-97	25° 24' 59.3055" S	28° 47' 14.3243" E
EX11-98	25° 24' 59.4058" S	28° 47' 14.3291" E
EX11-99	25° 25' 00.0187" S	28° 47' 14.3582" E
EX11-100	25° 25' 00.6224" S	28° 47' 14.3868" E
EX11-101	25° 25' 01.2263" S	28° 47' 14.4155" E
EX11-102	25° 25' 01.8272" S	28° 47' 14.4441" E
EX11-103	25° 25' 01.9270" S	28° 47' 14.4488" E
EX11-104	25° 25' 02.9024" S	28° 47' 14.4951" E
EX11-105	25° 25' 03.8757" S	28° 47' 14.5413" E
EX11-106	25° 25' 03.9778" S	28° 47' 14.5462" E
EX11-107	25° 25' 04.5789" S	28° 47' 14.5747" E
EX11-108	25° 25' 05.1808" S	28° 47' 14.6033" E
EX11-109	25° 25' 05.7815" S	28° 47' 14.6232" E
EX11-110	25° 25' 06.3767" S	28° 47' 14.6498" E
EX11-111	25° 25' 06.4793" S	28° 47' 14.6544" E
EX11-112	25° 25' 07.4528" S	28° 47' 14.6980" E
EX11-113	25° 25' 08.4243" S	28° 47' 14.7414" E
EX11-114	25° 25' 08.5196" S	28° 47' 14.7457" E
EX11-115	25° 25' 09.1255" S	28° 47' 14.7728" E
EX11-116	25° 25' 09.7275" S	28° 47' 14.7998" E
EX11-117	25° 25' 10.3326" S	28° 47' 14.8268" E
EX11-118	25° 25' 10.9313" S	28° 47' 14.8536" E
EX11-119	25° 25' 11.0289" S	28° 47' 14.8580" E
EX11-120	25° 25' 11.5211" S	28° 47' 14.8800" E
EX11-121	25° 25' 12.0080" S	28° 47' 14.9018" E
EX11-122	25° 25' 12.6132" S	28° 47' 14.9289" E
EX11-123	25° 25' 13.2268" S	28° 47' 14.9564" E
EX11-124	25° 25' 13.3160" S	28° 47' 14.9604" E
EX11-125	25° 25' 14.2886" S	28° 47' 15.0039" E
EX11-126	25° 25' 15.2692" S	28° 47' 15.0478" E
EX11-127	25° 25' 15.3779" S	28° 47' 15.0526" E
EX11-128	25° 25' 15.9744" S	28° 47' 15.0793" E
EX11-129	25° 25' 16.5793" S	28° 47' 15.1064" E
EX11-130	25° 25' 17.1815" S	28° 47' 15.1333" E
EX11-131	25° 25' 17.7849" S	28° 47' 15.1603" E
EX11-132	25° 25' 18.2394" S	28° 47' 15.2334" E
EX11-133	25° 25' 18.7337" S	28° 47' 15.2564" E
EX11-134	25° 25' 19.3897" S	28° 47' 15.2869" E
EX11-135	25° 25' 20.3779" S	28° 47' 15.3328" E
EX11-136	25° 25' 21.0636" S	28° 47' 15.3646" E
EX11-137	25° 25' 22.3299" S	28° 47' 15.4234" E
EX11-138	25° 25' 23.1178" S	28° 47' 15.4600" E
EX11-139	25° 25' 23.7862" S	28° 47' 15.4910" E
EX11-140	25° 25' 24.4545" S	28° 47' 15.5221" E
EX11-141	25° 25' 25.1221" S	28° 47' 15.5530" E
EX11-142	25° 25' 25.7898" S	28° 47' 15.5841" E
EX11-143	25° 25' 26.4535" S	28° 47' 15.6149" E
EX11-144	25° 25' 27.1164" S	28° 47' 15.6457" E
EX11-145	25° 25' 27.7799" S	28° 47' 15.6765" E
EX11-146	25° 25' 28.4477" S	28° 47' 15.7075" E
EX11-147	25° 25' 29.1155" S	28° 47' 15.7385" E
EX11-148	25° 25' 29.7979" S	28° 47' 15.7702" E
EX11-149	25° 25' 29.8834" S	28° 47' 15.7742" E
EX11-150	25° 25' 30.8618" S	28° 47' 15.8196" E
EX11-151	25° 25' 31.8404" S	28° 47' 15.8651" E
EX11-152	25° 25' 31.9337" S	28° 47' 15.8734" E
EX11-153	25° 25' 32.6010" S	28° 47' 15.9045" E
EX11-154	25° 25' 33.2736" S	28° 47' 15.9358" E
EX11-155	25° 25' 33.9372" S	28° 47' 15.9667" E
EX11-156	25° 25' 34.6055" S	28° 47' 15.9979" E
EX11-157	25° 25' 35.2687" S	28° 47' 16.0288" E
EX11-158	25° 25' 35.9290" S	28° 47' 16.0595" E
EX11-159	25° 25' 36.6121" S	28° 47' 16.0913" E
EX11-160	25° 25' 36.7129" S	28° 47' 16.0960" E
EX11-161	25° 25' 37.6841" S	28° 47' 16.1413" E
EX11-162	25° 25' 38.0147" S	28° 47' 16.1566" E
EX11-163	25° 25' 38.2750" S	28° 47' 16.1687" E
EX11-164	25° 25' 38.6881" S	28° 47' 16.1880" E
EX11-165	25° 25' 39.2097" S	28° 47' 16.2123" E
EX11-166	25° 25' 39.8334" S	28° 47' 16.2414" E
EX11-167	25° 25' 40.1496" S	28° 47' 16.2561" E
EX11-168	25° 25' 41.1260" S	28° 47' 16.3015" E
EX11-169	25° 25' 41.2297" S	28° 47' 16.3064" E
EX11-170	25° 25' 41.8747" S	28° 47' 16.3364" E
EX11-171	25° 25' 42.5265" S	28° 47' 16.3668" E
EX11-172	25° 25' 43.1736" S	28° 47' 16.3969" E
EX11-173	25° 25' 43.8209" S	28° 47' 16.4271" E
EX11-174	25° 25' 44.4721" S	28° 47' 16.4574" E
EX11-175	25° 25' 45.5066" S	28° 47' 16.5056" E
EX11-176	25° 25' 49.8292" S	28° 47' 16.7069" E
EX11-177	25° 25' 51.5790" S	28° 47' 16.7108" E
EX11-178	25° 25' 52.3734" S	28° 47' 16.0666" E
EX11-179	25° 25' 52.5689" S	28° 47' 15.1739" E
EX11-180	25° 25' 58.4155" S	28° 46' 48.1406" E
EX11-181	25° 25' 58.7085" S	28° 46' 46.7839" E
EX11-182	25° 25' 58.8204" S	28° 46' 46.0850" E
EX11-183	25° 25' 58.9452" S	28° 46' 45.3042" E
EX11-184	25° 25' 59.0593" S	28° 46' 44.5906" E

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 47 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. — M B Straughan G.Pr. LS0907D — 09 October 2025 date

For applicant Owain Jackson name

signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	**Dwg:** reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

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Point	Latitude	Longitude
EX11-185	25° 25' 59.1724" S	28° 46' 43.8831" E
EX11-186	25° 25' 59.2042" S	28° 46' 43.6844" E
EX11-187	25° 25' 59.2300" S	28° 46' 43.1704" E
EX11-188	25° 25' 59.2750" S	28° 46' 42.2732" E
EX11-189	25° 25' 59.3190" S	28° 46' 41.3972" E
EX11-190	25° 25' 59.3564" S	28° 46' 40.6491" E
EX11-191	25° 25' 59.3564" S	28° 46' 40.6459" E
EX11-192	25° 25' 59.3546" S	28° 46' 39.9100" E
EX11-193	25° 25' 59.3527" S	28° 46' 39.1744" E
EX11-194	25° 25' 59.3507" S	28° 46' 38.3840" E
EX11-195	25° 25' 59.3478" S	28° 46' 37.2379" E
EX11-196	25° 25' 59.3559" S	28° 46' 37.2556" E
EX11-197	25° 26' 00.6557" S	28° 46' 37.2532" E
EX11-198	25° 26' 00.6052" S	28° 45' 04.8302" E
EX11-199	25° 26' 01.2540" S	28° 46' 04.1132" E
EX11-200	25° 26' 01.2523" S	28° 46' 03.0396" E
EX11-201	25° 26' 00.6013" S	28° 46' 02.3251" E
EX11-202	25° 25' 59.3014" S	28° 46' 02.3276" E
EX11-203	25° 25' 58.6527" S	28° 46' 03.0445" E
EX11-204	25° 25' 38.9596" S	28° 46' 03.0825" E
EX11-205	25° 25' 38.9613" S	28° 46' 04.1560" E
EX11-206	25° 25' 38.9793" S	28° 46' 04.1655" E
EX11-207	25° 25' 38.5218" S	28° 46' 04.1672" E
EX11-208	25° 25' 38.0403" S	28° 46' 04.1690" E
EX11-209	25° 25' 37.5485" S	28° 46' 04.1707" E
EX11-210	25° 25' 37.0568" S	28° 46' 04.1725" E
EX11-211	25° 25' 36.5562" S	28° 46' 04.1743" E
EX11-212	25° 25' 36.0670" S	28° 46' 04.1761" E
EX11-213	25° 25' 35.5715" S	28° 46' 04.1779" E
EX11-214	25° 25' 35.0881" S	28° 46' 04.1796" E
EX11-215	25° 25' 34.6024" S	28° 46' 04.1814" E
EX11-216	25° 25' 34.1128" S	28° 46' 04.1831" E
EX11-217	25° 25' 33.6256" S	28° 46' 04.1849" E
EX11-218	25° 25' 33.1377" S	28° 46' 04.1866" E
EX11-219	25° 25' 32.6473" S	28° 46' 04.1884" E
EX11-220	25° 25' 32.1643" S	28° 46' 04.1902" E
EX11-221	25° 25' 31.6788" S	28° 46' 04.1919" E
EX11-222	25° 25' 31.1801" S	28° 46' 04.1937" E
EX11-223	25° 25' 30.6996" S	28° 46' 04.1954" E
EX11-224	25° 25' 30.2145" S	28° 46' 04.1972" E
EX11-225	25° 25' 29.7348" S	28° 46' 04.1989" E
EX11-226	25° 25' 29.2376" S	28° 46' 04.2007" E
EX11-227	25° 25' 28.7539" S	28° 46' 04.2025" E
EX12-1	25° 24' 44.9211" S	28° 47' 06.3226" E
EX12-2	25° 24' 45.4361" S	28° 47' 06.0147" E
EX12-3	25° 24' 46.7287" S	28° 47' 06.0089" E
EX12-4	25° 24' 47.8581" S	28° 47' 06.0039" E
EX12-5	25° 24' 48.2878" S	28° 47' 06.0861" E

Point	Latitude	Longitude
EX12-6	25° 24' 57.1382" S	28° 47' 05.9870" E
EX12-7	25° 24' 57.2261" S	28° 47' 00.8041" E
EX12-8	25° 24' 59.9861" S	28° 47' 00.8442" E
EX12-9	25° 25' 00.6115" S	28° 46' 23.2313" E
EX12-10	25° 24' 55.5150" S	28° 46' 23.2219" E
EX12-11	25° 24' 55.6163" S	28° 46' 15.4491" E
EX12-12	25° 24' 53.9375" S	28° 46' 15.4161" E
EX12-13	25° 24' 54.0160" S	28° 46' 12.8633" E
EX12-14	25° 24' 36.7825" S	28° 46' 12.6088" E
EX12-15	25° 24' 35.4826" S	28° 46' 14.0442" E
EX12-16	25° 24' 34.5027" S	28° 46' 15.1262" E
EX12-17	25° 24' 34.0498" S	28° 46' 15.6264" E
EX12-18	25° 24' 33.4784" S	28° 46' 16.2572" E
EX12-19	25° 24' 33.0234" S	28° 46' 16.7597" E
EX12-20	25° 24' 32.5686" S	28° 46' 17.2618" E
EX12-21	25° 24' 31.6104" S	28° 46' 18.3199" E
EX12-22	25° 24' 31.5457" S	28° 46' 18.3914" E
EX12-23	25° 24' 31.0447" S	28° 46' 18.9445" E
EX12-24	25° 24' 30.5469" S	28° 46' 19.4942" E
EX12-25	25° 24' 30.0211" S	28° 46' 20.0747" E
EX12-26	25° 24' 29.4976" S	28° 46' 20.6529" E
EX12-27	25° 24' 28.9763" S	28° 46' 21.2285" E
EX12-28	25° 24' 28.4543" S	28° 46' 21.8048" E
EX12-29	25° 24' 27.9324" S	28° 46' 22.3811" E
EX12-30	25° 24' 27.4085" S	28° 46' 22.9595" E
EX12-31	25° 24' 26.8872" S	28° 46' 23.5352" E
EX12-32	25° 24' 26.8200" S	28° 46' 23.6094" E
EX12-33	25° 24' 26.2960" S	28° 46' 24.1880" E
EX12-34	25° 24' 25.7714" S	28° 46' 24.7672" E
EX12-35	25° 24' 25.2482" S	28° 46' 25.3449" E
EX12-36	25° 24' 24.7267" S	28° 46' 25.9207" E
EX12-37	25° 24' 24.2027" S	28° 46' 26.4993" E
EX12-38	25° 24' 23.6808" S	28° 46' 27.0756" E
EX12-39	25° 24' 23.1603" S	28° 46' 27.6503" E
EX12-40	25° 24' 22.6337" S	28° 46' 28.2317" E
EX12-41	25° 24' 22.5029" S	28° 46' 28.3761" E
EX12-42	25° 24' 22.0238" S	28° 46' 28.7186" E
EX12-43	25° 24' 21.6829" S	28° 46' 28.9623" E
EX12-44	25° 24' 20.5146" S	28° 46' 29.7974" E
EX12-45	25° 24' 18.3776" S	28° 46' 33.3661" E
EX12-46	25° 24' 18.3369" S	28° 46' 34.2543" E
EX12-47	25° 24' 16.5331" S	28° 46' 34.2605" E
EX12-48	25° 24' 16.5380" S	28° 46' 36.0852" E
EX12-49	25° 24' 16.5389" S	28° 46' 36.4010" E
EX12-50	25° 24' 15.7535" S	28° 46' 36.4037" E
EX12-51	25° 24' 14.9680" S	28° 46' 36.4063" E
EX12-52	25° 24' 14.9111" S	28° 46' 37.4799" E
EX12-53	25° 24' 14.8922" S	28° 46' 37.8378" E

Point	Latitude	Longitude
EX12-54	25° 24' 14.8443" S	28° 46' 38.7436" E
EX12-55	25° 24' 14.8065" S	28° 46' 39.4578" E
EX12-56	25° 24' 14.7687" S	28° 46' 40.1720" E
EX12-57	25° 24' 14.7311" S	28° 46' 40.8857" E
EX12-58	25° 24' 14.7511" S	28° 46' 41.6035" E
EX12-59	25° 24' 14.7713" S	28° 46' 42.3186" E
EX12-60	25° 24' 14.7914" S	28° 46' 43.0338" E
EX12-61	25° 24' 14.8115" S	28° 46' 43.7490" E
EX12-62	25° 24' 14.8316" S	28° 46' 44.4641" E
EX12-63	25° 24' 14.8518" S	28° 46' 45.1793" E
EX12-64	25° 24' 14.8712" S	28° 46' 45.8662" E
EX12-65	25° 24' 14.2210" S	28° 46' 45.8685" E
EX12-66	25° 24' 13.5715" S	28° 46' 45.8707" E
EX12-67	25° 24' 12.9222" S	28° 46' 45.8728" E
EX12-68	25° 24' 12.9520" S	28° 46' 46.9460" E
EX12-69	25° 24' 12.6388" S	28° 46' 46.9470" E
EX12-70	25° 24' 12.6399" S	28° 46' 47.3763" E
EX12-71	25° 24' 12.6423" S	28° 46' 48.2743" E
EX12-72	25° 24' 12.6442" S	28° 46' 48.9895" E
EX12-73	25° 24' 12.6462" S	28° 46' 49.7049" E
EX12-74	25° 24' 12.6481" S	28° 46' 50.4200" E
EX12-75	25° 24' 12.6501" S	28° 46' 51.1351" E
EX12-76	25° 24' 12.6522" S	28° 46' 51.8504" E
EX12-77	25° 24' 12.6543" S	28° 46' 52.5656" E
EX12-78	25° 24' 12.6568" S	28° 46' 53.4598" E
EX12-79	25° 24' 12.6592" S	28° 46' 54.3538" E
EX12-80	25° 24' 12.6618" S	28° 46' 55.2473" E
EX12-81	25° 24' 12.1784" S	28° 46' 55.2492" E
EX12-82	25° 24' 11.5642" S	28° 46' 55.2339" E
EX12-83	25° 24' 10.0710" S	28° 46' 54.6820" E
EX12-84	25° 24' 09.9676" S	28° 46' 55.0213" E
EX12-85	25° 24' 09.5252" S	28° 46' 56.7149" E
EX12-86	25° 24' 10.9912" S	28° 46' 57.2860" E
EX12-87	25° 24' 11.5074" S	28° 46' 55.5904" E
EX12-88	25° 24' 12.1752" S	28° 46' 55.6069" E
EX12-89	25° 24' 12.1786" S	28° 46' 56.6803" E
EX12-90	25° 24' 12.8279" S	28° 46' 56.6784" E
EX12-91	25° 24' 13.4776" S	28° 46' 56.6760" E
EX12-92	25° 24' 14.1271" S	28° 46' 56.6739" E
EX12-93	25° 24' 14.7767" S	28° 46' 56.6717" E
EX12-94	25° 24' 15.4264" S	28° 46' 56.6696" E
EX12-95	25° 24' 16.0759" S	28° 46' 56.6674" E
EX12-96	25° 24' 16.7257" S	28° 46' 56.6652" E
EX12-97	25° 24' 17.3752" S	28° 46' 56.6629" E
EX12-98	25° 24' 18.1904" S	28° 46' 56.6603" E
EX12-99	25° 24' 18.2029" S	28° 47' 01.9572" E
EX12-100	25° 24' 26.1150" S	28° 47' 03.7939" E
EX12-101	25° 24' 37.1164" S	28° 47' 06.3715" E

Point	Latitude	Longitude
EX13-1	25° 23' 58.1078" S	28° 47' 37.8291" E
EX13-2	25° 23' 55.9607" S	28° 47' 45.6042" E
EX13-3	25° 23' 56.7851" S	28° 47' 46.0704" E
EX13-4	25° 23' 58.0561" S	28° 47' 47.6979" E
EX13-5	25° 23' 59.2948" S	28° 47' 46.8945" E
EX13-6	25° 23' 59.7480" S	28° 47' 46.6006" E
EX13-7	25° 24' 00.9480" S	28° 47' 45.8222" E
EX13-8	25° 24' 01.4919" S	28° 47' 45.9705" E
EX13-9	25° 24' 01.2575" S	28° 47' 47.0123" E
EX13-10	25° 24' 01.0997" S	28° 47' 46.9693" E
EX13-11	25° 24' 01.1605" S	28° 47' 47.4283" E
EX13-12	25° 24' 04.8960" S	28° 47' 48.4470" E
EX13-13	25° 24' 05.0537" S	28° 47' 48.4900" E
EX13-14	25° 24' 05.0702" S	28° 47' 48.6678" E
EX13-15	25° 24' 05.1102" S	28° 47' 49.0949" E
EX13-16	25° 24' 05.2387" S	28° 47' 49.6808" E
EX13-17	25° 24' 03.3435" S	28° 47' 50.1852" E
EX13-18	25° 24' 03.2519" S	28° 47' 49.7678" E
EX13-19	25° 24' 01.2684" S	28° 47' 49.2268" E
EX13-20	25° 24' 00.9529" S	28° 47' 49.1409" E
EX13-21	25° 23' 59.3756" S	28° 47' 50.1643" E
EX13-22	25° 24' 00.6346" S	28° 47' 52.5171" E
EX13-23	25° 24' 03.7727" S	28° 48' 05.0287" E
EX13-24	25° 24' 04.0365" S	28° 48' 06.0803" E
EX13-25	25° 24' 04.7993" S	28° 48' 05.6744" E
EX13-26	25° 24' 05.4430" S	28° 48' 05.3319" E
EX13-27	25° 24' 06.1744" S	28° 48' 04.9427" E
EX13-28	25° 24' 06.8181" S	28° 48' 04.6001" E
EX13-29	25° 24' 07.6959" S	28° 48' 04.1331" E
EX13-30	25° 24' 08.6784" S	28° 48' 03.6103" E
EX13-31	25° 24' 09.2635" S	28° 48' 03.2987" E
EX13-32	25° 24' 10.2876" S	28° 48' 02.7538" E
EX13-33	25° 24' 10.9605" S	28° 48' 02.3956" E
EX13-34	25° 24' 11.0190" S	28° 48' 02.3645" E
EX13-35	25° 24' 11.8889" S	28° 48' 01.9016" E
EX13-36	25° 24' 12.5033" S	28° 48' 01.5746" E
EX13-37	25° 24' 13.1177" S	28° 48' 01.2476" E
EX13-38	25° 24' 13.7321" S	28° 48' 00.9206" E
EX13-39	25° 24' 15.4876" S	28° 47' 59.9864" E
EX13-40	25° 24' 16.0728" S	28° 47' 59.6750" E
EX13-41	25° 24' 16.6579" S	28° 47' 59.3635" E
EX13-42	25° 24' 17.2431" S	28° 47' 59.0521" E
EX13-43	25° 24' 17.8283" S	28° 47' 58.7407" E
EX13-44	25° 24' 18.4134" S	28° 47' 58.4293" E
EX13-45	25° 24' 18.9986" S	28° 47' 58.1178" E
EX13-46	25° 24' 19.5837" S	28° 47' 57.8064" E
EX13-47	25° 24' 20.1689" S	28° 47' 57.4950" E
EX13-48	25° 24' 20.7540" S	28° 47' 57.1836" E

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 48 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. — M B Straughan G.Pr. LS0907D — 09 October 2025 date

For applicant — Owain Jackson name — signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	**Dwg:** reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

friedlaender, burger & volkmann

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Point	Latitude	Longitude
EX13-49	25° 24' 21.3685" S	28° 47' 56.8566" E
EX13-50	25° 24' 21.9829" S	28° 47' 56.5296" E
EX13-51	25° 24' 22.5973" S	28° 47' 56.2026" E
EX13-52	25° 24' 23.2117" S	28° 47' 55.8756" E
EX13-53	25° 24' 23.8339" S	28° 47' 55.5444" E
EX13-54	25° 24' 23.9068" S	28° 47' 55.5057" E
EX13-55	25° 24' 24.4919" S	28° 47' 55.1942" E
EX13-56	25° 24' 25.0771" S	28° 47' 54.8828" E
EX13-57	25° 24' 25.6622" S	28° 47' 54.5714" E
EX13-58	25° 24' 26.2474" S	28° 47' 54.2599" E
EX13-59	25° 24' 26.8325" S	28° 47' 53.9485" E
EX13-60	25° 24' 27.4177" S	28° 47' 53.6371" E
EX13-61	25° 24' 28.0029" S	28° 47' 53.3257" E
EX13-62	25° 24' 28.5880" S	28° 47' 53.0142" E
EX13-63	25° 24' 29.1732" S	28° 47' 52.7028" E
EX13-64	25° 24' 29.7583" S	28° 47' 52.3913" E
EX13-65	25° 24' 30.3435" S	28° 47' 52.0799" E
EX13-66	25° 24' 30.9286" S	28° 47' 51.7685" E
EX13-67	25° 24' 31.5138" S	28° 47' 51.4570" E
EX13-68	25° 24' 32.0989" S	28° 47' 51.1456" E
EX13-69	25° 24' 32.6841" S	28° 47' 50.8342" E
EX13-70	25° 24' 33.2693" S	28° 47' 50.5227" E
EX13-71	25° 24' 33.8544" S	28° 47' 50.2113" E
EX13-72	25° 24' 33.9129" S	28° 47' 50.1801" E
EX13-73	25° 24' 34.4981" S	28° 47' 49.8687" E
EX13-74	25° 24' 35.0832" S	28° 47' 49.5572" E
EX13-75	25° 24' 35.6684" S	28° 47' 49.2458" E
EX13-76	25° 24' 36.2536" S	28° 47' 48.9344" E
EX13-77	25° 24' 36.8387" S	28° 47' 48.6229" E
EX13-78	25° 24' 37.4239" S	28° 47' 48.3115" E
EX13-79	25° 24' 38.0090" S	28° 47' 48.0000" E
EX13-80	25° 24' 38.5942" S	28° 47' 47.6886" E
EX13-81	25° 24' 39.1793" S	28° 47' 47.3771" E
EX13-82	25° 24' 39.7645" S	28° 47' 47.0657" E
EX13-83	25° 24' 40.3496" S	28° 47' 46.7542" E
EX13-84	25° 24' 40.9348" S	28° 47' 46.4428" E
EX13-85	25° 24' 41.5199" S	28° 47' 46.1313" E
EX13-86	25° 24' 42.1051" S	28° 47' 45.8199" E
EX13-87	25° 24' 42.6902" S	28° 47' 45.5084" E
EX13-88	25° 24' 43.2754" S	28° 47' 45.1970" E
EX13-89	25° 24' 43.3339" S	28° 47' 45.1658" E
EX13-90	25° 24' 44.1961" S	28° 47' 44.7069" E
EX13-91	25° 24' 45.0481" S	28° 47' 44.2534" E
EX13-92	25° 24' 45.6591" S	28° 47' 43.9282" E
EX13-93	25° 24' 46.3555" S	28° 47' 43.5577" E
EX13-94	25° 24' 46.9407" S	28° 47' 43.2462" E
EX13-95	25° 24' 47.5258" S	28° 47' 42.9348" E
EX13-96	25° 24' 48.1110" S	28° 47' 42.6233" E

Point	Latitude	Longitude
EX13-97	25° 24' 48.6961" S	28° 47' 42.3119" E
EX13-98	25° 24' 49.2813" S	28° 47' 42.0004" E
EX13-99	25° 24' 49.8665" S	28° 47' 41.6890" E
EX13-100	25° 24' 50.4516" S	28° 47' 41.3775" E
EX13-101	25° 24' 51.0368" S	28° 47' 41.0661" E
EX13-102	25° 24' 51.6219" S	28° 47' 40.7546" E
EX13-103	25° 24' 52.2071" S	28° 47' 40.4431" E
EX13-104	25° 24' 52.7922" S	28° 47' 40.1317" E
EX13-105	25° 24' 53.3774" S	28° 47' 39.8202" E
EX13-106	25° 24' 53.9625" S	28° 47' 39.5088" E
EX13-107	25° 24' 54.5477" S	28° 47' 39.1973" E
EX13-108	25° 24' 55.1328" S	28° 47' 38.8858" E
EX13-109	25° 24' 55.7180" S	28° 47' 38.5744" E
EX13-110	25° 24' 56.3031" S	28° 47' 38.2629" E
EX13-111	25° 24' 56.8883" S	28° 47' 37.9514" E
EX13-112	25° 24' 57.8351" S	28° 47' 37.4475" E
EX13-113	25° 24' 56.9147" S	28° 47' 36.7450" E
EX13-114	25° 24' 56.4239" S	28° 47' 36.3703" E
EX13-115	25° 24' 55.5273" S	28° 47' 35.6860" E
EX13-116	25° 24' 54.9932" S	28° 47' 35.2783" E
EX13-117	25° 24' 54.4591" S	28° 47' 34.8705" E
EX13-118	25° 24' 53.9249" S	28° 47' 34.4628" E
EX13-119	25° 24' 53.3908" S	28° 47' 34.0551" E
EX13-120	25° 24' 52.8567" S	28° 47' 33.6474" E
EX13-121	25° 24' 52.3225" S	28° 47' 33.2397" E
EX13-122	25° 24' 51.7884" S	28° 47' 32.8319" E
EX13-123	25° 24' 50.9736" S	28° 47' 32.2100" E
EX13-124	25° 24' 45.9484" S	28° 47' 28.3742" E
EX13-125	25° 24' 45.4143" S	28° 47' 27.9665" E
EX13-126	25° 24' 44.8801" S	28° 47' 27.5588" E
EX13-127	25° 24' 44.3460" S	28° 47' 27.1511" E
EX13-128	25° 24' 43.8119" S	28° 47' 26.7434" E
EX13-129	25° 24' 43.2777" S	28° 47' 26.3357" E
EX13-130	25° 24' 42.7436" S	28° 47' 25.9280" E
EX13-131	25° 24' 41.9854" S	28° 47' 25.3493" E
EX13-132	25° 24' 41.8518" S	28° 47' 25.2473" E
EX13-133	25° 24' 41.2465" S	28° 47' 24.9755" E
EX13-134	25° 24' 40.5242" S	28° 47' 24.6516" E
EX13-135	25° 24' 39.8019" S	28° 47' 24.3278" E
EX13-136	25° 24' 39.0795" S	28° 47' 24.0039" E
EX13-137	25° 24' 39.0193" S	28° 47' 23.9769" E
EX13-138	25° 24' 38.2970" S	28° 47' 23.6530" E
EX13-139	25° 24' 37.5446" S	28° 47' 23.3156" E
EX13-140	25° 24' 37.0630" S	28° 47' 23.1000" E
EX13-141	25° 24' 36.3030" S	28° 47' 22.7593" E
EX13-142	25° 24' 35.5656" S	28° 47' 22.4287" E
EX13-143	25° 24' 34.7982" S	28° 47' 22.0846" E
EX13-144	25° 24' 34.0608" S	28° 47' 21.7540" E

Point	Latitude	Longitude
EX13-145	25° 24' 33.3234" S	28° 47' 21.4234" E
EX13-146	25° 24' 32.5860" S	28° 47' 21.0929" E
EX13-147	25° 24' 31.8486" S	28° 47' 20.7623" E
EX13-148	25° 24' 31.1113" S	28° 47' 20.4317" E
EX13-149	25° 24' 30.3739" S	28° 47' 20.1011" E
EX13-150	25° 24' 29.6365" S	28° 47' 19.7705" E
EX13-151	25° 24' 28.8991" S	28° 47' 19.4400" E
EX13-152	25° 24' 28.1617" S	28° 47' 19.1094" E
EX13-153	25° 24' 27.4243" S	28° 47' 18.7788" E
EX13-154	25° 24' 26.6870" S	28° 47' 18.4482" E
EX13-155	25° 24' 25.9571" S	28° 47' 18.1210" E
EX13-156	25° 24' 25.4753" S	28° 47' 17.9050" E
EX13-157	25° 24' 24.7078" S	28° 47' 17.5609" E
EX13-158	25° 24' 23.9705" S	28° 47' 17.2304" E
EX13-159	25° 24' 23.2331" S	28° 47' 16.8998" E
EX13-160	25° 24' 22.4957" S	28° 47' 16.5692" E
EX13-161	25° 24' 21.7583" S	28° 47' 16.2387" E
EX13-162	25° 24' 21.0209" S	28° 47' 15.9081" E
EX13-163	25° 24' 20.2835" S	28° 47' 15.5776" E
EX13-164	25° 24' 19.5461" S	28° 47' 15.2470" E
EX13-165	25° 24' 18.8087" S	28° 47' 14.9164" E
EX13-166	25° 24' 18.0714" S	28° 47' 14.5859" E
EX13-167	25° 24' 17.3340" S	28° 47' 14.2553" E
EX13-168	25° 24' 16.5665" S	28° 47' 13.9113" E
EX13-169	25° 24' 16.0851" S	28° 47' 13.6961" E
EX13-170	25° 24' 06.0171" S	28° 47' 09.1833" E
EX13-171	25° 24' 00.0077" S	28° 47' 30.9486" E
EX14-1	25° 22' 44.9201" S	28° 47' 37.0310" E
EX14-2	25° 22' 25.1944" S	28° 47' 44.0090" E
EX14-3	25° 22' 03.5035" S	28° 47' 51.6915" E
EX14-4	25° 22' 03.6259" S	28° 47' 52.7755" E
EX14-5	25° 22' 04.3049" S	28° 47' 53.0887" E
EX14-6	25° 22' 10.6133" S	28° 48' 48.9658" E
EX14-7	25° 22' 10.1903" S	28° 48' 49.5692" E
EX14-8	25° 22' 10.2906" S	28° 48' 50.4564" E
EX14-9	25° 22' 10.8339" S	28° 48' 50.9181" E
EX14-10	25° 22' 11.6390" S	28° 48' 50.8002" E
EX14-11	25° 22' 12.0624" S	28° 48' 50.1969" E
EX14-12	25° 22' 37.4216" S	28° 48' 46.4823" E
EX14-13	25° 22' 44.9266" S	28° 48' 47.7788" E
EX14-14	25° 22' 45.3074" S	28° 48' 48.5688" E
EX14-15	25° 22' 46.5917" S	28° 48' 48.7904" E
EX14-16	25° 22' 56.3382" S	28° 47' 40.3984" E
EX14-17	25° 22' 56.6850" S	28° 47' 40.1900" E
EX14-18	25° 23' 05.0220" S	28° 47' 44.2490" E
EX14-19	25° 23' 25.2440" S	28° 47' 31.1622" E
EX14-20	25° 23' 30.9689" S	28° 47' 15.4738" E
EX14-21	25° 23' 01.4947" S	28° 47' 02.6240" E

Point	Latitude	Longitude
EX14-22	25° 22' 40.2074" S	28° 46' 53.2114" E
EX14-23	25° 22' 35.9859" S	28° 47' 04.7626" E
EX14-24	25° 22' 30.8485" S	28° 47' 06.7413" E
EX14-25	25° 22' 32.6728" S	28° 47' 12.4803" E
EX14-26	25° 22' 28.7654" S	28° 47' 17.2350" E
EX14-27	25° 22' 27.9809" S	28° 47' 23.0716" E
EX14-28	25° 22' 33.3825" S	28° 47' 39.6117" E
EX14-29	25° 22' 44.4152" S	28° 47' 35.4143" E
EX14-30	25° 22' 44.6656" S	28° 47' 36.2160" E
EX14-31	25° 22' 44.9175" S	28° 47' 37.0226" E
EX15-1	25° 24' 17.2135" S	28° 49' 01.4665" E
EX15-2	25° 24' 18.2012" S	28° 49' 00.8367" E
EX15-3	25° 24' 18.9451" S	28° 49' 01.0051" E
EX15-4	25° 24' 19.0406" S	28° 49' 01.0267" E
EX15-5	25° 24' 19.6773" S	28° 49' 01.1707" E
EX15-6	25° 24' 20.3139" S	28° 49' 01.3148" E
EX15-7	25° 24' 20.9505" S	28° 49' 01.4588" E
EX15-8	25° 24' 21.5872" S	28° 49' 01.6029" E
EX15-9	25° 24' 22.2238" S	28° 49' 01.7469" E
EX15-10	25° 24' 22.8604" S	28° 49' 01.8910" E
EX15-11	25° 24' 23.4971" S	28° 49' 02.0350" E
EX15-12	25° 24' 24.1337" S	28° 49' 02.1791" E
EX15-13	25° 24' 24.7703" S	28° 49' 02.3231" E
EX15-14	25° 24' 25.4070" S	28° 49' 02.4672" E
EX15-15	25° 24' 26.0436" S	28° 49' 02.6112" E
EX15-16	25° 24' 26.6802" S	28° 49' 02.7553" E
EX15-17	25° 24' 27.3507" S	28° 49' 02.9070" E
EX15-18	25° 24' 28.0185" S	28° 49' 02.9906" E
EX15-19	25° 24' 28.6643" S	28° 49' 03.0715" E
EX15-20	25° 24' 29.3100" S	28° 49' 03.1523" E
EX15-21	25° 24' 29.9558" S	28° 49' 03.2332" E
EX15-22	25° 24' 30.6016" S	28° 49' 03.3140" E
EX15-23	25° 24' 30.6985" S	28° 49' 03.3262" E
EX15-24	25° 24' 31.3442" S	28° 49' 03.4070" E
EX15-25	25° 24' 31.9900" S	28° 49' 03.4878" E
EX15-26	25° 24' 32.6358" S	28° 49' 03.5687" E
EX15-27	25° 24' 33.2816" S	28° 49' 03.6496" E
EX15-28	25° 24' 33.9274" S	28° 49' 03.7304" E
EX15-29	25° 24' 34.5731" S	28° 49' 03.8113" E
EX15-30	25° 24' 35.2189" S	28° 49' 03.8921" E
EX15-31	25° 24' 35.8647" S	28° 49' 03.9730" E
EX15-32	25° 24' 36.3863" S	28° 49' 04.0383" E
EX15-33	25° 24' 36.6186" S	28° 49' 04.0103" E
EX15-34	25° 24' 37.2647" S	28° 49' 03.9324" E
EX15-35	25° 24' 37.9107" S	28° 49' 03.8545" E
EX15-36	25° 24' 38.5568" S	28° 49' 03.7766" E
EX15-37	25° 24' 39.2029" S	28° 49' 03.6987" E
EX15-38	25° 24' 39.9930" S	28° 49' 03.6035" E

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**,

excluding the figures **EX1 to EX78,**

represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 49 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR
Registration No.

M B Straughan
G.Pr. LSO907D

09 October 2025
date

For applicant

Owain Jackson
name

signature

09 October 2025
date

signature

date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation

Dwg: reg 2(2) plan er kruis river oct 2025.dwg

Revision:

Date: 09 October 2025

friedlaender, burger & volkmann

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Point	Latitude	Longitude
EX15-39	25° 24' 40.0779" S	28° 49' 03.5452" E
EX15-40	25° 24' 40.7240" S	28° 49' 03.1022" E
EX15-41	25° 24' 41.2757" S	28° 49' 02.7239" E
EX15-42	25° 24' 41.8274" S	28° 49' 02.3457" E
EX15-43	25° 24' 42.3791" S	28° 49' 01.9673" E
EX15-44	25° 24' 42.9308" S	28° 49' 01.5891" E
EX15-45	25° 24' 43.4825" S	28° 49' 01.2107" E
EX15-46	25° 24' 44.0342" S	28° 49' 00.8325" E
EX15-47	25° 24' 45.2733" S	28° 48' 59.9828" E
EX15-48	25° 24' 49.6687" S	28° 48' 56.9688" E
EX15-49	25° 24' 55.2631" S	28° 48' 51.6954" E
EX15-50	25° 24' 57.7338" S	28° 48' 49.3664" E
EX15-51	25° 24' 58.1290" S	28° 48' 48.9939" E
EX15-52	25° 24' 58.3434" S	28° 48' 48.7750" E
EX15-53	25° 24' 58.4149" S	28° 48' 48.7020" E
EX15-54	25° 24' 58.8916" S	28° 48' 48.2155" E
EX15-55	25° 24' 59.3682" S	28° 48' 47.7289" E
EX15-56	25° 24' 59.8449" S	28° 48' 47.2424" E
EX15-57	25° 25' 00.3215" S	28° 48' 46.7559" E
EX15-58	25° 25' 00.7981" S	28° 48' 46.2694" E
EX15-59	25° 25' 01.2748" S	28° 48' 45.7828" E
EX15-60	25° 25' 01.7514" S	28° 48' 45.2963" E
EX15-61	25° 25' 02.2280" S	28° 48' 44.8098" E
EX15-62	25° 25' 02.7047" S	28° 48' 44.3233" E
EX15-63	25° 25' 02.7762" S	28° 48' 44.2503" E
EX15-64	25° 25' 03.2528" S	28° 48' 43.7637" E
EX15-65	25° 25' 03.7294" S	28° 48' 43.2772" E
EX15-66	25° 25' 04.2061" S	28° 48' 42.7907" E
EX15-67	25° 25' 04.6827" S	28° 48' 42.3041" E
EX15-68	25° 25' 05.1594" S	28° 48' 41.8176" E
EX15-69	25° 25' 05.6360" S	28° 48' 41.3311" E
EX15-70	25° 25' 06.1126" S	28° 48' 40.8445" E
EX15-71	25° 25' 06.9467" S	28° 48' 39.9931" E
EX15-72	25° 25' 07.5421" S	28° 48' 39.3844" E
EX15-73	25° 25' 08.1142" S	28° 48' 38.8004" E
EX15-74	25° 25' 08.5908" S	28° 48' 38.3139" E
EX15-75	25° 25' 08.6623" S	28° 48' 38.2409" E
EX15-76	25° 25' 09.1389" S	28° 48' 37.7543" E
EX15-77	25° 25' 09.6156" S	28° 48' 37.2678" E
EX15-78	25° 25' 10.0922" S	28° 48' 36.7812" E
EX15-79	25° 25' 10.5688" S	28° 48' 36.2947" E
EX15-80	25° 25' 11.0454" S	28° 48' 35.8081" E
EX15-81	25° 25' 11.1169" S	28° 48' 35.7351" E
EX15-82	25° 25' 11.5935" S	28° 48' 35.2486" E
EX15-83	25° 25' 12.0702" S	28° 48' 34.7620" E
EX15-84	25° 25' 12.5468" S	28° 48' 34.2754" E
EX15-85	25° 25' 13.0234" S	28° 48' 33.7889" E
EX15-86	25° 25' 13.0949" S	28° 48' 33.7159" E

Point	Latitude	Longitude
EX15-87	25° 25' 13.5715" S	28° 48' 33.2293" E
EX15-88	25° 25' 14.0481" S	28° 48' 32.7428" E
EX15-89	25° 25' 14.5248" S	28° 48' 32.2562" E
EX15-90	25° 25' 15.0014" S	28° 48' 31.7696" E
EX15-91	25° 25' 15.5543" S	28° 48' 31.2052" E
EX15-92	25° 25' 16.1163" S	28° 48' 30.5845" E
EX15-93	25° 25' 16.5981" S	28° 48' 30.0524" E
EX15-94	25° 25' 17.0800" S	28° 48' 29.5203" E
EX15-95	25° 25' 17.5619" S	28° 48' 28.9881" E
EX15-96	25° 25' 17.6307" S	28° 48' 28.9121" E
EX15-97	25° 25' 18.1125" S	28° 48' 28.3800" E
EX15-98	25° 25' 18.5944" S	28° 48' 27.8478" E
EX15-99	25° 25' 19.0762" S	28° 48' 27.3157" E
EX15-100	25° 25' 19.5581" S	28° 48' 26.7836" E
EX15-101	25° 25' 20.0400" S	28° 48' 26.2514" E
EX15-102	25° 25' 20.5218" S	28° 48' 25.7193" E
EX15-103	25° 25' 21.0037" S	28° 48' 25.1871" E
EX15-104	25° 25' 21.0725" S	28° 48' 25.1111" E
EX15-105	25° 25' 21.5314" S	28° 48' 24.6043" E
EX15-106	25° 25' 21.9903" S	28° 48' 24.0975" E
EX15-107	25° 25' 22.4492" S	28° 48' 23.5907" E
EX15-108	25° 25' 22.9081" S	28° 48' 23.0839" E
EX15-109	25° 25' 23.3670" S	28° 48' 22.5771" E
EX15-110	25° 25' 23.8259" S	28° 48' 22.0703" E
EX15-111	25° 25' 24.2848" S	28° 48' 21.5635" E
EX15-112	25° 25' 24.7437" S	28° 48' 21.0567" E
EX15-113	25° 25' 24.8125" S	28° 48' 20.9806" E
EX15-114	25° 25' 25.2714" S	28° 48' 20.4738" E
EX15-115	25° 25' 25.7303" S	28° 48' 19.9670" E
EX15-116	25° 25' 26.1892" S	28° 48' 19.4602" E
EX15-117	25° 25' 26.4352" S	28° 48' 19.1885" E
EX15-118	25° 25' 26.6962" S	28° 48' 18.7989" E
EX15-119	25° 25' 26.7541" S	28° 48' 18.7125" E
EX15-120	25° 25' 27.1399" S	28° 48' 18.1366" E
EX15-121	25° 25' 27.5259" S	28° 48' 17.5603" E
EX15-122	25° 25' 31.0900" S	28° 48' 12.2400" E
EX15-123	25° 25' 31.7281" S	28° 48' 11.2874" E
EX15-124	25° 25' 31.7860" S	28° 48' 11.2010" E
EX15-125	25° 25' 32.1718" S	28° 48' 10.6250" E
EX15-126	25° 25' 32.5576" S	28° 48' 10.0491" E
EX15-127	25° 25' 32.9435" S	28° 48' 09.4731" E
EX15-128	25° 25' 33.3293" S	28° 48' 08.8971" E
EX15-129	25° 25' 33.7151" S	28° 48' 08.3212" E
EX15-130	25° 25' 34.1009" S	28° 48' 07.7452" E
EX15-131	25° 25' 34.4867" S	28° 48' 07.1693" E
EX15-132	25° 25' 35.2584" S	28° 48' 06.0173" E
EX15-133	25° 25' 34.0834" S	28° 48' 05.1202" E
EX15-134	25° 25' 33.5226" S	28° 48' 04.6920" E

Point	Latitude	Longitude
EX15-135	25° 25' 32.9618" S	28° 48' 04.2638" E
EX15-136	25° 25' 32.4010" S	28° 48' 03.8356" E
EX15-137	25° 25' 31.8402" S	28° 48' 03.4074" E
EX15-138	25° 25' 31.2793" S	28° 48' 02.9792" E
EX15-139	25° 25' 30.7185" S	28° 48' 02.5510" E
EX15-140	25° 25' 30.1577" S	28° 48' 02.1228" E
EX15-141	25° 25' 29.5969" S	28° 48' 01.6946" E
EX15-142	25° 25' 29.0361" S	28° 48' 01.2664" E
EX15-143	25° 25' 28.4753" S	28° 48' 00.8382" E
EX15-144	25° 25' 27.9145" S	28° 48' 00.4101" E
EX15-145	25° 25' 27.3537" S	28° 47' 59.9819" E
EX15-146	25° 25' 27.2736" S	28° 47' 59.9207" E
EX15-147	25° 25' 26.7395" S	28° 47' 59.5129" E
EX15-148	25° 25' 26.2054" S	28° 47' 59.1051" E
EX15-149	25° 25' 25.6713" S	28° 47' 58.6973" E
EX15-150	25° 25' 25.1372" S	28° 47' 58.2895" E
EX15-151	25° 25' 24.6031" S	28° 47' 57.8817" E
EX15-152	25° 25' 24.0689" S	28° 47' 57.4739" E
EX15-153	25° 25' 23.5348" S	28° 47' 57.0661" E
EX15-154	25° 25' 23.0007" S	28° 47' 56.6584" E
EX15-155	25° 25' 22.4666" S	28° 47' 56.2506" E
EX15-156	25° 25' 21.9325" S	28° 47' 55.8428" E
EX15-157	25° 25' 21.3984" S	28° 47' 55.4350" E
EX15-158	25° 25' 20.7575" S	28° 47' 54.9457" E
EX15-159	25° 25' 20.4371" S	28° 47' 54.7007" E
EX15-160	25° 25' 15.8909" S	28° 47' 51.2301" E
EX15-161	25° 25' 15.3566" S	28° 47' 50.8226" E
EX15-162	25° 25' 14.7156" S	28° 47' 50.3333" E
EX15-163	25° 25' 14.1815" S	28° 47' 49.9255" E
EX15-164	25° 25' 13.6474" S	28° 47' 49.5178" E
EX15-165	25° 25' 13.1133" S	28° 47' 49.1100" E
EX15-166	25° 25' 12.5792" S	28° 47' 48.7022" E
EX15-167	25° 25' 12.0451" S	28° 47' 48.2945" E
EX15-168	25° 25' 11.5110" S	28° 47' 47.8867" E
EX15-169	25° 25' 10.9769" S	28° 47' 47.4789" E
EX15-170	25° 25' 10.4427" S	28° 47' 47.0712" E
EX15-171	25° 25' 09.9086" S	28° 47' 46.6634" E
EX15-172	25° 25' 09.3745" S	28° 47' 46.2556" E
EX15-173	25° 25' 08.8404" S	28° 47' 45.8479" E
EX15-174	25° 25' 08.3063" S	28° 47' 45.4401" E
EX15-175	25° 25' 07.7722" S	28° 47' 45.0324" E
EX15-176	25° 25' 07.2381" S	28° 47' 44.6246" E
EX15-177	25° 25' 07.1579" S	28° 47' 44.5634" E
EX15-178	25° 25' 06.6238" S	28° 47' 44.1557" E
EX15-179	25° 25' 06.0897" S	28° 47' 43.7479" E
EX15-180	25° 25' 05.5556" S	28° 47' 43.3402" E
EX15-181	25° 25' 05.0215" S	28° 47' 42.9324" E
EX15-182	25° 25' 04.4874" S	28° 47' 42.5247" E

Point	Latitude	Longitude
EX15-183	25° 25' 03.9532" S	28° 47' 42.1169" E
EX15-184	25° 25' 03.4191" S	28° 47' 41.7091" E
EX15-185	25° 25' 02.8850" S	28° 47' 41.3014" E
EX15-186	25° 25' 02.3509" S	28° 47' 40.8936" E
EX15-187	25° 25' 01.8168" S	28° 47' 40.4859" E
EX15-188	25° 25' 01.2826" S	28° 47' 40.0782" E
EX15-189	25° 25' 00.7485" S	28° 47' 39.6704" E
EX15-190	25° 24' 59.9805" S	28° 47' 39.0841" E
EX15-191	25° 24' 59.0602" S	28° 47' 38.3814" E
EX15-192	25° 24' 42.5512" S	28° 47' 47.1690" E
EX15-193	25° 24' 34.9834" S	28° 47' 51.1967" E
EX15-194	25° 24' 27.2836" S	28° 47' 55.2947" E
EX15-195	25° 24' 25.7592" S	28° 47' 56.1060" E
EX15-196	25° 24' 24.4470" S	28° 47' 56.8043" E
EX15-197	25° 24' 23.8619" S	28° 47' 57.1158" E
EX15-198	25° 24' 23.2767" S	28° 47' 57.4272" E
EX15-199	25° 24' 22.6915" S	28° 47' 57.7386" E
EX15-200	25° 24' 22.1064" S	28° 47' 58.0500" E
EX15-201	25° 24' 22.0186" S	28° 47' 58.0967" E
EX15-202	25° 24' 21.4334" S	28° 47' 58.4082" E
EX15-203	25° 24' 20.8483" S	28° 47' 58.7196" E
EX15-204	25° 24' 20.2631" S	28° 47' 59.0310" E
EX15-205	25° 24' 19.6780" S	28° 47' 59.3424" E
EX15-206	25° 24' 19.0928" S	28° 47' 59.6538" E
EX15-207	25° 24' 18.5076" S	28° 47' 59.9652" E
EX15-208	25° 24' 17.9225" S	28° 48' 00.2767" E
EX15-209	25° 24' 17.3373" S	28° 48' 00.5881" E
EX15-210	25° 24' 16.7521" S	28° 48' 00.8995" E
EX15-211	25° 24' 16.1670" S	28° 48' 01.2109" E
EX15-212	25° 24' 15.5818" S	28° 48' 01.5223" E
EX15-213	25° 24' 15.4940" S	28° 48' 01.5690" E
EX15-214	25° 24' 14.9089" S	28° 48' 01.8804" E
EX15-215	25° 24' 14.3237" S	28° 48' 02.1918" E
EX15-216	25° 24' 13.7386" S	28° 48' 02.5032" E
EX15-217	25° 24' 13.1534" S	28° 48' 02.8147" E
EX15-218	25° 24' 12.5682" S	28° 48' 03.1261" E
EX15-219	25° 24' 11.9831" S	28° 48' 03.4375" E
EX15-220	25° 24' 11.3394" S	28° 48' 03.7800" E
EX15-221	25° 24' 10.5073" S	28° 48' 04.2228" E
EX15-222	25° 24' 09.7305" S	28° 48' 04.6362" E
EX15-223	25° 24' 09.1452" S	28° 48' 04.9477" E
EX15-224	25° 24' 08.4139" S	28° 48' 05.3368" E
EX15-225	25° 24' 08.2528" S	28° 48' 05.4226" E
EX15-226	25° 24' 07.8287" S	28° 48' 05.6482" E
EX15-227	25° 24' 07.4181" S	28° 48' 05.8668" E
EX15-228	25° 24' 07.2436" S	28° 48' 05.9596" E
EX15-229	25° 24' 06.8329" S	28° 48' 06.1782" E
EX15-230	25° 24' 06.6584" S	28° 48' 06.2710" E

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 50 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No.

M B Straughan
G.Pr. LS0907D

09 October 2025
date

For applicant

Owain Jackson
name

signature

09 October 2025
date

signature

date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	**Dwg:** reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

friedlaender, burger & volkmann

Point	Latitude	Longitude
EX15-231	25° 24' 06.2477" S	28° 48' 06.4896" E
EX15-232	25° 24' 06.0732" S	28° 48' 06.5824" E
EX15-233	25° 24' 05.6626" S	28° 48' 06.8010" E
EX15-234	25° 24' 05.4881" S	28° 48' 06.8938" E
EX15-235	25° 24' 05.0774" S	28° 48' 07.1124" E
EX15-236	25° 24' 04.6533" S	28° 48' 07.3381" E
EX15-237	25° 24' 04.4922" S	28° 48' 07.4238" E
EX15-238	25° 24' 03.7608" S	28° 48' 07.8130" E
EX15-239	25° 24' 03.4119" S	28° 48' 06.4129" E
EX15-240	25° 24' 00.6114" S	28° 47' 55.2466" E
EX15-241	25° 23' 59.4725" S	28° 47' 51.8253" E
EX15-242	25° 23' 57.9412" S	28° 47' 48.9635" E
EX15-243	25° 23' 55.7926" S	28° 47' 46.2123" E
EX15-244	25° 23' 55.5908" S	28° 47' 47.1545" E
EX15-245	25° 23' 55.1559" S	28° 47' 48.7289" E
EX15-246	25° 23' 54.9196" S	28° 47' 49.5847" E
EX15-247	25° 23' 54.7069" S	28° 47' 50.3548" E
EX15-248	25° 23' 54.4942" S	28° 47' 51.1250" E
EX15-249	25° 23' 54.2815" S	28° 47' 51.8952" E
EX15-250	25° 23' 54.0688" S	28° 47' 52.6653" E
EX15-251	25° 23' 53.8560" S	28° 47' 53.4355" E
EX15-252	25° 23' 53.6433" S	28° 47' 54.2057" E
EX15-253	25° 23' 53.4306" S	28° 47' 54.9759" E
EX15-254	25° 23' 53.2179" S	28° 47' 55.7460" E
EX15-255	25° 23' 53.0052" S	28° 47' 56.5162" E
EX15-256	25° 23' 52.7925" S	28° 47' 57.2864" E
EX15-257	25° 23' 52.5797" S	28° 47' 58.0565" E
EX15-258	25° 23' 52.3670" S	28° 47' 58.8267" E
EX15-259	25° 23' 52.1543" S	28° 47' 59.5969" E
EX15-260	25° 23' 52.1165" S	28° 47' 59.7338" E
EX15-261	25° 23' 51.9037" S	28° 48' 00.5039" E
EX15-262	25° 23' 51.6910" S	28° 48' 01.2741" E
EX15-263	25° 23' 51.4783" S	28° 48' 02.0443" E
EX15-264	25° 23' 51.2656" S	28° 48' 02.8144" E
EX15-265	25° 23' 51.0528" S	28° 48' 03.5846" E
EX15-266	25° 23' 50.8401" S	28° 48' 04.3547" E
EX15-267	25° 23' 50.6273" S	28° 48' 05.1249" E
EX15-268	25° 23' 50.4146" S	28° 48' 05.8951" E
EX15-269	25° 23' 50.2019" S	28° 48' 06.6652" E
EX15-270	25° 23' 49.9892" S	28° 48' 07.4354" E
EX15-271	25° 23' 49.7764" S	28° 48' 08.2055" E
EX15-272	25° 23' 49.5637" S	28° 48' 08.9756" E
EX15-273	25° 23' 49.3510" S	28° 48' 09.7458" E
EX15-274	25° 23' 49.1382" S	28° 48' 10.5160" E
EX15-275	25° 23' 48.9397" S	28° 48' 11.2347" E
EX15-276	25° 23' 48.5003" S	28° 48' 12.8255" E
EX15-277	25° 23' 48.4468" S	28° 48' 13.0191" E
EX15-278	25° 23' 48.0170" S	28° 48' 14.5750" E

Point	Latitude	Longitude
EX15-279	25° 23' 47.5022" S	28° 48' 16.4384" E
EX15-280	25° 23' 47.3302" S	28° 48' 17.0611" E
EX15-281	25° 23' 47.1511" S	28° 48' 17.7093" E
EX15-282	25° 23' 46.9621" S	28° 48' 18.3936" E
EX15-283	25° 23' 46.6395" S	28° 48' 19.5615" E
EX15-284	25° 23' 46.4267" S	28° 48' 20.3317" E
EX15-285	25° 23' 43.1325" S	28° 48' 32.2557" E
EX15-286	25° 23' 42.9197" S	28° 48' 33.0259" E
EX15-287	25° 23' 42.7069" S	28° 48' 33.7960" E
EX15-288	25° 23' 42.4942" S	28° 48' 34.5661" E
EX15-289	25° 23' 42.2814" S	28° 48' 35.3362" E
EX15-290	25° 23' 42.0686" S	28° 48' 36.1064" E
EX15-291	25° 23' 41.8558" S	28° 48' 36.8765" E
EX15-292	25° 23' 41.6430" S	28° 48' 37.6466" E
EX15-293	25° 23' 41.4303" S	28° 48' 38.4167" E
EX15-294	25° 23' 41.2175" S	28° 48' 39.1869" E
EX15-295	25° 23' 41.0047" S	28° 48' 39.9570" E
EX15-296	25° 23' 40.7919" S	28° 48' 40.7271" E
EX15-297	25° 23' 40.5792" S	28° 48' 41.4972" E
EX15-298	25° 23' 40.3664" S	28° 48' 42.2674" E
EX15-299	25° 23' 40.1536" S	28° 48' 43.0375" E
EX15-300	25° 23' 39.9408" S	28° 48' 43.8076" E
EX15-301	25° 23' 39.6854" S	28° 48' 44.7318" E
EX15-302	25° 23' 39.4490" S	28° 48' 45.5875" E
EX15-303	25° 23' 39.0943" S	28° 48' 46.8710" E
EX15-304	25° 23' 38.8816" S	28° 48' 47.6411" E
EX15-305	25° 23' 38.6688" S	28° 48' 48.4113" E
EX15-306	25° 23' 38.4560" S	28° 48' 49.1814" E
EX15-307	25° 23' 38.2432" S	28° 48' 49.9515" E
EX15-308	25° 23' 38.0304" S	28° 48' 50.7216" E
EX15-309	25° 23' 37.8176" S	28° 48' 51.4917" E
EX15-310	25° 23' 37.6048" S	28° 48' 52.2618" E
EX15-311	25° 23' 37.3920" S	28° 48' 53.0320" E
EX15-312	25° 23' 37.1792" S	28° 48' 53.8021" E
EX15-313	25° 23' 36.9664" S	28° 48' 54.5722" E
EX15-314	25° 23' 36.7536" S	28° 48' 55.3423" E
EX15-315	25° 23' 36.5408" S	28° 48' 56.1124" E
EX15-316	25° 23' 36.5030" S	28° 48' 56.2493" E
EX15-317	25° 23' 36.1483" S	28° 48' 57.5328" E
EX15-318	25° 23' 35.7937" S	28° 48' 58.8164" E
EX15-319	25° 23' 35.5572" S	28° 48' 59.6720" E
EX15-320	25° 23' 35.3207" S	28° 49' 00.5277" E
EX15-321	25° 23' 35.0843" S	28° 49' 01.3834" E
EX15-322	25° 23' 35.0465" S	28° 49' 01.5203" E
EX15-323	25° 23' 34.6918" S	28° 49' 02.8038" E
EX15-324	25° 23' 34.3371" S	28° 49' 04.0873" E
EX15-325	25° 23' 34.1243" S	28° 49' 04.8574" E
EX15-326	25° 23' 33.9115" S	28° 49' 05.6275" E

Point	Latitude	Longitude
EX15-327	25° 23' 33.6987" S	28° 49' 06.3976" E
EX15-328	25° 23' 33.4858" S	28° 49' 07.1677" E
EX15-329	25° 23' 33.2730" S	28° 49' 07.9377" E
EX15-330	25° 23' 33.0602" S	28° 49' 08.7079" E
EX15-331	25° 23' 32.8474" S	28° 49' 09.4780" E
EX15-332	25° 23' 32.6346" S	28° 49' 10.2481" E
EX15-333	25° 23' 32.5967" S	28° 49' 10.3850" E
EX15-334	25° 23' 32.3839" S	28° 49' 11.1550" E
EX15-335	25° 23' 32.1711" S	28° 49' 11.9251" E
EX15-336	25° 23' 31.9583" S	28° 49' 12.6953" E
EX15-337	25° 23' 31.7454" S	28° 49' 13.4654" E
EX15-338	25° 23' 31.5326" S	28° 49' 14.2354" E
EX15-339	25° 23' 31.3198" S	28° 49' 15.0055" E
EX15-340	25° 23' 31.1070" S	28° 49' 15.7756" E
EX15-341	25° 23' 30.8941" S	28° 49' 16.5457" E
EX15-342	25° 23' 30.6813" S	28° 49' 17.3158" E
EX15-343	25° 23' 30.4685" S	28° 49' 18.0858" E
EX15-344	25° 23' 31.6344" S	28° 49' 18.4763" E
EX15-345	25° 23' 31.7587" S	28° 49' 18.5179" E
EX15-346	25° 23' 32.4738" S	28° 49' 18.7574" E
EX15-347	25° 23' 33.1421" S	28° 49' 18.9813" E
EX15-348	25° 23' 33.4405" S	28° 49' 18.9229" E
EX15-349	25° 23' 34.1764" S	28° 49' 18.7789" E
EX15-350	25° 23' 34.9165" S	28° 49' 18.6342" E
EX15-351	25° 23' 35.5840" S	28° 49' 18.5036" E
EX15-352	25° 23' 36.4815" S	28° 49' 17.9145" E
EX15-353	25° 23' 36.9741" S	28° 49' 17.5911" E
EX15-354	25° 23' 37.1064" S	28° 49' 17.1122" E
EX15-355	25° 23' 37.3712" S	28° 49' 16.1538" E
EX15-356	25° 23' 37.6361" S	28° 49' 15.1952" E
EX15-357	25° 23' 37.7607" S	28° 49' 15.2370" E
EX15-358	25° 23' 38.4602" S	28° 49' 15.4713" E
EX15-359	25° 23' 39.1267" S	28° 49' 15.6946" E
EX15-360	25° 23' 39.4913" S	28° 49' 15.5236" E
EX15-361	25° 23' 39.6109" S	28° 49' 15.4675" E
EX15-362	25° 23' 40.2686" S	28° 49' 15.1590" E
EX15-363	25° 23' 40.9263" S	28° 49' 14.8505" E
EX15-364	25° 23' 41.5841" S	28° 49' 14.5419" E
EX15-365	25° 23' 42.2418" S	28° 49' 14.2334" E
EX15-366	25° 23' 42.8995" S	28° 49' 13.9249" E
EX15-367	25° 23' 43.5572" S	28° 49' 13.6163" E
EX15-368	25° 23' 44.2149" S	28° 49' 13.3078" E
EX15-369	25° 23' 44.8726" S	28° 49' 12.9993" E
EX15-370	25° 23' 45.5304" S	28° 49' 12.6908" E
EX15-371	25° 23' 46.1881" S	28° 49' 12.3823" E
EX15-372	25° 23' 46.3077" S	28° 49' 12.3262" E
EX15-373	25° 23' 47.0658" S	28° 49' 11.9705" E
EX15-374	25° 23' 47.8133" S	28° 49' 11.6199" E

Point	Latitude	Longitude
EX15-375	25° 23' 48.4113" S	28° 49' 11.3394" E
EX15-376	25° 23' 48.5415" S	28° 49' 11.2783" E
EX15-377	25° 23' 49.3298" S	28° 49' 11.2088" E
EX15-378	25° 23' 49.4594" S	28° 49' 11.1974" E
EX15-379	25° 23' 50.2044" S	28° 49' 11.1317" E
EX15-380	25° 23' 50.9495" S	28° 49' 11.0660" E
EX15-381	25° 23' 51.6945" S	28° 49' 11.0003" E
EX15-382	25° 23' 51.8241" S	28° 49' 10.9889" E
EX15-383	25° 23' 52.6015" S	28° 49' 10.9203" E
EX15-384	25° 23' 53.3790" S	28° 49' 10.8518" E
EX15-385	25° 23' 54.1564" S	28° 49' 10.7833" E
EX15-386	25° 23' 54.2860" S	28° 49' 10.7718" E
EX15-387	25° 23' 55.0958" S	28° 49' 10.7004" E
EX15-388	25° 23' 55.9057" S	28° 49' 10.6290" E
EX15-389	25° 23' 56.7155" S	28° 49' 10.5576" E
EX15-390	25° 23' 56.8451" S	28° 49' 10.5462" E
EX15-391	25° 23' 57.5901" S	28° 49' 10.4805" E
EX15-392	25° 23' 58.3352" S	28° 49' 10.4149" E
EX15-393	25° 23' 59.0973" S	28° 49' 10.3477" E
EX15-394	25° 23' 59.2274" S	28° 49' 10.3727" E
EX15-395	25° 23' 59.9116" S	28° 49' 10.5045" E
EX15-396	25° 24' 00.6479" S	28° 49' 10.6463" E
EX15-397	25° 24' 01.3841" S	28° 49' 10.7881" E
EX15-398	25° 24' 02.1204" S	28° 49' 10.9299" E
EX15-399	25° 24' 02.8566" S	28° 49' 11.0717" E
EX15-400	25° 24' 03.3571" S	28° 49' 11.1681" E
EX15-401	25° 24' 03.9355" S	28° 49' 10.9877" E
EX15-402	25° 24' 04.6390" S	28° 49' 10.7684" E
EX15-403	25° 24' 05.3425" S	28° 49' 10.5490" E
EX15-404	25° 24' 06.0460" S	28° 49' 10.3296" E
EX15-405	25° 24' 06.7495" S	28° 49' 10.1102" E
EX15-406	25° 24' 07.2338" S	28° 49' 09.9591" E
EX15-407	25° 24' 07.6142" S	28° 49' 09.5940" E
EX15-408	25° 24' 08.1653" S	28° 49' 09.0649" E
EX15-409	25° 24' 08.7163" S	28° 49' 08.5359" E
EX15-410	25° 24' 09.2674" S	28° 49' 08.0068" E
EX15-411	25° 24' 09.3654" S	28° 49' 07.9127" E
EX15-412	25° 24' 10.2524" S	28° 49' 07.0612" E
EX15-413	25° 24' 10.1427" S	28° 49' 06.6234" E
EX15-414	25° 24' 11.1767" S	28° 49' 05.8676" E
EX15-415	25° 24' 11.2967" S	28° 49' 05.7800" E
EX15-416	25° 24' 12.0802" S	28° 49' 05.2073" E
EX15-417	25° 24' 12.6623" S	28° 49' 04.7818" E
EX15-418	25° 24' 13.2444" S	28° 49' 04.3564" E
EX15-419	25° 24' 13.8265" S	28° 49' 03.9309" E
EX15-420	25° 24' 14.4086" S	28° 49' 03.5055" E
EX15-421	25° 24' 14.9907" S	28° 49' 03.0801" E
EX15-422	25° 24' 15.5728" S	28° 49' 02.6546" E

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**,

excluding the figures **EX1 to EX78,**

represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 51 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No.

M B Straughan
G.Pr. LSO907D

09 October 2025
date

For applicant Owain Jackson
name

signature

09 October 2025
date

signature

date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation

Dwg: reg 2(2) plan er kruis river oct 2025.dwg

Revision:

Date: 09 October 2025

friedlaender, burger & volkmann

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Point	Latitude	Longitude
EX15-423	25° 24' 16.5820" S	28° 49' 01.9170" E
EX16-1	25° 23' 40.6509" S	28° 49' 23.8270" E
EX16-2	25° 23' 37.7783" S	28° 49' 24.4317" E
EX16-3	25° 23' 36.6610" S	28° 49' 24.6669" E
EX16-4	25° 23' 31.6669" S	28° 49' 28.9888" E
EX16-5	25° 23' 31.5883" S	28° 49' 29.0523" E
EX16-6	25° 23' 30.9338" S	28° 49' 29.5821" E
EX16-7	25° 23' 30.2793" S	28° 49' 30.1119" E
EX16-8	25° 23' 29.6247" S	28° 49' 30.6417" E
EX16-9	25° 23' 28.9701" S	28° 49' 31.1715" E
EX16-10	25° 23' 28.3156" S	28° 49' 31.7013" E
EX16-11	25° 23' 27.6610" S	28° 49' 32.2311" E
EX16-12	25° 23' 27.0065" S	28° 49' 32.7609" E
EX16-13	25° 23' 26.2019" S	28° 49' 33.4121" E
EX16-14	25° 23' 25.9032" S	28° 49' 34.5093" E
EX16-15	25° 23' 25.6699" S	28° 49' 35.3661" E
EX16-16	25° 23' 25.3927" S	28° 49' 36.3842" E
EX16-17	25° 23' 24.9870" S	28° 49' 37.8738" E
EX16-18	25° 23' 24.6605" S	28° 49' 39.0732" E
EX16-19	25° 23' 24.4272" S	28° 49' 39.9299" E
EX16-20	25° 23' 24.1939" S	28° 49' 40.7866" E
EX16-21	25° 23' 23.9606" S	28° 49' 41.6433" E
EX16-22	25° 23' 23.7273" S	28° 49' 42.5000" E
EX16-23	25° 23' 23.4940" S	28° 49' 43.3567" E
EX16-24	25° 23' 23.4661" S	28° 49' 43.4596" E
EX16-25	25° 23' 23.2328" S	28° 49' 44.3163" E
EX16-26	25° 23' 22.9995" S	28° 49' 45.1730" E
EX16-27	25° 23' 22.7662" S	28° 49' 46.0297" E
EX16-28	25° 23' 22.5329" S	28° 49' 46.8864" E
EX16-29	25° 23' 22.2996" S	28° 49' 47.7431" E
EX16-30	25° 23' 22.0663" S	28° 49' 48.5998" E
EX16-31	25° 23' 21.8337" S	28° 49' 49.4542" E
EX16-32	25° 23' 21.0557" S	28° 49' 49.1975" E
EX16-33	25° 23' 20.7600" S	28° 49' 50.2827" E
EX16-34	25° 23' 14.0273" S	28° 49' 47.5958" E
EX16-35	25° 23' 13.6029" S	28° 49' 46.6663" E
EX16-36	25° 23' 12.9964" S	28° 49' 48.8930" E
EX16-37	25° 23' 13.7940" S	28° 49' 48.4515" E
EX16-38	25° 23' 19.8845" S	28° 49' 50.8820" E
EX16-39	25° 23' 19.5150" S	28° 49' 52.2391" E
EX16-40	25° 23' 20.9466" S	28° 49' 52.7118" E
EX16-41	25° 23' 20.9461" S	28° 49' 52.7139" E
EX16-42	25° 23' 20.7128" S	28° 49' 53.5706" E
EX16-43	25° 23' 20.4794" S	28° 49' 54.4272" E
EX16-44	25° 23' 20.2461" S	28° 49' 55.2839" E
EX16-45	25° 23' 20.0128" S	28° 49' 56.1406" E
EX16-46	25° 23' 19.7795" S	28° 49' 56.9973" E
EX16-47	25° 23' 19.5462" S	28° 49' 57.8540" E
EX16-48	25° 23' 19.3129" S	28° 49' 58.7107" E
EX16-49	25° 23' 19.0796" S	28° 49' 59.5674" E
EX16-50	25° 23' 18.8463" S	28° 50' 00.4241" E
EX16-51	25° 23' 18.6130" S	28° 50' 01.2808" E
EX16-52	25° 23' 18.3797" S	28° 50' 02.1375" E
EX16-53	25° 23' 18.3657" S	28° 50' 02.1889" E
EX16-54	25° 23' 18.1323" S	28° 50' 03.0455" E
EX16-55	25° 23' 17.8990" S	28° 50' 03.9022" E
EX16-56	25° 23' 17.6657" S	28° 50' 04.7589" E
EX16-57	25° 23' 17.4324" S	28° 50' 05.6156" E
EX16-58	25° 23' 17.1991" S	28° 50' 06.4723" E
EX16-59	25° 23' 16.9657" S	28° 50' 07.3289" E
EX16-60	25° 23' 16.7324" S	28° 50' 08.1856" E
EX16-61	25° 23' 16.4991" S	28° 50' 09.0423" E
EX16-62	25° 23' 16.2658" S	28° 50' 09.8990" E
EX16-63	25° 23' 16.0324" S	28° 50' 10.7557" E
EX16-64	25° 23' 15.7991" S	28° 50' 11.6123" E
EX16-65	25° 23' 15.5658" S	28° 50' 12.4690" E
EX16-66	25° 23' 15.5517" S	28° 50' 12.5204" E
EX16-67	25° 23' 15.3184" S	28° 50' 13.3771" E
EX16-68	25° 23' 15.0851" S	28° 50' 14.2337" E
EX16-69	25° 23' 14.8517" S	28° 50' 15.0904" E
EX16-70	25° 23' 14.6184" S	28° 50' 15.9471" E
EX16-71	25° 23' 14.3851" S	28° 50' 16.8037" E
EX16-72	25° 23' 14.1517" S	28° 50' 17.6604" E
EX16-73	25° 23' 13.9184" S	28° 50' 18.5171" E
EX16-74	25° 23' 13.6850" S	28° 50' 19.3737" E
EX16-75	25° 23' 13.4517" S	28° 50' 20.2304" E
EX16-76	25° 23' 13.0589" S	28° 50' 21.6723" E
EX16-77	25° 23' 12.5455" S	28° 50' 23.5570" E
EX16-78	25° 23' 12.5257" S	28° 50' 23.6298" E
EX16-79	25° 23' 12.0777" S	28° 50' 25.2746" E
EX16-80	25° 23' 11.8443" S	28° 50' 26.1312" E
EX16-81	25° 23' 11.6110" S	28° 50' 26.9879" E
EX16-82	25° 23' 11.3776" S	28° 50' 27.8445" E
EX16-83	25° 23' 11.1442" S	28° 50' 28.7012" E
EX16-84	25° 23' 10.9109" S	28° 50' 29.5578" E
EX16-85	25° 23' 10.6775" S	28° 50' 30.4145" E
EX16-86	25° 23' 10.2866" S	28° 50' 31.8496" E
EX16-87	25° 23' 11.5902" S	28° 50' 32.2799" E
EX16-88	25° 23' 12.3684" S	28° 50' 32.5368" E
EX16-89	25° 23' 12.8080" S	28° 50' 32.6819" E
EX16-90	25° 23' 13.5121" S	28° 50' 32.5056" E
EX16-91	25° 23' 14.3042" S	28° 50' 32.3072" E
EX16-92	25° 23' 15.1845" S	28° 50' 32.0867" E
EX16-93	25° 23' 15.9662" S	28° 50' 31.7189" E
EX16-94	25° 23' 16.7132" S	28° 50' 31.3674" E
EX16-95	25° 23' 17.4603" S	28° 50' 31.0159" E
EX16-96	25° 23' 18.2073" S	28° 50' 30.6644" E
EX16-97	25° 23' 19.1818" S	28° 50' 30.2059" E
EX16-98	25° 23' 20.3028" S	28° 50' 29.6783" E
EX16-99	25° 23' 20.8150" S	28° 50' 29.4374" E
EX16-100	25° 23' 21.3572" S	28° 50' 29.0427" E
EX16-101	25° 23' 21.8955" S	28° 50' 28.6509" E
EX16-102	25° 23' 23.7941" S	28° 50' 27.2689" E
EX16-103	25° 23' 24.9990" S	28° 50' 26.3919" E
EX16-104	25° 23' 25.6767" S	28° 50' 25.8986" E
EX16-105	25° 23' 26.3544" S	28° 50' 25.4053" E
EX16-106	25° 23' 27.0321" S	28° 50' 24.9120" E
EX16-107	25° 23' 27.0728" S	28° 50' 24.8824" E
EX16-108	25° 23' 27.7505" S	28° 50' 24.3892" E
EX16-109	25° 23' 28.4281" S	28° 50' 23.8959" E
EX16-110	25° 23' 29.1058" S	28° 50' 23.4026" E
EX16-111	25° 23' 29.7835" S	28° 50' 22.9093" E
EX16-112	25° 23' 30.4612" S	28° 50' 22.4160" E
EX16-113	25° 23' 31.1389" S	28° 50' 21.9227" E
EX16-114	25° 23' 31.8165" S	28° 50' 21.4294" E
EX16-115	25° 23' 32.4942" S	28° 50' 20.9361" E
EX16-116	25° 23' 33.1719" S	28° 50' 20.4428" E
EX16-117	25° 23' 33.8496" S	28° 50' 19.9496" E
EX16-118	25° 23' 34.5267" S	28° 50' 19.4566" E
EX16-119	25° 23' 34.5674" S	28° 50' 19.4271" E
EX16-120	25° 23' 35.2451" S	28° 50' 18.9337" E
EX16-121	25° 23' 35.9228" S	28° 50' 18.4404" E
EX16-122	25° 23' 36.6004" S	28° 50' 17.9471" E
EX16-123	25° 23' 37.2781" S	28° 50' 17.4538" E
EX16-124	25° 23' 37.9558" S	28° 50' 16.9605" E
EX16-125	25° 23' 38.6335" S	28° 50' 16.4672" E
EX16-126	25° 23' 39.3111" S	28° 50' 15.9739" E
EX16-127	25° 23' 39.9888" S	28° 50' 15.4806" E
EX16-128	25° 23' 40.6665" S	28° 50' 14.9873" E
EX16-129	25° 23' 41.3442" S	28° 50' 14.4940" E
EX16-130	25° 23' 42.0218" S	28° 50' 14.0006" E
EX16-131	25° 23' 42.7025" S	28° 50' 13.5127" E
EX16-132	25° 23' 43.3834" S	28° 50' 13.0247" E
EX16-133	25° 23' 44.0642" S	28° 50' 12.5366" E
EX16-134	25° 23' 44.7450" S	28° 50' 12.0485" E
EX16-135	25° 23' 45.4258" S	28° 50' 11.5605" E
EX16-136	25° 23' 46.1066" S	28° 50' 11.0724" E
EX16-137	25° 23' 46.7874" S	28° 50' 10.5844" E
EX16-138	25° 23' 47.4682" S	28° 50' 10.0963" E
EX16-139	25° 23' 48.1491" S	28° 50' 09.6083" E
EX16-140	25° 23' 48.8299" S	28° 50' 09.1202" E
EX16-141	25° 23' 49.5107" S	28° 50' 08.6321" E
EX16-142	25° 23' 50.1915" S	28° 50' 08.1441" E
EX16-143	25° 23' 50.2732" S	28° 50' 08.0855" E
EX16-144	25° 23' 50.9540" S	28° 50' 07.5974" E
EX16-145	25° 23' 51.6348" S	28° 50' 07.1094" E
EX16-146	25° 23' 52.3156" S	28° 50' 06.6213" E
EX16-147	25° 23' 52.9964" S	28° 50' 06.1332" E
EX16-148	25° 23' 53.6772" S	28° 50' 05.6452" E
EX16-149	25° 23' 54.3580" S	28° 50' 05.1571" E
EX16-150	25° 23' 55.0388" S	28° 50' 04.6690" E
EX16-151	25° 23' 55.7197" S	28° 50' 04.1809" E
EX16-152	25° 23' 56.4005" S	28° 50' 03.6929" E
EX16-153	25° 23' 57.0812" S	28° 50' 03.2048" E
EX16-154	25° 23' 57.7621" S	28° 50' 02.7167" E
EX16-155	25° 23' 58.4429" S	28° 50' 02.2286" E
EX16-156	25° 23' 59.1237" S	28° 50' 01.7405" E
EX16-157	25° 23' 59.8045" S	28° 50' 01.2525" E
EX16-158	25° 24' 00.7440" S	28° 50' 00.5789" E
EX16-159	25° 24' 01.4248" S	28° 50' 00.0908" E
EX16-160	25° 24' 02.4868" S	28° 49' 59.3294" E
EX16-161	25° 24' 03.1948" S	28° 49' 58.8218" E
EX16-162	25° 24' 03.9301" S	28° 49' 58.2946" E
EX16-163	25° 24' 04.6381" S	28° 49' 57.7870" E
EX16-164	25° 24' 04.7198" S	28° 49' 57.7284" E
EX16-165	25° 24' 06.0098" S	28° 49' 56.8035" E
EX16-166	25° 24' 07.3004" S	28° 49' 55.8782" E
EX16-167	25° 24' 07.3827" S	28° 49' 55.8192" E
EX16-168	25° 24' 08.0635" S	28° 49' 55.3311" E
EX16-169	25° 24' 08.7443" S	28° 49' 54.8429" E
EX16-170	25° 24' 09.4251" S	28° 49' 54.3548" E
EX16-171	25° 24' 10.6184" S	28° 49' 53.4993" E
EX16-172	25° 24' 11.4433" S	28° 49' 52.9078" E
EX16-173	25° 24' 12.2057" S	28° 49' 52.3612" E
EX16-174	25° 24' 12.9138" S	28° 49' 51.8535" E
EX16-175	25° 24' 13.6218" S	28° 49' 51.3459" E
EX16-176	25° 24' 14.3298" S	28° 49' 50.8383" E
EX16-177	25° 24' 15.0378" S	28° 49' 50.3306" E
EX16-178	25° 24' 15.7459" S	28° 49' 49.8230" E
EX16-179	25° 24' 16.4539" S	28° 49' 49.3153" E
EX16-180	25° 24' 16.5356" S	28° 49' 49.2567" E
EX16-181	25° 24' 17.2164" S	28° 49' 48.7686" E
EX16-182	25° 24' 17.8972" S	28° 49' 48.2805" E
EX16-183	25° 24' 18.5779" S	28° 49' 47.7923" E
EX16-184	25° 24' 19.2860" S	28° 49' 47.2847" E
EX16-185	25° 24' 19.9940" S	28° 49' 46.7770" E
EX16-186	25° 24' 20.7565" S	28° 49' 46.2303" E
EX16-187	25° 24' 21.4375" S	28° 49' 45.7420" E
EX16-188	25° 24' 22.1183" S	28° 49' 45.2538" E
EX16-189	25° 24' 22.7991" S	28° 49' 44.7657" E
EX16-190	25° 24' 23.4799" S	28° 49' 44.2775" E
EX16-191	25° 24' 24.1606" S	28° 49' 43.7894" E

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 52 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. — M B Straughan G.Pr. LS0907D — 09 October 2025 date

For applicant — Owain Jackson name — signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	Dwg: reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

friedlaender, burger & volkmann

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Point	Latitude	Longitude
EX16-192	25° 24' 24.8414" S	28° 49' 43.3012" E
EX16-193	25° 24' 25.5832" S	28° 49' 42.7693" E
EX16-194	25° 24' 26.7313" S	28° 49' 41.9461" E
EX16-195	25° 24' 26.5262" S	28° 49' 41.1336" E
EX16-196	25° 24' 26.3088" S	28° 49' 40.2717" E
EX16-197	25° 24' 26.0913" S	28° 49' 39.4099" E
EX16-198	25° 24' 25.8738" S	28° 49' 38.5480" E
EX16-199	25° 24' 25.6563" S	28° 49' 37.6862" E
EX16-200	25° 24' 25.6302" S	28° 49' 37.5827" E
EX16-201	25° 24' 25.4127" S	28° 49' 36.7209" E
EX16-202	25° 24' 25.1952" S	28° 49' 35.8590" E
EX16-203	25° 24' 24.9777" S	28° 49' 34.9972" E
EX16-204	25° 24' 24.7602" S	28° 49' 34.1353" E
EX16-205	25° 24' 24.5427" S	28° 49' 33.2735" E
EX16-206	25° 24' 24.3252" S	28° 49' 32.4117" E
EX16-207	25° 24' 24.1077" S	28° 49' 31.5498" E
EX16-208	25° 24' 23.8902" S	28° 49' 30.6880" E
EX16-209	25° 24' 23.6727" S	28° 49' 29.8262" E
EX16-210	25° 24' 23.4552" S	28° 49' 28.9643" E
EX16-211	25° 24' 23.2377" S	28° 49' 28.1025" E
EX16-212	25° 24' 23.0202" S	28° 49' 27.2406" E
EX16-213	25° 24' 22.8027" S	28° 49' 26.3788" E
EX16-214	25° 24' 22.5852" S	28° 49' 25.5170" E
EX16-215	25° 24' 22.3242" S	28° 49' 24.4829" E
EX16-216	25° 24' 22.1901" S	28° 49' 23.9518" E
EX16-217	25° 24' 22.0110" S	28° 49' 23.2419" E
EX16-218	25° 24' 21.8413" S	28° 49' 22.5697" E
EX16-219	25° 24' 21.6717" S	28° 49' 21.8975" E
EX16-220	25° 24' 21.5020" S	28° 49' 21.2252" E
EX16-221	25° 24' 21.3323" S	28° 49' 20.5530" E
EX16-222	25° 24' 21.1627" S	28° 49' 19.8808" E
EX16-223	25° 24' 20.9930" S	28° 49' 19.2086" E
EX16-224	25° 24' 20.8234" S	28° 49' 18.5363" E
EX16-225	25° 24' 20.6537" S	28° 49' 17.8641" E
EX16-226	25° 24' 20.6276" S	28° 49' 17.7607" E
EX16-227	25° 24' 20.4536" S	28° 49' 17.0712" E
EX16-228	25° 24' 20.2795" S	28° 49' 16.3818" E
EX16-229	25° 24' 20.1055" S	28° 49' 15.6923" E
EX16-230	25° 24' 19.9315" S	28° 49' 15.0028" E
EX16-231	25° 24' 19.7575" S	28° 49' 14.3134" E
EX16-232	25° 24' 19.5835" S	28° 49' 13.6239" E
EX16-233	25° 24' 19.4285" S	28° 49' 13.0099" E
EX16-234	25° 24' 17.6723" S	28° 49' 13.4949" E
EX16-235	25° 24' 14.8343" S	28° 49' 14.2784" E
EX16-236	25° 24' 13.7308" S	28° 49' 14.5831" E
EX16-237	25° 24' 12.6272" S	28° 49' 14.8878" E
EX16-238	25° 24' 07.2667" S	28° 49' 16.3678" E
EX16-239	25° 24' 05.8387" S	28° 49' 16.7621" E

Point	Latitude	Longitude
EX16-240	25° 24' 03.5667" S	28° 49' 17.3893" E
EX16-241	25° 23' 51.9255" S	28° 49' 20.6032" E
EX16-242	25° 23' 51.3548" S	28° 49' 20.8576" E
EX16-243	25° 23' 49.8829" S	28° 49' 21.5137" E
EX16-244	25° 23' 48.3115" S	28° 49' 22.2142" E
EX16-245	25° 23' 42.8852" S	28° 49' 23.3566" E
EX16-246	25° 23' 41.7681" S	28° 49' 23.5918" E
EX17-1	25° 22' 56.2820" S	28° 49' 42.9593" E
EX17-2	25° 22' 52.9866" S	28° 49' 41.8399" E
EX17-3	25° 22' 53.9786" S	28° 49' 42.6151" E
EX17-4	25° 22' 54.1482" S	28° 49' 43.1658" E
EX17-5	25° 22' 53.3710" S	28° 49' 42.9054" E
EX17-6	25° 22' 53.2442" S	28° 49' 43.3640" E
EX17-7	25° 22' 53.1174" S	28° 49' 43.8225" E
EX17-8	25° 22' 52.9906" S	28° 49' 44.2811" E
EX17-9	25° 22' 52.8638" S	28° 49' 44.7397" E
EX17-10	25° 22' 52.7370" S	28° 49' 45.1983" E
EX17-11	25° 22' 52.6103" S	28° 49' 45.6568" E
EX17-12	25° 22' 52.4835" S	28° 49' 46.1154" E
EX17-13	25° 22' 52.3567" S	28° 49' 46.5740" E
EX17-14	25° 22' 52.2299" S	28° 49' 47.0326" E
EX17-15	25° 22' 52.0937" S	28° 49' 47.5254" E
EX17-16	25° 22' 51.9707" S	28° 49' 47.9702" E
EX17-17	25° 22' 51.8472" S	28° 49' 48.4150" E
EX17-18	25° 22' 51.7290" S	28° 49' 48.8428" E
EX17-19	25° 22' 51.6108" S	28° 49' 49.2706" E
EX17-20	25° 22' 51.4926" S	28° 49' 49.6984" E
EX17-21	25° 22' 51.3744" S	28° 49' 50.1263" E
EX17-22	25° 22' 51.2562" S	28° 49' 50.5541" E
EX17-23	25° 22' 51.0840" S	28° 49' 51.1777" E
EX17-24	25° 22' 51.1765" S	28° 49' 51.7424" E
EX17-25	25° 22' 51.2537" S	28° 49' 52.2141" E
EX17-26	25° 22' 51.3310" S	28° 49' 52.6858" E
EX17-27	25° 22' 51.4083" S	28° 49' 53.1576" E
EX17-28	25° 22' 51.4856" S	28° 49' 53.6293" E
EX17-29	25° 22' 51.5629" S	28° 49' 54.1011" E
EX17-30	25° 22' 51.6401" S	28° 49' 54.5728" E
EX17-31	25° 22' 51.7174" S	28° 49' 55.0445" E
EX17-32	25° 22' 51.7947" S	28° 49' 55.5163" E
EX17-33	25° 22' 51.8720" S	28° 49' 55.9880" E
EX17-34	25° 22' 51.9492" S	28° 49' 56.4598" E
EX17-35	25° 22' 52.0265" S	28° 49' 56.9315" E
EX17-36	25° 22' 52.1038" S	28° 49' 57.4032" E
EX17-37	25° 22' 52.1842" S	28° 49' 57.8960" E
EX17-38	25° 22' 52.2594" S	28° 49' 58.3534" E
EX17-39	25° 22' 51.4598" S	28° 49' 58.5121" E
EX17-40	25° 22' 49.5537" S	28° 49' 58.8905" E
EX17-41	25° 22' 50.5966" S	28° 50' 10.2428" E

Point	Latitude	Longitude
EX17-42	25° 22' 55.0640" S	28° 50' 05.8607" E
EX17-43	25° 22' 55.3448" S	28° 50' 06.2076" E
EX17-44	25° 22' 55.6907" S	28° 50' 06.6350" E
EX17-45	25° 22' 56.0107" S	28° 50' 07.0302" E
EX17-46	25° 22' 56.3307" S	28° 50' 07.4256" E
EX17-47	25° 22' 56.6507" S	28° 50' 07.8208" E
EX17-48	25° 22' 56.9706" S	28° 50' 08.2161" E
EX17-49	25° 22' 57.2906" S	28° 50' 08.6114" E
EX17-50	25° 22' 57.6106" S	28° 50' 09.0067" E
EX17-51	25° 22' 57.9306" S	28° 50' 09.4019" E
EX17-52	25° 22' 58.2505" S	28° 50' 09.7972" E
EX17-53	25° 22' 58.5705" S	28° 50' 10.1925" E
EX17-54	25° 22' 58.9785" S	28° 50' 10.6965" E
EX17-55	25° 22' 59.5321" S	28° 50' 10.8820" E
EX17-56	25° 22' 59.9674" S	28° 50' 11.0279" E
EX17-57	25° 23' 00.4026" S	28° 50' 11.1738" E
EX17-58	25° 23' 00.8379" S	28° 50' 11.3196" E
EX17-59	25° 23' 01.3044" S	28° 50' 11.4760" E
EX17-60	25° 23' 01.7085" S	28° 50' 11.6114" E
EX17-61	25° 23' 02.2180" S	28° 50' 11.7821" E
EX17-62	25° 23' 02.6843" S	28° 50' 11.9384" E
EX17-63	25° 23' 03.1506" S	28° 50' 12.0946" E
EX17-64	25° 23' 03.6172" S	28° 50' 12.2510" E
EX17-65	25° 23' 03.8538" S	28° 50' 11.3954" E
EX17-66	25° 23' 04.4445" S	28° 50' 11.5931" E
EX17-67	25° 23' 04.7638" S	28° 50' 12.0552" E
EX17-68	25° 23' 04.7959" S	28° 50' 13.3938" E
EX17-69	25° 23' 05.8303" S	28° 50' 09.6531" E
EX17-70	25° 23' 05.1341" S	28° 50' 10.7222" E
EX17-71	25° 23' 04.6339" S	28° 50' 10.9089" E
EX17-72	25° 23' 04.0432" S	28° 50' 10.7108" E
EX17-73	25° 23' 07.4387" S	28° 49' 58.4302" E
EX17-74	25° 23' 07.6539" S	28° 49' 57.6519" E
EX17-75	25° 23' 07.7826" S	28° 49' 57.1865" E
EX17-76	25° 23' 07.9113" S	28° 49' 56.7210" E
EX17-77	25° 23' 08.0399" S	28° 49' 56.2556" E
EX17-78	25° 23' 08.1686" S	28° 49' 55.7902" E
EX17-79	25° 23' 08.2973" S	28° 49' 55.3247" E
EX17-80	25° 23' 08.4260" S	28° 49' 54.8593" E
EX17-81	25° 23' 08.5547" S	28° 49' 54.3938" E
EX17-82	25° 23' 08.6834" S	28° 49' 53.9284" E
EX17-83	25° 23' 08.8121" S	28° 49' 53.4629" E
EX17-84	25° 23' 08.9407" S	28° 49' 52.9975" E
EX17-85	25° 23' 09.0694" S	28° 49' 52.5320" E
EX17-86	25° 23' 09.1981" S	28° 49' 52.0666" E
EX17-87	25° 23' 09.3268" S	28° 49' 51.6012" E
EX17-88	25° 23' 09.4555" S	28° 49' 51.1357" E
EX17-89	25° 23' 09.7393" S	28° 49' 50.1089" E

Point	Latitude	Longitude
EX17-90	25° 23' 08.8187" S	28° 49' 49.8002" E
EX17-91	25° 23' 08.8565" S	28° 49' 49.6653" E
EX17-92	25° 23' 09.4686" S	28° 49' 47.4813" E
EX17-93	25° 23' 09.9521" S	28° 49' 45.7556" E
EX17-94	25° 23' 10.4970" S	28° 49' 43.8112" E
EX17-95	25° 23' 11.0717" S	28° 49' 41.7601" E
EX17-96	25° 23' 11.2633" S	28° 49' 41.0764" E
EX17-97	25° 23' 11.8380" S	28° 49' 39.0253" E
EX17-98	25° 23' 12.4150" S	28° 49' 36.9718" E
EX17-99	25° 23' 09.7755" S	28° 49' 36.0755" E
EX17-100	25° 23' 09.7762" S	28° 49' 36.0733" E
EX17-101	25° 23' 10.1586" S	28° 49' 34.7081" E
EX17-102	25° 23' 09.5377" S	28° 49' 34.4972" E
EX17-103	25° 23' 09.4419" S	28° 49' 34.8389" E
EX17-104	25° 23' 09.0357" S	28° 49' 35.0753" E
EX17-105	25° 22' 57.0800" S	28° 49' 31.0156" E
EX17-106	25° 22' 56.8885" S	28° 49' 31.6992" E
EX17-107	25° 22' 56.3137" S	28° 49' 33.7502" E
EX17-108	25° 22' 55.7389" S	28° 49' 35.8011" E
EX17-109	25° 22' 55.5473" S	28° 49' 36.4848" E
EX17-110	25° 22' 54.3378" S	28° 49' 40.8003" E
EX17-111	25° 22' 54.0505" S	28° 49' 41.8256" E
EX17-112	25° 22' 56.3780" S	28° 49' 42.6164" E
EX18-1	25° 16' 13.9710" S	28° 50' 01.6793" E
EX18-2	25° 16' 20.4065" S	28° 50' 01.6705" E
EX18-3	25° 16' 24.2486" S	28° 50' 04.3537" E
EX18-4	25° 16' 24.4482" S	28° 50' 06.1697" E
EX18-5	25° 16' 26.2978" S	28° 50' 08.7427" E
EX18-6	25° 16' 37.2796" S	28° 50' 16.8294" E
EX18-7	25° 16' 42.8368" S	28° 50' 08.9637" E
EX18-8	25° 16' 42.6432" S	28° 50' 08.8214" E
EX18-9	25° 16' 47.3684" S	28° 50' 01.0593" E
EX18-10	25° 16' 47.9837" S	28° 49' 58.8599" E
EX18-11	25° 16' 47.9852" S	28° 49' 58.3870" E
EX18-12	25° 16' 28.6708" S	28° 49' 44.4960" E
EX18-13	25° 16' 26.7909" S	28° 49' 47.6578" E
EX18-14	25° 16' 24.8040" S	28° 49' 47.1363" E
EX18-15	25° 16' 23.5097" S	28° 49' 47.1381" E
EX18-16	25° 16' 23.5014" S	28° 49' 39.7366" E
EX18-17	25° 16' 22.9811" S	28° 49' 39.5057" E
EX18-18	25° 16' 22.9796" S	28° 49' 37.9296" E
EX18-19	25° 16' 16.6395" S	28° 49' 36.6466" E
EX18-20	25° 16' 16.6580" S	28° 49' 52.6227" E
EX18-21	25° 16' 13.9607" S	28° 49' 52.6264" E
EX19-1	25° 20' 54.6332" S	28° 48' 38.0519" E
EX19-2	25° 20' 54.8115" S	28° 48' 37.3636" E
EX19-3	25° 20' 55.0123" S	28° 48' 37.2408" E
EX19-4	25° 20' 57.5124" S	28° 48' 38.0255" E

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 53 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. — M B Straughan G.Pr. LS0907D — 09 October 2025 date

For applicant Owain Jackson name

signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation

Dwg: reg 2(2) plan er kruis river oct 2025.dwg

Revision:

Date: 09 October 2025

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Point	Latitude	Longitude
EX19-5	25° 21' 04.8383" S	28° 48' 09.7553" E
EX19-6	25° 21' 04.9132" S	28° 48' 07.5771" E
EX19-7	25° 21' 05.0816" S	28° 48' 07.4052" E
EX19-8	25° 21' 05.3414" S	28° 48' 07.4160" E
EX19-9	25° 21' 05.4642" S	28° 48' 03.8422" E
EX19-10	25° 21' 02.3792" S	28° 48' 03.7139" E
EX19-11	25° 21' 02.2230" S	28° 48' 03.5285" E
EX19-12	25° 21' 02.4132" S	28° 47' 57.9891" E
EX19-13	25° 20' 59.9776" S	28° 47' 57.8878" E
EX19-14	25° 20' 59.8214" S	28° 47' 57.7024" E
EX19-15	25° 20' 59.8912" S	28° 47' 55.6700" E
EX19-16	25° 20' 56.9220" S	28° 47' 51.8558" E
EX19-17	25° 20' 55.0750" S	28° 47' 51.7862" E
EX19-18	25° 20' 55.1178" S	28° 47' 50.5354" E
EX19-19	25° 20' 54.3060" S	28° 47' 50.5017" E
EX19-20	25° 20' 53.4940" S	28° 47' 50.4679" E
EX19-21	25° 20' 52.6823" S	28° 47' 50.4342" E
EX19-22	25° 20' 51.8706" S	28° 47' 50.4004" E
EX19-23	25° 20' 51.0585" S	28° 47' 50.3667" E
EX19-24	25° 20' 50.2467" S	28° 47' 50.3329" E
EX19-25	25° 20' 49.4350" S	28° 47' 50.2992" E
EX19-26	25° 20' 48.4603" S	28° 47' 50.2587" E
EX19-27	25° 20' 47.6489" S	28° 47' 50.2249" E
EX19-28	25° 20' 46.8369" S	28° 47' 50.1912" E
EX19-29	25° 20' 46.0252" S	28° 47' 50.1574" E
EX19-30	25° 20' 45.2134" S	28° 47' 50.1238" E
EX19-31	25° 20' 44.4015" S	28° 47' 50.0900" E
EX19-32	25° 20' 43.5897" S	28° 47' 50.0563" E
EX19-33	25° 20' 43.5465" S	28° 47' 51.3073" E
EX19-34	25° 20' 41.5293" S	28° 47' 51.2159" E
EX19-35	25° 20' 37.7534" S	28° 47' 54.4723" E
EX19-36	25° 20' 37.7228" S	28° 47' 55.3657" E
EX19-37	25° 20' 36.5863" S	28° 47' 55.3183" E
EX19-38	25° 20' 36.3654" S	28° 48' 01.7507" E
EX19-39	25° 20' 36.2180" S	28° 48' 01.7445" E
EX19-40	25° 20' 33.1852" S	28° 48' 05.2812" E
EX19-41	25° 20' 31.1247" S	28° 48' 13.2328" E
EX19-42	25° 20' 33.4685" S	28° 48' 13.9683" E
EX19-43	25° 20' 33.5802" S	28° 48' 14.1893" E
EX19-44	25° 20' 29.6678" S	28° 48' 29.2863" E
EX19-45	25° 20' 31.1737" S	28° 48' 29.7594" E
EX19-46	25° 20' 30.1177" S	28° 48' 33.4445" E
EX19-47	25° 20' 27.5083" S	28° 48' 32.6255" E
EX19-48	25° 20' 23.3434" S	28° 48' 48.6940" E
EX19-49	25° 20' 21.5661" S	28° 48' 48.1362" E
EX19-50	25° 20' 16.1839" S	28° 49' 14.4771" E
EX19-51	25° 20' 14.6570" S	28° 49' 22.4358" E
EX19-52	25° 20' 19.2302" S	28° 49' 40.4902" E

Point	Latitude	Longitude
EX19-53	25° 20' 23.8960" S	28° 49' 43.3863" E
EX19-54	25° 20' 29.7053" S	28° 49' 41.5800" E
EX19-55	25° 20' 30.0588" S	28° 49' 42.9566" E
EX19-56	25° 20' 30.4123" S	28° 49' 44.3332" E
EX19-57	25° 20' 30.5007" S	28° 49' 44.6773" E
EX19-58	25° 20' 30.7835" S	28° 49' 45.7785" E
EX19-59	25° 20' 30.8630" S	28° 49' 46.0882" E
EX19-60	25° 20' 31.3030" S	28° 49' 47.8016" E
EX19-61	25° 20' 32.5171" S	28° 49' 48.3125" E
EX19-62	25° 20' 33.2661" S	28° 49' 48.6277" E
EX19-63	25° 20' 33.2402" S	28° 49' 49.7716" E
EX19-64	25° 20' 33.2256" S	28° 49' 50.4151" E
EX19-65	25° 20' 33.7684" S	28° 49' 51.1914" E
EX19-66	25° 20' 34.2971" S	28° 49' 51.9476" E
EX19-67	25° 20' 35.2868" S	28° 49' 53.3632" E
EX19-68	25° 20' 35.7766" S	28° 49' 53.4380" E
EX19-69	25° 20' 35.2716" S	28° 49' 57.4282" E
EX19-70	25° 20' 34.2103" S	28° 49' 57.1604" E
EX19-71	25° 20' 34.0212" S	28° 49' 58.0666" E
EX19-72	25° 20' 33.8394" S	28° 49' 58.9379" E
EX19-73	25° 20' 33.6577" S	28° 49' 59.8093" E
EX19-74	25° 20' 33.4759" S	28° 50' 00.6807" E
EX19-75	25° 20' 33.2869" S	28° 50' 01.5867" E
EX19-76	25° 20' 32.1465" S	28° 50' 01.2986" E
EX19-77	25° 20' 30.9503" S	28° 50' 07.0338" E
EX19-78	25° 20' 30.9086" S	28° 50' 08.0670" E
EX19-79	25° 20' 29.8288" S	28° 50' 08.4593" E
EX19-80	25° 20' 30.0835" S	28° 50' 09.3082" E
EX19-81	25° 20' 30.3382" S	28° 50' 10.1572" E
EX19-82	25° 20' 30.5928" S	28° 50' 11.0062" E
EX19-83	25° 20' 30.8475" S	28° 50' 11.8551" E
EX19-84	25° 20' 30.9793" S	28° 50' 12.2945" E
EX19-85	25° 20' 31.4047" S	28° 50' 12.8742" E
EX19-86	25° 20' 31.9151" S	28° 50' 13.5697" E
EX19-87	25° 20' 32.4255" S	28° 50' 14.2652" E
EX19-88	25° 20' 32.9360" S	28° 50' 14.9608" E
EX19-89	25° 20' 33.4464" S	28° 50' 15.6563" E
EX19-90	25° 20' 33.6930" S	28° 50' 15.9924" E
EX19-91	25° 20' 34.3746" S	28° 50' 16.5028" E
EX19-92	25° 20' 34.6889" S	28° 50' 16.7381" E
EX19-93	25° 20' 35.5644" S	28° 50' 15.9561" E
EX19-94	25° 20' 35.6149" S	28° 50' 15.9110" E
EX19-95	25° 20' 36.2457" S	28° 50' 15.3476" E
EX19-96	25° 20' 36.4359" S	28° 50' 15.1777" E
EX19-97	25° 20' 36.3625" S	28° 50' 15.8419" E
EX19-98	25° 20' 36.2644" S	28° 50' 16.7304" E
EX19-99	25° 20' 36.1663" S	28° 50' 17.6191" E
EX19-100	25° 20' 36.0261" S	28° 50' 18.4997" E

Point	Latitude	Longitude
EX19-101	25° 20' 35.8860" S	28° 50' 19.3804" E
EX19-102	25° 20' 35.7459" S	28° 50' 20.2610" E
EX19-103	25° 20' 35.5269" S	28° 50' 21.6373" E
EX19-104	25° 20' 36.6639" S	28° 50' 22.2592" E
EX19-105	25° 20' 36.8951" S	28° 50' 22.3857" E
EX19-106	25° 20' 35.2321" S	28° 50' 26.0667" E
EX19-107	25° 20' 35.4066" S	28° 50' 26.1628" E
EX19-108	25° 20' 35.0164" S	28° 50' 27.0268" E
EX19-109	25° 20' 34.7557" S	28° 50' 27.6033" E
EX19-110	25° 20' 34.3651" S	28° 50' 28.4678" E
EX19-111	25° 20' 32.2101" S	28° 50' 33.2386" E
EX19-112	25° 20' 31.8999" S	28° 50' 33.9249" E
EX19-113	25° 20' 31.5818" S	28° 50' 34.6295" E
EX19-114	25° 20' 31.2635" S	28° 50' 35.3340" E
EX19-115	25° 20' 30.9451" S	28° 50' 36.0382" E
EX19-116	25° 20' 30.5583" S	28° 50' 36.8948" E
EX19-117	25° 20' 31.5965" S	28° 50' 37.3841" E
EX19-118	25° 20' 31.6859" S	28° 50' 37.4262" E
EX19-119	25° 20' 32.2835" S	28° 50' 37.7079" E
EX19-120	25° 20' 32.8811" S	28° 50' 37.9893" E
EX19-121	25° 20' 33.4784" S	28° 50' 38.2710" E
EX19-122	25° 20' 34.0759" S	28° 50' 38.5524" E
EX19-123	25° 20' 34.6732" S	28° 50' 38.8341" E
EX19-124	25° 20' 35.2708" S	28° 50' 39.1155" E
EX19-125	25° 20' 35.8681" S	28° 50' 39.3972" E
EX19-126	25° 20' 36.4657" S	28° 50' 39.6786" E
EX19-127	25° 20' 37.0633" S	28° 50' 39.9604" E
EX19-128	25° 20' 37.6605" S	28° 50' 40.2417" E
EX19-129	25° 20' 38.2581" S	28° 50' 40.5235" E
EX19-130	25° 20' 38.8333" S	28° 50' 40.7945" E
EX19-131	25° 20' 39.4631" S	28° 50' 41.7121" E
EX19-132	25° 20' 39.4469" S	28° 50' 42.4270" E
EX19-133	25° 20' 39.4305" S	28° 50' 43.1422" E
EX19-134	25° 20' 39.4143" S	28° 50' 43.8571" E
EX19-135	25° 20' 39.3348" S	28° 50' 44.6028" E
EX19-136	25° 20' 39.2557" S	28° 50' 45.3489" E
EX19-137	25° 20' 39.1762" S	28° 50' 46.0946" E
EX19-138	25° 20' 38.8511" S	28° 50' 46.3275" E
EX19-139	25° 20' 38.3066" S	28° 50' 46.7176" E
EX19-140	25° 20' 37.7620" S	28° 50' 47.1078" E
EX19-141	25° 20' 37.2171" S	28° 50' 47.4979" E
EX19-142	25° 20' 36.6725" S	28° 50' 47.8884" E
EX19-143	25° 20' 36.1280" S	28° 50' 48.2785" E
EX19-144	25° 20' 35.5831" S	28° 50' 48.6686" E
EX19-145	25° 20' 35.0385" S	28° 50' 49.0588" E
EX19-146	25° 20' 33.9315" S	28° 50' 49.8519" E
EX19-147	25° 20' 33.2665" S	28° 50' 49.6840" E
EX19-148	25° 20' 32.6014" S	28° 50' 49.5157" E

Point	Latitude	Longitude
EX19-149	25° 20' 31.9360" S	28° 50' 49.3477" E
EX19-150	25° 20' 31.0180" S	28° 50' 49.1157" E
EX19-151	25° 20' 30.0951" S	28° 50' 49.6952" E
EX19-152	25° 20' 29.1962" S	28° 50' 50.2592" E
EX19-153	25° 20' 28.9206" S	28° 50' 51.2104" E
EX19-154	25° 20' 28.7231" S	28° 50' 51.8919" E
EX19-155	25° 20' 28.5255" S	28° 50' 52.5734" E
EX19-156	25° 20' 28.3283" S	28° 50' 53.2545" E
EX19-157	25° 20' 28.1308" S	28° 50' 53.9360" E
EX19-158	25° 20' 27.9333" S	28° 50' 54.6175" E
EX19-159	25° 20' 27.7358" S	28° 50' 55.2990" E
EX19-160	25° 20' 27.5385" S	28° 50' 55.9804" E
EX19-161	25° 20' 27.3410" S	28° 50' 56.6616" E
EX19-162	25° 20' 27.1435" S	28° 50' 57.3430" E
EX19-163	25° 20' 26.9460" S	28° 50' 58.0245" E
EX19-164	25° 20' 26.7487" S	28° 50' 58.7060" E
EX19-165	25° 20' 26.6056" S	28° 50' 59.1993" E
EX19-166	25° 20' 26.6841" S	28° 50' 59.6734" E
EX19-167	25° 20' 26.8005" S	28° 51' 00.3774" E
EX19-168	25° 20' 26.9169" S	28° 51' 01.0810" E
EX19-169	25° 20' 27.0333" S	28° 51' 01.7846" E
EX19-170	25° 20' 27.1494" S	28° 51' 02.4882" E
EX19-171	25° 20' 27.2658" S	28° 51' 03.1918" E
EX19-172	25° 20' 27.3822" S	28° 51' 03.8955" E
EX19-173	25° 20' 27.3999" S	28° 51' 04.0009" E
EX19-174	25° 20' 27.5159" S	28° 51' 04.7046" E
EX19-175	25° 20' 27.6323" S	28° 51' 05.4082" E
EX19-176	25° 20' 27.7487" S	28° 51' 06.1118" E
EX19-177	25° 20' 27.8651" S	28° 51' 06.8154" E
EX19-178	25° 20' 27.9815" S	28° 51' 07.5194" E
EX19-179	25° 20' 28.0979" S	28° 51' 08.2230" E
EX19-180	25° 20' 28.2143" S	28° 51' 08.9266" E
EX19-181	25° 20' 28.3307" S	28° 51' 09.6303" E
EX19-182	25° 20' 28.4468" S	28° 51' 10.3339" E
EX19-183	25° 20' 28.5632" S	28° 51' 11.0375" E
EX19-184	25° 20' 28.6796" S	28° 51' 11.7411" E
EX19-185	25° 20' 28.7960" S	28° 51' 12.4447" E
EX19-186	25° 20' 28.4607" S	28° 51' 13.8752" E
EX19-187	25° 20' 28.4054" S	28° 51' 14.1113" E
EX19-188	25° 20' 27.8331" S	28° 51' 14.4506" E
EX19-189	25° 20' 27.2612" S	28° 51' 14.7900" E
EX19-190	25° 20' 26.6889" S	28° 51' 15.1293" E
EX19-191	25° 20' 26.1170" S	28° 51' 15.4687" E
EX19-192	25° 20' 26.0313" S	28° 51' 15.5196" E
EX19-193	25° 20' 25.4590" S	28° 51' 15.8589" E
EX19-194	25° 20' 24.8867" S	28° 51' 16.1982" E
EX19-195	25° 20' 24.3148" S	28° 51' 16.5379" E
EX19-196	25° 20' 23.7425" S	28° 51' 16.8773" E

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 54 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No.

M B Straughan G.Pr. LS0907D — 09 October 2025 date

For applicant Owain Jackson name

signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	**Dwg:** reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

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Point	Latitude	Longitude
EX19-197	25° 20' 22.4298" S	28° 51' 17.6559" E
EX19-198	25° 20' 21.8046" S	28° 51' 17.7554" E
EX19-199	25° 20' 21.2900" S	28° 51' 17.8372" E
EX19-200	25° 20' 20.6466" S	28° 51' 17.9395" E
EX19-201	25° 20' 20.0033" S	28° 51' 18.0418" E
EX19-202	25° 20' 19.3603" S	28° 51' 18.1438" E
EX19-203	25° 20' 18.7221" S	28° 51' 18.2454" E
EX19-204	25° 20' 18.0161" S	28° 51' 18.3575" E
EX19-205	25° 20' 17.1333" S	28° 51' 18.4980" E
EX19-206	25° 20' 16.4578" S	28° 51' 18.6054" E
EX19-207	25° 20' 15.7823" S	28° 51' 18.7128" E
EX19-208	25° 20' 15.1925" S	28° 51' 18.8065" E
EX19-209	25° 20' 14.1837" S	28° 51' 18.9668" E
EX19-210	25° 20' 13.1754" S	28° 51' 19.1273" E
EX19-211	25° 20' 10.3519" S	28° 51' 19.5761" E
EX19-212	25° 20' 09.3433" S	28° 51' 19.7364" E
EX19-213	25° 20' 09.2549" S	28° 51' 20.3727" E
EX19-214	25° 20' 09.1568" S	28° 51' 21.0798" E
EX19-215	25° 20' 09.0587" S	28° 51' 21.7865" E
EX19-216	25° 20' 08.9603" S	28° 51' 22.4935" E
EX19-217	25° 20' 08.8622" S	28° 51' 23.2006" E
EX19-218	25° 20' 08.7641" S	28° 51' 23.9077" E
EX19-219	25° 20' 08.6660" S	28° 51' 24.6144" E
EX19-220	25° 20' 08.5679" S	28° 51' 25.3215" E
EX19-221	25° 20' 08.4695" S	28° 51' 26.0285" E
EX19-222	25° 20' 08.3714" S	28° 51' 26.7356" E
EX19-223	25° 20' 09.3221" S	28° 51' 26.9905" E
EX19-224	25° 20' 10.3321" S	28° 51' 27.2611" E
EX19-225	25° 20' 10.3327" S	28° 51' 27.2608" E
EX19-226	25° 20' 13.6090" S	28° 51' 27.8122" E
EX19-227	25° 20' 14.0978" S	28° 51' 33.5985" E
EX19-228	25° 20' 13.7752" S	28° 51' 34.3979" E
EX19-229	25° 20' 13.4837" S	28° 51' 35.1206" E
EX19-230	25° 20' 12.2031" S	28° 51' 38.2944" E
EX19-231	25° 20' 13.7238" S	28° 51' 40.5925" E
EX19-232	25° 20' 14.0035" S	28° 51' 41.0152" E
EX19-233	25° 20' 13.6778" S	28° 51' 41.0270" E
EX19-234	25° 20' 12.5408" S	28° 51' 41.0683" E
EX19-235	25° 20' 12.5685" S	28° 51' 41.9921" E
EX19-236	25° 20' 12.5962" S	28° 51' 42.9160" E
EX19-237	25° 20' 12.6239" S	28° 51' 43.8399" E
EX19-238	25° 20' 12.6516" S	28° 51' 44.7638" E
EX19-239	25° 20' 12.6793" S	28° 51' 45.6876" E
EX19-240	25° 20' 12.7070" S	28° 51' 46.6115" E
EX19-241	25° 20' 12.7347" S	28° 51' 47.5357" E
EX19-242	25° 20' 12.7624" S	28° 51' 48.4596" E
EX19-243	25° 20' 12.7901" S	28° 51' 49.3835" E
EX19-244	25° 20' 12.8178" S	28° 51' 50.3073" E

Point	Latitude	Longitude
EX19-245	25° 20' 12.8455" S	28° 51' 51.2312" E
EX19-246	25° 20' 12.8732" S	28° 51' 52.1550" E
EX19-247	25° 20' 11.2518" S	28° 51' 52.2216" E
EX19-248	25° 20' 10.1153" S	28° 51' 52.2683" E
EX19-249	25° 20' 10.1413" S	28° 51' 53.1593" E
EX19-250	25° 20' 10.1673" S	28° 51' 54.0506" E
EX19-251	25° 20' 10.1934" S	28° 51' 54.9420" E
EX19-252	25° 20' 10.2194" S	28° 51' 55.8334" E
EX19-253	25° 20' 10.2454" S	28° 51' 56.7247" E
EX19-254	25° 20' 10.2714" S	28° 51' 57.6161" E
EX19-255	25° 20' 10.2975" S	28° 51' 58.5075" E
EX19-256	25° 20' 10.3235" S	28° 51' 59.3988" E
EX19-257	25° 20' 10.3495" S	28° 52' 00.2902" E
EX19-258	25° 20' 10.3755" S	28° 52' 01.1816" E
EX19-259	25° 20' 10.4015" S	28° 52' 02.0729" E
EX19-260	25° 20' 10.4275" S	28° 52' 02.9643" E
EX19-261	25° 20' 10.4535" S	28° 52' 03.8557" E
EX19-262	25° 20' 10.4796" S	28° 52' 04.7470" E
EX19-263	25° 20' 10.5056" S	28° 52' 05.6384" E
EX19-264	25° 20' 10.5316" S	28° 52' 06.5292" E
EX19-265	25° 20' 03.8614" S	28° 52' 06.7721" E
EX19-266	25° 20' 03.9497" S	28° 52' 09.5737" E
EX19-267	25° 20' 03.7507" S	28° 52' 09.7735" E
EX19-268	25° 19' 56.1216" S	28° 52' 10.0607" E
EX19-269	25° 19' 56.3600" S	28° 52' 16.1843" E
EX19-270	25° 19' 51.4874" S	28° 52' 16.3590" E
EX19-271	25° 19' 51.1626" S	28° 52' 16.3706" E
EX19-272	25° 19' 50.0258" S	28° 52' 16.4114" E
EX19-273	25° 19' 48.8888" S	28° 52' 16.4521" E
EX19-274	25° 19' 48.5642" S	28° 52' 16.4638" E
EX19-275	25° 19' 47.4274" S	28° 52' 16.5045" E
EX19-276	25° 19' 46.2905" S	28° 52' 16.5453" E
EX19-277	25° 19' 45.9658" S	28° 52' 16.5569" E
EX19-278	25° 19' 44.8290" S	28° 52' 16.5977" E
EX19-279	25° 19' 43.6921" S	28° 52' 16.6384" E
EX19-280	25° 19' 43.3004" S	28° 52' 03.4156" E
EX19-281	25° 19' 47.1980" S	28° 52' 03.2755" E
EX19-282	25° 19' 46.9861" S	28° 51' 56.1279" E
EX19-283	25° 19' 40.8148" S	28° 51' 56.3497" E
EX19-284	25° 19' 41.0267" S	28° 52' 03.4972" E
EX19-285	25° 19' 42.8133" S	28° 52' 03.4330" E
EX19-286	25° 19' 44.3178" S	28° 52' 53.9085" E
EX19-287	25° 19' 45.9899" S	28° 53' 48.1924" E
EX19-288	25° 19' 46.6625" S	28° 53' 48.6109" E
EX19-289	25° 20' 04.6209" S	28° 53' 47.8892" E
EX19-290	25° 20' 04.6821" S	28° 53' 50.7480" E
EX19-291	25° 20' 06.9227" S	28° 53' 50.6885" E
EX19-292	25° 20' 07.4180" S	28° 53' 50.7003" E

Point	Latitude	Longitude
EX19-293	25° 20' 07.2709" S	28° 53' 44.4358" E
EX19-294	25° 20' 08.4070" S	28° 53' 44.4112" E
EX19-295	25° 20' 08.3878" S	28° 53' 43.4647" E
EX19-296	25° 20' 08.3748" S	28° 53' 42.6412" E
EX19-297	25° 20' 08.3387" S	28° 53' 41.7072" E
EX19-298	25° 20' 08.3154" S	28° 53' 40.8315" E
EX19-299	25° 20' 08.2881" S	28° 53' 39.9433" E
EX19-300	25° 20' 09.4222" S	28° 53' 39.9122" E
EX19-301	25° 20' 09.7478" S	28° 53' 39.9109" E
EX19-302	25° 20' 10.8846" S	28° 53' 39.8859" E
EX19-303	25° 20' 12.0219" S	28° 53' 39.8681" E
EX19-304	25° 20' 12.3476" S	28° 53' 39.8553" E
EX19-305	25° 20' 13.4820" S	28° 53' 39.8153" E
EX19-306	25° 20' 14.6191" S	28° 53' 39.7829" E
EX19-307	25° 20' 14.5763" S	28° 53' 38.6100" E
EX19-308	25° 20' 15.5154" S	28° 53' 38.5816" E
EX19-309	25° 20' 16.5821" S	28° 53' 37.8952" E
EX19-310	25° 20' 27.2719" S	28° 53' 17.1107" E
EX19-311	25° 20' 27.4150" S	28° 53' 16.4140" E
EX19-312	25° 20' 26.6866" S	28° 52' 52.3923" E
EX19-313	25° 20' 26.5942" S	28° 52' 49.4543" E
EX19-314	25° 20' 26.7481" S	28° 52' 49.2500" E
EX19-315	25° 20' 29.2542" S	28° 52' 49.2042" E
EX19-316	25° 20' 28.0323" S	28° 52' 09.5071" E
EX19-317	25° 20' 28.1845" S	28° 52' 09.3156" E
EX19-318	25° 20' 30.6581" S	28° 52' 09.2350" E
EX19-319	25° 20' 29.7854" S	28° 51' 41.4668" E
EX19-320	25° 20' 30.2204" S	28° 51' 41.6215" E
EX19-321	25° 20' 31.4713" S	28° 51' 42.0739" E
EX19-322	25° 20' 32.1195" S	28° 51' 42.3081" E
EX19-323	25° 20' 32.7677" S	28° 51' 42.5426" E
EX19-324	25° 20' 33.4163" S	28° 51' 42.7772" E
EX19-325	25° 20' 34.0645" S	28° 51' 43.0114" E
EX19-326	25° 20' 34.7127" S	28° 51' 43.2459" E
EX19-327	25° 20' 35.3612" S	28° 51' 43.4801" E
EX19-328	25° 20' 36.0094" S	28° 51' 43.7147" E
EX19-329	25° 20' 36.6580" S	28° 51' 43.9493" E
EX19-330	25° 20' 37.3062" S	28° 51' 44.1835" E
EX19-331	25° 20' 37.9544" S	28° 51' 44.4180" E
EX19-332	25° 20' 38.6029" S	28° 51' 44.6526" E
EX19-333	25° 20' 39.1656" S	28° 51' 44.8562" E
EX19-334	25° 20' 39.8216" S	28° 51' 45.0932" E
EX19-335	25° 20' 40.4855" S	28° 51' 45.3331" E
EX19-336	25° 20' 41.0875" S	28° 51' 45.5510" E
EX19-337	25° 20' 41.6896" S	28° 51' 45.7688" E
EX19-338	25° 20' 42.2916" S	28° 51' 45.9862" E
EX19-339	25° 20' 42.8010" S	28° 51' 46.1705" E
EX19-340	25° 20' 43.6937" S	28° 51' 46.4935" E

Point	Latitude	Longitude
EX19-341	25° 20' 44.5548" S	28° 51' 46.8047" E
EX19-342	25° 20' 45.8304" S	28° 51' 47.2660" E
EX19-343	25° 20' 46.2512" S	28° 51' 46.5450" E
EX19-344	25° 20' 46.7776" S	28° 51' 45.6422" E
EX19-345	25° 20' 47.0732" S	28° 51' 44.9583" E
EX19-346	25° 20' 47.4461" S	28° 51' 44.0953" E
EX19-347	25° 20' 47.5120" S	28° 51' 44.0162" E
EX19-348	25° 20' 47.8947" S	28° 51' 43.5555" E
EX19-349	25° 20' 48.2895" S	28° 51' 43.0805" E
EX19-350	25° 20' 48.7699" S	28° 51' 42.5024" E
EX19-351	25° 20' 48.9887" S	28° 51' 42.6570" E
EX19-352	25° 20' 50.3698" S	28° 51' 41.9323" E
EX19-353	25° 20' 50.7209" S	28° 51' 41.3304" E
EX19-354	25° 20' 51.0719" S	28° 51' 40.7284" E
EX19-355	25° 20' 51.4230" S	28° 51' 40.1265" E
EX19-356	25° 20' 52.5111" S	28° 51' 38.2602" E
EX19-357	25° 20' 54.4608" S	28° 51' 37.0185" E
EX19-358	25° 20' 55.0659" S	28° 51' 37.7248" E
EX19-359	25° 20' 55.5116" S	28° 51' 38.2453" E
EX19-360	25° 20' 55.9573" S	28° 51' 38.7655" E
EX19-361	25° 20' 56.4033" S	28° 51' 39.2861" E
EX19-362	25° 20' 56.7882" S	28° 51' 39.7355" E
EX19-363	25° 20' 57.3988" S	28° 51' 39.7613" E
EX19-364	25° 20' 58.0481" S	28° 51' 39.7884" E
EX19-365	25° 20' 58.6974" S	28° 51' 39.8159" E
EX19-366	25° 20' 59.3471" S	28° 51' 39.8431" E
EX19-367	25° 20' 59.9964" S	28° 51' 39.8706" E
EX19-368	25° 21' 00.6460" S	28° 51' 39.8981" E
EX19-369	25° 21' 01.2954" S	28° 51' 39.9252" E
EX19-370	25° 21' 01.9450" S	28° 51' 39.9527" E
EX19-371	25° 21' 02.5943" S	28° 51' 39.9798" E
EX19-372	25° 21' 03.2440" S	28° 51' 40.0073" E
EX19-373	25° 21' 03.8933" S	28° 51' 40.0345" E
EX19-374	25° 21' 04.5429" S	28° 51' 40.0620" E
EX19-375	25° 21' 05.1922" S	28° 51' 40.0891" E
EX19-376	25° 21' 05.8419" S	28° 51' 40.1166" E
EX19-377	25° 21' 05.9390" S	28° 51' 40.1208" E
EX19-378	25° 21' 06.3475" S	28° 51' 40.1379" E
EX19-379	25° 21' 06.9761" S	28° 51' 39.4859" E
EX19-380	25° 21' 07.4491" S	28° 51' 38.9950" E
EX19-381	25° 21' 07.9221" S	28° 51' 38.5045" E
EX19-382	25° 21' 08.3948" S	28° 51' 38.0140" E
EX19-383	25° 21' 08.8678" S	28° 51' 37.5231" E
EX19-384	25° 21' 09.3408" S	28° 51' 37.0326" E
EX19-385	25° 21' 09.8138" S	28° 51' 36.5421" E
EX19-386	25° 21' 10.2865" S	28° 51' 36.0512" E
EX19-387	25° 21' 10.7595" S	28° 51' 35.5607" E
EX19-388	25° 21' 11.2326" S	28° 51' 35.0702" E

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 55 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. — M B Straughan G.Pr. LS0907D — 09 October 2025 date

For applicant Owain Jackson name

signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	**Dwg:** reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

friedlaender, burger & volkmann

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Point	Latitude	Longitude
EX19-389	25° 21' 11.7056" S	28° 51' 34.5793" E
EX19-390	25° 21' 12.1782" S	28° 51' 34.0888" E
EX19-391	25° 21' 12.6539" S	28° 51' 33.5954" E
EX19-392	25° 21' 12.7250" S	28° 51' 33.5217" E
EX19-393	25° 21' 13.4356" S	28° 51' 32.7844" E
EX19-394	25° 21' 12.7653" S	28° 51' 31.8994" E
EX19-395	25° 21' 12.3492" S	28° 51' 31.3498" E
EX19-396	25° 21' 11.9330" S	28° 51' 30.8002" E
EX19-397	25° 21' 11.5168" S	28° 51' 30.2510" E
EX19-398	25° 21' 10.8469" S	28° 51' 29.3660" E
EX19-399	25° 21' 10.4723" S	28° 51' 28.8714" E
EX19-400	25° 21' 10.0978" S	28° 51' 28.3769" E
EX19-401	25° 21' 10.0269" S	28° 51' 28.2833" E
EX19-402	25° 21' 09.4067" S	28° 51' 27.4643" E
EX19-403	25° 21' 08.9905" S	28° 51' 26.9148" E
EX19-404	25° 21' 08.5744" S	28° 51' 26.3656" E
EX19-405	25° 21' 08.1582" S	28° 51' 25.8160" E
EX19-406	25° 21' 07.4706" S	28° 51' 24.9081" E
EX19-407	25° 21' 06.7828" S	28° 51' 23.9998" E
EX19-408	25° 21' 06.7203" S	28° 51' 23.9172" E
EX19-409	25° 21' 06.2189" S	28° 51' 23.2551" E
EX19-410	25° 21' 05.9351" S	28° 51' 23.1632" E
EX19-411	25° 21' 05.3119" S	28° 51' 22.9608" E
EX19-412	25° 21' 04.6884" S	28° 51' 22.7584" E
EX19-413	25° 21' 04.0652" S	28° 51' 22.5560" E
EX19-414	25° 21' 03.4418" S	28° 51' 22.3536" E
EX19-415	25° 21' 03.3481" S	28° 51' 22.3230" E
EX19-416	25° 21' 02.7250" S	28° 51' 22.1206" E
EX19-417	25° 21' 02.1015" S	28° 51' 21.9182" E
EX19-418	25° 21' 01.4780" S	28° 51' 21.7158" E
EX19-419	25° 21' 00.8548" S	28° 51' 21.5135" E
EX19-420	25° 21' 00.2313" S	28° 51' 21.3111" E
EX19-421	25° 20' 59.6078" S	28° 51' 21.1087" E
EX19-422	25° 20' 58.9847" S	28° 51' 20.9063" E
EX19-423	25° 20' 58.3612" S	28° 51' 20.7039" E
EX19-424	25° 20' 57.7377" S	28° 51' 20.5015" E
EX19-425	25° 20' 57.1145" S	28° 51' 20.2991" E
EX19-426	25° 20' 56.4910" S	28° 51' 20.0968" E
EX19-427	25° 20' 55.8675" S	28° 51' 19.8944" E
EX19-428	25° 20' 55.0640" S	28° 51' 19.6336" E
EX19-429	25° 20' 55.2813" S	28° 51' 15.9219" E
EX19-430	25° 20' 55.1055" S	28° 51' 14.3610" E
EX19-431	25° 20' 53.9876" S	28° 51' 13.2938" E
EX19-432	25° 20' 54.1986" S	28° 51' 12.0934" E
EX19-433	25° 21' 01.5036" S	28° 51' 09.5231" E
EX19-434	25° 21' 01.2561" S	28° 51' 08.6715" E
EX19-435	25° 21' 00.4885" S	28° 51' 08.3781" E
EX19-436	25° 20' 57.2493" S	28° 50' 57.2284" E

Point	Latitude	Longitude
EX19-437	25° 20' 57.3426" S	28° 50' 56.9733" E
EX19-438	25° 21' 11.8702" S	28° 50' 48.3531" E
EX19-439	25° 21' 13.8237" S	28° 50' 44.7295" E
EX19-440	25° 21' 14.5997" S	28° 50' 43.0119" E
EX19-441	25° 21' 15.3856" S	28° 50' 43.4420" E
EX19-442	25° 21' 15.8197" S	28° 50' 42.4810" E
EX19-443	25° 21' 16.2537" S	28° 50' 41.5203" E
EX19-444	25° 21' 16.7895" S	28° 50' 40.3340" E
EX19-445	25° 21' 16.7787" S	28° 50' 40.2601" E
EX19-446	25° 21' 16.6106" S	28° 50' 39.1003" E
EX19-447	25° 21' 16.4825" S	28° 50' 38.2174" E
EX19-448	25° 21' 16.3545" S	28° 50' 37.3344" E
EX19-449	25° 21' 16.2265" S	28° 50' 36.4515" E
EX19-450	25° 21' 16.0984" S	28° 50' 35.5686" E
EX19-451	25° 21' 15.9704" S	28° 50' 34.6856" E
EX19-452	25° 21' 15.8525" S	28° 50' 33.8722" E
EX19-453	25° 21' 15.1440" S	28° 50' 33.4847" E
EX19-454	25° 21' 14.4165" S	28° 50' 33.0867" E
EX19-455	25° 21' 13.6890" S	28° 50' 32.6888" E
EX19-456	25° 21' 13.6308" S	28° 50' 32.6569" E
EX19-457	25° 21' 12.9032" S	28° 50' 32.2590" E
EX19-458	25° 21' 12.1757" S	28° 50' 31.8610" E
EX19-459	25° 21' 11.4482" S	28° 50' 31.4630" E
EX19-460	25° 21' 10.7207" S	28° 50' 31.0650" E
EX19-461	25° 21' 11.2271" S	28° 50' 29.9439" E
EX19-462	25° 21' 11.6182" S	28° 50' 26.4039" E
EX19-463	25° 21' 11.7431" S	28° 50' 25.2738" E
EX19-464	25° 21' 11.8797" S	28° 50' 24.0373" E
EX19-465	25° 21' 11.9816" S	28° 50' 23.1142" E
EX19-466	25° 21' 12.0836" S	28° 50' 22.1911" E
EX19-467	25° 21' 12.1856" S	28° 50' 21.2681" E
EX19-468	25° 21' 12.2875" S	28° 50' 20.3450" E
EX19-469	25° 21' 12.3895" S	28° 50' 19.4219" E
EX19-470	25° 21' 12.4915" S	28° 50' 18.4989" E
EX19-471	25° 21' 12.5799" S	28° 50' 17.6986" E
EX19-472	25° 21' 12.5755" S	28° 50' 17.4420" E
EX19-473	25° 21' 12.5603" S	28° 50' 16.5480" E
EX19-474	25° 21' 12.5452" S	28° 50' 15.6541" E
EX19-475	25° 21' 12.5300" S	28° 50' 14.7601" E
EX19-476	25° 21' 12.5288" S	28° 50' 14.6886" E
EX19-477	25° 21' 12.5136" S	28° 50' 13.7947" E
EX19-478	25° 21' 12.4984" S	28° 50' 12.9007" E
EX19-479	25° 21' 12.4832" S	28° 50' 12.0068" E
EX19-480	25° 21' 12.4681" S	28° 50' 11.1128" E
EX19-481	25° 21' 12.4528" S	28° 50' 10.2189" E
EX19-482	25° 21' 12.4377" S	28° 50' 09.3250" E
EX19-483	25° 21' 12.4225" S	28° 50' 08.4310" E
EX19-484	25° 21' 12.4073" S	28° 50' 07.5371" E

Point	Latitude	Longitude
EX19-485	25° 21' 12.3865" S	28° 50' 06.3120" E
EX19-486	25° 21' 15.8330" S	28° 50' 03.6160" E
EX19-487	25° 21' 16.7968" S	28° 50' 02.9516" E
EX19-488	25° 21' 20.2441" S	28° 50' 09.0065" E
EX19-489	25° 21' 19.7797" S	28° 50' 09.5379" E
EX19-490	25° 21' 20.2111" S	28° 50' 10.2955" E
EX19-491	25° 21' 31.8159" S	28° 50' 02.2925" E
EX19-492	25° 21' 35.0284" S	28° 49' 47.4832" E
EX19-493	25° 21' 35.8138" S	28° 49' 46.5700" E
EX19-494	25° 21' 39.9167" S	28° 49' 45.0959" E
EX19-495	25° 21' 40.3706" S	28° 49' 46.6261" E
EX19-496	25° 21' 42.2243" S	28° 49' 45.9604" E
EX19-497	25° 21' 42.6084" S	28° 49' 47.2560" E
EX19-498	25° 21' 44.9142" S	28° 49' 51.0082" E
EX19-499	25° 21' 56.7961" S	28° 49' 49.1534" E
EX19-500	25° 22' 01.8524" S	28° 49' 49.7311" E
EX19-501	25° 22' 06.1774" S	28° 49' 47.8006" E
EX19-502	25° 22' 13.2562" S	28° 49' 35.2955" E
EX19-503	25° 22' 16.0522" S	28° 49' 28.3594" E
EX19-504	25° 22' 16.5180" S	28° 49' 27.2037" E
EX19-505	25° 22' 16.9172" S	28° 49' 26.2134" E
EX19-506	25° 21' 56.6710" S	28° 49' 12.3301" E
EX19-507	25° 21' 39.0724" S	28° 49' 06.8044" E
EX19-508	25° 21' 38.3933" S	28° 49' 06.1338" E
EX19-509	25° 21' 36.9910" S	28° 49' 04.7478" E
EX19-510	25° 21' 29.2737" S	28° 48' 40.8679" E
EX19-511	25° 21' 28.3552" S	28° 48' 41.2277" E
EX19-512	25° 21' 28.4116" S	28° 48' 41.9236" E
EX19-513	25° 21' 19.4054" S	28° 48' 43.1547" E
EX19-514	25° 21' 10.1086" S	28° 49' 25.8558" E
EX19-515	25° 21' 10.5948" S	28° 49' 27.7488" E
EX19-516	25° 21' 10.0135" S	28° 49' 28.1152" E
EX19-517	25° 21' 01.1214" S	28° 49' 30.8808" E
EX19-518	25° 21' 01.1205" S	28° 49' 30.8810" E
EX19-519	25° 21' 04.1701" S	28° 49' 18.5825" E
EX19-520	25° 21' 03.5188" S	28° 49' 13.1939" E
EX19-521	25° 20' 59.9109" S	28° 49' 13.7220" E
EX19-522	25° 20' 58.9596" S	28° 49' 05.8520" E
EX19-523	25° 21' 00.4288" S	28° 49' 05.6369" E
EX19-524	25° 21' 05.0030" S	28° 48' 54.0162" E
EX19-525	25° 21' 03.6440" S	28° 48' 42.7769" E
EX19-526	25° 21' 01.2858" S	28° 48' 41.5904" E
EX19-527	25° 20' 54.4418" S	28° 48' 39.4422" E
EX19-528	25° 20' 54.3301" S	28° 48' 39.2212" E
EX20-1	25° 21' 41.3837" S	28° 51' 12.7897" E
EX20-2	25° 21' 41.4682" S	28° 51' 12.5546" E
EX20-3	25° 21' 42.4401" S	28° 51' 12.0913" E
EX20-4	25° 21' 53.0547" S	28° 51' 11.8138" E

Point	Latitude	Longitude
EX20-5	25° 21' 53.0023" S	28° 51' 09.3824" E
EX20-6	25° 21' 53.1610" S	28° 51' 09.1991" E
EX20-7	25° 22' 06.8384" S	28° 51' 08.8413" E
EX20-8	25° 22' 06.7859" S	28° 51' 06.4098" E
EX20-9	25° 22' 06.9443" S	28° 51' 06.2265" E
EX20-10	25° 22' 10.6534" S	28° 51' 06.1293" E
EX20-11	25° 22' 15.6554" S	28° 51' 03.5686" E
EX20-12	25° 22' 15.8531" S	28° 51' 03.6552" E
EX20-13	25° 22' 09.4231" S	28° 50' 48.4031" E
EX20-14	25° 22' 10.0117" S	28° 50' 48.0994" E
EX20-15	25° 22' 06.4298" S	28° 50' 39.6801" E
EX20-16	25° 22' 06.2037" S	28° 50' 39.4725" E
EX20-17	25° 21' 32.1306" S	28° 50' 29.6338" E
EX20-18	25° 21' 30.3916" S	28° 50' 36.9286" E
EX20-19	25° 21' 28.1460" S	28° 50' 47.6994" E
EX20-20	25° 21' 27.6370" S	28° 50' 51.3313" E
EX20-21	25° 21' 27.3278" S	28° 50' 59.4086" E
EX20-22	25° 21' 27.2528" S	28° 51' 01.3650" E
EX20-23	25° 21' 27.2818" S	28° 51' 04.0088" E
EX20-24	25° 21' 27.9324" S	28° 51' 08.8477" E
EX20-25	25° 21' 28.7692" S	28° 51' 14.1289" E
EX20-26	25° 21' 29.0848" S	28° 51' 16.1214" E
EX20-27	25° 21' 32.1976" S	28° 51' 22.9250" E
EX20-28	25° 21' 33.7462" S	28° 51' 22.0669" E
EX20-29	25° 21' 35.5012" S	28° 51' 21.2254" E
EX20-30	25° 21' 35.8905" S	28° 51' 22.2092" E
EX20-31	25° 21' 41.7899" S	28° 51' 19.3813" E
EX20-32	25° 21' 42.0492" S	28° 51' 20.0373" E
EX20-33	25° 21' 43.8877" S	28° 51' 19.1557" E
EX20-34	25° 21' 43.2899" S	28° 51' 17.6359" E
EX21-1	25° 22' 15.9856" S	28° 51' 34.3718" E
EX21-2	25° 22' 14.8345" S	28° 51' 34.8826" E
EX21-3	25° 22' 14.1409" S	28° 51' 33.4588" E
EX21-4	25° 22' 14.2831" S	28° 51' 33.2948" E
EX21-5	25° 22' 14.5673" S	28° 51' 32.7719" E
EX21-6	25° 22' 11.4873" S	28° 51' 29.4768" E
EX21-7	25° 22' 00.2218" S	28° 51' 40.4515" E
EX21-8	25° 21' 54.1476" S	28° 51' 46.3687" E
EX21-9	25° 21' 53.4173" S	28° 51' 47.0801" E
EX21-10	25° 21' 54.0909" S	28° 51' 47.7779" E
EX21-11	25° 21' 55.1544" S	28° 51' 49.3487" E
EX21-12	25° 21' 55.7632" S	28° 51' 50.2461" E
EX21-13	25° 21' 56.5672" S	28° 51' 49.5556" E
EX21-14	25° 21' 58.0952" S	28° 51' 51.9704" E
EX21-15	25° 21' 57.3732" S	28° 51' 52.7592" E
EX21-16	25° 21' 56.2492" S	28° 51' 52.8767" E
EX21-17	25° 21' 54.1839" S	28° 51' 54.8864" E
EX21-18	25° 21' 53.5037" S	28° 51' 55.5480" E

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 56 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. M B Straughan G.Pr. LS0907D — 09 October 2025 date

For applicant Owain Jackson name

signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation

Dwg: reg 2(2) plan er kruis river oct 2025.dwg

Revision:

Date: 09 October 2025

friedlaender, burger & volkmann

Point	Latitude	Longitude
EX21-19	25° 21' 52.8296" S	28° 51' 56.1099" E
EX21-20	25° 21' 51.0500" S	28° 51' 57.8423" E
EX21-21	25° 21' 42.8123" S	28° 52' 05.8592" E
EX21-22	25° 21' 41.7607" S	28° 52' 06.9744" E
EX21-23	25° 21' 40.0263" S	28° 52' 08.7081" E
EX21-24	25° 21' 39.2227" S	28° 52' 09.4887" E
EX21-25	25° 21' 38.8240" S	28° 52' 09.9154" E
EX21-26	25° 21' 38.4592" S	28° 52' 10.4945" E
EX21-27	25° 21' 38.4475" S	28° 52' 10.8758" E
EX21-28	25° 21' 38.5231" S	28° 52' 11.1125" E
EX21-29	25° 21' 43.5342" S	28° 52' 18.4790" E
EX21-30	25° 21' 49.9631" S	28° 52' 13.2473" E
EX21-31	25° 21' 54.7737" S	28° 52' 20.4090" E
EX21-32	25° 22' 08.4871" S	28° 52' 09.2371" E
EX21-33	25° 22' 08.7515" S	28° 52' 09.0245" E
EX21-34	25° 22' 09.4036" S	28° 52' 08.4934" E
EX21-35	25° 22' 21.0209" S	28° 52' 25.7908" E
EX21-36	25° 22' 28.1578" S	28° 52' 19.9965" E
EX21-37	25° 22' 28.4266" S	28° 52' 20.0449" E
EX21-38	25° 22' 32.5281" S	28° 52' 26.4775" E
EX21-39	25° 22' 35.2269" S	28° 52' 27.8483" E
EX21-40	25° 22' 41.2586" S	28° 52' 13.4595" E
EX21-41	25° 22' 17.5925" S	28° 52' 01.4401" E
EX21-42	25° 22' 14.5998" S	28° 51' 56.9747" E
EX21-43	25° 22' 17.5735" S	28° 51' 58.5493" E
EX21-44	25° 22' 58.9054" S	28° 52' 19.5906" E
EX21-45	25° 23' 19.2466" S	28° 51' 30.6259" E
EX21-46	25° 23' 30.4098" S	28° 51' 03.7423" E
EX21-47	25° 23' 28.9736" S	28° 51' 02.8586" E
EX21-48	25° 23' 27.9141" S	28° 51' 02.4790" E
EX21-49	25° 23' 32.0545" S	28° 50' 53.6387" E
EX21-50	25° 23' 40.5130" S	28° 50' 28.4345" E
EX21-51	25° 23' 40.4379" S	28° 50' 28.4038" E
EX21-52	25° 23' 39.7584" S	28° 50' 28.1263" E
EX21-53	25° 23' 38.6502" S	28° 50' 28.9017" E
EX21-54	25° 23' 37.4447" S	28° 50' 29.7450" E
EX21-55	25° 23' 35.1882" S	28° 50' 31.3239" E
EX21-56	25° 23' 34.2283" S	28° 50' 31.9956" E
EX21-57	25° 23' 33.2685" S	28° 50' 32.6670" E
EX21-58	25° 23' 30.7999" S	28° 50' 34.3942" E
EX21-59	25° 23' 29.8400" S	28° 50' 35.0659" E
EX21-60	25° 23' 28.8801" S	28° 50' 35.7372" E
EX21-61	25° 23' 26.4117" S	28° 50' 37.4642" E
EX21-62	25° 23' 25.3285" S	28° 50' 38.2224" E
EX21-63	25° 23' 23.2623" S	28° 50' 39.6676" E
EX21-64	25° 23' 18.2591" S	28° 50' 41.4964" E
EX21-65	25° 23' 17.7464" S	28° 50' 41.6838" E
EX21-66	25° 23' 16.0988" S	28° 50' 42.2858" E

Point	Latitude	Longitude
EX21-67	25° 23' 14.9138" S	28° 50' 42.7192" E
EX21-68	25° 23' 09.7798" S	28° 50' 43.2266" E
EX21-69	25° 23' 04.4176" S	28° 50' 43.0546" E
EX21-70	25° 22' 59.9108" S	28° 50' 52.2780" E
EX21-71	25° 22' 59.3420" S	28° 50' 53.4152" E
EX21-72	25° 22' 53.5780" S	28° 51' 07.3497" E
EX21-73	25° 22' 52.3843" S	28° 51' 06.9313" E
EX21-74	25° 22' 52.1364" S	28° 51' 07.7799" E
EX21-75	25° 22' 51.8218" S	28° 51' 08.8572" E
EX21-76	25° 22' 49.8622" S	28° 51' 07.9113" E
EX21-77	25° 22' 49.1558" S	28° 51' 09.5786" E
EX21-78	25° 22' 48.2704" S	28° 51' 11.6682" E
EX21-79	25° 22' 46.1967" S	28° 51' 10.6738" E
EX21-80	25° 22' 42.4835" S	28° 51' 19.6480" E
EX21-81	25° 22' 40.2033" S	28° 51' 18.5239" E
EX21-82	25° 22' 36.9498" S	28° 51' 26.5738" E
EX21-83	25° 22' 34.5596" S	28° 51' 25.4875" E
EX21-84	25° 22' 31.6670" S	28° 51' 32.5044" E
EX21-85	25° 22' 26.9325" S	28° 51' 30.1420" E
EX21-86	25° 22' 20.7392" S	28° 51' 36.1958" E
EX21-87	25° 22' 26.1877" S	28° 51' 42.3383" E
EX21-88	25° 22' 27.3705" S	28° 51' 42.9297" E
EX21-89	25° 22' 26.4289" S	28° 51' 45.2150" E
EX21-90	25° 22' 26.2136" S	28° 51' 45.3047" E
EX21-91	25° 22' 25.0322" S	28° 51' 44.7225" E
EX21-92	25° 22' 22.8352" S	28° 51' 42.9560" E
EX21-93	25° 22' 20.6091" S	28° 51' 39.9006" E
EX21-94	25° 22' 16.2322" S	28° 51' 33.5459" E
EX21-95	25° 22' 16.6203" S	28° 51' 32.9287" E
EX21-96	25° 22' 15.1599" S	28° 51' 34.3537" E
EX21-97	25° 22' 15.7445" S	28° 51' 34.0218" E
EX22-1	25° 23' 50.4521" S	28° 52' 57.4457" E
EX22-2	25° 23' 58.0626" S	28° 52' 59.6437" E
EX22-3	25° 23' 57.8334" S	28° 52' 59.9792" E
EX22-4	25° 23' 57.3953" S	28° 53' 00.6204" E
EX22-5	25° 23' 56.9576" S	28° 53' 01.2611" E
EX22-6	25° 23' 56.3497" S	28° 53' 02.1509" E
EX22-7	25° 23' 56.0307" S	28° 53' 02.0184" E
EX22-8	25° 23' 55.3257" S	28° 53' 01.7256" E
EX22-9	25° 23' 54.3613" S	28° 53' 01.3250" E
EX22-10	25° 23' 53.8926" S	28° 53' 01.1304" E
EX22-11	25° 23' 53.5464" S	28° 53' 01.9402" E
EX22-12	25° 23' 53.1493" S	28° 53' 02.8694" E
EX22-13	25° 23' 52.8279" S	28° 53' 03.6214" E
EX22-14	25° 23' 52.5145" S	28° 53' 04.3545" E
EX22-15	25° 23' 52.1963" S	28° 53' 05.0990" E
EX22-16	25° 23' 51.8752" S	28° 53' 05.8503" E
EX22-17	25° 23' 51.5580" S	28° 53' 06.5925" E

Point	Latitude	Longitude
EX22-18	25° 23' 51.2356" S	28° 53' 07.3468" E
EX22-19	25° 23' 50.9155" S	28° 53' 08.0956" E
EX22-20	25° 23' 50.8841" S	28° 53' 08.1690" E
EX22-21	25° 23' 50.5762" S	28° 53' 08.8893" E
EX22-22	25° 23' 50.2634" S	28° 53' 09.6213" E
EX22-23	25° 23' 49.9542" S	28° 53' 10.3445" E
EX22-24	25° 23' 49.6412" S	28° 53' 11.0770" E
EX22-25	25° 23' 49.3355" S	28° 53' 11.7921" E
EX22-26	25° 23' 49.0247" S	28° 53' 12.5191" E
EX22-27	25° 23' 48.7143" S	28° 53' 13.2454" E
EX22-28	25° 23' 48.4040" S	28° 53' 13.9713" E
EX22-29	25° 23' 48.0930" S	28° 53' 14.6989" E
EX22-30	25° 23' 47.7835" S	28° 53' 15.4229" E
EX22-31	25° 23' 47.4767" S	28° 53' 16.1406" E
EX22-32	25° 23' 46.8984" S	28° 53' 17.4937" E
EX22-33	25° 23' 47.9764" S	28° 53' 18.0522" E
EX22-34	25° 23' 48.0392" S	28° 53' 18.0848" E
EX22-35	25° 23' 48.7742" S	28° 53' 18.4655" E
EX22-36	25° 23' 49.5033" S	28° 53' 18.8433" E
EX22-37	25° 23' 50.0792" S	28° 53' 19.1417" E
EX22-38	25° 23' 50.2791" S	28° 53' 19.2226" E
EX22-39	25° 23' 51.0331" S	28° 53' 19.5281" E
EX22-40	25° 23' 51.7895" S	28° 53' 19.8345" E
EX22-41	25° 23' 52.5404" S	28° 53' 20.1387" E
EX22-42	25° 23' 53.2873" S	28° 53' 20.4412" E
EX22-43	25° 23' 54.0505" S	28° 53' 20.7504" E
EX22-44	25° 23' 55.4219" S	28° 53' 21.3060" E
EX22-45	25° 23' 56.7751" S	28° 53' 24.2591" E
EX22-46	25° 23' 56.6287" S	28° 53' 25.0373" E
EX22-47	25° 23' 56.4320" S	28° 53' 26.0827" E
EX22-48	25° 23' 56.2823" S	28° 53' 26.8786" E
EX22-49	25° 23' 56.1361" S	28° 53' 27.6557" E
EX22-50	25° 23' 55.9853" S	28° 53' 28.4568" E
EX22-51	25° 23' 55.8364" S	28° 53' 29.2487" E
EX22-52	25° 23' 55.6877" S	28° 53' 30.0384" E
EX22-53	25° 23' 55.5449" S	28° 53' 30.7976" E
EX22-54	25° 23' 55.3907" S	28° 53' 31.6170" E
EX22-55	25° 23' 55.3787" S	28° 53' 31.6810" E
EX22-56	25° 23' 55.2300" S	28° 53' 32.4714" E
EX22-57	25° 23' 55.0836" S	28° 53' 33.2491" E
EX22-58	25° 23' 54.9360" S	28° 53' 34.0338" E
EX22-59	25° 23' 54.7856" S	28° 53' 34.8332" E
EX22-60	25° 23' 54.6390" S	28° 53' 35.6122" E
EX22-61	25° 23' 54.4870" S	28° 53' 36.4198" E
EX22-62	25° 23' 54.3362" S	28° 53' 37.2216" E
EX22-63	25° 23' 55.3109" S	28° 53' 37.4439" E
EX22-64	25° 23' 55.9272" S	28° 53' 37.5845" E
EX22-65	25° 23' 55.7847" S	28° 53' 38.3421" E

Point	Latitude	Longitude
EX22-66	25° 23' 55.5976" S	28° 53' 39.3361" E
EX22-67	25° 23' 56.5580" S	28° 53' 39.5552" E
EX22-68	25° 23' 57.4194" S	28° 53' 39.7517" E
EX22-69	25° 23' 58.3024" S	28° 53' 39.9530" E
EX22-70	25° 23' 58.5412" S	28° 53' 38.6839" E
EX22-71	25° 23' 58.6320" S	28° 53' 38.2014" E
EX22-72	25° 23' 59.7715" S	28° 53' 38.4612" E
EX22-73	25° 24' 01.0050" S	28° 53' 38.7426" E
EX22-74	25° 24' 00.9995" S	28° 53' 39.5093" E
EX22-75	25° 24' 01.5468" S	28° 53' 40.9976" E
EX22-76	25° 24' 02.5699" S	28° 53' 42.1420" E
EX22-77	25° 24' 03.9129" S	28° 53' 42.7682" E
EX22-78	25° 24' 12.8220" S	28° 53' 44.8003" E
EX22-79	25° 24' 12.6746" S	28° 53' 45.5835" E
EX22-80	25° 24' 12.5252" S	28° 53' 46.3773" E
EX22-81	25° 24' 12.3770" S	28° 53' 47.1650" E
EX22-82	25° 24' 12.2298" S	28° 53' 47.9476" E
EX22-83	25° 24' 12.0829" S	28° 53' 48.7280" E
EX22-84	25° 24' 11.9341" S	28° 53' 49.5188" E
EX22-85	25° 24' 11.7850" S	28° 53' 50.3109" E
EX22-86	25° 24' 11.6389" S	28° 53' 51.0874" E
EX22-87	25° 24' 11.4903" S	28° 53' 51.8771" E
EX22-88	25° 24' 11.3424" S	28° 53' 52.6630" E
EX22-89	25° 24' 11.1877" S	28° 53' 53.4850" E
EX22-90	25° 24' 10.9225" S	28° 53' 54.8943" E
EX22-91	25° 24' 10.8540" S	28° 53' 55.2581" E
EX22-92	25° 24' 12.1078" S	28° 53' 55.5442" E
EX22-93	25° 24' 12.9282" S	28° 53' 55.7313" E
EX22-94	25° 24' 13.7243" S	28° 53' 55.9129" E
EX22-95	25° 24' 14.6951" S	28° 53' 56.1344" E
EX22-96	25° 24' 15.3089" S	28° 53' 56.2744" E
EX22-97	25° 24' 22.3430" S	28° 53' 18.8899" E
EX22-98	25° 24' 23.3926" S	28° 53' 16.9629" E
EX22-99	25° 24' 28.3443" S	28° 53' 11.6890" E
EX22-100	25° 24' 29.8175" S	28° 53' 08.8157" E
EX22-101	25° 24' 32.4096" S	28° 53' 09.5644" E
EX22-102	25° 24' 35.6985" S	28° 52' 48.3779" E
EX22-103	25° 24' 38.5109" S	28° 52' 30.2564" E
EX22-104	25° 24' 43.3908" S	28° 51' 58.8024" E
EX22-105	25° 24' 42.8554" S	28° 51' 58.3968" E
EX22-106	25° 24' 42.4035" S	28° 51' 58.4887" E
EX22-107	25° 24' 31.8890" S	28° 51' 50.5230" E
EX22-108	25° 24' 30.8067" S	28° 51' 49.7030" E
EX22-109	25° 24' 28.4151" S	28° 51' 47.8913" E
EX22-110	25° 24' 26.5861" S	28° 51' 46.5057" E
EX22-111	25° 24' 25.4958" S	28° 51' 45.6798" E
EX22-112	25° 24' 24.2358" S	28° 51' 44.7253" E
EX22-113	25° 24' 11.4413" S	28° 51' 55.4597" E

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 57 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No.

M B Straughan
G.Pr. LS0907D

09 October 2025
date

For applicant

Owain Jackson
name

signature

09 October 2025
date

signature

date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	**Dwg:** reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

friedlaender, burger & volkmann

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Point	Latitude	Longitude
EX22-114	25° 24' 02.0401" S	28° 52' 23.2271" E
EX23-1	25° 10' 31.3364" S	28° 53' 57.3709" E
EX23-2	25° 10' 30.9398" S	28° 53' 56.2980" E
EX23-3	25° 10' 30.2058" S	28° 53' 54.3124" E
EX23-4	25° 10' 30.1148" S	28° 53' 54.3508" E
EX23-5	25° 10' 29.5789" S	28° 53' 54.5764" E
EX23-6	25° 10' 28.9850" S	28° 53' 54.8265" E
EX23-7	25° 10' 28.3911" S	28° 53' 55.0766" E
EX23-8	25° 10' 27.7973" S	28° 53' 55.3267" E
EX23-9	25° 10' 27.6126" S	28° 53' 55.4045" E
EX23-10	25° 10' 27.1998" S	28° 53' 55.5647" E
EX23-11	25° 10' 26.6004" S	28° 53' 55.7973" E
EX23-12	25° 10' 26.0001" S	28° 53' 56.0302" E
EX23-13	25° 10' 25.4007" S	28° 53' 56.2628" E
EX23-14	25° 10' 25.3088" S	28° 53' 56.2985" E
EX23-15	25° 10' 24.5644" S	28° 53' 56.5873" E
EX23-16	25° 10' 23.6356" S	28° 53' 56.9477" E
EX23-17	25° 10' 23.5437" S	28° 53' 56.9834" E
EX23-18	25° 10' 22.9768" S	28° 53' 57.2034" E
EX23-19	25° 10' 22.3982" S	28° 53' 57.4279" E
EX23-20	25° 10' 21.8197" S	28° 53' 57.6524" E
EX23-21	25° 10' 21.2528" S	28° 53' 57.8724" E
EX23-22	25° 10' 20.7787" S	28° 53' 58.0564" E
EX23-23	25° 10' 20.2301" S	28° 53' 58.2612" E
EX23-24	25° 10' 19.2990" S	28° 53' 58.6088" E
EX23-25	25° 10' 19.2057" S	28° 53' 58.6436" E
EX23-26	25° 10' 18.6365" S	28° 53' 58.8561" E
EX23-27	25° 10' 18.0577" S	28° 53' 59.0722" E
EX23-28	25° 10' 17.4789" S	28° 53' 59.2883" E
EX23-29	25° 10' 16.9097" S	28° 53' 59.5008" E
EX23-30	25° 10' 16.8164" S	28° 53' 59.5356" E
EX23-31	25° 10' 15.8853" S	28° 53' 59.8832" E
EX23-32	25° 10' 15.5696" S	28° 54' 00.0010" E
EX23-33	25° 10' 14.9541" S	28° 54' 00.2308" E
EX23-34	25° 10' 14.4575" S	28° 54' 00.4162" E
EX23-35	25° 10' 13.8421" S	28° 54' 00.6460" E
EX23-36	25° 10' 13.4645" S	28° 54' 00.7869" E
EX23-37	25° 10' 12.8439" S	28° 54' 01.0186" E
EX23-38	25° 10' 12.2232" S	28° 54' 01.2503" E
EX23-39	25° 10' 11.6026" S	28° 54' 01.4820" E
EX23-40	25° 10' 11.2819" S	28° 54' 01.6017" E
EX23-41	25° 10' 10.9842" S	28° 54' 01.7267" E
EX23-42	25° 10' 10.2760" S	28° 54' 02.0240" E
EX23-43	25° 10' 09.4138" S	28° 54' 02.3860" E
EX23-44	25° 10' 07.2851" S	28° 54' 03.2798" E
EX23-45	25° 10' 03.4563" S	28° 54' 05.3279" E
EX23-46	25° 10' 03.0097" S	28° 54' 05.6216" E
EX23-47	25° 10' 01.9737" S	28° 54' 06.3023" E

Point	Latitude	Longitude
EX23-48	25° 10' 01.8847" S	28° 54' 06.3608" E
EX23-49	25° 10' 00.9375" S	28° 54' 06.9832" E
EX23-50	25° 09' 59.7991" S	28° 54' 07.7313" E
EX23-51	25° 09' 59.5272" S	28° 54' 07.9457" E
EX23-52	25° 09' 59.4480" S	28° 54' 08.0082" E
EX23-53	25° 09' 58.8847" S	28° 54' 08.4522" E
EX23-54	25° 09' 57.8702" S	28° 54' 09.2520" E
EX23-55	25° 09' 57.4354" S	28° 54' 09.5948" E
EX23-56	25° 09' 57.0005" S	28° 54' 09.9377" E
EX23-57	25° 09' 56.4185" S	28° 54' 10.3965" E
EX23-58	25° 09' 56.1688" S	28° 54' 10.6388" E
EX23-59	25° 09' 54.7583" S	28° 54' 12.0072" E
EX23-60	25° 09' 54.3819" S	28° 54' 12.3724" E
EX23-61	25° 09' 54.0056" S	28° 54' 12.7376" E
EX23-62	25° 09' 53.6041" S	28° 54' 13.1271" E
EX23-63	25° 09' 53.5310" S	28° 54' 13.1980" E
EX23-64	25° 09' 53.2783" S	28° 54' 13.4428" E
EX23-65	25° 09' 50.4654" S	28° 54' 16.6553" E
EX23-66	25° 09' 47.8083" S	28° 54' 20.2303" E
EX23-67	25° 09' 47.4917" S	28° 54' 20.7278" E
EX23-68	25° 09' 47.1937" S	28° 54' 21.1960" E
EX23-69	25° 09' 46.8957" S	28° 54' 21.6642" E
EX23-70	25° 09' 46.5848" S	28° 54' 22.1525" E
EX23-71	25° 09' 46.5290" S	28° 54' 22.2403" E
EX23-72	25° 09' 45.9523" S	28° 54' 23.1463" E
EX23-73	25° 09' 45.6429" S	28° 54' 23.6318" E
EX23-74	25° 09' 45.5309" S	28° 54' 23.8318" E
EX23-75	25° 09' 43.7237" S	28° 54' 27.0555" E
EX23-76	25° 09' 43.4132" S	28° 54' 27.6095" E
EX23-77	25° 09' 42.5770" S	28° 54' 29.1010" E
EX23-78	25° 09' 42.5259" S	28° 54' 29.1923" E
EX23-79	25° 09' 41.8903" S	28° 54' 30.3259" E
EX23-80	25° 09' 41.1920" S	28° 54' 31.5717" E
EX23-81	25° 09' 42.6561" S	28° 54' 31.2504" E
EX23-82	25° 09' 43.9308" S	28° 54' 30.9706" E
EX23-83	25° 09' 44.3884" S	28° 54' 30.8702" E
EX23-84	25° 09' 44.8439" S	28° 54' 30.7703" E
EX23-85	25° 09' 45.2993" S	28° 54' 30.6703" E
EX23-86	25° 09' 45.7547" S	28° 54' 30.5704" E
EX23-87	25° 09' 46.2101" S	28° 54' 30.4704" E
EX23-88	25° 09' 46.6655" S	28° 54' 30.3705" E
EX23-89	25° 09' 47.1209" S	28° 54' 30.2705" E
EX23-90	25° 09' 47.5763" S	28° 54' 30.1706" E
EX23-91	25° 09' 48.0317" S	28° 54' 30.0707" E
EX23-92	25° 09' 48.1273" S	28° 54' 30.0497" E
EX23-93	25° 09' 48.5827" S	28° 54' 29.9497" E
EX23-94	25° 09' 49.0381" S	28° 54' 29.8498" E
EX23-95	25° 09' 49.4935" S	28° 54' 29.7499" E

Point	Latitude	Longitude
EX23-96	25° 09' 49.9489" S	28° 54' 29.6499" E
EX23-97	25° 09' 50.4043" S	28° 54' 29.5500" E
EX23-98	25° 09' 50.8597" S	28° 54' 29.4501" E
EX23-99	25° 09' 51.3151" S	28° 54' 29.3501" E
EX23-100	25° 09' 51.7705" S	28° 54' 29.2502" E
EX23-101	25° 09' 52.2259" S	28° 54' 29.1502" E
EX23-102	25° 09' 52.6813" S	28° 54' 29.0503" E
EX23-103	25° 09' 53.1367" S	28° 54' 28.9503" E
EX23-104	25° 09' 53.5921" S	28° 54' 28.8504" E
EX23-105	25° 09' 54.0475" S	28° 54' 28.7505" E
EX23-106	25° 09' 54.5030" S	28° 54' 28.6505" E
EX23-107	25° 09' 55.6184" S	28° 54' 28.4057" E
EX23-108	25° 09' 56.7344" S	28° 54' 28.1608" E
EX23-109	25° 09' 57.2204" S	28° 54' 28.0541" E
EX23-110	25° 09' 57.7064" S	28° 54' 27.9475" E
EX23-111	25° 09' 58.1924" S	28° 54' 27.8408" E
EX23-112	25° 09' 58.6784" S	28° 54' 27.7341" E
EX23-113	25° 09' 59.1644" S	28° 54' 27.6275" E
EX23-114	25° 09' 59.6504" S	28° 54' 27.5208" E
EX23-115	25° 10' 00.1364" S	28° 54' 27.4142" E
EX23-116	25° 10' 00.6224" S	28° 54' 27.3075" E
EX23-117	25° 10' 00.7180" S	28° 54' 27.2865" E
EX23-118	25° 10' 01.1642" S	28° 54' 27.1886" E
EX23-119	25° 10' 01.6103" S	28° 54' 27.0907" E
EX23-120	25° 10' 02.0565" S	28° 54' 26.9928" E
EX23-121	25° 10' 02.5027" S	28° 54' 26.8949" E
EX23-122	25° 10' 02.9488" S	28° 54' 26.7969" E
EX23-123	25° 10' 03.3950" S	28° 54' 26.6990" E
EX23-124	25° 10' 03.8412" S	28° 54' 26.6011" E
EX23-125	25° 10' 04.2873" S	28° 54' 26.5032" E
EX23-126	25° 10' 04.7335" S	28° 54' 26.4053" E
EX23-127	25° 10' 05.1796" S	28° 54' 26.3073" E
EX23-128	25° 10' 05.6258" S	28° 54' 26.2094" E
EX23-129	25° 10' 06.7093" S	28° 54' 25.9716" E
EX23-130	25° 10' 07.6654" S	28° 54' 25.7618" E
EX23-131	25° 10' 08.1753" S	28° 54' 25.6499" E
EX23-132	25° 10' 08.6852" S	28° 54' 25.5380" E
EX23-133	25° 10' 09.1951" S	28° 54' 25.4260" E
EX23-134	25° 10' 09.7050" S	28° 54' 25.3141" E
EX23-135	25° 10' 10.6610" S	28° 54' 25.1043" E
EX23-136	25° 10' 12.1270" S	28° 54' 24.7828" E
EX23-137	25° 10' 12.7642" S	28° 54' 24.6430" E
EX23-138	25° 10' 13.4015" S	28° 54' 24.5031" E
EX23-139	25° 10' 14.0389" S	28° 54' 24.3632" E
EX23-140	25° 10' 14.6763" S	28° 54' 24.2233" E
EX23-141	25° 10' 15.6323" S	28° 54' 24.0135" E
EX23-142	25° 10' 16.5884" S	28° 54' 23.8036" E
EX23-143	25° 10' 17.2258" S	28° 54' 23.6638" E

Point	Latitude	Longitude
EX23-144	25° 10' 17.8632" S	28° 54' 23.5238" E
EX23-145	25° 10' 18.5005" S	28° 54' 23.3840" E
EX23-146	25° 10' 19.1379" S	28° 54' 23.2441" E
EX23-147	25° 10' 20.0940" S	28° 54' 23.0343" E
EX23-148	25° 10' 21.0405" S	28° 54' 22.8264" E
EX23-149	25° 10' 21.0500" S	28° 54' 22.8244" E
EX23-150	25° 10' 21.3686" S	28° 54' 22.7544" E
EX23-151	25° 10' 21.5167" S	28° 54' 23.5675" E
EX23-152	25° 10' 22.4914" S	28° 54' 23.3474" E
EX23-153	25° 10' 23.2891" S	28° 54' 23.1673" E
EX23-154	25° 10' 24.0843" S	28° 54' 22.9878" E
EX23-155	25° 10' 24.8805" S	28° 54' 22.8080" E
EX23-156	25° 10' 25.6770" S	28° 54' 22.6282" E
EX23-157	25° 10' 26.4719" S	28° 54' 22.4488" E
EX23-158	25° 10' 27.2677" S	28° 54' 22.2691" E
EX23-159	25° 10' 28.0963" S	28° 54' 22.0820" E
EX23-160	25° 10' 28.1918" S	28° 54' 22.0605" E
EX23-161	25° 10' 29.6109" S	28° 54' 21.7401" E
EX23-162	25° 10' 30.4519" S	28° 54' 21.5502" E
EX23-163	25° 10' 31.2949" S	28° 54' 21.3599" E
EX23-164	25° 10' 32.1391" S	28° 54' 21.1693" E
EX23-165	25° 10' 32.9827" S	28° 54' 20.9788" E
EX23-166	25° 10' 33.8256" S	28° 54' 20.7885" E
EX23-167	25° 10' 34.6685" S	28° 54' 20.5982" E
EX23-168	25° 10' 34.7647" S	28° 54' 20.5765" E
EX23-169	25° 10' 35.9416" S	28° 54' 20.3108" E
EX23-170	25° 10' 36.8065" S	28° 54' 20.1138" E
EX23-171	25° 10' 37.6032" S	28° 54' 19.9390" E
EX23-172	25° 10' 38.3999" S	28° 54' 19.7642" E
EX23-173	25° 10' 39.1967" S	28° 54' 19.5893" E
EX23-174	25° 10' 39.9934" S	28° 54' 19.4146" E
EX23-175	25° 10' 40.0571" S	28° 54' 19.4006" E
EX23-176	25° 10' 40.8538" S	28° 54' 19.2258" E
EX23-177	25° 10' 41.6506" S	28° 54' 19.0510" E
EX23-178	25° 10' 42.4473" S	28° 54' 18.8761" E
EX23-179	25° 10' 43.2440" S	28° 54' 18.7013" E
EX23-180	25° 10' 44.0407" S	28° 54' 18.5265" E
EX23-181	25° 10' 44.8375" S	28° 54' 18.3517" E
EX23-182	25° 10' 45.6342" S	28° 54' 18.1769" E
EX23-183	25° 10' 46.4309" S	28° 54' 18.0021" E
EX23-184	25° 10' 47.2277" S	28° 54' 17.8273" E
EX23-185	25° 10' 48.1837" S	28° 54' 17.6175" E
EX23-186	25° 10' 48.6618" S	28° 54' 17.5127" E
EX23-187	25° 10' 49.6497" S	28° 54' 17.2959" E
EX23-188	25° 10' 50.4783" S	28° 54' 17.1141" E
EX23-189	25° 10' 51.3069" S	28° 54' 16.9323" E
EX23-190	25° 10' 52.1355" S	28° 54' 16.7504" E
EX23-191	25° 10' 52.9641" S	28° 54' 16.5687" E

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 58 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. — M B Straughan G.Pr. LS0907D — 09 October 2025 date

For applicant — Owain Jackson name — signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation

Dwg: reg 2(2) plan er kruis river oct 2025.dwg

Revision:

Date: 09 October 2025

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Point	Latitude	Longitude
EX23-192	25° 10' 53.7927" S	28° 54' 16.3868" E
EX23-193	25° 10' 54.6213" S	28° 54' 16.2050" E
EX23-194	25° 10' 55.4499" S	28° 54' 16.0232" E
EX23-195	25° 10' 55.5136" S	28° 54' 16.0093" E
EX23-196	25° 10' 56.3103" S	28° 54' 15.8344" E
EX23-197	25° 10' 57.1071" S	28° 54' 15.6596" E
EX23-198	25° 10' 57.9038" S	28° 54' 15.4847" E
EX23-199	25° 10' 58.7005" S	28° 54' 15.3099" E
EX23-200	25° 10' 59.4973" S	28° 54' 15.1351" E
EX23-201	25° 11' 00.2781" S	28° 54' 14.9638" E
EX23-202	25° 11' 01.0589" S	28° 54' 14.7924" E
EX23-203	25° 11' 00.8362" S	28° 54' 13.5666" E
EX23-204	25° 10' 59.4813" S	28° 54' 06.1098" E
EX23-205	25° 10' 59.2777" S	28° 54' 05.4138" E
EX23-206	25° 10' 58.9294" S	28° 54' 04.2238" E
EX23-207	25° 10' 58.5813" S	28° 54' 03.0338" E
EX23-208	25° 10' 56.7810" S	28° 53' 56.8813" E
EX23-209	25° 10' 56.8818" S	28° 53' 56.6441" E
EX23-210	25° 11' 03.2048" S	28° 53' 53.8212" E
EX23-211	25° 11' 04.2583" S	28° 53' 53.3508" E
EX23-212	25° 11' 03.9586" S	28° 53' 52.5401" E
EX23-213	25° 11' 03.6589" S	28° 53' 51.7295" E
EX23-214	25° 11' 03.3593" S	28° 53' 50.9188" E
EX23-215	25° 11' 03.0596" S	28° 53' 50.1082" E
EX23-216	25° 11' 02.7599" S	28° 53' 49.2975" E
EX23-217	25° 11' 02.4602" S	28° 53' 48.4868" E
EX23-218	25° 11' 02.1605" S	28° 53' 47.6762" E
EX23-219	25° 11' 01.9097" S	28° 53' 46.9977" E
EX23-220	25° 11' 02.6925" S	28° 53' 46.6482" E
EX23-221	25° 11' 03.4753" S	28° 53' 46.2986" E
EX23-222	25° 11' 04.2581" S	28° 53' 45.9491" E
EX23-223	25° 11' 04.9997" S	28° 53' 45.6179" E
EX23-224	25° 11' 04.9990" S	28° 53' 44.5886" E
EX23-225	25° 11' 06.6238" S	28° 53' 44.5873" E
EX23-226	25° 11' 06.6254" S	28° 53' 45.6230" E
EX23-227	25° 11' 06.6269" S	28° 53' 46.5159" E
EX23-228	25° 11' 06.6282" S	28° 53' 47.4087" E
EX23-229	25° 11' 06.6284" S	28° 53' 47.5159" E
EX23-230	25° 11' 06.6303" S	28° 53' 48.7605" E
EX23-231	25° 11' 07.7678" S	28° 53' 48.7596" E
EX23-232	25° 11' 08.6452" S	28° 53' 48.7588" E
EX23-233	25° 11' 09.4577" S	28° 53' 48.7581" E
EX23-234	25° 11' 10.2701" S	28° 53' 48.7574" E
EX23-235	25° 11' 11.1307" S	28° 53' 48.7567" E
EX23-236	25° 11' 11.9657" S	28° 53' 48.6148" E
EX23-237	25° 11' 12.7686" S	28° 53' 48.4783" E
EX23-238	25° 11' 13.2464" S	28° 53' 48.3971" E
EX23-239	25° 11' 13.6578" S	28° 53' 48.9040" E

Point	Latitude	Longitude
EX23-240	25° 11' 14.1986" S	28° 53' 49.5704" E
EX23-241	25° 11' 14.7393" S	28° 53' 50.2367" E
EX23-242	25° 11' 15.2802" S	28° 53' 50.9033" E
EX23-243	25° 11' 15.4726" S	28° 53' 52.8203" E
EX23-244	25° 11' 15.6808" S	28° 53' 54.8952" E
EX23-245	25° 11' 16.7647" S	28° 53' 56.0440" E
EX23-246	25° 11' 18.2041" S	28° 53' 56.0773" E
EX23-247	25° 11' 19.5037" S	28° 53' 56.1074" E
EX23-248	25° 11' 20.1512" S	28° 53' 56.0447" E
EX23-249	25° 11' 21.6837" S	28° 53' 55.8961" E
EX23-250	25° 11' 22.6526" S	28° 53' 55.8022" E
EX23-251	25° 11' 23.9846" S	28° 53' 55.6730" E
EX23-252	25° 11' 24.3955" S	28° 53' 55.9645" E
EX23-253	25° 11' 25.3776" S	28° 53' 56.2428" E
EX23-254	25° 11' 26.1643" S	28° 53' 56.4659" E
EX23-255	25° 11' 26.8516" S	28° 53' 56.6607" E
EX23-256	25° 11' 27.4851" S	28° 53' 56.3090" E
EX23-257	25° 11' 28.2103" S	28° 53' 55.9065" E
EX23-258	25° 11' 28.9355" S	28° 53' 55.5040" E
EX23-259	25° 11' 29.6607" S	28° 53' 55.1015" E
EX23-260	25° 11' 30.3860" S	28° 53' 54.6989" E
EX23-261	25° 11' 31.1112" S	28° 53' 54.2964" E
EX23-262	25° 11' 31.7203" S	28° 53' 53.9583" E
EX23-263	25° 11' 31.8654" S	28° 53' 53.8777" E
EX23-264	25° 11' 32.3005" S	28° 53' 53.6362" E
EX23-265	25° 11' 32.4456" S	28° 53' 53.5557" E
EX23-266	25° 11' 33.0838" S	28° 53' 53.2015" E
EX23-267	25° 11' 33.8090" S	28° 53' 52.7990" E
EX23-268	25° 11' 34.5342" S	28° 53' 52.3964" E
EX23-269	25° 11' 35.2594" S	28° 53' 51.9939" E
EX23-270	25° 11' 36.0473" S	28° 53' 51.5566" E
EX23-271	25° 11' 35.5972" S	28° 53' 50.5258" E
EX23-272	25° 11' 35.5268" S	28° 53' 50.3648" E
EX23-273	25° 11' 35.2456" S	28° 53' 49.7208" E
EX23-274	25° 11' 35.1753" S	28° 53' 49.5598" E
EX23-275	25° 11' 34.6689" S	28° 53' 48.4003" E
EX23-276	25° 11' 34.3174" S	28° 53' 47.5953" E
EX23-277	25° 11' 33.9657" S	28° 53' 46.7900" E
EX23-278	25° 11' 33.6141" S	28° 53' 45.9850" E
EX23-279	25° 11' 33.2624" S	28° 53' 45.1796" E
EX23-280	25° 11' 32.9107" S	28° 53' 44.3743" E
EX23-281	25° 11' 32.5592" S	28° 53' 43.5693" E
EX23-282	25° 11' 32.2074" S	28° 53' 42.7640" E
EX23-283	25° 11' 31.8559" S	28° 53' 41.9590" E
EX23-284	25° 11' 31.5042" S	28° 53' 41.1537" E
EX23-285	25° 11' 31.1527" S	28° 53' 40.3487" E
EX23-286	25° 11' 30.6604" S	28° 53' 39.2216" E
EX23-287	25° 11' 29.3766" S	28° 53' 39.9343" E

Point	Latitude	Longitude
EX23-288	25° 11' 29.2895" S	28° 53' 39.9826" E
EX23-289	25° 11' 28.5643" S	28° 53' 40.3852" E
EX23-290	25° 11' 27.8391" S	28° 53' 40.7877" E
EX23-291	25° 11' 27.1139" S	28° 53' 41.1903" E
EX23-292	25° 11' 26.9162" S	28° 53' 41.3000" E
EX23-293	25° 11' 26.5210" S	28° 53' 41.3117" E
EX23-294	25° 11' 25.7089" S	28° 53' 41.3358" E
EX23-295	25° 11' 24.8967" S	28° 53' 41.3598" E
EX23-296	25° 11' 24.0845" S	28° 53' 41.3839" E
EX23-297	25° 11' 23.2724" S	28° 53' 41.4079" E
EX23-298	25° 11' 22.4603" S	28° 53' 41.4320" E
EX23-299	25° 11' 21.6481" S	28° 53' 41.4561" E
EX23-300	25° 11' 20.7560" S	28° 53' 41.4825" E
EX23-301	25° 11' 20.6582" S	28° 53' 41.4854" E
EX23-302	25° 11' 19.6804" S	28° 53' 41.5143" E
EX23-303	25° 11' 19.1606" S	28° 53' 41.5297" E
EX23-304	25° 11' 17.9226" S	28° 53' 41.5664" E
EX23-305	25° 11' 17.4087" S	28° 53' 41.6537" E
EX23-306	25° 11' 17.3104" S	28° 53' 41.6705" E
EX23-307	25° 11' 15.1028" S	28° 53' 42.0459" E
EX23-308	25° 11' 13.3425" S	28° 53' 42.3452" E
EX23-309	25° 11' 13.1893" S	28° 53' 42.3713" E
EX23-310	25° 11' 12.4879" S	28° 53' 42.4905" E
EX23-311	25° 11' 11.5886" S	28° 53' 42.6434" E
EX23-312	25° 11' 10.7176" S	28° 53' 42.7916" E
EX23-313	25° 11' 09.8730" S	28° 53' 42.7936" E
EX23-314	25° 11' 09.0606" S	28° 53' 42.7956" E
EX23-315	25° 11' 08.2481" S	28° 53' 42.7976" E
EX23-316	25° 11' 07.4357" S	28° 53' 42.7995" E
EX23-317	25° 11' 06.6226" S	28° 53' 42.8015" E
EX23-318	25° 11' 05.8101" S	28° 53' 42.8022" E
EX23-319	25° 11' 04.9977" S	28° 53' 42.8029" E
EX23-320	25° 11' 04.1852" S	28° 53' 42.8036" E
EX23-321	25° 11' 03.9635" S	28° 53' 42.8038" E
EX23-322	25° 11' 03.1882" S	28° 53' 43.1500" E
EX23-323	25° 11' 02.4355" S	28° 53' 43.4861" E
EX23-324	25° 11' 01.6828" S	28° 53' 43.8222" E
EX23-325	25° 11' 00.9301" S	28° 53' 44.1583" E
EX23-326	25° 11' 00.1774" S	28° 53' 44.4944" E
EX23-327	25° 10' 59.4247" S	28° 53' 44.8305" E
EX23-328	25° 10' 59.3645" S	28° 53' 44.8574" E
EX23-329	25° 10' 58.6118" S	28° 53' 45.1934" E
EX23-330	25° 10' 57.8592" S	28° 53' 45.5295" E
EX23-331	25° 10' 57.1064" S	28° 53' 45.8656" E
EX23-332	25° 10' 56.3537" S	28° 53' 46.2017" E
EX23-333	25° 10' 55.6010" S	28° 53' 46.5377" E
EX23-334	25° 10' 54.8483" S	28° 53' 46.8738" E
EX23-335	25° 10' 54.0957" S	28° 53' 47.2099" E

Point	Latitude	Longitude
EX23-336	25° 10' 53.3429" S	28° 53' 47.5460" E
EX23-337	25° 10' 53.2827" S	28° 53' 47.5729" E
EX23-338	25° 10' 52.5300" S	28° 53' 47.9090" E
EX23-339	25° 10' 51.7774" S	28° 53' 48.2451" E
EX23-340	25° 10' 51.0246" S	28° 53' 48.5811" E
EX23-341	25° 10' 50.2719" S	28° 53' 48.9172" E
EX23-342	25° 10' 49.5193" S	28° 53' 49.2533" E
EX23-343	25° 10' 48.7665" S	28° 53' 49.5893" E
EX23-344	25° 10' 48.0139" S	28° 53' 49.9254" E
EX23-345	25° 10' 47.2611" S	28° 53' 50.2615" E
EX23-346	25° 10' 45.9364" S	28° 53' 50.8530" E
EX23-347	25° 10' 45.4848" S	28° 53' 51.0544" E
EX23-348	25° 10' 43.7084" S	28° 53' 51.8476" E
EX23-349	25° 10' 42.9557" S	28° 53' 52.1836" E
EX23-350	25° 10' 42.2030" S	28° 53' 52.5196" E
EX23-351	25° 10' 41.4503" S	28° 53' 52.8557" E
EX23-352	25° 10' 40.6976" S	28° 53' 53.1917" E
EX23-353	25° 10' 39.9449" S	28° 53' 53.5278" E
EX23-354	25° 10' 39.1921" S	28° 53' 53.8638" E
EX23-355	25° 10' 38.4394" S	28° 53' 54.1999" E
EX23-356	25° 10' 38.3793" S	28° 53' 54.2267" E
EX23-357	25° 10' 37.6265" S	28° 53' 54.5628" E
EX23-358	25° 10' 36.8738" S	28° 53' 54.8988" E
EX23-359	25° 10' 36.1211" S	28° 53' 55.2349" E
EX23-360	25° 10' 35.3684" S	28° 53' 55.5709" E
EX23-361	25° 10' 34.6157" S	28° 53' 55.9070" E
EX23-362	25° 10' 32.5382" S	28° 53' 56.8345" E
EX23-363	25° 10' 31.7855" S	28° 53' 57.1705" E
EX24-1	25° 11' 50.3429" S	28° 54' 59.5613" E
EX24-2	25° 11' 50.9783" S	28° 54' 59.4093" E
EX24-3	25° 11' 52.0109" S	28° 54' 59.1623" E
EX24-4	25° 11' 52.7258" S	28° 54' 58.9913" E
EX24-5	25° 11' 53.4407" S	28° 54' 58.8204" E
EX24-6	25° 11' 54.3780" S	28° 54' 58.5962" E
EX24-7	25° 11' 54.1671" S	28° 54' 57.5310" E
EX24-8	25° 11' 54.2914" S	28° 54' 57.3184" E
EX24-9	25° 11' 54.2085" S	28° 54' 56.8993" E
EX24-10	25° 11' 54.6054" S	28° 54' 56.8044" E
EX24-11	25° 11' 54.3808" S	28° 54' 55.6697" E
EX24-12	25° 11' 55.0958" S	28° 54' 55.4986" E
EX24-13	25° 11' 54.8709" S	28° 54' 54.3638" E
EX24-14	25° 11' 55.2206" S	28° 54' 54.2799" E
EX24-15	25° 11' 55.4139" S	28° 54' 54.4166" E
EX24-16	25° 11' 55.7952" S	28° 54' 54.3254" E
EX24-17	25° 11' 55.9196" S	28° 54' 54.1129" E
EX24-18	25° 11' 55.8366" S	28° 54' 53.6937" E
EX24-19	25° 11' 56.1859" S	28° 54' 53.6102" E
EX24-20	25° 11' 56.7578" S	28° 54' 53.4733" E

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 59 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. — M B Straughan G.Pr. LS0907D — 09 October 2025 date

For applicant — Owain Jackson name — signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation

Dwg: reg 2(2) plan er kruis river oct 2025.dwg

Revision:

Date: 09 October 2025

friedlaender, burger & volkmann

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Point	Latitude	Longitude
EX24-21	25° 11' 57.1209" S	28° 54' 52.1980" E
EX24-22	25° 11' 57.5181" S	28° 54' 52.1030" E
EX24-23	25° 11' 57.9299" S	28° 54' 52.0045" E
EX24-24	25° 11' 58.3728" S	28° 54' 51.5510" E
EX24-25	25° 11' 58.2138" S	28° 54' 50.7479" E
EX24-26	25° 11' 59.1033" S	28° 54' 50.5352" E
EX24-27	25° 11' 59.3002" S	28° 54' 51.5301" E
EX24-28	25° 12' 00.1136" S	28° 54' 51.7212" E
EX24-29	25° 12' 05.2851" S	28° 54' 48.8644" E
EX24-30	25° 12' 05.2870" S	28° 54' 46.7545" E
EX24-31	25° 12' 05.9374" S	28° 54' 46.7554" E
EX24-32	25° 12' 06.1003" S	28° 54' 46.5767" E
EX24-33	25° 12' 08.4738" S	28° 54' 46.5797" E
EX24-34	25° 12' 09.5306" S	28° 54' 46.5810" E
EX24-35	25° 12' 10.5872" S	28° 54' 46.5823" E
EX24-36	25° 12' 13.5139" S	28° 54' 46.5859" E
EX24-37	25° 12' 14.6192" S	28° 54' 46.5873" E
EX24-38	25° 12' 14.6201" S	28° 54' 45.8010" E
EX24-39	25° 12' 14.6210" S	28° 54' 45.0147" E
EX24-40	25° 12' 14.6214" S	28° 54' 44.6039" E
EX24-41	25° 12' 15.3530" S	28° 54' 44.6048" E
EX24-42	25° 12' 16.0846" S	28° 54' 44.6057" E
EX24-43	25° 12' 16.1497" S	28° 54' 44.6058" E
EX24-44	25° 12' 16.9138" S	28° 54' 44.6067" E
EX24-45	25° 12' 17.6779" S	28° 54' 44.6077" E
EX24-46	25° 12' 18.4420" S	28° 54' 44.6086" E
EX24-47	25° 12' 19.2061" S	28° 54' 44.6095" E
EX24-48	25° 12' 19.9703" S	28° 54' 44.6105" E
EX24-49	25° 12' 20.7344" S	28° 54' 44.6114" E
EX24-50	25° 12' 21.5238" S	28° 54' 44.6124" E
EX24-51	25° 12' 21.5250" S	28° 54' 43.4507" E
EX24-52	25° 12' 21.5311" S	28° 54' 37.4465" E
EX24-53	25° 12' 21.5322" S	28° 54' 36.2849" E
EX24-54	25° 12' 20.7844" S	28° 54' 36.2840" E
EX24-55	25° 12' 20.0365" S	28° 54' 36.2831" E
EX24-56	25° 12' 19.2887" S	28° 54' 36.2822" E
EX24-57	25° 12' 18.5408" S	28° 54' 36.2813" E
EX24-58	25° 12' 18.0365" S	28° 54' 36.2807" E
EX24-59	25° 12' 18.0374" S	28° 54' 35.4766" E
EX24-60	25° 12' 18.0382" S	28° 54' 34.6724" E
EX24-61	25° 12' 18.0390" S	28° 54' 33.8683" E
EX24-62	25° 12' 18.0398" S	28° 54' 33.0641" E
EX24-63	25° 12' 18.0407" S	28° 54' 32.2600" E
EX24-64	25° 12' 18.0415" S	28° 54' 31.4558" E
EX24-65	25° 12' 18.0423" S	28° 54' 30.6516" E
EX24-66	25° 12' 18.0431" S	28° 54' 29.8475" E
EX24-67	25° 12' 18.0432" S	28° 54' 29.7760" E
EX24-68	25° 12' 18.0450" S	28° 54' 27.9890" E
EX24-69	25° 12' 16.4841" S	28° 54' 27.9870" E
EX24-70	25° 12' 15.5411" S	28° 54' 27.9857" E
EX24-71	25° 12' 15.5417" S	28° 54' 27.4500" E
EX24-72	25° 12' 15.5425" S	28° 54' 26.6459" E
EX24-73	25° 12' 15.5433" S	28° 54' 25.8418" E
EX24-74	25° 12' 15.5441" S	28° 54' 25.0376" E
EX24-75	25° 12' 15.5449" S	28° 54' 24.2334" E
EX24-76	25° 12' 15.5457" S	28° 54' 23.4293" E
EX24-77	25° 12' 15.5465" S	28° 54' 22.6251" E
EX24-78	25° 12' 15.5474" S	28° 54' 21.8210" E
EX24-79	25° 12' 15.5474" S	28° 54' 21.7495" E
EX24-80	25° 12' 15.5482" S	28° 54' 20.9454" E
EX24-81	25° 12' 15.5490" S	28° 54' 20.2152" E
EX24-82	25° 12' 15.1354" S	28° 54' 19.5334" E
EX24-83	25° 12' 14.7206" S	28° 54' 18.8494" E
EX24-84	25° 12' 14.3058" S	28° 54' 18.1654" E
EX24-85	25° 12' 13.8909" S	28° 54' 17.4815" E
EX24-86	25° 12' 13.4761" S	28° 54' 16.7975" E
EX24-87	25° 12' 13.0613" S	28° 54' 16.1135" E
EX24-88	25° 12' 12.6465" S	28° 54' 15.4296" E
EX24-89	25° 12' 12.2317" S	28° 54' 14.7456" E
EX24-90	25° 12' 11.8168" S	28° 54' 14.0616" E
EX24-91	25° 12' 11.4020" S	28° 54' 13.3777" E
EX24-92	25° 12' 11.3659" S	28° 54' 13.3182" E
EX24-93	25° 12' 10.9601" S	28° 54' 12.6491" E
EX24-94	25° 12' 10.5543" S	28° 54' 11.9800" E
EX24-95	25° 12' 10.1484" S	28° 54' 11.3109" E
EX24-96	25° 12' 09.7426" S	28° 54' 10.6418" E
EX24-97	25° 12' 09.3603" S	28° 54' 10.0114" E
EX24-98	25° 12' 09.2588" S	28° 54' 09.4068" E
EX24-99	25° 12' 10.4899" S	28° 54' 09.1575" E
EX24-100	25° 12' 10.2840" S	28° 54' 07.9273" E
EX24-101	25° 12' 10.4757" S	28° 54' 07.8884" E
EX24-102	25° 12' 10.6061" S	28° 54' 07.6803" E
EX24-103	25° 12' 10.5826" S	28° 54' 07.5398" E
EX24-104	25° 12' 11.4619" S	28° 54' 07.3615" E
EX24-105	25° 12' 11.3943" S	28° 54' 06.9573" E
EX24-106	25° 12' 12.1138" S	28° 54' 06.8115" E
EX24-107	25° 12' 11.9220" S	28° 54' 05.6694" E
EX24-108	25° 12' 12.6256" S	28° 54' 05.5270" E
EX24-109	25° 12' 12.2959" S	28° 54' 03.5585" E
EX24-110	25° 12' 13.3509" S	28° 54' 03.3447" E
EX24-111	25° 12' 13.2214" S	28° 54' 02.5716" E
EX24-112	25° 12' 13.0918" S	28° 54' 01.7983" E
EX24-113	25° 12' 12.9622" S	28° 54' 01.0250" E
EX24-114	25° 12' 11.9068" S	28° 54' 01.2388" E
EX24-115	25° 12' 11.6004" S	28° 53' 59.4112" E
EX24-116	25° 12' 11.4532" S	28° 53' 58.5328" E
EX24-117	25° 12' 10.2220" S	28° 53' 58.7817" E
EX24-118	25° 12' 10.0894" S	28° 53' 57.9908" E
EX24-119	25° 12' 08.8583" S	28° 53' 58.2403" E
EX24-120	25° 12' 08.3148" S	28° 53' 58.3504" E
EX24-121	25° 12' 08.2202" S	28° 53' 57.7881" E
EX24-122	25° 12' 07.1345" S	28° 53' 58.0079" E
EX24-123	25° 12' 06.8089" S	28° 53' 57.2881" E
EX24-124	25° 12' 06.4831" S	28° 53' 56.5681" E
EX24-125	25° 12' 06.1573" S	28° 53' 55.8481" E
EX24-126	25° 12' 05.8316" S	28° 53' 55.1281" E
EX24-127	25° 12' 05.5058" S	28° 53' 54.4081" E
EX24-128	25° 12' 05.1800" S	28° 53' 53.6881" E
EX24-129	25° 12' 04.8542" S	28° 53' 52.9681" E
EX24-130	25° 12' 04.5285" S	28° 53' 52.2481" E
EX24-131	25° 12' 04.2027" S	28° 53' 51.5281" E
EX24-132	25° 12' 03.8769" S	28° 53' 50.8081" E
EX24-133	25° 12' 03.5511" S	28° 53' 50.0880" E
EX24-134	25° 12' 03.5221" S	28° 53' 50.0240" E
EX24-135	25° 12' 03.1963" S	28° 53' 49.3040" E
EX24-136	25° 12' 02.8706" S	28° 53' 48.5840" E
EX24-137	25° 12' 02.5448" S	28° 53' 47.8640" E
EX24-138	25° 12' 02.2190" S	28° 53' 47.1440" E
EX24-139	25° 12' 01.8932" S	28° 53' 46.4240" E
EX24-140	25° 12' 01.5674" S	28° 53' 45.7040" E
EX24-141	25° 12' 01.2416" S	28° 53' 44.9840" E
EX24-142	25° 12' 00.9158" S	28° 53' 44.2640" E
EX24-143	25° 12' 00.5900" S	28° 53' 43.5440" E
EX24-144	25° 12' 00.3556" S	28° 53' 43.0259" E
EX24-145	25° 12' 00.3468" S	28° 53' 42.9190" E
EX24-146	25° 12' 00.2831" S	28° 53' 42.1484" E
EX24-147	25° 12' 00.2168" S	28° 53' 41.3476" E
EX24-148	25° 12' 00.1506" S	28° 53' 40.5468" E
EX24-149	25° 12' 00.0844" S	28° 53' 39.7459" E
EX24-150	25° 12' 00.0785" S	28° 53' 39.6748" E
EX24-151	25° 12' 00.0108" S	28° 53' 38.8561" E
EX24-152	25° 11' 59.9432" S	28° 53' 38.0375" E
EX24-153	25° 11' 59.8755" S	28° 53' 37.2189" E
EX24-154	25° 11' 59.8078" S	28° 53' 36.4002" E
EX24-155	25° 11' 59.7401" S	28° 53' 35.5816" E
EX24-156	25° 11' 59.6724" S	28° 53' 34.7630" E
EX24-157	25° 11' 59.6047" S	28° 53' 33.9444" E
EX24-158	25° 11' 59.5370" S	28° 53' 33.1258" E
EX24-159	25° 11' 59.4693" S	28° 53' 32.3071" E
EX24-160	25° 11' 59.4016" S	28° 53' 31.4885" E
EX24-161	25° 11' 58.3492" S	28° 53' 31.5938" E
EX24-162	25° 11' 50.2210" S	28° 53' 32.4060" E
EX24-163	25° 11' 49.1687" S	28° 53' 32.5109" E
EX24-164	25° 11' 49.2364" S	28° 53' 33.3295" E
EX24-165	25° 11' 49.3041" S	28° 53' 34.1481" E
EX24-166	25° 11' 49.3718" S	28° 53' 34.9667" E
EX24-167	25° 11' 49.4395" S	28° 53' 35.7853" E
EX24-168	25° 11' 49.5072" S	28° 53' 36.6039" E
EX24-169	25° 11' 50.5595" S	28° 53' 36.4990" E
EX24-170	25° 11' 50.6745" S	28° 53' 37.8869" E
EX24-171	25° 11' 51.0629" S	28° 53' 37.8482" E
EX24-172	25° 11' 51.1217" S	28° 53' 38.5600" E
EX24-173	25° 11' 52.1745" S	28° 53' 38.4548" E
EX24-174	25° 11' 52.2333" S	28° 53' 39.1666" E
EX24-175	25° 11' 52.2921" S	28° 53' 39.8785" E
EX24-176	25° 11' 52.3804" S	28° 53' 40.9462" E
EX24-177	25° 11' 52.4760" S	28° 53' 42.1030" E
EX24-178	25° 11' 52.3463" S	28° 53' 42.1159" E
EX24-179	25° 11' 51.6177" S	28° 53' 42.1887" E
EX24-180	25° 11' 51.7134" S	28° 53' 43.3454" E
EX24-181	25° 11' 52.1830" S	28° 53' 43.2987" E
EX24-182	25° 11' 52.2185" S	28° 53' 43.7256" E
EX24-183	25° 11' 52.3949" S	28° 53' 43.8874" E
EX24-184	25° 11' 52.6290" S	28° 53' 43.8642" E
EX24-185	25° 11' 52.6879" S	28° 53' 44.5760" E
EX24-186	25° 11' 52.7541" S	28° 53' 45.3769" E
EX24-187	25° 11' 52.7937" S	28° 53' 45.8565" E
EX24-188	25° 11' 53.0658" S	28° 53' 46.4578" E
EX24-189	25° 11' 53.3917" S	28° 53' 47.1777" E
EX24-190	25° 11' 53.1441" S	28° 53' 47.3132" E
EX24-191	25° 11' 52.4453" S	28° 53' 47.6950" E
EX24-192	25° 11' 52.7929" S	28° 53' 48.4630" E
EX24-193	25° 11' 53.1404" S	28° 53' 49.2309" E
EX24-194	25° 11' 53.3867" S	28° 53' 49.7752" E
EX24-195	25° 11' 53.0373" S	28° 53' 49.9659" E
EX24-196	25° 11' 53.9493" S	28° 53' 51.9820" E
EX24-197	25° 11' 53.0031" S	28° 53' 52.4992" E
EX24-198	25° 11' 53.3289" S	28° 53' 53.2194" E
EX24-199	25° 11' 52.3827" S	28° 53' 53.7366" E
EX24-200	25° 11' 52.7084" S	28° 53' 54.4566" E
EX24-201	25° 11' 52.8314" S	28° 53' 54.7286" E
EX24-202	25° 11' 52.4820" S	28° 53' 54.9194" E
EX24-203	25° 11' 52.4090" S	28° 53' 55.1588" E
EX24-204	25° 11' 52.6263" S	28° 53' 55.6390" E
EX24-205	25° 11' 51.8256" S	28° 53' 56.0765" E
EX24-206	25° 11' 52.2093" S	28° 53' 56.9245" E
EX24-207	25° 11' 52.5351" S	28° 53' 57.6445" E
EX24-208	25° 11' 51.7780" S	28° 53' 58.0584" E
EX24-209	25° 11' 51.9559" S	28° 53' 59.1198" E
EX24-210	25° 11' 51.2205" S	28° 53' 59.2687" E
EX24-211	25° 11' 50.4851" S	28° 53' 59.4177" E
EX24-212	25° 11' 49.7496" S	28° 53' 59.5667" E

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 60 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. M B Straughan G.Pr. LSO907D — 09 October 2025 date

For applicant Owain Jackson name

signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	Dwg: reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

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Point	Latitude	Longitude
EX24-213	25° 11' 49.9411" S	28° 54' 00.7091" E
EX24-214	25° 11' 48.6177" S	28° 54' 00.9770" E
EX24-215	25° 11' 47.5783" S	28° 54' 01.1874" E
EX24-216	25° 11' 47.7108" S	28° 54' 01.9782" E
EX24-217	25° 11' 47.8404" S	28° 54' 02.7516" E
EX24-218	25° 11' 48.1123" S	28° 54' 02.6965" E
EX24-219	25° 11' 48.3038" S	28° 54' 03.8389" E
EX24-220	25° 11' 46.0975" S	28° 54' 04.2858" E
EX24-221	25° 11' 45.9060" S	28° 54' 03.1434" E
EX24-222	25° 11' 45.1865" S	28° 54' 03.2891" E
EX24-223	25° 11' 44.4670" S	28° 54' 03.4347" E
EX24-224	25° 11' 43.7475" S	28° 54' 03.5805" E
EX24-225	25° 11' 43.0280" S	28° 54' 03.7262" E
EX24-226	25° 11' 42.3085" S	28° 54' 03.8719" E
EX24-227	25° 11' 41.5891" S	28° 54' 04.0176" E
EX24-228	25° 11' 40.8696" S	28° 54' 04.1633" E
EX24-229	25° 11' 40.0701" S	28° 54' 04.3252" E
EX24-230	25° 11' 39.4296" S	28° 54' 04.4549" E
EX25-1	25° 19' 45.1481" S	28° 54' 53.6805" E
EX25-2	25° 19' 54.1333" S	28° 55' 10.3867" E
EX25-3	25° 19' 59.1391" S	28° 55' 07.1304" E
EX25-4	25° 19' 57.6989" S	28° 55' 04.4496" E
EX25-5	25° 20' 04.6138" S	28° 54' 59.9465" E
EX25-6	25° 20' 04.9529" S	28° 54' 58.5659" E
EX25-7	25° 20' 06.0824" S	28° 54' 58.9017" E
EX25-8	25° 20' 06.3875" S	28° 54' 57.6588" E
EX25-9	25° 20' 07.4227" S	28° 54' 57.9664" E
EX25-10	25° 20' 10.5396" S	28° 54' 45.2704" E
EX25-11	25° 20' 11.0483" S	28° 54' 44.9186" E
EX25-12	25° 20' 00.6637" S	28° 54' 26.7329" E
EX25-13	25° 19' 51.1928" S	28° 54' 45.6190" E
EX26-1	25° 09' 30.5278" S	28° 54' 50.6957" E
EX26-2	25° 09' 30.5025" S	28° 54' 50.7403" E
EX26-3	25° 09' 30.1274" S	28° 54' 51.4075" E
EX26-4	25° 09' 29.5997" S	28° 54' 52.3458" E
EX26-5	25° 09' 28.6994" S	28° 54' 53.9466" E
EX26-6	25° 09' 28.4237" S	28° 54' 54.4368" E
EX26-7	25° 09' 27.7506" S	28° 54' 55.6337" E
EX26-8	25° 09' 27.3756" S	28° 54' 56.3004" E
EX26-9	25° 09' 27.0007" S	28° 54' 56.9672" E
EX26-10	25° 09' 26.6286" S	28° 54' 57.6288" E
EX26-11	25° 09' 26.2487" S	28° 54' 58.3043" E
EX26-12	25° 09' 25.8754" S	28° 54' 58.9680" E
EX26-13	25° 09' 25.5004" S	28° 54' 59.6348" E
EX26-14	25° 09' 25.1254" S	28° 55' 00.3015" E
EX26-15	25° 09' 24.7457" S	28° 55' 00.9768" E
EX26-16	25° 09' 24.3736" S	28° 55' 01.6384" E
EX26-17	25° 09' 23.9986" S	28° 55' 02.3051" E
EX26-18	25° 09' 23.6187" S	28° 55' 02.9807" E
EX26-19	25° 09' 23.2437" S	28° 55' 03.6474" E
EX26-20	25° 09' 22.8687" S	28° 55' 04.3142" E
EX26-21	25° 09' 22.4967" S	28° 55' 04.9758" E
EX26-22	25° 09' 22.4696" S	28° 55' 05.0239" E
EX26-23	25° 09' 22.1165" S	28° 55' 05.6516" E
EX26-24	25° 09' 21.7416" S	28° 55' 06.3184" E
EX26-25	25° 09' 21.3666" S	28° 55' 06.9851" E
EX26-26	25° 09' 20.9255" S	28° 55' 07.7694" E
EX26-27	25° 09' 20.4365" S	28° 55' 08.6387" E
EX26-28	25° 09' 21.1044" S	28° 55' 09.0794" E
EX26-29	25° 09' 22.0441" S	28° 55' 09.6994" E
EX26-30	25° 09' 22.6587" S	28° 55' 10.1050" E
EX26-31	25° 09' 23.2655" S	28° 55' 10.5053" E
EX26-32	25° 09' 23.8851" S	28° 55' 10.9142" E
EX26-33	25° 09' 24.5000" S	28° 55' 11.3199" E
EX26-34	25° 09' 25.1068" S	28° 55' 11.7203" E
EX26-35	25° 09' 25.7214" S	28° 55' 12.1258" E
EX26-36	25° 09' 26.5399" S	28° 55' 12.6659" E
EX26-37	25° 09' 26.9046" S	28° 55' 12.9066" E
EX26-38	25° 09' 27.7321" S	28° 55' 13.4526" E
EX26-39	25° 09' 28.4883" S	28° 55' 12.1111" E
EX26-40	25° 09' 28.8640" S	28° 55' 11.4448" E
EX26-41	25° 09' 29.2396" S	28° 55' 10.7785" E
EX26-42	25° 09' 29.6152" S	28° 55' 10.1122" E
EX26-43	25° 09' 29.9958" S	28° 55' 09.4370" E
EX26-44	25° 09' 30.2359" S	28° 55' 09.0111" E
EX26-45	25° 09' 30.8512" S	28° 55' 09.4155" E
EX26-46	25° 09' 31.4586" S	28° 55' 09.8147" E
EX26-47	25° 09' 32.0738" S	28° 55' 10.2190" E
EX26-48	25° 09' 32.6890" S	28° 55' 10.6234" E
EX26-49	25° 09' 33.3043" S	28° 55' 11.0277" E
EX26-50	25° 09' 33.9117" S	28° 55' 11.4270" E
EX26-51	25° 09' 34.5269" S	28° 55' 11.8313" E
EX26-52	25° 09' 35.2509" S	28° 55' 12.3072" E
EX26-53	25° 09' 36.3203" S	28° 55' 12.4504" E
EX26-54	25° 09' 37.1201" S	28° 55' 12.5576" E
EX26-55	25° 09' 37.9299" S	28° 55' 12.6661" E
EX26-56	25° 09' 38.4629" S	28° 55' 12.7375" E
EX26-57	25° 09' 39.4158" S	28° 55' 12.8651" E
EX26-58	25° 09' 39.5181" S	28° 55' 11.9359" E
EX26-59	25° 09' 39.6030" S	28° 55' 11.1642" E
EX26-60	25° 09' 39.6893" S	28° 55' 10.3808" E
EX26-61	25° 09' 39.7755" S	28° 55' 09.5973" E
EX26-62	25° 09' 39.8617" S	28° 55' 08.8139" E
EX26-63	25° 09' 39.9479" S	28° 55' 08.0305" E
EX26-64	25° 09' 40.0328" S	28° 55' 07.2587" E
EX26-65	25° 09' 40.1191" S	28° 55' 06.4753" E
EX26-66	25° 09' 40.2053" S	28° 55' 05.6918" E
EX26-67	25° 09' 40.2915" S	28° 55' 04.9084" E
EX26-68	25° 09' 40.7131" S	28° 55' 04.9431" E
EX26-69	25° 09' 41.4584" S	28° 55' 04.9958" E
EX26-70	25° 09' 42.1719" S	28° 55' 05.0461" E
EX26-71	25° 09' 42.8847" S	28° 55' 05.0964" E
EX26-72	25° 09' 43.5976" S	28° 55' 05.1468" E
EX26-73	25° 09' 44.3104" S	28° 55' 05.1971" E
EX26-74	25° 09' 45.0239" S	28° 55' 05.2474" E
EX26-75	25° 09' 45.7043" S	28° 55' 05.2955" E
EX26-76	25° 09' 46.4582" S	28° 55' 05.0611" E
EX26-77	25° 09' 47.1521" S	28° 55' 04.8453" E
EX26-78	25° 09' 47.3894" S	28° 55' 04.7716" E
EX26-79	25° 09' 47.6805" S	28° 55' 04.6171" E
EX26-80	25° 09' 47.8768" S	28° 55' 04.4664" E
EX26-81	25° 09' 48.4866" S	28° 55' 03.9984" E
EX26-82	25° 09' 48.9413" S	28° 55' 03.6498" E
EX26-83	25° 09' 49.5261" S	28° 55' 03.2009" E
EX26-84	25° 09' 50.1108" S	28° 55' 02.7520" E
EX26-85	25° 09' 50.6956" S	28° 55' 02.3032" E
EX26-86	25° 09' 51.2876" S	28° 55' 01.8488" E
EX26-87	25° 09' 51.8673" S	28° 55' 01.4038" E
EX26-88	25° 09' 52.4520" S	28° 55' 00.9549" E
EX26-89	25° 09' 53.0368" S	28° 55' 00.5060" E
EX26-90	25° 09' 53.6287" S	28° 55' 00.0516" E
EX26-91	25° 09' 55.3588" S	28° 54' 58.7235" E
EX26-92	25° 09' 54.6876" S	28° 54' 57.6680" E
EX26-93	25° 09' 54.2790" S	28° 54' 57.0255" E
EX26-94	25° 09' 53.8704" S	28° 54' 56.3830" E
EX26-95	25° 09' 53.4619" S	28° 54' 55.7405" E
EX26-96	25° 09' 53.0518" S	28° 54' 55.0957" E
EX26-97	25° 09' 52.6432" S	28° 54' 54.4532" E
EX26-98	25° 09' 52.3460" S	28° 54' 53.9854" E
EX26-99	25° 09' 51.9322" S	28° 54' 53.3351" E
EX26-100	25° 09' 51.5236" S	28° 54' 52.6926" E
EX26-101	25° 09' 51.1185" S	28° 54' 52.0556" E
EX26-102	25° 09' 50.7049" S	28° 54' 51.4052" E
EX26-103	25° 09' 50.2962" S	28° 54' 50.7624" E
EX26-104	25° 09' 46.6652" S	28° 54' 45.0529" E
EX26-105	25° 09' 46.2516" S	28° 54' 44.4025" E
EX26-106	25° 09' 46.2294" S	28° 54' 44.3676" E
EX26-107	25° 09' 45.8424" S	28° 54' 43.7592" E
EX26-108	25° 09' 45.4338" S	28° 54' 43.1167" E
EX26-109	25° 09' 45.0253" S	28° 54' 42.4742" E
EX26-110	25° 09' 44.6152" S	28° 54' 41.8294" E
EX26-111	25° 09' 44.2066" S	28° 54' 41.1869" E
EX26-112	25° 09' 43.7980" S	28° 54' 40.5444" E
EX26-113	25° 09' 43.3894" S	28° 54' 39.9020" E
EX26-114	25° 09' 42.9758" S	28° 54' 39.2516" E
EX26-115	25° 09' 42.5672" S	28° 54' 38.6091" E
EX26-116	25° 09' 42.1586" S	28° 54' 37.9667" E
EX26-117	25° 09' 41.7500" S	28° 54' 37.3242" E
EX26-118	25° 09' 41.3399" S	28° 54' 36.6794" E
EX26-119	25° 09' 40.9313" S	28° 54' 36.0369" E
EX26-120	25° 09' 40.3287" S	28° 54' 35.0895" E
EX26-121	25° 09' 39.7846" S	28° 54' 34.2339" E
EX26-122	25° 09' 39.2146" S	28° 54' 35.2476" E
EX26-123	25° 09' 38.6010" S	28° 54' 36.3388" E
EX26-124	25° 09' 38.2290" S	28° 54' 37.0004" E
EX26-125	25° 09' 37.8491" S	28° 54' 37.6760" E
EX26-126	25° 09' 37.4741" S	28° 54' 38.3428" E
EX26-127	25° 09' 37.0994" S	28° 54' 39.0092" E
EX26-128	25° 09' 37.0788" S	28° 54' 39.0458" E
EX26-129	25° 09' 36.6989" S	28° 54' 39.7214" E
EX26-130	25° 09' 36.3240" S	28° 54' 40.3881" E
EX26-131	25° 09' 35.9519" S	28° 54' 41.0497" E
EX26-132	25° 09' 35.5721" S	28° 54' 41.7253" E
EX26-133	25° 09' 35.1232" S	28° 54' 42.5237" E
EX26-134	25° 09' 35.0975" S	28° 54' 42.5694" E
EX26-135	25° 09' 34.4885" S	28° 54' 43.6523" E
EX26-136	25° 09' 32.2788" S	28° 54' 47.5818" E
EX26-137	25° 09' 32.0328" S	28° 54' 48.0193" E
EX26-138	25° 09' 31.6576" S	28° 54' 48.6863" E
EX26-139	25° 09' 31.2779" S	28° 54' 49.3616" E
EX26-140	25° 09' 30.9028" S	28° 54' 50.0287" E
EX27-1	25° 21' 48.8152" S	28° 56' 44.6682" E
EX27-2	25° 21' 49.2006" S	28° 56' 44.2328" E
EX27-3	25° 21' 51.2579" S	28° 56' 41.9088" E
EX27-4	25° 21' 51.5520" S	28° 56' 41.5765" E
EX27-5	25° 21' 54.0026" S	28° 56' 38.8082" E
EX27-6	25° 21' 54.3610" S	28° 56' 38.4032" E
EX27-7	25° 21' 57.0886" S	28° 56' 35.3219" E
EX27-8	25° 21' 57.5586" S	28° 56' 34.7909" E
EX27-9	25° 21' 59.2044" S	28° 56' 32.9317" E
EX27-10	25° 21' 59.4396" S	28° 56' 32.6659" E
EX27-11	25° 22' 00.9843" S	28° 56' 30.9208" E
EX27-12	25° 22' 01.2648" S	28° 56' 30.6039" E
EX27-13	25° 22' 01.9663" S	28° 56' 29.8114" E
EX27-14	25° 22' 02.6837" S	28° 56' 29.0008" E
EX27-15	25° 22' 04.3578" S	28° 56' 27.1095" E
EX27-16	25° 22' 07.2203" S	28° 56' 24.8360" E
EX27-17	25° 22' 07.8806" S	28° 56' 24.3115" E
EX27-18	25° 22' 08.5407" S	28° 56' 23.7872" E
EX27-19	25° 22' 09.3147" S	28° 56' 23.1725" E
EX27-20	25° 22' 10.1068" S	28° 56' 22.5433" E
EX27-21	25° 22' 10.7670" S	28° 56' 22.0190" E

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 61 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. — M B Straughan G.Pr. LS0907D — 09 October 2025 date

For applicant — Owain Jackson name — signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	Dwg: reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

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Point	Latitude	Longitude
EX27-22	25° 22' 11.4271" S	28° 56' 21.4947" E
EX27-23	25° 22' 12.0872" S	28° 56' 20.9703" E
EX27-24	25° 22' 12.7474" S	28° 56' 20.4460" E
EX27-25	25° 22' 13.4075" S	28° 56' 19.9217" E
EX27-26	25° 22' 14.2789" S	28° 56' 19.2295" E
EX27-27	25° 22' 15.9345" S	28° 56' 17.8603" E
EX27-28	25° 22' 13.3795" S	28° 56' 16.4401" E
EX27-29	25° 22' 11.6420" S	28° 56' 15.4744" E
EX27-30	25° 22' 07.2617" S	28° 56' 13.0396" E
EX27-31	25° 22' 05.1584" S	28° 56' 11.8705" E
EX27-32	25° 22' 02.9683" S	28° 56' 10.6533" E
EX27-33	25° 22' 00.5607" S	28° 56' 09.3150" E
EX27-34	25° 21' 52.0321" S	28° 56' 04.5749" E
EX27-35	25° 21' 47.3625" S	28° 56' 01.9795" E
EX27-36	25° 21' 45.9120" S	28° 56' 01.1733" E
EX27-37	25° 21' 45.1869" S	28° 56' 00.7704" E
EX27-38	25° 21' 44.4615" S	28° 56' 00.3672" E
EX27-39	25° 21' 43.7363" S	28° 55' 59.9641" E
EX27-40	25° 21' 43.0110" S	28° 55' 59.5611" E
EX27-41	25° 21' 42.2859" S	28° 55' 59.1581" E
EX27-42	25° 21' 41.5608" S	28° 55' 58.7549" E
EX27-43	25° 21' 40.8354" S	28° 55' 58.3519" E
EX27-44	25° 21' 33.4957" S	28° 55' 54.2729" E
EX27-45	25° 21' 32.2880" S	28° 55' 54.7001" E
EX27-46	25° 21' 31.5022" S	28° 55' 54.9692" E
EX27-47	25° 21' 30.3344" S	28° 55' 55.3863" E
EX27-48	25° 21' 30.3287" S	28° 55' 56.7449" E
EX27-49	25° 21' 30.3283" S	28° 55' 57.6409" E
EX27-50	25° 21' 30.3279" S	28° 55' 58.5368" E
EX27-51	25° 21' 30.3275" S	28° 55' 59.4328" E
EX27-52	25° 21' 30.3271" S	28° 56' 00.3287" E
EX27-53	25° 21' 30.3267" S	28° 56' 01.2246" E
EX27-54	25° 21' 30.3263" S	28° 56' 02.1206" E
EX27-55	25° 21' 30.3259" S	28° 56' 03.0165" E
EX27-56	25° 21' 30.3205" S	28° 56' 03.9107" E
EX27-57	25° 21' 25.8739" S	28° 56' 03.5443" E
EX27-58	25° 21' 18.6858" S	28° 56' 14.5028" E
EX27-59	25° 21' 17.8265" S	28° 56' 15.8128" E
EX27-60	25° 21' 26.4354" S	28° 56' 33.6687" E
EX27-61	25° 21' 29.4586" S	28° 56' 31.9033" E
EX27-62	25° 21' 30.1254" S	28° 56' 33.1368" E
EX27-63	25° 21' 33.7218" S	28° 56' 39.7901" E
EX27-64	25° 21' 34.6974" S	28° 56' 49.3914" E
EX27-65	25° 21' 35.3539" S	28° 56' 49.4017" E
EX27-66	25° 21' 44.4978" S	28° 56' 49.5453" E
EX28-1	25° 17' 28.2388" S	28° 55' 49.5898" E
EX28-2	25° 17' 22.5684" S	28° 55' 49.0851" E
EX28-3	25° 17' 20.1444" S	28° 55' 48.5761" E
EX28-4	25° 17' 09.6352" S	28° 55' 47.4901" E
EX28-5	25° 17' 09.5644" S	28° 55' 48.9871" E
EX28-6	25° 16' 59.6687" S	28° 55' 46.7173" E
EX28-7	25° 16' 59.8566" S	28° 55' 52.3143" E
EX28-8	25° 17' 04.6431" S	28° 55' 54.1542" E
EX28-9	25° 17' 04.5649" S	28° 55' 54.6907" E
EX28-10	25° 17' 04.4782" S	28° 55' 55.2865" E
EX28-11	25° 17' 03.7068" S	28° 56' 00.5833" E
EX28-12	25° 17' 03.4413" S	28° 56' 10.7908" E
EX28-13	25° 17' 06.3105" S	28° 56' 11.5281" E
EX28-14	25° 17' 07.1084" S	28° 56' 11.6971" E
EX28-15	25° 17' 08.3044" S	28° 56' 11.8452" E
EX28-16	25° 17' 08.0235" S	28° 56' 20.0637" E
EX28-17	25° 17' 06.9139" S	28° 56' 30.2899" E
EX28-18	25° 17' 05.6673" S	28° 56' 32.8476" E
EX28-19	25° 17' 06.5030" S	28° 56' 33.1796" E
EX28-20	25° 17' 05.7026" S	28° 56' 35.8333" E
EX28-21	25° 17' 08.3965" S	28° 56' 37.0470" E
EX28-22	25° 17' 07.4753" S	28° 56' 41.6184" E
EX28-23	25° 17' 08.3878" S	28° 56' 43.3716" E
EX28-24	25° 17' 10.7954" S	28° 56' 45.4583" E
EX28-25	25° 17' 11.9637" S	28° 56' 46.5491" E
EX28-26	25° 17' 12.8457" S	28° 56' 46.7244" E
EX28-27	25° 17' 13.7398" S	28° 56' 46.9022" E
EX28-28	25° 17' 14.6245" S	28° 56' 47.0855" E
EX28-29	25° 17' 14.2870" S	28° 56' 48.3804" E
EX28-30	25° 17' 15.2985" S	28° 56' 48.8671" E
EX28-31	25° 17' 16.4361" S	28° 56' 49.4153" E
EX28-32	25° 17' 16.7735" S	28° 56' 47.7244" E
EX28-33	25° 17' 17.2070" S	28° 56' 47.8751" E
EX28-34	25° 17' 17.9169" S	28° 56' 48.0599" E
EX28-35	25° 17' 18.8729" S	28° 56' 48.3415" E
EX28-36	25° 17' 19.1171" S	28° 56' 47.4135" E
EX28-37	25° 17' 20.9769" S	28° 56' 44.5427" E
EX28-38	25° 17' 25.5398" S	28° 56' 45.3871" E
EX28-39	25° 17' 26.7469" S	28° 56' 45.7208" E
EX28-40	25° 17' 26.8145" S	28° 56' 45.7662" E
EX28-41	25° 17' 25.0296" S	28° 56' 50.8064" E
EX28-42	25° 17' 25.5972" S	28° 56' 51.1160" E
EX28-43	25° 17' 26.2263" S	28° 56' 51.0779" E
EX28-44	25° 17' 25.9437" S	28° 56' 51.5599" E
EX28-45	25° 17' 25.9335" S	28° 56' 52.5652" E
EX28-46	25° 17' 25.9243" S	28° 56' 53.4665" E
EX28-47	25° 17' 25.5935" S	28° 56' 53.6800" E
EX28-48	25° 17' 24.5506" S	28° 56' 54.3529" E
EX28-49	25° 17' 24.5133" S	28° 56' 54.5785" E
EX28-50	25° 17' 24.6822" S	28° 56' 55.3837" E
EX28-51	25° 17' 24.7922" S	28° 56' 55.6690" E
EX28-52	25° 17' 23.3011" S	28° 56' 57.3099" E
EX28-53	25° 17' 20.4741" S	28° 57' 00.0406" E
EX28-54	25° 17' 20.7641" S	28° 57' 00.4244" E
EX28-55	25° 17' 21.4508" S	28° 57' 01.4336" E
EX28-56	25° 17' 22.1933" S	28° 57' 02.4066" E
EX28-57	25° 17' 22.5656" S	28° 57' 02.8969" E
EX28-58	25° 17' 25.5275" S	28° 57' 08.8820" E
EX28-59	25° 17' 26.5565" S	28° 57' 11.4517" E
EX28-60	25° 17' 26.9346" S	28° 57' 16.9360" E
EX28-61	25° 17' 25.3082" S	28° 57' 17.4160" E
EX28-62	25° 17' 23.1325" S	28° 57' 18.5192" E
EX28-63	25° 17' 22.6457" S	28° 57' 17.7341" E
EX28-64	25° 17' 21.5880" S	28° 57' 18.5137" E
EX28-65	25° 17' 21.5641" S	28° 57' 18.5313" E
EX28-66	25° 17' 21.5522" S	28° 57' 18.5142" E
EX28-67	25° 17' 21.0569" S	28° 57' 17.8063" E
EX28-68	25° 17' 20.0042" S	28° 57' 18.5529" E
EX28-69	25° 17' 19.5234" S	28° 57' 17.8226" E
EX28-70	25° 17' 19.1669" S	28° 57' 18.0863" E
EX28-71	25° 17' 19.1465" S	28° 57' 18.1015" E
EX28-72	25° 17' 18.0608" S	28° 57' 18.8665" E
EX28-73	25° 17' 16.9470" S	28° 57' 19.6507" E
EX28-74	25° 17' 16.5983" S	28° 57' 19.9022" E
EX28-75	25° 17' 16.5830" S	28° 57' 19.9133" E
EX28-76	25° 17' 13.4180" S	28° 57' 22.0339" E
EX28-77	25° 17' 12.1590" S	28° 57' 22.8324" E
EX28-78	25° 17' 12.1101" S	28° 57' 22.8635" E
EX28-79	25° 17' 11.7983" S	28° 57' 23.0620" E
EX28-80	25° 17' 08.2404" S	28° 57' 24.8285" E
EX28-81	25° 17' 08.2076" S	28° 57' 24.8448" E
EX28-82	25° 17' 07.7703" S	28° 57' 25.0552" E
EX28-83	25° 17' 06.6772" S	28° 57' 25.8555" E
EX28-84	25° 17' 05.6058" S	28° 57' 26.6270" E
EX28-85	25° 17' 05.5713" S	28° 57' 26.6519" E
EX28-86	25° 17' 05.1203" S	28° 57' 26.9607" E
EX28-87	25° 17' 04.0996" S	28° 57' 27.6014" E
EX28-88	25° 17' 03.0345" S	28° 57' 28.4485" E
EX28-89	25° 17' 03.0097" S	28° 57' 28.4683" E
EX28-90	25° 17' 02.6105" S	28° 57' 28.7813" E
EX28-91	25° 17' 01.5480" S	28° 57' 29.6458" E
EX28-92	25° 17' 01.9813" S	28° 57' 30.3290" E
EX28-93	25° 17' 02.4202" S	28° 57' 31.0848" E
EX28-94	25° 17' 02.8860" S	28° 57' 31.8222" E
EX28-95	25° 17' 03.3306" S	28° 57' 32.5816" E
EX28-96	25° 17' 03.3500" S	28° 57' 32.6142" E
EX28-97	25° 17' 03.7641" S	28° 57' 33.3113" E
EX28-98	25° 17' 03.3417" S	28° 57' 33.5964" E
EX28-99	25° 17' 04.9807" S	28° 57' 36.2683" E
EX28-100	25° 17' 03.8938" S	28° 57' 37.0696" E
EX28-101	25° 17' 04.3082" S	28° 57' 37.7554" E
EX28-102	25° 17' 04.3398" S	28° 57' 37.8072" E
EX28-103	25° 17' 04.7948" S	28° 57' 38.5574" E
EX28-104	25° 17' 03.6501" S	28° 57' 39.2081" E
EX28-105	25° 17' 03.6169" S	28° 57' 39.2269" E
EX28-106	25° 17' 03.2574" S	28° 57' 39.4339" E
EX28-107	25° 17' 03.2429" S	28° 57' 39.4422" E
EX28-108	25° 17' 01.9867" S	28° 57' 40.1272" E
EX28-109	25° 17' 01.9689" S	28° 57' 40.1369" E
EX28-110	25° 17' 01.6202" S	28° 57' 40.3285" E
EX28-111	25° 17' 02.4023" S	28° 57' 42.4107" E
EX28-112	25° 17' 04.1841" S	28° 57' 47.1547" E
EX28-113	25° 17' 07.4633" S	28° 57' 52.9418" E
EX28-114	25° 17' 12.6964" S	28° 57' 49.2293" E
EX28-115	25° 17' 18.3756" S	28° 57' 46.2740" E
EX28-116	25° 17' 21.2478" S	28° 57' 44.2214" E
EX28-117	25° 17' 23.5752" S	28° 57' 42.5582" E
EX28-118	25° 17' 23.5752" S	28° 57' 42.5512" E
EX28-119	25° 17' 25.2001" S	28° 57' 46.2983" E
EX28-120	25° 17' 25.3965" S	28° 57' 46.7513" E
EX28-121	25° 17' 28.3793" S	28° 57' 50.0669" E
EX28-122	25° 17' 29.6429" S	28° 57' 47.9697" E
EX28-123	25° 17' 30.1304" S	28° 57' 47.8973" E
EX28-124	25° 17' 36.4376" S	28° 57' 46.9617" E
EX28-125	25° 17' 38.9517" S	28° 57' 38.9050" E
EX28-126	25° 17' 39.0221" S	28° 57' 38.5297" E
EX28-127	25° 17' 39.0476" S	28° 57' 38.3939" E
EX28-128	25° 17' 44.7518" S	28° 57' 41.4149" E
EX28-129	25° 17' 57.9632" S	28° 57' 26.6155" E
EX28-130	25° 18' 07.9480" S	28° 57' 15.6913" E
EX28-131	25° 18' 20.4823" S	28° 56' 54.4698" E
EX28-132	25° 18' 33.5045" S	28° 56' 31.5158" E
EX28-133	25° 18' 32.9617" S	28° 56' 31.1362" E
EX28-134	25° 18' 33.3331" S	28° 56' 30.4941" E
EX28-135	25° 18' 33.8555" S	28° 56' 29.5912" E
EX28-136	25° 18' 34.3740" S	28° 56' 28.6948" E
EX28-137	25° 18' 35.9407" S	28° 56' 25.9867" E
EX28-138	25° 18' 36.4625" S	28° 56' 25.0847" E
EX28-139	25° 18' 36.9810" S	28° 56' 24.1884" E
EX28-140	25° 18' 39.8538" S	28° 56' 19.2224" E
EX28-141	25° 18' 40.3731" S	28° 56' 18.3247" E
EX28-142	25° 18' 42.1222" S	28° 56' 15.3011" E
EX28-143	25° 18' 31.3923" S	28° 56' 08.2126" E
EX28-144	25° 18' 31.3825" S	28° 56' 08.2058" E
EX28-145	25° 18' 31.3774" S	28° 56' 08.2022" E
EX28-146	25° 18' 30.2672" S	28° 56' 07.4251" E
EX28-147	25° 18' 29.7167" S	28° 56' 07.0395" E

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 62 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No.

M B Straughan
G.Pr. LS0907D

09 October 2025
date

For applicant

Owain Jackson
name

signature

09 October 2025
date

signature

date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	**Dwg:** reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

friedlaender, burger & volkmann

Point	Latitude	Longitude
EX28-148	25° 18' 29.1748" S	28° 56' 06.6602" E
EX28-149	25° 18' 28.6293" S	28° 56' 06.2783" E
EX28-150	25° 18' 28.0778" S	28° 56' 05.8922" E
EX28-151	25° 18' 27.5291" S	28° 56' 05.5080" E
EX28-152	25° 18' 26.9841" S	28° 56' 05.1265" E
EX28-153	25° 18' 26.4241" S	28° 56' 04.7345" E
EX28-154	25° 18' 25.8821" S	28° 56' 04.3550" E
EX28-155	25° 18' 25.3339" S	28° 56' 03.9712" E
EX28-156	25° 18' 24.7824" S	28° 56' 03.5851" E
EX28-157	25° 18' 24.2355" S	28° 56' 03.2023" E
EX28-158	25° 18' 23.6850" S	28° 56' 02.8169" E
EX28-159	25° 18' 23.1369" S	28° 56' 02.4332" E
EX28-160	25° 18' 22.5826" S	28° 56' 02.0452" E
EX28-161	25° 18' 21.9335" S	28° 56' 01.5907" E
EX28-162	25° 18' 21.4124" S	28° 56' 02.4921" E
EX28-163	25° 18' 21.1486" S	28° 56' 02.9482" E
EX28-164	25° 18' 18.2694" S	28° 56' 00.0488" E
EX28-165	25° 18' 16.9338" S	28° 55' 59.4560" E
EX28-166	25° 18' 10.0671" S	28° 55' 56.4084" E
EX28-167	25° 18' 09.9546" S	28° 55' 56.3585" E
EX28-168	25° 18' 08.9982" S	28° 55' 55.9341" E
EX28-169	25° 18' 08.3951" S	28° 55' 55.6664" E
EX28-170	25° 18' 07.7838" S	28° 55' 55.3952" E
EX28-171	25° 18' 07.1814" S	28° 55' 55.1278" E
EX28-172	25° 18' 06.5665" S	28° 55' 54.8549" E
EX28-173	25° 18' 05.9633" S	28° 55' 54.5872" E
EX28-174	25° 18' 05.3437" S	28° 55' 54.3123" E
EX28-175	25° 18' 05.1633" S	28° 55' 54.2322" E
EX28-176	25° 18' 05.1916" S	28° 55' 54.0343" E
EX28-177	25° 18' 05.4723" S	28° 55' 52.0781" E
EX28-178	25° 18' 03.5571" S	28° 55' 51.9504" E
EX28-179	25° 18' 02.5536" S	28° 55' 51.8835" E
EX28-180	25° 18' 01.9037" S	28° 55' 51.8401" E
EX28-181	25° 18' 01.2544" S	28° 55' 51.7969" E
EX28-182	25° 18' 00.2524" S	28° 55' 51.7300" E
EX28-183	25° 17' 59.4830" S	28° 55' 51.6787" E
EX28-184	25° 17' 58.4030" S	28° 55' 51.6067" E
EX28-185	25° 17' 55.9143" S	28° 55' 51.4408" E
EX28-186	25° 17' 49.6126" S	28° 55' 51.0205" E
EX29-1	25° 20' 41.2458" S	28° 57' 19.2091" E
EX29-2	25° 20' 44.3686" S	28° 57' 20.1971" E
EX29-3	25° 20' 47.6609" S	28° 57' 13.3906" E
EX29-4	25° 20' 48.0498" S	28° 57' 13.6134" E
EX29-5	25° 20' 48.1695" S	28° 57' 13.6855" E
EX29-6	25° 20' 48.3819" S	28° 57' 13.8081" E
EX29-7	25° 20' 48.5305" S	28° 57' 13.8927" E
EX29-8	25° 20' 49.2493" S	28° 57' 14.3102" E
EX29-9	25° 20' 49.9667" S	28° 57' 14.7270" E

Point	Latitude	Longitude
EX29-10	25° 20' 50.6912" S	28° 57' 15.1479" E
EX29-11	25° 20' 51.4169" S	28° 57' 15.5360" E
EX29-12	25° 20' 52.1167" S	28° 57' 15.9760" E
EX29-13	25° 20' 52.8416" S	28° 57' 16.3972" E
EX29-14	25° 20' 53.5772" S	28° 57' 16.8033" E
EX29-15	25° 20' 54.3007" S	28° 57' 17.2238" E
EX29-16	25° 20' 55.1581" S	28° 57' 17.7441" E
EX29-17	25° 20' 55.7369" S	28° 57' 16.5198" E
EX29-18	25° 20' 56.1106" S	28° 57' 15.7294" E
EX29-19	25° 20' 56.4876" S	28° 57' 14.9320" E
EX29-20	25° 20' 56.9423" S	28° 57' 13.9702" E
EX29-21	25° 21' 00.4254" S	28° 57' 15.9501" E
EX29-22	25° 21' 00.7652" S	28° 57' 15.1216" E
EX29-23	25° 21' 01.2741" S	28° 57' 14.1386" E
EX29-24	25° 21' 02.0024" S	28° 57' 13.9416" E
EX29-25	25° 21' 02.7883" S	28° 57' 13.7289" E
EX29-26	25° 21' 03.5869" S	28° 57' 13.5128" E
EX29-27	25° 21' 04.3664" S	28° 57' 13.3018" E
EX29-28	25° 21' 05.1521" S	28° 57' 13.0892" E
EX29-29	25° 21' 05.9471" S	28° 57' 12.8740" E
EX29-30	25° 21' 06.7302" S	28° 57' 12.6621" E
EX29-31	25° 21' 07.5065" S	28° 57' 12.4159" E
EX29-32	25° 21' 07.2348" S	28° 57' 11.2263" E
EX29-33	25° 21' 08.8099" S	28° 57' 10.7898" E
EX29-34	25° 21' 09.8933" S	28° 57' 10.5152" E
EX29-35	25° 21' 09.6954" S	28° 57' 09.6332" E
EX29-36	25° 21' 09.5014" S	28° 57' 08.7684" E
EX29-37	25° 21' 09.3078" S	28° 57' 07.9060" E
EX29-38	25° 21' 09.0768" S	28° 57' 07.0326" E
EX29-39	25° 21' 08.0064" S	28° 57' 07.3220" E
EX29-40	25° 20' 57.9300" S	28° 57' 10.0472" E
EX29-41	25° 20' 47.4933" S	28° 57' 03.9992" E
EX29-42	25° 20' 47.5058" S	28° 57' 02.7278" E
EX29-43	25° 20' 47.5032" S	28° 57' 01.3824" E
EX29-44	25° 21' 04.3055" S	28° 57' 01.7848" E
EX29-45	25° 21' 05.6476" S	28° 57' 01.8169" E
EX29-46	25° 21' 05.9086" S	28° 57' 01.3756" E
EX29-47	25° 21' 06.3269" S	28° 57' 00.6681" E
EX29-48	25° 21' 06.7583" S	28° 56' 59.9450" E
EX29-49	25° 21' 07.1645" S	28° 56' 59.2013" E
EX29-50	25° 21' 07.6156" S	28° 56' 58.4922" E
EX29-51	25° 21' 08.0338" S	28° 56' 57.7834" E
EX29-52	25° 21' 08.4454" S	28° 56' 57.0860" E
EX29-53	25° 21' 08.7611" S	28° 56' 56.5581" E
EX29-54	25° 21' 08.8883" S	28° 56' 56.3429" E
EX29-55	25° 21' 09.4166" S	28° 56' 55.4489" E
EX29-56	25° 21' 09.4240" S	28° 56' 54.4394" E
EX29-57	25° 21' 09.4276" S	28° 56' 53.9265" E

Point	Latitude	Longitude
EX29-58	25° 21' 09.4708" S	28° 56' 53.5405" E
EX29-59	25° 21' 09.4877" S	28° 56' 52.6432" E
EX29-60	25° 21' 09.5045" S	28° 56' 51.7530" E
EX29-61	25° 21' 09.5215" S	28° 56' 50.8468" E
EX29-62	25° 21' 09.5385" S	28° 56' 49.9467" E
EX29-63	25° 21' 09.5554" S	28° 56' 49.0494" E
EX29-64	25° 21' 09.5722" S	28° 56' 48.1546" E
EX29-65	25° 21' 09.5891" S	28° 56' 47.2576" E
EX29-66	25° 21' 09.6361" S	28° 56' 44.7617" E
EX29-67	25° 21' 09.6550" S	28° 56' 43.7556" E
EX29-68	25° 21' 09.6739" S	28° 56' 42.7507" E
EX29-69	25° 21' 09.6926" S	28° 56' 41.7544" E
EX29-70	25° 21' 09.7116" S	28° 56' 40.7454" E
EX29-71	25° 21' 09.7305" S	28° 56' 39.7400" E
EX29-72	25° 21' 09.7504" S	28° 56' 38.6794" E
EX29-73	25° 21' 09.7608" S	28° 56' 38.1279" E
EX29-74	25° 21' 09.7845" S	28° 56' 36.8664" E
EX29-75	25° 21' 08.9878" S	28° 56' 36.8477" E
EX29-76	25° 21' 08.1692" S	28° 56' 36.8284" E
EX29-77	25° 21' 07.3507" S	28° 56' 36.8092" E
EX29-78	25° 21' 06.5362" S	28° 56' 36.7900" E
EX29-79	25° 21' 05.7292" S	28° 56' 36.7710" E
EX29-80	25° 21' 04.9178" S	28° 56' 36.7520" E
EX29-81	25° 21' 04.1098" S	28° 56' 36.7330" E
EX29-82	25° 21' 03.2990" S	28° 56' 36.7139" E
EX29-83	25° 21' 02.4853" S	28° 56' 36.6948" E
EX29-84	25° 21' 01.6790" S	28° 56' 36.6758" E
EX29-85	25° 21' 00.8649" S	28° 56' 36.6567" E
EX29-86	25° 21' 00.0463" S	28° 56' 36.6375" E
EX29-87	25° 20' 59.9886" S	28° 56' 36.6361" E
EX29-88	25° 20' 59.1616" S	28° 56' 36.6167" E
EX29-89	25° 20' 58.3555" S	28° 56' 36.5977" E
EX29-90	25° 20' 56.7504" S	28° 56' 36.5600" E
EX29-91	25° 20' 55.8295" S	28° 56' 36.5383" E
EX29-92	25° 20' 54.8330" S	28° 56' 36.5297" E
EX29-93	25° 20' 53.8620" S	28° 56' 36.4897" E
EX29-94	25° 20' 52.9123" S	28° 56' 36.4678" E
EX29-95	25° 20' 51.9968" S	28° 56' 36.4466" E
EX29-96	25° 20' 51.2213" S	28° 56' 36.4286" E
EX29-97	25° 20' 50.4315" S	28° 56' 36.4104" E
EX29-98	25° 20' 50.3655" S	28° 56' 36.4088" E
EX29-99	25° 20' 49.5469" S	28° 56' 36.3899" E
EX29-100	25° 20' 48.7370" S	28° 56' 36.3712" E
EX29-101	25° 20' 47.9350" S	28° 56' 36.3526" E
EX29-102	25° 20' 47.1184" S	28° 56' 36.3337" E
EX29-103	25° 20' 46.3072" S	28° 56' 36.3150" E
EX29-104	25° 20' 45.5006" S	28° 56' 36.2963" E
EX29-105	25° 20' 44.6952" S	28° 56' 36.2777" E

Point	Latitude	Longitude
EX29-106	25° 20' 43.8767" S	28° 56' 36.2587" E
EX29-107	25° 20' 43.0665" S	28° 56' 36.2771" E
EX29-108	25° 20' 42.2478" S	28° 56' 36.2572" E
EX29-109	25° 20' 42.0494" S	28° 56' 36.2932" E
EX29-110	25° 20' 41.0336" S	28° 56' 36.1930" E
EX29-111	25° 20' 30.9781" S	28° 56' 35.9879" E
EX29-112	25° 20' 29.9391" S	28° 56' 35.9741" E
EX29-113	25° 20' 29.1272" S	28° 56' 35.9633" E
EX29-114	25° 20' 28.3173" S	28° 56' 35.9525" E
EX29-115	25° 20' 27.5083" S	28° 56' 35.9418" E
EX29-116	25° 20' 26.6905" S	28° 56' 35.9309" E
EX29-117	25° 20' 25.8865" S	28° 56' 35.9202" E
EX29-118	25° 20' 25.0778" S	28° 56' 35.9094" E
EX29-119	25° 20' 24.2688" S	28° 56' 35.8987" E
EX29-120	25° 20' 23.4512" S	28° 56' 35.8878" E
EX29-121	25° 20' 22.6459" S	28° 56' 35.8771" E
EX29-122	25° 20' 21.8294" S	28° 56' 35.8662" E
EX29-123	25° 20' 21.0207" S	28° 56' 35.8554" E
EX29-124	25° 20' 20.2139" S	28° 56' 35.8447" E
EX29-125	25° 20' 19.3956" S	28° 56' 35.8339" E
EX29-126	25° 20' 17.5030" S	28° 56' 35.8087" E
EX29-127	25° 20' 16.6043" S	28° 56' 35.7966" E
EX29-128	25° 20' 15.9308" S	28° 56' 35.7876" E
EX29-129	25° 20' 15.2922" S	28° 56' 35.7790" E
EX29-130	25° 20' 14.6622" S	28° 56' 35.7705" E
EX29-131	25° 20' 14.1598" S	28° 56' 35.7637" E
EX29-132	25° 20' 13.3778" S	28° 56' 35.7532" E
EX29-133	25° 20' 12.5946" S	28° 56' 35.7715" E
EX29-134	25° 20' 11.8143" S	28° 56' 35.7322" E
EX29-135	25° 20' 11.0273" S	28° 56' 35.7216" E
EX29-136	25° 20' 10.2470" S	28° 56' 35.7111" E
EX29-137	25° 20' 09.4652" S	28° 56' 35.7006" E
EX29-138	25° 20' 08.6864" S	28° 56' 35.6901" E
EX29-139	25° 20' 07.9046" S	28° 56' 35.6796" E
EX29-140	25° 20' 07.1302" S	28° 56' 35.6692" E
EX29-141	25° 20' 06.3484" S	28° 56' 35.6587" E
EX29-142	25° 20' 05.5680" S	28° 56' 35.6683" E
EX29-143	25° 20' 04.7946" S	28° 56' 35.6378" E
EX29-144	25° 20' 04.7213" S	28° 56' 35.6368" E
EX29-145	25° 20' 03.9424" S	28° 56' 35.6263" E
EX29-146	25° 20' 03.1602" S	28° 56' 35.6158" E
EX29-147	25° 20' 02.3786" S	28° 56' 35.6053" E
EX29-148	25° 20' 01.5861" S	28° 56' 35.5946" E
EX29-149	25° 20' 00.8072" S	28° 56' 35.5786" E
EX29-150	25° 20' 00.0276" S	28° 56' 35.5678" E
EX29-151	25° 19' 59.3241" S	28° 56' 35.5581" E
EX29-152	25° 19' 58.7559" S	28° 56' 36.0081" E
EX29-153	25° 19' 58.0937" S	28° 56' 36.5326" E

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 63 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. — M B Straughan G.Pr. LS0907D — 09 October 2025 date

For applicant Owain Jackson name

signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	Dwg: reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

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Point	Latitude	Longitude
EX29-154	25° 19' 57.4317" S	28° 56' 37.0569" E
EX29-155	25° 19' 56.7800" S	28° 56' 37.5731" E
EX29-156	25° 19' 56.0986" S	28° 56' 38.1128" E
EX29-157	25° 19' 56.7680" S	28° 56' 39.1267" E
EX29-158	25° 20' 02.9218" S	28° 56' 48.4472" E
EX29-159	25° 20' 16.8625" S	28° 57' 01.2697" E
EX29-160	25° 20' 18.5456" S	28° 57' 02.8179" E
EX29-161	25° 20' 22.0810" S	28° 57' 06.1430" E
EX30-1	25° 19' 30.4688" S	28° 56' 44.4118" E
EX30-2	25° 19' 55.9546" S	28° 56' 35.7303" E
EX30-3	25° 19' 55.5738" S	28° 56' 34.3628" E
EX30-4	25° 19' 55.1682" S	28° 56' 34.1255" E
EX30-5	25° 19' 52.8933" S	28° 56' 25.9513" E
EX30-6	25° 19' 50.7918" S	28° 56' 23.0206" E
EX30-7	25° 19' 42.5496" S	28° 56' 18.4052" E
EX30-8	25° 19' 42.1073" S	28° 56' 19.3612" E
EX30-9	25° 19' 42.1926" S	28° 56' 19.6498" E
EX30-10	25° 19' 41.8643" S	28° 56' 20.3593" E
EX30-11	25° 19' 31.2009" S	28° 56' 20.2624" E
EX30-12	25° 19' 29.4872" S	28° 56' 19.8886" E
EX30-13	25° 19' 19.4270" S	28° 56' 15.4225" E
EX30-14	25° 19' 11.4143" S	28° 56' 13.6331" E
EX30-15	25° 19' 06.6153" S	28° 56' 13.4972" E
EX30-16	25° 19' 04.0492" S	28° 56' 14.2289" E
EX30-17	25° 19' 03.5021" S	28° 56' 14.3849" E
EX30-18	25° 19' 03.0475" S	28° 56' 14.5145" E
EX30-19	25° 19' 02.8996" S	28° 56' 14.5966" E
EX30-20	25° 19' 02.2111" S	28° 56' 14.9789" E
EX30-21	25° 19' 01.4837" S	28° 56' 15.3827" E
EX30-22	25° 19' 00.9104" S	28° 56' 15.7010" E
EX30-23	25° 19' 00.1152" S	28° 56' 16.1425" E
EX30-24	25° 18' 59.7586" S	28° 56' 16.3404" E
EX30-25	25° 18' 59.5032" S	28° 56' 16.5806" E
EX30-26	25° 18' 59.0418" S	28° 56' 17.0146" E
EX30-27	25° 18' 58.5058" S	28° 56' 17.5188" E
EX30-28	25° 18' 57.9999" S	28° 56' 17.9946" E
EX30-29	25° 18' 57.4718" S	28° 56' 18.4913" E
EX30-30	25° 18' 57.3242" S	28° 56' 18.6937" E
EX30-31	25° 18' 56.9113" S	28° 56' 19.2602" E
EX30-32	25° 18' 56.5076" S	28° 56' 19.8141" E
EX30-33	25° 18' 55.9383" S	28° 56' 20.5951" E
EX30-34	25° 18' 55.3594" S	28° 56' 21.6157" E
EX30-35	25° 18' 54.9017" S	28° 56' 22.4225" E
EX30-36	25° 18' 54.5569" S	28° 56' 23.0303" E
EX30-37	25° 18' 54.3809" S	28° 56' 23.3406" E
EX30-38	25° 18' 54.2274" S	28° 56' 23.7989" E
EX30-39	25° 18' 54.0382" S	28° 56' 24.3638" E
EX30-40	25° 18' 53.8096" S	28° 56' 25.0466" E

Point	Latitude	Longitude
EX30-41	25° 18' 53.5804" S	28° 56' 25.7310" E
EX30-42	25° 18' 53.3516" S	28° 56' 26.4143" E
EX30-43	25° 18' 53.1364" S	28° 56' 27.0568" E
EX30-44	25° 18' 52.9086" S	28° 56' 27.7372" E
EX30-45	25° 18' 52.6850" S	28° 56' 28.4048" E
EX30-46	25° 18' 52.4738" S	28° 56' 29.0355" E
EX30-47	25° 18' 52.3180" S	28° 56' 29.5008" E
EX30-48	25° 18' 52.1100" S	28° 56' 30.1218" E
EX30-49	25° 18' 51.7824" S	28° 56' 31.1001" E
EX30-50	25° 18' 51.5048" S	28° 56' 31.9290" E
EX30-51	25° 18' 50.7234" S	28° 56' 34.2623" E
EX30-52	25° 18' 49.9442" S	28° 56' 34.5576" E
EX30-53	25° 18' 46.8919" S	28° 56' 32.4615" E
EX30-54	25° 18' 52.0688" S	28° 56' 23.3775" E
EX30-55	25° 18' 45.1794" S	28° 56' 18.6466" E
EX30-56	25° 18' 41.8119" S	28° 56' 24.5548" E
EX30-57	25° 18' 38.0166" S	28° 56' 31.2134" E
EX30-58	25° 18' 39.4706" S	28° 56' 29.6810" E
EX30-59	25° 18' 40.1416" S	28° 56' 29.5087" E
EX30-60	25° 18' 42.2016" S	28° 56' 30.9228" E
EX30-61	25° 18' 42.4135" S	28° 56' 31.9098" E
EX30-62	25° 18' 39.7245" S	28° 56' 36.6471" E
EX30-63	25° 18' 31.8406" S	28° 56' 50.5304" E
EX30-64	25° 18' 30.9450" S	28° 56' 50.7589" E
EX30-65	25° 18' 29.2406" S	28° 56' 49.5882" E
EX30-66	25° 18' 28.7015" S	28° 56' 49.2179" E
EX30-67	25° 18' 28.4944" S	28° 56' 48.2320" E
EX30-68	25° 18' 27.2892" S	28° 56' 50.3536" E
EX30-69	25° 18' 28.1840" S	28° 56' 50.1262" E
EX30-70	25° 18' 30.4282" S	28° 56' 51.6676" E
EX30-71	25° 18' 30.6351" S	28° 56' 52.6526" E
EX30-72	25° 18' 27.5988" S	28° 56' 58.0027" E
EX30-73	25° 18' 11.9585" S	28° 57' 24.7841" E
EX30-74	25° 18' 10.7116" S	28° 57' 24.9652" E
EX30-75	25° 18' 07.5787" S	28° 57' 21.9308" E
EX30-76	25° 18' 07.5107" S	28° 57' 20.8922" E
EX30-77	25° 18' 05.9713" S	28° 57' 22.8615" E
EX30-78	25° 18' 06.8670" S	28° 57' 22.7771" E
EX30-79	25° 18' 08.8450" S	28° 57' 24.5979" E
EX30-80	25° 18' 09.8313" S	28° 57' 32.0578" E
EX30-81	25° 18' 10.1814" S	28° 57' 34.9765" E
EX30-82	25° 18' 27.1078" S	28° 58' 04.0087" E
EX30-83	25° 18' 30.1070" S	28° 58' 05.9645" E
EX30-84	25° 18' 37.4927" S	28° 58' 05.9578" E
EX30-85	25° 18' 48.9091" S	28° 57' 57.9020" E
EX30-86	25° 19' 02.0401" S	28° 57' 37.5560" E
EX30-87	25° 19' 30.0184" S	28° 56' 53.7335" E
EX30-88	25° 19' 30.6912" S	28° 56' 49.2434" E

Point	Latitude	Longitude
EX30-89	25° 19' 30.5010" S	28° 56' 47.3962" E
EX30-90	25° 19' 30.0103" S	28° 56' 45.2937" E
EX31-1	25° 21' 36.3286" S	28° 57' 51.2678" E
EX31-2	25° 21' 42.3867" S	28° 57' 52.1357" E
EX31-3	25° 21' 43.2258" S	28° 57' 52.2561" E
EX31-4	25° 21' 44.0664" S	28° 57' 52.3768" E
EX31-5	25° 21' 44.8697" S	28° 57' 52.4921" E
EX31-6	25° 21' 45.6796" S	28° 57' 52.6084" E
EX31-7	25° 21' 46.4767" S	28° 57' 52.7228" E
EX31-8	25° 21' 47.2915" S	28° 57' 52.8398" E
EX31-9	25° 21' 48.1028" S	28° 57' 52.9563" E
EX31-10	25° 21' 48.9067" S	28° 57' 53.0717" E
EX31-11	25° 21' 49.7139" S	28° 57' 53.1876" E
EX31-12	25° 21' 50.5025" S	28° 57' 53.3008" E
EX31-13	25° 21' 51.4322" S	28° 57' 53.4343" E
EX31-14	25° 21' 53.2850" S	28° 57' 53.7003" E
EX31-15	25° 21' 53.3580" S	28° 57' 53.7108" E
EX31-16	25° 21' 55.8587" S	28° 57' 54.0698" E
EX31-17	25° 21' 57.1196" S	28° 57' 54.2508" E
EX31-18	25° 21' 58.2007" S	28° 57' 54.4060" E
EX31-19	25° 21' 59.1748" S	28° 57' 54.5459" E
EX31-20	25° 21' 59.2482" S	28° 57' 54.5659" E
EX31-21	25° 22' 00.8929" S	28° 57' 55.0139" E
EX31-22	25° 22' 09.4411" S	28° 57' 55.4922" E
EX31-23	25° 22' 09.6018" S	28° 57' 51.8950" E
EX31-24	25° 22' 09.6581" S	28° 57' 50.6355" E
EX31-25	25° 22' 09.7139" S	28° 57' 49.3857" E
EX31-26	25° 22' 09.8735" S	28° 57' 45.8134" E
EX31-27	25° 22' 01.3353" S	28° 57' 45.3338" E
EX31-28	25° 21' 55.2935" S	28° 57' 42.2013" E
EX31-29	25° 21' 55.2522" S	28° 57' 42.1765" E
EX31-30	25° 21' 48.0698" S	28° 57' 37.8554" E
EX31-31	25° 21' 46.6542" S	28° 57' 36.2158" E
EX31-32	25° 21' 45.3879" S	28° 57' 33.5695" E
EX31-33	25° 21' 44.0110" S	28° 57' 30.7096" E
EX31-34	25° 21' 44.7175" S	28° 57' 30.2946" E
EX31-35	25° 21' 45.2384" S	28° 57' 29.9887" E
EX31-36	25° 21' 45.2644" S	28° 57' 28.8146" E
EX31-37	25° 21' 45.2835" S	28° 57' 27.9525" E
EX31-38	25° 21' 45.3026" S	28° 57' 27.0905" E
EX31-39	25° 21' 45.3216" S	28° 57' 26.2321" E
EX31-40	25° 21' 45.3232" S	28° 57' 26.1624" E
EX31-41	25° 21' 45.3422" S	28° 57' 25.3054" E
EX31-42	25° 21' 45.3612" S	28° 57' 24.4433" E
EX31-43	25° 21' 45.3802" S	28° 57' 23.5854" E
EX31-44	25° 21' 45.3991" S	28° 57' 22.7350" E
EX31-45	25° 21' 45.4182" S	28° 57' 21.8733" E
EX31-46	25° 21' 45.4373" S	28° 57' 21.0125" E

Point	Latitude	Longitude
EX31-47	25° 21' 45.4566" S	28° 57' 20.1426" E
EX31-48	25° 21' 45.4941" S	28° 57' 18.4460" E
EX31-49	25° 21' 45.5318" S	28° 57' 16.7415" E
EX31-50	25° 21' 45.2093" S	28° 57' 16.3137" E
EX31-51	25° 21' 44.4718" S	28° 57' 15.3356" E
EX31-52	25° 21' 46.5513" S	28° 57' 13.4166" E
EX31-53	25° 21' 46.0106" S	28° 57' 12.7431" E
EX31-54	25° 21' 45.2158" S	28° 57' 11.7533" E
EX31-55	25° 21' 44.4652" S	28° 57' 10.8183" E
EX31-56	25° 21' 44.1405" S	28° 57' 10.4139" E
EX31-57	25° 21' 43.5757" S	28° 57' 09.7104" E
EX31-58	25° 21' 43.0470" S	28° 57' 09.0519" E
EX31-59	25° 21' 42.5108" S	28° 57' 08.3841" E
EX31-60	25° 21' 41.9707" S	28° 57' 07.7114" E
EX31-61	25° 21' 41.4360" S	28° 57' 07.0455" E
EX31-62	25° 21' 40.9018" S	28° 57' 06.3802" E
EX31-63	25° 21' 40.3650" S	28° 57' 05.7116" E
EX31-64	25° 21' 39.8268" S	28° 57' 05.0414" E
EX31-65	25° 21' 39.2902" S	28° 57' 04.3730" E
EX31-66	25° 21' 38.7519" S	28° 57' 03.7026" E
EX31-67	25° 21' 38.2211" S	28° 57' 03.0415" E
EX31-68	25° 21' 37.6652" S	28° 57' 02.3492" E
EX31-69	25° 21' 37.5046" S	28° 57' 02.1492" E
EX31-70	25° 21' 37.3340" S	28° 57' 01.9487" E
EX31-71	25° 21' 37.3327" S	28° 57' 01.9470" E
EX31-72	25° 21' 36.7522" S	28° 57' 01.2211" E
EX31-73	25° 21' 36.0523" S	28° 57' 00.3459" E
EX31-74	25° 21' 36.0836" S	28° 57' 00.3384" E
EX31-75	25° 21' 35.2991" S	28° 57' 00.0140" E
EX31-76	25° 21' 34.5683" S	28° 56' 59.7119" E
EX31-77	25° 21' 33.8341" S	28° 56' 59.4083" E
EX31-78	25° 21' 33.1082" S	28° 56' 59.1082" E
EX31-79	25° 21' 32.3692" S	28° 56' 58.8027" E
EX31-80	25° 21' 31.5711" S	28° 56' 58.4728" E
EX31-81	25° 21' 31.1961" S	28° 56' 59.5448" E
EX31-82	25° 21' 28.8730" S	28° 56' 59.4037" E
EX31-83	25° 21' 27.2465" S	28° 57' 00.2323" E
EX31-84	25° 21' 26.1817" S	28° 57' 00.7749" E
EX31-85	25° 21' 25.9919" S	28° 57' 00.8716" E
EX31-86	25° 21' 25.1506" S	28° 57' 01.3107" E
EX31-87	25° 21' 24.6628" S	28° 57' 01.5654" E
EX31-88	25° 21' 23.8101" S	28° 57' 02.0105" E
EX31-89	25° 21' 23.0730" S	28° 57' 02.3952" E
EX31-90	25° 21' 22.2558" S	28° 57' 02.8218" E
EX31-91	25° 21' 21.6430" S	28° 57' 03.5217" E
EX31-92	25° 21' 21.0784" S	28° 57' 04.1663" E
EX31-93	25° 21' 20.5083" S	28° 57' 04.8175" E
EX31-94	25° 21' 19.9471" S	28° 57' 05.4584" E

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 64 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No.

M B Straughan G.Pr. LS0907D — 09 October 2025 date

For applicant Owain Jackson name

signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	Dwg: reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

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Point	Latitude	Longitude
EX31-95	25° 21' 19.3916" S	28° 57' 06.0928" E
EX31-96	25° 21' 18.9487" S	28° 57' 06.5987" E
EX31-97	25° 21' 18.3793" S	28° 57' 07.2489" E
EX31-98	25° 21' 17.8181" S	28° 57' 07.8898" E
EX31-99	25° 21' 17.2597" S	28° 57' 08.5275" E
EX31-100	25° 21' 16.6980" S	28° 57' 09.1690" E
EX31-101	25° 21' 16.1359" S	28° 57' 09.8109" E
EX31-102	25° 21' 15.5713" S	28° 57' 10.4556" E
EX31-103	25° 21' 15.0138" S	28° 57' 11.0923" E
EX31-104	25° 21' 14.4420" S	28° 57' 11.7453" E
EX31-105	25° 21' 13.8800" S	28° 57' 12.3871" E
EX31-106	25° 21' 13.3113" S	28° 57' 13.0365" E
EX31-107	25° 21' 12.7495" S	28° 57' 13.6781" E
EX31-108	25° 21' 12.1931" S	28° 57' 14.3135" E
EX31-109	25° 21' 11.6294" S	28° 57' 14.9573" E
EX31-110	25° 21' 10.8375" S	28° 57' 15.8615" E
EX31-111	25° 21' 10.2916" S	28° 57' 16.4850" E
EX31-112	25° 21' 10.2683" S	28° 57' 16.5058" E
EX31-113	25° 21' 09.6430" S	28° 57' 17.0633" E
EX31-114	25° 21' 08.9850" S	28° 57' 17.6499" E
EX31-115	25° 21' 07.4988" S	28° 57' 18.9751" E
EX31-116	25° 21' 06.5830" S	28° 57' 18.4401" E
EX31-117	25° 21' 06.2288" S	28° 57' 19.2450" E
EX31-118	25° 21' 05.8241" S	28° 57' 20.1648" E
EX31-119	25° 21' 05.4822" S	28° 57' 20.9416" E
EX31-120	25° 21' 05.1454" S	28° 57' 21.7070" E
EX31-121	25° 21' 04.8058" S	28° 57' 22.4787" E
EX31-122	25° 21' 04.4618" S	28° 57' 23.2603" E
EX31-123	25° 21' 04.1237" S	28° 57' 24.0286" E
EX31-124	25° 21' 03.7709" S	28° 57' 24.8305" E
EX31-125	25° 21' 04.7974" S	28° 57' 25.3817" E
EX31-126	25° 21' 08.1628" S	28° 57' 27.1893" E
EX31-127	25° 21' 12.3045" S	28° 57' 29.4179" E
EX31-128	25° 21' 14.2957" S	28° 57' 28.3880" E
EX31-129	25° 21' 14.5123" S	28° 57' 28.4736" E
EX31-130	25° 21' 17.4871" S	28° 57' 35.3984" E
EX31-131	25° 21' 18.6230" S	28° 57' 38.1429" E
EX31-132	25° 21' 22.7596" S	28° 57' 45.4229" E
EX31-133	25° 21' 25.7449" S	28° 57' 49.8717" E
EX32-1	25° 16' 39.5771" S	28° 59' 35.9734" E
EX32-2	25° 16' 39.1017" S	28° 59' 35.6889" E
EX32-3	25° 16' 38.7968" S	28° 59' 35.4555" E
EX32-4	25° 16' 38.1667" S	28° 59' 35.1364" E
EX32-5	25° 16' 38.4224" S	28° 59' 34.3962" E
EX32-6	25° 16' 37.4058" S	28° 59' 33.8380" E
EX32-7	25° 16' 36.8599" S	28° 59' 33.5621" E
EX32-8	25° 16' 36.0260" S	28° 59' 33.0850" E
EX32-9	25° 16' 35.6858" S	28° 59' 34.0040" E
EX32-10	25° 16' 35.3188" S	28° 59' 34.9958" E
EX32-11	25° 16' 34.9719" S	28° 59' 35.9329" E
EX32-12	25° 16' 35.8604" S	28° 59' 36.2070" E
EX32-13	25° 16' 34.2692" S	28° 59' 40.3921" E
EX32-14	25° 16' 33.6771" S	28° 59' 41.7013" E
EX32-15	25° 16' 32.4124" S	28° 59' 43.7026" E
EX32-16	25° 16' 31.6176" S	28° 59' 45.1330" E
EX32-17	25° 16' 30.0577" S	28° 59' 45.4494" E
EX32-18	25° 16' 28.2026" S	28° 59' 52.3121" E
EX32-19	25° 16' 34.7356" S	28° 59' 54.5686" E
EX32-20	25° 16' 34.9982" S	28° 59' 53.6039" E
EX32-21	25° 16' 39.9193" S	28° 59' 54.3039" E
EX32-22	25° 16' 38.8908" S	28° 59' 58.5830" E
EX32-23	25° 16' 39.3496" S	28° 59' 58.7441" E
EX32-24	25° 16' 40.2954" S	28° 59' 58.9946" E
EX32-25	25° 16' 41.2892" S	28° 59' 59.2578" E
EX32-26	25° 16' 43.2415" S	28° 59' 58.7169" E
EX32-27	25° 16' 43.5944" S	28° 59' 58.6304" E
EX32-28	25° 16' 44.1523" S	28° 59' 58.5094" E
EX32-29	25° 16' 45.2073" S	28° 59' 58.2805" E
EX32-30	25° 16' 45.7894" S	28° 59' 58.1512" E
EX32-31	25° 16' 47.3563" S	28° 59' 57.9084" E
EX32-32	25° 16' 48.6392" S	28° 59' 58.1500" E
EX32-33	25° 16' 49.1039" S	28° 59' 58.2375" E
EX32-34	25° 16' 48.9704" S	28° 59' 59.0779" E
EX32-35	25° 16' 48.6131" S	29° 00' 01.3256" E
EX32-36	25° 16' 50.5944" S	29° 00' 01.2803" E
EX32-37	25° 16' 50.9558" S	29° 00' 01.2595" E
EX32-38	25° 16' 52.5042" S	29° 00' 01.2402" E
EX32-39	25° 16' 53.5104" S	29° 00' 01.4586" E
EX32-40	25° 16' 54.0229" S	29° 00' 01.5397" E
EX32-41	25° 16' 55.1700" S	29° 00' 01.9488" E
EX32-42	25° 16' 56.4933" S	29° 00' 02.4208" E
EX32-43	25° 16' 56.8651" S	29° 00' 02.5498" E
EX32-44	25° 16' 58.3940" S	28° 59' 56.1663" E
EX32-45	25° 16' 59.3398" S	28° 59' 56.4690" E
EX32-46	25° 17' 00.2884" S	28° 59' 56.7723" E
EX32-47	25° 17' 00.7085" S	28° 59' 56.8744" E
EX32-48	25° 17' 01.8446" S	28° 59' 52.1486" E
EX32-49	25° 17' 03.0359" S	28° 59' 52.5801" E
EX32-50	25° 17' 04.0606" S	28° 59' 52.7852" E
EX32-51	25° 17' 04.6039" S	28° 59' 52.2755" E
EX32-52	25° 17' 05.6454" S	28° 59' 49.5947" E
EX32-53	25° 17' 05.6268" S	28° 59' 49.1046" E
EX32-54	25° 17' 06.6567" S	28° 59' 49.3191" E
EX32-55	25° 17' 06.7821" S	28° 59' 48.0995" E
EX32-56	25° 17' 07.5880" S	28° 59' 48.2456" E
EX32-57	25° 17' 07.6730" S	28° 59' 47.4580" E
EX32-58	25° 17' 07.7689" S	28° 59' 46.5681" E
EX32-59	25° 17' 07.9109" S	28° 59' 45.2512" E
EX32-60	25° 17' 07.3283" S	28° 59' 45.0773" E
EX32-61	25° 17' 07.4833" S	28° 59' 44.2990" E
EX32-62	25° 17' 07.6783" S	28° 59' 43.3200" E
EX32-63	25° 17' 07.8667" S	28° 59' 42.3737" E
EX32-64	25° 17' 08.0437" S	28° 59' 41.4851" E
EX32-65	25° 17' 09.4083" S	28° 59' 40.6435" E
EX32-66	25° 17' 11.8606" S	28° 59' 35.8786" E
EX32-67	25° 17' 12.4062" S	28° 59' 34.9960" E
EX32-68	25° 17' 11.9356" S	28° 59' 34.6512" E
EX32-69	25° 17' 11.3633" S	28° 59' 34.2319" E
EX32-70	25° 17' 10.8408" S	28° 59' 33.8491" E
EX32-71	25° 17' 10.3198" S	28° 59' 33.4674" E
EX32-72	25° 17' 09.9079" S	28° 59' 32.9567" E
EX32-73	25° 17' 09.4918" S	28° 59' 32.4409" E
EX32-74	25° 17' 09.0757" S	28° 59' 31.9251" E
EX32-75	25° 17' 10.2296" S	28° 59' 30.0467" E
EX32-76	25° 17' 12.6862" S	28° 59' 23.0394" E
EX32-77	25° 17' 09.0656" S	28° 59' 21.6329" E
EX32-78	25° 17' 11.1238" S	28° 59' 15.9072" E
EX32-79	25° 17' 09.1007" S	28° 59' 13.9293" E
EX32-80	25° 17' 09.2587" S	28° 59' 13.2035" E
EX32-81	25° 17' 09.4101" S	28° 59' 12.5083" E
EX32-82	25° 17' 09.5681" S	28° 59' 11.7824" E
EX32-83	25° 17' 10.2740" S	28° 59' 09.0293" E
EX32-84	25° 17' 09.7710" S	28° 59' 08.8614" E
EX32-85	25° 17' 10.1127" S	28° 59' 07.8594" E
EX32-86	25° 17' 09.4556" S	28° 59' 07.5984" E
EX32-87	25° 17' 08.8207" S	28° 59' 07.3463" E
EX32-88	25° 17' 07.9768" S	28° 59' 07.0111" E
EX32-89	25° 17' 07.9672" S	28° 59' 07.0072" E
EX32-90	25° 17' 07.4471" S	28° 59' 06.3914" E
EX32-91	25° 17' 07.4858" S	28° 59' 05.8306" E
EX32-92	25° 17' 06.8965" S	28° 59' 05.2345" E
EX32-93	25° 17' 07.8217" S	28° 59' 04.6410" E
EX32-94	25° 17' 07.1615" S	28° 59' 03.5441" E
EX32-95	25° 17' 07.3252" S	28° 59' 03.0358" E
EX32-96	25° 17' 08.9561" S	28° 59' 01.0078" E
EX32-97	25° 17' 05.1859" S	28° 58' 57.2034" E
EX32-98	25° 17' 05.2651" S	28° 58' 57.1842" E
EX32-99	25° 17' 06.1870" S	28° 58' 56.9603" E
EX32-100	25° 17' 07.0652" S	28° 58' 56.7470" E
EX32-101	25° 17' 08.1362" S	28° 58' 56.8465" E
EX32-102	25° 17' 08.9325" S	28° 58' 56.9204" E
EX32-103	25° 17' 08.5459" S	28° 58' 55.4646" E
EX32-104	25° 17' 08.5189" S	28° 58' 55.1801" E
EX32-105	25° 17' 08.9941" S	28° 58' 53.2763" E
EX32-106	25° 17' 08.7831" S	28° 58' 52.3234" E
EX32-107	25° 17' 08.8282" S	28° 58' 49.8445" E
EX32-108	25° 17' 08.8337" S	28° 58' 49.5446" E
EX32-109	25° 17' 08.8743" S	28° 58' 48.9540" E
EX32-110	25° 17' 08.9308" S	28° 58' 48.1318" E
EX32-111	25° 17' 08.9826" S	28° 58' 47.3776" E
EX32-112	25° 17' 08.0408" S	28° 58' 47.3731" E
EX32-113	25° 17' 07.7792" S	28° 58' 47.3719" E
EX32-114	25° 17' 06.5729" S	28° 58' 47.3636" E
EX32-115	25° 17' 06.2601" S	28° 58' 48.6665" E
EX32-116	25° 17' 06.0395" S	28° 58' 49.5858" E
EX32-117	25° 17' 05.9730" S	28° 58' 49.8625" E
EX32-118	25° 17' 04.9831" S	28° 58' 49.4516" E
EX32-119	25° 17' 04.5203" S	28° 58' 50.1735" E
EX32-120	25° 17' 03.8895" S	28° 58' 51.1573" E
EX32-121	25° 17' 03.6003" S	28° 58' 51.6083" E
EX32-122	25° 17' 03.2258" S	28° 58' 52.1925" E
EX32-123	25° 17' 02.7787" S	28° 58' 52.8898" E
EX32-124	25° 17' 02.4663" S	28° 58' 53.3770" E
EX32-125	25° 17' 02.1022" S	28° 58' 53.9449" E
EX32-126	25° 17' 01.7041" S	28° 58' 54.5657" E
EX32-127	25° 17' 01.4023" S	28° 58' 55.0362" E
EX32-128	25° 17' 00.9914" S	28° 58' 55.6766" E
EX32-129	25° 17' 00.5119" S	28° 58' 56.4240" E
EX32-130	25° 17' 00.1666" S	28° 58' 56.9622" E
EX32-131	25° 16' 59.9228" S	28° 58' 57.3421" E
EX32-132	25° 16' 59.6316" S	28° 58' 57.7960" E
EX32-133	25° 16' 59.2756" S	28° 58' 58.3509" E
EX32-134	25° 16' 58.8574" S	28° 58' 59.0027" E
EX32-135	25° 16' 58.5099" S	28° 58' 59.5442" E
EX32-136	25° 16' 57.7773" S	28° 59' 00.6895" E
EX32-137	25° 16' 57.3911" S	28° 59' 01.2932" E
EX32-138	25° 16' 57.0431" S	28° 59' 01.8372" E
EX32-139	25° 16' 56.6842" S	28° 59' 02.3982" E
EX32-140	25° 16' 56.3134" S	28° 59' 02.9779" E
EX32-141	25° 16' 55.8427" S	28° 59' 03.7137" E
EX32-142	25° 16' 55.4442" S	28° 59' 04.5202" E
EX32-143	25° 16' 55.1107" S	28° 59' 05.1951" E
EX32-144	25° 16' 54.7909" S	28° 59' 05.8423" E
EX32-145	25° 16' 54.6747" S	28° 59' 06.0776" E
EX32-146	25° 16' 52.9380" S	28° 59' 03.3174" E
EX32-147	25° 16' 53.0835" S	28° 59' 01.9895" E
EX32-148	25° 16' 51.2668" S	28° 59' 03.7633" E
EX32-149	25° 16' 52.3207" S	28° 59' 03.9169" E
EX32-150	25° 16' 53.5327" S	28° 59' 05.9455" E
EX32-151	25° 16' 53.4730" S	28° 59' 06.4870" E
EX32-152	25° 16' 47.6257" S	28° 59' 12.4521" E
EX32-153	25° 16' 46.9626" S	28° 59' 11.6659" E

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 65 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. — M B Straughan G.Pr. LS0907D — 09 October 2025 date

For applicant Owain Jackson name

signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	Dwg: reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

friedlaender, burger & volkmann

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Point	Latitude	Longitude
EX32-154	25° 16' 46.4861" S	28° 59' 12.1520" E
EX32-155	25° 16' 45.2947" S	28° 59' 13.3674" E
EX32-156	25° 16' 45.9577" S	28° 59' 14.1537" E
EX32-157	25° 16' 44.8581" S	28° 59' 15.5292" E
EX32-158	25° 16' 44.4337" S	28° 59' 15.4684" E
EX32-159	25° 16' 43.5786" S	28° 59' 14.0299" E
EX32-160	25° 16' 43.2465" S	28° 59' 14.2551" E
EX32-161	25° 16' 39.9388" S	28° 59' 17.0337" E
EX32-162	25° 16' 41.2398" S	28° 59' 18.2417" E
EX32-163	25° 16' 39.1168" S	28° 59' 19.5354" E
EX32-164	25° 16' 40.8303" S	28° 59' 22.1115" E
EX32-165	25° 16' 42.1999" S	28° 59' 23.5489" E
EX32-166	25° 16' 44.0107" S	28° 59' 25.0667" E
EX32-167	25° 16' 43.7384" S	28° 59' 25.5131" E
EX32-168	25° 16' 43.5950" S	28° 59' 26.2265" E
EX32-169	25° 16' 43.4508" S	28° 59' 26.9444" E
EX32-170	25° 16' 43.3213" S	28° 59' 27.5883" E
EX32-171	25° 16' 43.1805" S	28° 59' 28.2891" E
EX32-172	25° 16' 43.0265" S	28° 59' 29.0551" E
EX32-173	25° 16' 42.8697" S	28° 59' 29.8351" E
EX32-174	25° 16' 41.8756" S	28° 59' 29.5168" E
EX33-1	25° 30' 49.2404" S	28° 59' 57.0904" E
EX33-2	25° 30' 54.6872" S	29° 00' 01.0017" E
EX33-3	25° 30' 59.8308" S	28° 59' 59.8039" E
EX33-4	25° 31' 00.7160" S	28° 59' 59.9860" E
EX33-5	25° 31' 10.5154" S	29° 00' 07.0168" E
EX33-6	25° 31' 22.7535" S	28° 59' 46.3061" E
EX33-7	25° 31' 21.9579" S	28° 59' 41.5754" E
EX33-8	25° 31' 22.0872" S	28° 59' 41.3623" E
EX33-9	25° 31' 25.0771" S	28° 59' 40.6656" E
EX33-10	25° 31' 32.7401" S	28° 59' 27.6922" E
EX33-11	25° 31' 32.2044" S	28° 59' 24.8991" E
EX33-12	25° 31' 32.3297" S	28° 59' 24.6870" E
EX33-13	25° 31' 33.7850" S	28° 59' 24.3478" E
EX33-14	25° 31' 34.6706" S	28° 59' 22.8477" E
EX33-15	25° 31' 34.7109" S	28° 59' 22.4495" E
EX33-16	25° 31' 33.4055" S	28° 59' 20.4077" E
EX33-17	25° 31' 33.6563" S	28° 59' 19.9833" E
EX33-18	25° 31' 31.9079" S	28° 59' 18.7290" E
EX33-19	25° 31' 31.2543" S	28° 59' 18.2601" E
EX33-20	25° 31' 30.6005" S	28° 59' 17.7910" E
EX33-21	25° 31' 31.2210" S	28° 59' 16.7404" E
EX33-22	25° 31' 31.7984" S	28° 59' 15.7627" E
EX33-23	25° 31' 31.5293" S	28° 59' 14.3598" E
EX33-24	25° 31' 31.3949" S	28° 59' 13.6590" E
EX33-25	25° 31' 31.2604" S	28° 59' 12.9582" E
EX33-26	25° 31' 31.1259" S	28° 59' 12.2574" E
EX33-27	25° 31' 30.9915" S	28° 59' 11.5566" E

Point	Latitude	Longitude
EX33-28	25° 31' 30.8570" S	28° 59' 10.8558" E
EX33-29	25° 31' 30.7226" S	28° 59' 10.1551" E
EX33-30	25° 31' 30.6956" S	28° 59' 10.0145" E
EX33-31	25° 31' 30.8450" S	28° 59' 09.7615" E
EX33-32	25° 31' 31.1996" S	28° 59' 09.1612" E
EX33-33	25° 31' 31.5541" S	28° 59' 08.5609" E
EX33-34	25° 31' 31.9086" S	28° 59' 07.9606" E
EX33-35	25° 31' 32.2632" S	28° 59' 07.3602" E
EX33-36	25° 31' 32.6178" S	28° 59' 06.7599" E
EX33-37	25° 31' 32.9723" S	28° 59' 06.1596" E
EX33-38	25° 31' 33.3269" S	28° 59' 05.5592" E
EX33-39	25° 31' 33.6815" S	28° 59' 04.9589" E
EX33-40	25° 31' 34.0360" S	28° 59' 04.3586" E
EX33-41	25° 31' 34.4083" S	28° 59' 03.7283" E
EX33-42	25° 31' 34.9401" S	28° 59' 02.8276" E
EX33-43	25° 31' 34.1228" S	28° 59' 02.2417" E
EX33-44	25° 31' 34.0411" S	28° 59' 02.1831" E
EX33-45	25° 31' 33.5373" S	28° 59' 01.8216" E
EX33-46	25° 31' 33.0335" S	28° 59' 01.4601" E
EX33-47	25° 31' 32.4888" S	28° 59' 01.0693" E
EX33-48	25° 31' 31.9441" S	28° 59' 00.6786" E
EX33-49	25° 31' 31.1270" S	28° 59' 00.0924" E
EX33-50	25° 31' 30.3100" S	28° 58' 59.5065" E
EX33-51	25° 31' 30.2282" S	28° 58' 59.4479" E
EX33-52	25° 31' 29.7653" S	28° 58' 59.1158" E
EX33-53	25° 31' 29.2206" S	28° 58' 58.7250" E
EX33-54	25° 31' 28.6758" S	28° 58' 58.3343" E
EX33-55	25° 31' 28.1312" S	28° 58' 57.9435" E
EX33-56	25° 31' 27.3141" S	28° 58' 57.3574" E
EX33-57	25° 31' 26.4970" S	28° 58' 56.7713" E
EX33-58	25° 31' 26.4153" S	28° 58' 56.7127" E
EX33-59	25° 31' 25.8842" S	28° 58' 56.3317" E
EX33-60	25° 31' 25.3518" S	28° 58' 55.9498" E
EX33-61	25° 31' 24.8070" S	28° 58' 55.5591" E
EX33-62	25° 31' 24.2623" S	28° 58' 55.1683" E
EX33-63	25° 31' 23.4451" S	28° 58' 54.5820" E
EX33-64	25° 31' 21.2664" S	28° 58' 53.0194" E
EX33-65	25° 30' 44.7991" S	28° 59' 54.7579" E
EX33-66	25° 30' 46.9777" S	28° 59' 56.3206" E
EX33-67	25° 30' 47.7411" S	28° 59' 56.0138" E
EX34-1	25° 28' 30.1967" S	28° 59' 43.8452" E
EX34-2	25° 28' 29.6793" S	28° 59' 43.9022" E
EX34-3	25° 28' 29.1619" S	28° 59' 43.9592" E
EX34-4	25° 28' 28.6446" S	28° 59' 44.0162" E
EX34-5	25° 28' 28.1272" S	28° 59' 44.0733" E
EX34-6	25° 28' 27.6098" S	28° 59' 44.1303" E
EX34-7	25° 28' 27.0925" S	28° 59' 44.1873" E
EX34-8	25° 28' 26.5751" S	28° 59' 44.2443" E

Point	Latitude	Longitude
EX34-9	25° 28' 26.0577" S	28° 59' 44.3013" E
EX34-10	25° 28' 25.5404" S	28° 59' 44.3583" E
EX34-11	25° 28' 25.0230" S	28° 59' 44.4153" E
EX34-12	25° 28' 24.5056" S	28° 59' 44.4723" E
EX34-13	25° 28' 23.9883" S	28° 59' 44.5293" E
EX34-14	25° 28' 23.4709" S	28° 59' 44.5863" E
EX34-15	25° 28' 22.9535" S	28° 59' 44.6433" E
EX34-16	25° 28' 22.4362" S	28° 59' 44.7003" E
EX34-17	25° 28' 21.9188" S	28° 59' 44.7573" E
EX34-18	25° 28' 21.4014" S	28° 59' 44.8144" E
EX34-19	25° 28' 20.8840" S	28° 59' 44.8714" E
EX34-20	25° 28' 20.3667" S	28° 59' 44.9284" E
EX34-21	25° 28' 19.3789" S	28° 59' 45.0372" E
EX34-22	25° 28' 18.3548" S	28° 59' 45.1500" E
EX34-23	25° 28' 15.5591" S	28° 59' 45.4581" E
EX34-24	25° 28' 14.7154" S	28° 59' 45.5510" E
EX34-25	25° 28' 13.6784" S	28° 59' 45.6653" E
EX34-26	25° 28' 12.7221" S	28° 59' 45.7707" E
EX34-27	25° 28' 11.7686" S	28° 59' 45.8757" E
EX34-28	25° 28' 10.7736" S	28° 59' 45.9854" E
EX34-29	25° 28' 08.3615" S	28° 59' 46.2511" E
EX34-30	25° 28' 07.6582" S	28° 59' 46.3286" E
EX34-31	25° 28' 07.1731" S	28° 59' 46.3821" E
EX34-32	25° 28' 06.6881" S	28° 59' 46.4355" E
EX34-33	25° 28' 06.2030" S	28° 59' 46.4889" E
EX34-34	25° 28' 05.7180" S	28° 59' 46.5424" E
EX34-35	25° 28' 05.2330" S	28° 59' 46.5958" E
EX34-36	25° 28' 04.7480" S	28° 59' 46.6493" E
EX34-37	25° 28' 04.2629" S	28° 59' 46.7027" E
EX34-38	25° 28' 03.7779" S	28° 59' 46.7561" E
EX34-39	25° 28' 02.8078" S	28° 59' 46.8630" E
EX34-40	25° 28' 01.9994" S	28° 59' 46.9521" E
EX34-41	25° 28' 01.5144" S	28° 59' 47.0055" E
EX34-42	25° 28' 01.0294" S	28° 59' 47.0590" E
EX34-43	25° 28' 00.5443" S	28° 59' 47.1124" E
EX34-44	25° 27' 59.5743" S	28° 59' 47.2193" E
EX34-45	25° 27' 58.2741" S	28° 59' 47.3625" E
EX34-46	25° 27' 58.2546" S	28° 59' 47.3647" E
EX34-47	25° 27' 57.6614" S	28° 59' 48.1652" E
EX34-48	25° 27' 57.0471" S	28° 59' 48.9941" E
EX34-49	25° 27' 56.7388" S	28° 59' 49.4100" E
EX34-50	25° 27' 56.4306" S	28° 59' 49.8260" E
EX34-51	25° 27' 56.1223" S	28° 59' 50.2419" E
EX34-52	25° 27' 55.8140" S	28° 59' 50.6579" E
EX34-53	25° 27' 55.5058" S	28° 59' 51.0738" E
EX34-54	25° 27' 55.1975" S	28° 59' 51.4898" E
EX34-55	25° 27' 54.8892" S	28° 59' 51.9057" E
EX34-56	25° 27' 54.5809" S	28° 59' 52.3216" E

Point	Latitude	Longitude
EX34-57	25° 27' 54.2727" S	28° 59' 52.7376" E
EX34-58	25° 27' 53.9644" S	28° 59' 53.1535" E
EX34-59	25° 27' 53.6561" S	28° 59' 53.5695" E
EX34-60	25° 27' 53.3478" S	28° 59' 53.9854" E
EX34-61	25° 27' 53.0396" S	28° 59' 54.4014" E
EX34-62	25° 27' 52.6847" S	28° 59' 54.8802" E
EX34-63	25° 27' 52.1709" S	28° 59' 55.5734" E
EX34-64	25° 27' 51.2070" S	28° 59' 56.8739" E
EX34-65	25° 27' 50.9023" S	28° 59' 57.2850" E
EX34-66	25° 27' 50.9187" S	28° 59' 57.2966" E
EX34-67	25° 28' 03.7943" S	29° 00' 06.4202" E
EX34-68	25° 28' 03.8107" S	29° 00' 06.4318" E
EX34-69	25° 28' 06.0702" S	29° 00' 00.6464" E
EX34-70	25° 28' 06.1373" S	29° 00' 00.4747" E
EX34-71	25° 28' 06.4335" S	28° 59' 59.7163" E
EX34-72	25° 28' 06.8844" S	28° 59' 58.5617" E
EX34-73	25° 28' 07.0570" S	28° 59' 58.1198" E
EX34-74	25° 28' 07.3745" S	28° 59' 57.3068" E
EX34-75	25° 28' 07.5772" S	28° 59' 56.7879" E
EX34-76	25° 28' 07.7798" S	28° 59' 56.2689" E
EX34-77	25° 28' 08.0839" S	28° 59' 55.4903" E
EX34-78	25° 28' 08.1022" S	28° 59' 55.4976" E
EX34-79	25° 28' 11.5215" S	28° 59' 56.8579" E
EX34-80	25° 28' 15.2370" S	28° 59' 58.3360" E
EX34-81	25° 28' 17.6703" S	28° 59' 59.3040" E
EX34-82	25° 28' 17.6886" S	28° 59' 59.3113" E
EX34-83	25° 28' 17.6847" S	28° 59' 59.3323" E
EX34-84	25° 28' 17.2146" S	29° 00' 01.8121" E
EX34-85	25° 28' 15.5551" S	29° 00' 10.5677" E
EX34-86	25° 28' 15.5511" S	29° 00' 10.5887" E
EX34-87	25° 28' 15.5680" S	29° 00' 10.5994" E
EX34-88	25° 28' 23.3348" S	29° 00' 15.5227" E
EX34-89	25° 28' 23.3517" S	29° 00' 15.5334" E
EX34-90	25° 28' 23.3568" S	29° 00' 15.5127" E
EX34-91	25° 28' 23.8572" S	29° 00' 13.4886" E
EX34-92	25° 28' 24.6300" S	29° 00' 10.3629" E
EX34-93	25° 28' 25.5156" S	29° 00' 06.7803" E
EX34-94	25° 28' 25.6294" S	29° 00' 06.3200" E
EX34-95	25° 28' 25.6486" S	29° 00' 06.3239" E
EX34-96	25° 28' 28.0956" S	29° 00' 06.8220" E
EX34-97	25° 28' 28.8945" S	29° 00' 06.9846" E
EX34-98	25° 28' 29.3739" S	29° 00' 07.0822" E
EX34-99	25° 28' 29.8532" S	29° 00' 07.1797" E
EX34-100	25° 28' 30.3325" S	29° 00' 07.2773" E
EX34-101	25° 28' 30.8119" S	29° 00' 07.3749" E
EX34-102	25° 28' 31.2912" S	29° 00' 07.4724" E
EX34-103	25° 28' 31.7705" S	29° 00' 07.5700" E
EX34-104	25° 28' 32.2499" S	29° 00' 07.6676" E

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 66 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. M B Straughan G.Pr. LS0907D — 09 October 2025 date

For applicant Owain Jackson name

signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	Dwg: reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

friedlaender, burger & volkmann

Point	Latitude	Longitude
EX34-105	25° 28' 32.7292" S	29° 00' 07.7651" E
EX34-106	25° 28' 33.2086" S	29° 00' 07.8627" E
EX34-107	25° 28' 33.6879" S	29° 00' 07.9603" E
EX34-108	25° 28' 34.1672" S	29° 00' 08.0579" E
EX34-109	25° 28' 34.6466" S	29° 00' 08.1554" E
EX34-110	25° 28' 35.1259" S	29° 00' 08.2530" E
EX34-111	25° 28' 35.7689" S	29° 00' 08.3839" E
EX34-112	25° 28' 36.8874" S	29° 00' 08.6115" E
EX34-113	25° 28' 37.9419" S	29° 00' 08.8262" E
EX34-114	25° 28' 38.4813" S	29° 00' 08.9360" E
EX34-115	25° 28' 38.9606" S	29° 00' 09.0335" E
EX34-116	25° 28' 39.4400" S	29° 00' 09.1311" E
EX34-117	25° 28' 39.9193" S	29° 00' 09.2287" E
EX34-118	25° 28' 40.3987" S	29° 00' 09.3263" E
EX34-119	25° 28' 40.8780" S	29° 00' 09.4238" E
EX34-120	25° 28' 41.3573" S	29° 00' 09.5214" E
EX34-121	25° 28' 41.8367" S	29° 00' 09.6190" E
EX34-122	25° 28' 42.3160" S	29° 00' 09.7166" E
EX34-123	25° 28' 42.7953" S	29° 00' 09.8141" E
EX34-124	25° 28' 43.2747" S	29° 00' 09.9117" E
EX34-125	25° 28' 43.7540" S	29° 00' 10.0093" E
EX34-126	25° 28' 44.2334" S	29° 00' 10.1068" E
EX34-127	25° 28' 44.7127" S	29° 00' 10.2044" E
EX34-128	25° 28' 45.1920" S	29° 00' 10.3020" E
EX34-129	25° 28' 45.6714" S	29° 00' 10.3996" E
EX34-130	25° 28' 46.1507" S	29° 00' 10.4971" E
EX34-131	25° 28' 46.6301" S	29° 00' 10.5947" E
EX34-132	25° 28' 47.1094" S	29° 00' 10.6923" E
EX34-133	25° 28' 47.7793" S	29° 00' 10.8286" E
EX34-134	25° 28' 47.7984" S	29° 00' 10.8326" E
EX34-135	25° 28' 47.8063" S	29° 00' 10.8129" E
EX34-136	25° 28' 48.0734" S	29° 00' 10.1466" E
EX34-137	25° 28' 48.2704" S	29° 00' 09.6553" E
EX34-138	25° 28' 48.4673" S	29° 00' 09.1641" E
EX34-139	25° 28' 48.6642" S	29° 00' 08.6728" E
EX34-140	25° 28' 48.8611" S	29° 00' 08.1816" E
EX34-141	25° 28' 49.0580" S	29° 00' 07.6903" E
EX34-142	25° 28' 49.2550" S	29° 00' 07.1991" E
EX34-143	25° 28' 49.4519" S	29° 00' 06.7078" E
EX34-144	25° 28' 49.6488" S	29° 00' 06.2166" E
EX34-145	25° 28' 49.8458" S	29° 00' 05.7253" E
EX34-146	25° 28' 50.0427" S	29° 00' 05.2341" E
EX34-147	25° 28' 50.2396" S	29° 00' 04.7428" E
EX34-148	25° 28' 50.4365" S	29° 00' 04.2516" E
EX34-149	25° 28' 50.6334" S	29° 00' 03.7603" E
EX34-150	25° 28' 50.8303" S	29° 00' 03.2691" E
EX34-151	25° 28' 51.0273" S	29° 00' 02.7778" E
EX34-152	25° 28' 51.2242" S	29° 00' 02.2865" E

Point	Latitude	Longitude
EX34-153	25° 28' 51.4211" S	29° 00' 01.7953" E
EX34-154	25° 28' 51.6180" S	29° 00' 01.3040" E
EX34-155	25° 28' 51.8149" S	29° 00' 00.8128" E
EX34-156	25° 28' 52.0119" S	29° 00' 00.3215" E
EX34-157	25° 28' 52.2088" S	28° 59' 59.8303" E
EX34-158	25° 28' 52.2122" S	28° 59' 59.8319" E
EX34-159	25° 28' 52.5074" S	28° 59' 59.0949" E
EX34-160	25° 28' 52.8026" S	28° 59' 58.3580" E
EX34-161	25° 28' 52.9964" S	28° 59' 57.8652" E
EX34-162	25° 28' 53.1933" S	28° 59' 57.3740" E
EX34-163	25° 28' 53.3903" S	28° 59' 56.8827" E
EX34-164	25° 28' 53.5872" S	28° 59' 56.3914" E
EX34-165	25° 28' 53.7841" S	28° 59' 55.9002" E
EX34-166	25° 28' 53.9810" S	28° 59' 55.4089" E
EX34-167	25° 28' 54.1779" S	28° 59' 54.9177" E
EX34-168	25° 28' 54.4997" S	28° 59' 54.1148" E
EX34-169	25° 28' 54.8016" S	28° 59' 53.3615" E
EX34-170	25° 28' 54.9985" S	28° 59' 52.8703" E
EX34-171	25° 28' 55.1954" S	28° 59' 52.3790" E
EX34-172	25° 28' 55.3924" S	28° 59' 51.8877" E
EX34-173	25° 28' 55.5893" S	28° 59' 51.3965" E
EX34-174	25° 28' 55.7862" S	28° 59' 50.9052" E
EX34-175	25° 28' 55.9831" S	28° 59' 50.4140" E
EX34-176	25° 28' 56.1800" S	28° 59' 49.9227" E
EX34-177	25° 28' 56.3769" S	28° 59' 49.4314" E
EX34-178	25° 28' 56.5738" S	28° 59' 48.9401" E
EX34-179	25° 28' 56.7707" S	28° 59' 48.4489" E
EX34-180	25° 28' 57.0766" S	28° 59' 47.6858" E
EX34-181	25° 28' 57.4048" S	28° 59' 46.8670" E
EX34-182	25° 28' 57.6017" S	28° 59' 46.3758" E
EX34-183	25° 28' 57.7741" S	28° 59' 45.9455" E
EX34-184	25° 28' 57.7985" S	28° 59' 45.8845" E
EX34-185	25° 28' 57.9954" S	28° 59' 45.3932" E
EX34-186	25° 28' 58.1923" S	28° 59' 44.9019" E
EX34-187	25° 28' 58.3892" S	28° 59' 44.4107" E
EX34-188	25° 28' 58.5861" S	28° 59' 43.9194" E
EX34-189	25° 28' 58.7830" S	28° 59' 43.4281" E
EX34-190	25° 28' 58.9799" S	28° 59' 42.9368" E
EX34-191	25° 28' 59.1768" S	28° 59' 42.4456" E
EX34-192	25° 28' 59.3737" S	28° 59' 41.9543" E
EX34-193	25° 28' 59.5707" S	28° 59' 41.4630" E
EX34-194	25° 28' 59.7675" S	28° 59' 40.9717" E
EX34-195	25° 28' 59.9644" S	28° 59' 40.4805" E
EX34-196	25° 29' 00.1613" S	28° 59' 39.9892" E
EX34-197	25° 29' 00.3582" S	28° 59' 39.4979" E
EX34-198	25° 29' 00.5551" S	28° 59' 39.0066" E
EX34-199	25° 29' 00.7913" S	28° 59' 38.4173" E
EX34-200	25° 29' 00.3798" S	28° 59' 37.9122" E

Point	Latitude	Longitude
EX34-201	25° 29' 00.0542" S	28° 59' 37.5125" E
EX34-202	25° 28' 59.7286" S	28° 59' 37.1128" E
EX34-203	25° 28' 59.4029" S	28° 59' 36.7131" E
EX34-204	25° 28' 59.0773" S	28° 59' 36.3133" E
EX34-205	25° 28' 58.7517" S	28° 59' 35.9136" E
EX34-206	25° 28' 58.4260" S	28° 59' 35.5139" E
EX34-207	25° 28' 58.1004" S	28° 59' 35.1142" E
EX34-208	25° 28' 57.7748" S	28° 59' 34.7145" E
EX34-209	25° 28' 57.4491" S	28° 59' 34.3148" E
EX34-210	25° 28' 57.1235" S	28° 59' 33.9151" E
EX34-211	25° 28' 56.7979" S	28° 59' 33.5154" E
EX34-212	25° 28' 56.4722" S	28° 59' 33.1157" E
EX34-213	25° 28' 56.1466" S	28° 59' 32.7161" E
EX34-214	25° 28' 55.8210" S	28° 59' 32.3164" E
EX34-215	25° 28' 55.5593" S	28° 59' 31.9951" E
EX34-216	25° 28' 54.8455" S	28° 59' 31.1191" E
EX34-217	25° 28' 53.8315" S	28° 59' 29.8744" E
EX34-218	25° 28' 53.5058" S	28° 59' 29.4747" E
EX34-219	25° 28' 53.1802" S	28° 59' 29.0750" E
EX34-220	25° 28' 52.8546" S	28° 59' 28.6754" E
EX34-221	25° 28' 52.5289" S	28° 59' 28.2757" E
EX34-222	25° 28' 52.2033" S	28° 59' 27.8760" E
EX34-223	25° 28' 51.8776" S	28° 59' 27.4763" E
EX34-224	25° 28' 51.5520" S	28° 59' 27.0766" E
EX34-225	25° 28' 51.2264" S	28° 59' 26.6769" E
EX34-226	25° 28' 50.9007" S	28° 59' 26.2772" E
EX34-227	25° 28' 50.5751" S	28° 59' 25.8775" E
EX34-228	25° 28' 50.2494" S	28° 59' 25.4778" E
EX34-229	25° 28' 49.9239" S	28° 59' 25.0780" E
EX34-230	25° 28' 49.5982" S	28° 59' 24.6784" E
EX34-231	25° 28' 49.2726" S	28° 59' 24.2787" E
EX34-232	25° 28' 48.6382" S	28° 59' 23.5003" E
EX34-233	25° 28' 48.1972" S	28° 59' 22.9590" E
EX34-234	25° 28' 48.1086" S	28° 59' 23.1900" E
EX34-235	25° 28' 48.0819" S	28° 59' 23.2596" E
EX34-236	25° 28' 47.7348" S	28° 59' 24.1646" E
EX34-237	25° 28' 47.3876" S	28° 59' 25.0695" E
EX34-238	25° 28' 47.1294" S	28° 59' 25.7427" E
EX34-239	25° 28' 46.9396" S	28° 59' 26.2374" E
EX34-240	25° 28' 46.7498" S	28° 59' 26.7320" E
EX34-241	25° 28' 46.5601" S	28° 59' 27.2267" E
EX34-242	25° 28' 46.3703" S	28° 59' 27.7214" E
EX34-243	25° 28' 46.1805" S	28° 59' 28.2160" E
EX34-244	25° 28' 45.9908" S	28° 59' 28.7107" E
EX34-245	25° 28' 45.8010" S	28° 59' 29.2053" E
EX34-246	25° 28' 45.6112" S	28° 59' 29.6999" E
EX34-247	25° 28' 45.4215" S	28° 59' 30.1946" E
EX34-248	25° 28' 45.2317" S	28° 59' 30.6893" E

Point	Latitude	Longitude
EX34-249	25° 28' 45.0419" S	28° 59' 31.1840" E
EX34-250	25° 28' 44.8522" S	28° 59' 31.6786" E
EX34-251	25° 28' 44.6624" S	28° 59' 32.1733" E
EX34-252	25° 28' 44.4726" S	28° 59' 32.6679" E
EX34-253	25° 28' 44.2435" S	28° 59' 33.2652" E
EX34-254	25° 28' 44.1663" S	28° 59' 33.4663" E
EX34-255	25° 28' 44.1561" S	28° 59' 33.4845" E
EX34-256	25° 28' 43.8619" S	28° 59' 34.0058" E
EX34-257	25° 28' 43.6045" S	28° 59' 34.4618" E
EX34-258	25° 28' 43.3471" S	28° 59' 34.9179" E
EX34-259	25° 28' 43.0897" S	28° 59' 35.3739" E
EX34-260	25° 28' 42.8323" S	28° 59' 35.8300" E
EX34-261	25° 28' 42.5750" S	28° 59' 36.2860" E
EX34-262	25° 28' 42.3176" S	28° 59' 36.7421" E
EX34-263	25° 28' 42.0602" S	28° 59' 37.1981" E
EX34-264	25° 28' 41.6312" S	28° 59' 37.9582" E
EX34-265	25° 28' 41.2022" S	28° 59' 38.7183" E
EX34-266	25° 28' 40.9448" S	28° 59' 39.1743" E
EX34-267	25° 28' 40.6875" S	28° 59' 39.6304" E
EX34-268	25° 28' 40.4301" S	28° 59' 40.0864" E
EX34-269	25° 28' 40.1727" S	28° 59' 40.5425" E
EX34-270	25° 28' 39.9153" S	28° 59' 40.9985" E
EX34-271	25° 28' 39.6579" S	28° 59' 41.4546" E
EX34-272	25° 28' 39.4005" S	28° 59' 41.9106" E
EX34-273	25° 28' 39.1431" S	28° 59' 42.3667" E
EX34-274	25° 28' 38.8857" S	28° 59' 42.8227" E
EX34-275	25° 28' 38.8569" S	28° 59' 42.8738" E
EX34-276	25° 28' 38.8466" S	28° 59' 42.8921" E
EX34-277	25° 28' 38.8272" S	28° 59' 42.8942" E
EX34-278	25° 28' 38.7159" S	28° 59' 42.9616" E
EX34-279	25° 28' 37.7308" S	28° 59' 43.0150" E
EX34-280	25° 28' 37.2458" S	28° 59' 43.0685" E
EX34-281	25° 28' 36.7608" S	28° 59' 43.1219" E
EX34-282	25° 28' 36.2757" S	28° 59' 43.1753" E
EX34-283	25° 28' 35.7907" S	28° 59' 43.2288" E
EX34-284	25° 28' 35.3057" S	28° 59' 43.2822" E
EX34-285	25° 28' 34.8207" S	28° 59' 43.3357" E
EX34-286	25° 28' 34.3356" S	28° 59' 43.3891" E
EX34-287	25° 28' 33.8506" S	28° 59' 43.4426" E
EX34-288	25° 28' 33.3656" S	28° 59' 43.4960" E
EX34-289	25° 28' 32.8805" S	28° 59' 43.5495" E
EX34-290	25° 28' 32.3955" S	28° 59' 43.6029" E
EX34-291	25° 28' 31.5871" S	28° 59' 43.6920" E
EX34-292	25° 28' 30.7140" S	28° 59' 43.7882" E
EX35-1	25° 09' 55.8783" S	29° 00' 19.6495" E
EX35-2	25° 09' 51.3080" S	29° 00' 20.5911" E
EX35-3	25° 09' 44.4185" S	29° 00' 23.9113" E
EX35-4	25° 09' 42.5463" S	29° 00' 24.8135" E

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**,

excluding the figures **EX1 to EX78,**

represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 67 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. — M B Straughan G.Pr. LS0907D — 09 October 2025 date

For applicant — Owain Jackson name — signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation

Dwg: reg 2(2) plan er kruis river oct 2025.dwg

Revision:

Date: 09 October 2025

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Point	Latitude	Longitude
EX35-5	25° 09' 37.0990" S	29° 00' 27.4385" E
EX35-6	25° 09' 32.4131" S	29° 00' 29.6965" E
EX35-7	25° 09' 35.7785" S	29° 00' 33.9441" E
EX35-8	25° 09' 40.8348" S	29° 00' 40.3263" E
EX35-9	25° 09' 39.7759" S	29° 00' 40.8797" E
EX35-10	25° 09' 38.8119" S	29° 00' 41.3835" E
EX35-11	25° 09' 33.3349" S	29° 00' 44.2460" E
EX35-12	25° 09' 30.8915" S	29° 00' 46.4814" E
EX35-13	25° 09' 38.0617" S	29° 00' 55.8723" E
EX35-14	25° 09' 38.9457" S	29° 00' 57.0302" E
EX35-15	25° 09' 39.3219" S	29° 00' 57.5230" E
EX35-16	25° 09' 39.8226" S	29° 00' 58.1788" E
EX35-17	25° 09' 43.6785" S	29° 01' 09.8955" E
EX35-18	25° 09' 46.9509" S	29° 01' 08.2347" E
EX35-19	25° 09' 52.0955" S	29° 01' 05.6238" E
EX35-20	25° 09' 52.3502" S	29° 01' 05.6831" E
EX35-21	25° 09' 52.8879" S	29° 01' 06.3567" E
EX35-22	25° 09' 58.7650" S	29° 01' 03.3739" E
EX35-23	25° 09' 59.3486" S	29° 01' 04.3825" E
EX35-24	25° 10' 00.6773" S	29° 01' 03.8282" E
EX35-25	25° 10' 02.6121" S	29° 01' 03.0210" E
EX35-26	25° 10' 04.4719" S	29° 01' 02.2453" E
EX35-27	25° 10' 05.8570" S	29° 01' 02.0904" E
EX35-28	25° 10' 06.8456" S	29° 01' 01.9799" E
EX35-29	25° 10' 08.8186" S	29° 01' 01.7594" E
EX35-30	25° 10' 11.6294" S	29° 01' 01.2858" E
EX35-31	25° 10' 18.7326" S	29° 01' 00.0891" E
EX35-32	25° 10' 26.0615" S	29° 00' 58.3658" E
EX35-33	25° 10' 33.9009" S	29° 00' 56.3861" E
EX35-34	25° 10' 38.3027" S	29° 00' 50.4463" E
EX35-35	25° 10' 38.4350" S	29° 00' 50.1456" E
EX35-36	25° 10' 40.4019" S	29° 00' 52.7995" E
EX35-37	25° 10' 42.9388" S	29° 00' 50.5661" E
EX35-38	25° 10' 44.8213" S	29° 00' 48.5635" E
EX35-39	25° 10' 43.5246" S	29° 00' 46.6363" E
EX35-40	25° 10' 48.7517" S	29° 00' 43.8626" E
EX35-41	25° 10' 51.4134" S	29° 00' 42.1057" E
EX35-42	25° 10' 56.2612" S	29° 00' 38.5685" E
EX35-43	25° 10' 57.3797" S	29° 00' 28.3875" E
EX35-44	25° 10' 49.3598" S	29° 00' 18.6262" E
EX35-45	25° 10' 34.9844" S	29° 00' 00.6467" E
EX35-46	25° 10' 34.2619" S	29° 00' 00.9823" E
EX36-1	25° 29' 52.1620" S	29° 00' 52.5807" E
EX36-2	25° 29' 55.2147" S	29° 00' 49.4215" E
EX36-3	25° 29' 58.9992" S	29° 00' 45.5050" E
EX36-4	25° 30' 01.9137" S	29° 00' 42.9047" E
EX36-5	25° 30' 13.8063" S	29° 00' 34.3396" E
EX36-6	25° 30' 25.7015" S	29° 00' 25.7786" E
EX36-7	25° 30' 28.2153" S	29° 00' 23.1826" E
EX36-8	25° 30' 27.3317" S	29° 00' 23.3099" E
EX36-9	25° 30' 04.4992" S	29° 00' 26.6031" E
EX36-10	25° 29' 48.6112" S	29° 00' 28.8997" E
EX36-11	25° 29' 48.5874" S	29° 00' 28.8960" E
EX36-13	25° 29' 20.2007" S	29° 00' 24.4467" E
EX36-14	25° 29' 19.1197" S	29° 00' 25.6442" E
EX36-15	25° 29' 10.9686" S	29° 00' 23.6799" E
EX36-16	25° 28' 25.6637" S	29° 00' 12.7731" E
EX36-17	25° 28' 30.3502" S	29° 00' 21.1162" E
EX36-18	25° 28' 17.1226" S	29° 00' 30.1561" E
EX36-19	25° 27' 55.8870" S	29° 00' 44.6677" E
EX36-20	25° 28' 15.1913" S	29° 01' 18.9522" E
EX36-21	25° 28' 36.1891" S	29° 01' 56.2520" E
EX36-22	25° 28' 38.0049" S	29° 01' 58.2710" E
EX36-23	25° 28' 38.0009" S	29° 01' 59.2834" E
EX36-24	25° 28' 39.0397" S	29° 01' 58.1496" E
EX36-25	25° 28' 49.8426" S	29° 01' 46.3565" E
EX36-26	25° 28' 52.2075" S	29° 01' 44.0403" E
EX36-27	25° 28' 52.8654" S	29° 01' 43.6498" E
EX36-28	25° 28' 56.5933" S	29° 01' 41.4366" E
EX36-29	25° 28' 59.3879" S	29° 01' 39.7774" E
EX36-30	25° 29' 03.8820" S	29° 01' 37.1091" E
EX36-31	25° 29' 03.7265" S	29° 01' 36.7947" E
EX36-32	25° 29' 03.3998" S	29° 01' 36.1247" E
EX36-33	25° 29' 02.9374" S	29° 01' 35.1791" E
EX36-34	25° 29' 02.5818" S	29° 01' 34.4523" E
EX36-35	25° 29' 02.4960" S	29° 01' 34.5033" E
EX36-36	25° 29' 01.6378" S	29° 01' 35.0128" E
EX36-37	25° 29' 00.7796" S	29° 01' 35.5224" E
EX36-38	25° 28' 59.9214" S	29° 01' 36.0319" E
EX36-39	25° 28' 59.3730" S	29° 01' 36.3575" E
EX36-40	25° 28' 59.2299" S	29° 01' 36.4413" E
EX36-41	25° 28' 59.1443" S	29° 01' 36.2903" E
EX36-42	25° 28' 58.9133" S	29° 01' 35.8797" E
EX36-43	25° 28' 58.6820" S	29° 01' 35.4688" E
EX36-44	25° 28' 58.5961" S	29° 01' 35.3160" E
EX36-45	25° 28' 58.7395" S	29° 01' 35.2317" E
EX36-46	25° 28' 59.3525" S	29° 01' 34.8677" E
EX36-47	25° 29' 00.2109" S	29° 01' 34.3585" E
EX36-48	25° 29' 01.0693" S	29° 01' 33.8494" E
EX36-49	25° 29' 01.9277" S	29° 01' 33.3403" E
EX36-50	25° 29' 02.0136" S	29° 01' 33.2893" E
EX36-51	25° 29' 03.7281" S	29° 01' 32.2697" E
EX36-52	25° 29' 04.0184" S	29° 01' 32.0984" E
EX36-53	25° 29' 04.1683" S	29° 01' 32.4150" E
EX36-54	25° 29' 04.4766" S	29° 01' 33.0453" E
EX36-55	25° 29' 04.9390" S	29° 01' 33.9909" E
EX36-56	25° 29' 05.4015" S	29° 01' 34.9365" E
EX36-57	25° 29' 05.7289" S	29° 01' 35.6058" E
EX36-58	25° 29' 05.8836" S	29° 01' 35.9207" E
EX36-59	25° 29' 07.3135" S	29° 01' 35.0716" E
EX36-60	25° 29' 08.5266" S	29° 01' 34.3514" E
EX36-61	25° 29' 09.6710" S	29° 01' 33.6720" E
EX36-62	25° 29' 11.8273" S	29° 01' 32.0703" E
EX36-63	25° 29' 11.0184" S	29° 01' 31.8791" E
EX36-64	25° 29' 15.1700" S	29° 01' 29.9393" E
EX36-65	25° 29' 16.4591" S	29° 01' 28.9872" E
EX36-66	25° 29' 19.0721" S	29° 01' 26.7327" E
EX36-67	25° 29' 23.1244" S	29° 01' 22.5696" E
EX36-68	25° 29' 28.9696" S	29° 01' 16.5795" E
EX36-69	25° 29' 36.1562" S	29° 01' 09.1452" E
EX36-70	25° 29' 39.5062" S	29° 01' 05.6783" E
EX36-71	25° 29' 43.8620" S	29° 01' 01.1703" E
EX37-1	25° 07' 50.6258" S	29° 01' 02.2002" E
EX37-2	25° 07' 50.0291" S	29° 01' 03.0470" E
EX37-3	25° 07' 49.5860" S	29° 01' 04.0250" E
EX37-4	25° 07' 47.4398" S	29° 01' 07.0691" E
EX37-5	25° 07' 47.1115" S	29° 01' 06.4504" E
EX37-6	25° 07' 46.7831" S	29° 01' 05.8317" E
EX37-7	25° 07' 46.4561" S	29° 01' 05.2157" E
EX37-8	25° 07' 45.8467" S	29° 01' 04.0674" E
EX37-9	25° 07' 45.2579" S	29° 01' 04.4445" E
EX37-10	25° 07' 44.6954" S	29° 01' 04.8048" E
EX37-11	25° 07' 44.1317" S	29° 01' 05.1660" E
EX37-12	25° 07' 43.5722" S	29° 01' 05.5240" E
EX37-13	25° 07' 42.8704" S	29° 01' 05.9735" E
EX37-14	25° 07' 42.5878" S	29° 01' 06.1546" E
EX37-15	25° 07' 41.7468" S	29° 01' 06.6932" E
EX37-16	25° 07' 40.9053" S	29° 01' 07.2321" E
EX37-17	25° 07' 41.2372" S	29° 01' 07.8574" E
EX37-18	25° 07' 41.5637" S	29° 01' 08.4724" E
EX37-19	25° 07' 41.8906" S	29° 01' 09.0884" E
EX37-20	25° 07' 42.2167" S	29° 01' 09.7028" E
EX37-21	25° 07' 42.5442" S	29° 01' 10.3199" E
EX37-22	25° 07' 42.8725" S	29° 01' 10.9384" E
EX37-23	25° 07' 43.1993" S	29° 01' 11.5543" E
EX37-24	25° 07' 43.5266" S	29° 01' 12.1708" E
EX37-25	25° 07' 43.8544" S	29° 01' 12.7885" E
EX37-26	25° 07' 44.1820" S	29° 01' 13.4054" E
EX37-27	25° 07' 44.5084" S	29° 01' 14.0197" E
EX37-28	25° 07' 44.5654" S	29° 01' 14.1280" E
EX37-29	25° 07' 45.4001" S	29° 01' 15.7009" E
EX37-30	25° 07' 45.5710" S	29° 01' 16.0229" E
EX37-31	25° 07' 45.8982" S	29° 01' 16.6393" E
EX37-32	25° 07' 46.2261" S	29° 01' 17.2571" E
EX37-33	25° 07' 46.5530" S	29° 01' 17.8731" E
EX37-34	25° 07' 46.8792" S	29° 01' 18.4877" E
EX37-35	25° 07' 47.2083" S	29° 01' 19.1079" E
EX37-36	25° 07' 47.5338" S	29° 01' 19.7211" E
EX37-37	25° 07' 47.8617" S	29° 01' 20.3390" E
EX37-38	25° 07' 48.1870" S	29° 01' 20.9518" E
EX37-39	25° 07' 48.5159" S	29° 01' 21.5717" E
EX37-40	25° 07' 48.8430" S	29° 01' 22.1880" E
EX37-41	25° 07' 49.1711" S	29° 01' 22.8063" E
EX37-42	25° 07' 49.4976" S	29° 01' 23.4214" E
EX37-43	25° 07' 49.8269" S	29° 01' 24.0420" E
EX37-44	25° 07' 50.1526" S	29° 01' 24.6557" E
EX37-45	25° 07' 50.4804" S	29° 01' 25.2733" E
EX37-46	25° 07' 50.8077" S	29° 01' 25.8900" E
EX37-47	25° 07' 51.2380" S	29° 01' 26.7008" E
EX37-48	25° 07' 51.9045" S	29° 01' 27.9567" E
EX37-49	25° 08' 03.5313" S	29° 01' 16.2571" E
EX37-50	25° 08' 04.8420" S	29° 01' 15.4219" E
EX37-51	25° 08' 06.2850" S	29° 01' 14.9149" E
EX37-52	25° 08' 07.7933" S	29° 01' 14.7591" E
EX37-53	25° 08' 23.1446" S	29° 01' 16.8322" E
EX37-54	25° 08' 23.3215" S	29° 01' 15.2526" E
EX37-55	25° 08' 23.3812" S	29° 01' 14.7184" E
EX37-56	25° 08' 23.4644" S	29° 01' 13.9759" E
EX37-57	25° 08' 23.5477" S	29° 01' 13.2313" E
EX37-58	25° 08' 23.6310" S	29° 01' 12.4867" E
EX37-59	25° 08' 23.7144" S	29° 01' 11.7415" E
EX37-60	25° 08' 23.7978" S	29° 01' 10.9964" E
EX37-61	25° 08' 23.8811" S	29° 01' 10.2517" E
EX37-62	25° 08' 23.9641" S	29° 01' 09.5104" E
EX37-63	25° 08' 24.0478" S	29° 01' 08.7625" E
EX37-64	25° 08' 24.1312" S	29° 01' 08.0169" E
EX37-65	25° 08' 24.2154" S	29° 01' 07.2650" E
EX37-66	25° 08' 23.2476" S	29° 01' 07.1342" E
EX37-67	25° 08' 23.2278" S	29° 01' 07.3113" E
EX37-68	25° 08' 22.9090" S	29° 01' 07.2683" E
EX37-69	25° 08' 22.1656" S	29° 01' 07.1679" E
EX37-70	25° 08' 21.4910" S	29° 01' 07.0768" E
EX37-71	25° 08' 20.8146" S	29° 01' 06.9855" E
EX37-72	25° 08' 20.1344" S	29° 01' 06.8937" E
EX37-73	25° 08' 20.0717" S	29° 01' 06.8852" E
EX37-74	25° 08' 19.3941" S	29° 01' 06.7938" E
EX37-75	25° 08' 18.7174" S	29° 01' 06.7024" E
EX37-76	25° 08' 18.0393" S	29° 01' 06.6108" E
EX37-77	25° 08' 17.7954" S	29° 01' 06.5779" E
EX37-78	25° 08' 17.3307" S	29° 01' 05.5190" E
EX37-79	25° 08' 17.0395" S	29° 01' 04.8557" E
EX37-80	25° 08' 16.7473" S	29° 01' 04.1899" E

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 68 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. M B Straughan G.Pr. LS0907D — 09 October 2025 date

For applicant Owain Jackson name

signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	Dwg: reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

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Point	Latitude	Longitude
EX37-81	25° 08' 16.4564" S	29° 01' 03.5271" E
EX37-82	25° 08' 16.1654" S	29° 01' 02.8641" E
EX37-83	25° 08' 15.8735" S	29° 01' 02.1991" E
EX37-84	25° 08' 15.5817" S	29° 01' 01.5342" E
EX37-85	25° 08' 15.2911" S	29° 01' 00.8720" E
EX37-86	25° 08' 14.9328" S	29° 01' 00.0559" E
EX37-87	25° 08' 14.9236" S	29° 01' 00.0349" E
EX37-88	25° 08' 14.9158" S	29° 01' 00.0171" E
EX37-89	25° 08' 14.2372" S	29° 00' 59.4398" E
EX37-90	25° 08' 13.7262" S	29° 00' 59.0049" E
EX37-91	25° 08' 13.2116" S	29° 00' 58.5671" E
EX37-92	25° 08' 12.5663" S	29° 00' 58.0181" E
EX37-93	25° 08' 12.3096" S	29° 00' 57.7997" E
EX37-94	25° 08' 11.6172" S	29° 00' 57.2106" E
EX37-95	25° 08' 11.1059" S	29° 00' 56.7756" E
EX37-96	25° 08' 10.5885" S	29° 00' 56.3354" E
EX37-97	25° 08' 10.0761" S	29° 00' 55.8995" E
EX37-98	25° 08' 09.6345" S	29° 00' 55.5238" E
EX37-99	25° 08' 10.0238" S	29° 00' 54.9718" E
EX37-100	25° 08' 10.5014" S	29° 00' 54.2939" E
EX37-101	25° 08' 11.0670" S	29° 00' 53.4917" E
EX37-102	25° 08' 10.3006" S	29° 00' 52.8393" E
EX37-103	25° 08' 10.2472" S	29° 00' 52.7938" E
EX37-104	25° 08' 09.7601" S	29° 00' 52.3794" E
EX37-105	25° 08' 09.2719" S	29° 00' 51.9641" E
EX37-106	25° 08' 08.7826" S	29° 00' 51.5479" E
EX37-107	25° 08' 08.2926" S	29° 00' 51.1310" E
EX37-108	25° 08' 07.8068" S	29° 00' 50.7177" E
EX37-109	25° 08' 07.3194" S	29° 00' 50.3031" E
EX37-110	25° 08' 06.6404" S	29° 00' 49.7253" E
EX37-111	25° 08' 06.5779" S	29° 00' 49.7057" E
EX37-112	25° 08' 05.7613" S	29° 00' 49.4484" E
EX37-113	25° 08' 05.1344" S	29° 00' 49.2509" E
EX37-114	25° 08' 04.5105" S	29° 00' 49.0543" E
EX37-115	25° 08' 03.7796" S	29° 00' 48.8240" E
EX37-116	25° 08' 03.5141" S	29° 00' 48.8949" E
EX37-117	25° 08' 03.1193" S	29° 00' 49.0003" E
EX37-118	25° 08' 02.9441" S	29° 00' 48.2090" E
EX37-119	25° 08' 02.8531" S	29° 00' 47.7979" E
EX37-120	25° 08' 02.4460" S	29° 00' 47.3807" E
EX37-121	25° 08' 01.9938" S	29° 00' 46.9174" E
EX37-122	25° 08' 01.5410" S	29° 00' 46.4534" E
EX37-123	25° 08' 01.0897" S	29° 00' 45.9911" E
EX37-124	25° 08' 01.0416" S	29° 00' 45.9417" E
EX37-125	25° 08' 00.6028" S	29° 00' 45.4922" E
EX37-126	25° 07' 59.9788" S	29° 00' 45.4442" E
EX37-127	25° 07' 59.3327" S	29° 00' 45.3945" E
EX37-128	25° 07' 58.6825" S	29° 00' 45.3446" E

Point	Latitude	Longitude
EX37-129	25° 07' 58.2584" S	29° 00' 45.3120" E
EX37-130	25° 07' 58.3011" S	29° 00' 44.6421" E
EX37-131	25° 07' 58.3443" S	29° 00' 43.9636" E
EX37-132	25° 07' 58.3875" S	29° 00' 43.2866" E
EX37-133	25° 07' 58.4306" S	29° 00' 42.6091" E
EX37-134	25° 07' 58.4800" S	29° 00' 41.8343" E
EX37-135	25° 07' 58.4874" S	29° 00' 41.7174" E
EX37-136	25° 07' 58.3491" S	29° 00' 41.0588" E
EX37-137	25° 07' 58.2103" S	29° 00' 40.3980" E
EX37-138	25° 07' 58.0690" S	29° 00' 39.7253" E
EX37-139	25° 07' 57.0557" S	29° 00' 39.9823" E
EX37-140	25° 07' 56.6253" S	29° 00' 37.9333" E
EX37-141	25° 07' 56.4043" S	29° 00' 36.8810" E
EX37-142	25° 07' 55.7934" S	29° 00' 37.0359" E
EX37-143	25° 07' 55.1737" S	29° 00' 37.1930" E
EX37-144	25° 07' 54.5477" S	29° 00' 37.3517" E
EX37-145	25° 07' 53.9310" S	29° 00' 37.5081" E
EX37-146	25° 07' 53.8665" S	29° 00' 37.5244" E
EX37-147	25° 07' 52.9134" S	29° 00' 37.7661" E
EX37-148	25° 07' 51.9620" S	29° 00' 38.0073" E
EX37-149	25° 07' 51.3478" S	29° 00' 38.1630" E
EX37-150	25° 07' 50.7305" S	29° 00' 38.3196" E
EX37-151	25° 07' 50.1137" S	29° 00' 38.4759" E
EX37-152	25° 07' 49.4973" S	29° 00' 38.6322" E
EX37-153	25° 07' 49.4342" S	29° 00' 38.6482" E
EX37-154	25° 07' 48.4850" S	29° 00' 38.8888" E
EX37-155	25° 07' 47.5346" S	29° 00' 39.1298" E
EX37-156	25° 07' 47.0309" S	29° 00' 39.2575" E
EX37-157	25° 07' 47.7427" S	29° 00' 42.6454" E
EX37-158	25° 07' 47.0636" S	29° 00' 53.3040" E
EX37-159	25° 07' 46.9059" S	29° 00' 53.2918" E
EX37-160	25° 07' 46.0910" S	29° 00' 53.2292" E
EX37-161	25° 07' 46.0432" S	29° 00' 53.9773" E
EX37-162	25° 07' 45.7405" S	29° 00' 54.5767" E
EX37-163	25° 07' 45.3461" S	29° 00' 55.3580" E
EX37-164	25° 07' 44.9978" S	29° 00' 56.0479" E
EX37-165	25° 07' 44.7758" S	29° 00' 56.4877" E
EX37-166	25° 07' 44.5161" S	29° 00' 57.0024" E
EX38-1	25° 18' 25.4273" S	29° 00' 46.8305" E
EX38-2	25° 18' 12.1637" S	29° 00' 44.3568" E
EX38-3	25° 18' 10.3485" S	29° 00' 41.0569" E
EX38-4	25° 18' 08.2328" S	29° 00' 41.4740" E
EX38-5	25° 18' 08.7054" S	29° 00' 43.5830" E
EX38-6	25° 18' 06.9437" S	29° 00' 43.0884" E
EX38-7	25° 18' 07.3096" S	29° 00' 42.7821" E
EX38-8	25° 18' 06.3388" S	29° 00' 40.8195" E
EX38-9	25° 18' 01.9177" S	29° 00' 40.1620" E
EX38-10	25° 18' 01.9832" S	29° 00' 39.8356" E

Point	Latitude	Longitude
EX38-11	25° 18' 01.1098" S	29° 00' 39.1303" E
EX38-12	25° 18' 01.4733" S	29° 00' 37.8272" E
EX38-13	25° 18' 01.2459" S	29° 00' 36.3942" E
EX38-14	25° 18' 02.9334" S	29° 00' 34.0234" E
EX38-15	25° 18' 04.3924" S	29° 00' 31.8445" E
EX38-16	25° 18' 04.8312" S	29° 00' 31.2354" E
EX38-17	25° 18' 00.8277" S	29° 00' 29.2175" E
EX38-18	25° 18' 01.1609" S	29° 00' 28.1601" E
EX38-19	25° 17' 59.2094" S	29° 00' 27.1642" E
EX38-20	25° 17' 57.7234" S	29° 00' 25.6217" E
EX38-21	25° 17' 56.6563" S	29° 00' 23.9017" E
EX38-22	25° 17' 54.5530" S	29° 00' 22.8180" E
EX38-23	25° 17' 55.2807" S	29° 00' 21.7099" E
EX38-24	25° 17' 54.8650" S	29° 00' 21.1254" E
EX38-25	25° 17' 55.1886" S	29° 00' 20.7330" E
EX38-26	25° 17' 54.5183" S	29° 00' 19.9880" E
EX38-27	25° 17' 53.0121" S	29° 00' 19.1126" E
EX38-28	25° 17' 53.5890" S	29° 00' 18.1441" E
EX38-29	25° 17' 52.7741" S	29° 00' 17.7777" E
EX38-30	25° 17' 53.1297" S	29° 00' 16.9729" E
EX38-31	25° 17' 52.7972" S	29° 00' 16.0105" E
EX38-32	25° 17' 52.1906" S	29° 00' 15.7128" E
EX38-33	25° 17' 52.3860" S	29° 00' 15.2521" E
EX38-34	25° 17' 51.9637" S	29° 00' 15.0310" E
EX38-35	25° 17' 52.1753" S	29° 00' 14.5073" E
EX38-36	25° 17' 51.7603" S	29° 00' 13.6703" E
EX38-37	25° 17' 51.1801" S	29° 00' 13.3864" E
EX38-38	25° 17' 51.5012" S	29° 00' 12.3534" E
EX38-39	25° 17' 51.6127" S	29° 00' 09.9010" E
EX38-40	25° 17' 51.1461" S	29° 00' 08.7290" E
EX38-41	25° 17' 50.5609" S	29° 00' 08.2594" E
EX38-42	25° 17' 48.4757" S	29° 00' 07.2398" E
EX38-43	25° 17' 47.6128" S	29° 00' 06.7299" E
EX38-44	25° 17' 44.9056" S	29° 00' 05.3325" E
EX38-45	25° 17' 44.4090" S	29° 00' 05.3711" E
EX38-46	25° 17' 43.5605" S	29° 00' 04.7240" E
EX38-47	25° 17' 43.6807" S	29° 00' 04.1643" E
EX38-48	25° 17' 43.8924" S	29° 00' 03.1791" E
EX38-49	25° 17' 43.5389" S	29° 00' 00.9986" E
EX38-50	25° 17' 42.4084" S	29° 00' 01.2088" E
EX38-51	25° 17' 42.1708" S	29° 00' 00.1624" E
EX38-52	25° 17' 40.6766" S	29° 00' 00.4059" E
EX38-53	25° 17' 38.6975" S	29° 00' 01.4962" E
EX38-54	25° 17' 38.4120" S	29° 00' 01.3518" E
EX38-55	25° 17' 37.9343" S	29° 00' 00.4624" E
EX38-56	25° 17' 32.9337" S	29° 00' 04.3265" E
EX38-57	25° 17' 31.5572" S	29° 00' 03.3875" E
EX38-58	25° 17' 29.3378" S	29° 00' 03.2981" E

Point	Latitude	Longitude
EX38-59	25° 17' 28.9762" S	29° 00' 04.3630" E
EX38-60	25° 17' 27.6406" S	29° 00' 03.5201" E
EX38-61	25° 17' 27.1262" S	29° 00' 04.6528" E
EX38-62	25° 17' 26.2327" S	29° 00' 04.1933" E
EX38-63	25° 17' 25.8937" S	29° 00' 05.0356" E
EX38-64	25° 17' 25.0034" S	29° 00' 04.5839" E
EX38-65	25° 17' 21.7927" S	29° 00' 03.1880" E
EX38-66	25° 17' 21.1203" S	29° 00' 05.1359" E
EX38-67	25° 17' 22.8685" S	29° 00' 06.1009" E
EX38-68	25° 17' 20.9567" S	29° 00' 09.5219" E
EX38-69	25° 17' 31.7086" S	29° 00' 15.0902" E
EX38-70	25° 17' 31.1711" S	29° 00' 16.2737" E
EX38-71	25° 17' 31.3468" S	29° 00' 16.8192" E
EX38-72	25° 17' 30.5581" S	29° 00' 18.5699" E
EX38-73	25° 17' 28.2862" S	29° 00' 17.1204" E
EX38-74	25° 17' 27.5345" S	29° 00' 18.4776" E
EX38-75	25° 17' 27.5533" S	29° 00' 19.0807" E
EX38-76	25° 17' 27.1435" S	29° 00' 20.0686" E
EX38-77	25° 17' 27.6836" S	29° 00' 20.3828" E
EX38-78	25° 17' 26.5637" S	29° 00' 22.3423" E
EX38-79	25° 17' 28.0024" S	29° 00' 23.2004" E
EX38-80	25° 17' 29.1380" S	29° 00' 23.8852" E
EX38-81	25° 17' 30.1636" S	29° 00' 21.6798" E
EX38-82	25° 17' 32.2580" S	29° 00' 22.6436" E
EX38-83	25° 17' 33.8250" S	29° 00' 23.4587" E
EX38-84	25° 17' 33.0103" S	29° 00' 23.8636" E
EX38-85	25° 17' 32.0519" S	29° 00' 25.8338" E
EX38-86	25° 17' 34.7353" S	29° 00' 27.3618" E
EX38-87	25° 17' 34.2633" S	29° 00' 30.1882" E
EX38-88	25° 17' 34.7014" S	29° 00' 30.4167" E
EX38-89	25° 17' 34.1428" S	29° 00' 31.3384" E
EX38-90	25° 17' 32.9587" S	29° 00' 30.7071" E
EX38-91	25° 17' 36.0953" S	29° 00' 44.1381" E
EX38-92	25° 17' 46.2453" S	29° 00' 49.3115" E
EX38-93	25° 17' 45.6391" S	29° 00' 50.7903" E
EX38-94	25° 17' 48.6712" S	29° 00' 54.0094" E
EX38-95	25° 17' 54.1581" S	29° 00' 46.2810" E
EX38-96	25° 17' 56.3410" S	29° 00' 47.4632" E
EX38-97	25° 17' 57.5273" S	29° 00' 47.7525" E
EX38-98	25° 17' 58.6989" S	29° 00' 48.3955" E
EX38-99	25° 18' 00.1956" S	29° 00' 50.1217" E
EX38-100	25° 18' 03.4378" S	29° 00' 50.7330" E
EX38-101	25° 18' 03.2296" S	29° 00' 52.1293" E
EX38-102	25° 18' 04.0102" S	29° 00' 52.2967" E
EX38-103	25° 18' 03.8183" S	29° 00' 53.4581" E
EX38-104	25° 18' 04.2635" S	29° 00' 54.3204" E
EX38-105	25° 18' 06.1187" S	29° 00' 54.6506" E
EX38-106	25° 18' 05.9047" S	29° 00' 55.9711" E

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**,

excluding the figures **EX1 to EX78,**

represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 69 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No.

M B Straughan G.Pr. LS0907D

09 October 2025 date

For applicant

Owain Jackson name

signature

09 October 2025 date

signature

date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation

Dwg: reg 2(2) plan er kruis river oct 2025.dwg

Revision:

Date: 09 October 2025

friedlaender, burger & volkmann

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Point	Latitude	Longitude
EX38-107	25° 18' 07.4604" S	29° 00' 56.4525" E
EX38-108	25° 18' 07.3707" S	29° 00' 56.9799" E
EX38-109	25° 18' 08.9714" S	29° 00' 58.4149" E
EX38-110	25° 18' 09.8679" S	29° 00' 58.7310" E
EX38-111	25° 18' 14.4727" S	29° 00' 59.5818" E
EX38-112	25° 18' 14.5322" S	29° 00' 59.1575" E
EX38-113	25° 18' 14.7494" S	29° 00' 57.7487" E
EX38-114	25° 18' 16.3546" S	29° 00' 58.0521" E
EX38-115	25° 18' 17.9639" S	29° 00' 58.3422" E
EX38-116	25° 18' 18.4599" S	29° 00' 58.4260" E
EX38-117	25° 18' 23.2620" S	29° 00' 59.3375" E
EX38-118	25° 18' 22.7528" S	29° 01' 02.5857" E
EX38-119	25° 18' 22.1775" S	29° 01' 03.5941" E
EX38-120	25° 18' 21.1310" S	29° 01' 04.8906" E
EX38-121	25° 18' 19.7865" S	29° 01' 03.8069" E
EX38-122	25° 18' 18.9600" S	29° 01' 04.8981" E
EX38-123	25° 18' 17.1447" S	29° 01' 03.9555" E
EX38-124	25° 18' 17.1752" S	29° 01' 04.3828" E
EX38-125	25° 18' 14.7707" S	29° 01' 04.4803" E
EX38-126	25° 18' 14.8380" S	29° 01' 06.7442" E
EX38-127	25° 18' 17.3045" S	29° 01' 06.5959" E
EX38-128	25° 18' 17.7756" S	29° 01' 06.4373" E
EX38-129	25° 18' 16.8948" S	29° 01' 07.5646" E
EX38-130	25° 18' 15.3058" S	29° 01' 09.5413" E
EX38-131	25° 18' 12.3410" S	29° 01' 07.1274" E
EX38-132	25° 18' 13.9681" S	29° 01' 04.9892" E
EX38-133	25° 18' 11.2510" S	29° 01' 02.2151" E
EX38-134	25° 18' 08.1549" S	29° 01' 06.3032" E
EX38-135	25° 18' 11.3521" S	29° 01' 08.4272" E
EX38-136	25° 18' 12.0464" S	29° 01' 08.8898" E
EX38-137	25° 18' 12.6362" S	29° 01' 08.1205" E
EX38-138	25° 18' 12.8729" S	29° 01' 08.0884" E
EX38-139	25° 18' 14.8493" S	29° 01' 09.6611" E
EX38-140	25° 18' 14.2655" S	29° 01' 10.3066" E
EX38-141	25° 18' 15.4516" S	29° 01' 11.4856" E
EX38-142	25° 18' 14.0071" S	29° 01' 13.8424" E
EX38-143	25° 18' 14.1681" S	29° 01' 20.7480" E
EX38-144	25° 18' 13.9266" S	29° 01' 21.0313" E
EX38-145	25° 18' 13.3599" S	29° 01' 21.6717" E
EX38-146	25° 18' 12.7931" S	29° 01' 22.3120" E
EX38-147	25° 18' 12.2263" S	29° 01' 22.9523" E
EX38-148	25° 18' 11.5401" S	29° 01' 23.4307" E
EX38-149	25° 18' 10.8264" S	29° 01' 23.9283" E
EX38-150	25° 18' 10.1127" S	29° 01' 24.4258" E
EX38-151	25° 18' 09.3990" S	29° 01' 24.9234" E
EX38-152	25° 18' 08.6853" S	29° 01' 25.4209" E
EX38-153	25° 18' 07.9990" S	29° 01' 25.8993" E
EX38-154	25° 18' 06.9559" S	29° 01' 26.6265" E
EX38-155	25° 18' 06.4618" S	29° 01' 26.9709" E
EX38-156	25° 18' 05.9678" S	29° 01' 27.3154" E
EX38-157	25° 18' 04.9795" S	29° 01' 28.0042" E
EX38-158	25° 18' 04.2933" S	29° 01' 28.4826" E
EX38-159	25° 18' 03.6070" S	29° 01' 28.9610" E
EX38-160	25° 18' 02.6388" S	29° 01' 29.6360" E
EX38-161	25° 18' 02.6182" S	29° 01' 31.0658" E
EX38-162	25° 18' 02.6053" S	29° 01' 31.9593" E
EX38-163	25° 18' 02.5925" S	29° 01' 32.8529" E
EX38-164	25° 18' 02.5796" S	29° 01' 33.7466" E
EX38-165	25° 18' 02.5652" S	29° 01' 34.7474" E
EX38-166	25° 18' 02.5508" S	29° 01' 35.7483" E
EX38-167	25° 18' 02.5430" S	29° 01' 36.2845" E
EX38-168	25° 18' 02.5291" S	29° 01' 37.2496" E
EX38-169	25° 18' 02.5162" S	29° 01' 38.1432" E
EX38-170	25° 18' 02.5033" S	29° 01' 39.0368" E
EX38-171	25° 18' 02.4826" S	29° 01' 40.4739" E
EX38-172	25° 18' 03.6638" S	29° 01' 41.3604" E
EX38-173	25° 18' 04.3885" S	29° 01' 41.9044" E
EX38-174	25° 18' 05.1133" S	29° 01' 42.4484" E
EX38-175	25° 18' 05.3817" S	29° 01' 42.6498" E
EX38-176	25° 18' 05.1619" S	29° 01' 43.0044" E
EX38-177	25° 18' 06.1014" S	29° 01' 43.7096" E
EX38-178	25° 18' 07.0410" S	29° 01' 44.4148" E
EX38-179	25° 18' 07.2607" S	29° 01' 44.0605" E
EX38-180	25° 18' 07.5291" S	29° 01' 44.2620" E
EX38-181	25° 18' 08.2001" S	29° 01' 44.7657" E
EX38-182	25° 18' 08.8712" S	29° 01' 45.2695" E
EX38-183	25° 18' 09.5423" S	29° 01' 45.7732" E
EX38-184	25° 18' 10.2134" S	29° 01' 46.2770" E
EX38-185	25° 18' 10.8845" S	29° 01' 46.7807" E
EX38-186	25° 18' 11.5556" S	29° 01' 47.2845" E
EX38-187	25° 18' 12.7635" S	29° 01' 48.1912" E
EX38-188	25° 18' 13.7168" S	29° 01' 48.9068" E
EX38-189	25° 18' 14.3511" S	29° 01' 49.1247" E
EX38-190	25° 18' 14.8794" S	29° 01' 49.3062" E
EX38-191	25° 18' 16.0837" S	29° 01' 49.7199" E
EX38-192	25° 18' 16.6313" S	29° 01' 50.2256" E
EX38-193	25° 18' 17.2536" S	29° 01' 50.8002" E
EX38-194	25° 18' 17.8759" S	29° 01' 51.3749" E
EX38-195	25° 18' 18.6700" S	29° 01' 50.3344" E
EX38-196	25° 18' 18.8789" S	29° 01' 50.0607" E
EX38-197	25° 18' 19.6102" S	29° 01' 49.1024" E
EX38-198	25° 18' 20.3416" S	29° 01' 48.1440" E
EX38-199	25° 18' 20.5505" S	29° 01' 47.8702" E
EX38-200	25° 18' 21.2610" S	29° 01' 46.9392" E
EX38-201	25° 18' 21.9714" S	29° 01' 46.0083" E
EX38-202	25° 18' 21.4486" S	29° 01' 45.5256" E
EX38-203	25° 18' 21.7620" S	29° 01' 45.1149" E
EX38-204	25° 18' 22.2843" S	29° 01' 44.4303" E
EX38-205	25° 18' 22.8067" S	29° 01' 43.7458" E
EX38-206	25° 18' 23.3290" S	29° 01' 43.0613" E
EX38-207	25° 18' 23.8513" S	29° 01' 42.3767" E
EX38-208	25° 18' 24.3737" S	29° 01' 41.6922" E
EX38-209	25° 18' 24.8960" S	29° 01' 41.0076" E
EX38-210	25° 18' 25.5621" S	29° 01' 40.1346" E
EX38-211	25° 18' 27.2698" S	29° 01' 40.5447" E
EX38-212	25° 18' 27.7006" S	29° 01' 41.1726" E
EX38-213	25° 18' 28.1399" S	29° 01' 41.8129" E
EX38-214	25° 18' 28.4719" S	29° 01' 42.2967" E
EX38-215	25° 18' 29.1543" S	29° 01' 42.4756" E
EX38-216	25° 18' 30.2181" S	29° 01' 43.0113" E
EX38-217	25° 18' 31.2819" S	29° 01' 43.5470" E
EX38-218	25° 18' 31.8107" S	29° 01' 43.8133" E
EX38-219	25° 18' 32.5738" S	29° 01' 46.0900" E
EX38-220	25° 18' 32.8773" S	29° 01' 46.9956" E
EX38-221	25° 18' 33.1808" S	29° 01' 47.9013" E
EX38-222	25° 18' 33.4843" S	29° 01' 48.8070" E
EX38-223	25° 18' 33.7352" S	29° 01' 49.5554" E
EX38-224	25° 18' 35.7816" S	29° 01' 53.7746" E
EX38-225	25° 18' 36.1570" S	29° 01' 54.3130" E
EX38-226	25° 18' 36.6515" S	29° 01' 55.0222" E
EX38-227	25° 18' 37.1459" S	29° 01' 55.7314" E
EX38-228	25° 18' 37.6403" S	29° 01' 56.4407" E
EX38-229	25° 18' 38.1348" S	29° 01' 57.1499" E
EX38-230	25° 18' 38.8066" S	29° 01' 58.1136" E
EX38-231	25° 18' 39.5038" S	29° 01' 59.1136" E
EX38-232	25° 18' 39.4664" S	29° 02' 00.0490" E
EX38-233	25° 18' 39.4291" S	29° 02' 00.9848" E
EX38-234	25° 18' 39.3918" S	29° 02' 01.9206" E
EX38-235	25° 18' 39.3545" S	29° 02' 02.8564" E
EX38-236	25° 18' 39.7054" S	29° 02' 04.2919" E
EX38-237	25° 18' 39.9259" S	29° 02' 05.1937" E
EX38-238	25° 18' 40.2636" S	29° 02' 06.5748" E
EX38-239	25° 18' 40.9661" S	29° 02' 07.3481" E
EX38-240	25° 18' 42.0612" S	29° 02' 08.5535" E
EX38-241	25° 18' 42.6355" S	29° 02' 09.1856" E
EX38-242	25° 18' 43.2099" S	29° 02' 09.8178" E
EX38-243	25° 18' 43.7842" S	29° 02' 10.4500" E
EX38-244	25° 18' 44.3586" S	29° 02' 11.0822" E
EX38-245	25° 18' 44.9329" S	29° 02' 11.7143" E
EX38-246	25° 18' 45.5072" S	29° 02' 12.3465" E
EX38-247	25° 18' 46.0815" S	29° 02' 12.9787" E
EX38-248	25° 18' 46.6559" S	29° 02' 13.6109" E
EX38-249	25° 18' 47.4599" S	29° 02' 14.4959" E
EX38-250	25° 18' 48.2393" S	29° 02' 13.6390" E
EX38-251	25° 18' 49.3885" S	29° 02' 12.3752" E
EX38-252	25° 18' 50.1930" S	29° 02' 11.4906" E
EX38-253	25° 18' 50.5379" S	29° 02' 11.1114" E
EX38-254	25° 18' 51.3423" S	29° 02' 10.2269" E
EX38-255	25° 18' 52.4421" S	29° 02' 09.0176" E
EX38-256	25° 18' 52.4915" S	29° 02' 08.9632" E
EX38-257	25° 18' 53.1811" S	29° 02' 08.2050" E
EX38-258	25° 18' 53.8706" S	29° 02' 07.4467" E
EX38-259	25° 18' 55.0199" S	29° 02' 06.1830" E
EX38-260	25° 18' 56.1197" S	29° 02' 04.9736" E
EX38-261	25° 18' 56.1691" S	29° 02' 04.9193" E
EX38-262	25° 18' 56.8587" S	29° 02' 04.1610" E
EX38-263	25° 18' 57.6632" S	29° 02' 03.2764" E
EX38-264	25° 18' 58.0080" S	29° 02' 02.8971" E
EX38-265	25° 18' 55.5957" S	29° 02' 00.2418" E
EX38-266	25° 18' 56.4001" S	29° 01' 59.3572" E
EX38-267	25° 18' 59.7960" S	29° 01' 55.6228" E
EX38-268	25° 19' 00.7814" S	29° 01' 55.9311" E
EX38-269	25° 19' 01.0518" S	29° 01' 56.1074" E
EX38-270	25° 19' 09.2389" S	29° 02' 05.2452" E
EX38-271	25° 19' 12.6587" S	29° 02' 03.9094" E
EX38-272	25° 19' 04.5145" S	29° 01' 54.7938" E
EX38-273	25° 19' 04.5561" S	29° 01' 54.6162" E
EX38-274	25° 19' 05.2578" S	29° 01' 54.3886" E
EX38-275	25° 19' 03.6069" S	29° 01' 48.4180" E
EX38-276	25° 19' 03.8140" S	29° 01' 47.9436" E
EX38-277	25° 19' 05.9840" S	29° 01' 46.9913" E
EX38-278	25° 19' 10.2976" S	29° 01' 45.1636" E
EX38-279	25° 19' 12.1158" S	29° 01' 50.2859" E
EX38-280	25° 19' 14.3302" S	29° 01' 49.2578" E
EX38-281	25° 19' 23.1480" S	29° 01' 59.7324" E
EX38-282	25° 19' 24.3323" S	29° 01' 58.3125" E
EX38-283	25° 19' 25.4643" S	29° 01' 59.6327" E
EX38-284	25° 19' 27.2444" S	29° 01' 57.4884" E
EX38-285	25° 19' 27.8989" S	29° 01' 56.6915" E
EX38-286	25° 19' 26.9401" S	29° 01' 56.3030" E
EX38-287	25° 19' 26.9093" S	29° 01' 56.1227" E
EX38-288	25° 19' 31.3820" S	29° 01' 51.7573" E
EX38-289	25° 19' 25.6410" S	29° 01' 45.2602" E
EX38-290	25° 19' 24.3905" S	29° 01' 46.5324" E
EX38-291	25° 19' 23.2099" S	29° 01' 45.2669" E
EX38-292	25° 19' 22.2313" S	29° 01' 46.2034" E
EX38-293	25° 19' 21.0133" S	29° 01' 44.8620" E
EX38-294	25° 19' 17.7311" S	29° 01' 43.3503" E
EX38-295	25° 19' 15.7391" S	29° 01' 43.0752" E
EX38-296	25° 19' 15.5192" S	29° 01' 42.8872" E
EX38-297	25° 19' 15.4926" S	29° 01' 42.8118" E
EX38-298	25° 19' 15.5852" S	29° 01' 42.5821" E

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 70 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. — M B Straughan G.Pr. LS0907D — 09 October 2025 (date)

For applicant — Owain Jackson (name) — signature — 09 October 2025 (date)

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	Dwg: reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

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Point	Latitude	Longitude
EX38-299	25° 19' 16.7887" S	29° 01' 42.0735" E
EX38-300	25° 19' 16.8594" S	29° 01' 42.1211" E
EX38-301	25° 19' 17.3047" S	29° 01' 41.3446" E
EX38-302	25° 19' 15.3768" S	29° 01' 38.5984" E
EX38-303	25° 19' 14.7933" S	29° 01' 38.8524" E
EX38-304	25° 19' 14.0407" S	29° 01' 36.7587" E
EX38-305	25° 19' 13.4451" S	29° 01' 37.0396" E
EX38-306	25° 19' 13.1313" S	29° 01' 37.6424" E
EX38-307	25° 19' 12.3598" S	29° 01' 37.9701" E
EX38-308	25° 19' 11.1254" S	29° 01' 34.6565" E
EX38-309	25° 19' 10.9019" S	29° 01' 32.7988" E
EX38-310	25° 19' 11.6907" S	29° 01' 32.4618" E
EX38-311	25° 19' 10.8729" S	29° 01' 30.1363" E
EX38-312	25° 19' 11.6366" S	29° 01' 29.8140" E
EX38-313	25° 19' 10.3865" S	29° 01' 27.1139" E
EX38-314	25° 19' 09.8838" S	29° 01' 27.3251" E
EX38-315	25° 19' 09.4700" S	29° 01' 26.1483" E
EX38-316	25° 19' 08.3058" S	29° 01' 25.1309" E
EX38-317	25° 19' 05.4432" S	29° 01' 19.6171" E
EX38-318	25° 19' 04.1781" S	29° 01' 20.1585" E
EX38-319	25° 19' 02.5419" S	29° 01' 18.2122" E
EX38-320	25° 19' 03.5735" S	29° 01' 17.3754" E
EX38-321	25° 19' 02.4476" S	29° 01' 15.9103" E
EX38-322	25° 19' 02.8718" S	29° 01' 15.4656" E
EX38-323	25° 19' 02.3629" S	29° 01' 14.7914" E
EX38-324	25° 19' 01.9051" S	29° 01' 15.2229" E
EX38-325	25° 18' 58.8425" S	29° 01' 11.5364" E
EX38-326	25° 18' 59.8243" S	29° 01' 10.5727" E
EX38-327	25° 19' 00.2000" S	29° 01' 10.2377" E
EX38-328	25° 18' 56.8791" S	29° 01' 06.2583" E
EX38-329	25° 18' 57.8465" S	29° 01' 05.2998" E
EX38-330	25° 18' 56.7776" S	29° 01' 03.9586" E
EX38-331	25° 18' 57.1698" S	29° 01' 03.5036" E
EX38-332	25° 18' 56.6135" S	29° 01' 02.8610" E
EX38-333	25° 18' 55.4921" S	29° 01' 01.7460" E
EX38-334	25° 18' 55.5042" S	29° 01' 01.4933" E
EX38-335	25° 18' 56.3626" S	29° 01' 00.6399" E
EX38-336	25° 18' 53.8386" S	29° 00' 57.6097" E
EX38-337	25° 18' 52.8608" S	29° 00' 56.7074" E
EX38-338	25° 18' 52.1870" S	29° 00' 57.4517" E
EX38-339	25° 18' 51.9599" S	29° 00' 57.4488" E
EX38-340	25° 18' 49.5603" S	29° 00' 54.7189" E
EX38-341	25° 18' 48.9832" S	29° 00' 54.0927" E
EX38-342	25° 18' 48.4092" S	29° 00' 53.4698" E
EX38-343	25° 18' 47.8495" S	29° 00' 52.8625" E
EX38-344	25° 18' 47.6452" S	29° 00' 52.0030" E
EX38-345	25° 18' 47.2346" S	29° 00' 50.2760" E
EX38-346	25° 18' 47.0397" S	29° 00' 48.9728" E
EX38-347	25° 18' 46.6010" S	29° 00' 48.9565" E
EX38-348	25° 18' 44.3566" S	29° 00' 48.8731" E
EX38-349	25° 18' 43.5579" S	29° 00' 48.8795" E
EX38-350	25° 18' 42.6798" S	29° 00' 48.8864" E
EX38-351	25° 18' 41.8999" S	29° 00' 48.8926" E
EX38-352	25° 18' 40.8165" S	29° 00' 48.9012" E
EX38-353	25° 18' 40.9259" S	29° 00' 50.4927" E
EX38-354	25° 18' 29.6523" S	29° 00' 50.3717" E
EX38-355	25° 18' 29.7558" S	29° 00' 48.8562" E
EX38-356	25° 18' 28.7040" S	29° 00' 48.6916" E
EX38-357	25° 18' 27.9103" S	29° 00' 48.5728" E
EX38-358	25° 18' 28.0290" S	29° 00' 47.8498" E
EX38-359	25° 18' 28.1041" S	29° 00' 47.3298" E
EX39-1	25° 10' 24.8514" S	29° 01' 31.1786" E
EX39-2	25° 10' 23.0906" S	29° 01' 30.1605" E
EX39-3	25° 10' 04.2407" S	29° 01' 26.1303" E
EX39-4	25° 10' 02.9984" S	29° 01' 33.8686" E
EX39-5	25° 10' 02.8091" S	29° 01' 36.4192" E
EX39-6	25° 10' 03.5092" S	29° 01' 39.3696" E
EX39-7	25° 10' 05.4218" S	29° 01' 42.7350" E
EX39-8	25° 10' 18.1644" S	29° 01' 45.3209" E
EX39-9	25° 10' 41.9629" S	29° 01' 53.8248" E
EX39-10	25° 10' 43.2173" S	29° 01' 48.2972" E
EX39-11	25° 10' 42.0394" S	29° 01' 47.9259" E
EX39-12	25° 10' 42.6167" S	29° 01' 45.3894" E
EX39-13	25° 10' 41.9201" S	29° 01' 45.1699" E
EX39-14	25° 10' 44.2700" S	29° 01' 34.8254" E
EX39-15	25° 10' 38.2401" S	29° 01' 32.4124" E
EX39-16	25° 10' 36.6449" S	29° 01' 32.1586" E
EX39-17	25° 10' 35.4840" S	29° 01' 31.9726" E
EX39-18	25° 10' 34.6183" S	29° 01' 34.6915" E
EX39-19	25° 10' 31.7770" S	29° 01' 33.4709" E
EX40-1	25° 12' 36.9971" S	29° 01' 33.0628" E
EX40-2	25° 12' 36.0568" S	29° 01' 33.6689" E
EX40-3	25° 12' 36.4437" S	29° 01' 34.4072" E
EX40-4	25° 12' 36.8509" S	29° 01' 35.1842" E
EX40-5	25° 12' 37.3223" S	29° 01' 36.0837" E
EX40-6	25° 12' 38.1350" S	29° 01' 37.6349" E
EX40-7	25° 12' 38.5339" S	29° 01' 38.3960" E
EX40-8	25° 12' 38.5826" S	29° 01' 38.4889" E
EX40-9	25° 12' 38.9476" S	29° 01' 39.1854" E
EX40-10	25° 12' 39.5570" S	29° 01' 40.3483" E
EX40-11	25° 12' 39.8660" S	29° 01' 40.9380" E
EX40-12	25° 12' 40.5024" S	29° 01' 42.1527" E
EX40-13	25° 12' 41.1480" S	29° 01' 43.3847" E
EX40-14	25° 12' 41.4726" S	29° 01' 44.0041" E
EX40-15	25° 12' 41.7971" S	29° 01' 44.6235" E
EX40-16	25° 12' 42.4477" S	29° 01' 45.8651" E
EX40-17	25° 12' 42.7729" S	29° 01' 46.4858" E
EX40-18	25° 12' 43.4233" S	29° 01' 47.7271" E
EX40-19	25° 12' 43.7413" S	29° 01' 48.3338" E
EX40-20	25° 12' 44.0898" S	29° 01' 48.9991" E
EX40-21	25° 12' 44.6298" S	29° 01' 50.0296" E
EX40-22	25° 12' 44.7109" S	29° 01' 50.1843" E
EX40-23	25° 12' 45.0839" S	29° 01' 50.8963" E
EX40-24	25° 12' 46.1487" S	29° 01' 50.2096" E
EX40-25	25° 12' 53.1363" S	29° 02' 03.3030" E
EX40-26	25° 12' 56.5663" S	29° 02' 05.6602" E
EX40-27	25° 12' 59.6967" S	29° 02' 10.3131" E
EX40-28	25° 13' 02.5374" S	29° 02' 11.4660" E
EX40-29	25° 13' 05.2638" S	29° 02' 10.7748" E
EX40-30	25° 13' 05.4585" S	29° 02' 10.9089" E
EX40-31	25° 13' 07.0039" S	29° 02' 18.2758" E
EX40-32	25° 13' 09.6783" S	29° 02' 23.2876" E
EX40-33	25° 13' 10.1716" S	29° 02' 24.2121" E
EX40-34	25° 13' 10.7322" S	29° 02' 23.8506" E
EX40-35	25° 13' 11.2929" S	29° 02' 23.4890" E
EX40-36	25° 13' 11.8535" S	29° 02' 23.1276" E
EX40-37	25° 13' 12.4141" S	29° 02' 22.7660" E
EX40-38	25° 13' 12.9747" S	29° 02' 22.4046" E
EX40-39	25° 13' 13.8236" S	29° 02' 24.0002" E
EX40-40	25° 13' 22.0978" S	29° 02' 21.8503" E
EX40-41	25° 13' 22.7581" S	29° 02' 21.6752" E
EX40-42	25° 13' 14.6237" S	29° 02' 06.4308" E
EX40-43	25° 13' 14.1545" S	29° 02' 05.9048" E
EX40-44	25° 13' 13.8914" S	29° 02' 05.4117" E
EX40-45	25° 13' 13.7027" S	29° 02' 04.7050" E
EX40-46	25° 13' 10.6444" S	29° 01' 58.9738" E
EX40-47	25° 13' 10.0853" S	29° 01' 57.9262" E
EX40-48	25° 13' 09.5262" S	29° 01' 56.8785" E
EX40-49	25° 13' 09.1973" S	29° 01' 56.2622" E
EX40-50	25° 13' 08.8684" S	29° 01' 55.6459" E
EX40-51	25° 13' 08.5396" S	29° 01' 55.0296" E
EX40-52	25° 13' 08.2107" S	29° 01' 54.4134" E
EX40-53	25° 13' 07.8818" S	29° 01' 53.7971" E
EX40-54	25° 13' 07.5529" S	29° 01' 53.1808" E
EX40-55	25° 13' 07.2240" S	29° 01' 52.5645" E
EX40-56	25° 13' 06.8952" S	29° 01' 51.9482" E
EX40-57	25° 13' 06.5663" S	29° 01' 51.3320" E
EX40-58	25° 13' 06.2374" S	29° 01' 50.7157" E
EX40-59	25° 13' 05.9085" S	29° 01' 50.0994" E
EX40-60	25° 13' 05.5796" S	29° 01' 49.4832" E
EX40-61	25° 13' 05.0205" S	29° 01' 48.4355" E
EX40-62	25° 13' 01.8796" S	29° 01' 42.5502" E
EX40-63	25° 12' 52.9363" S	29° 01' 25.7845" E
EX40-64	25° 12' 46.3907" S	29° 01' 13.5217" E
EX40-65	25° 12' 45.8302" S	29° 01' 13.8834" E
EX40-66	25° 12' 39.2980" S	29° 01' 18.0984" E
EX40-67	25° 12' 39.4139" S	29° 01' 21.0859" E
EX40-68	25° 12' 34.0172" S	29° 01' 21.3426" E
EX40-69	25° 12' 34.2759" S	29° 01' 27.9644" E
EX41-1	25° 11' 31.9998" S	29° 01' 38.7575" E
EX41-2	25° 11' 32.3161" S	29° 01' 30.2769" E
EX41-3	25° 11' 16.8551" S	29° 01' 32.6964" E
EX41-4	25° 11' 15.8054" S	29° 02' 00.8399" E
EX41-5	25° 11' 15.6096" S	29° 02' 04.1584" E
EX41-6	25° 11' 15.6093" S	29° 02' 05.5620" E
EX41-7	25° 11' 16.9052" S	29° 02' 05.4060" E
EX41-8	25° 11' 17.7278" S	29° 02' 05.2869" E
EX41-9	25° 11' 18.6763" S	29° 02' 05.1629" E
EX41-10	25° 11' 19.4502" S	29° 02' 05.0217" E
EX41-11	25° 11' 20.4292" S	29° 02' 04.8777" E
EX41-12	25° 11' 21.3860" S	29° 02' 04.7230" E
EX41-13	25° 11' 21.3857" S	29° 02' 05.5069" E
EX41-14	25° 11' 21.5333" S	29° 02' 05.9573" E
EX41-15	25° 11' 25.5301" S	29° 02' 05.8161" E
EX41-16	25° 11' 40.4398" S	29° 02' 03.7027" E
EX41-17	25° 11' 41.1386" S	29° 02' 03.3643" E
EX41-18	25° 11' 47.4471" S	29° 02' 03.4436" E
EX41-19	25° 11' 49.7889" S	29° 02' 03.3707" E
EX41-20	25° 11' 49.8567" S	29° 02' 00.3075" E
EX41-21	25° 11' 49.9080" S	29° 01' 57.8680" E
EX41-22	25° 11' 49.9798" S	29° 01' 54.9592" E
EX41-23	25° 11' 48.1924" S	29° 01' 54.9927" E
EX41-24	25° 11' 47.4632" S	29° 01' 55.0121" E
EX41-25	25° 11' 47.8353" S	29° 01' 43.3755" E
EX41-26	25° 11' 41.6304" S	29° 01' 43.2251" E
EX41-27	25° 11' 41.8305" S	29° 01' 37.4173" E
EX42-1	25° 20' 35.3787" S	29° 02' 34.2073" E
EX42-2	25° 20' 35.2538" S	29° 02' 34.4775" E
EX42-3	25° 20' 23.9304" S	29° 02' 58.9854" E
EX42-4	25° 20' 09.8639" S	29° 03' 29.4248" E
EX42-5	25° 20' 06.8242" S	29° 03' 35.9485" E
EX42-6	25° 20' 24.6727" S	29° 03' 44.0275" E
EX42-7	25° 20' 25.1705" S	29° 03' 44.2421" E
EX42-8	25° 20' 25.4487" S	29° 03' 44.3802" E
EX42-9	25° 20' 37.1736" S	29° 03' 49.7019" E
EX42-10	25° 20' 40.1287" S	29° 03' 51.0433" E
EX42-11	25° 20' 40.6917" S	29° 03' 51.2973" E
EX42-12	25° 20' 44.9467" S	29° 03' 53.2321" E
EX42-13	25° 20' 47.0000" S	29° 03' 54.1736" E
EX42-14	25° 20' 47.5072" S	29° 03' 54.4059" E
EX42-15	25° 20' 47.9274" S	29° 03' 54.5984" E
EX42-16	25° 20' 50.7778" S	29° 03' 55.9690" E

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 71 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. — M B Straughan G.Pr. LS0907D — 09 October 2025 date

For applicant Owain Jackson name

signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation

Dwg: reg 2(2) plan er kruis river oct 2025.dwg

Revision:

Date: 09 October 2025

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Point	Latitude	Longitude
EX42-17	25° 20' 51.3278" S	29° 03' 56.2164" E
EX42-18	25° 20' 52.3033" S	29° 03' 56.6500" E
EX42-19	25° 20' 53.3615" S	29° 03' 57.1313" E
EX42-20	25° 21' 00.7953" S	29° 04' 00.4755" E
EX42-21	25° 21' 02.2214" S	29° 04' 01.1170" E
EX42-22	25° 21' 02.2660" S	29° 04' 01.1371" E
EX42-23	25° 21' 03.2319" S	29° 04' 01.5717" E
EX42-24	25° 21' 04.2189" S	29° 04' 01.6310" E
EX42-25	25° 21' 05.7750" S	29° 04' 01.7246" E
EX42-26	25° 21' 06.8383" S	29° 04' 01.7886" E
EX42-27	25° 21' 11.6109" S	29° 04' 02.1734" E
EX42-28	25° 21' 11.8051" S	29° 04' 02.1756" E
EX42-29	25° 21' 13.1732" S	29° 04' 02.2679" E
EX42-30	25° 21' 13.4908" S	29° 04' 02.2893" E
EX42-31	25° 21' 14.4941" S	29° 04' 02.3570" E
EX42-32	25° 21' 15.6877" S	29° 04' 02.4376" E
EX42-33	25° 21' 16.8864" S	29° 04' 02.5184" E
EX42-34	25° 21' 20.0496" S	29° 04' 02.7319" E
EX42-35	25° 21' 27.0404" S	29° 04' 03.2036" E
EX42-36	25° 21' 28.3512" S	29° 04' 03.2921" E
EX42-37	25° 21' 29.7734" S	29° 04' 03.3880" E
EX42-38	25° 21' 29.6373" S	29° 04' 03.0730" E
EX42-39	25° 21' 29.4877" S	29° 04' 02.7265" E
EX42-40	25° 21' 26.7348" S	29° 03' 56.4328" E
EX42-41	25° 21' 26.5086" S	29° 03' 55.8234" E
EX42-42	25° 21' 23.1408" S	29° 03' 47.8928" E
EX42-43	25° 21' 21.8505" S	29° 03' 45.0211" E
EX42-44	25° 21' 21.7253" S	29° 03' 44.7268" E
EX42-45	25° 21' 19.3211" S	29° 03' 39.0730" E
EX42-46	25° 21' 18.8259" S	29° 03' 37.1717" E
EX42-47	25° 21' 13.5029" S	29° 03' 16.7985" E
EX42-48	25° 21' 13.1996" S	29° 03' 15.6486" E
EX42-49	25° 21' 10.9584" S	29° 03' 07.1570" E
EX42-50	25° 21' 03.5224" S	29° 03' 03.4991" E
EX42-51	25° 21' 02.4961" S	29° 03' 02.9942" E
EX42-52	25° 20' 42.3382" S	29° 02' 52.8535" E
EX43-1	25° 08' 40.3007" S	29° 03' 59.3740" E
EX43-2	25° 08' 36.8680" S	29° 03' 38.8863" E
EX43-3	25° 08' 36.0677" S	29° 03' 39.0402" E
EX43-4	25° 08' 35.1474" S	29° 03' 39.2172" E
EX43-5	25° 08' 34.6672" S	29° 03' 39.3096" E
EX43-6	25° 08' 34.1870" S	29° 03' 39.4019" E
EX43-7	25° 08' 33.7069" S	29° 03' 39.4943" E
EX43-8	25° 08' 33.0986" S	29° 03' 39.6113" E
EX43-9	25° 08' 32.5865" S	29° 03' 39.7098" E
EX43-10	25° 08' 32.0743" S	29° 03' 39.8083" E
EX43-11	25° 08' 31.3948" S	29° 03' 39.9390" E
EX43-12	25° 08' 31.3931" S	29° 03' 39.9393" E

Point	Latitude	Longitude
EX43-13	25° 08' 31.0570" S	29° 03' 40.0039" E
EX43-14	25° 08' 31.0508" S	29° 03' 40.0051" E
EX43-15	25° 08' 30.4711" S	29° 03' 40.1166" E
EX43-16	25° 08' 29.9570" S	29° 03' 40.2155" E
EX43-17	25° 08' 29.4449" S	29° 03' 40.3140" E
EX43-18	25° 08' 28.9327" S	29° 03' 40.4125" E
EX43-19	25° 08' 28.4205" S	29° 03' 40.5110" E
EX43-20	25° 08' 27.7963" S	29° 03' 40.6311" E
EX43-21	25° 08' 27.2745" S	29° 03' 40.7314" E
EX43-22	25° 08' 26.7527" S	29° 03' 40.8318" E
EX43-23	25° 08' 26.2325" S	29° 03' 40.9318" E
EX43-24	25° 08' 25.7123" S	29° 03' 41.0319" E
EX43-25	25° 08' 25.1921" S	29° 03' 41.1319" E
EX43-26	25° 08' 24.6720" S	29° 03' 41.2320" E
EX43-27	25° 08' 24.1518" S	29° 03' 41.3320" E
EX43-28	25° 08' 23.6316" S	29° 03' 41.4321" E
EX43-29	25° 08' 23.1114" S	29° 03' 41.5321" E
EX43-30	25° 08' 22.8537" S	29° 03' 41.5817" E
EX43-31	25° 08' 22.6389" S	29° 03' 41.6230" E
EX43-32	25° 08' 22.0787" S	29° 03' 41.7307" E
EX43-33	25° 08' 21.5185" S	29° 03' 41.8385" E
EX43-34	25° 08' 21.1824" S	29° 03' 41.9031" E
EX43-35	25° 08' 21.3839" S	29° 03' 44.1417" E
EX43-36	25° 08' 20.8341" S	29° 03' 44.2014" E
EX43-37	25° 08' 20.3248" S	29° 03' 44.2567" E
EX43-38	25° 08' 19.8154" S	29° 03' 44.3121" E
EX43-39	25° 08' 19.3060" S	29° 03' 44.3674" E
EX43-40	25° 08' 18.7967" S	29° 03' 44.4227" E
EX43-41	25° 08' 18.2873" S	29° 03' 44.4780" E
EX43-42	25° 08' 17.7779" S	29° 03' 44.5333" E
EX43-43	25° 08' 17.2686" S	29° 03' 44.5886" E
EX43-44	25° 08' 16.7592" S	29° 03' 44.6440" E
EX43-45	25° 08' 16.2498" S	29° 03' 44.6993" E
EX43-46	25° 08' 15.6273" S	29° 03' 44.7669" E
EX43-47	25° 08' 14.7056" S	29° 03' 44.8670" E
EX43-48	25° 08' 14.7599" S	29° 03' 45.4709" E
EX43-49	25° 08' 14.8143" S	29° 03' 46.0749" E
EX43-50	25° 08' 14.8687" S	29° 03' 46.6788" E
EX43-51	25° 08' 14.9230" S	29° 03' 47.2828" E
EX43-52	25° 08' 14.9790" S	29° 03' 47.9045" E
EX43-53	25° 08' 15.0301" S	29° 03' 48.4729" E
EX43-54	25° 08' 15.0845" S	29° 03' 49.0769" E
EX43-55	25° 08' 15.1428" S	29° 03' 49.7242" E
EX43-56	25° 08' 15.1528" S	29° 03' 49.8361" E
EX43-57	25° 08' 15.1891" S	29° 03' 50.2390" E
EX43-58	25° 08' 15.2383" S	29° 03' 50.7861" E
EX43-59	25° 08' 15.2876" S	29° 03' 51.3332" E
EX43-60	25° 08' 15.3690" S	29° 03' 52.2381" E

Point	Latitude	Longitude
EX43-61	25° 08' 15.4795" S	29° 03' 53.4660" E
EX43-62	25° 08' 15.5032" S	29° 03' 53.6069" E
EX43-63	25° 08' 15.6208" S	29° 03' 54.3084" E
EX43-64	25° 08' 15.8347" S	29° 03' 55.5854" E
EX43-65	25° 08' 16.1429" S	29° 03' 57.4241" E
EX43-66	25° 08' 16.1795" S	29° 03' 57.6429" E
EX43-67	25° 08' 16.2802" S	29° 03' 58.2440" E
EX43-68	25° 08' 16.3810" S	29° 03' 58.8451" E
EX43-69	25° 08' 16.4817" S	29° 03' 59.4462" E
EX43-70	25° 08' 16.5824" S	29° 04' 00.0473" E
EX43-71	25° 08' 16.6535" S	29° 04' 00.4718" E
EX43-72	25° 08' 16.6594" S	29° 04' 00.5065" E
EX43-73	25° 08' 16.8418" S	29° 04' 01.5953" E
EX43-74	25° 08' 17.2036" S	29° 04' 03.7546" E
EX43-75	25° 08' 17.7535" S	29° 04' 07.0369" E
EX43-76	25° 08' 17.9074" S	29° 04' 07.5330" E
EX43-77	25° 08' 18.0543" S	29° 04' 08.4109" E
EX43-78	25° 08' 18.4662" S	29° 04' 10.8688" E
EX43-79	25° 08' 18.8781" S	29° 04' 13.3268" E
EX43-80	25° 08' 19.2900" S	29° 04' 15.7847" E
EX43-81	25° 08' 19.7016" S	29° 04' 18.2419" E
EX43-82	25° 08' 24.1093" S	29° 04' 18.9117" E
EX43-83	25° 08' 24.6849" S	29° 04' 18.7953" E
EX43-84	25° 08' 29.7721" S	29° 04' 20.5619" E
EX43-85	25° 08' 32.1908" S	29° 04' 22.1785" E
EX43-86	25° 08' 32.5692" S	29° 04' 22.4651" E
EX43-87	25° 08' 33.1445" S	29° 04' 22.3486" E
EX43-88	25° 08' 38.2639" S	29° 04' 27.2676" E
EX43-89	25° 08' 43.9530" S	29° 04' 26.1174" E
EX43-90	25° 08' 44.7522" S	29° 04' 25.9558" E
EX43-91	25° 08' 44.1640" S	29° 04' 22.4443" E
EX43-92	25° 08' 42.2112" S	29° 04' 10.7868" E
EX43-93	25° 08' 41.6230" S	29° 04' 07.2754" E
EX43-94	25° 08' 40.7699" S	29° 04' 02.1836" E
EX43-95	25° 08' 40.2993" S	29° 03' 59.3746" E
EX44-1	25° 18' 16.7280" S	29° 04' 03.3696" E
EX44-2	25° 18' 17.2563" S	29° 04' 00.8405" E
EX44-3	25° 18' 20.0633" S	29° 04' 00.4899" E
EX44-4	25° 18' 20.0530" S	29° 04' 01.6689" E
EX44-5	25° 18' 21.0202" S	29° 04' 01.5483" E
EX44-6	25° 18' 21.0301" S	29° 04' 00.3689" E
EX44-7	25° 18' 22.2641" S	29° 04' 00.2148" E
EX44-8	25° 18' 22.2704" S	29° 03' 45.9994" E
EX44-9	25° 18' 21.8521" S	29° 03' 46.0699" E
EX44-10	25° 18' 22.2079" S	29° 03' 45.3108" E
EX44-11	25° 18' 21.8180" S	29° 03' 43.7723" E
EX44-12	25° 18' 20.0382" S	29° 03' 44.9386" E
EX44-13	25° 18' 15.3576" S	29° 03' 45.7009" E

Point	Latitude	Longitude
EX44-14	25° 18' 15.4791" S	29° 03' 44.2441" E
EX44-15	25° 18' 15.5157" S	29° 03' 43.7723" E
EX44-16	25° 18' 13.1631" S	29° 03' 44.1354" E
EX44-17	25° 18' 13.0486" S	29° 03' 42.6792" E
EX44-18	25° 18' 11.6469" S	29° 03' 42.9270" E
EX44-19	25° 18' 10.8513" S	29° 03' 43.0817" E
EX44-20	25° 18' 10.8246" S	29° 03' 41.6399" E
EX44-21	25° 18' 11.2653" S	29° 03' 41.5804" E
EX44-22	25° 18' 11.2883" S	29° 03' 37.7199" E
EX44-23	25° 18' 05.6939" S	29° 03' 38.5089" E
EX44-24	25° 18' 05.5823" S	29° 03' 42.0155" E
EX44-25	25° 18' 05.5920" S	29° 03' 42.9542" E
EX44-26	25° 18' 05.4351" S	29° 03' 47.4376" E
EX44-27	25° 17' 58.1598" S	29° 03' 42.1825" E
EX44-28	25° 17' 57.9845" S	29° 03' 42.4833" E
EX44-29	25° 17' 57.4418" S	29° 03' 43.4144" E
EX44-30	25° 17' 56.8630" S	29° 03' 44.4076" E
EX44-31	25° 17' 56.5122" S	29° 03' 45.0095" E
EX44-32	25° 17' 56.1614" S	29° 03' 45.6113" E
EX44-33	25° 17' 55.8106" S	29° 03' 46.2132" E
EX44-34	25° 17' 55.4598" S	29° 03' 46.8151" E
EX44-35	25° 17' 55.1090" S	29° 03' 47.4170" E
EX44-36	25° 17' 54.7583" S	29° 03' 48.0189" E
EX44-37	25° 17' 54.4075" S	29° 03' 48.6208" E
EX44-38	25° 17' 54.0567" S	29° 03' 49.2227" E
EX44-39	25° 17' 53.7059" S	29° 03' 49.8246" E
EX44-40	25° 17' 53.3551" S	29° 03' 50.4265" E
EX44-41	25° 17' 53.0043" S	29° 03' 51.0283" E
EX44-42	25° 17' 52.6535" S	29° 03' 51.6302" E
EX44-43	25° 17' 52.3027" S	29° 03' 52.2321" E
EX44-44	25° 17' 51.9613" S	29° 03' 52.8179" E
EX44-45	25° 17' 51.8839" S	29° 03' 54.2152" E
EX44-46	25° 17' 51.8778" S	29° 03' 54.3248" E
EX44-47	25° 17' 51.8171" S	29° 03' 55.4209" E
EX44-48	25° 17' 51.7563" S	29° 03' 56.5174" E
EX44-49	25° 17' 51.7503" S	29° 03' 56.6269" E
EX44-50	25° 17' 51.7128" S	29° 03' 57.3027" E
EX44-51	25° 17' 51.6753" S	29° 03' 57.9789" E
EX44-52	25° 17' 51.6379" S	29° 03' 58.6551" E
EX44-53	25° 17' 51.6112" S	29° 03' 59.1376" E
EX44-54	25° 17' 51.6379" S	29° 03' 59.3244" E
EX44-55	25° 17' 51.6532" S	29° 03' 59.4303" E
EX44-56	25° 17' 51.8052" S	29° 04' 00.4896" E
EX44-57	25° 17' 51.9572" S	29° 04' 01.5490" E
EX44-58	25° 17' 51.9724" S	29° 04' 01.6549" E
EX44-59	25° 17' 52.0738" S	29° 04' 02.3611" E
EX44-60	25° 17' 52.1752" S	29° 04' 03.0673" E
EX44-61	25° 17' 52.2765" S	29° 04' 03.7735" E

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 72 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. M B Straughan G.Pr. LSO907D — 09 October 2025 date

For applicant Owain Jackson name

signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	**Dwg:** reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

friedlaender, burger & volkmann

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Point	Latitude	Longitude
EX44-62	25° 17' 52.4358" S	29° 04' 04.8833" E
EX44-63	25° 17' 52.6733" S	29° 04' 06.5387" E
EX44-64	25° 17' 53.9352" S	29° 04' 15.3317" E
EX44-65	25° 17' 54.0366" S	29° 04' 16.0380" E
EX44-66	25° 17' 54.1379" S	29° 04' 16.7442" E
EX44-67	25° 17' 54.2392" S	29° 04' 17.4504" E
EX44-68	25° 17' 54.3405" S	29° 04' 18.1566" E
EX44-69	25° 17' 54.4419" S	29° 04' 18.8628" E
EX44-70	25° 17' 54.5432" S	29° 04' 19.5690" E
EX44-71	25° 17' 54.6445" S	29° 04' 20.2753" E
EX44-72	25° 17' 54.7459" S	29° 04' 20.9815" E
EX44-73	25° 17' 54.8472" S	29° 04' 21.6877" E
EX44-74	25° 17' 54.9485" S	29° 04' 22.3939" E
EX44-75	25° 17' 55.0499" S	29° 04' 23.1001" E
EX44-76	25° 17' 55.1512" S	29° 04' 23.8063" E
EX44-77	25° 17' 55.2525" S	29° 04' 24.5126" E
EX44-78	25° 17' 55.3589" S	29° 04' 25.2541" E
EX44-79	25° 17' 55.4307" S	29° 04' 25.7548" E
EX44-80	25° 17' 55.5231" S	29° 04' 26.3985" E
EX44-81	25° 17' 55.6234" S	29° 04' 27.0978" E
EX44-82	25° 17' 55.6498" S	29° 04' 27.2817" E
EX44-83	25° 17' 55.7553" S	29° 04' 28.0175" E
EX44-84	25° 18' 09.6127" S	29° 04' 29.6219" E
EX44-85	25° 18' 16.0033" S	29° 04' 29.7478" E
EX44-86	25° 18' 11.3210" S	29° 04' 17.8836" E
EX44-87	25° 18' 14.7045" S	29° 04' 08.6852" E
EX44-88	25° 18' 14.9483" S	29° 04' 08.0224" E
EX44-89	25° 18' 14.8886" S	29° 04' 07.6102" E
EX45-1	25° 07' 42.8816" S	29° 04' 11.7551" E
EX45-2	25° 07' 37.2808" S	29° 04' 24.8260" E
EX45-3	25° 07' 48.1796" S	29° 04' 30.4612" E
EX45-4	25° 07' 59.0784" S	29° 04' 36.0968" E
EX45-5	25° 08' 04.6795" S	29° 04' 23.0253" E
EX45-6	25° 07' 53.7806" S	29° 04' 17.3901" E
EX46-1	25° 08' 17.0085" S	29° 04' 44.6740" E
EX46-2	25° 08' 16.3246" S	29° 04' 45.0148" E
EX46-3	25° 08' 16.3178" S	29° 04' 46.1947" E
EX46-4	25° 08' 28.8687" S	29° 04' 39.9352" E
EX46-5	25° 08' 28.6854" S	29° 04' 38.8501" E
EX46-6	25° 08' 26.2062" S	29° 04' 24.1736" E
EX46-7	25° 08' 15.5394" S	29° 04' 25.1420" E
EX47-1	25° 09' 08.5878" S	29° 04' 15.2901" E
EX47-2	25° 09' 08.1657" S	29° 04' 15.2692" E
EX47-3	25° 09' 07.7437" S	29° 04' 15.2483" E
EX47-4	25° 09' 07.3216" S	29° 04' 15.2275" E
EX47-5	25° 09' 06.8996" S	29° 04' 15.2066" E
EX47-6	25° 09' 06.4775" S	29° 04' 15.1857" E
EX47-7	25° 09' 06.0555" S	29° 04' 15.1649" E

Point	Latitude	Longitude
EX47-8	25° 09' 05.6334" S	29° 04' 15.1440" E
EX47-9	25° 09' 05.2114" S	29° 04' 15.1232" E
EX47-10	25° 09' 04.7893" S	29° 04' 15.1023" E
EX47-11	25° 09' 04.3673" S	29° 04' 15.0814" E
EX47-12	25° 09' 03.9452" S	29° 04' 15.0605" E
EX47-13	25° 09' 03.5232" S	29° 04' 15.0397" E
EX47-14	25° 09' 03.1011" S	29° 04' 15.0188" E
EX47-15	25° 09' 02.6790" S	29° 04' 14.9979" E
EX47-16	25° 09' 02.2570" S	29° 04' 14.9771" E
EX47-17	25° 09' 01.8350" S	29° 04' 14.9562" E
EX47-18	25° 09' 01.4129" S	29° 04' 14.9353" E
EX47-19	25° 09' 00.9909" S	29° 04' 14.9145" E
EX47-20	25° 09' 00.5688" S	29° 04' 14.8936" E
EX47-21	25° 09' 00.1467" S	29° 04' 14.8727" E
EX47-22	25° 08' 59.7247" S	29° 04' 14.8518" E
EX47-23	25° 08' 59.3026" S	29° 04' 14.8310" E
EX47-24	25° 08' 58.8806" S	29° 04' 14.8101" E
EX47-25	25° 08' 58.4585" S	29° 04' 14.7893" E
EX47-26	25° 08' 58.0365" S	29° 04' 14.7684" E
EX47-27	25° 08' 57.6144" S	29° 04' 14.7475" E
EX47-28	25° 08' 57.1924" S	29° 04' 14.7267" E
EX47-29	25° 08' 56.7703" S	29° 04' 14.7057" E
EX47-30	25° 08' 56.3483" S	29° 04' 14.6847" E
EX47-31	25° 08' 55.9262" S	29° 04' 14.6637" E
EX47-32	25° 08' 55.5042" S	29° 04' 14.6427" E
EX47-33	25° 08' 55.0821" S	29° 04' 14.6218" E
EX47-34	25° 08' 54.6601" S	29° 04' 14.6008" E
EX47-35	25° 08' 54.2381" S	29° 04' 14.5798" E
EX47-36	25° 08' 53.8160" S	29° 04' 14.5588" E
EX47-37	25° 08' 53.3940" S	29° 04' 14.5378" E
EX47-38	25° 08' 52.9719" S	29° 04' 14.5169" E
EX47-39	25° 08' 52.5499" S	29° 04' 14.4959" E
EX47-40	25° 08' 52.1278" S	29° 04' 14.4749" E
EX47-41	25° 08' 51.7058" S	29° 04' 14.4539" E
EX47-42	25° 08' 51.2837" S	29° 04' 14.4329" E
EX47-43	25° 08' 50.8617" S	29° 04' 14.4120" E
EX47-44	25° 08' 50.4396" S	29° 04' 14.3910" E
EX47-45	25° 08' 50.0176" S	29° 04' 14.3700" E
EX47-46	25° 08' 49.5955" S	29° 04' 14.3490" E
EX47-47	25° 08' 49.1735" S	29° 04' 14.3280" E
EX47-48	25° 08' 48.7514" S	29° 04' 14.3071" E
EX47-49	25° 08' 48.3294" S	29° 04' 14.2861" E
EX47-50	25° 08' 47.9073" S	29° 04' 14.2651" E
EX47-51	25° 08' 47.2743" S	29° 04' 14.2336" E
EX47-52	25° 08' 46.7451" S	29° 04' 14.2073" E
EX47-53	25° 08' 46.6094" S	29° 04' 14.2006" E
EX47-54	25° 08' 45.9822" S	29° 04' 14.1694" E
EX47-55	25° 08' 45.5104" S	29° 04' 14.1460" E

Point	Latitude	Longitude
EX47-56	25° 08' 45.1007" S	29° 04' 14.1256" E
EX47-57	25° 08' 44.7761" S	29° 04' 14.1095" E
EX47-58	25° 08' 44.2435" S	29° 04' 14.0834" E
EX47-59	25° 08' 45.3819" S	29° 04' 20.9924" E
EX47-60	25° 08' 46.2182" S	29° 04' 22.6609" E
EX47-61	25° 08' 46.3112" S	29° 04' 23.2255" E
EX47-62	25° 08' 46.0785" S	29° 04' 25.2204" E
EX47-63	25° 08' 46.2273" S	29° 04' 26.1236" E
EX47-64	25° 08' 46.8334" S	29° 04' 29.8043" E
EX47-65	25° 08' 46.9155" S	29° 04' 30.3025" E
EX47-66	25° 08' 46.9975" S	29° 04' 30.8007" E
EX47-67	25° 08' 47.0796" S	29° 04' 31.2989" E
EX47-68	25° 08' 47.1628" S	29° 04' 31.8037" E
EX47-69	25° 08' 48.4343" S	29° 04' 39.5191" E
EX47-70	25° 08' 49.2829" S	29° 04' 41.2655" E
EX47-71	25° 08' 49.3992" S	29° 04' 41.9686" E
EX47-72	25° 08' 49.1810" S	29° 04' 43.6683" E
EX47-73	25° 08' 49.1532" S	29° 04' 43.8850" E
EX47-74	25° 08' 49.2759" S	29° 04' 44.6306" E
EX47-75	25° 08' 49.2875" S	29° 04' 44.7009" E
EX47-76	25° 08' 49.4445" S	29° 04' 45.6537" E
EX47-77	25° 08' 49.6014" S	29° 04' 46.6065" E
EX47-78	25° 08' 49.6130" S	29° 04' 46.6768" E
EX47-79	25° 08' 49.7700" S	29° 04' 47.6296" E
EX47-80	25° 08' 49.9269" S	29° 04' 48.5824" E
EX47-81	25° 08' 49.9385" S	29° 04' 48.6526" E
EX47-82	25° 08' 50.0954" S	29° 04' 49.6055" E
EX47-83	25° 08' 50.1707" S	29° 04' 50.0626" E
EX47-84	25° 08' 50.2524" S	29° 04' 50.5583" E
EX47-85	25° 08' 50.2640" S	29° 04' 50.6286" E
EX47-86	25° 08' 50.3449" S	29° 04' 51.1197" E
EX47-87	25° 08' 50.4202" S	29° 04' 51.5768" E
EX47-88	25° 08' 50.4955" S	29° 04' 52.0339" E
EX47-89	25° 08' 50.5708" S	29° 04' 52.4910" E
EX47-90	25° 08' 50.6517" S	29° 04' 52.9821" E
EX47-91	25° 08' 50.6632" S	29° 04' 53.0524" E
EX47-92	25° 08' 50.7432" S	29° 04' 53.5376" E
EX47-93	25° 08' 50.8231" S	29° 04' 54.0228" E
EX47-94	25° 08' 50.9030" S	29° 04' 54.5080" E
EX47-95	25° 08' 50.9829" S	29° 04' 54.9932" E
EX47-96	25° 08' 51.0628" S	29° 04' 55.4784" E
EX47-97	25° 08' 51.1427" S	29° 04' 55.9635" E
EX47-98	25° 08' 51.2227" S	29° 04' 56.4487" E
EX47-99	25° 08' 51.3028" S	29° 04' 56.9354" E
EX47-100	25° 08' 51.9483" S	29° 05' 00.8545" E
EX47-101	25° 08' 59.1418" S	29° 04' 59.7072" E
EX47-102	25° 08' 59.5599" S	29° 04' 59.6406" E
EX47-103	25° 08' 59.9780" S	29° 04' 59.5739" E

Point	Latitude	Longitude
EX47-104	25° 09' 00.3961" S	29° 04' 59.5072" E
EX47-105	25° 09' 00.8142" S	29° 04' 59.4405" E
EX47-106	25° 09' 01.2323" S	29° 04' 59.3739" E
EX47-107	25° 09' 01.6504" S	29° 04' 59.3072" E
EX47-108	25° 09' 02.0685" S	29° 04' 59.2405" E
EX47-109	25° 09' 02.4866" S	29° 04' 59.1738" E
EX47-110	25° 09' 02.9047" S	29° 04' 59.1071" E
EX47-111	25° 09' 03.3228" S	29° 04' 59.0404" E
EX47-112	25° 09' 03.7409" S	29° 04' 58.9737" E
EX47-113	25° 09' 04.1590" S	29° 04' 58.9071" E
EX47-114	25° 09' 04.5771" S	29° 04' 58.8404" E
EX47-115	25° 09' 04.9952" S	29° 04' 58.7737" E
EX47-116	25° 09' 05.4133" S	29° 04' 58.7070" E
EX47-117	25° 09' 05.8314" S	29° 04' 58.6403" E
EX47-118	25° 09' 06.2495" S	29° 04' 58.5736" E
EX47-119	25° 09' 06.6673" S	29° 04' 58.5070" E
EX47-120	25° 09' 07.6292" S	29° 04' 58.3536" E
EX47-121	25° 09' 08.5426" S	29° 04' 58.2079" E
EX47-122	25° 09' 08.9896" S	29° 04' 58.1366" E
EX47-123	25° 09' 09.4367" S	29° 04' 58.0653" E
EX47-124	25° 09' 09.8837" S	29° 04' 57.9940" E
EX47-125	25° 09' 10.3307" S	29° 04' 57.9227" E
EX47-126	25° 09' 11.2441" S	29° 04' 57.7770" E
EX47-127	25° 09' 12.1575" S	29° 04' 57.6314" E
EX47-128	25° 09' 12.6045" S	29° 04' 57.5601" E
EX47-129	25° 09' 13.0516" S	29° 04' 57.4888" E
EX47-130	25° 09' 13.4986" S	29° 04' 57.4174" E
EX47-131	25° 09' 13.9456" S	29° 04' 57.3461" E
EX47-132	25° 09' 14.8591" S	29° 04' 57.2005" E
EX47-133	25° 09' 15.8014" S	29° 04' 57.0502" E
EX47-134	25° 09' 16.2323" S	29° 04' 56.9814" E
EX47-135	25° 09' 16.6623" S	29° 04' 56.9129" E
EX47-136	25° 09' 17.0923" S	29° 04' 56.8443" E
EX47-137	25° 09' 17.5223" S	29° 04' 56.7757" E
EX47-138	25° 09' 17.9523" S	29° 04' 56.7071" E
EX47-139	25° 09' 18.3823" S	29° 04' 56.6385" E
EX47-140	25° 09' 18.8123" S	29° 04' 56.5699" E
EX47-141	25° 09' 19.2423" S	29° 04' 56.5013" E
EX47-142	25° 09' 19.6723" S	29° 04' 56.4328" E
EX47-143	25° 09' 20.1023" S	29° 04' 56.3642" E
EX47-144	25° 09' 20.5323" S	29° 04' 56.2956" E
EX47-145	25° 09' 20.9623" S	29° 04' 56.2270" E
EX47-146	25° 09' 21.3923" S	29° 04' 56.1584" E
EX47-147	25° 09' 21.8223" S	29° 04' 56.0898" E
EX47-148	25° 09' 22.2523" S	29° 04' 56.0213" E
EX47-149	25° 09' 22.6823" S	29° 04' 55.9527" E
EX47-150	25° 09' 23.1123" S	29° 04' 55.8841" E
EX47-151	25° 09' 23.5423" S	29° 04' 55.8155" E

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 73 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. — M B Straughan G.Pr. LS0907D — 09 October 2025 date

For applicant Owain Jackson name

signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	Dwg: reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

friedlaender, burger & volkmann

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Point	Latitude	Longitude
EX47-152	25° 09' 23.9722" S	29° 04' 55.7469" E
EX47-153	25° 09' 24.4022" S	29° 04' 55.6783" E
EX47-154	25° 09' 24.8322" S	29° 04' 55.6097" E
EX47-155	25° 09' 24.9572" S	29° 04' 55.5903" E
EX47-156	25° 09' 25.6901" S	29° 04' 55.1895" E
EX47-157	25° 09' 25.8530" S	29° 04' 55.1004" E
EX47-158	25° 09' 26.5615" S	29° 04' 54.7133" E
EX47-159	25° 09' 27.2057" S	29° 04' 54.6169" E
EX47-160	25° 09' 28.9597" S	29° 04' 54.9520" E
EX47-161	25° 09' 29.0932" S	29° 04' 54.9307" E
EX47-162	25° 09' 29.5209" S	29° 04' 54.8624" E
EX47-163	25° 09' 29.9487" S	29° 04' 54.7942" E
EX47-164	25° 09' 30.3765" S	29° 04' 54.7259" E
EX47-165	25° 09' 30.8042" S	29° 04' 54.6577" E
EX47-166	25° 09' 31.2319" S	29° 04' 54.5895" E
EX47-167	25° 09' 31.6597" S	29° 04' 54.5213" E
EX47-168	25° 09' 32.0874" S	29° 04' 54.4531" E
EX47-169	25° 09' 32.5152" S	29° 04' 54.3848" E
EX47-170	25° 09' 32.9429" S	29° 04' 54.3166" E
EX47-171	25° 09' 33.3706" S	29° 04' 54.2483" E
EX47-172	25° 09' 33.7984" S	29° 04' 54.1801" E
EX47-173	25° 09' 34.2261" S	29° 04' 54.1119" E
EX47-174	25° 09' 34.6539" S	29° 04' 54.0437" E
EX47-175	25° 09' 35.0816" S	29° 04' 53.9754" E
EX47-176	25° 09' 35.5094" S	29° 04' 53.9072" E
EX47-177	25° 09' 35.9371" S	29° 04' 53.8390" E
EX47-178	25° 09' 36.3649" S	29° 04' 53.7708" E
EX47-179	25° 09' 36.7926" S	29° 04' 53.7025" E
EX47-180	25° 09' 37.2203" S	29° 04' 53.6343" E
EX47-181	25° 09' 37.6481" S	29° 04' 53.5660" E
EX47-182	25° 09' 38.0758" S	29° 04' 53.4978" E
EX47-183	25° 09' 38.5036" S	29° 04' 53.4296" E
EX47-184	25° 09' 39.0939" S	29° 04' 53.3357" E
EX47-185	25° 09' 38.8188" S	29° 04' 52.5464" E
EX47-186	25° 09' 36.3053" S	29° 04' 45.3353" E
EX47-187	25° 09' 33.7501" S	29° 04' 38.0057" E
EX47-188	25° 09' 30.5420" S	29° 04' 28.8031" E
EX47-189	25° 09' 30.3084" S	29° 04' 28.1331" E
EX47-190	25° 09' 30.0741" S	29° 04' 27.4612" E
EX47-191	25° 09' 29.8465" S	29° 04' 26.8083" E
EX47-192	25° 09' 29.6837" S	29° 04' 26.3415" E
EX47-193	25° 09' 29.3874" S	29° 04' 25.4916" E
EX47-194	25° 09' 29.1201" S	29° 04' 24.7250" E
EX47-195	25° 09' 29.0248" S	29° 04' 24.4516" E
EX47-196	25° 09' 28.6444" S	29° 04' 23.3605" E
EX47-197	25° 09' 28.4770" S	29° 04' 22.8804" E
EX47-198	25° 09' 28.3121" S	29° 04' 22.4076" E
EX47-199	25° 09' 27.9558" S	29° 04' 21.3856" E

Point	Latitude	Longitude
EX47-200	25° 09' 27.5995" S	29° 04' 20.3636" E
EX47-201	25° 09' 27.2431" S	29° 04' 19.3416" E
EX47-202	25° 09' 26.8868" S	29° 04' 18.3196" E
EX47-203	25° 09' 26.5941" S	29° 04' 17.4792" E
EX47-204	25° 09' 26.4292" S	29° 04' 17.0063" E
EX47-205	25° 09' 26.1366" S	29° 04' 16.1670" E
EX47-206	25° 09' 25.6320" S	29° 04' 16.1364" E
EX47-207	25° 09' 25.1937" S	29° 04' 16.1146" E
EX47-208	25° 09' 24.7555" S	29° 04' 16.0928" E
EX47-209	25° 09' 24.3172" S	29° 04' 16.0711" E
EX47-210	25° 09' 23.8789" S	29° 04' 16.0493" E
EX47-211	25° 09' 23.4406" S	29° 04' 16.0275" E
EX47-212	25° 09' 23.0023" S	29° 04' 16.0057" E
EX47-213	25° 09' 22.5641" S	29° 04' 15.9839" E
EX47-214	25° 09' 22.1258" S	29° 04' 15.9621" E
EX47-215	25° 09' 21.6875" S	29° 04' 15.9403" E
EX47-216	25° 09' 21.2492" S	29° 04' 15.9185" E
EX47-217	25° 09' 20.8272" S	29° 04' 15.8975" E
EX47-218	25° 09' 20.4051" S	29° 04' 15.8766" E
EX47-219	25° 09' 19.9831" S	29° 04' 15.8556" E
EX47-220	25° 09' 19.5610" S	29° 04' 15.8346" E
EX47-221	25° 09' 19.1390" S	29° 04' 15.8136" E
EX47-222	25° 09' 18.7169" S	29° 04' 15.7926" E
EX47-223	25° 09' 18.2949" S	29° 04' 15.7717" E
EX47-224	25° 09' 17.8729" S	29° 04' 15.7507" E
EX47-225	25° 09' 17.4508" S	29° 04' 15.7297" E
EX47-226	25° 09' 17.0288" S	29° 04' 15.7087" E
EX47-227	25° 09' 16.6067" S	29° 04' 15.6877" E
EX47-228	25° 09' 16.1847" S	29° 04' 15.6668" E
EX47-229	25° 09' 15.7626" S	29° 04' 15.6458" E
EX47-230	25° 09' 15.3406" S	29° 04' 15.6248" E
EX47-231	25° 09' 14.9185" S	29° 04' 15.6038" E
EX47-232	25° 09' 14.4965" S	29° 04' 15.5828" E
EX47-233	25° 09' 14.0744" S	29° 04' 15.5619" E
EX47-234	25° 09' 13.6524" S	29° 04' 15.5408" E
EX47-235	25° 09' 13.2303" S	29° 04' 15.5199" E
EX47-236	25° 09' 12.8083" S	29° 04' 15.4989" E
EX47-237	25° 09' 12.3863" S	29° 04' 15.4779" E
EX47-238	25° 09' 11.9642" S	29° 04' 15.4571" E
EX47-239	25° 09' 11.5421" S	29° 04' 15.4362" E
EX47-240	25° 09' 11.1201" S	29° 04' 15.4153" E
EX47-241	25° 09' 10.6980" S	29° 04' 15.3944" E
EX47-242	25° 09' 10.2760" S	29° 04' 15.3736" E
EX47-243	25° 09' 09.8539" S	29° 04' 15.3527" E
EX47-244	25° 09' 09.4319" S	29° 04' 15.3318" E
EX47-245	25° 09' 09.0098" S	29° 04' 15.3110" E
EX48-1	25° 17' 13.4948" S	29° 04' 57.8408" E
EX48-2	25° 17' 16.6210" S	29° 04' 58.7414" E

Point	Latitude	Longitude
EX48-3	25° 17' 18.4016" S	29° 04' 59.2544" E
EX48-4	25° 17' 20.4339" S	29° 04' 59.8398" E
EX48-5	25° 17' 21.1918" S	29° 05' 00.0582" E
EX48-6	25° 17' 21.8851" S	29° 05' 00.2579" E
EX48-7	25° 17' 23.2397" S	29° 05' 00.6482" E
EX48-8	25° 17' 24.0778" S	29° 05' 00.8896" E
EX48-9	25° 17' 25.5916" S	29° 05' 01.3257" E
EX48-10	25° 17' 26.9141" S	29° 05' 01.7068" E
EX48-11	25° 17' 27.8788" S	29° 05' 01.9847" E
EX48-12	25° 17' 28.9026" S	29° 05' 02.2797" E
EX48-13	25° 17' 29.8191" S	29° 05' 02.5437" E
EX48-14	25° 17' 30.7494" S	29° 05' 02.8117" E
EX48-15	25° 17' 31.6075" S	29° 05' 03.0590" E
EX48-16	25° 17' 32.5731" S	29° 05' 03.3371" E
EX48-17	25° 17' 33.2595" S	29° 05' 03.5349" E
EX48-18	25° 17' 34.3410" S	29° 05' 03.8465" E
EX48-19	25° 17' 32.3286" S	29° 05' 07.5827" E
EX48-20	25° 17' 33.0976" S	29° 05' 08.0839" E
EX48-21	25° 17' 33.1128" S	29° 05' 08.0937" E
EX48-22	25° 17' 33.5632" S	29° 05' 11.4938" E
EX48-23	25° 17' 38.1286" S	29° 05' 11.7126" E
EX48-24	25° 17' 37.9693" S	29° 05' 08.5083" E
EX48-25	25° 17' 38.0387" S	29° 05' 08.0147" E
EX48-26	25° 17' 37.8929" S	29° 05' 06.2129" E
EX48-27	25° 17' 37.6998" S	29° 05' 05.2336" E
EX48-28	25° 17' 39.1213" S	29° 05' 05.1763" E
EX48-29	25° 17' 39.1914" S	29° 05' 02.2138" E
EX48-30	25° 17' 37.0717" S	29° 05' 02.1890" E
EX48-31	25° 17' 36.7045" S	29° 04' 58.6491" E
EX48-32	25° 17' 40.1969" S	29° 04' 55.2474" E
EX48-33	25° 17' 45.2390" S	29° 04' 55.6328" E
EX48-34	25° 17' 48.5276" S	29° 04' 52.3921" E
EX48-35	25° 17' 48.5491" S	29° 04' 52.3708" E
EX48-36	25° 17' 50.3360" S	29° 04' 50.6062" E
EX48-37	25° 17' 49.1265" S	29° 04' 49.4443" E
EX48-38	25° 17' 49.1407" S	29° 04' 49.4136" E
EX48-39	25° 17' 49.6842" S	29° 04' 48.2420" E
EX48-40	25° 17' 49.7016" S	29° 04' 48.2097" E
EX48-41	25° 17' 50.4708" S	29° 04' 46.7876" E
EX48-42	25° 17' 50.4856" S	29° 04' 46.7529" E
EX48-43	25° 17' 51.0441" S	29° 04' 45.4689" E
EX48-44	25° 17' 51.0501" S	29° 04' 45.4386" E
EX48-45	25° 17' 51.6299" S	29° 04' 42.5329" E
EX48-46	25° 17' 51.6440" S	29° 04' 42.5100" E
EX48-47	25° 17' 54.2472" S	29° 04' 38.2720" E
EX48-48	25° 17' 49.4807" S	29° 04' 37.1197" E
EX48-49	25° 17' 50.0429" S	29° 04' 35.6805" E
EX48-50	25° 17' 50.8207" S	29° 04' 34.3794" E

Point	Latitude	Longitude
EX48-51	25° 17' 50.8300" S	29° 04' 34.3702" E
EX48-52	25° 17' 51.6799" S	29° 04' 33.5260" E
EX48-53	25° 17' 50.2792" S	29° 04' 32.5992" E
EX48-54	25° 17' 50.7449" S	29° 04' 31.3791" E
EX48-55	25° 17' 51.1900" S	29° 04' 27.3699" E
EX48-56	25° 17' 45.3689" S	29° 04' 26.5462" E
EX48-57	25° 17' 43.6657" S	29° 04' 26.3053" E
EX48-58	25° 17' 39.3588" S	29° 04' 25.6959" E
EX48-59	25° 17' 15.6107" S	29° 04' 22.3362" E
EX48-60	25° 17' 12.6925" S	29° 04' 21.9233" E
EX48-61	25° 17' 05.1619" S	29° 04' 35.0080" E
EX48-62	25° 17' 06.5230" S	29° 04' 38.7376" E
EX49-1	25° 06' 57.7943" S	29° 05' 27.7737" E
EX49-2	25° 07' 00.1983" S	29° 05' 26.2172" E
EX49-3	25° 07' 02.0029" S	29° 05' 25.0487" E
EX49-4	25° 07' 03.6143" S	29° 05' 24.0066" E
EX49-5	25° 07' 04.6826" S	29° 05' 23.3156" E
EX49-6	25° 07' 04.8547" S	29° 05' 23.2044" E
EX49-7	25° 07' 06.2980" S	29° 05' 22.2710" E
EX49-8	25° 07' 07.4979" S	29° 05' 21.4949" E
EX49-9	25° 07' 07.7792" S	29° 05' 21.3535" E
EX49-10	25° 07' 09.9577" S	29° 05' 20.2582" E
EX49-11	25° 07' 10.1276" S	29° 05' 20.1728" E
EX49-12	25° 07' 11.4694" S	29° 05' 19.4981" E
EX49-13	25° 07' 11.2633" S	29° 05' 19.1046" E
EX49-14	25° 07' 11.1362" S	29° 05' 19.1024" E
EX49-15	25° 07' 09.9966" S	29° 05' 17.9025" E
EX49-16	25° 07' 08.1110" S	29° 05' 14.0450" E
EX49-17	25° 07' 08.1775" S	29° 05' 13.8030" E
EX49-18	25° 07' 08.4125" S	29° 05' 13.6647" E
EX49-19	25° 06' 58.3512" S	29° 04' 54.4673" E
EX49-20	25° 06' 57.5019" S	29° 04' 54.2551" E
EX49-21	25° 06' 50.5947" S	29° 04' 52.5320" E
EX49-22	25° 06' 47.8480" S	29° 04' 51.8468" E
EX49-23	25° 06' 47.5311" S	29° 04' 51.7677" E
EX49-24	25° 06' 47.5307" S	29° 04' 51.7694" E
EX49-25	25° 06' 41.1177" S	29° 04' 50.1705" E
EX49-26	25° 06' 40.5899" S	29° 04' 50.0302" E
EX49-27	25° 06' 32.4906" S	29° 04' 48.0158" E
EX49-28	25° 06' 32.1926" S	29° 04' 47.9421" E
EX49-29	25° 06' 30.1312" S	29° 04' 47.4314" E
EX49-30	25° 06' 29.5531" S	29° 04' 52.9344" E
EX49-31	25° 06' 29.5121" S	29° 04' 53.3240" E
EX49-32	25° 06' 29.0863" S	29° 04' 57.3773" E
EX49-33	25° 06' 29.0085" S	29° 04' 58.1171" E
EX49-34	25° 06' 28.9711" S	29° 04' 58.4750" E
EX49-35	25° 06' 28.9610" S	29° 04' 58.5718" E
EX49-36	25° 06' 28.9003" S	29° 04' 59.1516" E

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 74 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No.

M B Straughan
G.Pr. LSO907D

09 October 2025
date

For applicant

Owain Jackson
name

signature

09 October 2025
date

signature

date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	**Dwg:** reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

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Point	Latitude	Longitude
EX49-37	25° 06' 28.6050" S	29° 05' 01.9586" E
EX49-38	25° 06' 28.4581" S	29° 05' 03.3548" E
EX49-39	25° 06' 28.4196" S	29° 05' 03.7239" E
EX49-40	25° 06' 28.2347" S	29° 05' 05.4818" E
EX49-41	25° 06' 26.9549" S	29° 05' 17.6593" E
EX50-1	25° 09' 02.9750" S	29° 05' 02.7039" E
EX50-3	25° 08' 55.0820" S	29° 05' 03.9626" E
EX50-4	25° 08' 54.1153" S	29° 05' 04.1167" E
EX50-5	25° 08' 52.6247" S	29° 05' 05.0754" E
EX50-6	25° 08' 55.2692" S	29° 05' 20.8732" E
EX50-7	25° 09' 05.2775" S	29° 05' 19.2776" E
EX50-8	25° 09' 29.2997" S	29° 05' 15.4476" E
EX50-9	25° 09' 27.2014" S	29° 04' 59.5622" E
EX50-10	25° 09' 25.5000" S	29° 04' 59.1119" E
EX51-1	25° 31' 27.3496" S	29° 05' 16.0096" E
EX51-2	25° 31' 26.7427" S	29° 05' 15.7538" E
EX51-3	25° 31' 26.7483" S	29° 05' 06.6293" E
EX51-4	25° 31' 23.4773" S	29° 05' 01.4250" E
EX51-5	25° 31' 20.9887" S	29° 05' 00.6632" E
EX51-6	25° 31' 23.0963" S	29° 04' 52.3125" E
EX51-7	25° 31' 16.3649" S	29° 04' 50.2498" E
EX51-8	25° 31' 15.9557" S	29° 04' 51.8716" E
EX51-9	25° 31' 10.4392" S	29° 04' 50.1815" E
EX51-10	25° 31' 06.6033" S	29° 04' 51.7171" E
EX51-11	25° 31' 04.4099" S	29° 04' 59.6065" E
EX51-12	25° 31' 04.4068" S	29° 05' 04.8099" E
EX51-13	25° 31' 03.8861" S	29° 05' 08.0500" E
EX51-14	25° 31' 02.0993" S	29° 05' 12.9143" E
EX51-15	25° 30' 59.8554" S	29° 05' 19.0225" E
EX51-16	25° 30' 55.6413" S	29° 05' 27.4297" E
EX51-17	25° 30' 54.2755" S	29° 05' 31.6789" E
EX51-18	25° 30' 52.6791" S	29° 05' 32.8369" E
EX51-19	25° 30' 47.4652" S	29° 05' 30.3337" E
EX51-20	25° 30' 44.8197" S	29° 05' 39.8452" E
EX51-21	25° 30' 54.1322" S	29° 05' 44.3166" E
EX51-22	25° 30' 56.1437" S	29° 05' 45.9295" E
EX51-23	25° 30' 55.6655" S	29° 05' 46.6533" E
EX51-24	25° 30' 56.8744" S	29° 05' 47.6227" E
EX51-25	25° 30' 59.6896" S	29° 05' 53.0060" E
EX51-26	25° 31' 03.8372" S	29° 05' 51.7850" E
EX51-27	25° 31' 05.0196" S	29° 05' 51.0339" E
EX51-28	25° 31' 12.8035" S	29° 05' 52.9945" E
EX51-29	25° 31' 14.7681" S	29° 05' 50.5078" E
EX51-30	25° 31' 18.7963" S	29° 05' 50.7439" E
EX51-31	25° 31' 21.7323" S	29° 05' 49.1071" E
EX51-32	25° 31' 22.3043" S	29° 05' 48.1474" E
EX51-33	25° 31' 31.6760" S	29° 05' 49.6072" E
EX51-34	25° 31' 31.8123" S	29° 05' 48.5432" E

Point	Latitude	Longitude
EX51-35	25° 31' 32.7777" S	29° 05' 48.6934" E
EX51-36	25° 31' 34.1011" S	29° 05' 47.5559" E
EX51-37	25° 31' 34.5641" S	29° 05' 43.9438" E
EX51-38	25° 31' 34.7478" S	29° 05' 43.7914" E
EX51-39	25° 31' 34.8383" S	29° 05' 43.0823" E
EX51-40	25° 31' 32.6657" S	29° 05' 42.7438" E
EX51-41	25° 31' 32.4754" S	29° 05' 42.5427" E
EX51-42	25° 31' 28.5601" S	29° 05' 19.1663" E
EX51-43	25° 31' 28.6866" S	29° 05' 18.9407" E
EX51-44	25° 31' 28.5077" S	29° 05' 18.2522" E
EX51-45	25° 31' 27.9753" S	29° 05' 18.4201" E
EX52-1	25° 14' 09.7454" S	29° 07' 16.6874" E
EX52-2	25° 14' 10.7206" S	29° 07' 17.4241" E
EX52-3	25° 14' 15.0332" S	29° 07' 20.6820" E
EX52-4	25° 15' 15.0295" S	29° 08' 06.0121" E
EX52-5	25° 15' 20.4493" S	29° 08' 10.1078" E
EX52-6	25° 15' 22.9276" S	29° 08' 09.7983" E
EX52-7	25° 15' 19.0760" S	29° 07' 53.4590" E
EX52-8	25° 15' 15.8952" S	29° 07' 39.9509" E
EX52-9	25° 15' 15.6233" S	29° 07' 38.8003" E
EX52-10	25° 15' 15.3984" S	29° 07' 37.8554" E
EX52-11	25° 15' 15.1663" S	29° 07' 36.8632" E
EX52-12	25° 15' 14.9001" S	29° 07' 35.7593" E
EX52-13	25° 15' 14.6777" S	29° 07' 34.7758" E
EX52-14	25° 15' 14.5189" S	29° 07' 34.1308" E
EX52-15	25° 15' 13.6688" S	29° 07' 32.6451" E
EX52-16	25° 15' 13.6661" S	29° 07' 32.6339" E
EX52-17	25° 15' 13.5361" S	29° 07' 32.0834" E
EX52-18	25° 15' 13.5369" S	29° 07' 32.0713" E
EX52-19	25° 15' 13.6488" S	29° 07' 30.4446" E
EX52-20	25° 15' 13.4830" S	29° 07' 29.7358" E
EX52-21	25° 15' 11.5134" S	29° 07' 21.4013" E
EX52-22	25° 15' 11.2760" S	29° 07' 20.4050" E
EX52-23	25° 15' 11.0134" S	29° 07' 19.2838" E
EX52-24	25° 15' 11.0115" S	29° 07' 19.2757" E
EX52-25	25° 15' 10.9635" S	29° 07' 19.0725" E
EX52-26	25° 15' 10.4328" S	29° 07' 18.0605" E
EX52-27	25° 15' 10.4275" S	29° 07' 18.0504" E
EX52-28	25° 15' 09.9982" S	29° 07' 17.2281" E
EX53-1	25° 15' 19.1291" S	29° 07' 17.3169" E
EX53-2	25° 15' 11.7941" S	29° 07' 17.2510" E
EX53-3	25° 15' 11.9386" S	29° 07' 17.8533" E
EX53-4	25° 15' 12.2715" S	29° 07' 19.2469" E
EX53-5	25° 15' 12.4250" S	29° 07' 19.8596" E
EX53-6	25° 15' 12.9118" S	29° 07' 21.8977" E
EX53-7	25° 15' 13.1650" S	29° 07' 22.9378" E
EX53-8	25° 15' 13.4099" S	29° 07' 23.9740" E
EX53-9	25° 15' 13.9471" S	29° 07' 26.1958" E

Point	Latitude	Longitude
EX53-10	25° 15' 14.3704" S	29° 07' 27.9551" E
EX53-11	25° 15' 14.6677" S	29° 07' 29.1790" E
EX53-12	25° 15' 14.9837" S	29° 07' 30.5301" E
EX53-13	25° 15' 15.2444" S	29° 07' 31.5935" E
EX53-14	25° 15' 15.4948" S	29° 07' 32.6283" E
EX53-15	25° 15' 15.7435" S	29° 07' 33.6495" E
EX53-16	25° 15' 16.0064" S	29° 07' 34.7383" E
EX53-17	25° 15' 16.2457" S	29° 07' 35.7373" E
EX53-18	25° 15' 17.1838" S	29° 07' 39.6934" E
EX53-19	25° 15' 17.4269" S	29° 07' 40.7479" E
EX53-20	25° 15' 17.6817" S	29° 07' 41.8320" E
EX53-21	25° 15' 17.9275" S	29° 07' 42.8661" E
EX53-22	25° 15' 18.4115" S	29° 07' 44.9239" E
EX53-23	25° 15' 18.6751" S	29° 07' 46.0462" E
EX53-24	25° 15' 18.9238" S	29° 07' 47.0989" E
EX53-25	25° 15' 19.1578" S	29° 07' 48.0980" E
EX53-26	25° 15' 19.4295" S	29° 07' 49.2418" E
EX53-27	25° 15' 19.4444" S	29° 07' 49.3104" E
EX53-28	25° 15' 19.7099" S	29° 07' 50.4338" E
EX53-29	25° 15' 19.9546" S	29° 07' 51.4783" E
EX53-30	25° 15' 20.2042" S	29° 07' 52.5328" E
EX53-31	25° 15' 20.4645" S	29° 07' 53.6437" E
EX53-32	25° 15' 20.6954" S	29° 07' 54.6161" E
EX53-33	25° 15' 20.9544" S	29° 07' 55.7237" E
EX53-34	25° 15' 21.1632" S	29° 07' 56.6048" E
EX53-35	25° 15' 21.4018" S	29° 07' 57.6181" E
EX53-36	25° 15' 21.6708" S	29° 07' 58.7680" E
EX53-37	25° 15' 23.7780" S	29° 08' 07.7085" E
EX53-38	25° 15' 24.6420" S	29° 08' 09.2190" E
EX53-39	25° 15' 24.6790" S	29° 08' 09.5789" E
EX53-40	25° 16' 30.8119" S	29° 08' 01.3024" E
EX53-41	25° 16' 30.7270" S	29° 08' 00.6747" E
EX53-42	25° 16' 32.4076" S	29° 08' 00.5289" E
EX53-43	25° 16' 32.2215" S	29° 07' 59.4043" E
EX53-44	25° 16' 31.8798" S	29° 07' 57.3552" E
EX53-45	25° 16' 32.2217" S	29° 07' 57.3023" E
EX53-46	25° 16' 32.1418" S	29° 07' 56.8619" E
EX53-47	25° 16' 33.3353" S	29° 07' 56.7238" E
EX53-48	25° 16' 33.1244" S	29° 07' 55.6370" E
EX53-49	25° 16' 32.9306" S	29° 07' 54.6532" E
EX53-50	25° 16' 32.5702" S	29° 07' 52.5048" E
EX53-51	25° 16' 32.3795" S	29° 07' 51.3337" E
EX53-52	25° 16' 32.2046" S	29° 07' 50.2727" E
EX53-53	25° 16' 33.6126" S	29° 07' 50.0876" E
EX53-54	25° 16' 33.2813" S	29° 07' 48.3220" E
EX53-55	25° 16' 32.5575" S	29° 07' 48.4521" E
EX53-56	25° 16' 32.4774" S	29° 07' 47.9084" E
EX53-57	25° 16' 28.9580" S	29° 07' 48.4732" E

Point	Latitude	Longitude
EX53-58	25° 16' 28.1267" S	29° 07' 43.2874" E
EX53-59	25° 16' 26.9618" S	29° 07' 36.0737" E
EX53-60	25° 16' 21.4601" S	29° 07' 37.0137" E
EX53-61	25° 16' 21.2917" S	29° 07' 35.8895" E
EX53-62	25° 16' 19.9799" S	29° 07' 35.3659" E
EX53-63	25° 16' 18.6573" S	29° 07' 34.9864" E
EX53-64	25° 16' 17.2458" S	29° 07' 34.7094" E
EX53-65	25° 16' 16.1652" S	29° 07' 34.7269" E
EX53-66	25° 16' 14.6608" S	29° 07' 34.8586" E
EX53-67	25° 16' 13.4476" S	29° 07' 34.9860" E
EX53-68	25° 16' 12.3279" S	29° 07' 32.4324" E
EX53-69	25° 16' 12.0850" S	29° 07' 31.1119" E
EX53-70	25° 16' 11.8715" S	29° 07' 29.8883" E
EX53-71	25° 16' 11.2854" S	29° 07' 26.6347" E
EX53-72	25° 16' 11.1098" S	29° 07' 25.6749" E
EX53-73	25° 16' 10.9558" S	29° 07' 24.7980" E
EX53-74	25° 16' 10.7882" S	29° 07' 23.9069" E
EX53-75	25° 16' 10.5793" S	29° 07' 22.7155" E
EX53-76	25° 16' 09.2472" S	29° 07' 22.6870" E
EX53-77	25° 16' 07.8297" S	29° 07' 22.6555" E
EX53-78	25° 16' 06.7859" S	29° 07' 22.6305" E
EX53-79	25° 16' 05.4018" S	29° 07' 22.6052" E
EX53-80	25° 16' 04.6651" S	29° 07' 22.5877" E
EX53-81	25° 16' 04.1924" S	29° 07' 22.4314" E
EX53-82	25° 16' 02.0459" S	29° 07' 21.7158" E
EX53-83	25° 16' 01.3106" S	29° 07' 18.4103" E
EX53-84	25° 16' 01.1501" S	29° 07' 17.6943" E
EX54-1	25° 08' 21.0630" S	29° 09' 05.2761" E
EX54-2	25° 08' 13.5907" S	29° 09' 14.3947" E
EX54-3	25° 08' 23.6868" S	29° 09' 24.3792" E
EX54-4	25° 08' 36.4472" S	29° 09' 08.8068" E
EX54-5	25° 08' 30.2314" S	29° 09' 06.6743" E
EX55-1	25° 12' 35.2538" S	29° 09' 31.9317" E
EX55-2	25° 12' 41.6537" S	29° 09' 44.4442" E
EX55-3	25° 12' 48.0091" S	29° 09' 40.5454" E
EX55-4	25° 12' 48.4499" S	29° 09' 40.6843" E
EX55-5	25° 12' 50.5116" S	29° 09' 44.8001" E
EX55-6	25° 12' 56.9084" S	29° 09' 41.0082" E
EX55-7	25° 12' 56.1636" S	29° 09' 39.4269" E
EX55-8	25° 12' 56.2328" S	29° 09' 39.1851" E
EX55-9	25° 13' 00.6080" S	29° 09' 36.6569" E
EX55-10	25° 13' 00.9140" S	29° 09' 36.7691" E
EX55-11	25° 13' 17.2098" S	29° 10' 08.0199" E
EX55-12	25° 13' 20.9169" S	29° 10' 08.2096" E
EX55-13	25° 13' 28.1876" S	29° 09' 56.0894" E
EX55-14	25° 13' 29.9046" S	29° 09' 58.8134" E
EX55-15	25° 13' 32.1180" S	29° 09' 57.1143" E
EX55-16	25° 13' 31.4934" S	29° 09' 55.9420" E

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 75 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. M B Straughan G.Pr. LSO907D — 09 October 2025 date

For applicant Owain Jackson name

signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	Dwg: reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

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Point	Latitude	Longitude
EX55-17	25° 13' 35.6708" S	29° 09' 48.7315" E
EX55-18	25° 13' 38.9761" S	29° 09' 50.2461" E
EX55-19	25° 13' 44.6406" S	29° 09' 38.7150" E
EX55-20	25° 13' 47.4489" S	29° 09' 25.5237" E
EX55-21	25° 13' 28.4413" S	29° 09' 11.2619" E
EX55-22	25° 13' 27.9566" S	29° 09' 12.1206" E
EX55-23	25° 12' 48.9712" S	29° 09' 09.8453" E
EX55-24	25° 12' 46.0473" S	29° 09' 03.8631" E
EX55-25	25° 12' 44.7857" S	29° 09' 07.2713" E
EX55-26	25° 12' 39.8153" S	29° 08' 59.3563" E
EX55-27	25° 12' 35.9176" S	29° 09' 03.0013" E
EX55-28	25° 12' 34.6695" S	29° 09' 05.9321" E
EX55-29	25° 12' 30.4614" S	29° 09' 04.6406" E
EX55-30	25° 12' 17.4268" S	29° 09' 02.3648" E
EX55-31	25° 12' 16.4184" S	29° 09' 06.1435" E
EX55-32	25° 12' 16.1610" S	29° 09' 06.3650" E
EX55-33	25° 12' 13.8244" S	29° 09' 06.3209" E
EX55-34	25° 12' 13.3363" S	29° 09' 04.0358" E
EX55-35	25° 12' 12.6644" S	29° 08' 44.6467" E
EX55-36	25° 11' 51.1583" S	29° 08' 47.5148" E
EX55-37	25° 11' 51.8289" S	29° 08' 54.1566" E
EX55-38	25° 11' 41.1427" S	29° 08' 56.0182" E
EX55-39	25° 11' 40.9961" S	29° 08' 56.2344" E
EX55-40	25° 11' 41.7010" S	29° 09' 02.8408" E
EX55-41	25° 11' 42.2924" S	29° 09' 08.4092" E
EX55-42	25° 11' 12.7494" S	29° 09' 13.1967" E
EX55-43	25° 11' 08.0849" S	29° 09' 19.3145" E
EX55-44	25° 11' 33.0357" S	29° 09' 40.7283" E
EX55-45	25° 11' 41.1707" S	29° 09' 42.9578" E
EX55-46	25° 11' 41.2477" S	29° 09' 41.3978" E
EX55-47	25° 11' 52.1379" S	29° 09' 42.7826" E
EX55-48	25° 11' 54.0919" S	29° 09' 46.2879" E
EX55-49	25° 11' 55.7088" S	29° 09' 46.6110" E
EX55-50	25° 11' 54.1708" S	29° 09' 51.4359" E
EX55-51	25° 11' 56.4359" S	29° 09' 53.6796" E
EX55-52	25° 11' 56.5327" S	29° 09' 57.5182" E
EX55-53	25° 12' 01.3228" S	29° 09' 58.4567" E
EX55-54	25° 12' 06.8717" S	29° 09' 58.7551" E
EX55-55	25° 12' 06.8931" S	29° 09' 58.9257" E
EX55-56	25° 12' 06.5118" S	29° 09' 59.4246" E
EX55-57	25° 12' 06.8665" S	29° 09' 59.4929" E
EX55-58	25° 12' 07.8511" S	29° 09' 59.6810" E
EX55-59	25° 12' 08.9245" S	29° 09' 59.8478" E
EX55-60	25° 12' 09.9970" S	29° 10' 00.0068" E
EX55-61	25° 12' 11.0221" S	29° 10' 00.1614" E
EX55-62	25° 12' 12.1195" S	29° 10' 00.3260" E
EX55-63	25° 12' 12.6084" S	29° 10' 00.3950" E
EX56-1	25° 16' 35.1732" S	29° 11' 05.0810" E
EX56-2	25° 16' 35.2625" S	29° 11' 05.6327" E
EX56-3	25° 16' 36.3120" S	29° 11' 05.7810" E
EX56-4	25° 16' 38.5111" S	29° 11' 05.1664" E
EX56-5	25° 16' 40.3130" S	29° 11' 04.4078" E
EX56-6	25° 16' 42.6036" S	29° 11' 03.1076" E
EX56-7	25° 16' 44.6231" S	29° 11' 01.5575" E
EX56-8	25° 16' 46.1941" S	29° 10' 59.9609" E
EX56-9	25° 16' 48.6686" S	29° 10' 57.2218" E
EX56-10	25° 17' 47.6672" S	29° 09' 51.1123" E
EX56-11	25° 17' 18.7274" S	29° 09' 39.4890" E
EX57-1	25° 17' 20.9353" S	29° 10' 40.7471" E
EX57-2	25° 17' 16.1602" S	29° 10' 35.4805" E
EX57-3	25° 16' 58.2695" S	29° 10' 55.1060" E
EX57-4	25° 17' 04.8170" S	29° 11' 03.5613" E
EX57-5	25° 17' 07.4382" S	29° 11' 09.5596" E
EX57-6	25° 17' 06.8745" S	29° 11' 09.7527" E
EX57-7	25° 17' 05.3838" S	29° 11' 10.2594" E
EX57-8	25° 17' 03.0013" S	29° 11' 04.8524" E
EX57-9	25° 17' 00.3691" S	29° 11' 01.3924" E
EX57-10	25° 16' 59.5813" S	29° 11' 00.3568" E
EX57-11	25° 16' 56.6464" S	29° 11' 03.2941" E
EX57-12	25° 16' 38.6552" S	29° 11' 21.3407" E
EX57-13	25° 16' 48.1501" S	29° 11' 40.3850" E
EX57-14	25° 16' 47.7742" S	29° 11' 40.6117" E
EX57-15	25° 16' 46.4643" S	29° 11' 37.9847" E
EX57-16	25° 16' 43.8586" S	29° 11' 39.5561" E
EX57-17	25° 16' 46.7161" S	29° 11' 45.2876" E
EX57-18	25° 16' 49.3215" S	29° 11' 43.7162" E
EX57-19	25° 16' 48.0121" S	29° 11' 41.0892" E
EX57-20	25° 16' 48.3881" S	29° 11' 40.8625" E
EX57-21	25° 16' 51.8827" S	29° 11' 47.8726" E
EX57-22	25° 16' 55.9114" S	29° 11' 53.0321" E
EX57-23	25° 16' 51.5052" S	29° 11' 55.5702" E
EX57-24	25° 16' 58.7321" S	29° 12' 06.8879" E
EX57-25	25° 17' 03.3361" S	29° 12' 02.5408" E
EX57-26	25° 17' 09.5245" S	29° 12' 10.4657" E
EX57-27	25° 17' 16.3121" S	29° 12' 15.3697" E
EX57-28	25° 17' 17.8181" S	29° 12' 14.8430" E
EX57-29	25° 17' 19.1808" S	29° 12' 19.6432" E
EX57-30	25° 17' 22.9324" S	29° 12' 20.8341" E
EX57-31	25° 17' 20.9295" S	29° 12' 13.7832" E
EX57-32	25° 17' 23.5715" S	29° 12' 12.8782" E
EX57-33	25° 17' 25.0912" S	29° 12' 18.2286" E
EX57-34	25° 17' 27.2715" S	29° 12' 17.9933" E
EX57-35	25° 17' 28.2625" S	29° 12' 17.8863" E
EX57-36	25° 17' 28.3614" S	29° 12' 17.8756" E
EX57-37	25° 17' 29.0083" S	29° 12' 17.8058" E
EX57-38	25° 17' 29.7198" S	29° 12' 17.7290" E
EX57-39	25° 17' 30.4313" S	29° 12' 17.6522" E
EX57-40	25° 17' 31.1428" S	29° 12' 17.5754" E
EX57-41	25° 17' 31.8544" S	29° 12' 17.4986" E
EX57-42	25° 17' 32.5659" S	29° 12' 17.4218" E
EX57-43	25° 17' 33.2774" S	29° 12' 17.3450" E
EX57-44	25° 17' 33.9890" S	29° 12' 17.2682" E
EX57-45	25° 17' 34.6358" S	29° 12' 17.1984" E
EX57-46	25° 17' 44.4971" S	29° 12' 16.1340" E
EX57-47	25° 17' 51.0278" S	29° 12' 17.5805" E
EX57-48	25° 17' 53.8279" S	29° 12' 18.6299" E
EX57-49	25° 17' 54.7246" S	29° 12' 18.9660" E
EX57-50	25° 17' 55.8088" S	29° 12' 19.3697" E
EX57-51	25° 17' 55.2047" S	29° 12' 16.4714" E
EX57-52	25° 18' 10.2557" S	29° 12' 14.6105" E
EX57-53	25° 18' 11.0815" S	29° 12' 14.5084" E
EX57-54	25° 18' 12.0723" S	29° 12' 14.3859" E
EX57-55	25° 18' 13.8174" S	29° 11' 55.1061" E
EX57-56	25° 18' 15.2272" S	29° 11' 39.5248" E
EX57-57	25° 18' 19.9088" S	29° 11' 40.0373" E
EX57-58	25° 18' 20.3432" S	29° 11' 35.2348" E
EX57-59	25° 18' 16.9422" S	29° 11' 23.2626" E
EX57-60	25° 18' 12.5993" S	29° 11' 24.7556" E
EX57-61	25° 18' 11.6688" S	29° 11' 25.0755" E
EX57-62	25° 17' 43.6283" S	29° 11' 34.7145" E
EX57-63	25° 17' 43.6283" S	29° 11' 34.7147" E
EX57-64	25° 17' 38.8996" S	29° 11' 18.0692" E
EX57-65	25° 17' 34.0245" S	29° 11' 12.3801" E
EX57-66	25° 17' 33.9649" S	29° 11' 06.7803" E
EX57-67	25° 17' 32.7642" S	29° 11' 05.4556" E
EX57-68	25° 17' 38.0656" S	29° 10' 59.6401" E
EX57-69	25° 17' 37.4944" S	29° 10' 59.0094" E
EX57-70	25° 17' 38.2953" S	29° 10' 58.1309" E
EX57-71	25° 17' 38.5253" S	29° 10' 57.4063" E
EX57-72	25° 17' 43.6663" S	29° 10' 54.3262" E
EX57-73	25° 17' 35.9358" S	29° 10' 45.7995" E
EX57-74	25° 17' 35.9361" S	29° 10' 45.5468" E
EX57-75	25° 17' 36.9390" S	29° 10' 44.4465" E
EX57-76	25° 17' 37.2597" S	29° 10' 41.8064" E
EX57-77	25° 17' 24.3419" S	29° 10' 37.0119" E
EX58-1	25° 15' 06.0635" S	29° 12' 47.3599" E
EX58-2	25° 15' 07.6193" S	29° 12' 49.2823" E
EX58-3	25° 15' 08.0609" S	29° 12' 49.1122" E
EX58-4	25° 15' 10.9183" S	29° 12' 51.1951" E
EX58-5	25° 15' 19.9301" S	29° 12' 33.4853" E
EX58-6	25° 14' 59.6506" S	29° 11' 49.4257" E
EX58-7	25° 14' 56.6075" S	29° 11' 56.7356" E
EX58-8	25° 14' 39.7654" S	29° 12' 37.9809" E
EX58-9	25° 14' 36.9697" S	29° 12' 44.8261" E
EX58-10	25° 14' 45.1074" S	29° 13' 01.8836" E
EX58-11	25° 14' 50.9631" S	29° 12' 47.5463" E
EX58-12	25° 14' 51.4566" S	29° 12' 46.3378" E
EX58-13	25° 14' 51.9319" S	29° 12' 46.8887" E
EX58-14	25° 14' 52.4701" S	29° 12' 47.5124" E
EX58-15	25° 14' 52.9174" S	29° 12' 48.0309" E
EX58-16	25° 14' 53.3647" S	29° 12' 48.5494" E
EX58-17	25° 14' 53.8121" S	29° 12' 49.0678" E
EX58-18	25° 14' 54.2594" S	29° 12' 49.5863" E
EX58-19	25° 14' 54.7067" S	29° 12' 50.1048" E
EX58-20	25° 14' 55.1541" S	29° 12' 50.6233" E
EX58-21	25° 14' 55.6246" S	29° 12' 51.1687" E
EX58-22	25° 14' 56.2914" S	29° 12' 50.3842" E
EX58-23	25° 14' 56.5803" S	29° 12' 50.0443" E
EX58-24	25° 14' 57.2470" S	29° 12' 49.2598" E
EX58-25	25° 15' 01.6229" S	29° 12' 44.1111" E
EX58-26	25° 15' 02.0702" S	29° 12' 44.6296" E
EX58-27	25° 15' 02.5175" S	29° 12' 45.1481" E
EX58-28	25° 15' 02.9648" S	29° 12' 45.6666" E
EX58-29	25° 15' 03.4121" S	29° 12' 46.1852" E
EX58-30	25° 15' 03.8594" S	29° 12' 46.7037" E
EX58-31	25° 15' 04.3067" S	29° 12' 47.2222" E
EX58-32	25° 15' 04.7541" S	29° 12' 47.7407" E
EX58-33	25° 15' 05.2014" S	29° 12' 48.2592" E
EX58-34	25° 15' 05.9087" S	29° 12' 47.5215" E
EX59-1	25° 18' 17.6931" S	29° 12' 35.6158" E
EX59-2	25° 18' 17.1677" S	29° 12' 35.5531" E
EX59-3	25° 18' 15.5648" S	29° 12' 35.9421" E
EX59-4	25° 18' 13.9093" S	29° 12' 38.7170" E
EX59-5	25° 18' 01.3906" S	29° 12' 38.3697" E
EX59-6	25° 18' 01.3155" S	29° 12' 39.7522" E
EX59-7	25° 18' 01.2750" S	29° 12' 41.3011" E
EX59-8	25° 18' 01.2590" S	29° 12' 41.5895" E
EX59-9	25° 18' 01.2249" S	29° 12' 42.6630" E
EX59-10	25° 18' 01.2112" S	29° 12' 43.1795" E
EX59-11	25° 18' 01.1746" S	29° 12' 43.8969" E
EX59-12	25° 18' 01.1308" S	29° 12' 44.8309" E
EX59-13	25° 18' 00.8053" S	29° 12' 45.4224" E
EX59-14	25° 18' 00.5770" S	29° 12' 46.6739" E
EX59-15	25° 18' 00.2518" S	29° 12' 48.4443" E
EX59-16	25° 17' 59.9518" S	29° 12' 48.7455" E
EX59-17	25° 17' 59.3927" S	29° 12' 49.6765" E
EX59-18	25° 17' 58.9058" S	29° 12' 50.4042" E
EX59-19	25° 17' 58.7108" S	29° 12' 50.6976" E
EX59-20	25° 17' 58.2632" S	29° 12' 51.3954" E
EX59-21	25° 17' 57.7187" S	29° 12' 52.2242" E
EX59-22	25° 17' 57.5673" S	29° 12' 52.4302" E
EX59-23	25° 17' 57.0985" S	29° 12' 53.1653" E

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 76 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. M B Straughan G.Pr. LS0907D — 09 October 2025 date

For applicant Owain Jackson name

signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	**Dwg:** reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

friedlaender, burger & volkmann

Point	Latitude	Longitude
EX59-24	25° 17' 57.9142" S	29° 12' 53.6513" E
EX59-25	25° 17' 58.8427" S	29° 12' 54.2663" E
EX59-26	25° 17' 59.7746" S	29° 12' 54.8449" E
EX59-27	25° 18' 00.5580" S	29° 12' 55.3321" E
EX59-28	25° 18' 01.3509" S	29° 12' 55.8247" E
EX59-29	25° 18' 02.1974" S	29° 12' 56.2612" E
EX59-30	25° 18' 03.0419" S	29° 12' 56.8300" E
EX59-31	25° 18' 04.2661" S	29° 12' 57.6776" E
EX59-32	25° 18' 04.5232" S	29° 12' 57.8325" E
EX59-33	25° 18' 09.0118" S	29° 12' 59.6118" E
EX59-34	25° 18' 14.5359" S	29° 13' 02.5308" E
EX59-35	25° 18' 14.9756" S	29° 13' 02.7526" E
EX59-36	25° 18' 32.1660" S	29° 13' 12.3842" E
EX59-37	25° 18' 32.7304" S	29° 13' 10.6745" E
EX59-38	25° 18' 32.7306" S	29° 13' 10.6741" E
EX59-39	25° 18' 32.8332" S	29° 13' 10.3372" E
EX59-40	25° 18' 38.3058" S	29° 13' 12.4931" E
EX59-41	25° 18' 40.5490" S	29° 13' 12.5633" E
EX59-42	25° 18' 42.5358" S	29° 13' 12.6255" E
EX59-43	25° 18' 44.4745" S	29° 13' 12.6672" E
EX59-44	25° 18' 45.9597" S	29° 13' 13.8694" E
EX59-45	25° 18' 48.0487" S	29° 13' 12.2900" E
EX59-46	25° 18' 52.5824" S	29° 13' 13.1748" E
EX59-47	25° 18' 54.6128" S	29° 13' 13.4037" E
EX59-48	25° 18' 56.3073" S	29° 13' 13.3627" E
EX59-49	25° 18' 57.5629" S	29° 13' 13.1530" E
EX59-50	25° 18' 57.7034" S	29° 13' 13.2030" E
EX59-51	25° 19' 01.8236" S	29° 13' 14.6684" E
EX59-52	25° 19' 09.4580" S	29° 13' 08.8878" E
EX59-53	25° 19' 10.8511" S	29° 13' 07.8305" E
EX59-54	25° 19' 12.0232" S	29° 13' 06.9402" E
EX59-55	25° 19' 15.0066" S	29° 13' 04.4363" E
EX59-56	25° 19' 17.1698" S	29° 13' 02.3260" E
EX59-57	25° 19' 18.9016" S	29° 13' 01.4216" E
EX59-58	25° 19' 18.7699" S	29° 12' 59.9211" E
EX59-59	25° 19' 18.8294" S	29° 12' 59.6805" E
EX59-60	25° 19' 18.7629" S	29° 12' 56.9162" E
EX59-61	25° 19' 16.8324" S	29° 12' 54.7242" E
EX59-62	25° 19' 14.0450" S	29° 12' 50.6202" E
EX59-63	25° 19' 11.6526" S	29° 12' 47.9112" E
EX59-64	25° 19' 11.3358" S	29° 12' 47.6461" E
EX59-65	25° 19' 10.5882" S	29° 12' 47.0591" E
EX59-66	25° 19' 10.3044" S	29° 12' 46.8235" E
EX59-67	25° 19' 08.4842" S	29° 12' 45.5767" E
EX59-68	25° 19' 06.8756" S	29° 12' 44.4784" E
EX59-69	25° 19' 06.6531" S	29° 12' 44.3372" E
EX59-70	25° 19' 05.5509" S	29° 12' 43.3803" E
EX59-71	25° 19' 03.8355" S	29° 12' 42.4002" E

Point	Latitude	Longitude
EX59-72	25° 19' 03.6299" S	29° 12' 41.6780" E
EX59-73	25° 19' 01.0430" S	29° 12' 41.5262" E
EX59-74	25° 18' 59.2603" S	29° 12' 41.4760" E
EX59-75	25° 18' 57.1928" S	29° 12' 40.8056" E
EX59-76	25° 18' 55.7241" S	29° 12' 41.1427" E
EX59-77	25° 18' 55.6836" S	29° 12' 40.9215" E
EX59-78	25° 18' 55.2624" S	29° 12' 38.5463" E
EX59-79	25° 18' 55.1366" S	29° 12' 37.4399" E
EX59-80	25° 18' 54.8602" S	29° 12' 35.5091" E
EX59-81	25° 18' 54.8144" S	29° 12' 35.0582" E
EX59-82	25° 18' 53.0528" S	29° 12' 33.8482" E
EX59-83	25° 18' 50.7989" S	29° 12' 34.4636" E
EX59-84	25° 18' 49.0866" S	29° 12' 34.5064" E
EX59-85	25° 18' 48.6935" S	29° 12' 34.3806" E
EX59-86	25° 18' 48.8846" S	29° 12' 33.2551" E
EX59-87	25° 18' 47.8578" S	29° 12' 33.1411" E
EX59-88	25° 18' 46.8063" S	29° 12' 33.1146" E
EX59-89	25° 18' 45.2397" S	29° 12' 33.0583" E
EX59-90	25° 18' 43.4283" S	29° 12' 33.0191" E
EX59-91	25° 18' 38.2934" S	29° 12' 33.7619" E
EX59-92	25° 18' 39.0853" S	29° 12' 31.9646" E
EX59-93	25° 18' 39.1145" S	29° 12' 30.6222" E
EX59-94	25° 18' 37.9006" S	29° 12' 30.4961" E
EX59-95	25° 18' 38.0743" S	29° 12' 28.7040" E
EX59-96	25° 18' 37.7004" S	29° 12' 28.6542" E
EX59-97	25° 18' 35.7655" S	29° 12' 28.4031" E
EX59-98	25° 18' 34.4802" S	29° 12' 28.2347" E
EX59-99	25° 18' 34.0088" S	29° 12' 28.3408" E
EX59-100	25° 18' 31.7720" S	29° 12' 28.8576" E
EX59-101	25° 18' 29.9693" S	29° 12' 29.3311" E
EX59-102	25° 18' 28.3382" S	29° 12' 30.1048" E
EX59-103	25° 18' 28.1538" S	29° 12' 30.2561" E
EX59-104	25° 18' 25.3344" S	29° 12' 31.5169" E
EX59-105	25° 18' 24.3258" S	29° 12' 31.9849" E
EX59-106	25° 18' 21.6691" S	29° 12' 33.1273" E
EX59-107	25° 18' 20.1622" S	29° 12' 33.8375" E
EX59-108	25° 18' 18.8943" S	29° 12' 34.4285" E
EX60-1	25° 17' 44.0493" S	29° 14' 15.3799" E
EX60-2	25° 17' 43.4313" S	29° 14' 16.8765" E
EX60-3	25° 17' 44.0220" S	29° 14' 17.0505" E
EX60-4	25° 17' 44.1640" S	29° 14' 16.0135" E
EX60-5	25° 17' 44.3367" S	29° 14' 15.8755" E
EX60-6	25° 17' 45.3677" S	29° 14' 16.1483" E
EX60-7	25° 17' 45.4949" S	29° 14' 16.3591" E
EX60-8	25° 17' 45.3508" S	29° 14' 17.3967" E
EX60-9	25° 17' 45.5917" S	29° 14' 17.4655" E
EX60-10	25° 17' 45.5941" S	29° 14' 17.4662" E
EX60-11	25° 17' 46.5072" S	29° 14' 17.8805" E

Point	Latitude	Longitude
EX60-12	25° 17' 47.5815" S	29° 14' 18.1560" E
EX60-13	25° 17' 47.4381" S	29° 14' 19.2103" E
EX60-14	25° 17' 48.3987" S	29° 14' 19.3837" E
EX60-15	25° 17' 48.5509" S	29° 14' 18.3080" E
EX60-16	25° 17' 49.4796" S	29° 14' 18.3667" E
EX60-17	25° 17' 50.6690" S	29° 14' 18.5692" E
EX60-18	25° 17' 50.5166" S	29° 14' 19.7521" E
EX60-19	25° 17' 50.8295" S	29° 14' 19.8171" E
EX60-20	25° 17' 52.6585" S	29° 14' 20.1706" E
EX60-21	25° 17' 54.5285" S	29° 14' 20.7169" E
EX60-22	25° 17' 54.3598" S	29° 14' 21.7236" E
EX60-23	25° 17' 54.5665" S	29° 14' 21.9089" E
EX60-24	25° 17' 55.7077" S	29° 14' 22.5699" E
EX60-25	25° 17' 56.7018" S	29° 14' 23.1913" E
EX60-26	25° 17' 56.9501" S	29° 14' 23.3473" E
EX60-27	25° 17' 57.8878" S	29° 14' 23.6305" E
EX60-28	25° 17' 58.7601" S	29° 14' 23.8752" E
EX60-29	25° 17' 59.0884" S	29° 14' 23.9649" E
EX60-30	25° 18' 02.5569" S	29° 14' 24.7503" E
EX60-31	25° 18' 02.8277" S	29° 14' 25.0540" E
EX60-32	25° 18' 17.2496" S	29° 14' 09.4714" E
EX60-33	25° 18' 16.6528" S	29° 14' 08.4028" E
EX60-34	25° 18' 15.9308" S	29° 14' 07.1098" E
EX60-35	25° 18' 15.3748" S	29° 14' 06.0702" E
EX60-36	25° 18' 13.9240" S	29° 14' 03.2452" E
EX60-37	25° 18' 13.9234" S	29° 14' 03.2439" E
EX60-38	25° 18' 12.6848" S	29° 14' 00.8578" E
EX60-39	25° 18' 07.7642" S	29° 13' 51.2567" E
EX60-40	25° 18' 06.9468" S	29° 13' 49.6747" E
EX60-41	25° 18' 02.2563" S	29° 13' 40.5325" E
EX60-42	25° 18' 00.9945" S	29° 13' 38.0664" E
EX60-43	25° 18' 00.9937" S	29° 13' 38.0646" E
EX60-44	25° 17' 53.1584" S	29° 13' 22.8045" E
EX60-45	25° 17' 52.5647" S	29° 13' 23.2063" E
EX60-46	25° 17' 40.9002" S	29° 13' 31.1584" E
EX60-47	25° 17' 43.0254" S	29° 13' 37.6185" E
EX60-48	25° 17' 41.8086" S	29° 14' 10.6798" E
EX60-49	25° 17' 41.7898" S	29° 14' 11.0484" E
EX60-50	25° 17' 42.4316" S	29° 14' 11.8907" E
EX60-51	25° 17' 41.2409" S	29° 14' 14.7663" E
EX60-52	25° 17' 36.3915" S	29° 14' 14.6514" E
EX60-53	25° 17' 26.9671" S	29° 14' 16.7306" E
EX60-54	25° 17' 27.9189" S	29° 14' 21.9527" E
EX60-55	25° 17' 26.8286" S	29° 14' 22.7649" E
EX60-56	25° 17' 25.2161" S	29° 14' 27.5559" E
EX60-57	25° 17' 24.2466" S	29° 14' 34.1497" E
EX60-58	25° 17' 27.8206" S	29° 14' 41.4436" E
EX60-59	25° 17' 31.8641" S	29° 14' 48.8086" E

Point	Latitude	Longitude
EX60-60	25° 17' 34.7589" S	29° 14' 50.1528" E
EX60-61	25° 17' 35.1379" S	29° 14' 49.1648" E
EX60-62	25° 17' 40.7349" S	29° 14' 45.2998" E
EX60-63	25° 17' 41.9204" S	29° 14' 44.9064" E
EX60-64	25° 17' 42.6035" S	29° 14' 45.6714" E
EX60-65	25° 17' 52.4881" S	29° 14' 34.9913" E
EX60-66	25° 17' 56.7978" S	29° 14' 30.3344" E
EX60-67	25° 17' 57.1611" S	29° 14' 29.9419" E
EX60-68	25° 17' 41.8452" S	29° 14' 26.4935" E
EX60-69	25° 17' 42.0359" S	29° 14' 23.9261" E
EX60-70	25° 17' 41.3553" S	29° 14' 23.7740" E
EX60-71	25° 17' 42.5676" S	29° 14' 18.0636" E
EX60-72	25° 17' 43.0200" S	29° 14' 17.8729" E
EX61-1	25° 08' 23.0615" S	29° 22' 45.0484" E
EX61-2	25° 08' 23.0634" S	29° 22' 45.0471" E
EX61-3	25° 08' 05.6264" S	29° 22' 15.6919" E
EX61-4	25° 08' 04.3968" S	29° 22' 16.6399" E
EX61-5	25° 07' 58.0502" S	29° 22' 21.1977" E
EX61-6	25° 07' 54.8903" S	29° 22' 15.1729" E
EX61-7	25° 07' 48.9522" S	29° 22' 19.8596" E
EX61-8	25° 07' 48.4920" S	29° 22' 20.1892" E
EX61-9	25° 08' 11.9144" S	29° 22' 53.0394" E
EX61-10	25° 08' 32.3937" S	29° 23' 21.9630" E
EX61-11	25° 08' 44.9361" S	29° 23' 21.8772" E
EX62-1	25° 10' 00.6246" S	29° 24' 02.9005" E
EX62-2	25° 10' 00.6248" S	29° 24' 02.9001" E
EX62-3	25° 10' 01.9140" S	29° 23' 59.4868" E
EX62-4	25° 10' 02.3774" S	29° 23' 58.2587" E
EX62-5	25° 10' 03.1219" S	29° 23' 56.2857" E
EX62-6	25° 10' 03.4840" S	29° 23' 55.3260" E
EX62-7	25° 10' 03.5674" S	29° 23' 55.1049" E
EX62-8	25° 10' 04.5106" S	29° 23' 52.6054" E
EX62-9	25° 10' 04.7814" S	29° 23' 51.8876" E
EX62-10	25° 10' 05.1376" S	29° 23' 50.9439" E
EX62-11	25° 10' 05.7710" S	29° 23' 49.2651" E
EX62-12	25° 10' 05.9691" S	29° 23' 48.7402" E
EX62-13	25° 10' 06.4216" S	29° 23' 47.5409" E
EX62-14	25° 10' 06.7007" S	29° 23' 46.8013" E
EX62-15	25° 10' 07.0124" S	29° 23' 45.9750" E
EX62-16	25° 10' 07.0546" S	29° 23' 45.8632" E
EX62-17	25° 10' 07.2528" S	29° 23' 45.3380" E
EX62-18	25° 10' 07.6397" S	29° 23' 44.3126" E
EX62-19	25° 10' 08.2613" S	29° 23' 42.6652" E
EX62-20	25° 10' 08.6503" S	29° 23' 41.6342" E
EX62-21	25° 10' 09.1759" S	29° 23' 40.2411" E
EX62-22	25° 10' 09.1841" S	29° 23' 40.2193" E
EX62-23	25° 10' 09.8120" S	29° 23' 38.5551" E
EX62-24	25° 10' 09.8561" S	29° 23' 38.4383" E

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 77 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No.
M B Straughan G.Pr. LS0907D
09 October 2025 date

For applicant
Owain Jackson name
signature
09 October 2025 date

signature date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation
Dwg: reg 2(2) plan er kruis river oct 2025.dwg
Revision:
Date: 09 October 2025

friedlaender, burger & volkmann

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Point	Latitude	Longitude
EX62-25	25° 10' 10.1068" S	29° 23' 37.7740" E
EX62-26	25° 10' 10.3939" S	29° 23' 37.0127" E
EX62-27	25° 10' 10.4918" S	29° 23' 36.7533" E
EX62-28	25° 10' 10.5381" S	29° 23' 36.6306" E
EX62-29	25° 10' 08.4101" S	29° 23' 35.3233" E
EX62-30	25° 10' 07.3175" S	29° 23' 34.4891" E
EX62-31	25° 10' 07.0946" S	29° 23' 34.3189" E
EX62-32	25° 10' 05.6975" S	29° 23' 33.4521" E
EX62-33	25° 10' 04.6866" S	29° 23' 33.0013" E
EX62-34	25° 10' 04.5241" S	29° 23' 32.9172" E
EX62-35	25° 10' 04.9349" S	29° 23' 32.7288" E
EX62-36	25° 10' 05.2339" S	29° 23' 31.9634" E
EX62-37	25° 10' 05.6237" S	29° 23' 31.6018" E
EX62-38	25° 10' 05.9860" S	29° 23' 31.2912" E
EX62-39	25° 10' 07.0090" S	29° 23' 31.0852" E
EX62-40	25° 10' 07.2150" S	29° 23' 30.8105" E
EX62-41	25° 10' 07.1121" S	29° 23' 27.2817" E
EX62-42	25° 10' 07.0145" S	29° 23' 23.6120" E
EX62-43	25° 10' 06.7943" S	29° 23' 23.6165" E
EX62-44	25° 10' 06.5918" S	29° 23' 17.6206" E
EX62-45	25° 10' 06.5830" S	29° 23' 17.4642" E
EX62-46	25° 10' 06.5341" S	29° 23' 16.2626" E
EX62-47	25° 10' 06.0541" S	29° 22' 52.2061" E
EX62-48	25° 10' 07.5238" S	29° 22' 52.9607" E
EX62-49	25° 10' 07.5572" S	29° 22' 54.2154" E
EX62-50	25° 10' 07.5900" S	29° 22' 55.4485" E
EX62-51	25° 10' 08.1557" S	29° 23' 16.7194" E
EX62-52	25° 10' 08.1904" S	29° 23' 18.0277" E
EX62-53	25° 10' 08.4541" S	29° 23' 27.9557" E
EX62-54	25° 10' 08.5252" S	29° 23' 30.6297" E
EX62-55	25° 10' 08.5598" S	29° 23' 31.9374" E
EX62-56	25° 10' 11.3557" S	29° 23' 31.5343" E
EX62-57	25° 10' 12.2979" S	29° 23' 31.9647" E
EX62-58	25° 10' 12.3194" S	29° 23' 31.9073" E
EX62-59	25° 10' 12.5725" S	29° 23' 31.2352" E
EX62-60	25° 10' 12.6309" S	29° 23' 31.0800" E
EX62-61	25° 10' 13.2458" S	29° 23' 29.4469" E
EX62-62	25° 10' 13.8335" S	29° 23' 27.8857" E
EX62-63	25° 10' 14.4451" S	29° 23' 26.2612" E
EX62-64	25° 10' 15.0819" S	29° 23' 24.5698" E
EX62-65	25° 10' 15.4143" S	29° 23' 23.6868" E
EX62-66	25° 10' 15.7098" S	29° 23' 22.9020" E
EX62-67	25° 10' 15.9095" S	29° 23' 22.3714" E
EX62-68	25° 10' 16.3416" S	29° 23' 21.2237" E
EX62-69	25° 10' 16.5198" S	29° 23' 20.7505" E
EX62-70	25° 10' 18.2980" S	29° 23' 21.5604" E
EX62-71	25° 10' 19.2574" S	29° 23' 21.9975" E
EX62-72	25° 10' 23.0630" S	29° 23' 23.7311" E

Point	Latitude	Longitude
EX62-73	25° 10' 24.2299" S	29° 23' 24.2627" E
EX62-74	25° 10' 25.2856" S	29° 23' 24.7436" E
EX62-75	25° 10' 26.3499" S	29° 23' 25.2284" E
EX62-76	25° 10' 28.5215" S	29° 23' 26.2177" E
EX62-77	25° 10' 29.5800" S	29° 23' 26.7000" E
EX62-78	25° 10' 31.0078" S	29° 23' 27.3504" E
EX62-79	25° 10' 31.9455" S	29° 23' 27.7776" E
EX62-80	25° 10' 32.7389" S	29° 23' 25.6744" E
EX62-81	25° 10' 33.1507" S	29° 23' 24.5828" E
EX62-82	25° 10' 33.5229" S	29° 23' 23.5963" E
EX62-83	25° 10' 33.9330" S	29° 23' 22.5092" E
EX62-84	25° 10' 34.3069" S	29° 23' 21.5181" E
EX62-85	25° 10' 34.7085" S	29° 23' 20.4535" E
EX62-86	25° 10' 35.0987" S	29° 23' 19.4193" E
EX62-87	25° 10' 35.8724" S	29° 23' 17.3682" E
EX62-88	25° 10' 36.0745" S	29° 23' 16.8326" E
EX62-89	25° 10' 36.4987" S	29° 23' 15.7080" E
EX62-90	25° 10' 36.8410" S	29° 23' 14.8005" E
EX62-91	25° 10' 37.2606" S	29° 23' 13.6883" E
EX62-92	25° 10' 37.6552" S	29° 23' 12.6422" E
EX62-93	25° 10' 38.0198" S	29° 23' 11.6756" E
EX62-94	25° 10' 38.4164" S	29° 23' 10.6243" E
EX62-95	25° 10' 38.8252" S	29° 23' 09.5406" E
EX62-96	25° 10' 39.1153" S	29° 23' 08.7715" E
EX62-97	25° 10' 39.2505" S	29° 23' 08.4131" E
EX62-98	25° 10' 23.9756" S	29° 23' 00.9767" E
EX62-99	25° 10' 10.6126" S	29° 22' 54.4600" E
EX62-100	25° 10' 10.1529" S	29° 22' 54.2358" E
EX62-101	25° 10' 12.1571" S	29° 22' 46.1926" E
EX62-102	25° 10' 09.8422" S	29° 22' 46.2648" E
EX62-103	25° 10' 09.6692" S	29° 22' 39.5691" E
EX62-104	25° 10' 14.2508" S	29° 22' 37.7630" E
EX62-105	25° 10' 28.3805" S	29° 21' 40.8601" E
EX62-106	25° 10' 03.5334" S	29° 21' 45.4738" E
EX62-107	25° 10' 02.8880" S	29° 21' 34.8008" E
EX62-108	25° 09' 56.5233" S	29° 21' 35.9723" E
EX62-109	25° 09' 34.7704" S	29° 21' 39.9755" E
EX62-110	25° 09' 32.8776" S	29° 22' 47.0410" E
EX62-111	25° 09' 32.8523" S	29° 22' 47.9368" E
EX62-112	25° 09' 32.7388" S	29° 22' 51.9480" E
EX62-113	25° 09' 32.1700" S	29° 23' 12.0392" E
EX62-114	25° 09' 28.2159" S	29° 23' 12.2927" E
EX62-115	25° 09' 21.4800" S	29° 23' 12.7244" E
EX62-116	25° 09' 21.5587" S	29° 23' 13.1127" E
EX62-117	25° 09' 21.6444" S	29° 23' 13.5350" E
EX62-118	25° 09' 21.9214" S	29° 23' 14.9004" E
EX62-119	25° 09' 22.0645" S	29° 23' 15.6062" E
EX62-120	25° 09' 22.1666" S	29° 23' 16.1097" E

Point	Latitude	Longitude
EX62-121	25° 09' 22.2744" S	29° 23' 16.6547" E
EX62-122	25° 09' 22.4139" S	29° 23' 17.3594" E
EX62-123	25° 09' 22.3542" S	29° 23' 17.5641" E
EX62-124	25° 09' 22.0966" S	29° 23' 18.4483" E
EX62-125	25° 09' 21.8390" S	29° 23' 19.3324" E
EX62-126	25° 09' 21.5814" S	29° 23' 20.2166" E
EX62-127	25° 09' 21.3238" S	29° 23' 21.1007" E
EX62-128	25° 09' 21.0602" S	29° 23' 22.0056" E
EX62-129	25° 09' 20.8214" S	29° 23' 22.8251" E
EX62-130	25° 09' 20.5386" S	29° 23' 23.7957" E
EX62-131	25° 09' 20.3206" S	29° 23' 24.5438" E
EX62-132	25° 09' 20.1027" S	29° 23' 25.2919" E
EX62-133	25° 09' 19.8847" S	29° 23' 26.0400" E
EX62-134	25° 09' 19.5197" S	29° 23' 27.2928" E
EX62-135	25° 09' 19.7292" S	29° 23' 27.3900" E
EX62-136	25° 09' 20.5997" S	29° 23' 27.7942" E
EX62-137	25° 09' 21.0987" S	29° 23' 28.0258" E
EX62-138	25° 09' 21.5977" S	29° 23' 28.2575" E
EX62-139	25° 09' 22.0967" S	29° 23' 28.4892" E
EX62-140	25° 09' 22.5958" S	29° 23' 28.7208" E
EX62-141	25° 09' 23.0948" S	29° 23' 28.9525" E
EX62-142	25° 09' 23.6060" S	29° 23' 29.1899" E
EX62-143	25° 09' 24.1212" S	29° 23' 29.4290" E
EX62-144	25° 09' 24.6364" S	29° 23' 29.6682" E
EX62-145	25° 09' 25.1477" S	29° 23' 29.9056" E
EX62-146	25° 09' 25.6467" S	29° 23' 30.1372" E
EX62-147	25° 09' 26.3621" S	29° 23' 30.4694" E
EX62-148	25° 09' 26.5663" S	29° 23' 30.5642" E
EX62-150	25° 09' 27.4487" S	29° 23' 30.9738" E
EX62-151	25° 09' 27.7481" S	29° 23' 31.1128" E
EX62-152	25° 09' 28.2686" S	29° 23' 31.3545" E
EX62-153	25° 09' 28.7676" S	29° 23' 31.5861" E
EX62-154	25° 09' 29.2666" S	29° 23' 31.8178" E
EX62-155	25° 09' 29.9390" S	29° 23' 32.1299" E
EX62-156	25° 09' 31.2546" S	29° 23' 32.7407" E
EX62-157	25° 09' 31.5755" S	29° 23' 32.8897" E
EX62-158	25° 09' 31.4687" S	29° 23' 36.6521" E
EX62-159	25° 09' 31.3346" S	29° 23' 41.3567" E
EX62-160	25° 09' 18.1609" S	29° 24' 18.5627" E
EX62-161	25° 09' 23.8916" S	29° 24' 33.6578" E
EX62-162	25° 09' 22.5779" S	29° 24' 37.3672" E
EX62-163	25° 09' 22.6895" S	29° 24' 41.7633" E
EX62-164	25° 09' 31.6203" S	29° 24' 41.4873" E
EX62-165	25° 09' 31.6202" S	29° 24' 41.4892" E
EX62-166	25° 09' 45.2776" S	29° 24' 41.0667" E
EX62-167	25° 09' 45.3922" S	29° 24' 41.0632" E
EX62-168	25° 09' 52.9222" S	29° 24' 20.7724" E
EX62-169	25° 09' 55.6618" S	29° 24' 13.0977" E

Point	Latitude	Longitude
EX62-170	25° 09' 55.4378" S	29° 24' 12.9872" E
EX62-171	25° 09' 53.1538" S	29° 24' 11.8604" E
EX62-172	25° 09' 50.9204" S	29° 24' 10.7573" E
EX62-173	25° 09' 50.8015" S	29° 24' 10.6986" E
EX62-174	25° 09' 51.8651" S	29° 24' 07.1892" E
EX62-175	25° 09' 52.3469" S	29° 24' 07.1332" E
EX62-176	25° 09' 57.9063" S	29° 24' 06.4885" E
EX62-177	25° 09' 58.1691" S	29° 24' 06.4580" E
EX62-178	25° 09' 58.7469" S	29° 24' 05.3405" E
EX62-179	25° 09' 59.5447" S	29° 24' 05.7494" E
EX62-181	25° 10' 00.0285" S	29° 24' 05.8941" E
EX62-182	25° 10' 01.9132" S	29° 24' 05.8617" E
EX62-183	25° 10' 03.9856" S	29° 24' 05.8264" E
EX62-184	25° 10' 07.8020" S	29° 24' 04.6751" E
EX62-185	25° 10' 08.6815" S	29° 24' 04.7543" E
EX62-186	25° 10' 10.5076" S	29° 24' 05.5055" E
EX62-187	25° 10' 11.5622" S	29° 24' 05.9393" E
EX62-188	25° 10' 17.1316" S	29° 24' 07.0359" E
EX62-189	25° 10' 17.3309" S	29° 24' 06.5115" E
EX62-190	25° 10' 15.1052" S	29° 24' 05.4972" E
EX62-191	25° 10' 13.3641" S	29° 24' 04.7039" E
EX62-192	25° 10' 11.8815" S	29° 24' 04.0283" E
EX62-193	25° 10' 10.4505" S	29° 24' 03.3763" E
EX62-194	25° 10' 09.2722" S	29° 24' 02.8394" E
EX62-195	25° 10' 08.9543" S	29° 24' 02.6946" E
EX62-196	25° 10' 08.1684" S	29° 24' 02.3365" E
EX62-197	25° 10' 07.6947" S	29° 24' 02.1206" E
EX62-198	25° 10' 06.4858" S	29° 24' 01.5698" E
EX62-199	25° 10' 06.0443" S	29° 24' 01.3687" E
EX62-200	25° 10' 05.3907" S	29° 24' 01.0709" E
EX62-201	25° 10' 04.3009" S	29° 24' 00.5743" E
EX62-202	25° 10' 03.3419" S	29° 24' 00.1374" E
EX62-203	25° 10' 02.1871" S	29° 23' 59.6112" E
EX62-204	25° 10' 00.9001" S	29° 24' 03.0263" E
EX63-1	25° 10' 09.1012" S	29° 23' 58.8722" E
EX63-2	25° 10' 09.7083" S	29° 23' 57.6717" E
EX63-3	25° 10' 08.6168" S	29° 23' 56.9645" E
EX63-5	25° 10' 07.5251" S	29° 23' 56.2572" E
EX63-6	25° 10' 06.9177" S	29° 23' 57.4574" E
EX64-1	25° 10' 02.6543" S	29° 24' 25.3884" E
EX64-2	25° 10' 03.5002" S	29° 24' 26.2158" E
EX64-3	25° 10' 03.5221" S	29° 24' 27.2253" E
EX64-4	25° 10' 04.2422" S	29° 24' 27.9472" E
EX64-5	25° 10' 05.3720" S	29° 24' 26.5869" E
EX64-6	25° 10' 10.6478" S	29° 24' 19.2032" E
EX64-7	25° 10' 14.3658" S	29° 24' 12.8077" E
EX64-8	25° 10' 16.7377" S	29° 24' 07.6061" E
EX64-9	25° 10' 15.7483" S	29° 24' 07.3900" E

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 78 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No.

M B Straughan G.Pr. LSO907D

09 October 2025 date

For applicant Owain Jackson name

signature

09 October 2025 date

signature date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	**Dwg:** reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

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Point	Latitude	Longitude
EX64-10	25° 10' 11.6574" S	29° 24' 06.4967" E
EX64-11	25° 10' 10.4118" S	29° 24' 06.0091" E
EX64-12	25° 10' 10.4122" S	29° 24' 06.0080" E
EX64-13	25° 10' 08.2080" S	29° 24' 05.1131" E
EX64-14	25° 10' 04.1830" S	29° 24' 06.2401" E
EX64-15	25° 09' 59.9489" S	29° 24' 06.4030" E
EX64-16	25° 09' 59.3490" S	29° 24' 06.2313" E
EX64-17	25° 09' 52.8861" S	29° 24' 24.1268" E
EX64-18	25° 09' 50.2396" S	29° 24' 31.4245" E
EX64-19	25° 09' 55.0843" S	29° 24' 33.5458" E
EX64-20	25° 09' 59.2106" S	29° 24' 23.8805" E
EX65-1	25° 10' 44.9693" S	29° 24' 21.6055" E
EX65-2	25° 10' 39.1015" S	29° 24' 18.1695" E
EX65-3	25° 10' 36.2728" S	29° 24' 24.3908" E
EX65-4	25° 10' 39.5823" S	29° 24' 28.4147" E
EX65-5	25° 10' 40.0715" S	29° 24' 29.3134" E
EX65-6	25° 10' 40.5093" S	29° 24' 30.1176" E
EX65-7	25° 10' 40.9212" S	29° 24' 34.0453" E
EX65-8	25° 10' 50.0668" S	29° 24' 32.7267" E
EX65-9	25° 11' 02.8581" S	29° 24' 30.8793" E
EX65-10	25° 10' 54.1932" S	29° 24' 27.0067" E
EX66-1	25° 11' 05.0142" S	29° 24' 30.5704" E
EX66-2	25° 11' 04.9259" S	29° 24' 30.5791" E
EX66-3	25° 11' 12.7817" S	29° 24' 33.9383" E
EX66-4	25° 11' 13.6173" S	29° 24' 29.3273" E
EX67-1	25° 26' 05.7279" S	29° 24' 51.6295" E
EX67-2	25° 26' 07.1015" S	29° 24' 52.8686" E
EX67-3	25° 26' 08.8136" S	29° 24' 55.0027" E
EX67-4	25° 26' 10.1970" S	29° 24' 57.4093" E
EX67-5	25° 26' 11.2162" S	29° 25' 00.0253" E
EX67-6	25° 26' 11.8223" S	29° 25' 02.6724" E
EX67-7	25° 26' 12.7632" S	29° 25' 08.7682" E
EX67-8	25° 26' 13.5705" S	29° 25' 10.7952" E
EX67-9	25° 26' 14.1328" S	29° 25' 11.2345" E
EX67-10	25° 26' 14.2690" S	29° 25' 12.1164" E
EX67-11	25° 26' 13.8702" S	29° 25' 12.7356" E
EX67-12	25° 26' 13.7161" S	29° 25' 14.9428" E
EX67-13	25° 26' 14.4462" S	29° 25' 19.6758" E
EX67-14	25° 26' 30.4683" S	29° 25' 14.8935" E
EX67-15	25° 26' 29.4924" S	29° 25' 03.0496" E
EX67-16	25° 26' 28.5781" S	29° 24' 51.5949" E
EX68-1	25° 24' 35.9641" S	29° 25' 43.9679" E
EX68-2	25° 24' 30.2402" S	29° 26' 23.7839" E
EX68-3	25° 24' 38.4946" S	29° 26' 22.9571" E
EX68-4	25° 24' 40.4246" S	29° 26' 22.6601" E
EX68-5	25° 24' 42.4547" S	29° 26' 22.3484" E
EX68-6	25° 24' 43.6329" S	29° 26' 22.1672" E
EX68-7	25° 24' 44.7427" S	29° 26' 21.9263" E

Point	Latitude	Longitude
EX68-8	25° 24' 50.1041" S	29° 26' 21.1018" E
EX68-9	25° 24' 52.0344" S	29° 26' 20.8049" E
EX68-10	25° 24' 53.6433" S	29° 26' 20.5575" E
EX68-11	25° 24' 54.7695" S	29° 26' 20.3843" E
EX68-12	25° 24' 55.9601" S	29° 26' 20.2012" E
EX68-13	25° 24' 57.6011" S	29° 26' 19.9488" E
EX68-14	25° 24' 59.3066" S	29° 26' 19.6865" E
EX68-15	25° 25' 01.7520" S	29° 26' 19.3105" E
EX68-16	25° 25' 03.6183" S	29° 26' 19.0234" E
EX68-17	25° 25' 05.2272" S	29° 26' 18.7760" E
EX68-18	25° 25' 06.1926" S	29° 26' 18.6275" E
EX68-19	25° 25' 07.2628" S	29° 26' 18.4629" E
EX68-20	25° 25' 08.2281" S	29° 26' 18.3145" E
EX68-21	25° 25' 09.1935" S	29° 26' 18.1660" E
EX68-22	25° 25' 10.1588" S	29° 26' 18.0175" E
EX68-23	25° 25' 11.1241" S	29° 26' 17.8690" E
EX68-24	25° 25' 12.2758" S	29° 26' 17.6919" E
EX68-25	25° 25' 12.8009" S	29° 26' 17.6111" E
EX68-26	25° 25' 21.6461" S	29° 26' 16.3174" E
EX68-27	25° 25' 23.7154" S	29° 26' 15.9324" E
EX68-28	25° 25' 24.6807" S	29° 26' 15.7840" E
EX68-29	25° 25' 26.6970" S	29° 26' 15.4738" E
EX68-30	25° 25' 28.5483" S	29° 26' 15.1892" E
EX68-31	25° 25' 30.7325" S	29° 26' 14.8531" E
EX68-32	25° 25' 32.4202" S	29° 26' 14.5935" E
EX68-33	25° 25' 33.5786" S	29° 26' 14.4154" E
EX68-34	25° 25' 35.1874" S	29° 26' 14.1679" E
EX68-35	25° 25' 41.4238" S	29° 26' 13.2086" E
EX68-36	25° 25' 40.3971" S	29° 26' 01.2659" E
EX68-37	25° 25' 39.1564" S	29° 25' 46.8365" E
EX68-38	25° 25' 38.6259" S	29° 25' 40.6689" E
EX68-39	25° 26' 11.2689" S	29° 25' 38.9159" E
EX68-40	25° 26' 15.0348" S	29° 25' 36.7864" E
EX68-41	25° 26' 11.7192" S	29° 25' 15.2882" E
EX68-42	25° 26' 10.9228" S	29° 25' 13.2874" E
EX68-43	25° 26' 10.3587" S	29° 25' 12.8428" E
EX68-44	25° 26' 10.2243" S	29° 25' 11.9661" E
EX68-45	25° 26' 10.6232" S	29° 25' 11.3470" E
EX68-46	25° 26' 10.7734" S	29° 25' 09.1568" E
EX68-47	25° 26' 09.8434" S	29° 25' 03.1282" E
EX68-48	25° 26' 09.2952" S	29° 25' 00.7360" E
EX68-49	25° 26' 08.4025" S	29° 24' 58.4451" E
EX68-50	25° 26' 07.1905" S	29° 24' 56.3369" E
EX68-51	25° 26' 05.6918" S	29° 24' 54.4690" E
EX68-52	25° 26' 03.9431" S	29° 24' 52.8852" E
EX68-53	25° 26' 01.9862" S	29° 24' 51.6317" E
EX68-54	25° 25' 56.0273" S	29° 24' 51.6405" E
EX68-55	25° 25' 54.5284" S	29° 24' 51.6428" E

Point	Latitude	Longitude
EX68-56	25° 25' 44.7150" S	29° 24' 51.6574" E
EX68-57	25° 25' 35.6066" S	29° 24' 51.6710" E
EX68-58	25° 25' 33.8453" S	29° 24' 52.3072" E
EX68-59	25° 25' 32.3178" S	29° 24' 52.6736" E
EX68-60	25° 25' 30.7532" S	29° 24' 52.6946" E
EX68-61	25° 25' 29.2180" S	29° 24' 52.3638" E
EX68-62	25° 25' 27.7691" S	29° 24' 51.6782" E
EX68-63	25° 24' 43.5239" S	29° 24' 51.2639" E
EX69-1	25° 05' 19.4297" S	29° 27' 29.8561" E
EX69-2	25° 05' 19.0987" S	29° 27' 30.2731" E
EX69-3	25° 05' 18.7677" S	29° 27' 30.6901" E
EX69-4	25° 05' 18.4367" S	29° 27' 31.1071" E
EX69-5	25° 05' 17.6333" S	29° 27' 32.1192" E
EX69-6	25° 05' 17.8295" S	29° 27' 33.1597" E
EX69-7	25° 05' 17.8591" S	29° 27' 33.3168" E
EX69-8	25° 05' 17.9613" S	29° 27' 33.8585" E
EX69-9	25° 05' 18.0635" S	29° 27' 34.4001" E
EX69-10	25° 05' 18.1656" S	29° 27' 34.9417" E
EX69-11	25° 05' 18.2678" S	29° 27' 35.4834" E
EX69-12	25° 05' 18.3700" S	29° 27' 36.0250" E
EX69-13	25° 05' 18.4688" S	29° 27' 36.5492" E
EX69-14	25° 05' 18.5677" S	29° 27' 37.0733" E
EX69-15	25° 05' 18.6666" S	29° 27' 37.5975" E
EX69-16	25° 05' 18.7654" S	29° 27' 38.1217" E
EX69-17	25° 05' 18.8643" S	29° 27' 38.6458" E
EX69-18	25° 05' 18.9632" S	29° 27' 39.1700" E
EX69-19	25° 05' 19.0620" S	29° 27' 39.6941" E
EX69-20	25° 05' 19.0917" S	29° 27' 39.8514" E
EX69-21	25° 05' 19.1972" S	29° 27' 40.4105" E
EX69-22	25° 05' 19.3026" S	29° 27' 40.9696" E
EX69-23	25° 05' 19.4081" S	29° 27' 41.5287" E
EX69-24	25° 05' 19.5597" S	29° 27' 42.3323" E
EX69-25	25° 05' 20.8220" S	29° 27' 43.7464" E
EX69-26	25° 05' 21.1011" S	29° 27' 44.0591" E
EX69-27	25° 05' 22.0840" S	29° 27' 45.1587" E
EX69-28	25° 05' 25.2060" S	29° 27' 48.1474" E
EX69-29	25° 05' 25.8809" S	29° 27' 48.7934" E
EX69-30	25° 05' 25.8783" S	29° 27' 48.7931" E
EX69-31	25° 05' 25.7878" S	29° 27' 49.6796" E
EX69-32	25° 05' 26.2722" S	29° 27' 49.7391" E
EX69-33	25° 05' 26.7566" S	29° 27' 49.7987" E
EX69-34	25° 05' 27.2411" S	29° 27' 49.8582" E
EX69-35	25° 05' 27.7255" S	29° 27' 49.9177" E
EX69-36	25° 05' 28.2100" S	29° 27' 49.9772" E
EX69-37	25° 05' 28.6944" S	29° 27' 50.0368" E
EX69-38	25° 05' 29.1788" S	29° 27' 50.0963" E
EX69-39	25° 05' 29.6633" S	29° 27' 50.1559" E
EX69-40	25° 05' 30.1477" S	29° 27' 50.2154" E

Point	Latitude	Longitude
EX69-41	25° 05' 30.6322" S	29° 27' 50.2749" E
EX69-42	25° 05' 31.1166" S	29° 27' 50.3345" E
EX69-43	25° 05' 31.6010" S	29° 27' 50.3940" E
EX69-44	25° 05' 32.0855" S	29° 27' 50.4536" E
EX69-45	25° 05' 33.0543" S	29° 27' 50.5726" E
EX69-46	25° 05' 33.5388" S	29° 27' 50.6322" E
EX69-47	25° 05' 34.0232" S	29° 27' 50.6917" E
EX69-48	25° 05' 34.5077" S	29° 27' 50.7512" E
EX69-49	25° 05' 34.9921" S	29° 27' 50.8108" E
EX69-50	25° 05' 35.4766" S	29° 27' 50.8703" E
EX69-51	25° 05' 36.1225" S	29° 27' 50.9497" E
EX69-52	25° 05' 36.6070" S	29° 27' 51.0092" E
EX69-53	25° 05' 36.6650" S	29° 27' 50.4417" E
EX69-54	25° 05' 40.4301" S	29° 27' 52.1364" E
EX69-55	25° 05' 40.0806" S	29° 27' 52.4420" E
EX69-56	25° 05' 39.4108" S	29° 27' 53.0276" E
EX69-57	25° 05' 39.2582" S	29° 27' 54.6551" E
EX69-58	25° 05' 42.6700" S	29° 27' 54.8490" E
EX69-59	25° 05' 43.3074" S	29° 27' 54.8852" E
EX69-60	25° 05' 42.8726" S	29° 27' 59.1308" E
EX69-61	25° 05' 45.1726" S	29° 28' 00.3136" E
EX69-62	25° 05' 44.8828" S	29° 28' 00.9930" E
EX69-63	25° 05' 44.4861" S	29° 28' 01.9230" E
EX69-64	25° 05' 44.7840" S	29° 28' 02.6264" E
EX69-65	25° 05' 44.9895" S	29° 28' 03.1118" E
EX69-66	25° 05' 45.1951" S	29° 28' 03.5972" E
EX69-67	25° 05' 45.4006" S	29° 28' 04.0826" E
EX69-68	25° 05' 45.7197" S	29° 28' 04.8362" E
EX69-69	25° 05' 46.2417" S	29° 28' 04.9135" E
EX69-70	25° 05' 46.7249" S	29° 28' 04.9851" E
EX69-71	25° 05' 47.2079" S	29° 28' 05.0566" E
EX69-72	25° 05' 47.6910" S	29° 28' 05.1282" E
EX69-73	25° 05' 48.1741" S	29° 28' 05.1997" E
EX69-74	25° 05' 48.7864" S	29° 28' 05.2904" E
EX69-75	25° 05' 49.1705" S	29° 28' 04.9616" E
EX69-76	25° 05' 49.6829" S	29° 28' 04.5229" E
EX69-77	25° 05' 51.1837" S	29° 28' 06.6425" E
EX69-78	25° 05' 50.9839" S	29° 28' 07.4462" E
EX69-79	25° 05' 50.9698" S	29° 28' 07.5032" E
EX69-80	25° 05' 50.9902" S	29° 28' 07.5320" E
EX69-81	25° 05' 51.5683" S	29° 28' 08.3485" E
EX69-82	25° 05' 51.7699" S	29° 28' 08.6312" E
EX69-83	25° 06' 05.2070" S	29° 27' 57.1559" E
EX69-84	25° 06' 06.3911" S	29° 27' 56.1446" E
EX69-85	25° 06' 06.3055" S	29° 27' 54.4095" E
EX69-86	25° 06' 06.2942" S	29° 27' 54.1808" E
EX69-87	25° 06' 06.2899" S	29° 27' 54.0934" E
EX69-88	25° 06' 06.1360" S	29° 27' 50.9765" E

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 79 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. — M B Straughan G.Pr. LSO907D — 09 October 2025 date

For applicant — Owain Jackson name — signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	**Dwg:** reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

friedlaender, burger & volkmann

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Point	Latitude	Longitude
EX69-89	25° 06' 06.0025" S	29° 27' 48.2733" E
EX69-90	25° 06' 05.9958" S	29° 27' 48.1368" E
EX69-91	25° 06' 05.9958" S	29° 27' 48.1363" E
EX69-92	25° 06' 05.9305" S	29° 27' 46.8149" E
EX69-93	25° 06' 05.9041" S	29° 27' 46.2803" E
EX69-94	25° 06' 05.8777" S	29° 27' 45.7458" E
EX69-95	25° 06' 05.8513" S	29° 27' 45.2112" E
EX69-96	25° 06' 05.8249" S	29° 27' 44.6767" E
EX69-97	25° 06' 05.8214" S	29° 27' 44.6054" E
EX69-98	25° 06' 05.7950" S	29° 27' 44.0708" E
EX69-99	25° 06' 05.7686" S	29° 27' 43.5363" E
EX69-100	25° 06' 05.7422" S	29° 27' 43.0017" E
EX69-101	25° 06' 05.7158" S	29° 27' 42.4672" E
EX69-102	25° 06' 05.6894" S	29° 27' 41.9326" E
EX69-103	25° 06' 05.6630" S	29° 27' 41.3980" E
EX69-104	25° 06' 05.6366" S	29° 27' 40.8635" E
EX69-105	25° 06' 05.6102" S	29° 27' 40.3289" E
EX69-106	25° 06' 05.5838" S	29° 27' 39.7943" E
EX69-107	25° 06' 05.5574" S	29° 27' 39.2598" E
EX69-108	25° 06' 05.5310" S	29° 27' 38.7253" E
EX69-109	25° 06' 05.5045" S	29° 27' 38.1907" E
EX69-110	25° 06' 05.5010" S	29° 27' 38.1194" E
EX69-111	25° 06' 05.4746" S	29° 27' 37.5849" E
EX69-112	25° 06' 05.4482" S	29° 27' 37.0503" E
EX69-113	25° 06' 05.4218" S	29° 27' 36.5158" E
EX69-114	25° 06' 05.3954" S	29° 27' 35.9812" E
EX69-115	25° 06' 05.3690" S	29° 27' 35.4466" E
EX69-116	25° 06' 05.3426" S	29° 27' 34.9121" E
EX69-117	25° 06' 05.3162" S	29° 27' 34.3775" E
EX69-118	25° 06' 05.2898" S	29° 27' 33.8429" E
EX69-119	25° 06' 05.2862" S	29° 27' 33.7717" E
EX69-120	25° 06' 05.2598" S	29° 27' 33.2371" E
EX69-121	25° 06' 05.2334" S	29° 27' 32.7026" E
EX69-122	25° 06' 05.2070" S	29° 27' 32.1680" E
EX69-123	25° 06' 05.1806" S	29° 27' 31.6335" E
EX69-124	25° 06' 05.1542" S	29° 27' 31.0989" E
EX69-125	25° 06' 05.1277" S	29° 27' 30.5643" E
EX69-126	25° 06' 05.1013" S	29° 27' 30.0298" E
EX69-127	25° 06' 05.0749" S	29° 27' 29.4952" E
EX69-128	25° 06' 05.0485" S	29° 27' 28.9607" E
EX69-129	25° 06' 05.0152" S	29° 27' 28.2864" E
EX69-130	25° 06' 04.2780" S	29° 27' 28.1070" E
EX69-131	25° 06' 03.8021" S	29° 27' 27.9912" E
EX69-132	25° 06' 03.3262" S	29° 27' 27.8754" E
EX69-133	25° 06' 02.8503" S	29° 27' 27.7596" E
EX69-134	25° 06' 02.3744" S	29° 27' 27.6438" E
EX69-135	25° 06' 01.8984" S	29° 27' 27.5280" E
EX69-136	25° 06' 00.7257" S	29° 27' 27.2427" E

Point	Latitude	Longitude
EX69-137	25° 05' 53.3381" S	29° 27' 25.9476" E
EX69-138	25° 05' 51.7882" S	29° 27' 24.2520" E
EX69-139	25° 05' 46.5704" S	29° 27' 18.5435" E
EX69-140	25° 05' 41.6973" S	29° 27' 13.2124" E
EX69-141	25° 05' 38.6396" S	29° 27' 14.0161" E
EX69-142	25° 05' 38.2821" S	29° 27' 17.5252" E
EX69-143	25° 05' 36.7239" S	29° 27' 17.3339" E
EX69-144	25° 05' 35.5468" S	29° 27' 28.8876" E
EX69-145	25° 05' 28.2916" S	29° 27' 21.9429" E
EX69-146	25° 05' 25.9922" S	29° 27' 24.8472" E
EX69-147	25° 05' 24.5225" S	29° 27' 23.4403" E
EX69-148	25° 05' 24.2662" S	29° 27' 23.7630" E
EX69-149	25° 05' 23.4975" S	29° 27' 24.7315" E
EX69-150	25° 05' 23.1559" S	29° 27' 25.1619" E
EX69-151	25° 05' 22.8142" S	29° 27' 25.5924" E
EX69-152	25° 05' 22.4726" S	29° 27' 26.0228" E
EX69-153	25° 05' 22.1309" S	29° 27' 26.4532" E
EX69-154	25° 05' 21.7893" S	29° 27' 26.8836" E
EX69-155	25° 05' 21.4476" S	29° 27' 27.3140" E
EX69-156	25° 05' 21.1059" S	29° 27' 27.7445" E
EX69-157	25° 05' 20.7643" S	29° 27' 28.1748" E
EX69-158	25° 05' 20.4226" S	29° 27' 28.6053" E
EX69-159	25° 05' 20.0916" S	29° 27' 29.0222" E
EX69-160	25° 05' 19.7607" S	29° 27' 29.4392" E
EX70-1	25° 02' 36.0757" S	29° 28' 35.7830" E
EX70-2	25° 02' 40.5888" S	29° 28' 31.9845" E
EX70-3	25° 02' 33.7665" S	29° 28' 22.2181" E
EX70-4	25° 02' 20.7430" S	29° 28' 33.1797" E
EX70-5	25° 02' 24.3024" S	29° 28' 38.2752" E
EX70-6	25° 02' 23.5288" S	29° 28' 38.9264" E
EX70-7	25° 02' 27.9777" S	29° 28' 45.2958" E
EX70-8	25° 02' 25.9147" S	29° 28' 47.0322" E
EX70-9	25° 02' 29.1773" S	29° 28' 51.7030" E
EX70-10	25° 02' 31.2404" S	29° 28' 49.9666" E
EX70-11	25° 02' 34.2064" S	29° 28' 54.2129" E
EX70-12	25° 02' 37.5850" S	29° 28' 51.3698" E
EX70-13	25° 02' 37.7672" S	29° 28' 51.3962" E
EX70-14	25° 02' 38.9075" S	29° 28' 53.0287" E
EX70-15	25° 02' 39.4804" S	29° 28' 55.6462" E
EX70-16	25° 02' 40.0537" S	29° 28' 59.9460" E
EX70-17	25° 02' 40.7433" S	29° 29' 00.9336" E
EX70-18	25° 02' 41.1775" S	29° 29' 01.7272" E
EX70-19	25° 02' 41.7266" S	29° 29' 02.9494" E
EX70-20	25° 02' 42.8105" S	29° 29' 04.7295" E
EX70-21	25° 02' 43.4565" S	29° 29' 03.7464" E
EX70-22	25° 02' 43.0666" S	29° 29' 03.1398" E
EX70-23	25° 02' 43.9449" S	29° 29' 02.2671" E
EX70-24	25° 02' 43.9686" S	29° 29' 02.0610" E

Point	Latitude	Longitude
EX70-25	25° 02' 43.1230" S	29° 29' 00.7878" E
EX70-26	25° 02' 42.9411" S	29° 29' 00.7567" E
EX70-27	25° 02' 42.0819" S	29° 29' 01.4447" E
EX70-28	25° 02' 41.9009" S	29° 29' 01.1483" E
EX70-29	25° 02' 42.8549" S	29° 29' 00.3843" E
EX70-30	25° 02' 44.0114" S	29° 28' 59.4107" E
EX70-31	25° 02' 44.1388" S	29° 28' 57.6196" E
EX70-32	25° 02' 44.4630" S	29° 28' 57.6420" E
EX70-33	25° 02' 44.5796" S	29° 28' 55.8730" E
EX70-34	25° 02' 42.4809" S	29° 28' 52.8679" E
EX70-35	25° 02' 42.0940" S	29° 28' 53.1935" E
EX70-36	25° 02' 40.6112" S	29° 28' 51.0705" E
EX70-37	25° 02' 40.9980" S	29° 28' 50.7449" E
EX70-38	25° 02' 40.5037" S	29° 28' 50.0370" E
EX70-39	25° 02' 42.0510" S	29° 28' 48.7349" E
EX70-40	25° 02' 38.5906" S	29° 28' 43.7807" E
EX70-41	25° 02' 40.5246" S	29° 28' 42.1526" E
EX71-1	25° 29' 20.0008" S	29° 30' 24.0820" E
EX71-2	25° 29' 21.4084" S	29° 30' 25.0343" E
EX71-3	25° 29' 21.7370" S	29° 30' 25.2565" E
EX71-4	25° 29' 22.2324" S	29° 30' 25.5916" E
EX71-5	25° 29' 22.4427" S	29° 30' 24.9945" E
EX71-6	25° 29' 22.8772" S	29° 30' 23.7611" E
EX71-7	25° 29' 22.8063" S	29° 30' 23.4865" E
EX71-8	25° 29' 21.3378" S	29° 30' 22.2677" E
EX71-9	25° 29' 21.0454" S	29° 30' 22.1652" E
EX71-10	25° 29' 19.9528" S	29° 30' 22.1989" E
EX72-1	25° 01' 17.6722" S	29° 37' 28.4891" E
EX72-2	25° 01' 18.9275" S	29° 37' 28.1188" E
EX72-3	25° 01' 18.7588" S	29° 37' 27.4299" E
EX72-4	25° 01' 18.5901" S	29° 37' 26.7411" E
EX72-5	25° 01' 18.4213" S	29° 37' 26.0522" E
EX72-6	25° 01' 18.2526" S	29° 37' 25.3633" E
EX72-7	25° 01' 18.0839" S	29° 37' 24.6745" E
EX72-8	25° 01' 17.9152" S	29° 37' 23.9856" E
EX72-9	25° 01' 17.8006" S	29° 37' 23.5179" E
EX72-10	25° 01' 16.3590" S	29° 37' 23.1277" E
EX72-11	25° 01' 09.0450" S	29° 37' 21.1482" E
EX72-12	25° 01' 07.9147" S	29° 37' 20.8423" E
EX72-13	25° 01' 03.0502" S	29° 37' 22.2811" E
EX72-14	25° 01' 03.8113" S	29° 37' 25.3803" E
EX72-15	25° 01' 05.4347" S	29° 37' 31.9919" E
EX72-16	25° 01' 07.9961" S	29° 37' 42.4238" E
EX72-17	25° 01' 10.4181" S	29° 37' 47.0391" E
EX72-18	25° 01' 10.9414" S	29° 37' 46.8844" E
EX72-19	25° 01' 15.1157" S	29° 37' 45.6499" E
EX72-20	25° 01' 14.9020" S	29° 37' 44.7797" E
EX72-21	25° 01' 15.5295" S	29° 37' 44.5941" E

Point	Latitude	Longitude
EX72-22	25° 01' 16.1571" S	29° 37' 44.4085" E
EX72-23	25° 01' 16.7847" S	29° 37' 44.2229" E
EX72-24	25° 01' 17.4123" S	29° 37' 44.0373" E
EX72-25	25° 01' 18.0398" S	29° 37' 43.8516" E
EX72-26	25° 01' 18.6674" S	29° 37' 43.6660" E
EX72-27	25° 01' 19.2950" S	29° 37' 43.4804" E
EX72-28	25° 01' 19.9225" S	29° 37' 43.2948" E
EX72-29	25° 01' 20.5501" S	29° 37' 43.1092" E
EX72-30	25° 01' 21.2053" S	29° 37' 42.9154" E
EX72-31	25° 01' 20.8762" S	29° 37' 41.5724" E
EX73-1	25° 03' 29.4298" S	29° 38' 36.4094" E
EX73-2	25° 03' 47.5149" S	29° 37' 57.6936" E
EX73-3	25° 03' 39.1585" S	29° 37' 52.9894" E
EX73-4	25° 03' 43.6580" S	29° 37' 43.3554" E
EX73-5	25° 03' 34.3912" S	29° 37' 38.1390" E
EX73-6	25° 03' 36.9418" S	29° 37' 32.6777" E
EX73-7	25° 02' 50.3086" S	29° 37' 06.4317" E
EX73-8	25° 02' 45.2635" S	29° 37' 09.9508" E
EX73-9	25° 02' 31.3761" S	29° 37' 19.6371" E
EX73-10	25° 02' 13.1299" S	29° 37' 32.3625" E
EX73-11	25° 01' 41.9549" S	29° 37' 54.1019" E
EX73-12	25° 01' 41.5462" S	29° 37' 54.3869" E
EX73-13	25° 01' 42.1656" S	29° 38' 26.2267" E
EX73-14	25° 01' 42.5311" S	29° 38' 45.0528" E
EX73-15	25° 01' 51.0695" S	29° 39' 50.5837" E
EX73-16	25° 01' 51.2179" S	29° 39' 51.7233" E
EX73-17	25° 01' 53.4474" S	29° 40' 08.8456" E
EX73-18	25° 01' 55.5458" S	29° 40' 24.9646" E
EX73-19	25° 01' 57.8732" S	29° 40' 42.8476" E
EX73-20	25° 01' 58.0179" S	29° 40' 43.9591" E
EX73-21	25° 01' 58.8224" S	29° 40' 50.1418" E
EX73-22	25° 02' 00.1185" S	29° 41' 00.1039" E
EX73-23	25° 02' 04.4061" S	29° 41' 33.0692" E
EX73-24	25° 02' 22.7096" S	29° 41' 09.7379" E
EX73-25	25° 02' 23.4721" S	29° 41' 08.7659" E
EX73-26	25° 02' 40.4754" S	29° 40' 47.0889" E
EX73-27	25° 02' 48.2433" S	29° 40' 37.1850" E
EX73-28	25° 02' 56.0110" S	29° 40' 27.2807" E
EX73-29	25° 03' 03.7786" S	29° 40' 17.3760" E
EX73-30	25° 03' 11.5459" S	29° 40' 07.4710" E
EX73-31	25° 03' 19.3131" S	29° 39' 57.5657" E
EX73-32	25° 03' 27.0801" S	29° 39' 47.6600" E
EX73-33	25° 03' 42.5785" S	29° 39' 27.8923" E
EX73-34	25° 03' 43.5334" S	29° 39' 26.6743" E
EX73-35	25° 03' 33.9090" S	29° 39' 27.6870" E
EX74-1	25° 00' 31.8738" S	29° 44' 36.4785" E
EX74-2	25° 00' 31.3874" S	29° 44' 37.3735" E
EX74-3	25° 00' 33.4190" S	29° 44' 36.7277" E

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**, excluding the figures **EX1 to EX78,** represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 80 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR Registration No. — M B Straughan G.Pr. LS0907D — 09 October 2025 date

For applicant — Owain Jackson name — signature — 09 October 2025 date

signature — date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\cadfiles\ogm\h2au\2025 july ers kruis river and sekhukhune\kruis river er\plan compilation	Dwg: reg 2(2) plan er kruis river oct 2025.dwg
Revision:	Date: 09 October 2025

friedlaender, burger & volkmann

H2Au Limited

PLAN OF AREA FOR FOR APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM

The figure defined by the points **1 to 678**,

excluding the figures **EX1 to EX78**,

represents **640011.27 hectares** of land, and according to information provided by the Chief Surveyor-General, includes all or part of **4366 farms** in the Provinces of Gauteng, Limpopo and Mpumalanga, as tabulated herein, and for which application is made in terms of section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for a technical co-operation permit for petroleum.

Sheet 81 of 81 sheets

Plan prepared in accordance with **regulation 2(2)** of the **Mineral and Petroleum Resources Development Act, 2002 (28 of 2002).**

PASA reference no._____

PROFESSIONAL LAND SURVEYOR
Registration No.

M B Straughan
G.Pr. LS0907D

09 October 2025
date

For applicant

Owain Jackson
name

09 October 2025
date

signature

signature

date

CHIEF EXECUTIVE OFFICER, PETROLEUM AGENCY SA, CAPE TOWN

Ref: wgs84\coastfiles\ogn\h2au\2025 july ers knus river and sekhukhune\knus river erf\plan compilation

Dwg: reg 2(2) plan erf knus river oct 2025.dwg

Revision:

Date: 09 October 2025

fbv friedlaender, burger & volkmann

Point	Latitude	Longitude
EX74-4	25° 00' 43.8678" S	29° 44' 33.4066" E
EX74-5	25° 00' 52.3207" S	29° 44' 31.0617" E
EX74-6	25° 00' 54.2097" S	29° 44' 30.5378" E
EX74-7	25° 00' 55.3883" S	29° 44' 30.2108" E
EX74-8	25° 00' 55.3900" S	29° 44' 30.2104" E
EX74-9	25° 01' 14.0390" S	29° 44' 24.7139" E
EX74-10	25° 01' 15.9218" S	29° 44' 24.1589" E
EX74-11	25° 01' 15.1690" S	29° 44' 23.8270" E
EX74-12	25° 01' 14.7128" S	29° 44' 21.9449" E
EX74-13	25° 01' 14.7525" S	29° 44' 21.9340" E
EX74-14	25° 01' 25.4655" S	29° 44' 18.9006" E
EX74-15	25° 01' 25.7750" S	29° 44' 19.5902" E
EX74-16	25° 01' 26.1535" S	29° 44' 21.1942" E
EX74-17	25° 01' 25.6352" S	29° 44' 21.8921" E
EX74-18	25° 01' 27.6875" S	29° 44' 21.3071" E
EX74-19	25° 01' 26.9356" S	29° 44' 20.9667" E
EX74-20	25° 01' 25.6427" S	29° 44' 15.3106" E
EX74-21	25° 01' 26.8136" S	29° 44' 12.8030" E
EX74-22	25° 01' 27.3802" S	29° 44' 11.6009" E
EX74-23	25° 01' 33.3946" S	29° 44' 14.5901" E
EX74-24	25° 01' 35.5837" S	29° 44' 16.2073" E
EX74-25	25° 01' 40.0571" S	29° 44' 14.9966" E
EX74-26	25° 01' 46.4060" S	29° 44' 13.2783" E
EX74-27	25° 01' 52.2145" S	29° 44' 11.7061" E
EX74-28	25° 01' 55.0507" S	29° 44' 10.9385" E
EX74-29	25° 01' 56.0405" S	29° 44' 10.6706" E
EX74-30	25° 01' 58.6493" S	29° 44' 09.8425" E
EX74-31	25° 02' 01.0628" S	29° 44' 09.0765" E
EX74-32	25° 02' 01.5877" S	29° 44' 08.9098" E
EX74-33	25° 02' 02.5729" S	29° 44' 06.8101" E
EX74-34	25° 02' 03.6060" S	29° 44' 07.3607" E
EX74-35	25° 02' 04.4297" S	29° 44' 05.6357" E
EX74-36	25° 02' 06.8987" S	29° 44' 06.9726" E
EX74-37	25° 02' 07.9007" S	29° 44' 04.8177" E
EX74-38	25° 02' 08.9672" S	29° 44' 05.3857" E
EX74-39	25° 02' 09.7772" S	29° 44' 03.6507" E
EX74-40	25° 02' 10.8163" S	29° 44' 04.2187" E
EX74-41	25° 02' 12.7946" S	29° 43' 59.9508" E
EX74-42	25° 02' 12.4284" S	29° 43' 59.7528" E
EX74-43	25° 02' 13.2465" S	29° 43' 58.0105" E
EX74-44	25° 02' 12.1921" S	29° 43' 57.4396" E
EX74-45	25° 02' 11.1337" S	29° 43' 56.8664" E
EX74-46	25° 02' 10.0805" S	29° 43' 56.2961" E
EX74-47	25° 02' 09.0168" S	29° 43' 55.7202" E
EX74-48	25° 02' 07.9635" S	29° 43' 55.1498" E
EX74-49	25° 02' 07.6087" S	29° 43' 54.9612" E
EX74-50	25° 02' 06.5521" S	29° 43' 54.3891" E
EX74-51	25° 02' 05.5002" S	29° 43' 53.8195" E
EX74-52	25° 02' 04.4556" S	29° 43' 53.2538" E
EX74-53	25° 02' 03.4000" S	29° 43' 52.6822" E
EX74-54	25° 02' 02.3418" S	29° 43' 52.1092" E
EX74-55	25° 02' 01.2875" S	29° 43' 51.5384" E
EX74-56	25° 02' 00.2405" S	29° 43' 50.9714" E
EX74-57	25° 01' 59.1778" S	29° 43' 50.3960" E
EX74-58	25° 01' 58.1198" S	29° 43' 49.8232" E
EX74-59	25° 01' 57.0727" S	29° 43' 49.2562" E
EX74-60	25° 01' 58.0504" S	29° 43' 47.1549" E
EX74-61	25° 01' 57.7033" S	29° 43' 46.9678" E
EX74-62	25° 01' 58.5197" S	29° 43' 45.2275" E
EX74-63	25° 01' 57.4641" S	29° 43' 44.6573" E
EX74-64	25° 01' 56.4058" S	29° 43' 44.0857" E
EX74-65	25° 01' 55.3503" S	29° 43' 43.5156" E
EX74-66	25° 01' 54.2933" S	29° 43' 42.9447" E
EX74-67	25° 01' 53.2347" S	29° 43' 42.3729" E
EX74-68	25° 01' 52.1870" S	29° 43' 41.8071" E
EX74-69	25° 01' 51.1329" S	29° 43' 41.2377" E
EX74-70	25° 01' 50.0726" S	29° 43' 40.6656" E
EX74-71	25° 01' 49.0210" S	29° 43' 40.0970" E
EX74-72	25° 01' 47.9433" S	29° 43' 39.5150" E
EX74-73	25° 01' 47.1572" S	29° 43' 41.2818" E
EX74-74	25° 01' 46.7607" S	29° 43' 41.0464" E
EX74-75	25° 01' 43.8958" S	29° 43' 39.4525" E
EX74-76	25° 01' 40.3542" S	29° 43' 42.2518" E
EX74-77	25° 01' 36.3035" S	29° 43' 45.5695" E
EX74-78	25° 01' 35.5718" S	29° 43' 45.1590" E
EX74-79	25° 01' 34.8420" S	29° 43' 46.7358" E
EX74-80	25° 01' 32.1335" S	29° 43' 45.2310" E
EX74-81	25° 01' 31.3326" S	29° 43' 44.5154" E
EX74-82	25° 01' 29.3527" S	29° 43' 41.0099" E
EX74-83	25° 01' 29.3382" S	29° 43' 40.9842" E
EX74-84	25° 01' 27.7697" S	29° 43' 38.1677" E
EX74-85	25° 01' 25.5340" S	29° 43' 36.1037" E
EX74-86	25° 01' 17.8862" S	29° 43' 29.0150" E
EX74-87	25° 01' 13.3771" S	29° 43' 28.3208" E
EX74-88	25° 01' 09.1895" S	29° 43' 29.2408" E
EX74-89	25° 01' 07.5918" S	29° 43' 30.6142" E
EX74-90	25° 01' 07.8943" S	29° 43' 31.0476" E
EX74-91	25° 01' 08.4859" S	29° 43' 31.8950" E
EX74-92	25° 01' 09.0553" S	29° 43' 32.7107" E
EX74-93	25° 01' 06.0756" S	29° 43' 35.2365" E
EX74-94	25° 01' 05.0023" S	29° 43' 33.7124" E
EX74-95	25° 01' 01.6902" S	29° 43' 31.5891" E
EX74-96	25° 01' 00.1296" S	29° 43' 34.5216" E
EX74-97	25° 01' 00.1232" S	29° 43' 34.5335" E
EX74-98	25° 00' 16.8416" S	29° 42' 54.5556" E
EX74-99	25° 00' 17.1397" S	29° 43' 00.6694" E
EX74-100	25° 00' 17.7243" S	29° 43' 09.0831" E
EX74-101	25° 00' 18.2866" S	29° 43' 14.7051" E
EX74-102	25° 00' 18.2869" S	29° 43' 14.7076" E
EX74-103	25° 00' 18.7392" S	29° 43' 19.2270" E
EX74-104	25° 00' 19.7536" S	29° 43' 27.3469" E
EX74-105	25° 00' 37.7617" S	29° 43' 39.9618" E
EX74-106	25° 00' 45.1172" S	29° 43' 45.1044" E
EX74-107	25° 00' 44.5870" S	29° 43' 46.0021" E
EX74-108	25° 00' 44.9079" S	29° 43' 46.4427" E
EX74-109	25° 00' 43.8475" S	29° 43' 48.2385" E
EX74-110	25° 00' 43.6227" S	29° 43' 48.2910" E
EX74-111	25° 00' 41.8717" S	29° 43' 47.0466" E
EX74-112	25° 00' 36.8688" S	29° 43' 51.7254" E
EX74-113	25° 00' 35.2828" S	29° 43' 53.2088" E
EX74-114	25° 00' 28.5380" S	29° 43' 54.8189" E
EX74-115	25° 00' 28.1350" S	29° 43' 55.1343" E
EX74-116	25° 00' 27.0552" S	29° 43' 55.3921" E
EX74-117	25° 00' 25.1499" S	29° 43' 55.8469" E
EX74-118	25° 00' 23.8798" S	29° 43' 56.1501" E
EX74-119	25° 00' 26.4913" S	29° 44' 09.3217" E
EX75-1	25° 02' 03.3924" S	29° 44' 11.1321" E
EX75-2	25° 02' 03.2551" S	29° 44' 09.7543" E
EX75-3	25° 02' 00.1172" S	29° 44' 10.6805" E
EX75-4	25° 02' 00.4545" S	29° 44' 12.0583" E
EX76-1	25° 08' 32.0397" S	29° 44' 59.3394" E
EX76-2	25° 08' 27.7577" S	29° 45' 04.7104" E
EX76-3	25° 08' 39.9796" S	29° 45' 16.4726" E
EX76-4	25° 08' 44.2614" S	29° 45' 11.1016" E
EX77-1	25° 09' 56.3671" S	29° 45' 00.0727" E
EX77-2	25° 09' 39.8664" S	29° 46' 00.1027" E
EX77-3	25° 09' 49.4940" S	29° 46' 05.0016" E
EX77-4	25° 10' 20.0752" S	29° 45' 23.1618" E
EX78-1	25° 21' 54.0726" S	29° 51' 56.6150" E
EX78-2	25° 21' 57.9847" S	29° 51' 43.2731" E
EX78-3	25° 21' 58.1687" S	29° 51' 43.1884" E
EX78-4	25° 22' 11.7326" S	29° 51' 50.7224" E
EX78-5	25° 22' 19.6600" S	29° 51' 33.4310" E
EX78-6	25° 22' 19.1120" S	29° 51' 30.1266" E
EX78-7	25° 22' 20.2816" S	29° 51' 30.5753" E
EX78-8	25° 22' 19.7257" S	29° 51' 29.2883" E
EX78-9	25° 22' 18.7950" S	29° 51' 28.8186" E
EX78-10	25° 22' 17.8644" S	29° 51' 28.3489" E
EX78-11	25° 22' 16.9337" S	29° 51' 27.8793" E
EX78-12	25° 22' 16.0030" S	29° 51' 27.4096" E
EX78-13	25° 22' 15.0724" S	29° 51' 26.9399" E
EX78-14	25° 22' 14.1417" S	29° 51' 26.4702" E
EX78-15	25° 22' 13.2111" S	29° 51' 26.0006" E
EX78-16	25° 22' 12.2804" S	29° 51' 25.5309" E
EX78-17	25° 22' 11.3497" S	29° 51' 25.0613" E
EX78-18	25° 22' 10.4191" S	29° 51' 24.5916" E
EX78-19	25° 22' 09.4884" S	29° 51' 24.1219" E
EX78-20	25° 22' 08.4820" S	29° 51' 23.8176" E
EX78-21	25° 22' 07.4755" S	29° 51' 23.5132" E
EX78-22	25° 22' 06.8526" S	29° 51' 23.3247" E
EX78-23	25° 22' 06.2296" S	29° 51' 23.1363" E
EX78-24	25° 22' 03.6471" S	29° 51' 24.7476" E
EX78-25	25° 21' 58.0293" S	29° 51' 13.8919" E
EX78-26	25° 21' 50.7457" S	29° 51' 03.4631" E
EX78-27	25° 21' 27.8688" S	29° 51' 22.8003" E
EX78-28	25° 21' 35.3526" S	29° 51' 33.0596" E
EX78-29	25° 21' 41.7050" S	29° 51' 37.0652" E
EX78-30	25° 21' 37.6852" S	29° 51' 50.7941" E

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PROVINCIAL NOTICE 862 OF 2025

NATIONAL LAND TRANSPORT ACT, 5 OF 2009
GAUTENG DEPARTMENT OF ROADS AND TRANSPORT
NOTICE: THE GAUTENG PROVINCIAL LAND TRANSPORT FRAMEWORK (PLTF) HAS BEEN APPROVED

The Member of the Executive Council (MEC) for Roads and Transport in the Gauteng Province hereby gives notice that the Gauteng Provincial Land Transport Framework (PLTF) for Gauteng Province for the period from 2023 to 2027 has been approved by the Minister of Transport, and it is hereby published for general information in terms of Section 38 (1) of the National Land Transport Act, Act 5 of 2009.

The review, development, and update of the PLTF for the Gauteng Province was prepared in line with the requirements of the National Land Transport Act (NLTA), 5 OF 2009, Section 35, the National Land Transport Strategic Framework (NLTSF), as well as the Regulations Relating to the Minimum Requirements for the Preparation of Provincial Land Transport Frameworks, 2011.

The Gauteng PLTF provides a framework and overall guide to transport planning in Gauteng for a five-year period spanning 2023 to 2027.

The objectives of the Gauteng PLTF are as follows:

- To give broad strategic direction to the development of transport in the Gauteng Province;
- To give an overview of the status quo of transport in the province from a provincial perspective;
- To indicate land use development trends and the desirable spatial development of the province, and what transport measures and actions should be put in place to support the intended spatial development;
- To give an overview of development initiatives of provincial significance in the province, including budgets and implementation programmes; to report on the monitoring of transport in the province and identified trends;
- To indicate and summarise actions taken in the province to coordinate and integrate transport planning and management initiatives by municipalities and other organs of state in the province responsible for transport matters; and
- To indicate how the MEC has implemented the functions and responsibilities assigned to the province by the NLTA.

Kedibone Diale-Tlabela MPL

GAUTENG MEC OF ROADS AND TRANSPORT

UMTHETHO KAZWELONKE WEZOKUTHUTHA EMHLABENI, WEZI-5 WEZI 2009
UMNYANGO WEZEMIGWAQO NEZOKUTHUTHA ESIFUNDAZWENI SASEGAUTENG (GAUTENG DEPARTMENT OF ROADS AND TRANSPORT)
ISAZISO: IGAUTENG PROVINCIAL LAND TRANSPORT FRAMEWORK (PLTF) IGUNYAZIWE.

GAUTENG PROVINCIAL GOVERNMENT REPUBLIC OF SOUTH AFRICA

GAUTENG TRANSPORT AUTHORITY ACCESS GAUTENG2950 Connecting People, Places and Opportunities Sustainably

Ilunga Lomkhandlo ophethe (MEC) EzeMigwaqo nezokuThutha Esifundazweni saseGauteng unikeza isaziso sokuthi i-Gauteng Provincial Land Transport Framework (PLTF) yesiFundazwe saseGauteng esukela ngo-2023 kuya ku-2027, igunyazwe nguNgqongqoshe Wezokuthutha, futhi yashicilelwa ukuze uthole ulwazi olujwayelekile ngokweSigaba 38(1) soMthetho Kazwelonke Wezokuthutha Nezihamba Phansi, uMthetho wesi-5 wezi-2009.

Ukubuyekezwa, nokuthuthukiswa kanye nokuvuselelwa kwe-PLTF yesiFundazwe saseGauteng kulungiswe ngokuhambisana nezimfuneko zoMthetho Kazwelonke Wezokuthutha Nezihamba-phansi (NLTA), 5 KA-2009, isigaba 35, uhlaka Lukazwelonke Lwesu Lwezinto Zokuthutha Ezihamba-phansi (i-NLTSF), kanye Nemithethonqubo Ephathelene Nezimfuneko Ezincane Zokulungiselela Uhlaka Lwezifundazwe Zezokuthutha Ezihamba Phansi zowezi-2011.

I-PLTF yaseGauteng ihlinzeka ngohlaka kanye nomhlahlandlela jikelele wokuhlela ezokuthutha eGauteng isikhathi esiyiminyaka emihlanu, kusukela ngo -2023 kuya ku-2027.

Izinjongo ze-Gauteng PLTF zimi kanje:

- Ukunikeza umkhombandlela ekuthuthukisweni kwezokuthutha esiFundazweni saseGauteng;
- Ukunikeza isifinyezo sesimo samanje sezokuthutha esifundazweni ngokombono wesifundazwe;
- Ukukhombisa izindlela zokuthuthukiswa komhlaba kanye nentuthuko yendawo efiselekayo yesifundazwe nokuthi yini izinyathelo zokuthutha kanye nezinyathelo okufanele zenziwe ukusekela ukuthuthukiswa kwendawo okuhlosiwe;
- Ukunikeza umbono wezinhlelo zentuthuko ezibalulekile esifundazweni, okuhlanganisa nezabelomali kanye nokuqaliswa kwezinhlelo; ukubika ngokuqapha ezokuthutha esifundazweni kanye nokuhlonza okuhamba phambili;
- Ukukhombisa ngokufinqiwe izinyathelo ezithathwe esifundazweni, ukudidiyela nokuhlanganisa kwezinhlelo zokuthutha kanye nezokuphatha ngomasipala nezinye izinhlaka zombuso esifundazweni ezibhekele izindaba zokuthutha; futhi
- Ukuveza ukuthi uNgqongqoshe (MEC) wenze umsebenzi wakhe njengokunqunyiweyo nangokwezibopho ezinikezwe isifundazwe ngu -NLTA.

Kedibone Diale-Tlabela MPL

UNgqongqoshe Wezemigwaqo Nezokuthutha eGauteng

TRANSPORT AUTHORITY FOR GAUTENG

GAUTENG ON THE MOVE

Growing Gauteng Together Through Smart Mobility

REVIEW, DEVELOPMENT AND UPDATE OF THE PROVINCIAL LAND TRANSPORT FRAMEWORK (PLTF) FOR GAUTENG PROVINCE

2023 - 2027

FINAL REPORT

Revision: 4

Date: 18 September 2023

44 on Grand Central Boulevard, Grand Central Ext. 1, Midrand
P.O. Box 1266, Kelvin, 2054, Johannesburg South Africa

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Growing Gauteng Together Through Smart Mobility

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Abbreviations

4IR	Fourth Industrial Revolution
AADT	Annual Average Daily Traffic
AARTO	Administrative Adjudication of Road Traffic Offences
ACSA	Airports Company of South Africa
AFC	Automated Fare Collection
AMS	Arterial Management Systems
APTMS	Advanced Public Transport Management Systems
ASOD	Average Speed Over Distance
ASI	Avoid Shift Improve
B-BBEE	Broad-Based Black Economic Empowerment
BRT	Bus Rapid Transit
BUSA	Business Unity South Africa
CapEx	Capital Expenditures
CAV	Connected and Autonomous Vehicles
CBD	Central Business District
C-BRA	Cross-Border Road Agency
CCC	Central Communications Centre
CCTV	Close Circuit Television
CITP	Comprehensive Integrated Transport Plan
CO_2	Carbon Dioxide
CoE	City of Ekurhuleni
CoGTA	Cooperative Governance and Traditional Affairs
CoJ	City of Johannesburg
COLTO	Committee of Land Transport Officials
ConOps	Concept of Operations
CoT	City of Tshwane
COVID-19	Coronavirus Disease 2019
CSIR	Council for Scientific and Industrial Research
DAC	Department of Arts & Culture
DBOM	Design, Build, Operate & Maintain
DCS	Department of Community Safety
DDM	District Development Model
DITP	District Integrated Transport Plan
DM	District Municipality
DoRA	Division of Revenue Act
DOT	Department of Transport
DRT	Department of Roads and Transport
DSR	Department of Sport & Recreation

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EC	Eastern Cape
EFC	Electronic Fare Collection
EFVE	Electronic Fare Validation Equipment
EMM	Ekurhuleni Metropolitan Municipality
EMS	Emergency Medical Services
EMPD	Ekurhuleni Metropolitan Police Department
EMV	Europay, MasterCard and Visa
EPWP	Expanded Public Works Programme
ERWAT	Ekurhuleni Water Care Company
ETC	Electronic Toll Collection
EUC	Excess User Costs
FCD	Floating Car Data
FMS	Freeway Management System
FPS	Forensic Pathology Service
FS	Free State
GA	General Aviation
GCRO	Gauteng City Region Observatory
GCROCCRSAP	Gauteng City Region Overarching Climate Change Response Strategy and Action Plan
GDARDE	Gauteng Department of Agriculture, Rural Development and Environment
GDCS	Gauteng Department of Community Safety
GDE	Gauteng Department of Education
GDP	Gross Domestic Product
GDRT	Gauteng Department of Roads and Transport
GDS	Growth and Development Strategy
GeoLIS	Geographic Land Information System
GFIP	Gauteng Freeway Improvement Project
GGT2020	Growing Gauteng Together Report 2020
GHG	Greenhouse Gas
GHTS	Gauteng Household Travel Survey
GIS	Geographic Information System
GISCMC	Gauteng Integrated Smart City Modelling Centre
GITMP25	Gauteng Integrated Transport Masterplan 2025
GMA	Gautrain Management Agency
GORT	Gauteng Open Road Tolling
GORT TCH	Gauteng Open Road Tolling Transaction Clearing House
GP	Gauteng Province
GPDMC	Gauteng Provincial Disaster Management Centre
GPEMF	Gauteng Provincial Environmental Management Framework

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TRANSPORT AUTHORITY FOR GAUTENG

GAUTENG ON THE MOVE

Growing Gauteng Together Through Smart Mobility

GPG	Gauteng Provincial Government
GPRE	Gauteng Provincial Regulatory Entity
GPS	Global Positioning System
GRRL	Gautrain Rapid Rail Link
GRRIN	Gauteng Rapid Rail Integrated Network
GSDF	Gauteng Spatial Development Framework
GSOC	Gauteng Security Operations Centre
GSRN	Gauteng Strategic Road Network
GTA	Gauteng Tourism Authority
GTFS	General Transit Feed Specification
GTIA	Gauteng Transport Infrastructure Act 8 of 2001
GTIP5	5-year Gauteng Transport Implementation Plan
GVA	Gross Value Added
HOV	High Occupancy Vehicle
ICE	Internal Combustion Engine
IFM	Integrated Fare Management
IFMS	Integrated Fare Management System
IGAA	Intergovernmental Authorisation Agreement
IGRFA	Intergovernmental Relations Framework Act
IIP	Integrated Implementation Plan
IMS	Incident management system
IPC	Intermodal Planning Committee
IPCC	Intergovernmental Panel on Climate Change
IRPTN	Integrated Rapid Public Transport Network
IRTN	Integrated Rapid Transit Network
ITMP	Integrated Tran
ITMP25	25-year Integrated Transport Master Plan
ITP	Integrated transport plan
ITS	Intelligent Transportation Systems
IUDF	Integrated Urban Development Framework
JPM	Johannesburg, Pretoria, Mabopane
JRA	Johannesburg Roads Agency
KPI	Key Performance Indicator
KZN	Kwazulu-Natal
LITP	Local Integrated Transport Plan
LM	Local Municipality
LP	Limpopo Province
LTAB	Land Transport Advisory Board
MaaS	Mobility-as-a-Service
MBT	Minibus Taxi

MEC	Member of Executive Council
MINMEC	Transport Minister and MECs Forum
MOU	Memorandum of Understanding
MP	Mpumalanga
MSDF	Municipal Spatial Development Framework
MTEF	Medium Term Expenditure Framework
NC	Northern Cape
NDC	Nationally Determined Contribution
NDoT	National Department of Transport
NDP	National Development Plan
NHTS	National Household Travel Survey
NLTA	National Land Transport Act
NLTSF	National Land Transport Strategic Framework
NMT	Non-Motorised Transport
NPTR	National Public Transport Regulator
NRSS	National Road Safety Strategy
NSDF	National Spatial Development Framework
NW	North West
O-D	Origin-Destination
OLAS	Operating License Administration System
OL	Operating licence
OpEx	Operating Expenses
ORS	On-road services
ORTIA	O R Tambo International Airport
PA	Planning authority
PBS	Performance Based Standards
PCAC	Provincial Coordination Advisory Committee
PGS	Parking guidance signs
PHSHDA	Priority Human Settlements and Housing Development Area
PLTF	Provincial Land Transport Framework
PMS	Pavement Management System
POPI	Protection of Personal Information
PPP	Public Private Partnership
PRASA	Passenger Rail Agency of South Africa
PRE	Provincial Regulatory Entity
PRMG	Provincial Road Maintenance Grant
PSPTN	Primary Strategic Public Transport Network
PTIC	Public Transport Integration Committee
PTP	Public Transport Plan
PTNG	Public Transport Network Grant

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Printed by the Government Printer, Bosman Street, Private Bag X85, Pretoria, 0001,
for the ***Gauteng Provincial Administration***, Johannesburg.

Contact Centre Tel: 012-748 6200. eMail: info.egazette@gpw.gov.za
Publications: Tel: (012) 748 6053, 748 6061, 748 6065

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DIE PROVINSIE VAN GAUTENG

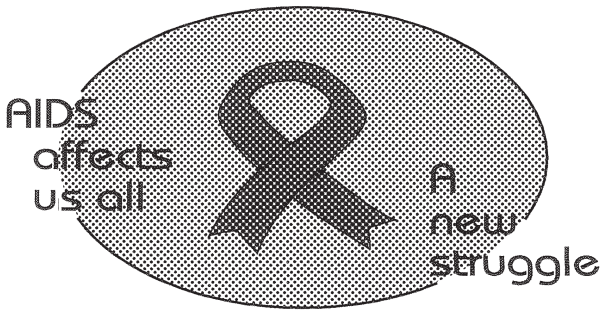
Provincial Gazette
Provinsiale Koerant

Selling price • Verkoopprys: **R2.50**
Other countries • Buitelands: **R3.25**

Vol: 31 **PRETORIA** **No: 449**
26 NOVEMBER 2025
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ISSN 1682-4520

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PTOG	Public Transport Operations Grant
QoL	Quality of Life
RAF	Road Accident Fund
RAMP	Road Assets Management Plan
RAMS	Road Asset Management System
RIMS	Road Incident Management System
RISFSA	Road Infrastructure Strategic Framework of South Africa
RSA	Republic of South Africa
RTMC	Road Traffic Management Corporation
RTQS	Road Transport Quality System
SADC	Southern African Development Community
SANRAL	South African National Roads Agency SOC Ltd
SAPS	South African Police Service
SDF	Spatial Development Framework
SDM	Sedibeng District Municipality
SERO	Socio Economic Review and Outlook
SITPF	Strategic Integrated Transport Plan Framework
SMME	Small, medium or micro enterprise
SSDI	Supporting Spatial Development Interventions
SSPTN	Secondary Strategic Public Transport Network
STATSSA	Statistics South Africa
STP	Strategic Transport Plan
SuDS	Sustainable Urban Drainage System
TAG	Transport Authority for Gauteng
TCC	Transport Coordination Committee
TCH	Transaction Clearing House
TDM	Transport Demand Model
TDM	Travel Demand Management
TIH	Transport Infrastructure House
TISH	Townships, Informal Settlements and Hostels
TMC	Traffic management centre
TMO	Traffic Management Operator
TMR	Transformation, Modernisation and Re-Industrialisation
TOD	Transit-Oriented Development
TRP	Taxi Recapitalisation Programme
UA	Universal Access
UTC	Urban traffic control
VAS	Value Added Service
VCI	Visual Condition Index
VLH	Vaal Logistics Hub

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GAUTENG ON THE MOVE

Growing Gauteng Together Through Smart Mobility

VMS	Variable message sign
VOC	Vehicle Operating Costs
WC	Western Cape
WEF	World Economic Forum
WIM	Weigh-in-Motion
WRDM	West Rand District Municipality

EXECUTIVE SUMMARY

The purpose of the Provincial Land Transport Framework (PLTF) is to provide a high-level strategic framework that will guide the planning and development of the transport system in the Gauteng Province over the next five years. This framework aims to align transport planning with all relevant national and provincial policies, goals and strategies. It deals with the relationship between land use and all modes of land transport in an integrated manner. The framework also aims to coordinate transversal planning across all sectors, as well as across the three tiers of Government and State Entities.

Chapter 1: Introduction

The Gauteng Province is the smallest province in South Africa, comprising only 1.42% of the total land area, but also the province with the highest population. The population of Gauteng was estimated at 15.5 million in July 2020 (StatsSA, 202 Mid-year population estimates) and this was expected to increase to 15.8 million in 2021, which is close to 25.3% of the total South African population. Currently there is a yearly migration of 200 000 people into Gauteng. This growth is making Gauteng one of the largest urban agglomerations and city regions in the World.

Gauteng is the economic powerhouse of Southern Africa, producing 34% of South Africa's GDP and is currently the 7th largest economy on the African Continent. The sectors that are the main contributors to economic growth are business, financial and real estate services. The Gauteng economy was forecasted to grow at 4.7% in 2021 after a contraction of 8.2% in 2020. There currently is a divergence between economic and population growth rates. The City Region with the Gauteng Province at its core, has developed with rapid urbanisation. It includes the three Metropolitan Cities of Ekurhuleni, Johannesburg and Tshwane, the two District Municipalities of Sedibeng and the West Rand, as well as some municipalities in adjacent provinces. Transport moves freely across the municipal and provincial boundaries and this urban conurbation functions as a single functional transport area.

South Africa and the Gauteng Province has become part of the Global Village. The external environment has changed significantly over the past decade and several global forces are influencing and shaping the transport sector. Economic growth and rapid urbanisation are causing the ever-increasing demand for the movement of people, goods and services. Private vehicles are or remain the preferred mode of transport. This is leading to increased traffic congestion, pollution, road traffic accidents and a greater dependency on fossil fuels.

Climate change is one of the most significant threats to the future of humanity. The increased demand for travel has a very significant impact on the natural environment because of pollution and increased greenhouse gas (GHG) emissions, with general agreement on the transport sector's adverse contribution to this. The approach to planning, the transformation and development of the transport system need to mitigate this. Building resilience and contingency measures into the system, are crucial to also mitigate the adverse impact of climatic incidents, such as flooding and extreme weather conditions.

Other external factors to consider in the planning and development of the transport system are efficiency opportunities offered by the Fourth Industrial Revolution (4IR), the fall-out from the COVID-19 pandemic, increased geo-political instability, the impact of rising energy costs, unemployment, the cost of living and inflation. Cost of energy has led to a drive for less dependence on oil and gas as primary sources of energy and an acceleration in the

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deployment of other and more sustainable sources. This will continue to impact, but also benefit the transport sector.

Forces and developments within are also shaping the transport sector, in the way it is functioning, planned and developed. Key policy shifts are taking place. The White Paper on National Rail Policy have been adopted, which provides a basis for the transformation of both passenger and freight rail. Many significant changes have taken place with respect to public transport operations, with shifts from rail to road-based and minibus-taxis services, Mobility-as-a-Service (MaaS) and e-hailing services coming into existence. Slow economic growth is also impacting on government's ability to funding of transport capital and operational expenditure.

The Gauteng Provincial Government (GPG) adopted Growing Gauteng Together 2030, a policy to address current realities and with the aim of alleviating poverty and inequality, to promote job creation, B-BBEE, support township economic growth and enhancing women and youth empowerment. In response, the Gauteng Department of Roads and Transport launched its Growing Gauteng Together through Smart Mobility Plan 2020-2025. This Plan intends to restructure the urban form, promote Gauteng as a freight logistics hub and data centric mobility, through building strong institutions. The Smart Mobility Plan is underpinned by the Provincial Government's Transformation, Modernisation and Re-industrialisation Programme (TMR). This is to be done through investing in key infrastructure within five strategic corridors, integration of all modes of transport and working towards a single public transport ticketing for the Province.

As prescribed in the Gauteng Transport Authority Act, 2019, Act 2 of 2019, the Transport Authority of Gauteng (TAG) was given the responsibility to develop a Provincial Land Transport Framework (PLTF) for the period 2022 to 2026. This PLTF was developed in terms of the National Land Transport Act (NLTA), 2009, Act 5 of 2009 and supporting Regulations on the Minimum Requirements for the Preparation of Provincial Land Transport Frameworks, 2011. In terms of provisions of the NLTA, a PLTF also must be developed within National Land Transport Strategic Framework (NLTSF), which guides land transport planning countrywide. The current NLTSF is for the period 2017 to 2022 and the National Department of Transport (NDoT) is in the process of doing an update to the NLTSF. Over-and-above minimum requirements, the PLTF aims at addressing realities unique to Gauteng, as well as external forces impacting on transport in the Province, to mitigate impacts as far as possible and exploit opportunities on offer.

Chapter 2: Process and Consultation

The NLTA and the Regulations emphasise the importance of stakeholder consultation during the preparation of the PLTF. The stakeholder consultation process followed, focused on augmenting and confirming current realities and issues, as well as obtaining input at key milestones of the preparation process. Role-players and stakeholders were identified in compliance of the Act. The stakeholder database for the PLTF preparation comprised a total of 134 entities, representing different sectors of society. The database was categorised according to the representative sectors of society. 47 entities were viewed as key role-players.

Three workshops with key role-players were undertaken, firstly to introduce the project, then to discuss the current realities, gaps and issues and then finally to obtain inputs on transport on solutions and strategies. A workshop with the wider grouping of role-players and stakeholders was also convened to discuss solutions and strategies. In addition to the workshops, several smaller group meetings and on-on-one engagement took place with key

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role-players. This included metropolitan, district and local municipalities, state owned entities (Public Rail Agency of South Africa, South African Local Government Association, South African National Roads Agency (SANRAL) and Transnet), provincially owned entities (Gautrain Management Agency and Gauteng Tourism Authority), the Gauteng Taxi Industry (NTA and SANTACO), the Freight Forum and other non-governmental, such as the Disability Alliance.

The Act requires that the PLTF has to be available for public inspection and comments for more than 30 days and this is to be facilitated through advertisement in the Provincial Gazette and two provincial newspapers, in at least two languages. After a draft PLTF was prepared, the general public was notified of the availability of the document for public comment. It was advertised in Gauteng Provincial Gazette and 3 provincial newspapers. The draft was made in English and an Executive Summary in Afrikaans, English, Sesotho and isiZulu. The draft could be downloaded from the Gauteng Department of Roads and Transport's website and printed Executive Summary documents were available at all the GDRT Provincial and Gauteng district, local and metropolitan municipal offices. Letters, Executive Summaries, Comment Forms and List were mailed to role-players and stakeholders on the database. Letters, accompanied by the draft PLTF, Executive Summary and Comment Form were mailed to MECs for Transport outside of the Gauteng Province.

The initial Public Inspection and Comment period was 18 Nov 2022 to 13 Jan 2023. A reminder of closing date for comments were sent via Bulk SMS on 10 January 2023. The comment period was extended to 25 January 2023, based on written requests for an extension. All comments received during public inspection period were acknowledged. All project comments received was collated into tracking-sheet for reference purposes. A Comments Responses Register was compiled capturing the comments received and indicating how comments were dealt with.

Chapter 3: Transport Vision, Policy and Objectives

The current NLTSF for the period 2017 to 2022 was considered and interpreted in terms of the strategic direction provided for transport and to guide the policy direction taken in the PLTF. The policy directives, objectives and strategies provided in the PLTF are aligned with the NLTSF.

The Gauteng White Paper on Transport Policy for Gauteng was adopted in 1997. Although the vision statement contained in the White Paper remains relevant, the transport system and environment have changed quite significantly over the past 25 years and new policy prerogatives are relevant as well as when considering planning and development of the transport system. In addition to the vision contained in the White Paper, several strategic papers relevant to transport were developed subsequently. If read together, the combination of these papers provides an ultimate picture and overall vision for the transport system for Gauteng. The vision for transport in the Province provided in the 1997 White Paper is:

> *"An integrated transport system which satisfies the needs of the people while supporting and facilitating social and economic growth, improving the quality of life, and the development of all the people of Gauteng."*

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The Gauteng 25-year Integrated Transport Plan (ITMP25) was developed and approved in 2013. The ITMP25 provides a vision statement that augments the statement contained in the White Paper, namely:

> *"An integrated and efficient transport system in Gauteng that promotes sustainable economic growth, skills development and job creation, fosters quality of life, socially includes all communities and preserves the environment."*

The Annual Performance Plan 2022/23 of the Gauteng Department of Roads and Transport also provides a supplementary vision statement, which states:

> *"To promote accessibility and the safe, affordable movement of people, goods and services and to render client-centred and developmental services in Gauteng."*

The Gauteng Government more recently adopted Growing Gauteng Together 2030 (GGT2030) and the vision for the Province is:

> *"A seamlessly integrated, socially cohesive, sustainable and economically inclusive Gauteng City Region, A place of opportunity, supported by a growing economy, smart, innovation driven and sustainable industries, an accountable, responsive, transparent and clean government, and a healthy, active citizenry."*

In response to the GGT2030, the Gauteng Department of Roads and Transport developed Growing Gauteng through Smart Mobility Plan 2020-2025. This plan contains various strategic statements that talk to the transport system in the short to medium term, namely:

> *"… to integrate public transport, build a smart transport infrastructure that leverages of available technology … prioritises rail as the backbone for the Gauteng's transport system … integrating all modes to make travel efficient for commuters … underpinned by technology and green transport, which includes non-motorised transport … to make Gauteng a freight logistics hub … and strengthen institutions".*

The Gauteng Cabinet has also identified the need to place a greater emphasis on the development of townships, informal settlements and hostels (TISH). This may require a shift in focus towards availability of land, more investment in local roads, safety, security and law enforcement, as well as the upgrade of local public transport facilities.

An assessment of the transport status quo in Gauteng shows that a several of negative trends and challenges have persisted over the past two decades, despite previous strategic documents and strategies being adopted. The following guiding principles were identified for the development of the PLTF, premised on the basis of developing a sustainable transport system which provides access to opportunity and to deal with such challenges:

1. The transport system further enables and promotes economic growth, job creation and poverty alleviation,
2. The transport system is planned in coordination with and in an integrated manner with economic and land use planning,
3. The planning and development of the transport system promote social integration and environmental sustainability including climate resilience,

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4. All travellers, including those in previously disadvantaged areas and more remote and rural parts of the Province, have travel options available that are accessible, affordable and of sufficient quality,
5. Public transport services provide users with convenient and seamless travel options across modes,
6. The quality and efficiency of public transport, MaaS and freight rail services offerings, as well as the quality of non-motorised infrastructure facilitate travel behavioural changes and a shift away from private and motorised goods vehicles,
7. Travellers, including public transport users, cyclists and pedestrians, are safe and secure while making their journeys,
8. The application of evolving technology continuously enhances the sustainability, effectiveness and efficiency of the transport system,
9. Sustained funding sources are available to extend the transport network to meet growing mobility needs and maintain infrastructure, facilities and systems at adequate levels, and
10. Planning is coordinated across all sectors and tiers of the State, with adequate capacity, expertise and resources to execute their mandates.

Taking cognisance of all the vision statements, applicable policies, the assessment of the status quo as set out in Chapter 4, inputs received during the stakeholder engagement process described, as well as the guiding principles, objectives were identified for the purpose of developing the solutions, interventions and strategies put forward in the PLTF. The objectives are:

The broader transport vision and objectives were used as a bases for developing and putting forward the solutions, strategies and interventions contained in Chapters 5 to 14 of the PLTF, dealing with the respective components of the transport system.

Chapter 4: Transport Status Quo

The Gauteng Province Household Travel Survey Report 2019/20 indicated that there are approximately 11 million trips per day in the Province of which 3.4 million are done during the morning peak period (06:00 to 09:00). Most of daily trips are intra-municipal trips, with the highest being in the City of Johannesburg (CoJ) with more than three million trips per day.

Average commuting times have increased over the past years. On a typical working day travel time increased by 17% from 46 minutes in 2014 to 57 minutes in 2019. Overall average travel time has almost doubled over the past 18 years. Associated with this, many more commuters choose to travel either earlier or later to avoid the peak.

Increasingly, more households in the Province have at least one member with a driving licence. Households without a licence decreased from more than 50% in 2000 to just over 46% in 2019. Nonetheless, the proportion of households without access to a private vehicle has increased to over 70% in 2019, from 66% in 2014.

The Province's vehicle population has grown from approximately 4.3m in 2011 to 4.8m in 2019.

COVID-19 had a huge impact on trips in undertaken in the province. Work related trips declined by 775 000 daily trips (700 000 less car as driver trips), which represents a decline

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of 28%, However, it was found that there was no significant impact on the duration of the trip and the time the commuter departed for work. Education related trips declined by 466 000 per day. Learners walking and using the car as passenger declined by 320 000 trips per day, contributing 68% of the decline. Discretionary trips declined by 4,5 million trips/day. Car as a driver declined by 1,6 million trips per day walking declined by 1,2 million trips per day.

Integrated Development

Gauteng is the densest province in South Africa, however, most people in the Province are concentrated in a few clusters – a key outcome of apartheid spatial planning policies. While some of these clusters are located close to core business areas in Johannesburg, Tshwane and Ekurhuleni, many of the clusters are located on the edges of the urban footprint. The densest 20% of the population lives on approximately 1% of the land area of Gauteng and the least dense 10% of the population lives on 90% of the Province's land area, which may be sparsely populated, but comprises of residential areas and many other land uses and activities.

Even though there are a variety of factors that contribute to urban growth (for example, migration, public policies, economic activities, etc.) there is a symbiotic relationship between transportation and urban growth. It is found that transport infrastructure expansion strongly correlates with population growth, spatial expansion, and land use change. On the one hand, transportation infrastructure attracts urban development. On the other hand, urban growth patterns configure urban spatial structure and thus influence transport. Urban growth increases travel demand and thus the need for transportation infrastructure.

The following cross cutting issues impact on land use and transport integration:

- Inter-governmental relations;
- Priorities of political leadership changes per dispensation;
- Capacity and capabilities;
- Data management, consolidation and integration;
- Disregard for psychosocial issues;
- Lack of understanding and support for urban resilience;
- Urban Safety;
- Destruction of state infrastructure;
- Impact of natural urban growth;
- Persistent under investment in infrastructure, unfunded operational deficit and poor infrastructure maintenance, and
- Densification and transport strategies not realising.

The interconnected and complex nature of these characteristics and patterns highlight how a nuanced and holistic approach is required in identifying and tackling the realities, issues and gaps in the relationship between land use and transport. It is also important to understand the cascading effects of one characteristic or pattern on a number of other areas.

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Public Transport

According to the National Household Travel Survey (NHTS, 2019), 42% of trips undertaken uses public transport. Of the public transport trips, 88% is done using MBTs, 8% by bus and 4% by rail respectively.

The urban structure is mostly characterised by low density development and urban sprawl, with very little spatial transformation having taken place over the past 20 years. In many instances this has even been perpetuated by more recent developments and the way economic housing development had taken place, by positioning such developments at the urban periphery on cheaper land. Substantial land-use development has also occurred towards the west of Johannesburg. The network development has not kept pace with the land-use development. The lack of spatial transformation, densification and in-filling impacts directly on the efficiency of public transport. Passengers must travel long distances, compared to more compact cities. Low levels of accessibility exist due to the inability of services to cover residential areas adequately and long walking distances are incurred to access services.

The quality of services is deteriorating with access and travel times continuing to increase, if the results of the 2014 HTS is compared with the survey done in 2019. Even prior to the COVID-19 Pandemic commuter rail continued to lose market share and is struggling to recover post pandemic from near collapse. The rate of extensions of formalised public transport networks, such as Gautrain and BRTs, is slower than anticipated mainly due to the availability of funding and funding priorities. This means that public transport is also becoming less attractive as a travel option to choice-users. The condition of public transport facilities and specifically taxi ranks have also deteriorated significantly over time due to lack of investment, proper maintenance and management.

The Pandemic also impacted adversely on all formalised public transport, with significant decreases in fare box revenue and the resulting sustainability of such services. Affordability of public transport to the user has decreased, with 60% of households spending more than 10% of disposable income on transport in 2019, compared to 55% in 2014.

The rail network in Gauteng still serves the demand from the townships to the CBD's, favouring the Eastern and Southern parts of Gauteng, originally constructed to serve the mining belt and associated the industrial areas. The development of Gauteng in terms of urbanisation has not was not necessarily in support or integrated with the existing commuter railway network, as developed sprawled towards the north-west, given the availability of land.

The route structures of provincially subsidised bus services were introduced pre-1994 and municipal bus services are still reflecting the original route structures and have not been optimally integrated with other public transport. Scholar transport services subsidised by the Gauteng Department of Education also operate in isolation from other services. Most services are aimed at commuters traveling to and from work during peak hours, with limited services during off-peaks catering for non-work trip purposes. Universal access and catering for needs of the mobility impaired also needs a lot of attention to make public transport a viable option for them.

Coordinated planning of public transport networks, covering the whole City Region and providing for provincial wide mobility and an Integrated Public Transport Network (IPTN) crossing municipal and provincial boundaries, is less than optimal. Planning, funding and financial support is fragmented across three spheres of government, considering commuter rail, bus and other services. More coordination and integration are required. A more uniform

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approach to providing funding support, subsidies to public transport and a fare policy are required.

Security and safety of passengers remain a challenge, especially with respect to access and the First and Last Mile (1LM) part of the public transport passenger journey. This also includes issues around Gender Based Violence. The general lack of, or adequate and convenient non-motorised infrastructure also contributes to this.

The MBT market share of work trips increased from 71% in 2014 to 88% in 2021, according to the respective HTSs. The functioning and efficiency of the Provincial Regulatory Entity (PRE) resulted in a severe backlog in disposing with operating licence applications. The process of renewing licences remains a bone of contention to the taxi industry.

The MBT industry operates in an economically regulated environment and as such require an operating license to legally transport passengers for financial gain. In this context, economic regulation refers to the fact that operating licences are issued based on the need for the services on a particular route or in a particular area, rather than applying free market principles. The applicable Regulations for the issuing of operating licenses were Gazetted in 2009. The Province has established a Provincial Regulating Entity (PRE) that deals with the issuing of new operating licenses and the conversion of area-based permits to route based operating licenses.

There is a grave concern amongst the Gauteng Taxi Industry regarding the backlog that exists with the issuing of operating licenses.

The taxi industry remains the only public transport mode that does not receive an operational subsidy from Government. The substantial increase in the price of fuel over the last two years, combined with the substantial increase in the price of new tyres as well as regular increases to parts and maintenance of the vehicle, has put the industry under more financial pressure than it has ever been. This combined with the fact that salaries and wages of their target market has not kept up with inflation over the past two years, makes it very difficult for the industry to increase their fares on a regular basis. The economic slowdown since 2019, with many companies closing down and workers losing their jobs has also impacted on the traditional taxi industry market. The challenges experienced by PRASA, especially since the start of COVID-19 have meant a public transport modal shift to minibus-taxis, which to some extent improved the sustainability of the taxi industry.

The industry is left behind when it comes to investment in infrastructure for the industry. The majority of grant funding is earmarked towards the IPTN which up to now has focussed mainly on the planning, construction, implementation and operation of the BRT systems. The provision of facilities for the taxi industry focussed mainly on lay-byes and formal taxi ranks at local authority level. The unprecedented growth in the industry has put pressure on the existing facilities as the demand for ranking and holding space has outstripped the provision. The design of the taxi ranks has not kept up to date with latest design technology in terms of materials used and energy efficiency.

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A Taxi Summit was convened with the MEC and officials and representatives from the taxi industry in Gauteng from 24-25 July 2019. The strategic objectives agreed at the summit related to:

- Work within the existing government regulatory framework;
- Modernise the MBT industry;
- Uphold and work with the road safety prescripts;
- Corporatise and empower the mini-bus taxi industry, and
- Eradicate violence, fraud and corruption.

The issues raised during various sessions with the GTI, as part of the consultation process of the PLTF project, are as follows;

- Continuous GTI inputs in land use, development and transport planning;
- Regulations for the minibus taxi industry should be pragmatic;
- Functioning of the PRE and the backlog in disposing with Operating Licence applications and renewals;
- Subsidy policy and the inclusion of the minibus taxi industry;
- Implementation of the outcomes of the taxi summit held in June 2019;
- Separate lanes for minibus taxis;
- Condition of taxi ranks;
- A programme that eliminates segregation and promotion of social integration;
- Transition to e-vehicles and sustainable transport, and
- Public safety and assistance to the industry.

e-Hailing services has become a reality and plays a significant role in, not only transporting people traveling to work, but more so for business, social and tourism purposes. The fact that no clear regulatory regime is in place for MaaS operations and e-hailing services is further contributing to the tensions and conflict in the public transport environment.

Sustainable Transport

South Africa is a signatory to the Sustainable Development Goals[1] (SDGs) as set out in the 2030 Agenda for Sustainable Development which seeks to eliminate extreme poverty and reduce inequality whilst protecting the planet. The National Development Plan (NDP) which predates the SDGs is recognised as being significantly aligned with the SDGs. Transport has a role to play in the realisation of many of the SDGs with specific relevance to Goal 11 – Sustainable Cities with Transport having a particular Target Indicator 11.2 which aims that, by 2030, all citizens will have access to safe affordable, accessible, and sustainable transport

[1] https://sdgs.un.org/goals

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systems through expanded public transport. In addition, special attention should be paid to the travel needs of those in vulnerable situations including women, children, persons with disabilities and older persons[2].

South Africa is also a signatory to the Paris Agreement[3] which seeks to limit global warming to below 1.5^{O} Celsius above preindustrial levels requiring CO_2 emissions to be reduced by 45% by 2030 and to Net Zero by 2050. As part of this commitment SA revised its Nationally Determined Contribution[4] (NDC) in 2021 increasing upper limit emissions reduction to 510Mt and 420Mt by 2025 and 2030 respectively. At 10.8% nationally and up to 40% in cities transport's contributions reduction targets towards GHG emissions require adjusting to contribute towards achieving these targets.

Key issues that sustainable transport planning has a significant role to play in addressing include:

- The current sprawling urban form of low densities and long travel distances which contribute significantly towards the inefficiency and unaffordability of transport;
- The limited integration of transport and land use and urban planning processes;
- Walking, whilst the primary mode of travel, along with cycling and public transport should form the departure point for all transport planning this is not the de facto case;
- Transport infrastructure and systems are not and have not previously been designed with due consideration of environmental aspects including Climate Change impacts and resilience and current approaches may lock out required changes, and
- Greater efficiencies in vehicle usage and non-motorised transport to reduce GHGs has not been optimised.

Sustainable Transport allows the basic access and development needs of individuals, companies and society to be met safely and in a manner consistent with human and ecosystem health, promotes equity within and between generations, is affordable and efficient thus has a key role in addressing the resilience and adaptation requirements of climate change and achieving social justice. It is also a crosscutting discipline that underpins all aspects of transport planning and delivery.

Although there are extensive legislative, policy and strategic documents at international, national and provincial levels that both recognise and require sustainable transport little impact has been achieved thus far. This is in part due to a siloed approach leading to a lack of integration in transport and land use planning and the upfront considerations of sustainable development that encompass both socioeconomic and environmental aspects. A further contributor is due to the paradigm of improving motor vehicle travel efficiency rather than adopting a sustainable mobility approach.

Sustainable transport requires a systems-based approach, incorporating the avoid (reducing the need to travel or transport goods and includes reducing urban sprawl), shift (changing the mode of travel or transport) and improve (utilising technological improvements to reduce

[2] https://unhabitat.org/sites/default/files/2019/05/sdg_11_synthesis_report_web2_0.pdf
[3] https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement
[4] https://www.gov.za/speeches/statement-virtual-cabinet-meeting-14-september-2021-20-sep-2021-0000

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energy use and emissions) where walking, cycling and public transport are given priority in any land use and transport planning is recognised as the necessary approach to be adopted.

Regarding sustainable transport current planning approaches are primarily focussed on the Green Economy aspects of Sustainable Transport seeking a reduction of GHG emissions through alternate energy sources and technological improvements with limited focus on the reducing the need to travel and encouraging mode shift. The prevailing paradigm of focussing on motor vehicle travel efficiency does not encompass the broader issues of social equity and environmentally responsible approaches.

Non-motorised Transport

Walking as a primary means of travel still remains one of the predominant modes of transport, at 27.7%. Cycling as a commuting mode is also growing continuously, although no recent statistics on the percentage modal share are available.

The current dispersed and low-density urban development results in long walking distances and do not make it very conducive for people to walk as a preferred means of travel, unless no other option is available or affordable. The challenge is then how to create a “smart”, compact and walkable City Region, often referred to as the “15 Minute City”. Stronger integration between land use and transport planning is required to shorten travel distances and to make non-motorised transport (NMT) a more viable option.

Road reserves do not always adequately provide for all uses, such as NMT, and other services and utilities. In many instances sidewalks do exist along roads albeit frequently of low quality, but very little is available by way of infrastructure and facilities for cyclists. Except for development around BRT stations, very little investment is focussed on non-motorised transport infrastructure at public transport nodes. This also hampers the promotion of public transport as a mode of choice.

Road infrastructure design standards, especially along provincial roads in urban areas, do not adequately cater for NMT. Motorised modes are largely only catered for and not the cross-sections as a whole and the full reserve width. The design standards applied often were appropriate to roads in rural areas, but with urbanisation and development these have now changed to roads within urban environments.

Urban design frameworks don’t adequately provide for safe and convenient NMT facilities. Sidewalks are not well lit and Universal Access needs of people are mostly not adequately accommodated.

Developer bulk service contributions for the upgrade of infrastructure are mostly targeted at increasing accessibility for motorised private vehicles, with very little attention to NMT needs.

Transport infrastructure

The Provincial Road network is 272 821km, the metros amount to 66 143km, municipalities amount to 256 903 km and un-proclaimed roads amount to 131 919 km. Gauteng Province has the lowest percentage of the SANRAL road network which is 3.6% (807 km) of the SANRAL road network.

According to the Gauteng Province Department of Roads and Transport Road Assets Management Plan (RAMP) 2021/22, the Province is responsible for a road network consisting of approximately 5 600km of roads (4 328km surfaced and 1 271km gravel roads). 33% of Gauteng provincial roads are classified as arterial roads, 27% as distributor roads, 33% as

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collector roads and the remaining 7% as principal and access roads. The Gauteng provincial road network includes 676 bridges and 428 major culverts.

Gauteng Province has a planned strategic road network which was developed over time. It consists of a grid of Freeways (PWV roads) and main arterials (K-routes). According to the Gauteng RAMP 2021/22, 76% of the paved road network is in a good to very good condition and 4% is in a poor to very poor condition.

According to the City of Ekurhuleni (CoE)'s CITP 2014, the majority of the CoE paved roads are in good condition, whilst most of the unpaved roads are in poor condition. Very Good and Good amounts to 72% of the network while 2.2% is classified as Poor to Very Poor. This information was based on the CoE pavement management system data conducted in 2012.

The City of Tshwane (CoT) Metropolitan Municipality consist of a road network that amounts to approximately 9 667.6 km of roads. According to the CoT Comprehensive Integrated Transport Plan (CITP), the paved roads amount to approximately 69% and unpaved roads amounts to 31% of the road network. The CoT's Pavement Management System of 2017 indicated that 73% of the network is classified as Very Good to Good and that 9% is Poor to very Poor.

According to the CoJ's SITPF 2013, the CoJ Road network is 9 324 km in extent. According to the CoJ's Pavement Management System (Surveys conducted in 2008), approximately 72% of the road network is in very good to good condition, and 20% of the network is in poor to very poor condition.

The Sedibeng District Municipality (SDM) consist of 1 408 km of road network. Midvaal local municipality amounts to 44.9% of the SDM road network; Lesedi local municipality amounts to 34.3% and Emfuleni local municipality amounts to 20.8% of the SDM road network.

The West Rand District Municipality (WRDM) consist of 2128 km of road network (1511km paved and 617km unpaved). Mogale City local municipality amounts to 41% of the WRDM road network; Rand West City local municipality amounts to 39% and Merafong local municipality amounts to 20% of the WRDM road network.

Gauteng also boasts 921km of rail that is the responsibility of Transnet and PRASA.

Freight Logistics

Freight transport is mainly conducted by road in Gauteng, while rail transport is used for bulk materials over long distances, such as the iron ore or coal lines. Air cargo is concentrated at OR Tambo International Airport although some smaller volumes are handled at airports such as Lanseria and Wonderboom.

Sustainability imperatives require that more rail friendly freight needs to be shift from road to rail although the relatively short distances in Gauteng might make it difficult to offer viable rail services within Gauteng. However, more road freight traffic on the corridor between Gauteng and Durban should be moved to rail. Hence the development of intermodal container terminals in Gauteng needs to be developed with suitable access roads to ensure efficient connectivity with industrial zones.

Challenges with freight logistics include overloading as well as road safety and security of both drivers and loads. It is important that safe staging areas as well as truck stops should be developed to protect equipment and drivers and reduce the negative impact of trucks on the road infrastructure.

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Transport Management

The status quo of Intelligent Transportation Systems (ITS) in the Province of Gauteng is dealt with next. This was addressed in two ways, the first being a review of current documentation on ITS planning and deployment within the Province and an overview of current ITS implemented and associated initiatives. The current context of various policies and plans were reviewed, namely the Gauteng 5 Year Integrated Transportation Master Plan, the Gauteng 5-year Transport Implementation Plan, and the Gauteng PLTF of 2010–2014. The overall status of these documents is that technology and ITS applications are mentioned throughout each, but requires an updated for more recent applications that were introduced over the past few years since the documents were written. The five Integrated Transportation Plans (CoT, CoJ, CoE, Sedibeng, West Rand) were reviewed and highlights provided, with the overall status being outdated with respect to the development of various technologies that have transpired over recent years. Furthermore, the Growing Gauteng Together Through Smart Mobility 2030 document was also reviewed as a key document, containing the latest strategic vision with regard to Smart Mobility for the Gauteng Province.

With respect to the ITS and technological initiatives currently active in the Gauteng Province, a summarised review is provided. The main initiatives listed are the Bus Rapid Transit (BRT) systems, the Gautrain, the Gauteng Freeway Management System (FMS), various Management Centres, Johannesburg Roads Agency initiatives, Gauteng Open Road Tolling (GORT), Initiatives of Toll Concessions for freeways, the DoT/SANRAL Transaction Clearing House (TCH), Provincial Smart Mobility Department Initiatives, MaaS and E-hailing.

Some challenges and opportunities were identified from an ITS and technological perspective, namely Provincial-wide coordination, Digital footprint expansion, opportunity for an Advanced Public Transportation Management System and a MaaS platform, Piggy-backing on current deployments, Training and Education, Awareness of 4IR and Technology applications, Principles regarding planning & implementation, Seamless transport, Integrated Corridor management, and Data sharing principles. One of the key priorities of the Province is reaching the vision of One Province One Ticket, and some key requirements are not yet in place to achieve this that should be dealt with.

Some future considerations to take note of during the development of technological implementations include the passenger journey, city planning and infrastructure, data-driven mobility, safety and inclusion, and delivery and distribution.

Tourism

Gauteng has 4.3 million annual tourist day trips and 3.1 million annual overnight trips, according to Gauteng Tourism Agency (GTA).

The major ports of entry to the Province are not well served by public transport, except Gautrain at ORTIA. The lack of information and signage provides challenges for tourists to access general public transport as a mode for tourism travel. Therefore, tourists largely rely on car rental services, private operators and e-hailing services to travel within the Province.

71% of tourists travel to and within Gauteng to visit friends and family, 12% for business purposes and 9% for holidays.

The backlog with the disposal for operating licence applications and licence renewals of tourism transport operators was close to 2 years at start of 2022 and this is a major challenge.

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Monitoring

Monitoring and review of specific key performance indicators as required by the NLTSF is currently not done properly. This is evident in all planning authorities and in the dormancy of the Gauteng Freight Databank. This is also apparent in the lack of any information regarding comparative analysis of the extent to which the key performance indicators have changed over time.

Problems, Issues and Gaps

An analysis of the transport status quo in Gauteng, discussions and inputs received at the various stakeholder and key role-player workshops, as well as further one-on-one sessions enabled the identification of problems, issues and gaps. The following are the top issues identified by stakeholders to be addressed as part of the PLTF (in no particular order of importance):

1. Increased traffic congestion, pollution and the environmental impact of transport;
2. Integration of economic, land use and transport planning and to optimally coordinate this across sectors, different spheres of government and municipal boundaries ("these must be done under one roof");
3. Affordability and accessibility of public transport to users in general and the attractiveness of such services to choice-users;
4. Decline in public transport services and facilities, modal optimisation and integration;
5. Barriers to entry for new entrants in providing formalised and subsidised public transport services;
6. Safety and security and the protection of travellers and transport infrastructure and lack of integration with security service providers to address this;
7. Lack of adequate non-motorised transport infrastructure and facilities and universal access for people with disabilities and the mobility impaired;
8. Lack of MaaS solutions that offer efficient integrated and responsive solutions to commuters needs to contribute to them making changes to their transport choices and behaviours;
9. Road freight movements, the impact the Strategic Road Network due to over-loading, on inner cities operations because of parked trucks and the cost of the "last mile" (Final section of the supply chain for delivery of freight to private dwellings for home deliveries or business premises);
10. Strengthening Regulatory Oversight, and
11. Additional and new funding sources, as well as the lack of a "platform" conducive to partner and leverage private funding.
12. Most of the pavement condition assessment data of the various authorities are dated and might not be a true reflection of the current situation.

Other important issues that were discussed and received attention during the stakeholder engagements were, how to best provide for non-motorised transport needs, how to create a smart and walkable South African city and how it could be applied to all spheres of government

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within the framework of existing regulations. The management of available transport data and the utilisation of information for the planning, development and management of the transport system also received attention. Further, a critical issue was for due consideration to be given as to how the PLTF will be enforced.

Chapter 5: Integrated Transport Plans

In terms of the NLTA, Chapter 2, section 11, municipalities are responsible for the improvement of the transport system within their jurisdiction and to prepare Integrated Transport Plans. An Integrated Transport Plan (ITP) is a component of the Integrated Development Plan (IDP) for a municipality. It is prepared in terms of the guidance provided within the PLTF, which provides the overarching framework for the development and/or updating of ITPs. These plans need to be developed and updated in terms of the Minimum Requirements for the Preparation of Integrated Transport Plans, 2016. These regulations were gazetted in terms and Sections 36(1) and (2) of the NLTA and require municipalities to update their ITPs.

In the minimum requirements it also distinguishes between various types of municipalities and the aspects to be addressed in their respective plans, depending on the type.

> **TYPE 1 - Planning Authorities** required to prepare CITP and CoE, CoJ and CoT are classified as Type 1 planning authorities.
>
> **TYPE 2 - Planning Authorities** are District Municipalities which must prepare District Integrated Transport Plans (DITP). DITPs to be prepared in Gauteng are for the two (2) type 2 planning authorities, namely Sedibeng District Municipality (SDM) and West Rand District Municipality (WRDM).
>
> **TYPE 3 - Planning Authorities** are local municipalities who are to prepare a Local Integrated Transport Plans (LITP). The local municipalities in Gauteng are Emfuleni Local Municipality, Lesedi Local Municipality, and Midvaal Local Municipality in the Sedibeng District Municipal area, and Mogale City Local Municipality, Merafong City Local Municipality, and Rand West City Local Municipality located within in the West Rand District. Local Integrated Transport Plans (LITPs) must be integrated into DITPs.

ITPs are prepared for a five-year period. A new ITP must be prepared every five years (overhauling of the Plan). On an annual basis (Annual Update), selected aspects must be updated. These updates would inter alia include updated project lists and budgets, which then makes up the Transportation components of the annually updated municipal Integrated Development Plans (IDPs).

The most recent CITP for CoE is for the period 2013 to 2017. It is a comprehensive document meeting all requirements. The vision, goals and objectives are aligned with the National and Provincial agendas. Since the completion of this CITP in 2017, CoE has also done a Roads Master Plan in 2018, Integrated Public Transport Network Plans and Corridor Operational Plans in 2021.

The CoJ, started in 2012 with their ITP for the period 2013 to 2018, where they followed a slightly different approach. Instead of a single document, it was developed in a few documents. The first was the Strategic Integrated Transport Plan Framework (SITPF). It is a very thorough and comprehensive plan (Roadmap) with progressive policies and strategies. It took a long-term view on Transportation. CoJ has since conducted various other planning studies, area/precinct wide ITP's, Operational Plans and Corridor studies in support of the SITPF.

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The latest CoT CITP covered the period 2015 to 2020. The CITP is a comprehensive plan and it is compliant with the minimum requirements. CoT has commenced in December 2021 with the update of their CITP and the project will run over three years. CoT is updating the Transport Register, the Spatial Development Framework (SDF), Public Transport Plan and their Transport Infrastructure Strategy. It is also proceeding with its Freight and Logistics Strategy, Funding Strategy and Implementation Plan.

The DITPs for Sedibeng and West Rand District Municipalities were completed in 2019 and covers the period 2019 to 2024, with assistance from the Gauteng Department of Roads and Transport. Both Plans are comprehensive documents and meet all requirements. Vision, Goals and Objectives in-line with National and Provincial strategies and prerogatives. Projects are identified which would assist with the economic growth of the respective districts, but no budgets or timeframes re given. Some base data is also dated. The LIDPs of the local municipalities are also integrated into the DITPs of the two districts.

Chapter 6: Integrated Development Framework

Taking into consideration that municipalities have limited budgets and are often fiscally constrained, the GSDF provides investment guidance through four spatial targeting focus areas. Spatial imperatives identified in the GSDF 2030 (Draft Review Document 2022) have been further developed into 16 SSDIs. The spatial strategies, focus areas and SSDIs are aligned with the aim to coordinate, integrate and align the plans of the three spheres of government as well as bring people in close proximity to areas of social and economic opportunity complemented by an affordable, reliable and safe public transport system. The integrated development strategies therefore aim to align its spatial priorities with national, provincial, and local imperatives in order to ensure sustainable land use and transport integration.

An understanding of the interrelationship between land use and transport has influenced the development of a vision, objectives, focus areas and strategies for the successful and sustainable integration of land use and transport that the PLTF aims to support and promote. These focus areas additionally aim to respond to and support the most recent provincial priorities as indicated by cabinet. To achieve this, the Province needs to follow a PLAN, CREATE and IMPLEMENT approach that should guide development and its discourse within the different spheres of government. “PLAN” focusses on elements that need to be considered and planned for, to create enabling environments. “CREATE” addresses the development of specific mechanisms or tools and “IMPLEMENTATION” deals with actions to be executed. Following the above approach, the following focus areas and strategies are proposed for the integration of land use and transport within the PLTF.

To enable sustainable land use and transport integration in the Province, the PLTF proposes the following focus areas:

- Coherent and sustainable urban development – which addresses the fragmented urban structure and dispersed pressure on service delivery and transport systems;
- Accessibility, connectivity, and mobility – which addresses the inability of many people to access economic and social opportunities;
- Resilience, which looks at incorporating adaptability into land use and transport planning, and

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- Good governance, which addresses institutional arrangements and processes that will strengthen land and transport integration.

Chapter 7: Public Transport

This chapter provides information of the public transport strategies and initiatives of provincial significance and emanating from the respective CITPs that aim to promote and improve public transport.

Based on the public transport status quo and the problems issues and gaps described in previous chapter, the following focus areas were identified to be addressed through public transport strategies:

- Public Transport and Land Use Integration;
- Provincial-wide strategic integrated public transport network (IPTN), also considering network continuity across municipal/provincial borders, integration between public transport modes and the role of modes;
- Quality of public transport, addressing aspects such as accessibility, reliability quality of services, quality facilities and Universal Access of facilities and vehicles;
- The devolution of the rail function;
- Passenger Safety and Security;
- Regulation of road-based modes and services, and
- Affordability (to users, government and operators), funding and subsidies.

Public transport linkages to new developments and existing, high density and major nodal developments, with in-filling along IPTN corridors and TOD development needs to be enabled, pursued, and promoted. The Provincial-wide IPTN needs to be confirmed, including key cross-border corridors as part of the GITMP25 update. Nodes of Provincial significance needs to be identified and ToD strategies be developed for each of these. A Modal Integration Working Group or similar structure need to be established to promote this.

The provisions of the National White Paper on Rail Policy need to be implemented, which as a start will include a due diligence study and consultation and agreement on the terms and conditions of such devolution. The commuter rail corridors need revitalisation through discussions and coordination with PRASA, including revitalisation of areas of impact around key stations in collaboration with municipalities. Approvals and funding for the expansions and first phase of the extensions to the Gauteng Rapid Rail Integrated Network (GRRIN) needs to be unlocked.

High-speed passenger rail as an alternative to inter-city road-based passenger transport over longer distances could become increasingly plausible. This is due to the long-term economic benefits that can be attributed to travel time savings, savings in accident cost and the impact on a reduction of GHG emissions. The Limpopo Province is promoting more frequent longer-term passenger rail services from Gauteng to Polokwane and Musina in the short-term and in the longer-term it envisages high-speed rail as a more appropriate option, linked to the development of the Makado-Musina SEZ, the anticipated increase in both passenger travel and freight movements. A high-level prefeasibility investigation should be conducted in

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partnership with all the relevant role-players on the implementation of high-speed rail along the N1 corridor to Musina and possibly also to eThekwini within the TransNat Corridor.

Through collaboration with all spheres of government, there needs to be agreement on consolidation of operational subsidies, targeting of beneficiaries and appropriate subsidy allocation mechanisms. This should culminate in an integrated strategy for equitable subsidising and providing financial support to public transport with the aim to improve affordability and enhance sustainability of public transport services. The integration of public transport ticketing and payment systems should be formalized through the "One-ticket-one-province" initiative.

The quality of formalised public transport will be enhanced through agreement on appropriate services norms and standards and through concessions/contracts that include performance regimes. Restructure, rationalise and integrate the Public Transport Operations Grant (PTOG) bus services into the IPTN(s) needs to be finalised in consultation with the affected metropolitan municipalities and also with due consideration of cross-border travel.

The condition of road-based public transport facilities and specifically taxi ranks, is often not acceptable and is generally deteriorating. The Province will, through liaison with municipalities, strive to obtain agreement on common minimum standards for public transport facilities and associated amenities, as well as the management and maintenance of such facilities. It will work with the municipalities on a framework for funding the necessary upgrades and maintenance regimes.

A public transport safety and security strategy will be developed through engagement and coordination with all stakeholders, including the security sector and municipalities. Increase usage of technology and data through e g CCTV cameras to increase visibility and monitoring of public transport spaces.

The GDRT will develop a strategy to improve the functioning of the PRE, to reduce backlog in disposing with operating license applications and renewals. It will also further assist the GTI with the implementation of the recommendations of the Gauteng Taxi Summit and its task teams.

Chapter 8: Non-Motorised and Sustainable Transport

Sustainable Transport is the planning and provision of transport systems and infrastructure that is a catalyst to and supports sustainable spatial, social and economic development safely and affordably whilst reducing inequality, minimising environmental impact and ensuring intergenerational equity.

Key issues driving the need for sustainable transport are sprawling settlement patterns, the current focus on car centric planning, the affordability and safety of travel and climate change.

Developing a sustainable transport system approach is premised on the "ASI" approach of:

- "AVOID" – reducing the need to travel or transport goods through changing urban form and integrated mixed use planning;
- "SHIFT" – changing the mode of travel through encouraging NMT, enabling public and shared transport, shifting freight from road to rail and pipeline, and
- "IMPROVE" – technology improvements that reduce both energy consumption and support the shift to green / renewable energy for propulsion.

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With long run horizons Sustainable Transport is crosscutting across all sectors of transport and urban and land use planning and requires incorporation into all ITPs, programmes and projects to ensure that longer term requirements are not locked out. Thus significant commitment and effort is required to ensure:

- Stronger integration between land use and transport planning in order to address urban sprawl;
- That all transport systems designs consider climate change risks and incorporate sustainable transport principles, and
- Life cycle cost benefit analyses that include social and environmental cost are required for all projects.

As walking is the primary mode of travel for the majority of residents and, being fundamental to sustainable transport planning walking and cycling should, along with Public Transport, form the basis for all transport and urban and land use planning.

Addressing safety and security and incorporating Universal Access principles based on the complete streets approach an NMT Policy and Strategy should be developed for Gauteng and ITPs should develop NMT strategies.

A key aspect of sustainable transport is improving the efficiency and optimal utilisation of existing and/or preferred modes of transport where Shift is unlikely. The use of technology to Improve this is an untapped opportunity through a greater focus on MaaS which offers flexibility, convenience and affordable alternatives to private vehicle ownership and usage of the 1-commuter-per-vehicle type. This can improve the impact on reducing congestion, emissions of GHGs and generally reduce the extent of the need for transport infrastructure required to serve higher private vehicle ownership and usage.

A key aspect is a communication campaign to raise awareness of the need for sustainable transport and its role in addressing climate change and social justice.

Chapter 9: Transport Infrastructure Strategy

South Africa, and Gauteng Province, faces many developmental obstacles, including infrastructure bottlenecks, and economic and social challenges such as unemployment, poverty, and inequality. Economic infrastructure, including the road network, is one of the key levers for economic growth. Road infrastructure has the potential to deliver a higher economic return on investment than any other single type of infrastructure. Road transportation is an important industry in the economy, yet various challenges inhibit the sector's contribution to South Africa's economic and social developmental objectives. One such challenge is the implementation of road infrastructure projects, where increased road use, low investment, and poor maintenance have led to higher transportation costs and transport bottlenecks.

The effective design, construction and maintenance of roads is crucial to a well-functioning and prosperous modern economy. Roads also play a role in meeting societal needs for connection and mobility in ever-expanding human settlements, and their construction and on-going maintenance provide opportunities to address social challenges like unemployment. With mounting concerns over climate change and air pollution, the role of roads needs to shift away from serving predominantly private vehicles and road-based freight, toward supporting more integrated mobility systems centred on walking, cycling and public transport.

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To enable and continue the economic growth of Gauteng, The PLTF proposes the following Road Infrastructure strategies in line with five (5) focus areas:

Transport Planning

- Protection and Development of Gauteng (Provincial) Strategic Road Network;
- Protect and Maintain Mobility also considering Accessibility;
- Facilitate mobility continuity across municipal and provincial boundaries;
- Transport Demand Modelling by making use of Big Data (Floating Car Data), and
- Transport planning to also focus on transport infrastructure for non-motorised transport including walking and cycling.

Infrastructure Design

- Maintain and Improve Road Design Standards to be more cost-efficient and sustainable;
- Review cross-section design to allow for all modes of transport and utility space in the right of way reserve (Embrace complete street principle with specific reference to adequately accommodate for pedestrians), and
- Ensure and apply Universal Access Design principles.

Construction and Implementation

- Continue with multi-year programme for the construction of new roads and upgrade of existing roads guided by a review of the existing and planned road network;
- Expand the provision of cost-efficient transport infrastructure for non-motorised transport in support of the Shift from motorised transport over time;
- Formation of partnership with Municipalities on implementation of major arterials and other roads especially in disadvantaged areas;
- Maintain High Quality Control Practices during construction, and
- Support Contractor Development programmes.

Infrastructure Maintenance

- Maintain Provincial Road infrastructure to the Highest Standards as required by The Road Infrastructure Strategic Framework for South Africa (RISFSA);
- Forming partnership with municipalities on the maintenance of major arterial and other roads especially in disadvantaged areas, and
- Supporting contractor development programmes.

Operations/Systems/Tools and Cross-cutting Elements

- Update and Maintain Pavement Management Systems to ensure effective maintenance as per RISFSA;

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- Implement more cost-efficient solutions for transport infrastructure build and maintenance to optimise usage of funds available;
- Active physical protection of road reserves from illegal invasion;
- Review and update Travel Demand Management Strategy;
- Activate/Establishment of Inter-governmental Coordination Structures dealing with Transport Planning and Implementation;
- Integrated data repository to ensure exchange and sharing of information and documentation, and
- Traffic Safety; support the RMTC to achieve reduction in fatalities and accidents and participate in the coordination and implementation of Traffic safety initiatives and programmes.

Chapter 10: Freight Logistics

Economic and social development of South Africa depends to a large extend on the level and cost of mobility within the supply chain to ensure that raw materials, work-in-process and finished goods are delivered on time and at reasonable cost. Transport is one of the most important and costly logistics functions performed in the supply chain of freight, both on the inbound and outbound side. The traditional view of transport is that it is a derived demand, based on some form of land-use development or economic activity that generates or attracts passengers or freight. However, it is also true that freight transport induces development, where existing transport infrastructure such as roads, railways, ports and intermodal terminals attract potential developers.

This report covers the objectives and system characteristics of freight transport, the status quo of freight logistics with specific reference to road freight, rail freight, air freight and pipelines. It includes reference to Gauteng logistics hubs and progress of GDRT with implementation of their freight plans. It also covers the experience of some users of freight logistics services as well as a summary of problems and issues in the freight logistics sector. A very high-level summary is given of the status of freight logistics according to the Integrated Transport Plans of the respective planning authorities.

Freight logistics strategy is covered in a separate chapter and addresses strategic objectives in the focus areas of freight logistics demand, network, infrastructure, operations, legislation, and implementation. Several freight logistics issues that need to receive attention are listed under these strategic objectives.

In conclusion, the report suggests that the focus of the Gauteng Province should be on overload control management, freight logistics hubs and truck-stops as well as freight routes for abnormal loads and dangerous goods and an additional focus and priority of the Shift from road to rail for freight transport.

Chapter 11: Transport Management Strategy

The chapter on Transport Management Strategy deals with high-level, strategic, road transportation measures to ensure the optimum and safe movement of people and goods. Some of the deficiencies that were identified in the management of the transport system is that there are gaps with regard to the digital footprint coverage of public transport, the

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unavailability of transport data from a single platform, the expensive and onerous nature of the typical four-step process transportation models, the fare management integration gap, and the gap created by the lack of integration between various mobility partners. The focus, therefore, was placed on three areas, namely that a data centric approach should be adopted for mobility, that a smart approach should be adopted towards public transport involving the provision of infrastructure and technology, and a smart approach towards the road system by improving the quality of mobility to users. These three areas and the solutions for each follow closely the guidelines set out in the Growing Gauteng Together Through Smart Mobility 2030 document, paving the way for the Province's Smart Mobility vision.

A total of seven strategies were addressed from a data centric mobility perspective. These include the expansion of transport data digitalisation, establishing the required digital infrastructure, some infrastructure automation measures, and a readiness for vehicle automations including connected and autonomous vehicles (CAV). Furthermore, another strategy includes harnessing the extensive amount of mobility data available that could lead to data services such as real-time monitoring and management of transport network and the creation of a MaaS platform. The last two data centric mobility strategies include the planning and equipping of a Transport Data Centre for the management of transport data and operations of the centre, as well as adapting the way transport demand models are set up by putting a greater emphasis on including mobility (big) data into the models. Open data is becoming a valuable resource around the world and creating opportunities around this within the transport environment could hold great benefits for both operators and passengers. It is important, however, that the relevant regulations be put in place for this.

Four strategies are outlined from a smart public transport perspective. The first is the pursuit of the vision of "One ticket, one province" by requiring the integration of fare media, transit data, and fare collection for Public Transport services into a central fare management system. The smart public transport environment requires expansion of its digital footprint, that would lead to the enabling of an integrated fare management system (IFMS), as well as Advanced Public Transport Management Systems (APTMS). The latter is the third strategy that will address the lack of integration of public transport. The last strategy involves the enhancement of traveller information and making this available through an Advanced Traveller Information System on easily accessible applications.

From a smart roads perspective, six strategies were identified. These include increased utilisation of the FMS, improved Arterial Management through piggybacking on the FMS, virtual weigh stations in combatting overload control, Integrated Corridor Management initiatives, improving safety through managed lanes on the highway and average speed over distance (ASOD) monitoring, and the effective use of Traffic Incident Management Systems.

A key aspect of sustainable transport is improving the efficiency and optimal utilisation of existing and/or preferred modes of transport where Shift is unlikely. The use of technology to Improve this is an untapped opportunity through a greater focus on MaaS which offers flexibility, convenience and affordable alternatives to private vehicle ownership and usage of the 1-commuter-per-vehicle type. This can improve the impact on reducing congestion, emissions of GHGs and generally reduce the extent of the need for transport infrastructure required to serve higher private vehicle ownership and usage.

With regard to these strategies, there are some cross cutting factors that need to be considered throughout, namely safety and security, especially cybersecurity, some organisational and coordination factors, as well as training and education.

In line with the strategies mentioned, various projects emerged that would advance the Gauteng Province from a Transport Management Perspective. These are the establishment of a multi-functional data centre, increased digitisation expansion through a compiling a Digitalisation Strategy, the identification and implementation of an integrated corridor management pilot project, and the planning and implementation of a public transport management system.

Chapter 12: Tourism Transport

It is essential that adequate transportation should be provided for the growth and development of tourism. There are, however, some challenges that need to be addressed for this growth to take place. Some of the tourism challenges identified are, the backlog in issuing operating licences to tourism operators, the inadequate provision of transportation links to the two international airports situated in Gauteng, lack of access to intra-provincial public transport, safety and security issues, and alignment of various stakeholders around tourism. Some of the key tourist transport focus areas that were identified are industry alignment, infrastructure development, operational improvement, and information sharing.

Six tourism strategies were identified that would help combat the aforementioned challenges. The first is the coordination of the transport function within tourism between the Gauteng Department of Roads and Transport, the Gauteng Tourism Authority and the Airports Company of South Africa (ACSA). Surveys are required for benchmarking tourist needs entering the major airports so that the necessary links may be established, and the backlog with operating licences needs to be addressed. The fourth strategy is ensuring that appropriate payment methods and products be available to tourists, and the fifth deals with the development of a smart tourist platform, starting with an operational concept. Lastly, the incorporation of Tourism Transport in Provincial and Local planning would help address the lack of institutional alignment.

Chapter 13: Funding Strategy and Implementation Programme

The position taken in the GITMP25 is supported in that inadequate funds needs to be allocated to transport infrastructure and operations, especially to preserve assets. Stable sources of funding are required, and transport budgets should be **doubled in the short-term** and increased to **4 times** the current funding levels over the next **25 years.**

Summaries of both the priority provincial planning and implementation projects and budgets, as well as municipal transport projects of provincial significance taken from ITPs are provided in this chapter (as far as such information could be accessed).

In addition, this chapter also provides several funding principles related to the basis for funding over the Project Life Cycle, the prioritisation of projects for funding, the user-pay principle, affordability and sustainability of public transport services and cost-efficiency, efficiency, quality and safety.

During budgeting and the prioritisation of projects for funding the financial viability and economic feasibility should not be only the consideration, but also their socio-economic impact. The numerical value of the socio- economic benefits (cost of accidents, travel time savings, impact of environment, etc) should ideally be calculated by a reputable institution on a national level and used as inputs on all projects. Cost Benefit Analysis (CBA) is essential to projects with a capital expenditure (CapEx) value > R1bn and CBA should achieve at least Ratio > 1 to be considered for funding and to proceed. The CBA should attempt full life cycle costing and hence match the 'investment term' to the period of economic benefits flowing from

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a project. Benefits and costs that accrue to users, funders, operators, and general society should be considered. “Going Green” and the enhancement of sustainability is an important consideration. Promotion of land use restructuring and investment in inter-modal facilities needs to receive priority. Maintenance requirements of public roads needs to be prioritised in line with the maximum percentage of network that is in poor and very poor condition.

It is confirmed that there is government acceptance of the user-pay principle to be applied to infrastructure upgrades, expansions, road network extensions and maintenance and this is also generally applied to formalized public transport, but the extent of user pay contributions should be linked to affordability of fares.

Several funding strategies are also proposed. With respect to incentivising appropriate development to take place in relation to key public transport corridors and nodes, provincial funding is to be made available to assist local authorities to provide and upgrade bulk infrastructure along IPTN corridors and nodes. The development of regulations is proposed to incentivise private developers to develop in right area with due consideration for NMT linkages to IPTN and within the special economic zones, by means of for example lower parking requirements for TODs and rebate on rates and taxes for developments in close proximity to public transport corridors and nodes, inclusive of state owned or state entity owned land. This will also be to get public developers to specifically address public transport accessibility.

Aligned with the strategy on financial support to public transport discussed previously, a strategy for providing financial support to public transport and strengthen existing subsidy allocation mechanisms by introducing incentives to operators.

The norms and standards that meets minimum user needs/requirements need to be confirmed with a view of affordability and ability for Government to be able to fund:

- public roads development and maintenance, and
- public transport quality, affordability and safety (i.e. BRT infrastructure and facilities).

Similarly, consideration should be given to the development of a strategy on the equitable application of user-pay principle for the provision, upgrade and maintenance of transport infrastructure and facilities, taking the lessons learnt from e-tolls into consideration.

The feasibility of additional and new sources of funding needs to be studied, considering the following potential new sources:

- Partnerships for inter-governmental and with private sector cooperation;
- Opportunities offered by international funding agencies and do project submissions in terms of published criteria, with specific reference to “green” funding;
- Conditional Grants;
- Expansion of private sector involvement through other credit instruments;
- Extension of development levies;
- Widening of the user-pay principle;
- Infrastructure funding through the Office of the President;

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- Licenses, levies and taxes;
- Value capture at public transport facilities;
- Advertising rights and revenue related to PT facilities and contracted PT services vehicles';
- Municipalities to be encouraged and assisted to pursue funding available for local projects, and
- Greater conceptualisation and promotion of the benefits, multiplier impact and reduction of negative impacts of transport (e g congestion, GHG and environment) certain transport projects to leverage funding required.

Bi-lateral agreements need to be pursued between public sector owners of land and potential public sector users of land for the development of stations, facilities and associated amenities and developing a framework for dealing with funding of TOD's.

The focus and deployment of bulk services contributions for transport infrastructure by private developers should be done to address transport as a whole, including public and non-motorised transport and not just the addition of road lanes and upgrading of intersections for private vehicles.

Chapter 14: Monitoring

The NLTSF proposes a practical approach for measuring progress with the implementation of the PLTF, that includes proper monitoring and review of specific key performance indicators (KPIs). The purpose of the transport indicators is to ensure a balanced view at the national, regional and local levels of the critical role of transport services in reducing poverty, facilitating growth and contributing to achievement of key development targets and sustainability.

This report covers these issues in a separate chapter on monitoring and includes a list of key performance indicators in line with national key performance indicators set out in the NLTSF, a report on how and to what extent the key performance indicators set for the Province in the NLTSF have been met, and a report on how and to what extent the key performance indicators set in the previous years' PLTF have been met.

It was decided to propose the development of a dashboard for presenting these KPIs where progress and/or challenges with the respective KPIs can be seen in summary. Such a dashboard needs to be populated with appropriate KPIs and some categories were suggested within which the indicators should be measured, including the transport network, freight logistics, public transport, road safety, sustainable transport, technology adoption, law enforcement, financial stability and transport policy. Potential KPIs have been presented under each of those categories.

Chapter 15: Coordination Structures and Measures, Liaison and Conflict Resolution

Chapter 3 of the Constitution (sections 40 and 41) provides for and promotes co-operative government. The responsibilities of the three spheres of government are set out in the Constitution, mainly in Schedules 4 and 5, and in section 11 of the NLTA.

At national level there is MINMEC, a Ministerial Committee between the Minister and provincial MECs responsible for transport matters as well as the Committee of Land Transport Officials (COLTO) as a coordination structure between the Director-General of the NDoT and the

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provincial heads of department. The Province will participate actively in these structures and other coordinating structures at national level.

In the Province there is a provincial coordinating committee between the MEC and Members of Mayoral Committees of the municipalities known as the MEC/MMCs Transport Forum. The Transport Technical Working Committee (TTWC) is a structure for technical coordination between provincial and municipal officials responsible for transport. The TTWC has sub-committees dealing with rail, freight, public transport and driving licences.

TAG has been established by the Gauteng Transport Authority Act 2 of 2019 and in terms of section 12 of the NLTA as a coordinating, as well as executive structure. Among other things, TAG must foster co-operation and coordination between public transport authorities and operators in the Province and must develop an integrated transport system.

TAG will play an active role in establishing appropriate coordinating mechanisms in the Province and will consider establishing formal coordinating structures. The MEC/GDRT and TAG in collaboration with the municipalities will negotiate and decide on more specific functions to be allocated/delegated to TAG.

The GMA Act 5 of 2006 provides that the GMA must liaise with and promote co-operation between government structures in all three spheres of government in relation to the Gautrain project

At municipal level, the three Metros must each establish an Intermodal Planning Committee (IPC). Municipalities may establish land transport advisory boards (LTABs). (Sections 15 and 16 of the NLTA). The GDRT and/or TAG will actively engage with municipalities and with IPCs and LTABs and similar structures to ensure effective coordination and co-operation as required by the legislation, policy and guidelines.

As regards bus contracts, the GDRT has signed an Intergovernmental Authorisation Agreement (IGAA) with all municipalities as contracting authorities which provide among other things that the GDRT is willing to enter into tendered subsidised bus service contracts in terms of section 42 of the NLTA. These contracts will be taken over later by the municipalities. The Province has also recently established the Public Transport Integration Committee as a sub-committee of the abovementioned TTWC to coordinate between the Province and municipalities on public transport issues.

The MEC will consider making regulations under section 10 of the NLTA on coordinating structures and procedures.

As required by the NLTA, the Province and/or TAG will make themselves available to assist and capacitate municipalities within the limits of available resources and in line with the prevailing legislation.

Dispute that may arise between the relevant organs of state will be dealt with in terms of the Intergovernmental Relations Framework Act (IGRFA)13 of 2005, within the spirit envisaged in section 41 of the Constitution.

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TRANSPORT AUTHORITY FOR GAUTENG

GAUTENG ON THE MOVE

Growing Gauteng Together Through Smart Mobility

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TRANSPORT AUTHORITY FOR GAUTENG

GAUTENG ON THE MOVE

Growing Gauteng Together Through Smart Mobility

1 INTRODUCTION

1.1 Gauteng Province

The Gauteng Province is the smallest province in South Africa, comprising only 1.42% of the total land area, but is also the province with the largest number of residents. The population of Gauteng was estimated at 15.5 million in July 2020 and this was expected to increase to 15.8 million in 2021, which is close to 25.3% of the total South African population. The Gauteng population is expected to further increase to 19.2 million by 2037. Currently there is a yearly migration of 200 000 people from the other provinces to Gauteng. This growth is making Gauteng one of the largest urban agglomerations in the World (GCRO, 2021).

Gauteng is the economic powerhouse of Southern Africa, producing 34% of South Africa's GDP and is currently the 7th largest economy on the African Continent. The sectors that are the main contributors to economic growth are business, financial and real estate services. The Gauteng economy was forecasted to grow at 4.7% in 2021 after a contraction of 8.2% in 2020. There currently is a divergence between economic and population growth rates.

A single Global City Region with the Gauteng Province at its core has developed with rapid urbanisation. The Global City Region includes the three Metropolitan Municipalities and two District Municipalities in the Province and the Local Municipalities within their districts, together with other municipalities in adjacent provinces. Transport moves freely across the municipal and provincial boundaries and the Gauteng urban conurbation functions as a ***single functional transport area*** on a daily basis.

With the further growth in the Gauteng economy, the demand for the movement of people, goods and services is continuously increasing. This has resulted in an ever-increasing level and duration of traffic congestion, loss of productivity, an increase in the impact that transport has on the environment and a decrease in the quality of life (QoL) of its people.

As opposed to other solutions, transport challenges in the Province can be addressed meaningfully by planning and implementing an integrated provincial wide public transport system.

1.2 Changes in the External Environment

South Africa and the Gauteng Province has become part of the Global Village. The external environment has changed significantly over the past decade and a number of global forces are influencing and shaping the transport sector.

It is estimated that by 2025, 60% of the world's population will be living in urban areas (UITP). The result of this rapid urbanisation and economic development is the increased demand for the movement of people, goods and services. Similar to global trends, private vehicles are or remain the preferred mode of transport in Gauteng and

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this is leading to further increased traffic congestion, pollution, road traffic accidents and a greater dependency on fossil fuels. Urbanisation has also led to the inevitable emergence of 'Smart Cities' and a greater dependency on ICT solutions.

There seems little doubt that climate change is one of the most significant threats to the future of humanity. The increased demand for travel has a very significant impact on the natural environment because of pollution and increased GHG emissions, with general agreement on the transport sector's adverse contribution to this. The transport sector is responsible for 18% of all man-made GHG emissions. Taking into account the fact that the global private vehicle fleet is expected to treble by 2050, emissions from transport are projected to grow faster than that of any other sector. Public transport is three to four times more energy efficient per passenger than private vehicles. Promotion of public and non-motorised transport use should therefore be at the forefront of this fight against climate change. Public transport and NMT play a major part in providing greener mobility solutions and reduction of CO_2 emissions.

In addition to considering the impact of the transport sector on the environment, it is also important to deal with the changing global weather patterns on the transport system. Building resilience and contingency measures into the system are crucial to mitigate the adverse impact of climatic incidents, such as flooding, extreme heat or cold conditions.

We are living in the 4IR. Its genesis is situated at the dawn of the third millennium with the evolution of the Internet. This is the first industrial revolution rooted in a new technological phenomenon, namely digitalization, rather than in the emergence of a new type of energy source. Digitalization enables the building of a new virtual world from which the physical world can be steered.

A major consequence of 4IR for the transport sector is the emergence of Disruptive Technology. The disruptions come from agile, innovative businesses using global digital platforms to oust well-established incumbents by improving the quality, speed and pricing of their services, as well as linking their services to convenient payment platforms. A major opportunity for the transport sector related to the advent of 4IR, is the availability of Big Data that can greatly contribute towards planning and the management of the transport network and associated systems.

4IR developments will also bring about both workforce challenges and opportunities. In a recent study of the World Economic Forum (WEF), it was predicted that by 2025 machines will handle 52% of the current tasks, almost twice as many as at present. Humans will have to transform their skills to keep pace with this 'seismic shift.' A WEF study found that; "a major challenge will be to retrain workers, who will themselves be pressed to update skills especially in areas of creativity, critical thinking and persuasion". An overall need for lifelong learning and adaptation was identified. With the current employment challenges in South Africa and Gauteng, the opportunities offered by 4IR need to be exploited to create new jobs.

The Coronavirus Disease 2019 (COVID-19) pandemic has had a profound, dramatic and in some respects a lasting impact on our world. Although still on-going, conversation is taking place about scenarios that could unfold after the pandemic. Questions are being pondered as to whether we will return to the pre-pandemic world

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or whether this is the beginning of a new reality. These questions are quite key as the transport sector had been hit particularly hard by the pandemic and specifically the public transport sub-sector. Over recent months, demand had fallen and contagion risk have caused a drastic reduction in the demand for transport services all over the world and specifically public transport. This might not have been the first time that communities had to suspend or limit transport activities for health reasons, but the scale of these restrictions has been unprecedented. By showing what an immobile world looks like, this new reality has shed light on the centrality of transport in the global economy and in almost all aspects of our lives. The challenge that the pandemic has brought to the fore is how best to protect public transport from health pandemics and from financial collapse.

Increased geo-political instability and uncertainty, recently experienced as a result of the war in Ukraine has had an impact on energy costs, the cost of living and inflation. This has led to a drive for less dependence on oil and gas as primary sources of energy and an acceleration in the deployment of other and more sustainable sources. This will continue to impact, but also benefit the transport sector.

The Provincial Government has adopted Growing Gauteng Together 2030 to address current realities and with the aim to address alleviation of poverty and inequality, the promotion of job creation, Broad-Based Black Economic Empowerment (B-BBEE), supporting township economy growth and enhancing women and youth empowerment. The approach towards the development of the transport system in Gauteng needs to support this policy.

1.3 Changes in the Transport Environment

Internal forces within the sector itself as well as the Gauteng Province are shaping the transport system, and the way it is functioning, planned and developed. Key policy shifts have taken place.

The GDRT Departmental 2020-2025 Growing Gauteng Together through Smart Mobility Plan was compiled in response to Growing Gauteng Together 2030 – through Smart Mobility. The foundation of this plan is restructured urban form, Gauteng as a freight logistics hub, data centric mobility and building strong institutions.

The White Paper on National Rail Policy 2022, has been adopted, which provides a basis for the transformation of both passenger and freight rail. Over time and with the promulgation of the proposed National Rail Act to enable the implementation of this policy, this could have a significant impact on specifically the management of passenger rail in the Province.

In looking forward and considering the planning and development of the transport system, a number of other changes and trends need to be taken into consideration:

- Drastic reduction in passenger rail ridership due to the significant destruction of the commuter rail system before and during the COVID-19 pandemic;
- Public transport shift to other modes (taxis), due to the availability of minibus taxis;

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- Lack of progress with the rollout of BRT/IPTN networks, due to the complexity of the system (compensation to affected public transport operators) and the distances over which it is being implemented;
- Taxi violence and addressing financial aid to the taxi industry, due to intense competition for especially new routes due to a lack of financial support to the industry, putting pressure on their profitability;
- E-hailing services due to the inability of mainly metered taxi industry to respond to market needs, combined with the availability of new technologies;
- E-toll saga and its impact on the GFIP due to the unprecedented pressure from society in general to scrap the e-tolling system and the realisation that the mechanism for urban tolling is much more sensitive than tolling long distance routes;
- Inland dry ports (freight logistics) due to the increasing need to improve the costs of the overall supply chain;
- The rapid shift towards sustainable transport systems and cities due to the urgent need to address social and environmental issues especially social justice and the provision of affordable access to opportunity, GHG emission reductions and biodiversity loss, and
- Slow growth of the economy and the impact thereof on long term funding for transport operating expenses (OpEx) and CapEx.

1.4 TAG

To address the challenges of developing an integrated public transport system for Gauteng, the Gauteng Transport Authority Act 2 of 2019 was promulgated in 2019. This Transport Authority is known as the Transport Authority for Gauteng (TAG). An application was made to Treasury to list the TAG as a Schedule 3(c) Provincial Public Entity, in terms of the Public Finance Management Act 1 of 1999. The overall goal of the TAG is to:

- Give effect to the Constitution and national transport policy and legislation within the Province;
- Consolidate certain transport functions of organs of state;
- Integrate transport systems;
- Foster co-operation and coordination between public transport authorities and operators;
- Improve and optimise the planning and implementation of public transport services, and
- Facilitate and rationalise the funding of public transport activities and initiatives.

For the TAG to achieve the stated goals, it must undertake strategic transport and integrated planning, promote the development of an integrated and accessible public transport network in the Province and regulate public transport fares in the Province. It also needs to secure the provision of public passenger transport services,

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infrastructure, an integrated ticketing system, an information system and implementation of a single public transport insignia. The TAG also needs to pursue effective management of traffic and transport demand management. In doing so, it needs to collect statistical data and information on transport, conduct research and foster good relations and co-operation with and between various organs of state.

As prescribed in the GTA Act the TAG is responsible to:

1. Develop a Strategic Transport Plan for Gauteng (STP) (section 7), and
2. Develop an Integrated Implementation Plan (IIP) for Gauteng (section 8).

As part of its abovementioned functions TAG will assist in developing the Provincial Land Transport Framework for Gauteng for the period 2023 to 2027 as required by section 35 of the NLTA 5 of 2009. It will also assist with the review of the Gauteng 25-Year Integrated Transport Master Plan (ITMP25) and the 5-Year Implementation Plan (GTIP5). During the review process recommendations will be made to replace the current EMME4 Transport Demand Model (TDM) with a Big-Data type TDM.

1.5 Gauteng Provincial Land Transport Framework (PLTF)

The Gauteng PLTF was developed in terms of the NLTA 5 of 2009 and Regulations Related to the Minimum Requirements for the Preparation of Provincial Land Transport Frameworks, 2011.

The NLTA requires that the Minister must have a five-year NLTSF for the country to guide land transport planning countrywide and must not derogate from the constitutional planning functions of provinces and municipalities. All spheres of government and public entities are bound by the provisions of the NLTSF and the NLTSF provides a framework within which provinces need to develop and update their PLTFs. The current NLTSF is for the period 2017 to 2022 and the NDoT is currently in the process of doing an update. A draft updated NLTSF, for the period 2023 to 2028, is expected to be published in March 2023.

Section 35 of the NLTA requires that:

"(1) Every MEC must prepare a five-year Provincial Land Transport Framework (PLTF) in accordance with the requirements prescribed by the Minister after consultation with all the MECs.

(2) The PLTF must provide a transport framework as an overall guide to transport planning within the Province, being guided by the NLTSF.

(3) PLTF's must include the planning of both intra-provincial and interprovincial long-distance services, which must be linked where applicable with other public transport services, and may provide for charter services and staff services, and in the case of interprovincial transport, this must be done in consultation with the MEC of the other province or provinces concerned.

(4) The Minister must, as soon as after the commencement of the Act, in consultation with the MECs and by notice in the Gazette, determine the date by which each province must have prepared its Provincial Land Transport Framework.

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(5) All Provincial PLTF's must include routes for the transporting of dangerous goods through the province, as reflected in the integrated transport plans within its jurisdiction.

(6) The dates for preparing integrated transport plans must be linked to the PLTF and must be as agreed upon by the MECs and planning authorities.

(7) The PLTF must summarise all available integrated transport plans in the Province.

(9) The MEC must update the PLTF every two years. [The National Land Transport Amendment Bill, 2016, once passed and in operation, will delete this requirement.]

(10) The PLTF must be submitted to the Minister for approval."

In terms of the NLTA, a PLTF also needs to provide an overview of the *status quo* of transport, as well as provide strategic direction, guidance and an enabling environment to develop and transform the transport system in a province. It needs to indicate land use development trends and propose transport interventions and measures that would support land use. An overview of development initiatives of provincial significance, including budgets and implementation programmes, as well as the monitoring of transport in a province needs to be given.

The aim of this PLTF is to provide the GPG and the Transport Authority of Gauteng (TAG) with a tool to coordinate planning activities across municipal and provincial boundaries being done by local authorities, the TAG and the Gauteng Department of Roads and Transport (GDRT) and monitor implementation thereof.

As part of the development of the PLTF cognisance was taken of the uniqueness of transport realities in Gauteng, to guide transformation and changing mobility needs and deal with Smart Mobility, new vehicle propulsion technology, autonomy, digitisation and Intelligent Transport Systems. It is also to provide an informed and uniform approach towards dealing with changing realities such as sustainability, resilience, mitigation of the impact of the COVID-19 pandemic, rapid urbanisation, safety and security, unemployment and Gender Based Violence. The PLTF also aims to provide guidance on both public and private investment in transport infrastructure and services in Gauteng over the next PLTF period.

1.6 Gauteng Department of Roads and Transport

The Gauteng Department of Roads and Transport (GDRT), through its Annual Performance Plan, seeks to implement its Smart Mobility Plan 2030 through key interventions to support the smart mobility of people and goods and play a critical role in the economic recovery of Gauteng by leveraging investment in infrastructure and smart mobility technology.

The Smart Mobility Plan is underpinned by the Provincial Government's Transformation, Modernisation and Re-industrialisation Programme (TMR).

This is done through investing in key infrastructure within five strategic corridors, integration of all modes of transport and working towards a single public transport ticketing system for the Province.

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The GDRT is also conducting a review of all institutional policies, with a view of such being updated to reflect and be aligned with the latest and relevant legislative prescripts and practice notes.

The GDRT has established the Transport Infrastructure House (TIH) and the Transport Infrastructure Compliance Office to facilitate the efficient management and implementation of transport infrastructure projects.

1.7 Planning Authorities in Gauteng

37% of the provincial population is concentrated in Johannesburg, whereas Ekurhuleni and Tshwane accommodate approximately 25% each. Jointly Sedibeng and the West Rand share 13% of the population (GCRO, 2021).

The Planning Authorities to whom guidance is to be given through this PLTF for the update of their next integrated transport plans, albeit District, Local or CITP, are:

- Ekurhuleni Metropolitan Municipality;
- Johannesburg Metropolitan Municipality;
- Sedibeng District Municipality (including Lesedi Municipality, Midvaal Municipality and Emfuleni Municipality);
- Tshwane Metropolitan Municipality, and
- West Rand District Municipality (including Mogale City Local Municipality, Merafong City Local Municipality and Rand West City Local Municipality)

Over and above providing an overview of the status of planning and the initiatives and projects of provincial significance in each the respective municipalities, the PLTF also provides guidance on the aspects of the planning and development of the transport system that should receive specific attention in support of the provincial strategies contained in this document.

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2 PROCESS AND CONSULTATION

The context for the review, development, and update of a Provincial Land Transport Framework (PLTF) is framed in Chapter 4, section 32 (b) of the NLTA 5 of 2009. Further, according to section 33 (2) of the Act, "the Minister, MEC and planning authority must, before finalising the NLTSF, provincial land transport framework, or integrated transport plan, as the case may be, publish a notice in English and at least one other official language in a newspaper circulating nationally, in the Province, or in the area of the planning authority, as the case may be, informing the relevant stakeholders that the plan in question has been completed and is available for public inspection at a place stated in the notice". Section 35 of the Act continues to broadly outline regulatory requirements for the development of PLTFs.

Notably, the Regulations relating to Minimum Requirements for the Preparation of Provincial Land Transport Frameworks (GN R825, 2011) further stipulate the process for completion of a PLTF, and minimum contents that should be complied with when preparing PLTFs. Regarding the process for completion and approval by the MEC, the Regulations, in section 4 (3), require the MEC to "consult with planning authorities in the Province, the rail, bus, taxi and other industries providing public transport in the Province, the PRE and other stakeholders."

Further direction regarding the regulatory requirements for public consultation in transport planning processes, is given in the Regulations on Procedures to be Followed in Promoting Public Participation in Transport Planning Processes (GN 2441 of 2013). To this end, section 6 (2) requires the MEC to "publish a notice in the Provincial Gazette and in at least two newspapers circulating in the Province to notify the public of the completion and availability for inspection of the first draft PLTF." In addition, according to section 6 (3) the notice "must invite the public to inspect the draft PLTF at the offices of the Department of Roads and Transport throughout the Province and also for download from the website of the Department." Lastly, section 6(4) provides that the draft PLTF must be available for public inspection for a period of 30 days. During this time the public may submit written comments on the draft PLTF."

The public consultation process for the project to review, develop, and update the Gauteng PLTF not only complies with the regulatory requirements mentioned above, but also with international best practice principles for public participation.

2.1 Process Followed in Preparing the PLTF

This section presents a summary of the public consultation process followed in preparing the first draft PLTF. The principal aim of the consultation process before publishing the first draft of the PLTF in the Gazette, was to create opportunities for key role-players and stakeholders to contribute comments at key milestones in the review, development, and update of the PLTF.

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In summary, the consultation process included the following steps:

- Identification of key role-players and stakeholders, and development of a stakeholder database;
- Notification to key role-players and stakeholders of the commencement of the process to review, develop, and update the Gauteng PLTF. The notification also extended an invitation to key role-players and stakeholders to participate in the process. In particular, the Gauteng Member of Executive Council (MEC) for Roads and Transport also sent notification letters that included an invitation to participate and contribute relevant information to the following role-players:
  - MECs in the Gauteng Province and their Heads of Department;
  - Executive Mayors in the Gauteng Province and their Municipal Managers;
  - All Gauteng Provincial Departments;
  - MECs of Transport in the other eight provinces in South Africa;
  - Relevant national government departments, and
  - All local authorities in the Gauteng Province.
- Invitations to key role-players and stakeholders to attend four key milestone workshops during the review, development, and update of the draft PLTF;
- Face-to-face, virtual and hybrid consultations with key role-players. The primary objective of the consultations was to obtain information for the draft PLTF as required by the Regulations relating to Minimum Requirements for the Preparation of Provincial Land Transport Frameworks (GN R825, 2011);
- Virtual consultations with role-players and stakeholders who requested additional meetings. These consultations aimed at understanding specific issues related to the respective organisations, institutions, or industries and how these issues would influence the development of the draft PLTF;
- Follow-up consultations to discuss certain aspects of the PLTF in more detail, for example, funding related issues;
- Key role-players and stakeholders could submit written questions or comments to the Gauteng PLTF Consultation Office via a project dedicated email address;
- Distribution of the presentations of all consultation meetings to key role-players and stakeholders, and where required, photos of face-to-face meetings and digital recordings of meetings;
- Distribution of a notification letter to all key role-players and stakeholders on the stakeholder database advising them of the availability of the first draft PLTF for public inspection. The letter included information about the locations where hard copies of the draft PLTF were placed for public inspection, invited key role-players and stakeholders to contact the Gauteng PLTF Consultation Office should they wish to obtain a copy of the draft PLTF or contribute comments, and provided a link to the website address where an electronic copy of the draft PLTF could be downloaded;

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- Placement of notification posters with information about the availability of the draft PLTF for public inspection, locations of hard copies of the document in the Province, link to the website where the draft PLTF could be downloaded, how the Gauteng PLTF Consultation Office could be contacted, and the public inspection period;
- Placement of hard copies of the draft PLTF at all the offices of the Gauteng Department of Roads and Transport throughout the Gauteng Province, the TAG, as well as all the local authorities in the Province. Several comment forms and boxes for depositing comment forms were also placed at the offices mentioned;
- Distributing copies of the draft PLTF to the MECs and their Heads of Department in the Gauteng Province, as well as the MECs of Transport in the other eight provinces of South Africa;
- Publication of a notification in the *Provincial Gazette*, and three regional daily newspapers to inform the public of the availability of the draft PLTF for public inspection, locations of hard copies of the document in the Province and link to the website where the draft PLTF could be downloaded, how the Gauteng PLTF Consultation Office could be contacted, and the public inspection period, and
- Compiling a Comments and Responses Register that documents the comments, questions and suggestions raised by the public during the process to review, develop, and update the PLTF, and the public inspection period.

2.2 Consultation Process

This section summarises the consultation process followed to date as part of the review, development, and updating of the Gauteng Provincial Land Transport Framework (PLTF).

The NLTA 5 of 2009, and the Regulations relating to Minimum Requirements for the Preparation of Provincial Land Transport Frameworks (GN R825, 2011) emphasise the importance of stakeholder consultation during the review, development, and updating of a PLTF. Therefore, the stakeholder consultation process followed to date focused on augmenting and confirming secondary data, as well as collecting stakeholder input at key milestones.

The objectives of the stakeholder consultation process are to achieve the goals of reviewing, developing, and updating the Gauteng PLTF by means of the following:

- Identifying and developing a stakeholder database comprising land transport decision-makers, planners, developers, and users to facilitate a broadly inclusive consultation process;
- Sharing information with stakeholders and key role-players, collecting data and inputs, and bringing key role-players together to contribute comments, raise questions and make suggestions towards the review, development, and updating of the Gauteng PLTF, and
- Documenting evidence of the public consultation process.

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This stakeholder consultation process distinguishes between stakeholders and key role-players, as follows:

- Stakeholders[i]: Stakeholders means public transport operators and other affected parties and includes organised bodies of persons, juristic persons having interest in transport planning and other government bodies having an interest in or affected by or affecting transport planning in the Province, and
- Key role-players: Parties who are: (i) tasked with the planning and implementation of transport frameworks, (ii) responsible for spatial planning and land use planning, (iii) responsible for land transport planning, (iv) affected by the Gauteng PLTF update, development, and review process, (v) critical to engage with during the project, and (vi) interested in, and can potentially influence, the project through participation and decision-making.

The stakeholder consultation process followed to date included the following steps:

- Preparation of a stakeholder consultation plan, which documents the stakeholder process methodology;
- Identification and development of a stakeholder database;
- Development of a stakeholder analysis matrix and map. The stakeholder analysis matrix was used to inform the identification of stakeholders and key role-players;
- Sharing information about the project with stakeholders, and
- Collecting data and obtaining input from stakeholders.

2.2.1 Development of a Stakeholder Consultation Plan

The consultation process that forms part of the review, development, and updating of the Gauteng PLTF, is described in detail in the Stakeholder Consultation Plan, which is an annexure to the Project Inception Report, dated 10 June 2022.

2.2.2 Development of a Stakeholder Analysis Matrix and Map of Stakeholders

Stakeholder mapping and analysis is the process of analysing stakeholder groups based on a comparative evaluation of the level of influence and impact of the project on respective categories of stakeholders. The stakeholder analysis matrix entailed the identification of stakeholders as required by the NLTA, noting the mandate of the respective stakeholder groups, and understanding how the project could potentially impact them. The stakeholder analysis was used to inform the objectives and methods of consultation.

2.2.3 Identification and Development of a Stakeholder Database

The stakeholders identified are aligned with the requirements of the NLTA, GN 2441 of 2013, being the Gauteng Regulations on procedures to be followed in promoting public participation in the transport planning process made under section 10(1)(g) of the NLTA, and Regulations relating to the Minimum Requirements for the Preparation of Provincial Land Transport Frameworks, 2011 made under the NLTA.

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The stakeholder database comprises a total number of 134 entities representing different sectors of society, of which 47 entities are key role-players. The stakeholder database has been categorised per sectors of society, as follows:

- 4th Industrial Revolution and Intelligent Transport Systems;
- Academia and research;
- Business and Commerce;
- Civil Society, e.g., freight logistics and operators, inter-provincial and intra-provincial long distance transport service suppliers, MBT industry, operators of chartered services, operators of e-hailing services, operators of long-distance public transport services, operators of metered taxi services, operators of transport of scholars, students, teachers, and lecturers, and so forth);
- District Municipalities in Gauteng;
- Local Municipalities in Gauteng;
- Metropolitan Municipalities in Gauteng;
- Municipally Owned Entities (e.g., City Power, PikitUp, ERWAT, Joburg Tourism);
- National Government Departments;
- Provincial Government Departments;
- Provincially Owned Entities (e.g., GMA, Gauteng City Region Observatory);
- State Owned Entities (e.g., Airports Company of South Africa (ACSA), Council for Scientific and Industrial Research (CSIR), Cross-Border Road Transport Agency, National Railway Safety Regulator, Road Traffic Management Corporation (RTMC), South African Bureau of Standards, South African Local Government Association, SANRAL, Passenger Rail Agency of South Africa (PRASA), Transnet, and so forth));
- Non-Governmental Organisations (e.g., Automobile Association of South Africa, Gauteng Freight Forum, National Taxi Alliance, South African National Taxi Council. Southern African Bus Operators Association, South African Cities Network, Quadpara, Women in Transport, and so forth).
- Tourism (e.g., South African Tourism), and
- Trade Unions.

The TAG, in terms of the Protection of Personal Information (POPI) Act 4 of 2013, is obliged to protect the contact information of the stakeholders identified.

2.2.4 Sharing Information About the Project with Stakeholders

All the stakeholders identified and listed on the stakeholder database were notified of the project to review, develop, and update the Gauteng PLTF at the start of the project during the month of June 2022. The notification letters, along with a registration and comment form were distributed by email, as follows:

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- Letters to the Members of Executive Council (MEC) of all the provincial departments, copied to the respective Heads of Departments, in the Gauteng Province were emailed by the Gauteng MEC for Public Transport and Roads Infrastructure;
- Letters to the MECs of Transport outside of the Gauteng Province, copied to the respective Heads of Departments, were emailed by the Gauteng MEC for Public Transport and Roads Infrastructure;
- Letters to the Executive Mayors of district, local and metropolitan municipalities in the Gauteng Province, copied to the respective Municipal Managers, were emailed by the Gauteng MEC for Roads and Transport, and
- Personalised letters to all the other stakeholders identified and listed on the stakeholder database were emailed by the TAG.

Sample copies of the respective notification letters, as well as the registration and comment form, are attached as Appendix A.

2.2.5 Collecting Data and Obtaining Input from Stakeholders

The consultation process for the review, development, and updating of the Gauteng PLTF has been designed to collect data and obtain input from stakeholders at specific milestones. Methods of collecting data and obtaining input from stakeholders included workshops and focus group meetings.

A summary of the workshops convened is attached as Appendix B.

The following documents were produced for each of the three workshops, and are attached as Appendix C:

- Invitation letter, comment and reply sheet;
- Workshop agenda;
- Workshop presentation, and
- Workshop notes summarising the key issues raised.

Table 2-1 presents a summary of the focus group meetings convened to date.

Table 2-1: Summary of focus group meetings held

Focus Group Meeting	Date Convened	Objectives of Meeting
Gautrain Management Agency	23 June 2022	Introduction of the background to the requirement for a provincial PLTF.
SANRAL	14 July 2022	Obtain most recent literature relevant to Intelligent Transport Systems and 4th Industrial To document current realities, gaps, and challenges.
Provincial Disaster Management Centre	14 July 2022	
Johannesburg Roads Agency	28 July 2022	Identify critical issues of concern for consideration in the PLTF.

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Focus Group Meeting	Date Convened	Objectives of Meeting
City of Tshwane	26 July 2022	Introduction of the background to the requirement for a provincial PLTF. Obtain most recent literature relevant to the PLTF regarding current realities, gaps, and challenges. Identify critical issues of concern.
West Rand District Municipality	4 August 2022	
City of Johannesburg	16 August 2022	
City of Ekurhuleni	18 August 2022	
Gauteng Taxi Industry (National Taxi Alliance (NTA) and South African National Taxi Council (SANTACO))	30 August 2022	Introduction of the background to the requirement for a provincial PLTF to five provincial executives each from the NTA and SANTACO. Providing an overview of the project to review, develop, and update the Gauteng PLTF; and Identification of critical issues of concern from the taxi industry that should be considered in the review, development, and update of the Gauteng PLTF.
South African Disability Alliance	5 September	Obtain specific data, statistics, and planning information.
SANRAL	12 September	Obtain specific data, statistics, and planning information.
South African Local Government Association (SALGA)	14 September 2022	Introduction of the background to the requirement for a provincial PLTF. Identify critical issues of concern from SALGA's provincial representatives for consideration in the PLTF.
Funding workshop with key role-players and stakeholders	15 September 2022	For key role-players and stakeholders to discuss issues related to funding that should be considered in the PLTF.
PRASA	19 September 2022	Obtain specific data, statistics, and planning information.
Sedibeng District Municipality	20 September 2022	Introduction of the background to the requirement for a provincial PLTF. Obtain most recent literature relevant to the PLTF regarding current realities, gaps, and challenges.

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Focus Group Meeting	Date Convened	Objectives of Meeting
		Identify critical issues of concern.
Gauteng Tourism Authority	04 October 2022	Obtain relevant information as it relates to tourism planning for the Province, data, and statistics regarding tourism pre-COVID-19 and post COVID-19 and understand how this will influence future tourism in the Province. For the Gauteng Tourism Authority to discuss tourism related issues that should be considered in the development of the draft PLTF.
Gauteng Taxi Industry (National Taxi Alliance (NTA) and South African National Taxi Council (SANTACO))	18 October 2022	Providing an overview of the project to review, develop, and update the Gauteng PLTF; Presenting the proposed transport vision and transport objectives for Gauteng, as well as the proposed transport strategies and solutions for Gauteng; and Obtain comments, concerns and suggestions from the NTA and SANTACO on the above.
Gauteng Taxi Industry (National Taxi Alliance (NTA) and South African National Taxi Council (SANTACO))	15 November 2022	To confirm the issues/matters raised by the Gauteng Taxi Industry. To discuss the solutions and strategies to deal with issues/matters To agree on a way forward
WWF and Presidential Climate Commission	Ongoing	Understanding of current realities regarding sustainable transport and non-motorised transport and identify critical issues of concern for consideration in the PLTF.

2.2.6 Publishing the first draft PLTF for public inspection

The first draft PLTF was published for public inspection and comment on the 18th of November 2022. The first draft PLTF was available for public inspection from 18 November 2022 until 13 January 2023. The comment period was extended from 13 to 25 January 2023 on request of key role-players and stakeholders. The following methods were used to notify the interested and affected parties on the database and the public of the availability of the first draft PLTF for public inspection and comment:

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- Notification letters, along with a registration and comment form and an Executive Summary of the first draft PLTF were distributed by email, as follows:
    - Letters to the Members of Executive Council (MEC) of all the provincial departments, copied to the respective Heads of Departments, in the Gauteng Province were emailed by the Gauteng MEC for Public Transport and Roads Infrastructure;
    - Letters to the MECs of Transport outside of the Gauteng Province, copied to the respective Heads of Departments, were emailed by the Gauteng MEC for Public Transport and Roads Infrastructure;
    - Letters to the Executive Mayors of district, local and metropolitan municipalities in the Gauteng Province, copied to the respective Municipal Managers, were emailed by the Gauteng MEC for Roads and Transport, and
    - Personalised letters to all the other stakeholders identified and listed on the stakeholder database were emailed by the TAG.

      Sample copies of the respective notification letters, as well as the registration and comment form, are attached as Appendix D.
- Media advertisements to notify the public of the availability of the first draft PLTF for public inspection and extending an invitation to the public to contribute comments were published as follows:
    - Beeld, 18 November 2022, in Afrikaans.
    - Sowetan, 18 November 2022, in English.
    - The Star, 18 November 2022, in English.
    - Provincial Gazette, Extraordinary Issue, 24 November 2022, in English.

      Copies of the tear sheets of the media advertisements, and a copy of the Extraordinary Issue of the Provincial Gazette are attached as Appendix E.
- Posting an electronic copy of the first draft PLTF, in English, and Executive Summaries of the first draft PLTF in Afrikaans, English, isiZulu, and Sesotho to the Gauteng Department of Roads and Transport website at https://www.Gauteng.gov.za (under Publications). A screen print showing the documents that were posted is attached as Appendix F.
- Placement of notification posters with information about the availability of the draft PLTF for public inspection, locations of hard copies of the document in the Province, link to the website where the draft PLTF could be downloaded, how the Gauteng PLTF Consultation Office could be contacted, and the public inspection period (see Appendix G).
- Placing one hard copy of the first draft PLTF at the Gauteng Department of Roads Offices and the District, local and metropolitan municipalities throughout the Province, as well as 20 hard copies per language[5] of the Executive Summary of the first draft PLTF and comment forms in the various languages with comment

[5] The Executive Summary of the first draft PLTF was available in the four major languages spoken in Gauteng, namely Afrikaans, English, isiZulu, and Sesotho.

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form boxes. A table with a list of public places and photos evidencing the placement of the documents at the public places are attached as Appendix G.

- Distribution of a bulk SMS on the 9th of January 2023 to all the key role-players and stakeholders on the database to remind them of the closure of the public inspection period of the first draft PLTF on the 13th of January 2023.
- Distribution of a bulk SMS on the 13th of January 2023 to inform all the key role-players and stakeholders on the database of the extension of the public inspection period of the first draft PLTF until the 25th of January 2023.

2.2.7 Comments and Responses Register

All the comments received from key role-players and stakeholders were captured in the form of a Comments and Responses Register (see Appendix H). Every comment has been responded to and an indication provided as to how the comments have been addressed in the PLTF.

2.3 Status of the PLTF

The last PLTF was developed in 2013 and has to date not been updated or reviewed. The Integrated Transport Masterplan 2025 (ITMP25) served as the PLTF. A new PLTF must therefore be developed which would underpin the NLTSF which must also be reviewed every 5-years.

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3 TRANSPORT VISION, POLICY AND OBJECTIVES

3.1 Introduction

Section 35 of the NLTA 5 of 2009 requires the MEC of the Province responsible for public transport to prepare a 5-year Provincial Land Transport Framework (PLTF) in accordance with the requirements prescribed by the Minister. These requirements were prescribed by the Minister in 2011 ("the Requirements). Section 35 provides as follows:

- The Provincial Land Transport Framework must provide a transport framework as an overall guide to transport planning within the Province, being guided by the NLTSF;
- The PLTF must include the planning of both intra-provincial and interprovincial long-distance services, which must be linked where applicable with other public transport services and may provide for charter services and staff services, and in the case of interprovincial transport, this must be done in consultation with the MEC of the other province or provinces concerned;
- The PLTF must include routes for the transporting of dangerous goods through the Province, as reflected in the integrated transport plans within its jurisdiction, and
- The PLTF must summarise all available integrated transport plans in the Province.

Section 35(9) provides that the PLTF must be updated every two years. However, this provision will be deleted by the NLT Amendment Bill, 2016 once it is passed as an act and brought into operation.

The Requirements are analysed and elaborated in the Policy and Legislation Review (attached as Appendix I).

The MEC has not officially published provincial land transport policy in terms of section 9(1) of the NLTA. However, there are a number of policy documents published by or on behalf of the Province that are relevant and are elaborated in Appendix J. These include the following:

- The Gauteng White Paper on Transport Policy published in November 1997 ("the White Paper");
- The Gauteng ITMP25 and 5-Year Implementation Plan, 2013;
- The Growing Gauteng Together Report, 2020 (GGT2020);
- Walking and Cycling on Roads and Streets in Gauteng, 2005;
- Policy on Non-Motorised Transport on Gauteng Provincial Roads;
- Gauteng Green Transport Policy;
- Policy Framework on Bus and MBT Facilities on Major Provincial Roads in Gauteng, and
- Policy on Provincial Monitoring and Registration of Public Transport Modes.

The municipalities in the Province have also produced various policy documents.

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There are also a number of policy documents at national level that inform the PLTF, as set out in Appendix I. These include the following:

- The NLTSF, 2017 to 2022 – refer to paragraph 3.3. The NDoT is currently working on revisions to the NLTSF;
- The White Paper on National Transport Policy, 1996;
- The Revised White Paper on National Transport Policy, 2021 (not approved by Cabinet yet);
- The White Paper on National Rail Policy, 2022;
- The Public Transport Strategy and Action Plan, 2007;
- The National Transport Master Plan 2020;
- The Draft Roads Policy, 2018 and Annexure 1 to the 2021 draft Revised White Paper;
- The Draft National Non-Motorised Transport Strategy, 2013;
- The Climate Change Response White Paper, 2011, and
- The Intergovernmental Panel on Climate Change Annual Report 6, Working Group III.

3.2 Policy and Legislative Background

The legislation and policy underpinning the PLTF are analysed in the attached Appendix I.

3.3 Interpretation of the NLTSF as it Relates to the Province

The NLTSF 2017 to 2022 identifies a number of key challenges facing the South African transport industry. These include spatial disposition as a result of past inequalities, a high carbon-dioxide per capita figure with GHG emissions having increased rapidly in the previous 10 years. South African cities are structurally fragmented and have many areas which lead to social and economic exclusion, rapid growth of urban areas and persistence of dense rural settlements with limited economic opportunities. Public transport (PT) is inefficient and not sufficiently customer focused.

Regarding planning, the NLTSF provides that:

"The current reality however is that transport planning in South Africa is uncoordinated and occurs in modal and sectoral silos. There is also a lack of consistency between transport and land use planning practice. This means many transport projects that can derive increased economies of scale and efficiencies from integration are being implemented and planned in isolation…"

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Regarding integration the NLTSF provides that:

"The transport system is fragmented, inefficient and not coping with rapid urbanization. Effective, efficient and inclusive urban transport systems are a prerequisite for economic development and for social equity and cohesion…"

As regards universal access and accessible transport the NLTSF provides that:

"Notwithstanding the policy intention [of the 1996 White Paper] universal access to Public Transport is very poor across the range of modes. The concept of Universal Access is for the design of the facilities and environments to be such that they are usable, safe and comfortable for use by all people with the widest range of physical and cognitive abilities and to the greatest extent possible, without the need for adaptation or specialized features…."

It provides that the concept of universal access is for the design of facilities and environments to be such that they are usable, safe and comfortable for use by all people with the widest range of physical and cognitive abilities.

The NLTSF provides a list of key performance indicators (KPIs) for planning authorities (municipalities) and states that the NDoT and planning authorities will report on the KPIs annually.

3.4 Stakeholder Considerations

In the course of developing the PLTF the Province has been and is engaging with relevant stakeholders and role players. Ten main issues of concern have been identified in the process. These are the need to address the following:

- Affordable, accessible and attractive public transport services;
- Congestion, pollution and environmental impact;
- Road freight movements and the impact on inner cities and the Strategic Road Network;
- Integration, both of land use and transport and modal integration;
- The decline of public transport and modal optimisation;
- Barriers to entry for new entrants in providing subsidised public transport is a problem;
- Strengthening regulatory oversight (by the GPRE and NPTR);
- Safety & security – protecting travellers and infrastructure;
- Universal access – people with disabilities and mobility impaired persons. Universal design is a requirement and must be incorporated in all transport design especially in terms of access to public transport facilities and services, and
- Shortage of funding – lack of a platform conducive to partner/leverage private funding.

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3.5 Vision

The vision of the Province and GDRT is, as set out in the 1997 White Paper:

"An integrated transport system which satisfies the needs of the people while supporting and facilitating social and economic growth, improving the quality of life, and the development of all the people of Gauteng."

The mission of the GDRT is:

To promote accessibility and the safe, affordable movement of people, goods and services and to render client-centred and developmental services in Gauteng.

The GDRT is undertaking the review of the ITMP25 which form its strategic transport policy to include the GRRIN Extension Study and the latest Gauteng Household Travel Survey (GHTS) data. Consequently, the province-wide transport model needs to be updated.

The GDRT is looking at Transport to play a pivotal role in driving Gauteng's socio-economic recovery during and in the aftermath of the COVID-19 pandemic. To contribute to this outcome, the Department's Growing Gauteng Together Through Smart Mobility Plan- 2030 is being implemented to address the Province's Transport challenges. The Smart Mobility 2030 Plan's key focus areas of infrastructure, operations, institutions and enabling technology are aimed at transforming the current transport system into an integrated smart transport network utilising information technology to facilitate the smart mobility.

The GDRT is mandated to provide an integrated transport system for the Gauteng citizens that is reliable, accessible, safe and affordable and has a broad range of socio-economic impacts. In this regard it has formulated a number of key strategic priorities that are listed in the appropriate chapters.

3.6 Objectives

3.6.1 Institutional Arrangements

Institutional arrangements are detailed in the attached Appendix J. The Appendix lists and describes the role and functions of each role player or stakeholder. It describes the constitutional imperative for friendly co-operation between organs of state and the requirements for public consultation and stakeholder engagement. It also deals with assignment and delegation of transport functions. The roles and functions of the three spheres of government are set out in Schedules 4 and 5 to the Constitution and section 11 of the NLTA.

3.6.2 Sustainable Transport

There are a number of legislative and policy imperatives which are outlined in the attached Appendix I. Climate Change induced weather events are becoming more extreme and affect transport systems. South Africa and the Province are mandated to respond to this challenge in terms of the Climate Change Response White Paper, 2011, the Intergovernmental Panel on Climate Change (IPCC) Annual Report 6,

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Working Group III and other documents considered in the Chapter on sustainable transport. The Climate Change Bill, 2022 once passed as an act, together with the regulations proposed under that act will impose concrete obligations vis-à-vis steps to be taken by authorities to mitigate climate change. In addition, the Gauteng City Region – Overarching Climate Change Response Strategy and Action Plan specifically identifies sustainable transport as one of 11 focus areas to be addressed.

A further aspect of Sustainable Transport is that of ensuring accessibility for all in support of the Decade of Action for Road Safety.

3.6.3 Public Transport

The following principles apply to public transport in the Province:

- Promotion of accessible, affordable and cost-effective public transport;
- Meeting the needs of customers;
- Considering the needs of special categories of passengers;
- Giving public transport priority over private transport;
- Improving public transport in marginalised areas;
- Optimising the coordination and integration of public transport modes, and establishing integrated rapid public transport networks (IRPTNs) in the Cities of Ekurhuleni, Johannesburg and Tshwane, and
- Selection and utilisation of appropriate public transport modes.

3.6.3.1 Commuter Rail

The vision, policy and objectives of the newly published White Paper on National Rail Policy must be applied. It is necessary to align human settlements with transport modes to maximise the role of rail. It is recognised that the areas adjacent the stations have not been utilised to its fullest potential and that much more can and must be done in future to develop the stations precincts into fully fledged TOD nodes. Access to all stations to be addressed to ensure easier access by the surrounding communities. Positioning rail as the backbone of the transport system by the year 2050 must recognise its integrative role in continental, national, regional and urban spatial development.

Rail is the most energy efficient transport mode. However, the country's present National Climate Change Response only reflects incremental benefits from advancing rail technology. Simply renewing powered rolling stock from time to time only realises evolutionary efficiency gains, while forgoing the fundamental advantage of positioning rail to compete strongly and win against other modes in high density corridors.

The Vision is to position rail as an affordable, competitive, effective, integrated, reliable, safe, sustainable and valued transport mode that provides the backbone of South Africa's freight logistics and passenger mobility systems and strengthens its economic growth and social development by 2050. The Rail White Paper provides

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for the drafting of a National Rail Act, the development of a National Rail Plan and a devolution strategy for rail.

3.6.3.2 *Integrated Public Transport Networks*

The Public Transport Strategy, 2007 has 2 key thrusts: Accelerated Modal Upgrading and Integrated Rapid Public Transport Networks. Accelerated Modal Upgrading refers to the current initiatives to transform bus, taxi and rail service delivery in the short to medium term. Integrated Rapid Public Transport Networks pertains to the focus on implementing high quality networks of Rail Priority Corridors and BRT Corridors in especially the 3 Metropolitan Municipalities in Gauteng.

3.6.3.3 *Subsidised Bus Services*

The NDoT is currently conducting a project to formulate subsidy policy. The NLTA requirement to restructure the bus contracts that were initially concluded in terms of the Transition Act, 2000 into municipally managed contracts forming part of the IPTNs has largely not materialised. The NLTA requires the Province to manage the existing bus contracts until they are assigned to municipalities.

In terms of its founding Act, the TAG must secure the provision of public passenger transport services in the Province. It will engage with the municipalities to provide for the rationalisation and future dispensation of the bus contracts to comply with the policy and legislation. Given the volume of inter-municipal and interprovincial public transport movements involved, the TAG is the appropriate body to address this issue.

3.6.3.4 *MBT-Type Services*

Currently MBT services are providing almost 90% of the public transport services in the Province. This is not ideal in view of road traffic and climate change imperatives. A majority of the services are illegal in that operators operate without operating licences or on routes not authorised by their licences, and efforts to formalise and rationalise the industry have proved largely unsuccessful since the days of the National Taxi Task Team in 1996 and the 2000 Transition Act.

In terms of prevailing policy and legislation MBT services must be integrated into the larger public transport systems and in particular into the IPTNs of the 3 metros. They should also provide feeder services to rail and bus services, which should form the backbone of the system.

3.6.3.5 *Metered Taxi, e-hailing and other MaaS Services*

MaaS aims to fulfil users' needs for mobility with a wide range of transport services offering tailor-made services on demand and includes taxi or car rental or ride-car and bike-sharing. E-hailing services have multiplied exponentially since their introduction in 2013 and fulfil an important mobility need. They are currently regulated as charter services in terms of the NLTA, but will be more formally regulated when the new section 66A is introduced into the NLTA by the NLT Amendment Bill, which seems about to be passed as an act. The NDoT is currently drafting regulations on e-hailing with a view to the passing of the Bill. Most e-hailing services are illegal at present, due mainly to backlogs experienced by the GPRE. Targeted efforts will be made to address the problems with the GPRE and to integrate all MaaS

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services into the larger public transport systems. All forms of NMT must be promoted and encouraged. The current amendments to the National Road Traffic Act that are being considered to accommodate environmentally friendly vehicles such as powered scooters and e-bikes should be expedited.

3.6.3.6 Scholar Transport Services

The provision of motorised public transport for scholar or learner transport in Gauteng is fragmented, not well organised and inadequately resourced. As a result, some eligible learners do not have access to scholar transport, and it is often not safe or reliable. The majority of scholars walk to school, and for them there has been little focus on providing safe, attractive paths along the major lines of demand. Walking to school creates major safety hazards, especially for smaller children in view of their vulnerability to assault and hazardous traffic situations e.g. where there are inadequate sidewalks.

The objective is to ensure that the transport needs of special categories of passengers, including learners, people with disabilities and the elderly and tourists, are met in the most efficient, effective and affordable way, and as far as possible by the system provided for mainstream public transport.

The GDRT will ensure the provision of scholar transport in the most effective and safe manner. This requires the implementation of a coordinated strategy with the Gauteng Department of Education (GDE), municipalities, the GPRE and private operators.

3.6.3.7 Passenger Safety and Security

Safety and security of public transport users remains a challenge, especially on access/First and Last Mile and including issues around gender-based violence. The Gauteng White Paper contains the following policy on the enhancement of safety on public transport:

“The GDRT recognises that the safety of public transport users deserves particular attention. If any long-lasting improvement is to be effected it is the Department's policy to make a contribution to enhance safety on public transport by definite actions which address, *inter alia*:

- the engineering (i.e. technical) aspects of public transport vehicles and facilities;
- the education (formal, informal and non-formal) of public transport operators: drivers and users;
- safety regulations, and
- safety research.”

The Department of Community Safety (DCS) is primarily responsible for personal safety of passengers. The GDRT will give its full support to the initiatives of the DCS in this regard.

3.6.3.8 Transit Oriented Development

Gauteng will emphasise TOD in its urban and transport planning to maximise the amount of residential, business and leisure space within walking distance of Public

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Transport. Efforts in this regard include the GMA's First and Last Mile Masterplan and Bicycle Sharing Scheme.

3.6.3.9 Ticketing and Fare Collection

The GDRT will work towards the development of one fare system as well as an integrated ticketing system whereby tickets can be used on different modes in an integrated network. There will be improved passenger information at public transport ranks and stops as well as through printed information and a Gauteng Public Transport Information and Call Centre. One of the functions of TAG is to secure the provision of an integrated ticketing and information system for public transport in the Province.

3.6.3.10 Financial Support to Public Transport

Funding shortages and the COVID-19 Pandemic have significantly impacted more formalised PT. GDRT will ensure that provision is made for the financing of integrated public transport and thus modal integration, through a holistic funding strategy. In terms of existing legislation provinces have very limited opportunities to raise funds from other sources than the equitable share of national income and the conditional grants transferred annually via the Division of Revenue Act (DoRA). Although taxation is a fundamental source for transportation, only a limited portion actually benefits the transport sector. This adversely affects the ability of the provinces to effectively discharge their responsibility in terms of providing the necessary service to their citizens. New and innovative fund raising alternatives (on- and off-budget) should be developed.

3.6.4 Non-Motorised Transport

Efforts should be made to create "smart", sustainable and walkable and cyclable South African Cities that are universally accessible. Current urban forms with low densities result in long travelling distances. Stronger integration between land use and transport planning, as well as TDM, is required to shorten travel distances and to make NMT a more viable option.

Road reserves do not always adequately provide for all uses, such as NMT, services and utilities. Walking, cycling and public transport should be the de facto departure point for most if not all transport infrastructure projects. Cycling is growing as a mode, but very little is available by way of infrastructure and facilities for cyclists. Urban design frameworks do not adequately provide for safe and convenient NMT. Traffic safety and motorised vehicle awareness and attitudes remains an issue. Security and equity, including addressing Gender Based Violence needs more attention. Universal access considerations are often neglected in planning and execution of projects.

3.6.5 Road Transport Infrastructure

Funding for further expansions of the Strategic Road Network in Gauteng remains a challenge, particularly in the light of the stalling of the Gauteng Freeway Improvement Project (GFIP) due to the difficulties with e-tolls and general lack of funding. Inadequate budgets for maintenance are resulting in deterioration of roads. Pavement management systems are applied on dated information.

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Protection of reserves for future development of the Strategic Road Network is key. Illegal invasion of road reserves and open space adjacent to existing roads is a problem. Designs should consider the full reserve width, the required modal hierarchy and shared capacity for public transport and NMT (Complete Streets principles). For planning purposes, a need exists for a "centrally located data warehouse", easily accessible for use and depositing information. TDM is required to use road assets more efficiently. Road traffic safety remains a major challenge.

South Africa, and Gauteng Province, face many developmental obstacles, including infrastructure bottlenecks, and economic and social challenges such as unemployment, poverty and inequality. Economic infrastructure, including the road network, is one of the key levers for economic growth. Road infrastructure has the potential to deliver a higher economic return on investment than any other single type of infrastructure. Road transportation is an important industry in the economy, yet various challenges inhibit the sector's contribution to South Africa's economic and social developmental objectives. One such challenge is the implementation of road infrastructure projects, where increased roads use, low investment, and poor maintenance have led to higher transportation costs and transport bottlenecks.

The effective design, construction and maintenance of roads is crucial to a well-functioning and prosperous modern economy. Roads also play a role in meeting societal needs for connection and mobility in ever-expanding human settlements, and their construction and on-going maintenance provide opportunities to address social challenges like unemployment. With mounting concerns over climate change and air pollution, the role of roads needs to shift away from serving predominantly private vehicles and road-based freight, toward supporting more integrated mobility systems centred on walking, cycling, public transport and freight via rail or sea.

The vision for the Roads Policy for South Africa which can be adopted by the Province is: '**To allow the development and management of a road network that is safe for all its users, well-maintained and that serves as a catalyst for social and economic development'.**

Strategic goals for the Province in terms of Road Infrastructure:

- An efficient and integrated infrastructure network that serves as a catalyst for social and economic development;
- A transport sector that is safe and secure;
- To optimise current capacity and maintain and develop the road network;
- Maximise job creation and skills development, and
- Integration of public transport and NMT, as a recognised mode of transport.

Authorities in South Africa have an obligation to plan, design, construct and maintain the road network, to protect the public investment in the road infrastructure, to ensure the continued functionality of the transportation system and to promote the safety of traffic on the road network.

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3.6.6 Freight Transport

Freight transport has a major impact on the current road network and does not contribute effectively towards the economic potential of manufacturing and industrial sectors within the Province due to traffic congestion and retarded delivery times negatively affecting freight operations. By creating freight movement routes peripheral to the central activities of the Province and utilising existing rail infrastructure more effectively, strain on the current road network can be relieved to a major extent and the freight and logistics sector can be optimised.

The low usage of rail for freight leads to undesired consequences in the form of environmental degradation, traffic congestion on roads, road safety problems, etc. There is a clear need to encourage and elevate rail as a mode of freight transport in Gauteng.

3.6.7 Enforcement

Law enforcement and traffic safety remain major issues. The GDRT will work in partnership with the DCS to reduce the incidence and severity of accidents by:

- Supporting the process to develop an excellent accident data management system so that safety interventions can be data-driven, appropriate, and focused on the priority hazardous locations, and so that education or enforcement programmes are correctly targeted;
- Identifying areas of mutual concern including road engineering issues, identifying and remedying hazardous locations, replacing sub-standard regulatory, warning and guidance signs, incident management, controlling overloading, accommodating traffic at road works, testing the roadworthiness of public transport vehicles, and eliminating fraud and corruption in the vehicle and driver licensing process, and
- Establishing province-wide coordination structures to ensure the close integration of road and traffic engineering, enforcement, and education measures.

In partnership with local authorities, the GDRT will identify the hazardous road locations, prioritise these locations for remedial treatments, and systematically budget for and implement improvement programmes.

GDRT will carry out independent Road Safety Audits whenever a new road or road section is planned and designed, or when rehabilitation and maintenance works are planned and designed, or when the road network is altered in any way. Existing locations that have a high priority from a safety point of view will also be audited.

The GDRT will review and re-appraise provincial road standards from a pedestrian safety perspective.

The characteristics of some roads designed as regional mobility routes have become inappropriate because of a conflict with adjacent land use developments, and safety, particularly of pedestrians, has been compromised. In these cases, GDRT shall review the road standards or the functional classification of the road and introduce measures to mitigate the dangers.

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The GDRT will continue to build a centre of excellence and innovation in respect of road materials research and testing.

3.6.8 Technological Advancement

Intelligent Transport Systems (ITS), i.e. the application of technology to address and assist in solving transport problems and challenges will be implemented. What this will mean is integration of technologies, increased automation and a shift to the digital age. The following should be considered:

- A lack of provincial-wide coordination/integration and creation of synergies in technology application needs to be considered and promoted;
- Better 4IR and ITS knowledge management is required;
- Data sharing (open data) opportunities should be identified and such opportunities should be exploited;
- The digital footprint of transportation services needs to be identified and expanded, such as providing a platform for APTMS and MaaS platform (e.g. bus contracts and scholar transport);
- Training and Education is required to ensure sustainable development of technology solutions;
- Awareness of 4IR and technology applications;
- Principles regarding planning and implementation (e.g. operational concept development, lifecycle costing approach, etc.), and
- Development of Integrated Corridor Management initiatives across municipal borders and jurisdictions through *inter alia* availability of digitized transport solutions is also required.

3.6.9 Transport Funding

The analysis of the funding status quo needs to be broken up into 3 components, namely CapEx, OpEx and maintenance, failing which the solutions and proposals may end up being based on incorrect information.

Agreement is required on the funding principles, departure points and approaches.

Consideration needs to be given as to how to determine cost-benefit of transport projects in guiding decisions on investments in the transport system.

Distinction should be made between funding and financing of transport infrastructure in reference to partnerships, for example with the private sector.

User- pay principles are very relevant to transportation, but the lessons learned from e-tolls need to be taken into account in developing future funding strategies.

Discussions on funding should also include considerations of the mini-bus taxi industry.

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3.7 Objectives

The specific objectives relating to the overall vision and key priorities of the Province are stated above and elaborated in more detail in the functional sections of the PLTF. They can be summarised as follows (adapted from the White Paper and elaborated):

- To integrate economic development, land use and transport effectively;
- To conceptualise and plan the transport ecosystem to be integrated and seamless inclusive of infrastructure, facilities, modes of transport as well as transport services;
- To disaggregate and understand the differentiated requirements of different categories of commuters and to focus on solutions that are responsive to these requirements and which offer affordable, accessible, integrated, efficient and environmentally sustainable solutions for each category;
- To regulate and control public transport effectively, with a view of enhancing efficiency and minimise negative externalities and conflict;
- To expand the opportunities of private transport modes to result in greater integration, efficiencies and minimise negative impact on congestion and the environment, such as Mobility as a Service (Maas) offerings;
- To minimise the negative effect of transportation on the environment, combat climate change and promote sustainable transport in line with international and national policy and prescriptions;
- To design transport solutions (infrastructure and operations) that are accessible to all and consider the needs of special categories of travellers (people with disabilities, mobility impaired, the elderly, children);
- To enhance traffic safety and the safety and security of all travellers;
- To provide, maintain and operate efficient transport infrastructure;
- To operate state facilities and services effectively;
- To ensure the acquisition of equitable funds for transport, manage and administer financial resources, manage fixed and movable assets and procurement functions, programmes and systems effectively;
- To manage integrated information systems effectively;
- To promote the implementation Intelligent Transport Solutions (ITS) and 4IR technologies to address and assist in solving transport problems and challenges;
- To manage consultation, communications and public relations functions and services effectively, and
- To enhance the governance, promote the transfer of skills and create the necessary capacity to efficiently plan, develop and manage the transport system in Gauteng.

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4 STATUS QUO OF TRANSPORT IN THE PROVINCE

The National Minimum Requirements for the Preparation of Provincial Land Transport Frameworks state that this chapter must contain at least the following:

a) Tables and maps showing -

   i. demographic features of industry and economic sectors, with demographic statistics per metropolitan and district municipality;

   ii. national and provincial road networks showing the category and state of such networks;

   iii. strategic public transport networks, including rail networks;

   iv. transport nodes of provincial significance;

   v. freight transport routes, including the routes for the transporting of dangerous goods contemplated in section 35(5) of the Act [NLTA], and

   vi. spatial development, economic development and housing development in the Province, including development initiatives, master plans and development programmes.

b) a description of public transport operations in the Province, including MBT, metered taxi, bus, and rail transport operations;

c) a description of intra-provincial and interprovincial long-distance services and interprovincial commuting services - a description of charter and staff services may be included;

d) the status of Integrated Rapid Public Transport Networks (IRPTNs) and BRT systems, if any, and of the Integrated Public Transport Networks required by the Act, in the Province;

e) a list of perceived problems and issues relevant to land transport in the Province, and

f) a description of the information systems being kept by the Province as required by section 6 of the Act, how this information was used to compile the Provincial Land Transport Framework (PLTF) and the data collection processes being followed.

4.1 Demographics

Due to the lack of recent census data, information on the demographic section has been sourced from various sources including the National Household Travel Survey (NHTS), 2020, the 2019 Gauteng Household Travel Survey (GHTS), Gauteng Province: Socio Economic Review and Outlook, 2022 (SERO), Cooperative Governance and Traditional Affairs (CoGTA) Municipal Profiles, 2020, the Gauteng Community Survey, 2016 and Municipalities of South Africa and the 2017 estimates.

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4.1.1 Population Characteristics

The mid-year population estimate for South Africa in 2019 was 58.8 million people of which approximately 15.2 million lived in Gauteng. This represents an increase of 9.5 million people or 19.2%, from the 2014 estimates.

Table 4-1 provides a high-level summary for Gauteng Province on population, size, density and contribution to GDP.

Table 4-1: Gauteng Population, Size, Density and Contribution to GDP (STATSSA, 2019)

Province	Population Estimate	%	Area – km²	%	Density People/km²	Contribution to GDP
Eastern Cape	6 712 276	11.4%	168 966	13.8%	38	7.6%
Free State	2 887 465	4.9%	129 825	10.6%	22	5.0%
Gauteng	15 176 116	25.8%	18 178	1.5%	785	34.7%
KwaZulu Natal	11 289 086	19.2%	94 361	7.7%	117	15.9%
Limpopo	5 982 584	10.2%	125 755	10.3%	46	7.2%
Mpumalanga	4 592 187	7.8%	76 495	6.3%	58	7.4%
Northern Cape	1 263 875	2.2%	372 889	30.5%	3	2.1%
North West	4 027 160	6.9%	104 882	8.6%	37	6.4%
Western Cape	6 844 272	11.6%	129 462	10.6%	50	13.7%
TOTAL	58 775 021	100.0%	1 220 813	100.0%		100.0%

Gauteng is by far the most dominant province in South Africa in terms of the following:

- One in four people live in Gauteng;
- It only covers 1.5% of the surface of South Africa;
- It is by far the most densely populated area in South Africa, at 785 people/square km, and
- It contributes almost 35% to the GDP of South Africa, more than double the contribution of KwaZulu Natal which boasts the second largest economy in South Africa.

This requires the Province to plan smarter and use the resources at its disposal more optimally.

The population distribution per planning authority is indicated in Table 4-2.

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Table 4-2: Population per Planning Authority

Planning Authority	Population	Percentage
City of Ekurhuleni	4 218 960	27.8%
City of Johannesburg	6 328 440	41.7%
City of Tshwane	2 853 110	18.8%
Sedibeng District Municipality	819 510	5.4%
West Rand District Municipality	956 095	6.3%
Total	15 176 116	100.0%

The three Metropolitan authorities account for 88% of the total population of Gauteng.

Table 4-3 depicts the Gauteng local municipal and district population distribution and the percentage change between 2011 and 2016. Generally, the Province presented an increase in population with a 9.2% percentage change. The district profile showed that metropolitan areas had the highest percentage change.

Table 4-3: Population distribution in the Province, Census 2011 & Community Survey 2016

Province/District/Local municipality	Total population		% change
	Census 2011	CS 2016	
DC42: Sedibeng	916 484	957 528	4.5
GT422: Midvaal	95 301	111 612	17.1
GT421: Emfuleni	721 663	733 445	1.6
GT423: Lesedi	99 520	112 472	13.0
DC48: West Rand	820 995	838 594	2.1
GT481: Mogale City	362 422	383 864	5.9
GT484: Merafong City	197 520	188 843	-4.4
GT485: Rand West City	261 053	265 887	1.9
EKU: Ekurhuleni	3 178 470	3 379 104	6.3
JHB: City of Johannesburg	4 434 827	4 949 347	11.6

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Province/District/Local municipality	Total population		% change
	Census 2011	CS 2016	
TSH: City of Tshwane	2 921 488	3 275 152	12.1
Gauteng	12 272 263	13 399 724	9.2

According to the weighted survey results, the number of black persons represented about 80% of the provincial population and increased slightly by 2% from the reported 2014 GHTS. White persons accounted for about 14%, while Asians/Indians and coloured persons together accounted for the remaining 6% of total population. (GHTS, 2019:32).

Table 4-4 provides the population demographic distribution of the metropolitan district and local municipalities in Gauteng.

Table 4-4: Population Demographic Distribution[6]

Municipality	Black/African	White	Coloured	Indian/Asian	Gauteng
City of Johannesburg	80.5	9.8	5.3	4.4	36.9
City of Tshwane	79.1	17.4	1.9	1.6	24.4
City of Ekurhuleni	81.7	13.7	2.5	2.0	25.2
Sedibeng	80.8	16.9	1.3	1.0	7.1
West Rand	78.7	17.7	2.5	1.1	6.3
Gauteng	80.4	13.6	3.3	2.7	

Since the COVID-19 outbreak, mortality rates have risen across regions and life expectancy and migration patterns have also been affected. The share of Gauteng's population to the national populace steadily increased to 26.3% in 2021. However, the population growth rate slowed to 1.9%, partly due to a decline in the average fertility rate. On the other hand, mortality levels were higher in 2020 than they were in recent years. However, life expectancy for 2020 (67.3 years) was 0.6 years higher than in 2019. Since 2000, educational attainment for people aged 20 years and above has notably increased. Meanwhile, poverty indicators have significantly regressed since 2015. High levels of income inequality are perpetuated by economic conditions that do not support job creation (Gauteng Province Socio-economic Review and Outlook 2022).

[6] Gauteng Housing Travel Survey, 2019/2020

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4.1.2 Sectors of the Economy in the Province

A key contributor to the economies of the metros in the Province is the tertiary (finance, government, trade and transport) and secondary (mainly manufacturing) sectors. In 2018, manufacturing activity accounted for 20.5% of economic output in the CoE, compared with 13.6% in the CoJ and 11.1% in the CoT. Similarly, the finance sector contributed a proportionally higher share of economic activity in the CoJ (at 29.7%) than in the CoT (23.2%) and CoE (21.3%). In the CoT, government accounted for 32.3% of economic output in 2018 (GPG, 2019: 24). Sedibeng is the fourth-largest contributor to the Gauteng economy. The predominant economic sector in this district is the manufacturing of fabricated metal (mainly steel) and chemicals. In 2018, West Rand was estimated to have contributed about 3.8% to the economic output of the Province. The sector that predominately drives the economy of the district is mining.

Table 4-5 summarises industry and economic sectors per municipality.

Table 4-5: Industry and Economic Sectors per municipality[7]

Municipality	Sectors
City of Johannesburg[8]	Finance (28.1%), community services (24.7%), trade (14.7%), manufacturing (14%), transport (9%), construction (4%), electricity (3%), mining (2%) agriculture (0.27%)
City of Tshwane	General government (28.1%), finance, insurance, real estate and business services (24.7%), manufacturing (13.0%), wholesale and retail trade, catering and accommodation (11.9%), transport, storage and communication (10.3%), community, social and personal services (5.2%), construction (3.5%), electricity, gas and water (1.9%), mining and quarrying (0.7%), agriculture, forestry and fishing (0.5%)
City of Ekurhuleni	Manufacturing (23%), finance and business services (21.3%), community services (20%), trade (15%), transport (11%), construction (4.1%), electricity (2.3%), mining (2.3%)
Sedibeng	Manufacturing (30.8%), government (17.8%), business services (17.8%), trade (13.7%)
West Rand	Manufacturing (22%), mining (19%), community services (19%), finance (16%), trade (10%), transport (6%), construction (4%)

4.2 Spatial Planning and Land Use

4.2.1 Land Use Status

The Province of Gauteng comprises of a mix of urban classifications. Historic towns and townships, informal settlement areas as well as areas seen as rural [small holdings or farmland] have generally been located in peripheral areas far from economic centres and other areas of opportunity and are seen as main contributors

[7] https://municipalities.co.za/provinces/view/3/gauteng
[8] https://www.cogta.gov.za/ddm/wp-content/uploads/2020/08/Take2_DistrictProfile_JHB1606-2-2.pdf

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of urban sprawl. Economic centres and industrial areas have generally been seen as areas of opportunity and have been [and still are] optimally located, benefitting from agglomeration advantages. Whilst commercial and industrial land uses have contributed to smaller percentages of urban sprawl, they have still had a significant impact on the Province's spatial form. Areas such as Pomona, north of O.R Tambo International Airport (ORTIA); commercial buildings running along Ontdekkers Road through the city centre; mixed commercial uses interspersed with residential areas as is seen in Randburg; industrial developments that run along mining belt and in areas such as Rosslyn in Pretoria; as well as informal trading structures in townships like Mamelodi and Tembisa are all indications of the impact of dispersed but concentrated development areas.

Falling in the middle of this locational dichotomy are gated communities and suburban areas. Whist they are also located in peripheral areas and have contributed to urban sprawl in the Province, they have had access to areas of opportunity due to the prevalence of private car usage and mobility. For example, north-west of Johannesburg, east of Pretoria, and south-east of Centurion residential developments have expanded outwards with the development of townhouses and gated communities.

Figure 4-1 shows the different urban classifications as identified in the GSDF.

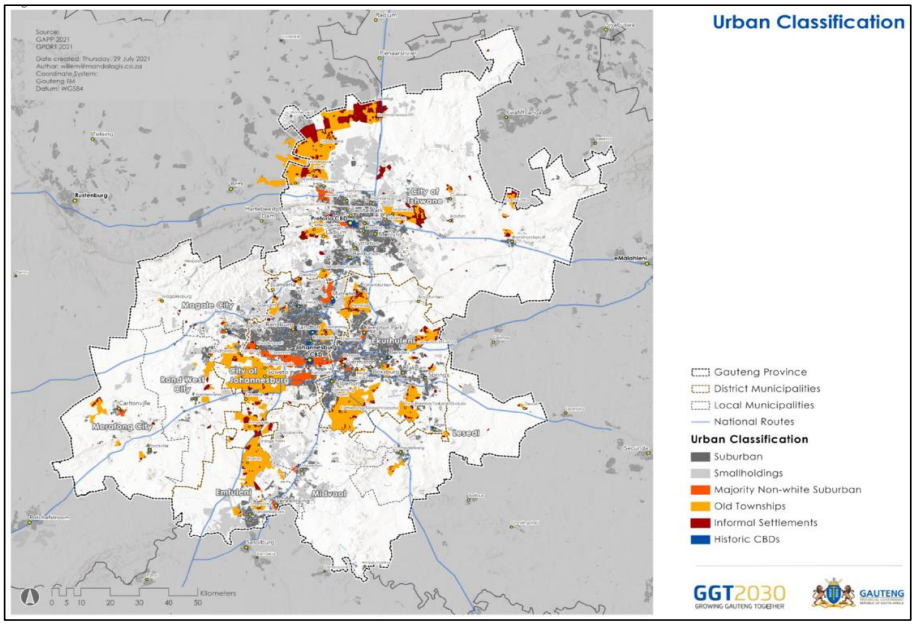


Figure 4-1: Urban Classification

(Source: GSDF 2030 Review (Draft Review 2022))

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4.2.2 Where and How is Growth Taking Place (Development Trends)

Even though Gauteng is the densest province in South Africa, within these urban classifications, most people in the Province are concentrated in a few clusters – a key outcome of apartheid spatial planning policies. The representation of population density in Figure 4-2 highlights the uneven horizontal distribution of Gauteng's population. While some of these clusters are located close to core business areas in Johannesburg, Tshwane and Ekurhuleni, many of the clusters are located on the edges of the urban footprint.

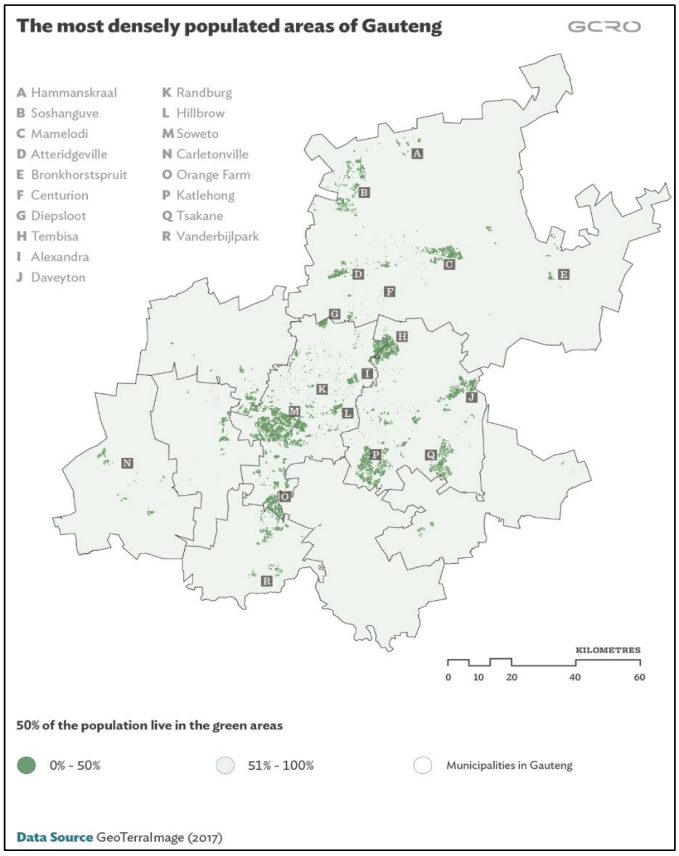


Figure 4-2: Most densely populated areas of Gauteng

(Source: www.gcro.co.za)

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In contrast to Figure 4-2, Figure 4-3 highlights the uneven vertical distribution of residents. It is noted that the densest 20% of the population lives on approximately 1% of the land area of Gauteng, with the densest square kilometre (the highest peak in Figure 4-3) clearly being in Hillbrow (with more than 48 000 people), followed by the peaks in Diepsloot (between 24 000 and 48 000 people) and then peaks in various parts of townships around Gauteng (for example Soweto, Tembisa and Mamelodi) (Fatti, Hamann & Naidoo, 2020). The least dense 10% of the population lives on 90% of the Province's land area, which may be sparsely populated but comprises of residential areas and many other land uses and activities.

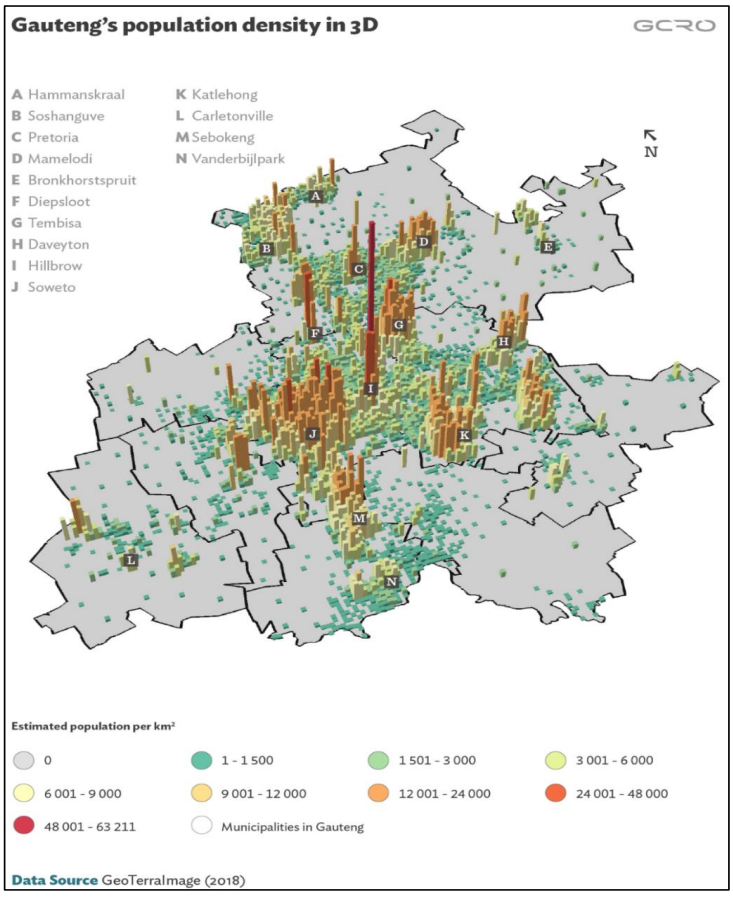


Figure 4-3: Gauteng's population density in 3D

(Source: www.gcro.co.za)

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4.2.3 Gauteng's Growth Trajectory and the Impact Thereof on Land Use and Transport Integration

The outward low-density sprawl of the Province is a challenge that continues to persist. Between 2010 and 2020 an average of 25.1km² of land per year was converted to urban land, translating into a growth rate of 1.3% per year (see Figure 4-4) (Ballard & Hamann, 2022). Residential development is seen as the largest contributor to Gauteng's land cover, with 10% of the Province's total area being covered by residential land use in 2020 (Ballard & Hamann, 2022). The remaining urban land cover, including commercial, industrial, institutions and utilities, covered less than 3% of the Province's land and significant expansion can be seen in areas around Soshanguve and Hammanskraal, Mamelodi, Pretoria East, Midrand, Katlehong and Sebokeng. This has aggravated the fragmented nature of the urban form and added pressure on already strained and dispersed service delivery and transport systems.

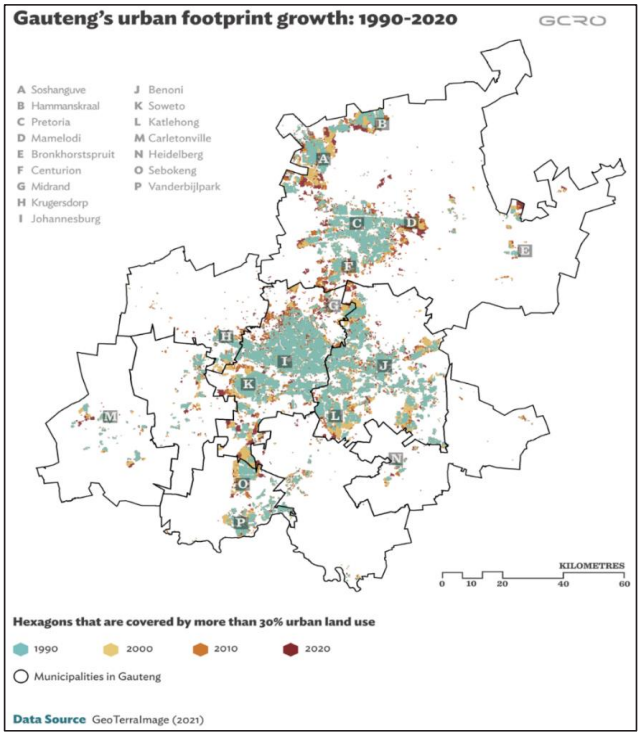


Figure 4-4: Most densely populated areas of Gauteng

(Source: GSDF 2030 Review (Draft Review 2022))

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4.2.4 Gauteng's Resultant Spatial Form

The resultant spatial form shows two axes where economic development and movement are defined: (i) a north–south axis, marked in the south by an older struggling manufacturing sector and in the north by newer post-industrial services, property development, economic investment and prosperity; and (ii) an east–west axis that was established during the mining era but today is in economic decline and distress. As a result of the Province's development footprint, continuation of historical geographies, the presence of mining and natural features, the centralised concentration of economic activity and peripheral location of housing development, Gauteng's spatial form is:

- Highly fragmented and comprises of dispersed developments and socioeconomic fragmentation and polarity, with the poorest communities often situated far from economic and social opportunities;
- Unsustainable due to the growth of low-density residential developments causing urban sprawl, threatening high potential agricultural land and sensitive natural environments, and contributing to inefficient urban form;
- Adverse to spatial restructuring and urban redevelopment due to rapid emergence of new middle to-high-income residential neighbourhoods (almost exclusively gated communities or exclusive lifestyle estates) which effectively sterilise land from future sustainable urban processes and create disjointedness in the urban network;
- Focussed on greenfield (mostly low density) residential development, as opposed to brownfield development, infill and urban regeneration;
- Weak in terms of integration of land use and public transport as public transport services remain ineffective and expensive due to low densities and the dispersed nature of development;
- Fragmented due to geomorphological conditions and mining activities, resulting in large tracts of abandoned land that continue to fragment the urban fabric;
- Inaccessible to people, especially the youth, who seek economic and social opportunities, indicating a disconnect between well located land and skills;
- Not viable for low-income housing because of inflated land prices around tertiary opportunities, and
- Impacted by the de-industrialisation and the closing of mines, which have a detrimental impact on settlements with strong economic links to these activities (e.g. areas such as Vereeniging and Vanderbijlpark that rely heavily on the embattled steel industry, and communities in the West Rand that used to rely on a now declining gold industry).

The outcome is a province with pockets of wealthy and middle-class areas with access to areas of social and economic opportunity surrounded by larger areas of poor and marginalised communities located on the periphery that struggle to access the formal economy. The above statements indicate the importance of linking economic activities and human settlement development as well as ensuring

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accessibility and connectivity through a robust public transport system and of how this will impact the spatial form of the Province.

4.2.5 Cross-cutting issues impacting on land use and transport integration[9]

Even though there are a variety of factors that contribute to urban growth (for example, migration, public policies, economic activities, etc.) there is a symbiotic relationship between transportation and urban growth. It is found that transport infrastructure expansion strongly correlates with population growth, spatial expansion, and land use change. On the one hand, transportation infrastructure attracts urban development. Transport systems provide essential mobility options for people and goods and influence patterns of growth and the level of economic activity through the accessibility they provide to land. On the other hand, urban growth patterns configure urban spatial structure and thus influence transport. Urban growth increases travel demand and thus the need for transportation infrastructure. Urban growth not only increases travel demand, but also, causes infrastructure pressure and consequently traffic congestion. Therefore, urban growth is strongly related to transport with reciprocal causes and effects. It is clear that the relationship between transport and land use is cyclical, impacted by various factors and requires to viewed under varying lenses.

These interactions are influenced by economic, political, demographic, social, technological and environmental changes. A downturn in the economy, can mean less jobs and/or lower incomes, therefore less people travelling to areas of employment – a decrease in transport demand. A younger population may be more likely to adapt and support advances in transport technology, such as e-hailing services, due to its convenience. E-commerce has seen more and more people opting for delivery versus self-pick up, which has generated new patterns of urban freight distribution, particularly with home deliveries. The focus on green technology and sustainable practices has seen local authorities promoting intensification of land uses, efforts to limit urban sprawl, mixed land use typologies and different transport modalities within spatial planning policy.

The following cross cutting issues impact on land use and transport integration:

- Inter-governmental relations – Each sector has a distinct purpose and set of obligations, and each one is structured differently with various forms of management and leadership.
- Priorities of political leadership changes per dispensation - Politics has short time horizons – five-year electoral cycles - whereas spatial transformation requires a long-term agenda, as infrastructure and services are delivered over many political terms.
- Capacity and capabilities - Different spheres do not experience the same level of financial or human capabilities or support; therefore, participation and output outcomes will not be the same. For instance, metropolitan municipalities may have

[9] Orton, SI and Nanyonjo, E, 2022. The Land Use and Transport Conundrum: Cross Cutting Issues impacting on Land Use and Transport Integration. CITEPLAN

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notably more capacity to conduct traffic law enforcement than smaller local municipalities.

- Data management, consolidation and integration- Availability, accessibility and usability of geo-spatial data requires careful stakeholder coordination and an information-driven approach that can unlock the value of such data.
- Disregard for psychosocial issues - Practitioners have to spend so much time on administrative compliance tasks or navigating internal demands and instructions that they have become disconnected from those they aim to serve.
- Lack of understanding and support for urban resilience - A significant barrier to municipalities providing their own funding for climate change adaptation is the fact that many municipalities are already functioning at a revenue deficit and struggling to provide basic services.
- Urban Safety - A barrier to making cities safer in South Africa is the lack of a clear and coherent framework that pulls together all the different policy intentions and directs, aligns and integrates urban safety interventions, planning instruments and investments by all government spheres and sectors.
- Destruction of state infrastructure - Public infrastructure theft has been a persistent issue for years, but the coronavirus pandemic and staffing shortages, particularly among security workers at stations, have resulted in widespread theft.
- Impact of natural urban growth - The legacy public transport systems (rail and provincial bus contracts) in South Africa's cities were designed when our urban form was essentially monocentric. The issue is that urban form in Gauteng's cities is no longer monocentric instead is polycentric, with numerous economically significant subcentres dispersed across metropolitan areas.
- Persistent under investment in infrastructure, unfunded operational deficit and poor infrastructure maintenance - Persistent under investment in infrastructure has led to transport modes not expanding to the extent required and not being able to meet increased demand at the same time placing immense pressure on existing services/networks as well the operations of municipalities.
- Densification and transport strategies not realising - The Corridor Densification Option Model was deemed fitting to address spatial imbalances and to attain physical integration, however the a) the supply of suitable housing and amenities within corridors and around nodes are not realising due to the capacity of basic infrastructure (water, sanitation and electricity); b) availability of vacant and underutilised land is mainly on the periphery of our the cities as that is where land is cheap , and c) despite the emphasis on densification, policies lack to support and incentivise it.

The interconnected and complex nature of these characteristics and patterns highlight how a nuanced and holistic approach is required in identifying and tackling the realities, issues and gaps in the relationship between land use and transport. It is also important to understand the cascading effects of one characteristic or pattern on a number of other areas.

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4.3 General System Characteristics

"Gauteng is the epicentre of growth and development in South Africa and contributes 34% to the National GDP. This is even though it is the country's smallest province by geography. Its three metropolitan municipalities have become a conurbation, a region defined by different cities and major urban areas merging into a singular urban area. Transport linking previously separate areas of economic activity into a single market is a key characteristic of a conurbation. Gauteng accounts for 7.4% of South Africa's entire road network. The Province's 55 000 km of road services 60% of national Freight traffic. Gauteng also boasts 921 km of rail. In addition to its estimated resident population of 15.2m, as of 2019, the Province's vehicle population has grown from approximately 4.3m in 2011 to 4.8m as of 2019, including Public Transport" quoted for the **Growing Gauteng Together Through Smart Mobility 2030** document.

To attest to this, according to the National Household Travel Survey (NHTS) 2020, considering all trips across all provinces, Gauteng (28.2%) had the largest number of individuals who undertook trips, followed by KwaZulu-Natal (16.9%), Western Cape (11.2%) and Limpopo (11.2%). Northern Cape had the least number of persons who undertook trips (2.2%).

Note that these surveys were carried out before the impact of COVID-19. Likewise, the results detailed in The Gauteng Province Household Travel Survey Report 2019/20, were all recorded before the impact of COVID-19.

4.3.1 NHTS 2020

According to the NHTS 2020, approximately 77% of individuals in metropolitan and urban areas travelled during the reference period, whilst 74.3% of individuals in rural areas travelled in the same period, which was slightly lower than the national percentage of 76.0%. Most travelling occurred from Monday to Friday. Men were more likely to travel than women during the week and over weekends.

Nationally, travelling to an educational institution was the primary purpose of undertaking a trip by household members. KwaZulu-Natal (49.4%) and Eastern Cape (48.6%) had the highest proportions of persons who cited travelling to an educational institution as their primary purpose for travel. Trips to the usual workplace were the second most common purpose for household members to travel. These trips were most predominant in Western Cape (37.4%), Gauteng (31.1%), and KwaZulu-Natal (28.3%). Also, these proportions were much higher than the national proportion of 26.3%. Travelling to welfare offices and going for a holiday/leisure were the least common trip purposes in the week (7 days).

The main travel purpose Nationally is illustrated in Figure 4-5.

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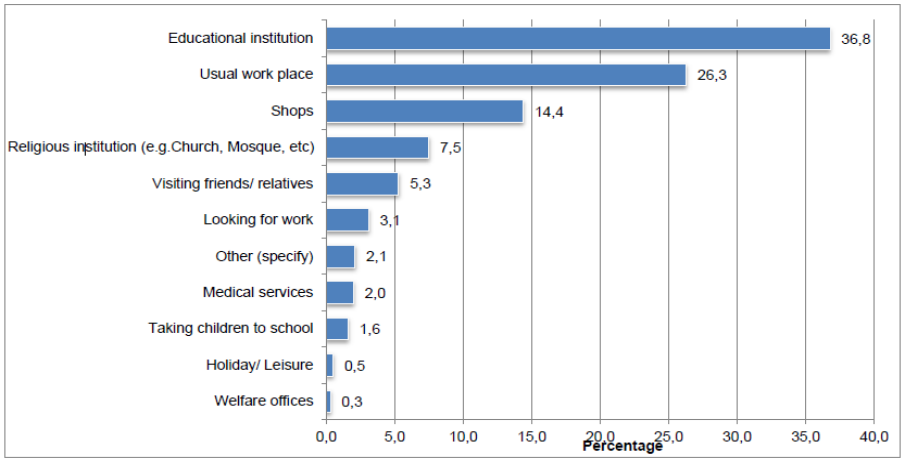


Figure 4-5: Main Travel Purpose Nationally

(Source: NHTS 2020)

Figure 4-5 indicates that in South Africa, 'walking all the way' was the main mode of travel used by household members to reach their destination. More than 41% of South Africans walked all the way to their destination, followed 25.7% who made use of a taxi, 14.9% was a driver of a vehicle private transport vehicle and 11% a passenger of a private transport vehicle.

Trains were the least used mode of travel by household members, except for Western Cape (1.6%) and Gauteng (1.5%), where more than one per cent of household members used this mode of transport. In Gauteng, the fact that the rail network has not expanded where low cost housing development has taken place, can be a contributing factor to the decline in modal share, as well as the impact of the COVID-19 pandemic and the resultant destruction of rail infrastructure on a grand scale. Table 4-6 indicates the mode split.

Table 4-6: Main Mode of Transport Nationally

Mode of Travel		Unit	Province									RSA
			WC	EC	NC	FS	KZN	NW	GP	MP	LP	
Public Transport	Train	%	1.6	0.3	*	*	0.5	*	1.5	0.1	*	0.7
	Bus	%	5.2	2.7	4.1	3.5	5.1	4.5	3.6	8.8	4.4	4.5
	Taxi	%	20.7	23.1	13.2	18.7	27.0	21.2	31.9	23.2	25.3	25.7

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Mode of Travel		Unit	Province									RSA
			WC	EC	NC	FS	KZN	NW	GP	MP	LP	
Private Transport	Driver	%	23.1	10.5	14.7	13.8	12.1	10.5	20.5	10.0	7.6	14.9
	Passenger	%	16.7	10.3	12.2	8.2	13.1	8.8	10.7	8.1	7.7	11.0
Walk all the way		%	31.5	52.2	53.9	54.9	40.9	52.2	29.5	48.8	54.3	41.7
Other		%	1.3	0.9	2.0	0.9	1.3	2.8	2.2	0.0	0.7	1.5

More than one-quarter (29.8%) of South Africa's workers left their home for work between 07:00 and 07:59 in the morning. Slightly less than one-quarter of workers (24.7%) left for work before 06:00 in the morning. Ten percent (10.2%) of workers started travelling at 08:00 or later. Workers in rural areas tended to leave earlier for work than the residents in urban areas. Two-thirds (66.2%) of rural workers left before 07:00, as opposed to 58.3% of workers in urban areas.

Overall, between 2013 and 2020, the average travel time for work has increased across all modes of transport except for those who walked all the way to their place of work. The highest increase is observed among those who used a train, taxi, or bus to reach their destination. In 2020, workers who used public transport experienced a long travel time in the morning to access their workplace; train users travelled for 107 minutes, bus travellers spent 84 minutes travelling, and taxi users travelled for 63 minutes. Those who used a car/bakkie/truck as passengers needed 49 minutes to get to work, while those who drove took 44 minutes.

4.3.2 The Gauteng Household Travel Survey 2019/20

Considering Gauteng, The Gauteng Household Travel Survey Report 2019/20 indicated that there are approximately 11 083 165 trips per day. Most of these daily trips are intra-municipal trips, the highest being the CoJ with more than three million trips per day.

Table 4-7 shows the origin-destination trip distribution matrix in Gauteng Province for a typical weekday.

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Table 4-7 Origin-Destination Daily Trip Distribution

	Trip destination							
		Ekurhuleni	Johannesburg	Sedibeng	Tshwane	West Rand	Outside Gauteng	Total
Trip origin	Ekurhuleni	1 724 992	136 100	1 055	10 550	0	9 495	1 882 193
	Johannesburg	66 456	3 092 909	9 879	37 718	58 374	14 369	3 279 705
	Sedibeng	1 786	23 212	1 346 277	1 786	1 786	10 713	1 385 559
	Tshwane	11 989	5 994	0	2 225 944	0	8 992	2 252 919
	West rand	0	295 037	0	3 598	1 501 571	482 134	2 282 340
	Outside GP	224	224	0	0	0	0	449
	Total	1 805 447	3 553 476	1 357 211	2 279 596	1 561 730	525 703	11 083 165

(Source: Gauteng Province Household Travel Survey Report 2019/20)

In contrast to the 2014 household travel survey that showed that the corridor between Ekurhuleni and Johannesburg had the largest trip density across municipalities, in 2019/20 the corridor between the West Rand and the CoJ emerged as the largest. However, the east-west corridor in Gauteng remains dominant. Intra-municipal travel (travel within municipalities) remains high at close to 90%.

According to the Gauteng Province Household Travel Survey Report 2019/20, the total trips conducted during peak period (06h00 to 09h00) are approximately 3 406 039 peak period trips. A total of 54.2% of the estimated morning peak-period trips were reported for work and education purposes, with a significant decline of more than 30% for educational trips from the GHTS 2014, which could be attributed to under reporting rather than an actual decline in the trips. Figure 4-6 shows the morning trips according to the trip purpose.

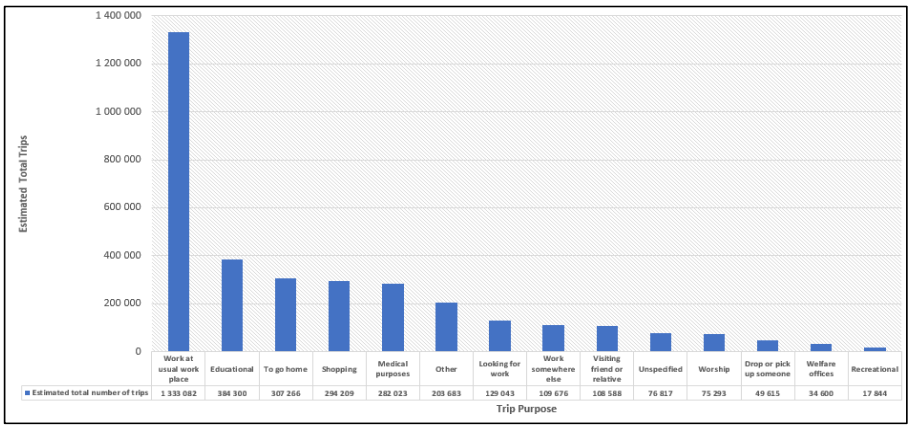


Figure 4-6: Morning Peak-Period trips according to purpose

Figure 4-7 shows the morning peak period trips according to travel mode. About 76.1% of these trips are conducted by walking, car, and MBT. The walking component

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has the highest percentage of 27.7%, followed by car as a driver which has 27.1%, MBT with 21.3% and passenger in a car at 5.2%.

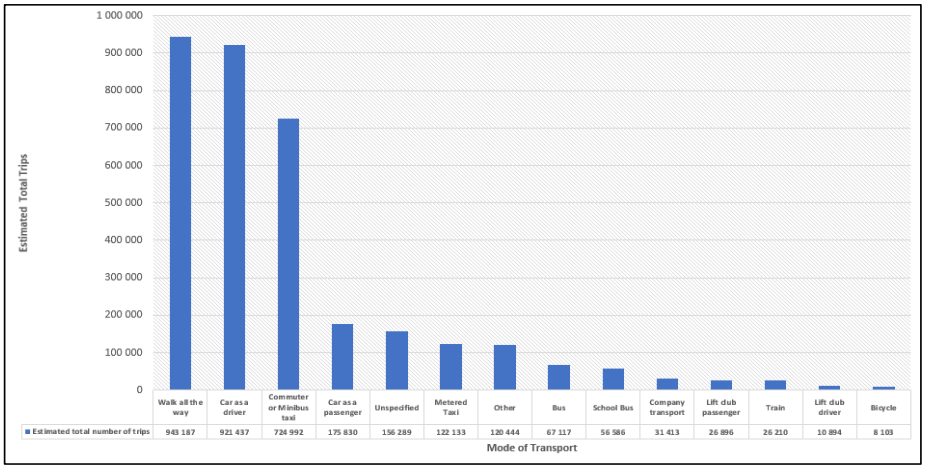


Figure 4-7: Morning Peak-Period trips according to travel mode

Table 4-8 shows the mode of travel according to trip purpose. As expected, the majority of passengers use their preferred mode of transport to get to their usual work place and to go home. 72% of the passengers use bus for to get to and from work, which indicates that bus routes and timetables are designed for workers and less so for other trip purposes. Gautrain is the only obvious outlier, with only 8% using it to get to their normal place of work, but 36% using it to get home. However, 48% use Gautrain to work somewhere else. The limited respondents for Gautrain were noted.

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Table 4-8: Mode of Travel according to Trip Purpose

Trip purpose	Bicycle	Bus	Car	Commuter or minibus	Company transport	Gautrain	Gautrain bus	Lift club	Metered taxi	Motorcycle	School bus	Train	Unspecified	Walk all the way	Other
Drop or pickup someone	1%	0%	2%	1%	1%	0%	0%	1%	0%	6%	0%	0%	0%	2%	0%
Educational	3%	6%	2%	4%	0%	0%	27%	5%	3%	9%	75%	4%	0%	10%	3%
Looking for work	10%	5%	1%	4%	0%	0%	9%	2%	4%	0%	0%	15%	0%	2%	2%
Medical purposes	9%	4%	4%	5%	1%	25%	9%	5%	7%	9%	0%	2%	0%	8%	4%
Other	6%	1%	4%	4%	0%	0%	0%	1%	5%	9%	0%	3%	0%	7%	51%
Recreational	3%	1%	0%	0%	0%	0%	0%	0%	0%	6%	0%	0%	0%	1%	1%
Shopping	5%	2%	13%	16%	0%	0%	0%	6%	18%	15%	0%	11%	0%	14%	7%
To go home	20%	20%	24%	24%	25%	8%	36%	30%	25%	15%	19%	21%	1%	24%	9%
Unspecified	0%	1%	1%	0%	0%	17%	0%	0%	1%	0%	1%	0%	96%	1%	1%
Visiting friend or relative	13%	3%	3%	4%	1%	0%	9%	1%	8%	6%	1%	5%	0%	11%	2%
Welfare offices	4%	1%	1%	1%	0%	0%	0%	2%	1%	0%	1%	1%	0%	0%	0%
Work at usual work place	19%	52%	40%	30%	65%	8%	0%	43%	19%	18%	2%	33%	1%	13%	16%
Work somewhere else	2%	2%	3%	3%	6%	42%	9%	3%	4%	9%	1%	3%	0%	2%	2%
Worship	6%	2%	3%	2%	0%	0%	0%	1%	4%	0%	0%	2%	0%	4%	2%
% Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

(Source: Gauteng Province Household Travel Survey Report 2019/20)

Table 4-9 shows the aggregate regional percentage distribution of mode share for work-related trips.

According to the Gauteng Province Household Travel Survey Report 2019/20, most of the trips were taken using a car as a driver, which amounts to 35%, followed by MBTs at 28% and 17% walking to the workplace..

Table 4-9: Aggregate regional percentage distribution of mode share for work-related trips

Mode of transport for work	Bicycle	Bus	Car as a driver	Car as a passenger	Commuter or minibus taxi	Company transport	Gautrain	Gautrain bus	Lift club driver	Lift club passenger	Metered taxi	Motorcycle	Other	School bus	Taxi	Train	Walk all the way	% Total
City of Johannesburg	19.0	61.1	32.3	16.3	47.1	34.7	66.7*	0.0	27.6	40.0	8.1	0.0	27.1	42.9	25.0	51.1	22.6	34.1
City of Tshwane	4.8	19.0	20.8	42.4	13.8	5.7	0.0	100.0*	34.5	12.2	12.1	44.4*	18.2	0.0	0.0	23.9	25.8	20.1
City of Ekurhuleni	33.3	4.4	19.9	19.2	13.9	14.2	33.3*	0.0	13.8	18.3	63.5	33.3*	16.7	28.6	25.0	20.7	24.0	19.8
Sedibeng	9.5	3.6	7.7	7.6	10.9	7.4	0.0	0.0	3.4	1.7	1.6	11.1	2.6	14.3	0.0	1.1	8.3	8.1
West Rand	33.3	11.9	19.2	14.5	14.3	38.1	0.0	0.0	20.7	27.8	14.7	11.1	35.4	14.3	50.0	3.3	19.3	17.9
% Total	**0.2**	**2.9**	**34.9**	**5.5**	**28.3**	**2.0**	**0.1**	**0.0**	**0.3**	**1.3**	**3.5**	**0.1**	**2.2**	**0.1**	**0.0**	**1.1**	**17.4**	**100.0**

*Very few respondents

Walking time to access the first public transport service has increased from 9 minutes in 2014 to 14 minutes in 2019/20. For the same period, accessing the final destination

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from a public transport service also increased from 8 minutes to 14 minutes. Accessing of train services takes the longest.

Average commuting times have increased over the past 20 years. On a typical working day travel time increased by 17% from 46 minutes in 2014 to 57 minutes in 2019/20. Overall, average travel time over the past 18 years has almost doubled. Associated with this, many more commuters choose to travel either earlier or later to avoid the peak. Travel times are particularly high for public transport trips and have deteriorated markedly for buses.

Increasingly more households in the Province have at least one member with a driving licence. Households without a licence decreased from over 50% in 2000 to just over 46% in 2019/20. Nonetheless, the proportion of households without access to a vehicle/car has increased to over 70% in 2019/20 from 66% in 2014.

The proportion of household income spent on public transport has increased. Nearly 60% of households spent more than 10% of their income on public transport in 2019, up from 55% in 2014.

4.3.3 Survey on the impact of COVID-19

The COVID-19 pandemic has had a devastating impact on livelihoods throughout South Africa and the Gauteng Province was not spared. The impact of job losses and people working from home on transport in general and more specifically public transport, although damaging has not been quantified until the CSIR was commissioned to conduct household surveys on specifically the impact of COVID-19 on transport in Gauteng.

Although the survey was conducted when the COVID-19 restrictions had been lifted, the questionnaire was designed to determine the respondents travel patterns during COVID-19, which was defined as the period between June 2021 and September 2021. At this time the third wave spiked in South Africa and strict COVID-19 restrictions were implemented. The restrictions varied between adjusted level 2 and level 4 for South Africa.

Table 4-10 indicates the impact that the pandemic had on work related trips.

Table 4-10: Mode of transport for work

Modes used for work	Before COVID-19		During COVID-19	
	Number of Trips*	(%) trips	Number of Trips*	(%) trips
Bicycle	12 763	0,5	12 122	0,6
Bus (BRT)	17 028	0,6	17 270	0,9
Bus (Other)	5 520	0,2	5 175	0,3
Car, as the driver	1 742 815	62,8	1 055 288	52,8

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Modes used for work	Before COVID-19		During COVID-19	
	Number of Trips*	(%) trips	Number of Trips*	(%) trips
Car, as the passenger	51 422	1,9	29 150	1,5
Commuter taxi/minibus taxi	714 857	25,7	681 574	34,1
Company transport	62 116	2,2	58 351	2,9
Gautrain bus	-	-	1 707	0,1
Lift club as a driver	2 635	0,1	6 233	0,3
Lift club as a passenger	19 182	0,7	9 188	0,5
Metered taxi	4 470	0,2	2 291	0,1
Motorcycle	13 352	0,5	10 683	0,5
Other	3 628	0,1	952	0
Train	2 401	0,1	2 320	0,1
Walk all the way	117 116	4,2	104 947	5,2
e-hailing service (e.g. Uber, Bolt)	6 848	0,2	2 401	0,1
Total	2 776 153	100	1 999 652	100
* One-way trips. The number of trips is based on a household weight.				

Most modes experienced a decline in ridership during the pandemic, with the following being the most impacted on:

- Overall, work trips declined by 775 000 trips during the COVID-19 lockdown period, representing a decline of 28% in work related trips. This can be attributed to a combination of job losses and mainly white-collar workers that was mostly working from home.
- Car driver declined by almost 700 000 trips or 40% from pre-COVID-19 levels. It is still responsible for 52% of all work related trips;
- Car passenger declined by 22 000 trips or 57%. It is responsible for only 1,5% of all work related trips; and
- Walking all the way declined by 12 000 trips, its share of the commuting market increased from 4,2% of all trips to 5,2% of all trips. This represents an increase of 24%.

Table 4-11 indicates the changes in departure time for work.

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Table 4-11: Departure time for work

Departure Time for Work	Before COVID-19		During COVID-19	
	Number of Trips*	Percentage (%)	Number of Trips*	Percentage (%)
00:00 - 05:59	482 785	17,6	413 687	20,9
06:00 - 09:00	2 178 976	79,7	1 470 505	74,2
09:01 - 23:59	73 802	2,7	98 094	4,9
Total	**2 735 563**	**100**	**1 982 286**	**100**
** One-way trips. The number of trips is based on a household weight.*				

Workers tended to adjust their departure time for work to fall outside the peak period probably to minimise the possibility of close contact with other workers commuting at the time. 21% of workers opted to travel earlier to work, 74% still travelled at the peak period time, while 5% travelled after that time.

Table 4-12 indicates the difference between trip duration before and during COVID-19.

Table 4-12: Trip duration for work purposes

Work trips duration	Before COVID-19		During COVID-19	
	Number of Trips*	Percent (%)	Number of Trips*	Percent (%)
0 - 5 minutes	47 631	1,9	38 730	2,3
5 - 10 minutes	103 979	4,2	80 507	4,8
10 - 15 minutes	210 385	8,6	160 831	9,5
15 - 30 minutes	797 376	32,5	827 050	31,3
30 - 60 minutes	1 033 679	42,1	704 353	41,8
1 - 1.5 hours	226 894	9,3	150 997	9
1.5 - 2 hours	22 009	0,9	13 712	0,8
2 - 3 hours	6 954	0,3	5 922	0,4
More than 3 hours	4 276	0,2	3 770	0,2
Total	**2 453 183**	**100**	**1 985 872**	**100**
** One-way trips. The number of trips is based on a household weight.*				

The following salient points from this table:

- The percentage of workers travelling less than 15 minutes increased from 14,7% of all workers to 16,6%;

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- The percentage of workers travelling between 15 and 60 minutes decreased from 74,6% to 73,1%;
- Overall, there was no significant change in trip duration before COVID-19, compared to during COVID-19, and
- It is difficult to understand how a reduction in 28% of work trips, has such an insignificant impact on travel time.

Table 4-13 indicates the difference in modes used for educational purposed before and during COVID-19.

Table 4-13: Modes used for educational purposes

Modes used for Education	Before COVID-19		During COVID-19	
	Number of Trips*	(%) trips	Number of Trips*	(%) trips
Bicycle	35 753	1,1	36 977	1,4
Bus (BRT)	35 991	1,2	26 211	1
Bus (Other)	3 203	0,1	5 561	0,2
Car, as the driver	68 219	2,2	20 346	0,8
Car, as the passenger	771 421	24,7	617 144	23,3
Commuter taxi/minibus taxi	199 220	6,4	175 447	6,6
Gautrain	1 201	0	-	-
Gautrain bus	-	-	1 201	0
Lift club as a driver	-	-	2 401	0,1
Lift club as a passenger	63 272	2	49 424	1,9
Metered taxi	2 387	0,1	2 387	0,1
Motorcycle	26 680	0,9	25 224	1
Other	1 707	0,1	929	0
School bus	933 403	29,9	902 213	34
Train	1 201	0	-	-
Walk all the way	941 947	30,2	776 819	29,3
e-hailing service (e.g. Uber, Bolt)	32 822	1,1	10 247	0,4
Total	**3 118 427**	**100**	**2 652 531**	**100**
** One-way trips. The number of trips is based on a household weight.*				

The following salient points from the table:

- In total there were 466 000 less trips during COVID-19 than before the pandemic. This represents a decline of 15%.
- Walking all the way declined by 165 000 trips, representing a decline 0f 18%.
- Car as passenger declined by 155 000 trips, representing a decline of 20%.

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- School bus was used by 34% of learners during COVID-19, representing an out shooter that requires further analysis. The GDE transport 139 000 scholars on contracted bus services, and it is difficult to understand that the remaining 750 000 scholars are transported by PTOG services or other private bus operators.

Table 4-14 indicates the difference between the duration of education trips before COVID-19 and during COVID-19.

Table 4-14: Duration of education trips

Education trip duration	Before COVID-19		During COVID-19	
	Number of Trips*	Percent (%)	Number of Trips*	Percent (%)
0 - 5 minutes	142 200	5,8	126 268	6,3
5 - 10 minutes	466 222	18,9	378 481	18,8
10 - 15 minutes	631 141	25,6	484 395	24
15 - 30 minutes	888 431	36	736 730	36,6
30 - 60 minutes	313 863	12,7	272 674	13,5
1 - 1.5 hours	24 198	1	14 835	0,7
2 - 3 hours	2 152	0,1	1 873	0,1
Total	**2 468 207**	**100**	**2 015 256**	**100**
** One-way trips. The number of trips is based on a household weight.*				

During both periods, 93% of the trips took between 5 and 60 minutes. Of the trips being made in this period, 65% took between 10 and 30 minutes.

There was no significant change between the duration of trips before and during COVID-19.

Table 4-15 indicates the number of trips per mode used for other, discretionary purposes, before and during COVID-19.

Table 4-15: Modes used for other purposes

Modes used for any other purpose	Before COVID-19		During COVID-19	
	Number of Trips*	Percent (%)	Number of Trips*	Percent (%)
Bicycle	35 443	0,5	9 535	0,4
Bus (BRT)	46 806	0,7	14 641	0,6
Bus (Other)	-	-	2 738	0,1
Car, as the driver	2 707 605	38,8	1 088 503	43,3

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Modes used for any other purpose	Before COVID-19		During COVID-19	
	Number of Trips*	Percent (%)	Number of Trips*	Percent (%)
Car, as the passenger	1 015 815	14,6	380 523	15,1
Commuter taxi/minibus taxi	1 182 114	16,9	323 837	12,9
Company transport	921	0	1 714	0,1
Gautrain	-	-	1 707	0,1
Gautrain bus	970	0	951	0
Lift club as a driver	2 635	0	8 203	0,3
Lift club as a passenger	18 995	0,3	3 420	0,1
Metered taxi	15 125	0,2	2 164	0,1
Motorcycle	16 970	0,2	7 202	0,3
Other	1 707	0		0
School bus	14 736	0,2	4 628	0,2
Train	4 802	0,1	3 413	0,1
Walk all the way	1 862 150	26,7	622 977	24,8
e-hailing service (e.g. Uber, Bolt)	54 512	0,8	39 772	1,6
Total	**6 981 306**	**100**	**2 515 928**	**100**
** One-way trips. The number of trips is based on a household weight.*				

Salient points from the table:

- The number of discretionary trips declined significantly from almost 7 million to just over 2,5 million. That represents a decrease of 64%.
- Car as driver declined by 1,6 million trips, representing a decline of 60%.
- Walking all the way declined by 1,2 million trips, representing a decline of 67%.
- Car as passenger and commuter/minibus taxi both experienced significant declines, with the other modes having experienced a less dramatic decline in trips.

Results from the COVID-19 survey that may potentially impact on future travel patterns are summarised below:

- 57% of respondents believe that they will return to work, whereas 36% believe they will work from home;
- 50% indicated that they are unlikely to work partially from home and from the office, whereas 36% indicated that this trend will continue;
- 44% indicated that they are likely to work a compressed week, whereas 44% indicated that they are unlikely to work a compressed week;

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- 71% indicated that they are likely to work full time from their place of work, whereas 21% indicated that they are unlikely to do so;
- 46% indicated that they are likely to work staggered hours in future, whereas 42% indicated that they are unlikely;
- 53% indicated that they are unlikely to work flexible hours in future, while 37% indicated that they are unlikely

Considering work travel patterns before, during and after COVID-19, the following was found:

- Prior to COVID-19:
  - Of the people commuting to work, 64% indicated that they continued to do so. The remaining g 36% started working from home, and
  - 98% of the people that worked from home continued to do so. The remaining 2% started commuting.
- During COVID-19 compared to prior to COVID-19:
  - 91% of the people who travelled, indicated that they continued to do so
  - 70% who work from home, indicated that they continued to do so. The remaining 30% indicated a shift from work from home to travelling to a place of work
- Before COVID-19 and post COVID-19:
  - 78% who commuted continue to do so, and
  - 87% who worked from home continue to do so.

4.3.4 Annual State of Transport Opinion Poll 2021

Transport is a major concern for South Africans and remains a constraint to the livelihoods of many people. Concerns range from the state of road, rail and facility infrastructure and service levels of public transport to e-tolls and law enforcement. The Institute of Transport and Logistics Studies has revived its annual State of Transport Opinion Poll to provide a comprehensive perspective on the transport issues that are faced by Gauteng residents. A survey of 521 respondents was conducted to gauge their opinions on transport-related matters. Previous polls (2012-2015) were used as a base for comparison. The study found a major dampening of enthusiasm regarding the state of transport, both country-wide and in their local areas, with most people believing that improvements are unlikely in the near future. Major issues continue to be the poor state of public transport services, the worsening condition of road infrastructure, and weak law enforcement. Gauteng residents also indicated that the public transport service providers did not sufficiently adhere to COVID-19 protocols. By implication, the commuting public faces insufficient, poor-quality services, where people are left vulnerable to crime, accidents, and illness.

The research data indicate that health is currently the highest priority issue in South Africa, followed closely by education and the economy. This is somewhat expected given the current global COVID-19 pandemic and the economic impact thereof.

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Although previous STOPSA surveys (Heyns & Luke, 2016) primarily identified transport as the third-highest priority issue in South Africa, respondents still regarded it as crucial. They ranked it as the fourth-highest priority issue in Gauteng. This is shown in Table 4-16.

Table 4-16 Ranking of priority issues

Priority	Mean	Std. Deviation
Health	4.51	1.032
Education	4.39	1.034
Economy	4.32	1.140
Transport	4.30	1.095
Safety and Security	4.24	1.327
Housing	4.13	1.242
Law and Order	4.12	1.315
Infrastructure	4.11	1.187
Employment	4.10	1.474
Environment	4.10	1.170
Social Issues	3.86	1.286

Respondents were asked to provide their opinion on the current state of local transport and the outlook for transport in Gauteng during the next five years. Only 22% of the respondents believed transport in their local area was better than a year ago. The majority of the respondents felt that there was little change or that it was much worse (21.4%). Respondents that indicated that transport in their local area was worse than a year ago attributed this mainly to the declining conditions of transport infrastructure, the lack of public transport services, safety and security concerns and aspects related to taxi services and infrastructure.

When tested on the outlook for transport in South Africa in the next five years, the majority (65.6%) of the respondents indicated that they believed it would be worse or they were neutral/undecided. Their view on the state of transport, specifically in Gauteng, in the next five years, is very similar, with the majority (65.3%) of respondents believing that transport would be worse in five years (34.1%), or they were neutral/undecided (31.2%). In both cases, respondents generally did not indicate that they would see any significant improvements.

On E-tolls: The respondents believe that the purpose of e-tolls is primarily for revenue collection purposes, with more than 50% indicating this. On the other hand, it appears that respondents do not really believe that e-tolls fees are used extensively for infrastructure purposes, with less than 25% believing that the income is used for infrastructure/road provision and less than 50% believing that the funds are used for maintenance. In another question, a majority of respondents reinforced this by indicating that they disagreed with the statement that e-tolls will enable the government to improve conditions and repair damages. Respondents furthermore stated that they did not believe that e-tolls contributed to safety and security on the route. On the contrary, they did indicate general agreement that the system served

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no purpose, was too expensive and was unfair to low-cost users. These results suggest that Gauteng residents generally do not support the e-toll system.

4.3.5 Traffic Trends on N1 Since COVID-19

Daily traffic flow data from a traffic counting site on the N1 Freeway near Midrand, between February 2020 and March 2022, illustrate the fluctuation in vehicle traffic volumes relative to the lockdown level in Figure 4-8.

Figure 4-8 illustrates that traffic flows on the N1 freeway in Gauteng plummeted when SA went into its first national lockdown at the end of March 2020, compared to pre-COVID-19 traffic volumes. Traffic volumes then steadily rose until end of November 2020 but then indicate a severe drop due to the December Holiday Period together with the Level 3 lockdown due to the 2nd wave. It still didn't reach the same volumes prior to March 2020. Although traffic volumes then rose again, they are still less than pre-COVID-19 levels.

Whilst the figure does not reflect traffic congestion, this too has been growing steadily on the Gauteng road network, although also still below the pre-COVID-19 levels. Whilst it can be argued that COVID-19 has suppressed traffic congestion in Gauteng, this situation will not remain indefinitely.

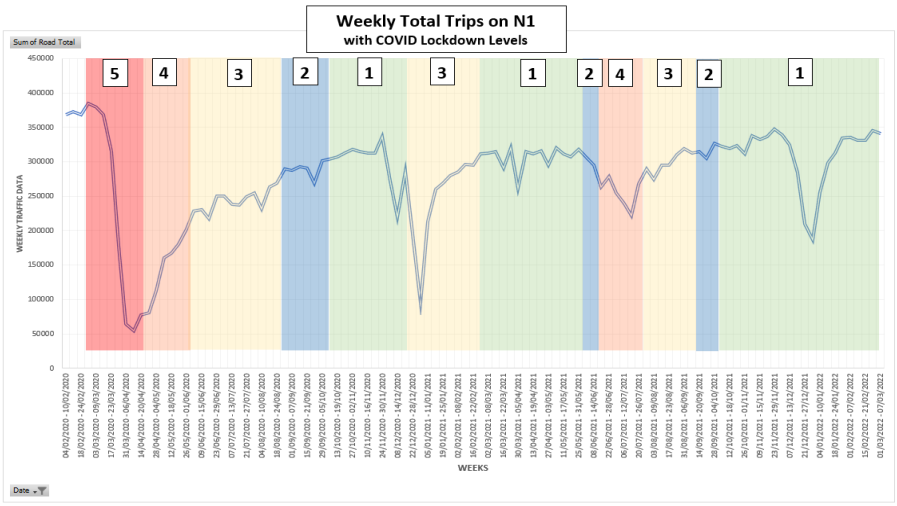


Figure 4-8: Traffic Flow on N1

4.3.6 Public Transport

The modal split between the different modes (private vs public transport) is indicated in Table 4-17.

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Table 4-17: Modal split work trips - 2020

Mode	Work trips	Percentage
Private Transport	2 092 000	45.1%
Train	80 000	1.7%
Bus	153 000	3.3%
MBT	1 700 000	36.6%
NMT (Walking)	570 000	12.3%
Other	46 000	1.0%
Total	4 641 000	100.0%

(Source: NHTS, 2020)

Private transport remains the dominant mode, with a 45% market share. Road based modes are responsible for 85% of the trips, and Metrorail, as a viable mode of transport, has become insignificant in Gauteng.

The road infrastructure remains under pressure as 85% of the work trips take place on the roads in Gauteng. Commercial vehicles also have to compete for the road space, with the result that congestion in especially the morning peak period is an increasing occurrence on certain corridors.

Table 4-18 indicates the model split for public transport modes for Gauteng.

Table 4-18: Public transport modal split for work trips - 2020

Mode	Work trips	Percentage
Train	80 000	3.2%
Bus	153 000	6.1%
MBT	1 700 000	67.9%
Walk	570 000	22.8%
Total	2 503 000	100.0%

(Source: NHTS, 2020)

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MBTs have almost 70% of the public transport market share, almost one in four people walk to work, and the challenges experienced by PRASA over the past few years and exacerbated by the COVID-19 pandemic is clearly illustrated by its low market share. Poor management and the unreliability of the then rail network systems also contributed to loss of market share. Safety, accessibility and efficiency issues also contributed to this. The source of information for the section that follows is the GHTS, 2019/20.

The estimated distribution of household-owned cars in Gauteng is indicated in Table 4-19.

Table 4-19: Levels of car ownership

Vehicles owned per household	Households	GHTS - 2014	GHTS - 2019
0	3 474 224	66.2%	70.2%
1	1 091 398	21.0%	22.0%
2	313 093	9.3%	6.3%
3	54 554	2.0%	1.1%
4	17 868	1.0%	0.4%
TOTAL	4 951 137	100%	100%

Almost 3.5 million households (70%) did not own any car in 2019, which is 4% more than the reported figure in 2014.

A large percentage of households depend on public transport on a daily basis. These households are also the lower income households that cannot afford a car. Metrorail served these households well as the network extended into the low-income areas and the fares were subsided by Government. However, the rail network was inefficient in terms of important aspects such as safety, access, and time management. Under these conditions, households had little option other than using MBTs or walking. As MBTs do not receive any operational subsidy from Government, it can be assumed that the money spent on transport by the lower income households has increased markedly over the last couple of years.

Average travel time by mode of travel is shown in Table 4-20.

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Table 4-20: Average travel time for peak period trips

Mode	Peak trips (weighted number)	Peak trips (%)	Average travel time
Walk all the way	701 576	30.7%	00:46:53
Car as a driver	598 429	26.2%	00:59:55
Commuter or MBT	567 528	24.8%	00:56:56
Car as a passenger	129 478	5.7%	00:46:59
Other	86 827	3.8%	00:44:49
Metered taxi	80 298	3.5%	00:58:57
Bus	37 211	1.6%	01:19:39
School bus	24 590	1.1%	00:45:24
Lift club passenger	18 497	0.8%	01:02:49
Train	12 404	0.5%	01:25:16
Company transport	11 969	0.5%	01:04:22
Bicycle	8 487	0.4%	00:54:37
Lift club driver	5 875	0.3%	00:55:33
Motorcycle	2 394	0.1%	00:30:00
Gautrain	1 088	0.0%	01:36:00
Gautrain bus	218	0.0%	00:30:00
Total	2 286 869	100%	00:57:23

The average travel time of 57 minutes is substantially higher that the 46 minutes recorded in 2014.

The mean walking time to access the first public transport mode in the morning and from the last public transport mode home is indicated in Table 4-21.

Table 4-21: Mean walking time to first public transport mode

Mode	Total number of trips	Trips %	Average walking time at start (minutes)	Average walking time at end (minutes)
Bus	59 408	5.9%	14.2	13.1
Commuter or MBT	773 170	77.0%	11.8	11.2
Gautrain	1 741	0.2%	16.4	19.5
Gautrain bus	1 306	0.1%	5.5	6.5
Metered taxi	142 535	14.2%	16.1	16.1
Train	25 896	2.6%	19.6	17.7
Total	1 004 055	100.0%	13.9	14.0

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Ignoring the Gautrain buses (due to the small survey sample), MBTs remain the most accessible public transport mode available in Gauteng.

In addition to the findings from the GHTS reported above, it noted the following high-level findings:

- Walking remains the predominant mode of travel;
- Walking time to access the first public transport service has increased from 9 minutes in 2014 to 14 minutes in 2019/20. For the same period, accessing the final destination from a public transport service also increased from 8 minutes to 14 minutes. Accessing of train services takes the longest;
- Average commuting times have doubled over the past 20 years. On a typical working day travel time increased by 17% from 46 minutes in 2014 to 57 minutes in 2019. Travel times are particularly high for public transport trips and have deteriorated markedly for buses;
- Intra-municipal travel (travel within municipalities) remains high at close to 90%;
- The number of persons per household working the typical 5 days a week decreased from 68.7% in 2014 to 62.5% in 2019, in favour of fewer days per week;
- The proportion of households without an employed person has increased markedly over the years;
- The number of households that do not own a car increased, and
- A significant proportion of household income is spent on commuting. Nearly 60% of households spent more than 10% of their income on public transport in 2019, up from 55% in 2014.

4.3.7 Freight Transport

Freight transport is mainly conducted by road in South Africa (and in Gauteng), while rail transport is used for bulk materials over long distances, such as the iron ore or coal lines. Air cargo is concentrated at the main international airports, such as OR Tambo International Airport in Kempton Park, King Shaka International Airport in eThekwini, and Cape Town International Airport, although some smaller volumes are handled at airports such as Lanseria and Wonderboom in Gauteng, and other regional airports.

Freight traffic can be split into the following categories in Gauteng:

- Through traffic (originates and destined outside Gauteng);
- Local traffic (originates and destined inside Gauteng);
- Outbound traffic (originates inside but destined outside Gauteng), and
- Inbound traffic (originates outside but destined inside Gauteng).

An example of through traffic is the anticipated increase in freight demand that will be generated by the Musina-Makhado SEZ along both the rail and road corridors linking Limpopo to the port of Durban through Gauteng.

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Types of freight include dry bulk, liquid bulk, containers, unitised (pallets or bulk bags), break-bulk (bags, cartons, crates) and vehicles on auto carriers or automotive trains.

The impact of freight and cargo has escalated due to a move from rail to road globally and in South Africa. Transnet Freight Rail has closed virtually all sidings for general freight to industrial sites in urban areas, and rail services are almost exclusively provided for bulk, containers and automotive over long distances. Current and future modal split policies are important, as the pavements of the road network have to be designed for the growth scenario, with consideration for the resulting axle load estimates.

Specific aspects of the freight transport management environment include definitions of freight routes and freight corridors where freight transport is concentrated, and services such as truck stops and staging areas. Infrastructure should be developed for logistics activities at and around nodes such as container terminals, consolidation and deconsolidation centres, industrial areas, and logistics parks such as the Automotive Supplier Park in Rosslyn.

The formal integration of freight facilities is important to allow for safety structures such as arrestor beds, weighbridges, geometric design for heavy vehicles (including appropriate turning circles and dedicated freight lanes) and other related services.

4.4 Public Transport

4.4.1 Commuter Rail

The commuter rail network in Gauteng is well developed and is maintained by the regional PRASA offices. The rail infrastructure, owned by PRASA, includes 385 route kilometres in Gauteng and 119 route kilometres are operated on Transnet lines. There are 232 commuter stations in Gauteng.

The existing commuter rail network covers a large area in the Province. It connects the townships (dormant, residential areas) to job opportunities. The commuter rail service has deteriorated substantially in the last decade and is at its lowest level since 1994. Passenger numbers declined for 259 million/annum in 2012/13 to 59 million/annum in 2019/20. The reasons for this are documented in Section 4.3.1.

According the PRASA, they are currently working on four priority corridors which will be ready to run train services by end of October 2022.[ii]

The commuter rail network is indicated in Figure 4-9.

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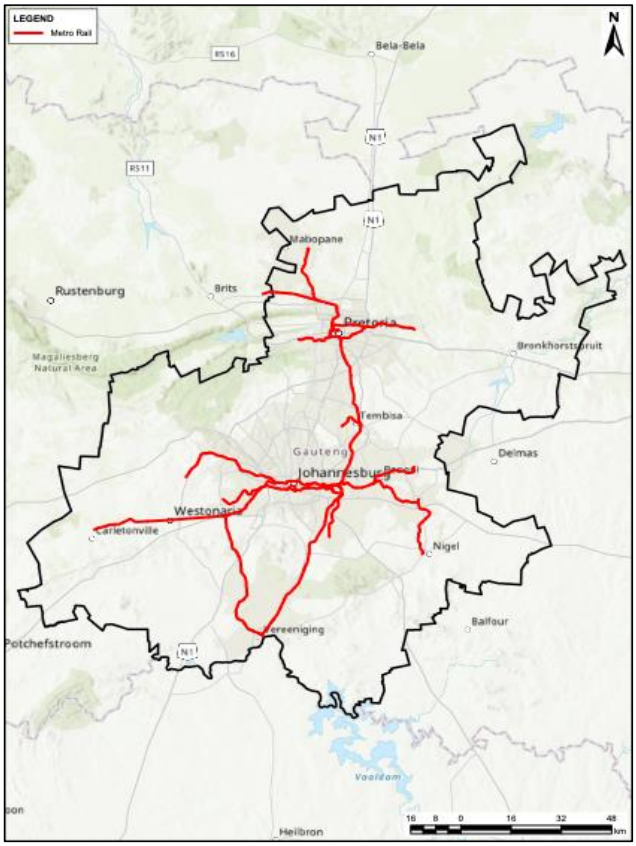


Figure 4-9: PRASA commuter rail network

In addition to the commuter rail network, the Province implemented a Rapid Rail Network over a decade ago. The Gautrain Rapid Rail Link network with its dedicated feeder and distribution services is indicated in Figure 4-10.

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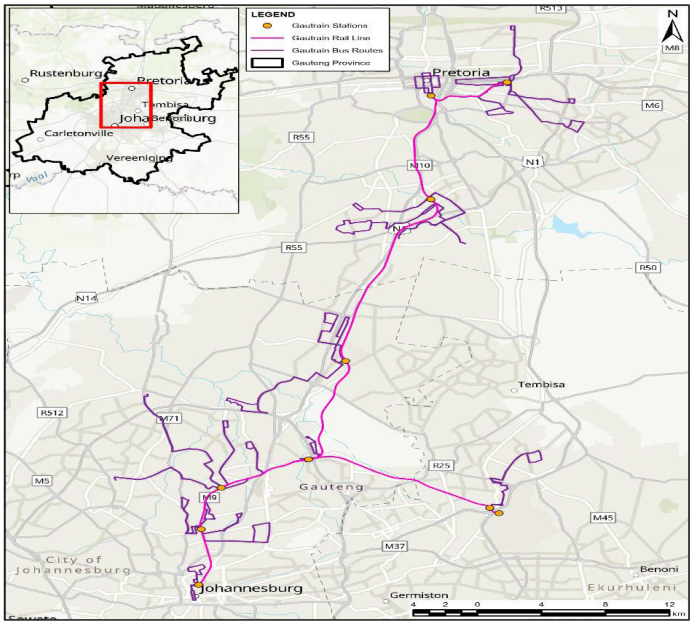


Figure 4-10: Gautrain Rapid Rail Link

The Gautrain operates commuter services on the North South Line (Hatfield – Park Station), from East to West (Rhodesfield – Sandton) with a dedicated airport service to and from OR Tambo International Airport. Integration with commuter rail services takes place at Hatfield, Pretoria, Rhodesfield and Park stations.

It consists of 10 (9 general passenger and 1 airport passenger) stations and 80 route kilometres.

Table 4-22 provides the passenger volumes for Gautrain for the two markets served, as well as the passengers making use of the Feeder and Distribution services for the 2018/19 - 2020/21 period.[iii]

Table 4-22: Passenger volumes for Gautrain and F&D services

Service Type	18/19	19/20	20/21
Annual Pax – APS	1 456 967	1 341 304	204 434
Annual Pax – GPS	12 515 515	12 588 612	2 448 726
Annual Pax – Bus	3 982 971	4 255 503	861 706

Almost 30% of all passengers make use of the Feeder and Distribution Services.

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The impact of COVID-19 is clear from the table with roughly an 80% reduction in passenger numbers during this period.

4.4.2 Strategic Public Transport Networks

The source of the strategic public transport networks for the three metropolitan areas was their respective, latest CITP's.

The CoE's Integrated Rapid Public Transport Network is indicated in Figure 4-11.

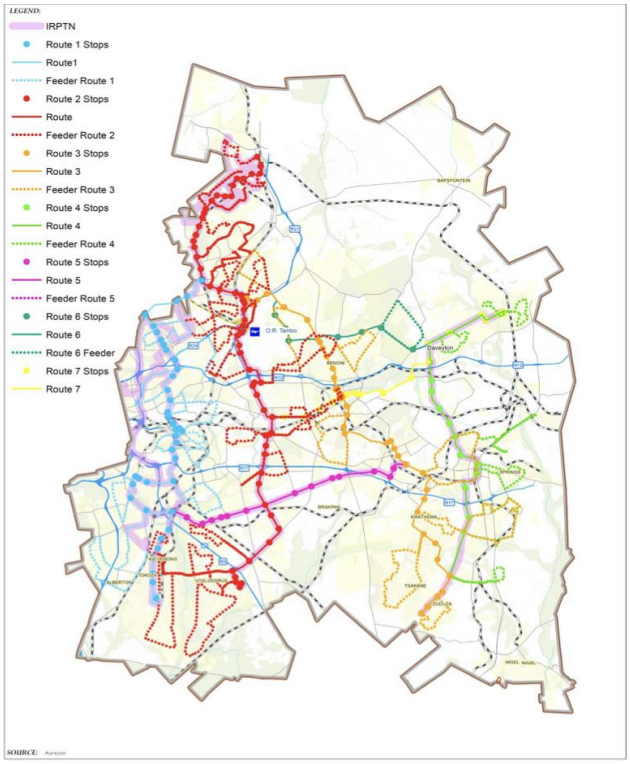


Figure 4-11: City of Ekurhuleni IRPTN

It was decided that the trunk route should be extended northwards and southwards into the established communities of Tembisa and Vosloorus, rather than terminate at out-of-the-way junctions on the outskirts of both townships. Not only would this provide added value to these communities in terms of improved accessibility and providing them with a world class public transport system but, it would also reduce the need for transfers onto feeder systems and improve travel times for passengers. The only drawback would be the significant increase in the length of the route and resulting project complexity and escalation in construction costs. It was thus decided

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that the route should be constructed in three Phases, Phase 1A, Phase 1B and Phase 1C to overcome these challenges.

The long-term public transport system will be characterised by some important qualities. The system will consist of integrated and regulated public transport which will be modern and attractive, offering seamless travelling with through-ticketing on contracted scheduled services. The public transport corridors will encourage high density development through quality, high frequency, scheduled, public transport services which, in turn, will attract more people to use the public transport system.

In terms of providing an overview of the IRPTN Trunk Route Corridor, it is beneficial to highlight that the corridor is 65km in length, and it is proposed to construct the route in three phases, Phase 1A, Phase 1B and Phase 1C. Phase 1A is to be constructed from the Tembisa Hospital to the OR Tambo International Airport, Phase 1B from the OR Tambo International Airport to Boksburg (at the East Rand Mall node) and Phase 1C from Boksburg to the New Natalspruit Hospital in Vosloorus.

The trunk bus and feeder operations will integrate at attractive interchanges where passenger transfers can be made in a safe and secure environment. The interchanges will also be important nodes of commercial attraction and will be located close to suburban business activities and in the city centre. These interchanges will stimulate further economic development in their immediate surrounds.

The CoJ's Strategic Integrated Public Transport Network is indicated in Figure 4-12.

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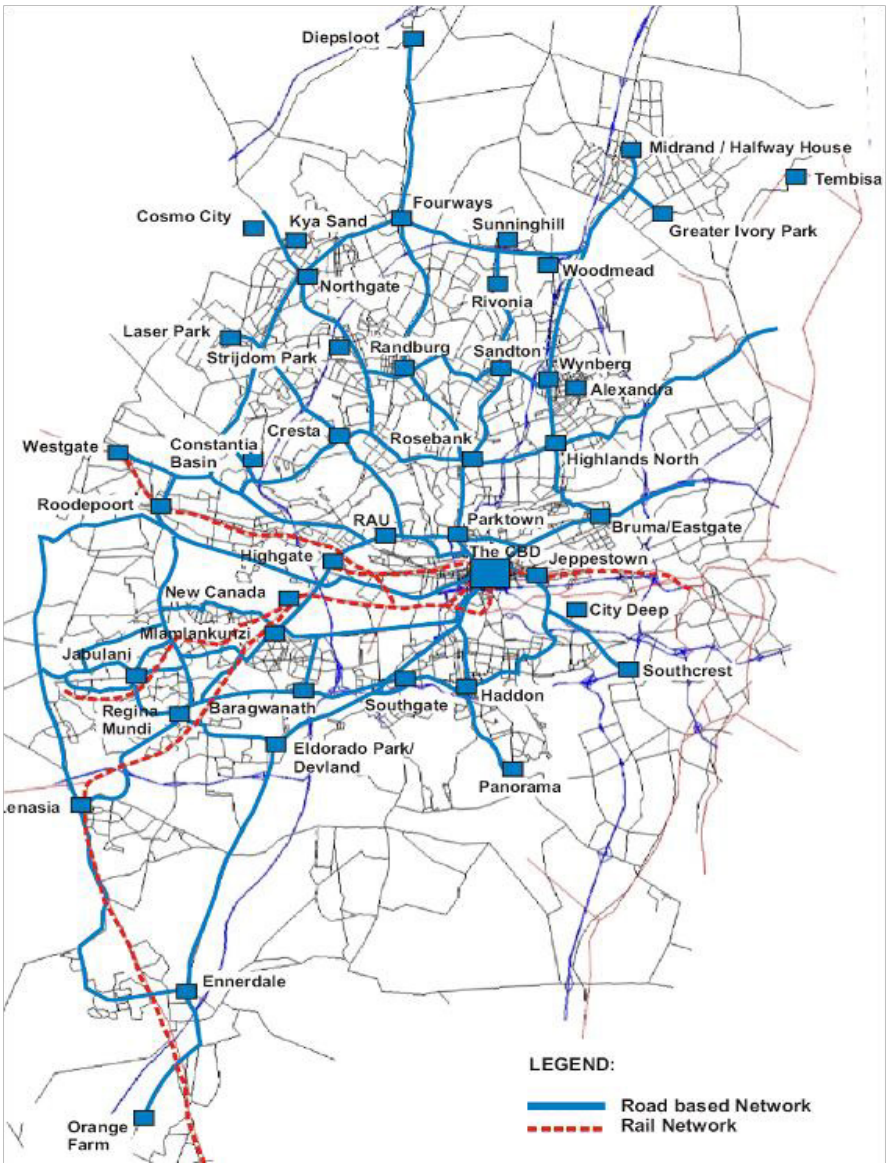


Figure 4-12: City of Johannesburg IPTN

The SPTN was viewed as both a network and a concept of operation. As a network plan, the overall aim of the SPTN was to identify the major public transport

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connections that needed to be made. This was designed with the aim of supporting a compact, multi-nodal city form, by providing a legible permanent public transport 'grid' of focused high-frequency public transport routes connecting key high-density nodes and also dense residential areas. Once on the grid, all the important destinations could be accessed through the public transport system because of the overall continuity of connections. It was designed as a lattice of public transport routes, 325km in total length, connecting the 45 or so development nodes in the City to each other along major mobility spines.

Operationally, reserved kerbside lanes were proposed on the busier links for the exclusive use of buses and minibus-taxis. A few large terminals were proposed at route starts and ends, and many smaller passenger facilities along the routes, particularly at points where routes intersected, and where passengers could switch from one service to another. Park and ride facilities were proposed too, focused at hubs on the SPTN in areas of high car ownership.

The CoT's Integrated Public Transport Network is indicated in Figure 4-13.

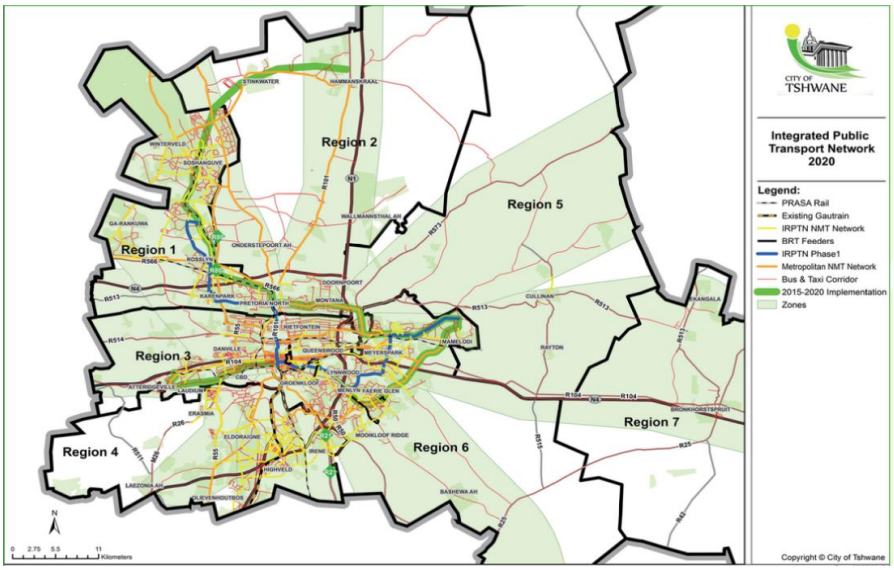


Figure 4-13: City of Tshwane IPTN

The Integrated Public Transport Network (IPTN) consists of all the key public transport routes and modes (rail, bus, mini-bus taxis, metered taxis, and non-motorised transport). Due to the large numbers of passengers using rail as their main mode it forms the 'back bone' of the IPTN, complemented by the A Re Yeng and its feeder services. Although there may be a certain degree of overlapping of services,

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each mode has its role to play in providing high quality public transport services to the public.

The IRPTN forms the rapid network component of the overall IPTN. However, there are numerous areas of the City that are not covered or serviced by the IRPTN.

The approach for describing the IPTN of the City is based on timelines defined by the demand model as well as the five-year horizon that is the lifecycle of the CITP. It must be noted that the demand model horizon is 2020, 2025 and the long-term horizon is 2037. Thus, the IPTN is defined in an incremental manner based on the implementation of key public transport initiatives including the years 2025 and 2037.

The BRT trunk line currently operates from Rainbow Junction to the CBD and from the CBD to Hatfield in a dedicated lane, from Hatfield to Menlyn the trunk line operates in mixed traffic lanes.

The IPTN for the two district municipalities was taken from the GITMP25 and is indicated in Figure 4-14. The routes indicated for these two district municipalities is the envisaged provincial road based strategic public transport network.

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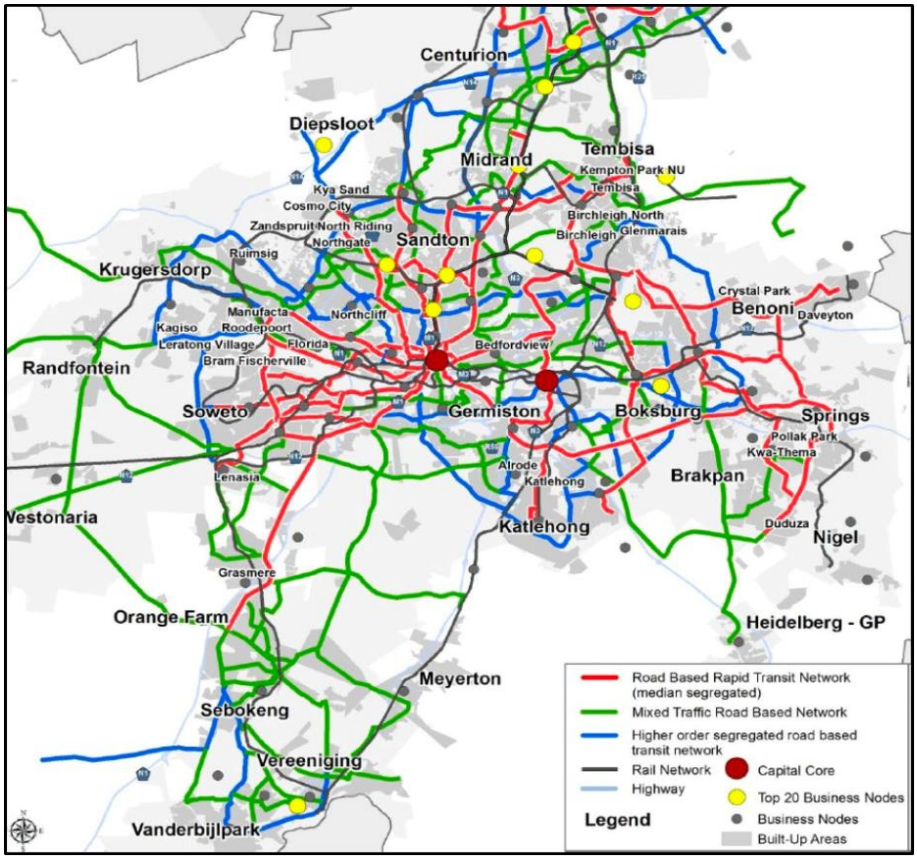


Figure 4-14: SDM and WRDM IPTN

The departure point is linking the residential areas to the main areas of employment, using the existing road network and being informed by the passenger volumes on the different linkages.

It is important that the IPTN's of especially the three metropolitan authorities be updated to indicate current reality. It has also become critical for the Province to integrated the different maps into a provincial wide map to assist with provincial wide planning in terms of continuity of routes and accessibility to the IPTN from a provincial perspective. The Provincial Strategic Public Transport Network should also indicate the linkages to the adjacent provinces.

From the above figures it is clear that the IPTN's for the Metropolitan Municipalities is mostly inward focussed with little evidence of planning for cross-border

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movements. It would seem that it is only the Province that has an integrated approach regarding the IPTN development and roll-out in the province.

4.4.3 PTOG Contracted Bus Services

Bus services in the Province are provided by various bus operators, contracted to various institutions in one way or another through different contracting regimes.

The footprint for the PTOG contracted bus routes is provided in Figure 4-15.

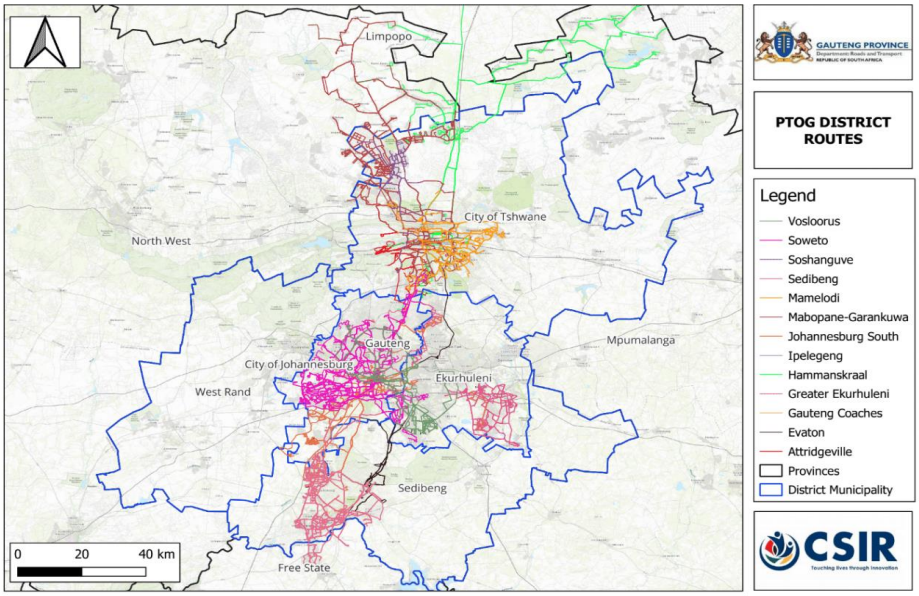


Figure 4-15: Bus Routes in Gauteng

The subsidised commuter bus services are contracted to the provincial government, through the Gauteng Department of Roads and Transport, as part of the Public Transport Network Grant (PTNG) and are funded by means of the DoRA.

The GDRT has re-designed the contracted services and as recently as October 2021, advertised 8 contracts to be tendered for by private transport companies. The process was eventually stopped in April 2022, after numerous court challenges from private sector companies and industry bodies representing the industry.

A summary of the PTOG services in Gauteng is highlighted in Table 4-23.

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Table 4-23: PTOG contracted bus services

KPI	2019/20	2020/21
Vehicles subsidised	2 526	2 346
Trips scheduled	1 865 337	1 845 480
Trips operated	1 547 451	905 780
Passenger trips	59 130 946	29 438 679
Revenue kilometres	99 622 148	52 452 154
Routes operated	3 280	3 308

The decline in passenger trips and revenue kilometres clearly illustrates the impact of COVID-19.

4.4.3.1 Bus Rapid Transport

A spatial orientation of the BRT trunk lines as currently implemented in the three metropolitan areas is provided in Figure 4-16.

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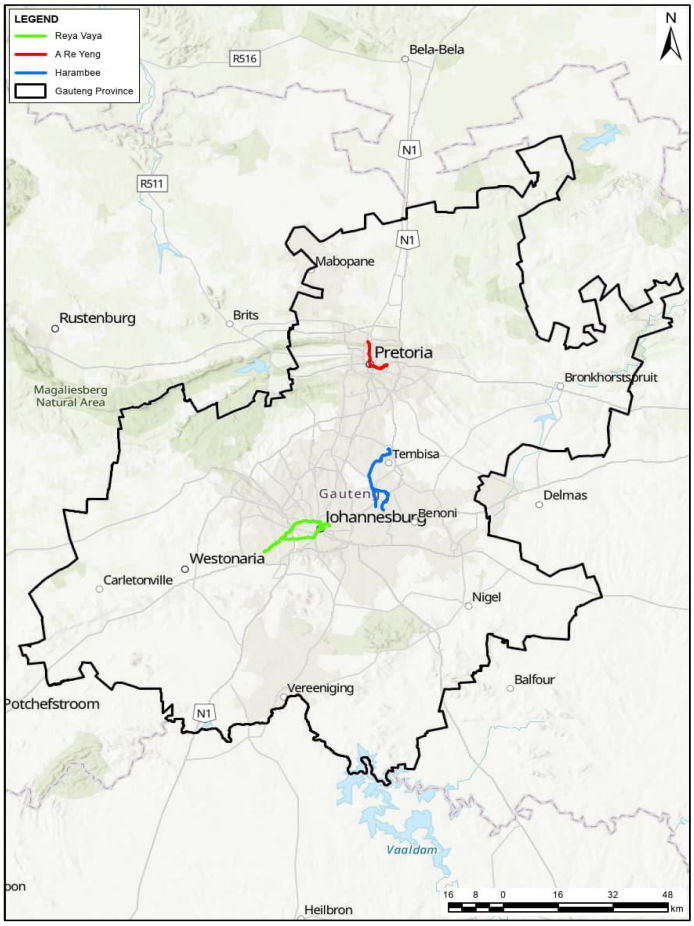


Figure 4-16: BRT trunk routes in Gauteng

The BRT trunk lines are very localised with limited coverage. The CoT trunk services operate from Rainbow Junction in the north, through the CBD to Hatfield (Gautrain Hatfield station), the CoE trunk services operate from Tembisa to Kempton Park and the CoJ trunk services operate from Soweto to Ellis Park and Braamfontein.

Table 4-24 gives a high-level overview of the current average weekday passengers using the BRT services in the Province.[iv]

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Table 4-24: BRT weekday passengers in Gauteng

Contracting Authority	Name	Operating area	Average weekday passengers	Average weekday pax /vehicle
City of Ekurhuleni	Harambee	Tembisa - Kempton Park	10 343	81.9
City of Johannesburg	Rea Vaya	Soweto - Braamfontein	33 032	120.5
City of Tshwane	A re Yeng	Rainbow Junction - Hatfield	23 017	137.8
TOTAL			66 392	113.4

The low passenger numbers experienced on all the BRT services reflects the challenges that continues with these services, ranging from expanding the current trunk line offering to operational issues experienced on a daily basis.

4.4.3.2 Municipal Owned Bus Services

In addition to the PTOG and BRT services, there are municipal bus services operating in Gauteng. In this regard, the CoJ, the CoT and the CoE offer a municipal bus service to their citizens.

Table 4-25 provides a high-level summary of the relevant operational information for the three entities.

Table 4-25: Municipal Bus Services in Gauteng

Category	Tshwane Bus Service[v]	Metrobus[vi]	CoE Municipal Bus Service
Ownership	CoT	State Owned Entity (CoJ)	CoE
Peak Fleet Requirement	160	361	65
Annual Kilometres	5.8 million	9.2 million	1.2 million
Annual Passenger Trips	5.8 million	8.1 million	0.82 million
Annual Budget	R 384 million	R 644 million	R 86.4 million
Annual Revenue (fares, advertising, private hire)	R 54 million	R 99 million	R 15.4 million
Annual deficit	R 330 million	R 545 million	R 71 million

In total, the 3 municipalities spend in the order of R 946 million per annum on subsidising the 3 bus services.

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4.4.4 Mini-bus Taxi Services

The mini-bus taxi routes are indicated per district for the province in Figure 4-17.

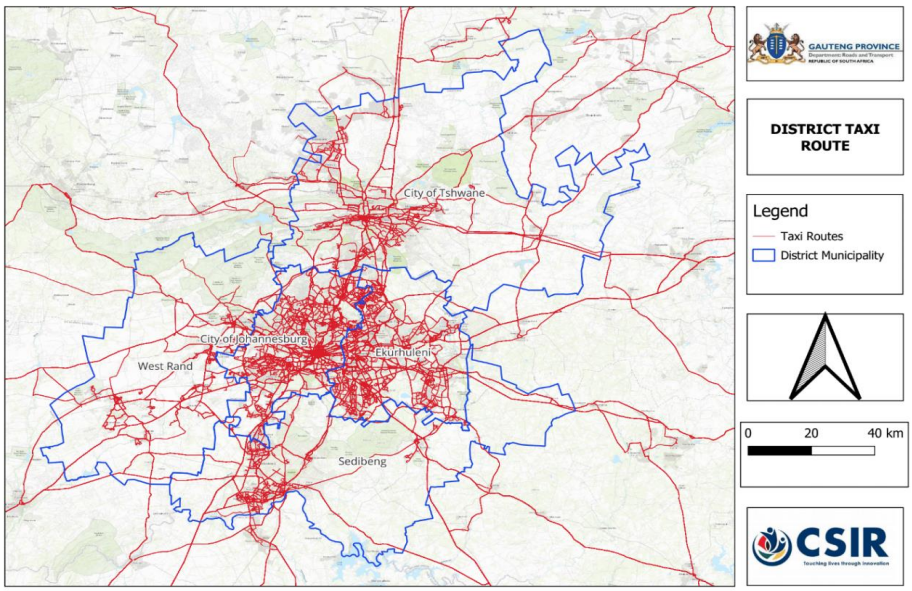


Figure 4-17: Mini-bus Taxi Routes in Gauteng

Figure 4-17 indicates the concentration of minibus taxi routes in the CoJ and CoE Metropolitan areas, with surprisingly fewer routes in CoT. There is a substantial number of inter-provincial routes.

Figure 4-18 indicates the locality of formal and informal minibus taxi facilities in the Province.

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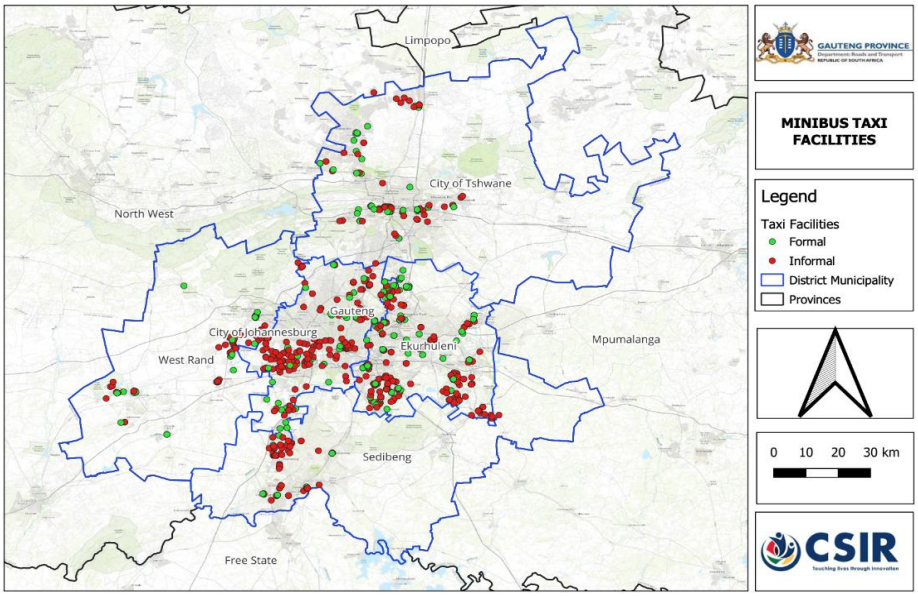


Figure 4-18: Mini-bus Taxi facilities in Gauteng

The minibus taxis facilities, both formal and informal, are indicated in Figure 4-18. The majority of the facilities are informal and both formal and informal facilities are concentrated in the CoJ and CoE.

The MBT industry operates in an economically regulated environment and as such require an operating license to legally transport passengers for financial gain. The applicable Regulations for the issuing of operating licenses was Gazetted in 2009. The Province has established a Provincial Regulating Entity (PRE) that deals with the issuing of new operating licenses and the conversion of area based permits to route based operating licenses.

There is a grave concern amongst the Gauteng Taxi Industry regarding the backlog that exists with the issuing of operating licenses.

The taxi industry remains the only public transport mode that does not receive an operational subsidy from Government. The substantial increase in the price of fuel over the last two years, combined with the substantial increase in the price of new tyres as well as regular increases to parts and maintenance of the vehicle, has put the industry under more financial pressure than it has ever been. This combined with the fact that salaries and wages of their target market has not kept up with inflation over the past two years, makes it very difficult for the industry to increase their fares on a regular basis. The economic slowdown since 2019, with many companies closing down and workers losing their jobs has also impacted on the traditional taxi industry market. The problems experienced by PRASA, especially since the start of

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COVID-19 have mitigated some of the problems experienced by the taxi industry, as the MBT industry was the main benefactor from PRASA's problems.

The industry is left behind when it comes to investment in infrastructure for the industry. The majority of grant funding is earmarked towards the IPTN which up to now has focussed mainly on the planning, construction, implementation and operation of the BRT systems. The provision of facilities for the taxi industry focussed mainly on lay-byes and formal taxi ranks at local authority level. The unprecedented growth in the industry has put pressure on the existing facilities as the demand for ranking and holding space has outstripped the provision. The design of the taxi ranks has not kept up to date with latest design technology in terms of materials used and energy efficiency.

A Taxi Summit was convened between the MEC and provincial officials and representatives from the taxi industry in Gauteng from 24-25 July 2019. The strategic objectives agreed at the summit related to:

- Work within the existing government regulatory framework;
- Modernise the MBT industry;
- Uphold and work with the road safety prescripts;
- Corporatise and empower the mini-bus taxi industry, and
- Eradicate violence, fraud and corruption.

The challenges faced by the taxi industry, as identified at the summit are:

- Taxi wars that require the law enforcement agencies and judiciary to act decisively on crimes committed in the industry;
- High level of corruption, maladministration and toxic management practices in the issuance of operating licenses;
- Lack of reliable, accurate and consistent data withing the industry;
- Minimum and/or lack of training and reskilling operators;
- Bad driving methods, poor conditions of vehicles and driver behaviour;
- Poor working conditions of taxi drivers;
- Lack of unity;
- Industry operating far below capacity, and
- Too many illegal operators.

Because of the informal nature of the industry, reliable MBT numbers are difficult to obtain. There are many MBTs operating illegally on the roads in Gauteng in that the operators do not hold the required licences or operate contrary to the conditions of their licences.

Table 4-26 provides a high-level summary of the MBT numbers and the number of registered associations for each Planning Authority in Gauteng.

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Table 4-26: MBT associations and vehicles by Planning Authority

Planning Authority	Nr of Associations	Nr of MBTs
City of Ekurhuleni	35	12 600
City of Johannesburg	78	23 930
City of Tshwane	40	23 930
Sedibeng District Municipality	39	2 030
West Rand District Municipality	12	2 870
TOTAL	204	53 680

As part of the information gathering exercise, workshops were held with representatives of the GTI to obtain a better understanding of what the issues are that frustrates the industry and hinders them to make real progress in becoming not only economically viable, but a thriving industry.

The following issues (not in order of priority) requires attention from the Government:

- Continuous GTI inputs in land use, development and transport planning

  The industry continuously finds itself on the backfoot when it comes to new housing and commercials developments, not being able to plan for services and routes to and from new destinations. New services must be introduced “reactively” after new developments had taken place and this leads to in adequate time to apply for OLs and may lead to conflict between associations for such new routes. Planning of mini-bus taxi infrastructure and facilities often is inadequate at new developments and are done for the industry as an afterthought and not with the industry as part of the planning of the development.

- Regulations for the minibus taxi industry should be pragmatic

  The fact that an operating licence has a validity period (7 years) associated with it, potentially limits the economic value thereof. The industry is in favour of operating licences to have a tradable value, which is measurable and auditable. The industry was under the impression that currently, the NLTA does not allow for the transfer of licences. There could be a misunderstanding in this regard, as Section 58 of the NLTA specifically provides for transfer of licenses.

If an operator fails to successfully apply for the renewal of an operating license, it becomes null and void on the date of expiry and the operator has to do a new licence application, standing at the “back of the que” and his/her vehicle can be impounded if continued to be operated. The experience of the industry is that there is no prior notification or grace period. Regulation 25(2) of the NLTA Regulations provides for a grace period in that where an application for renewal was properly made and the PRE has not issued the OL by the expiry date, the OL will remain valid until the PRE either issues the renewed OL or notifies the applicant that the application was refused. The operator must keep the receipt issues by the PRE in the vehiles as proof that the application was made.

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Operating licences are "expropriated" for affected operators to participate in operating companies operating BRT services. Contracts for the provision of BRT services are expiring after 12 years and the affected operators will be left without a future, if the incumbent operating company is not successful in winning the tender for future BRT operations. The legislation does not allow for this to happen. Where operators are displaced, they must be given alternative services or routes, or must be compensated.

The lack of regulation of e-hailing services remains a challenge to the GTI. The route-based licencing regime is constraining the industry to participate in MaaS service offerings. Not being able to provide such services in the off-peak impacts the viability and sustainability of operators. The NLTA Amendment Bill will provide for the regulation of e-hailing services. Until such time, e-hailing services are supposed to be regulated as charter services.

- Functioning of the PRE and the backlog in disposing with Operating Licence applications and renewals

  A significant backlog exists at the PRE in relation to the disposal of operating applications and renewals. The system is often off-line. The moratorium in existence with respect to the issuing of new licences is also causing significant problems to the industry, in being able to serve the increased demand for services and legal operations. Syncronisation between the regulatory entities at the respective spheres of government is also problematic as this lengthens the period that it takes to dispose with applications, i.e. the NPTR and the PRE.

  The transfer of licenses to a company or legal entity poses challenges for the industry that needs government's attention.

- Subsidy policy and the inclusion of the minibus taxi industry

  The industry is of the opinion that all public transport modes should be treated the same when it comes to operational financial support. The minibus taxi industry is transporting the majority of public transport passengers in the Province and increased their capacity to accommodate passenger demand that came about due to the collapse of the commuter rail services.

  The lack of subsidies or operational financial support is severely impacting on the profitability and sustainability of operations. This is aggravated by rising fuel costs and a substantial increase in the price of tyres over the past two years. The taxi recapitalization programme, currently paying R 125 000 per vehicle, whereas a new minibus taxi cost in the order of R 769 000, is also not assisting operators sufficiently to replace their vehicles and to sustainably operate them. Interest rate to finance taxi vehicles is substantially more than the prime interest rate.

- Implementation of the outcomes of the taxi summit held in June 2019

  The slow implementation of the recommendations of the 2019 Gauteng Taxi Summit and its task teams was raised as a concern. The main issues discussed was the establishment of a Taxi Academy, corporatisation and commercialisation of the industry or part thereof and setting up of a Cooperative Bank. It was

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mentioned that the provincial Department for Economic Development was assisting with the latter, but this seems to have grinded to a halt. The question was asked how the industry can create more value for itself to become a national asset through relationships/partnerships with government and the business sector/banks.

- Separate lanes for minibus taxis

  Congestion is impacting on the quality of service and travel times of public transport passengers. This was addressed in terms of dedicated lanes for BRTs. The long travel and "turn-around" times are adversely impacting the Industry and its passengers. Separate lanes and/or public transport priority measures on major arterials and freeways should be considered in this regard.

- Condition of taxi ranks

  The condition of many ranks is poor (not fit for human consumption), especially in townships. Where ranks with facilities and amenities of an acceptable quality had been provided, the maintenance and management thereof are not adequate, resulting in the deteriorating condition of such facilities. Little allowance is often made in municipal budgets for the Opex and maintenance (minor and major) for taxi ranks. The types and standards of facilities and amenities vary significantly between ranks.

- A programme that eliminates segregation and promotion of social integration

  The GTI is concerned that only passengers of certain areas and sectors of society view and/or perceive minibus taxis services as a viable transport offering and for a significant shift to public transport to take place, this needs to change.

- Transition to e-vehicles and sustainable transport

  The GTI is concerned about the implications of e-vehicles and if it was to be forced to convert to using such vehicles, the impact this would have on the sustainability of the Industry. The industry is concerned as to how the industry is to be brought into sustainable transport as part of the move away from traditional petrol/diesel engines.

- Public safety and assistance to the industry

  The GTI raised its concerns regarding the implementation and policing court orders in relation to conflicts on routes between operators and associations. Such orders are often not adhered to and enforced, which means that the potential for conflict does not disappear.

4.4.5 Inter-provincial Long-Distance Services

4.4.5.1 Rail based services

Inter-provincial long distance rail service is operated by Shosholoza Meyl, a division of PRASA.

It is intended to be a low-cost rail carrier, with cross-country trips taking at least 26 hours to complete and no luxurious dining carriages or onboard entertainment to pass

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the time. The experience has been described as “uniquely South African”, harking back to days when migrant labourers would use the rail service to return to their rural homes after working in the country’s industrial hubs.

But what the Shosholoza Meyl lacks in luxury it looks to make up for in price. Fares are split into two categories. Tourist carriages include four-berth compartments with bunk beds, communal toilets, and a shower at the head of the coach. Economy class is a tighter fit with minimal amenities.

There are currently two routes operating form Johannesburg Park station, namely one to Musina in the Limpopo Province and one to Queenstown in Eastern Cape Province.

The schedule for the Johannesburg – Musina route is the last Friday – Sunday of the month whereas the schedule for the Johannesburg - Queenstown route is the 2nd Friday – Sunday of the month. The Johannesburg – Musina schedule in increased to weekly trips during the December and January peak time.

Analysing the Johannesburg – Musina timetable reveals the following:

- Departure time (Johannesburg) : 15:00
- Arrival time (Musina) : 06:49
- In train travel time : 15H49
- Distance : 473 km
- Average speed : 30 km/hour
- Stops : 11
- Fare - Sleeper : R 230
- Fare - Seated : R 160

Analysing the Johannesburg – Queenstown timetable reveals the following:

- Departure time (Johannesburg) : 12:35
- Arrival time (Musina) : 04:09
- In train travel time : 15H34
- Distance : 769 km
- Average speed : 42 km/hour
- Stops : 14
- Fare - Sleeper : R 290

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- Fare - Seated : R 190

Inputs from the Limpopo Province indicate the desire to promote a more frequent passenger rail service between Johannesburg and Musna in the short term. The province envisages a high-speed rail service as being most suitable mode of public transport along this route, considering the anticipated increase in the travel demand due to the Musina-Makhado SEZ development.

4.4.5.2 Road based services

Inter-provincial long-distance services are those that cross the provincial boundary from adjacent provinces, and further afield such as neighbouring countries.

These services are offered by long distance taxi associations and a variety of bus companies, ranging from local bus companies specialising in long distance transport and bus companies registered in neighbouring countries that transport passengers to and from Gauteng on a regular basis. Autopax used to be one of the main players in this space, offering a diversified service to the different market segments, by means of the City to City and Translux brands. Autopax was put in business rescue towards the end of 2021.

Gauteng is unique in the sense that many inter-provincial services are offered on a daily basis, as part of the commuter transport system. These services include PTOG contracted services and MBT services mainly to and from the Limpopo, Mpumalanga and North West Provinces.

Services from neighbouring countries require permits, which is the responsibility of the Cross-Border Road Agency (C-BRA). In the 2019/20 financial year, the C-BRA issued 15 326 MBT and 1 313 bus permits to operators from neighbouring countries. The majority of these services terminate in Gauteng.

4.4.6 MaaS & Metered Taxis

4.4.6.1 E-hailing Services

E-hailing was first introduced in South Africa in 2011 by Uber, followed by Bolt (formally Taxify) in 2015.[vii]

The e-hailing service has filled a gap in the South African public transport market which was not satisfied by the existing public transport offerings at the time. The concept of transport on demand, ordered by means of a smartphone, and receiving information on the cost of the trip, details of the vehicle and the driver changed the public transport landscape.

The information available for Gauteng relates to the number of non-MBT operators registered by the PRE over the four-year period, 2016/17 – 2019/20 and is contained in Table 4-27.[viii]

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Table 4-27: Non-MBT modes registered: 2016/17 – 2019/20

	2016/17	2017/18	2018/19	2019/20	TOTAL
Number of vehicles registered	2 094	3 586	3 605	2 573	11 858

It is cautioned that the information contained in this table refers to e-hailing vehicles, metered taxis and tuk-tuks. A breakdown of the individual services is not available. It the absence of a breakdown and taking the popularity of e-hailing services into consideration, it can be assumed that at least 50% of the reported registrations were for e-hailing services.

In line with the NLTA and its published regulations (*Government Gazette* No 32821, published on 17 December 2009) e-hailing services require an operating licence to operate legally in South Africa. It is noted that the Regulations were published before e-hailing services were introduced to South Africa. E-hailing services are currently dealt with as charter services, however, when the NLT Amendment Bill is passed (which is expected soon), it will have a separate section on e-hailing. Specific regulations are currently being drafted on e-hailing which will be published when the Amendment Bill is promulgated.

4.4.6.2 Metered Taxi Services

Metered taxis can be found in the major metropolitan areas in Gauteng and to a lesser extent in the district municipalities. Metered taxis are not a commonly used mode in Gauteng for daily commuter trips. However, the industry is fairly well established and performs an essential role in the transportation of both residents and visitors within and to and from Gauteng.

Metered taxis offer personalised transport services, provided on demand to the general public and visitors. Metered taxis can be found at specific ranks, hailed on the street (to differing degrees in different places), or booked telephonically. The vehicle is hired, and the passenger/s is/are charged a fare based on the duration and distance of the trip. The charge is calculated in a sealed meter. The metered taxi does not operate on fixed routes but provides a door-to-door service based on passenger requirements. It is generally available 24 hours a day and seven days a week.

The metered taxi industry as whole is under pressure as their business model has not kept up with technology and a changing market demand. The popularity and continued growth in the e-hailing industry has confirmed that there is a strong market demand for e-hailing services.

4.4.7 Scholar Transport Services

The GDRT is responsible for contracted, subsidised scholar transport services in the Province in collaboration with the GDE. These services are offered in line with the Department's policy to support learners that walk more than 5 kilometres to school. There is no fare payable by the scholar and the scholar trip is subsidized in full.

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Information proved is for the 2019/20 financial year and is compared to the 2011/12 financial year (the time when the Gauteng ITMP25 was compiled).

It was reported that 138 838 learners (57 137 in 2011/12) from 429 schools benefited from the Scholar Transport Programme. Operators that served Primary School routes were paid R 600 million and operators serving Secondary Schools were paid R 316 million for a total expenditure of R 916 million (R 208 million in 2011/12).

The scholar transport services were put out to tender by the GDE in March 2021 for a 3-year contract period.

In addition, an amount of R169 million in 2021/22 is earmarked for scholar transport to transport learners in Public Special Schools.

According to the Department's annual performance plan (2021/2022) the allocated budget for scholar transport services is R 1.1 billion.

4.4.8 Nodes and Stations of Provincial Significance

In compiling the GSDF 2030, the SDFs of the metropolitan, district and local municipalities in the province were analysed. Most of the municipal SDFs have similar objectives and are (to a greater or lesser extent) structured around the themes of nodes, corridors and movement networks, and the protection of sensitive natural environments (GSDF, 2030:8). Table 4-28 indicates the nodes of significance, per local authority, with accompanying spatial orientation for each local authority.

Table 4-28: Nodes of Significance with Spatial Orientation per Local Authority

Nodes	Municipality
• Johannesburg Central Business District (CBD) • Midrand Node • Sandton • Baralink Regional node • Burma Regional Node • Constantia/Strubens Valley • Cresta/Beyers Naude Regional Node • Fourways Regional Node • Greater Sloane Regional Node • Greenstone Regional Node • Illovo Regional Node • NASREC Regional Node • Northgate Regional Node • Ormonde/Gold Reef City Regional Node • Parktown Regional Node • Randburg Regional Node • Rivonia Regional Node • Roodepoort Regional Node • Rosebank Regional Node • Southgate Regional Node • Sunninghill Regional Node	**City of Johannesburg**

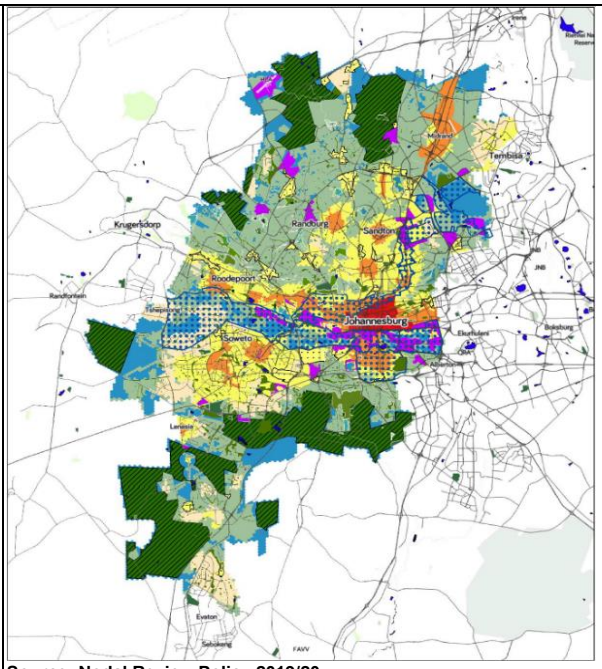
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• Westgate/ Princess Regional Node • Woodmead Regional Node • Ennerdale District Node • Jabulani District Node • Kliptown District Node • Lenasia District Node • Lenasia South/ Unaville District Node • Stretford District Node • Melrose Arch District Node • Gleneagles/ Oakdene Regional Node • Hyde Park/Dunkeld District Node • Killarney District Node	 **Source: Nodal Review Policy 2019/20**
Primary Nodes: • Aero City Centre • Carnival City Node • Edenvale CBD • Kempton Park CBD • Germiston CBD • Boksburg CBD • Alberton CBD • Springs CBD • Brakpan CBD • Benoni CBD • Nigel CBD • K27 and Midrand Street node • K86 and Lurie Street • Tsakane Community Centre • Ramakanopi	**City of Ekurhuleni**

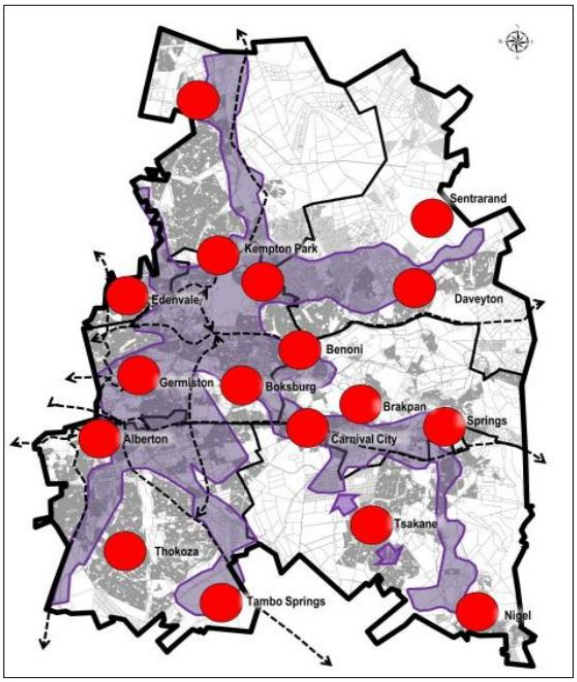
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Source: Ekurhuleni Metropolitan SDF, 2015

Capital Core

- Pretoria

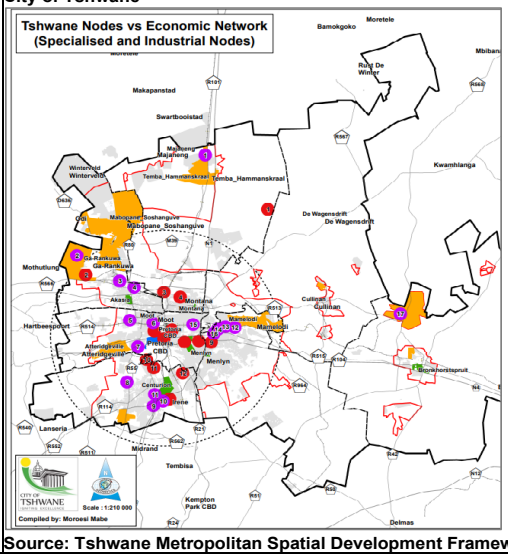
Metropolitan Nodes

- Akasia CBD
- Bronkhorstspruit
- Brooklyn
- Centurion CBD
- Hatfield
- Kolonnade
- Menlyn

Urban Core Nodes

- Atteridgeville/Saulsville
- Ekangala
- Ga-Rankuwa
- Hammanskraal/Temba
- Kopanong/Soshanguve South Mabopane/Soshanguve
- Mamelodi
- Olievenhoutbos
- Refilwe
- Zithobeni

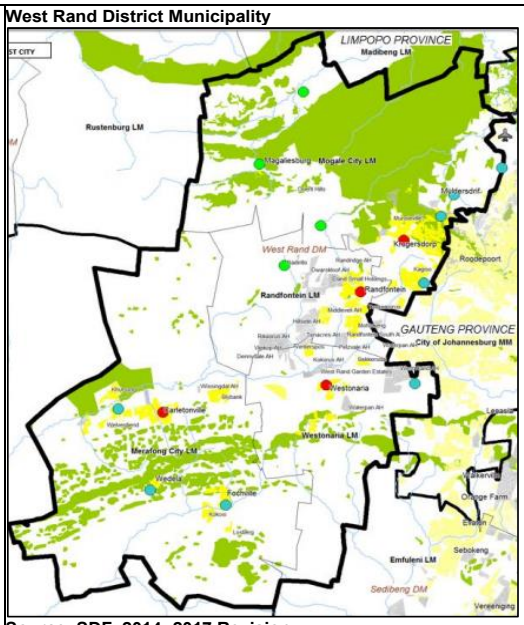
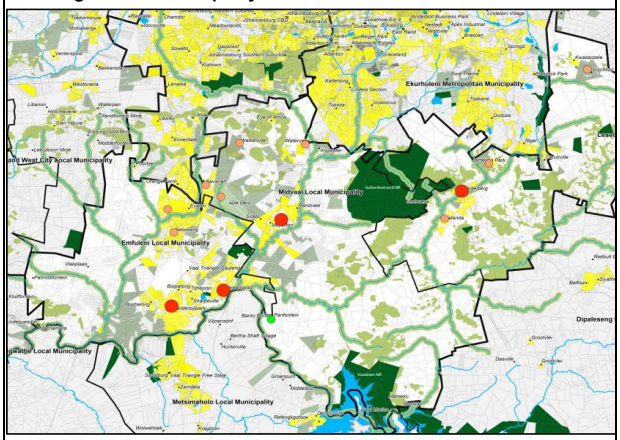
City of Tshwane



Source: Tshwane Metropolitan Spatial Development Framework, 2021

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Primary Nodes: • Randfontein • Westonaria • Carltonville • Krugersdorp **Secondary Nodes** • Lanseria-Nietgedacht • Muldersdrift • Silver Star-Cradle Mall • Leratong Node • Syferfontein-N12 • Fochville • Khutsong South • Wedela **Rural Nodes** • Hekpoort • Magaliesburg • Tarlton-Orient • Badirille	**West Rand District Municipality**  **Source: SDF, 2014 -2017 Revision**
Development Nodes and Corridors **Primary nodes** • Vanderbijlpark • Vereeniging • Meyerton **Secondary** • Evaton • Sebokeng • Savanna City • Waterval • Elandsfontein **Mixed Use consolidation:** • Heidelberg • Ratanda • Jameson Park	**Sedibeng District Municipality**  **Source: SDF, 2019 Draft Report**

Although the smallest province by land surface in South Africa, the Province still covers 18 176 square kilometres (roughly 211 km north to south and 80 km east to west).

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For the Global City Region to be functional, it requires the major nodes and stations to be connected through a network of routes and public transport services. The focus of such a connected network should be to enhance mobility and improve accessibility with intermodal transfer facilities of provincial significance located at strategic places in the Province.

Figure 4-19 gives a high-level indication of the major nodes and connectivity in Gauteng and beyond.

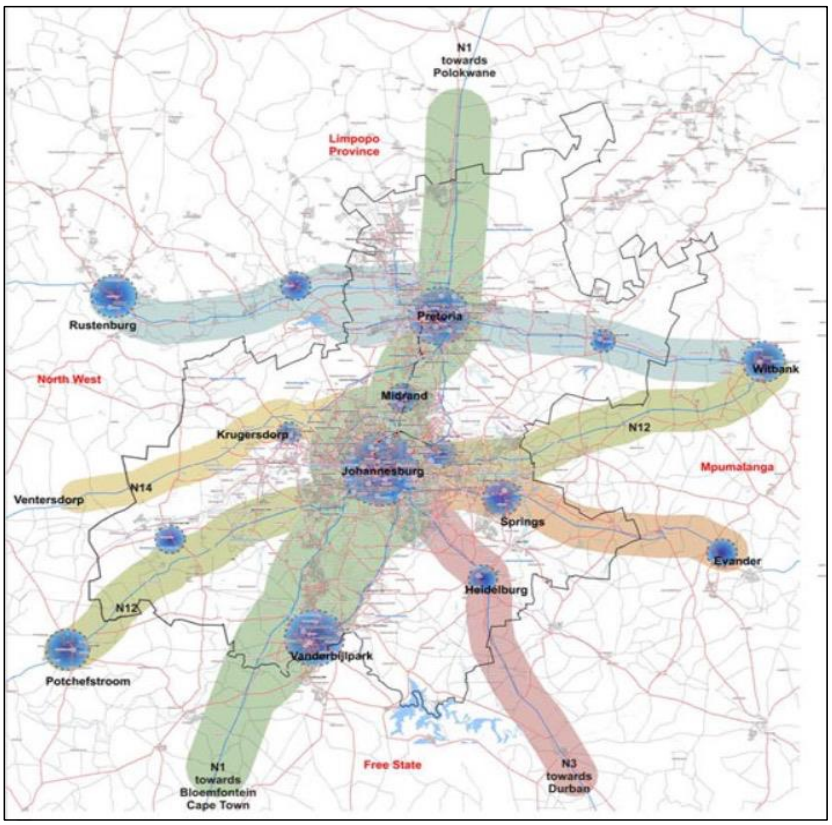


Figure 4-19: Major Nodes and Developments in Gauteng

Developments of significant importance are concentrated around the CBDs of Johannesburg and Tshwane and around the areas of expansion that are mostly driven by private sector development.

Development around stations has mainly focussed around Gautrain stations and specifically Sandton station in Johannesburg and Hatfield station in Pretoria.

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for the ***Gauteng Provincial Administration***, Johannesburg.

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Publications: Tel: (012) 748 6053, 748 6061, 748 6065

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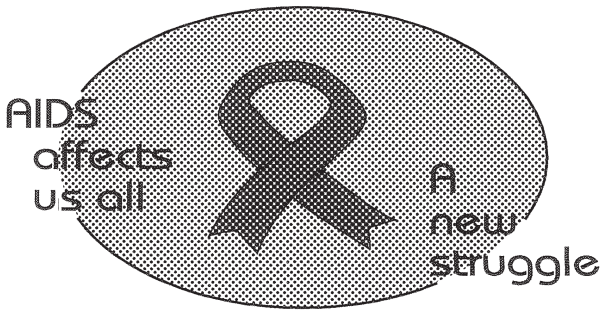
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4.4.9 Ticketing and Fare Collection

Ticketing and fare collection takes on different forms in the Province and is dependent on the mode and whether it is formalised or informal.

Gautrain makes use of its own, unique smartcard, a contactless bank card (Debit or Credit) and BRT issued smartcards since November 2019. A passenger needs to be in possession of a smartcard or approved debit or credit card. A Gautrain smartcard must be purchased at a once off fee, before accessing the system. The card can be loaded at any station with value in the form of cash or by purchasing weekly or monthly products for a pre-determined O-D pair at a discount.

The PTOG subsidised services are operated in line with the specifications as contained in the published Model Tender and Contract Documents. The specifications are clear on Electronic Fare Collection (EFC) on the buses and it states:

“All buses operating on the PTOG contracted services will have an Electronic Fare Validation Equipment (EFVE) system that conforms to the specifications. Commuters have the option to purchase multi-journey tickets, ranging from 10 trip tickets to 44 trip tickets. These products are usually offered at a slight discount to the cash fare as an incentive to the passengers. These ticketing systems are not integrated and can only be used on the services offered by a specific bus operator. The trips are paid for as the passenger enters the bus.”

The collection of fares on the different BRT systems in Gauteng is the responsibility of the Planning Authority (Municipality). In this regard they were responsible for the tender specifications, and eventually the awarding of the Automated Fare Collection (AFC) contract to the successful bidder. The BRTs in the Province operate as a closed system on the trunk routes, whereby the passenger pays at the fare gates as they enter the station. Passengers need to obtain a pre-paid smart card at any kiosk before boarding either a trunk, complementary or feeder bus.

Since 2018, Tshwane Bus Service uses the same fare collection equipment as TRT (Pty) Ltd, the A Re Yeng operator, and the fares are integrated with the A re Yeng fares. Passengers use the same fare medium on both services.

The procurement of the AFC System is underway, and implementation is scheduled for the financial year 2020/21 at Metrobus.

The MBT industry is informal and only takes cash from passengers as a payment medium for a trip.

There have been some initiatives in the past decade to introduced EFC to the MBT industry. This was usually done on a pilot basis, and by all accounts did not last very long. An EFC system (card based) was introduced on the Johannesburg, Pretoria and Mabopane (JPM) route in 2016. The JPM Taxi Association was selected as it has been involved in previous pilot projects and has experience in dealing with the cashless system. The project was to be expanded to other taxi routes in Gauteng, with the aim of completing a national rollout within five years. The current status of the system is not known.

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Any EFC system mooted for the MBT industry will have to solve the driver remuneration conditions in the industry first for the system to be accepted throughout the industry.

E-hailing services make use of propriety developed applications (Apps) and payment is mostly done via a credit card, although cash can also be used. The credit card details are loaded on the app, when the user first registers on the app. When an e-hailing trip is booked, prior to accepting the trip, the passenger is informed of the cost of the trip and when the trip is confirmed by the passenger the cost of the trip is deducted from the credit card, where applicable. The individual paying for the trip is not necessarily the user of the e-hailing service.

4.4.10 Financial Support to Public Transport

Expenditure on public transport subsidies continues to increase without any proportionate benefits to the public. Yet subsidies are paid only to specific modes (rail and bus), which have limited network coverage compared to MBTs. The current subsidy framework is also becoming more fragmented, as more public transport modes such as the Gautrain and BRT have been added to the network, each with their own subsidy requirements.

In Gauteng, the public transport supply consists of the following:

- Commuter rail (PRASA);
- Gautrain Rapid Rail Link;
- Commuter bus industry (PTOG);
- Municipal bus services;
- Scholar bus services;
- BRT;
- MBT services, and
- E-hailing services, inclusive of metered taxis and tuk-tuks.

The commuter rail system is funded by the DoT by means of a transfer of funds from the DoT to PRASA.

Gautrain is funded by the GPG and managed by the GMA.

The provincially managed and subsidised commuter bus services are funded by GDRT by means of a PTOG in accordance with Schedule 4 of the DoRA. This is a conditional grant that can only be used for provincially contracted commuter bus services.

Municipally owned bus services are funded from the local rates and taxes collected by the municipality. Metrobus (Johannesburg) and Brakpan Bus Service also operate PTOG contracts.

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Subsidised scholar transport service providers are contracted to the Gauteng Department of Education for a 3-year period at a time. These operators are paid by the GDE.

BRT services are funded by DoT by means of the PTNG in accordance with Schedule 5, Part B of the DoRA. The grant is split into a Network Operations Component and a Network Infrastructure Component. This is a conditional grant that can only be used for IPTN planning, infrastructure provision or part payment of operations.

The taxi industry is not directly subsidised by government but participates in a Taxi Recapitalisation Programme (TRP), in terms of which taxi operators receive a once-off capital grant, which aims to assist taxi operators in replacing their vehicles. The current capital subsidy is R 124 000 per vehicle. This is funded by the DoT.

E-hailing services do not receive any financial support from Government and is a purely market driven service offering to the user.

4.5 Road Network

This section of the report covers the condition/state and classification of the Gauteng Road network. It discusses in separate sub section the network under the jurisdictions of: SANRAL, GPG, the three (3) Metropolitan Municipalities and the six (6) Local Municipalities which are clustered under two (2) District Municipalities.

4.5.1 SANRAL Road Network

The South African road network is approximately 750 000 km in extent. According to SANRAL Strategic Plan 2020/21 – 2024/25, SANRAL road network is 22 214 km; Provincial Road network is 272 821 km; Metros amount to 66 143 km; municipalities amount to 256 903 km and un-proclaimed roads amount to 131 919 km. Un-proclaimed roads are those not formally gazetted by any authority. Figure 4-20 shows the SANRAL road network.

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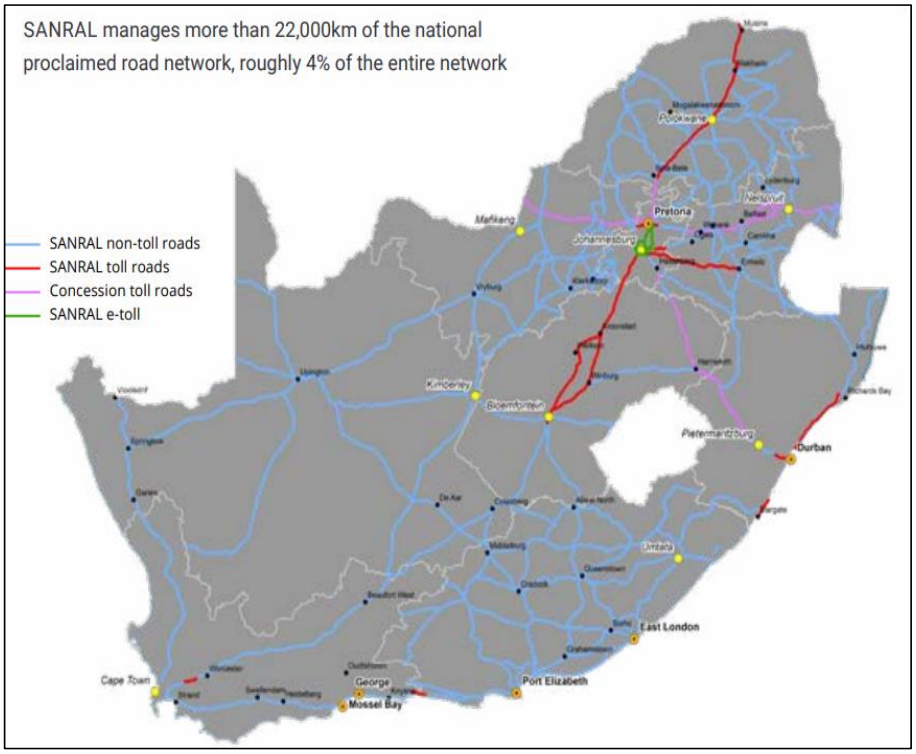


Figure 4-20: SANRAL Road Network

The SANRAL Road Network consists of 22 214 km of roads of which 87% of SANRAL roads in the system are non-toll roads funded by Treasury grant funds whilst 13% of the SANRAL roads are toll roads which are managed by SANRAL, and private concessions as shown in Table 4-29.

SANRAL accounts for 3.6% of the proclaimed road network; they carry about 34.9% of all the vehicle kilometres travelled and more than 70% of long-distance road freight.

Table 4-29: SANRAL Road Network per type

Description	Non-Toll	Agency Toll	PPP	Total
Dual Carriageway	817	557	519	1 893
4-lane undivided	30	302	231	562
2-Lane Single	18 414	823	521	19 758
Total	**19 262**	**1 681**	**1 271**	**22 214**
% of SANRAL Network	**87%**	**7%**	**6%**	

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Gauteng Province has the lowest percentage of the SANRAL road network which is 3.6% (807 km) of the SANRAL road network as shown in Table 4-30.

Table 4-30: SANRAL Road Network Length per Province

Province	SANRAL Region	Length (%)	Length (km)
Eastern Cape	Southern Region	22.3	4 952
Free State	Eastern Region	7.1	1 582
Gauteng	Northern Region	3.6	807
KwaZulu-Natal	Eastern Region	5.9	1 321
Limpopo	Northern Region	16.4	3 649
Mpumalanga	Northern Region	11.2	2 478
Northwest	Northern Region	11.3	2 503
Northern Cape	Western Region	15.6	3 457
Western Cape	Western Region	6.6	1 465
Total Length		**100**	**22 214**

(Source: SANRAL Strategic Plan 2020/21-2024-25)

The exact make-up and condition of the SANRAL network wasn't available at the time the report was compiled. They have been requested to provide the required information.

4.5.2 Gauteng Provincial Road Network

According to the Gauteng Province Department of Roads and Transport Road Assets Management Plan (RAMP) 2021/22, the Province is responsible for a road network consisting of approximately 5 600km of roads (4 328km surfaced and 1 271km gravel roads). 33% of Gauteng provincial roads are classified as arterial roads; 27% as distributor roads; 33% as collector roads and the remaining 7% as principal and access roads.

Table 4-31 shows the provincial network length per road class obtained from Gauteng RAMP 2021/22 and Figure 4-21 shows the road network.

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Table 4-31: Gauteng Provincial Road Network per class

Road Class	Length (carriageway-km)			
	Paved (Flexible)	Paved (Rigid)	Unpaved	Total
Principal	293.01			293.01
Arterial	1 870.29			1 870.29
Distributor	1 326.28		174.41	1 500.69
Collector	791.68	0.09	1 060.71	1 852.47
Access	46.69		36.50	83.19
Total	**4 327.94**	**0.09**	**1 271.62**	**5 599.65**

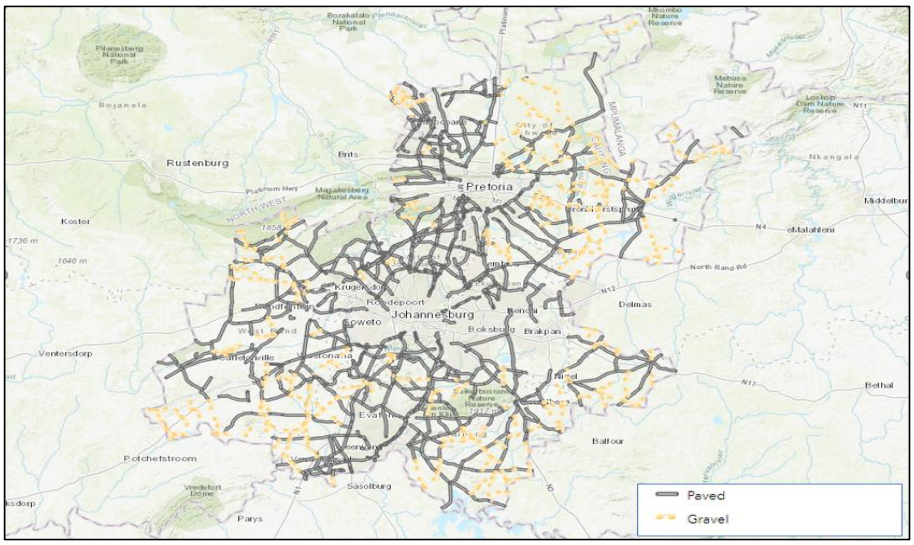


Figure 4-21: Gauteng Provincial Road Network

The Gauteng provincial road network includes 676 bridges and 428 major culverts.

Gauteng Province has a planned strategic road network which was developed over time. It consists of a grid of Freeways (PWV roads) and main arterials (K-routes). The Gauteng strategic road network is shown in Figure 4-22.

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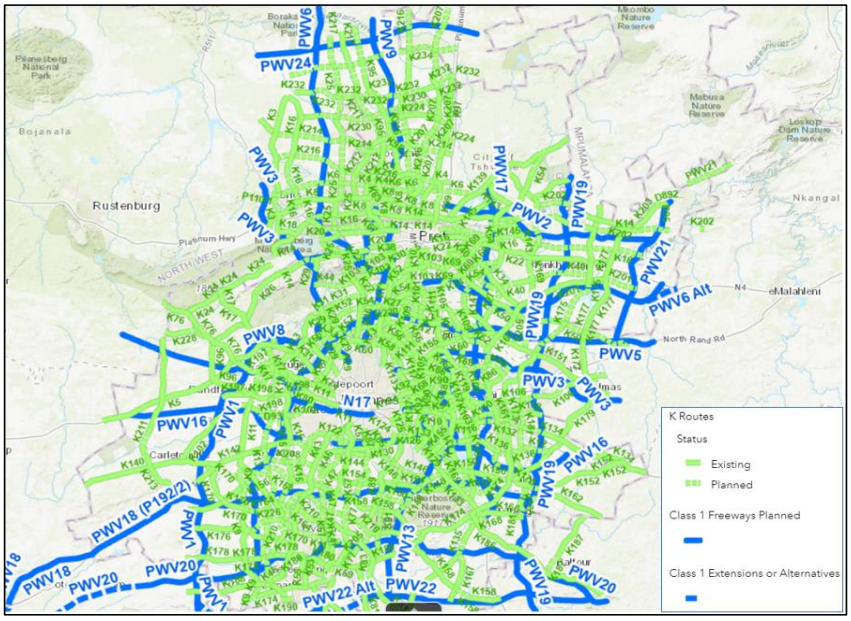


Figure 4-22: Gauteng Strategic Road Network (as per GDRT RAMS viewer)

(Source: Gauteng RAMS Geo-Spatial)

The visual assessment of the entire provincial network, both paved and unpaved roads, was carried out during the period 11 August to 23 October 2015. The data is now nearly 7 years old, and the Gauteng Department of Roads and Transport (GDRT) is currently in the procurement process to appoint service providers to update the visual assessment.

According to the Gauteng RAMP 2021/22 the 76% of the paved road network is in a good to very good condition and about 4% is in a poor to very poor condition. However, the average condition of the paved roads is 78%, which is categorised as a good condition. Figure 4-23 shows the VCI for the paved road length and Figure 4-24 shows the VCI for different road class.

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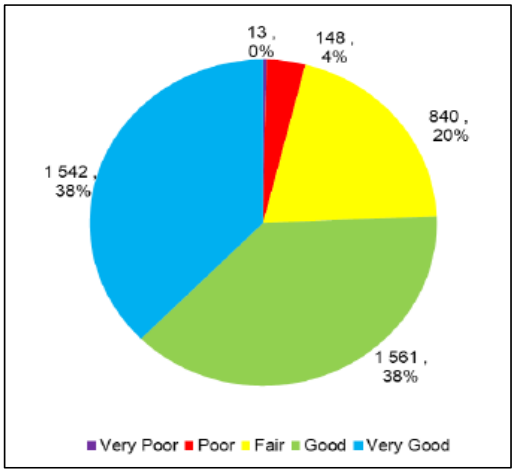


Figure 4-23: Paved Road (km, %) per VCI Category

(Source: Gauteng RAMP 21/22)

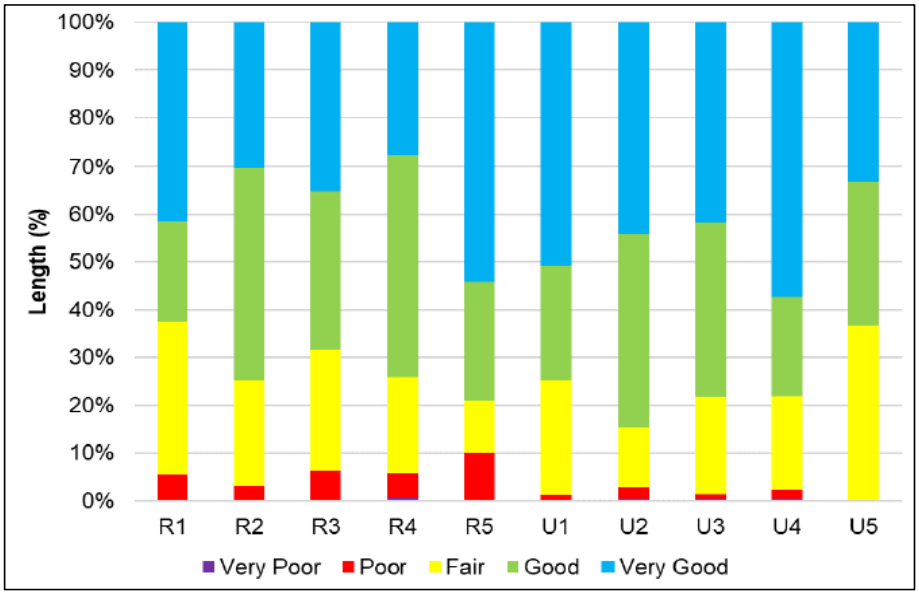


Figure 4-24: Distribution of VCI Categories per Road Class (paved)

(Source: Gauteng RAMP 21/22)

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About 63% of the unpaved roads are in fair condition, 28% in poor condition whilst 9% of the roads are in good condition. According to the Gauteng RAMP 2021/22, the average condition of the unpaved road network is 55% which is in fair condition. Figure 4-25 shows the VCI for the unpaved road length and Figure 4-26 shows the VCI for unpaved roads on different road classes.

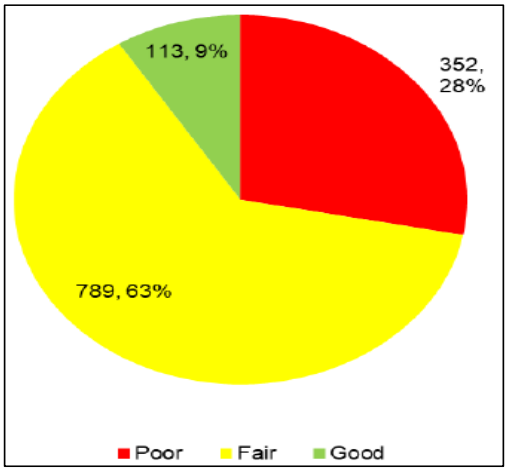


Figure 4-25: unpaved Road (km, %) per VCI Category

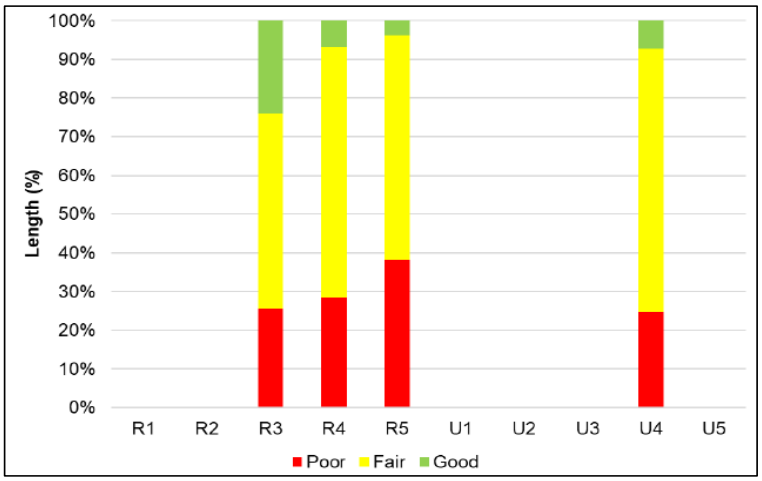


Figure 4-26: Distribution of VCI Categories per Road Class (unpaved)

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The road pavements have a limited life span which depends heavily on the maintenance they receive over their life span and their rehabilitation or reconstruction is critical to ensure the continued functioning of the pavement.

90% of the bridges and major culverts are in a very good or good condition; 8% in a fair condition; and 2% in a poor or very poor condition. In terms of number, there are 18 structures in the very poor or poor categories.

Remaining Useful Life: The distribution of pavement ages for paved roads provides a good indication of remaining useful life. Currently, 2 260 km (59%) of all pavements have already reached the end of their theoretical design life and 1 349 km (30%) of these pavements exceed their theoretical design life by more than 200%.

To estimate the Remaining Useful Life of the bridges and major culverts, the formula in TMH22 to calculate Apparent Age was used. The majority of structures have an apparent age between 0 and 40 years. The average Apparent Age and the average Remaining Useful Life for the provincial bridges are 28 years and 52 years respectively; and for major culverts are 15 years and 65 years respectively. Figure 4-27 shows the cumulative paved road network length versus the design life consumed.

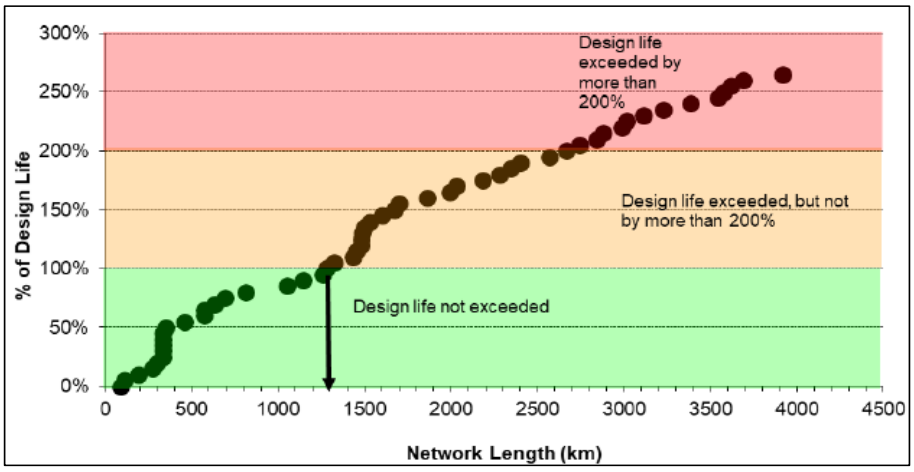


Figure 4-27: Cumulative Network Length vs Design Life Consumed

(Source: Gauteng RAMP 21/22)

Vehicle Operating Costs (VOC) and Excess User Costs (EUC): The average cost per vehicle-kilometre (VOC) driven on Gauteng provincial roads is currently R 6.84/km on the paved roads and R 12.27/km on the unpaved roads; giving an average VOC for the provincial road network of R 6.89/km. Currently the EUC on the paved provincial roads in Gauteng is R 85.74/1 000 km driven.

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Need Determination for the Current Road Network: The Technical Needs budget to remove all backlogs on the paved roads with regard to preventive maintenance, rehabilitation and upgrading and then to maintain this condition requires an amount of R 6 billion in 2019 and thereafter an annual amount of R 497 million from 2020 to 2029. For the unpaved network an amount of R 670 million is required in 2019 and thereafter an annual amount of R 76 million from 2020 to 2029.

For bridges the Technical Needs budget is R 72.4 million in 2016 and for major culverts it is R 23.1 million, giving a total budget of R 95.5 million.

Usage of Assets: Around 40.9 million veh-km are travelled on the provincial network per day. Vehicle-kilometres are calculated as the product of the Annual Average Daily Traffic (AADT) per link and the link length summed for the whole network. 99% of the daily veh-kms are travelled on the paved road network and only 1% on the unpaved network.

4.5.3 City of Ekurhuleni Metropolitan Road Network

The CoE Metropolitan Municipality total road network (national, provincial, and municipal roads) consist of approximately 9 871 km of roads. Gauteng Province owns 18% (2 177 km) and SANRAL owns 1% of the road network in CoE. Figure 4-28 shows the CoE Road network per class.

The CoE is served with national and provincial roads, freeways and arterial roads connecting to the rest of Gauteng as shown in Figure 4-28. These freeways are as follows:

- R21 connects the CoE to the CoT;
- R24 connects the CoE to the CoJ; Krugersdorp and Magaliesburg;
- R59 connects the CoE to Free State Province;
- N12 connects to Mpumalanga Province;
- N17 connects to Mpumalanga, Mozambique, and Swaziland;
- M2 connects CoE and the CoJ, and
- N3 connects to KwaZulu-Natal and Lesotho.

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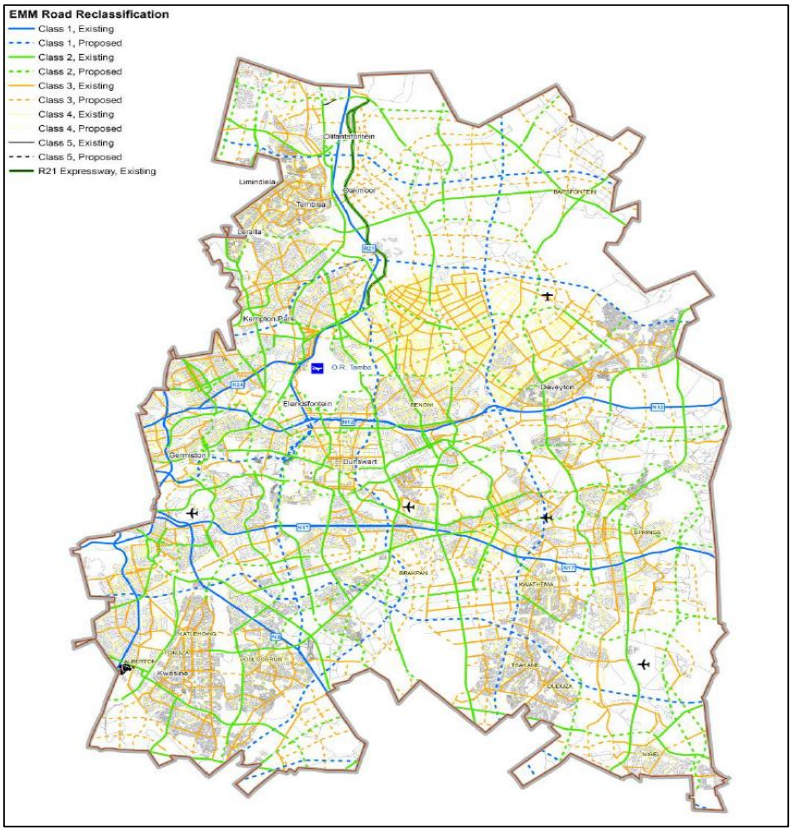


Figure 4-28: CoE Road Network

Most of these freeways carry the most traffic and are also the most congested. According to the CoE CITP, most of these freeways have been upgraded as part of SANRAL's GFIP project. According to the CoE Road Master Plan, the existing CoE road classification was conducted according to the TRH26 South African Road Classification and Access Management Manual. Table 4-32 shows the TRH26 Road Classification System.

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Table 4-32: TRH26 Road Classification System

Class No.	Function	Description
1	Mobility	Principal Arterial
2	Mobility	Major Arterial
3	Mobility	Minor Arterial
4	Access/ Activity	Collector Street
5	Access/ Activity	Local Street
6	Access/ Activity	Walkway

According to the CoE CITP 2014, the majority of the CoE paved roads are in good condition whilst most of the unpaved roads are in poor condition. This information was based on the CoE pavement management system data conducted in 2012. Table 4-33 shows the summary of the paved and unpaved road condition in the CoE area.

Table 4-33: Summary of EMM Road Conditions

Road Condition	Paved Road		Unpaved Road	
	Total Road Length (Km)	Percentage Of EMM Total (%)	Total Road Length (Km)	Percentage Of EMM Total (%)
Very Good	3 646.1	41	3.9	0.4
Good	2 757.6	31	4.1	0.4
Fair	1 039.5	12	65.2	7
Poor	206.1	2	894.2	92
Very Poor	19.4	0.2	1.3	0.1
Unknown	1 281.1	14	0.0	0.0
Total	**8 949.9**	**100**	**968.7**	**100**

(Source: CoE CITP 2014)

The CoE paved road network amounts to 8 949.9 km and unpaved road amounts to 968.7 km. Based on Table 4-33 it can be observed that 72% of the paved roads in the CoE area are in very good and good condition whilst 92% of the unpaved roads are in poor condition. Figure 4-29 shows the condition of the CoE paved road network and Figure 4-30 shows the CoE unpaved road condition.

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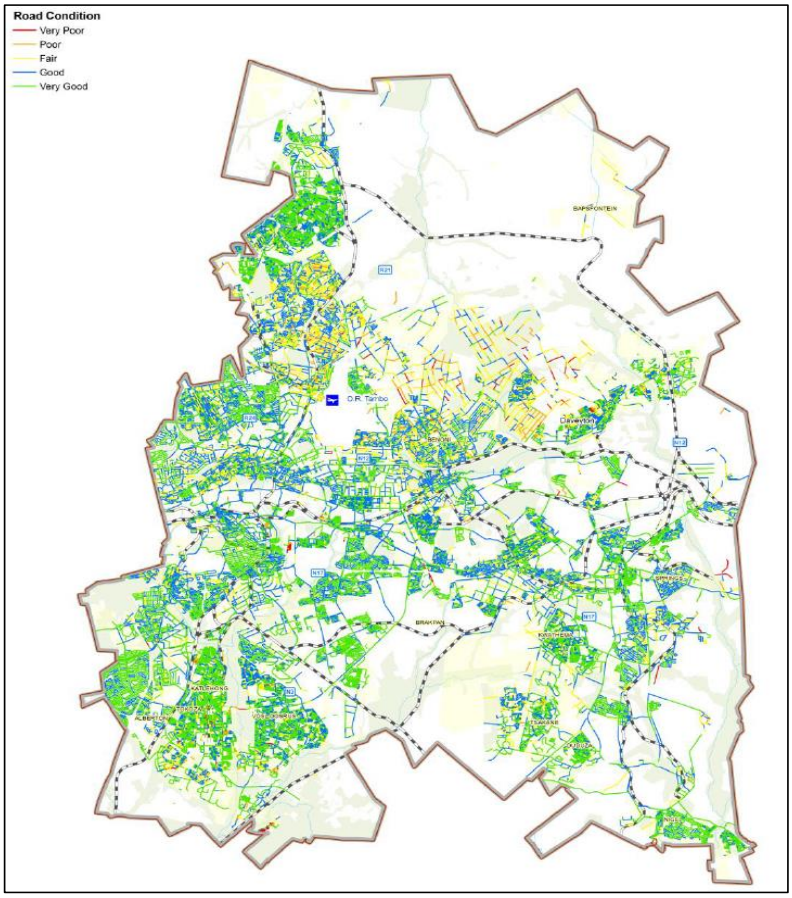


Figure 4-29: CoE Paved Road Condition

(Source: CoE CITP 2014)

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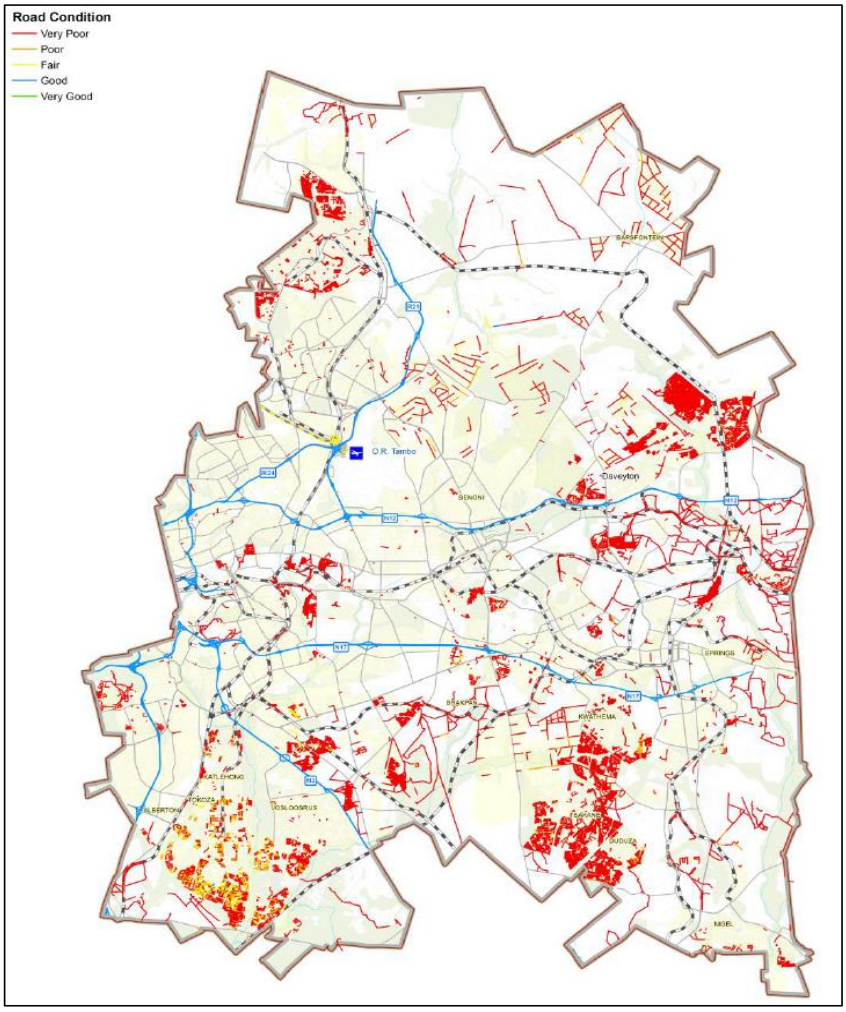


Figure 4-30: CoE Unpaved Road Condition

(Source: EMM CITP 2014)

4.5.4 City of Tshwane Metropolitan Road Network

The CoT Metropolitan Municipality consist of a road network that amounts to approximately 9 667.6 km of roads. According to the CoT CITP, the paved roads amount to approximately 69% and unpaved roads amounts to 31% of the road network.

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Figure 4-31 shows the CoT Road network.

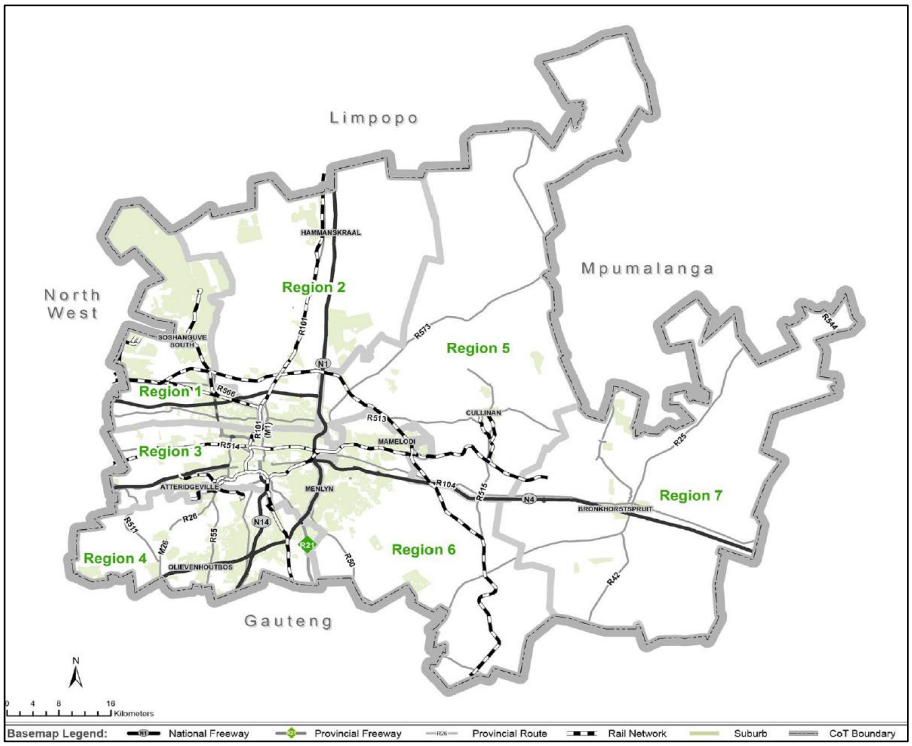


Figure 4-31: City of Tshwane Road Network

(Source: CoT CITP 2015)

Approximately 94% of the paved roads are classified as tertiary Routes while about 6% are classified as main tertiary and secondary routes. About 62% of the unpaved roads are classified as tertiary Routes; 18% as main tertiary routes and 20% as secondary and primary routes. Table 4-34 shows the CoT road length per classification.

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Table 4-34: CoT Road Length Per Classification

Road Classification	Un-Paved Road		Paved Road	
	Un-Paved Road length (Km)	% To CoT Road Network	Paved Road length (Km)	% To CoT Road Network
Primary Routes	0	0	722.9	11
Secondary Routes	56.3	2	610.9	9
Main Tertiary Routes	119.7	4	1 189.7	18
Tertiary Routes	2 860.4	94	4 107.7	62
Total	**3 036.4**	**100**	**6 631.2**	**100**

(Source: CoT CITP 2015)

The CoT's Pavement Management System of 2017 indicated that 73% of the network is classified as Very Good to Good and that 9% is Poor to very Poor.

4.5.5 City of Johannesburg Metropolitan Road Network

The CoJ is situated in the centre of Gauteng Province, and it is bounded by national, provincial, and local roads. Johannesburg Roads Agency (JRA) is responsible for the road infrastructure in the CoJ. Figure 4-32 shows the high-level CoJ road network obtained from CoJ Geographic Land Information system (GeoLIS).

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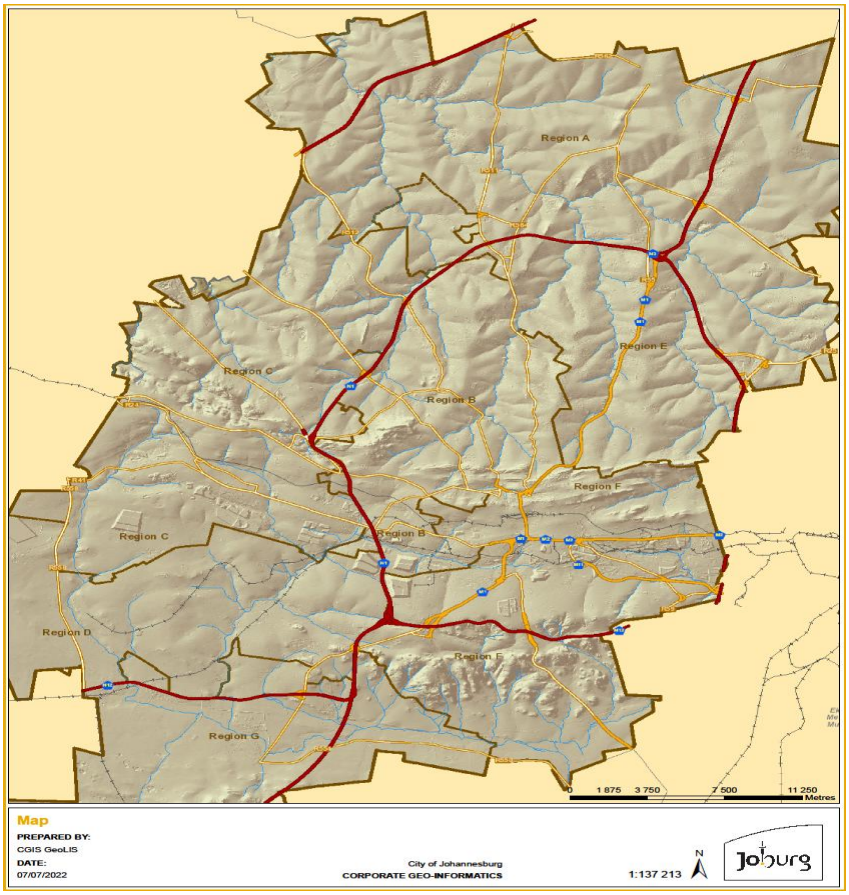


Figure 4-32: COJ Road Network

(Source: COJ CGIS GeoLIS)

According to the CoJ SITPF 2013, the CoJ Road network is 9 324 km. Table 4-35 shows the CoJ road network per region.

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Table 4-35: CoJ Road Network per Region

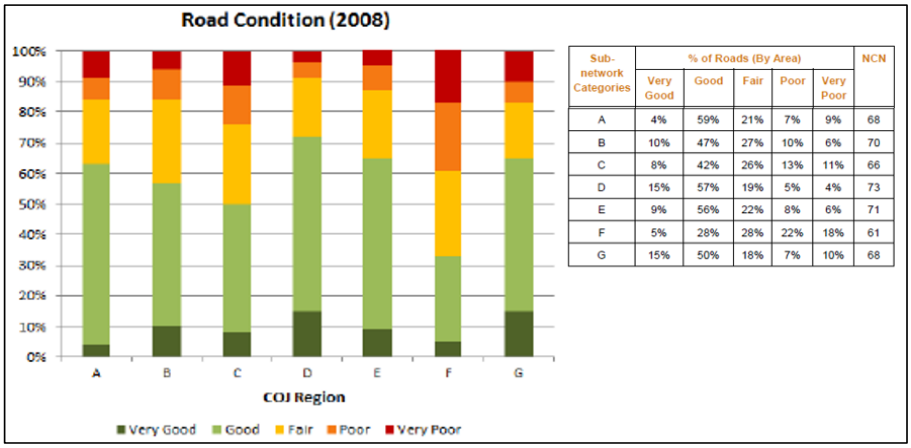
	Region							
	A	B	C	D	E	F	G	
Road	Midrand, Diepsloot, Kya Sand' Ivory Park	Randburg, Rosebank, Emmarentia, Greenside, Melville, Northcliff, Rosebank, Parktown	Roodepoort, Constantia Kloof, Northgate	Greater Soweto	Alexandra, Wynberg, Sandton	Jhb CBD, Yeoville, Hillbrow, Booysens, Brixton	Orange Farm, Ennerdale, Lenasia	Total
Paved roads CoJ owned (km)	678	1 408	1 298	1 462	1 245	1 534	700	**8 324**
Gravel Roads (km)	376	1	180	39	10	6	384	**997**

(Source: COJ SITPF 2013)

According to the CoJ Pavement Management System conducted in 2008, approximately 72% of the road network is in very good to good condition, and about 65% of Region E and G is in very good to good condition. Figure 4-33 shows the condition of the road network by region based on the CoJ pavement management system 2008.

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Sub-network Categories	% of Roads (By Area)					NCN
	Very Good	Good	Fair	Poor	Very Poor	
A	4%	59%	21%	7%	9%	68
B	10%	47%	27%	10%	6%	70
C	8%	42%	26%	13%	11%	66
D	15%	57%	19%	5%	4%	73
E	9%	56%	22%	8%	6%	71
F	5%	28%	28%	22%	18%	61
G	15%	50%	18%	7%	10%	68

Figure 4-33: CoJ Road Condition by Region

Based on the visual assessment conducted in 2008, 20% of the Johannesburg Roads Agency road network is in poor or very poor condition, 24% is in fair condition, 465 is in good condition while about 9% of the road network is in very good condition. The JRA road network VCI is 68.

4.5.6 Sedibeng District Municipality Road Network

Sedibeng District Municipality (SDM) is situated in the southern side of Gauteng Province. It consists of three local municipalities which are the Midvaal, Lesedi and Emfuleni local municipalities. The SDM consist of 1 408 km of road network. Midvaal local municipality amounts to 44.9% of the SDM road network; Lesedi local municipality amounts to 34.3% and Emfuleni local municipality amounts to 20.8% of the SDM road network. Figure 4-34 shows the SDM Strategic Road Network.

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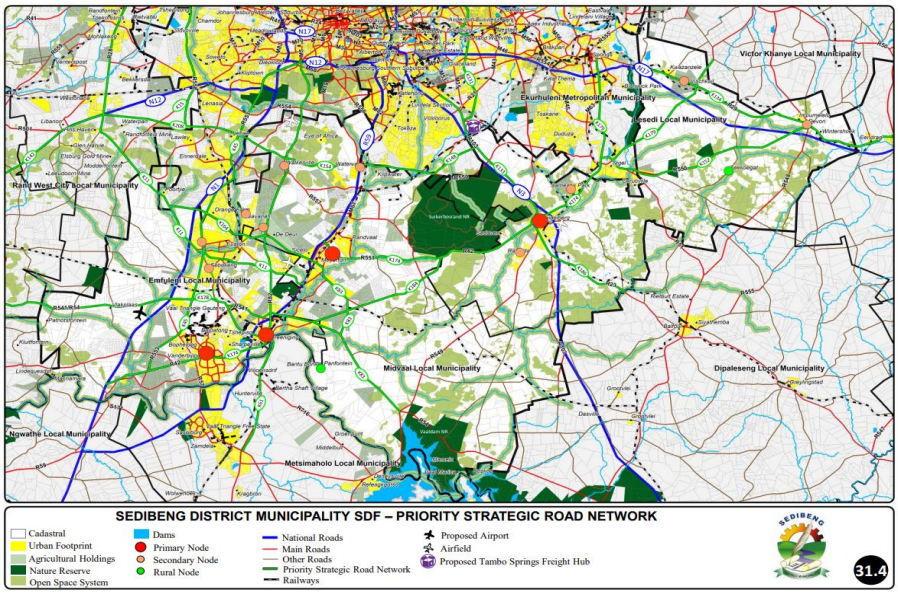


Figure 4-34: SDM Strategic Road Network

(Source: SDM SDF 2030)

According to the ITP 2013 and ITP 2019, the most significant routes in the SDM include the following:

- National Routes:
  - N1: connecting Vanderbijlpark and Free State Province with Johannesburg. The N1 route runs from Cape Town to Musina, and
  - N3: connects KwaZulu-Natal (Durban) to Johannesburg. It passes through SDM.
- Provincial Routes:
  - R553 Golden Highway: a major north-south link which links Vereeniging to Johannesburg through Sebokeng;
  - R59: it links Vereeniging with Alberton;
  - R82: links Johannesburg and Vereeniging via Walkersville and De Deur in the west of Midvaal;
  - R42: links Meyerton with Heidelberg;
  - R54: links Vereeniging and Vaal Marina towards the south;

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- R551: east-west link between Everton/Sebokeng in the west and Meyerton towards the east, further along to Heidelberg within Lesedi Local Municipality, continuing further along the R42 National Route N1;
- R550: east-west link between the N3, R59 and R82;
- R51: links Springs to Balfour and Vaal Dam;
- R549: links Heidelberg with the Vaal Dam, and
- R557: links Walkersville with Grasmere toll gate and Ennerdale.

- The major strategic roads in the SDM are as follows:
  - PWV 13: A major north-south road running from Benoni and Boksburg through Midvaal linking up with the proposed PWV 22 in the south;
  - PWV 18: This road will connect the East Rand and the West Rand and traverses the R59 freeway, and
  - PWV 20: A major east-west road running through the south of Midvaal and traversing the R59 freeway.

According to ITP 2019, the SDM has a total road network of 1 408 km of which 384 kms are gravel roads and 1 025 kms are paved roads. Table 4-36 shows the total road network per local municipality.

Table 4-36: SDM Road Network per municipality

Local Municipality	Gravel Road (km)	Paved Road (km)	Total Road (km)
Emfuleni	43	249	292
Lesedi	180	303	483
Midvaal	160	473	633
Total Road Length	**383**	**1 025**	**1 408**

(Source: SDM ITP 2019/2024)

The ITP 2019 outlined the SDM road condition based on the Road Asset Management System (RAMS) for SDM as shown in Figure 4-35 to Figure 4-36.

Figure 4-35 shows the paved road condition in the SDM. According to Figure 4-35, it can be observed that most paved roads in the Emfuleni local municipality are in a fair condition while most paved roads in Lesedi and Midvaal local municipality are in a fair to good condition.

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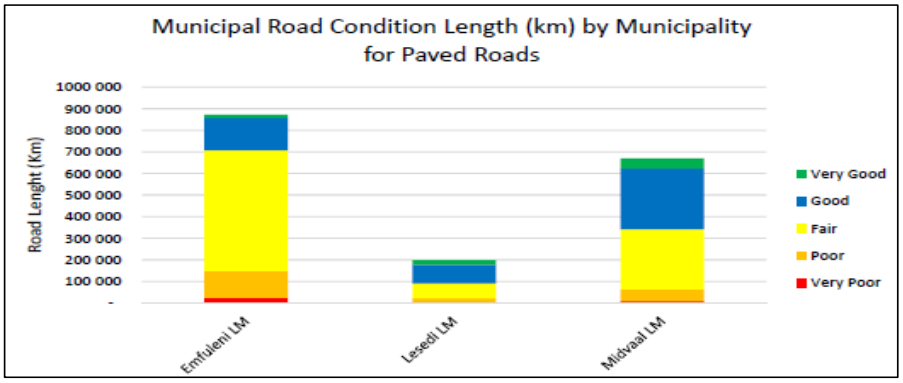


Figure 4-35: Paved Road Condition in SDM

(Source: SDM ITP 2019/2024)

Figure 4-36 shows the unpaved road condition in the SDM. According to Figure 4-36, it can be observed that most of the unpaved roads in Emfuleni local municipality are in poor to fair condition. Majority of the unpaved roads in the Lesedi and Midvaal local municipalities are in poor condition.

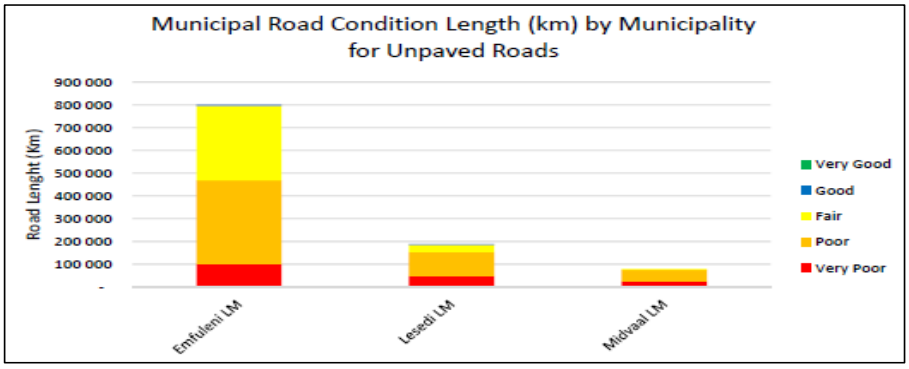


Figure 4-36: Unpaved Road Condition in SDM

(Source: SDM ITP 2019/2024)

Figure 4-37 shows the block road conditions in the SDM. According to the ITP 2019, all the block roads in the SDM are in a very poor condition.

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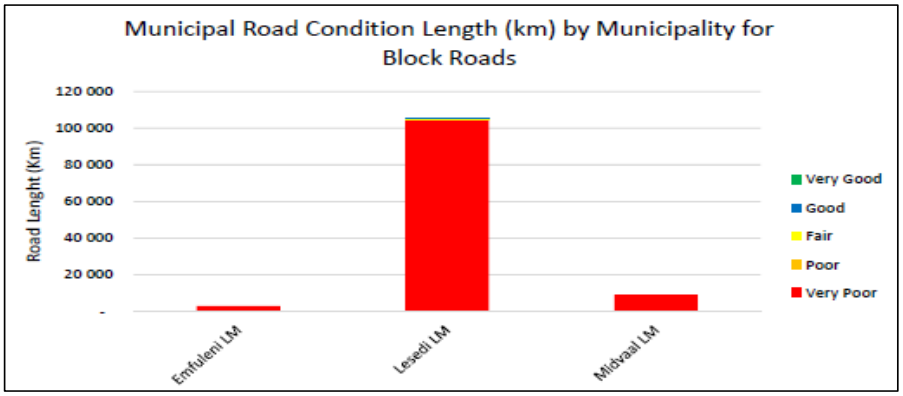


Figure 4-37: Block Road Condition in SDM

(Source: SDM ITP 2019/2024)

Although the road condition for SDM was taken from the DITP dated 2019-2024, no base date was provided for the PMS from which the road network condition was taken.

4.5.7 West Rand District Municipality Road Network

West Rand District Municipality (WRDM) is situated in the western side of Gauteng Province. It consists of three local municipalities which are Mogale City, Rand West City, and Merafong City. It is serviced by the national, provincial, and local road network as shown in Figure 4-38.

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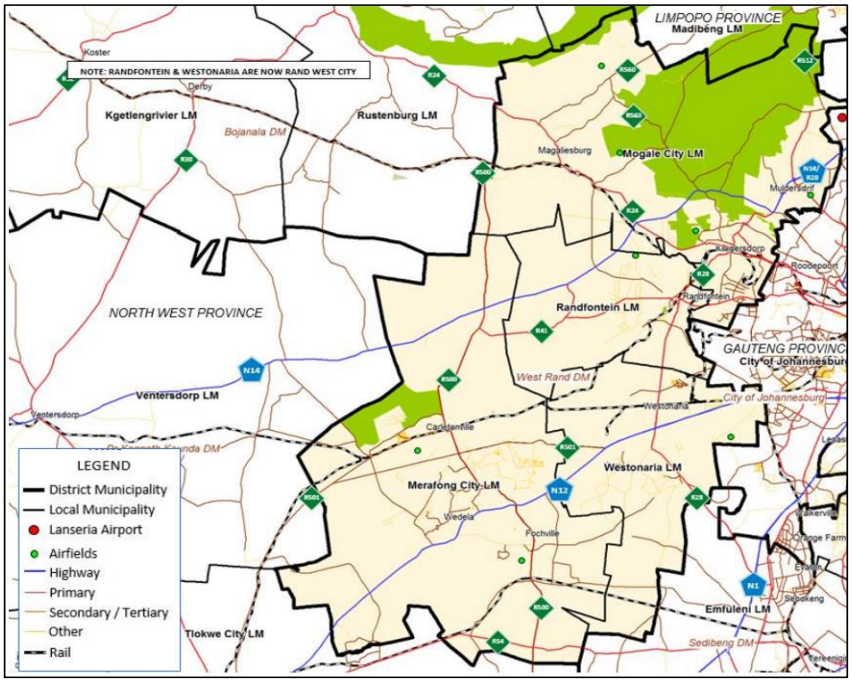


Figure 4-38: WRDM Road Network

(Source: WRDM SDF 2014-2017)

The most significant roads in the WRDM include the following:

- N12: links the CoJ with Potchefstroom. It passes through Westonaria and Fochville;
- N14: links CoT to Mogale City and with North-west Province;
- R28: north south link between Krugersdorp, Randfontein, and Westonaria;
- R500: links Carletonville to Fochville and Free State and to Rustenburg;
- R24: link between Mogale City and Rustenburg;
- R501: provides access from N12 and Westonaria to Carletonville;
- R41: links Carletonville to Randfontein, and
- R24: links Mogale city with Rustenburg.

Table 4-37 shows the WRDM road network per local municipality.

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Table 4-37: WRDM Road Network per municipality

Classification of Roads	Mogale City LM	Rand West City LM	Merafong City LM	Total Road (km)
National & Provincial Paved	101	85	287	473
National & Provincial Unpaved	0	0	110	110
Local Paved	596	591	324	1 511
Local Unpaved	274	241	102	617
Total Road Length	**971**	**917**	**823**	**2 711**

(Source: WRDM DITP 2019/2024)

According to the WRDM ITP 2019 – 2024, most paved roads in Mogale City are in good to very good condition; Merafong City most paved roads are in good condition whilst in Rand West City most paved road are in fair to good condition as shown in Figure 4-39.

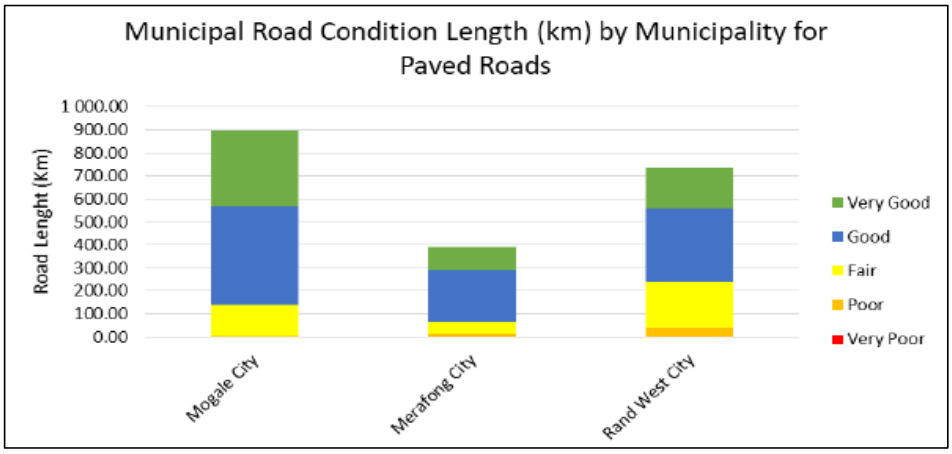


Figure 4-39: WRDM Paved Road Condition

(Source: WRDM DITP 2019/2024)

Majority of the unpaved roads in Mogale City are in poor condition; Merafong City unpaved roads range from very poor to fair condition while most unpaved roads in Rand West City are in very poor to poor condition as shown in Figure 4-40.

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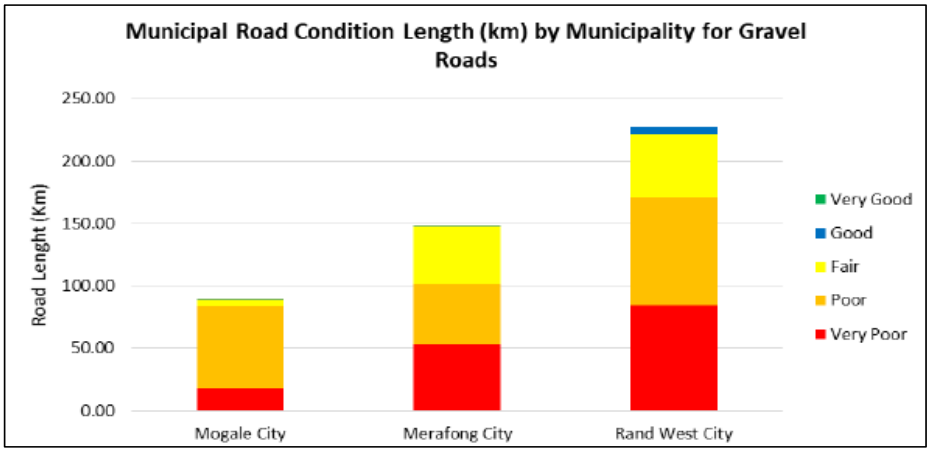


Figure 4-40: WRDM unpaved Road Condition

(Source: WRDM DITP 2019/2024)

Although the road condition for WRDM was taken from the DITP dated 2019-2024, no base date or source was provided for the PMS from which the road network condition was taken.

4.5.8 Observation

Most of the pavement condition assessment data of the various authorities are dated and might not be a true reflection of the current situation.

4.6 Freight Logistics

4.6.1 Introduction

Information on the state of logistics in South Africa has been published for a number of years, but unfortunately most of these research initiatives have ceased to exist, as indicated in Table 4-38.

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Table 4-38: Publication of Information on State of Logistics in South Africa

Publication	Organisation	First Published	Last Published
Sate of Logistics Survey	CSIR	2004	2013
supplychain**foresight**	Barloworld Logistics	2003	2016
Logistics Barometer SA	Stellenbosch University	2015	2016
Logistics Performance Index	World Bank	2007	2018
COVID-19: Cargo movement update (Weekly update)	Business Unity South Africa (BUSA)	July 2020	Ongoing

Similar publications like the Annual State of Logistics Report published by the Council of Supply Chain Management Professionals in the United State of America, is currently in the 33rd year of publication and still going strong.

The most recent source for information on the state of logistics in South Africa, is the *Logistics Barometer*, last published in 2016[ix]. According to this publication, demand for land freight transport reached 848 million tonnes in 2014, an increase of 8.4% from 2013. It is estimated that freight volumes increased to 865m tonnes in 2015 and is set to decrease to 856m tonnes by the end of 2016, mainly due to lower bulk mining exports.

The primary economy (agriculture and mining) was responsible for 76% of total volume but only contributed 44% to the transportable GDP. In contrast, the secondary (manufacturing) sector made up the remaining 24% of volume but added 56% value to the transportable economy. Agricultural freight volumes are low compared to the other sectors (in line with its GDP contribution); mining dominates, consisting mostly of the dedicated export lines of coal (through Richards Bay) and iron ore (through Saldanha).

Manufactured commodities are highly densified along the country's two key general freight corridors, namely Gauteng-Cape Town and Gauteng-Durban.

4.6.2 Road Freight

The 848 million tons land freight flows in 2014 translated into 379 billion tonne-km, an increase of 4.9% from 2013, as indicated in Figure 4-41.

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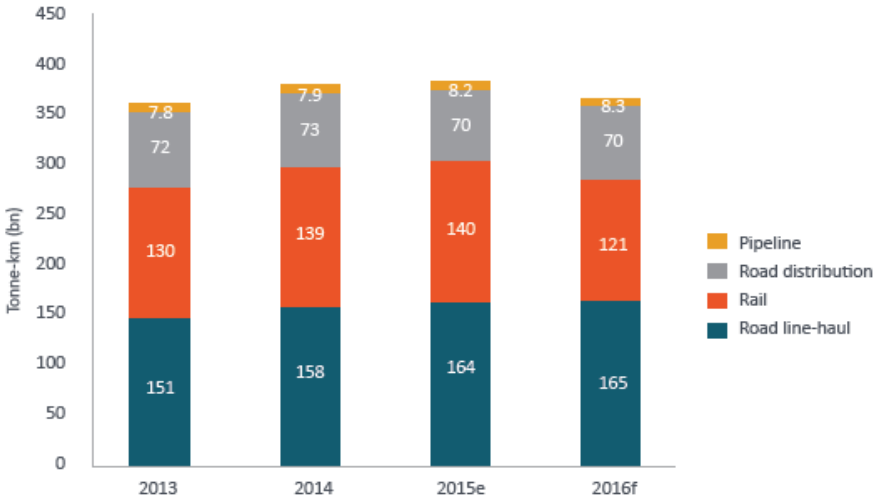


Figure 4-41: Tonne-km per Mode (South Africa 2014)

If the dedicated ring-fenced transport systems (i.e., the rail export lines, pipelines and conveyer belts) that totalled 107.5 billion tonne-km in 2014 are removed, 272 billion tonne-km remain that is classified as general freight. Road freight comprises 85% and rail freight 15% of this total.

4.6.3 Rail Freight

The general freight system can be further classified into three typologies: corridor, metropolitan and rural transport, as indicated in Figure 4-42.

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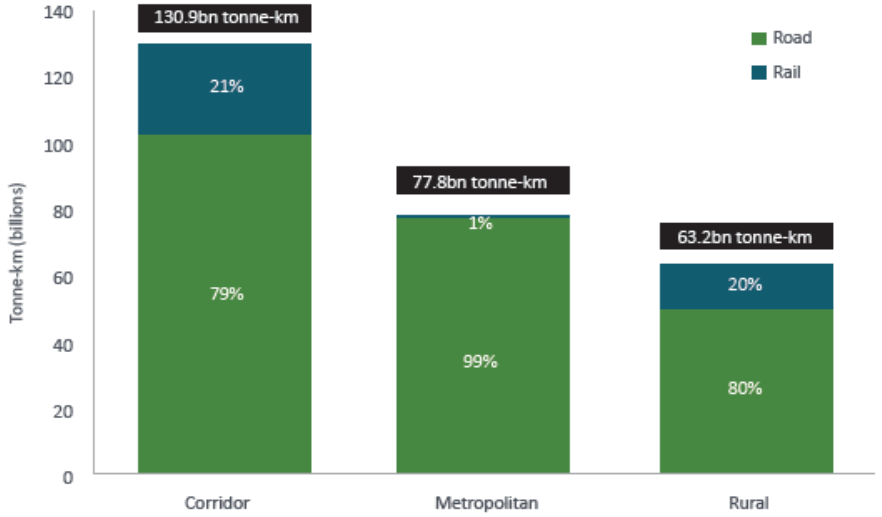


Figure 4-42: Typological Division of General Freight Transport (South Africa 2014)

Rail increased the export of primary commodities primarily, as this is its natural market, but a small portion in 2014 was still transported by road. It is expected that, with the increase of rail capacity and a slump in commodity prices, the transport of primary commodities on road should decrease markedly. Rail has also been able to increase corridor market share marginally in 2014.

4.6.4 Air Freight

Air transport is the most expensive mode of transport but provides the fastest service over medium to long distances. Short distances are better served by road as the time taken in entering and leaving the cargo terminals at the airports reduces the time benefits significantly. The basic operating principle of air transport is the hub-and-spoke concept, which allows multiple origins and destinations to be connected through relatively few large airports, which consequently eliminates the need for all origins and destinations to be connected to all others.

Gauteng hosts the largest hub for air cargo in Africa at OR Tambo International Airport and is connected to the global hubs by a number of international airlines and connected to local hubs by local and regional airlines. This connectivity provides great access to foreign markets, thus encouraging exports, and at the same time increases competition and choice in the home market from foreign-based producers. This connectivity encourages firms to specialise in areas where they possess a comparative advantage and the international trade provides the opportunity to better exploit economies of scale, driving down their costs and prices and thereby benefiting domestic consumers in the process.

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The proposed development of the Aerotropolis around OR Tambo International Airport will highly likely ensure continued growth of freight in that precinct.

4.6.5 Pipelines

Transnet Pipelines (Pipelines) is the largest multi-product operator in southern Africa[x], transporting hydrocarbons and methane-rich gas through a network of 3 800 km of petroleum and gas pipeline infrastructure. The core strategic objective of Pipelines is to ensure security of supply to the inland market. Pipelines offers fully integrated supply chain solutions from source to destination while ensuring the best safety practices, optimum service reliability and exceeding customer expectations at all times through capable human capital.

To this effect, Pipelines currently transports:

- More than 65% of all refined products to the inland market;
- More than 70% of all jet fuel required at OR Tambo International Airport;
- 100% of the crude requirements for the Natref Refinery;
- 100% of the methane-rich gas requirements to KwaZulu-Natal for Sasol Energy and its gas clients, and
- 100% of Tarlton's volumes, of which 60% is distributed cross-border.

4.6.6 Gauteng Logistics Hubs Proposed Interventions

The Gauteng Department of Roads and Transport proposed the following interventions for freight and logistics hubs[xi]:

- Plan, coordinate and implement establishment of Freight Hubs on the periphery of Gauteng's urban core;
- Building capacity to handle freight in the Province by introducing ICTs in freight corridors to improve efficiencies;
- Building infrastructure to handle freight, including Freight Hubs such as Tambo Springs and Pyramid;
- Repositioning Transport in Gauteng as the largest economic growth enabler;
- Plan, design and construct roads that support Freight Hubs (K148, PWV15, K133, K217, N3/K148 interchange upgrade, K90, K88, K86);
- Optimise the freight movement through hubs by restructuring connecting road networks, and deploy technology that efficiently moves freight in support of just-in-time practices, and
- Support the construction and commissioning of Tambo Springs Hub, Pyramid Hub, Rosslyn Hub, OR Tambo Midfield Terminal and the proposed Lanseria Cargo handling facility.

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4.6.7 Gauteng Department of Roads and Transport Progress with Freight Plans

The Gauteng Department of Roads and Transport indicated the following progress with their freight plans[xii]:

- Gauteng Department of Roads and Transport has approved Integrated Transport Plans from Municipalities that are aligned to Provincial and National Imperatives;
- The Department together with Municipalities has identified freight routes and routes that support freight hubs;
- The Department has upgraded roads that were identified as freight roads and others are in various states of implementation;
- The Department entered into the following MOUs with Municipalities and Agencies for construction of roads:
    - MOU with CoJ and SANRAL on upgrades of roads around City Deep (project complete).
    - MOU with SANRAL on the K148/N3 interchange for Tambo Springs (Designs complete, construction to commence soon).
    - MOU with Transnet and CoE on the Construction of Tambo Springs.
    - MOU with the German Federal Government on the Greening of Movement of Freight in Gauteng, and the Durban - Gauteng Smart Corridor.
- All Road Upgrades around City Deep are complete (Project A-F) and the upgrade of N17 interchange is currently being investigated;
- Tambo Springs N3/K148 interchange design is complete, and construction will commence anytime from now when legal issues around environmental issues are concluded;
- As per the MOU the Department set up a steering committee for the establishment of Tambo springs which has seen the construction of bulk infrastructure to support Tambo Springs;
- K90N, K90S, K88 to support the midfield cargo terminal at OR Tambo International Airport are currently in progress;
- PWV 15 to support OR Tambo International Airport and Tambo Springs is currently in the procurement stage for a PPP;
- K6, K8, K217. These roads are at design stage to support Pyramid and Rosslyn Hubs;
- Feasibility studies for West Rand Hub and Vaal were done and it was concluded that they will be needed sometime in the long term and not in the short to medium term, and
- Routes to support Sentra Rand were identified and the road reserves are being protected for the eventual upgrade of the hub to a Super Hub.

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4.6.8 Freight Logistics Network

The freight logistics network can be defined as a number of freight nodes that are linked with roads (or routes to accommodate all modes). In fact, it might be more correct to refer to those links as “corridors of freight mobility”, to allow flexibility in using appropriate freight transport modes. Primary modes include mainly road and rail while secondary modes may include conveyors, ropeways and drones.

The need for developing a freight logistics network strategy is to ensure that dangerous or hazardous goods as well as abnormal loads follow certain routes that can accommodate vehicle and load sizes exceeding the normal limitations on vehicle dimensions and axle loads that a vehicle using a public road must comply with. These specifications are stipulated in the National Road Traffic Act (Act 93 of 1996) as well as the National Road Traffic Regulations (2000).

In addition to accommodating abnormal physical dimensions and masses, the freight logistics network is also defined to allow rapid response in the case of incidents such as hazardous substance spillage or crashes that involve dangerous goods.

The Gauteng SDF 2030[10] provides a map of the freight transport network and airports as shown in Figure 4-43.

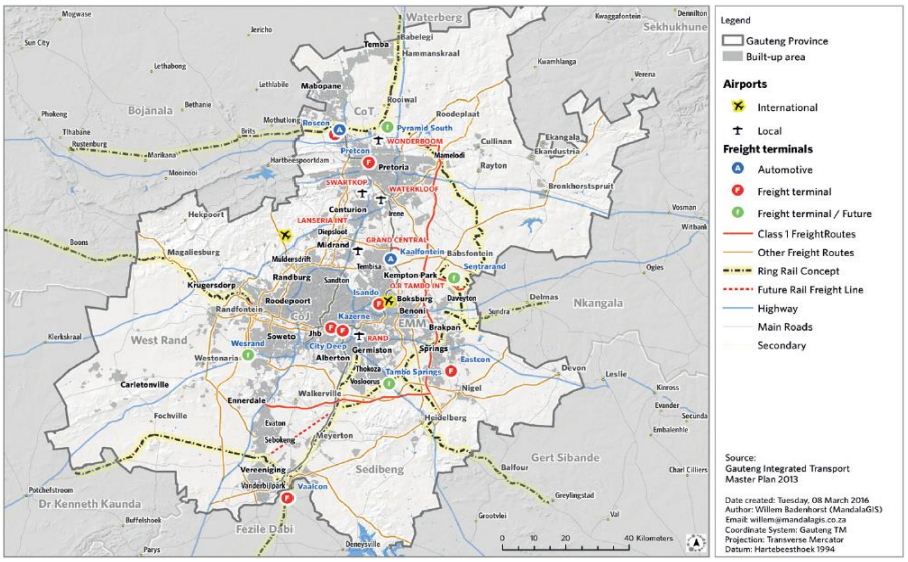


Figure 4-43: Freight Transport Network and Airports

[10] *Gauteng Spatial Development Framework 2030*, 22 March 2017, Gauteng Provincial Government.

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Reference was also made to freight mobility in a feedback presentation to the Premier of Gauteng at a Senior Executive Management Committee meeting on 17 November 2014[11]. The freight routes (or corridors) mentioned in the presentation are shown in Figure 4-44.

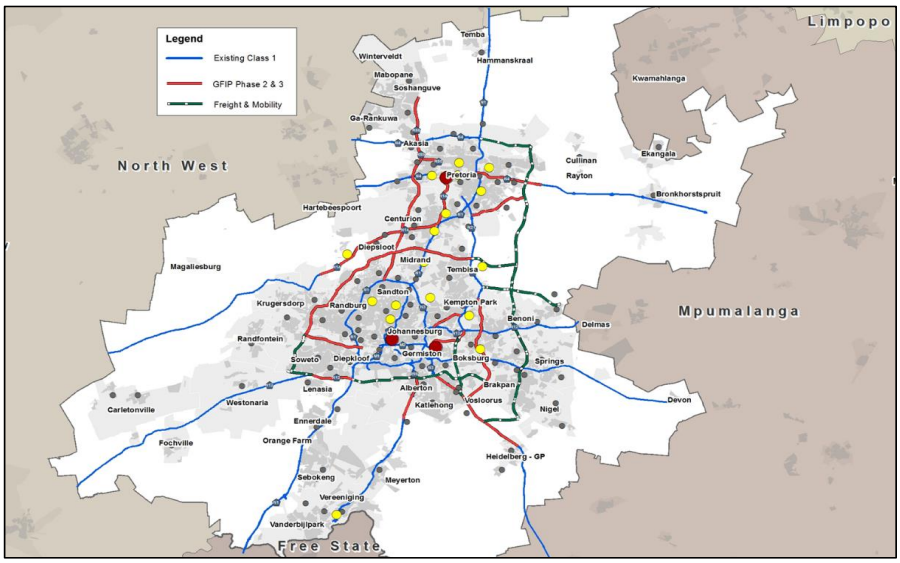


Figure 4-44: Future Class 1 Road Network with Freight Mobility

4.6.9 Gauteng Freight Databank

The current situation (September 2022) with the Gauteng Freight Databank (or Freight Data Warehouse) is that the facility is currently inactive and in the process of being revitalised. GDRT is working with the CSIR in developing a more comprehensive Freight Data Warehouse that will include information from freight traffic modelling and other relevant data sources. The intention is to provide a useful service to government and industry that includes extensive data and information that can be used in managing freight traffic better.

4.7 Intelligent Transport Systems

4.7.1 Introduction

This document addresses current references and application of technology within the context of the Transport Sector within Gauteng. Smart Mobility and initiatives associated with the 4IR principles typically evolve to the use of technology within the transportation sphere, currently better known as Intelligent Transportation Systems

[11] Matters arising from the meeting of the Senior Executive Management Committee (SEMC) - 17th November 2014, Gauteng Province Department of Roads and Transport.

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(ITS). A further phase of the project will address the concepts of Smart Mobility and 4IR and associated developments.

The following sections address ITS within the provincial context in two ways, i.e. (i) a review of current documentation on ITS planning and deployment within the Province, and (ii) an overview of current ITS implemented and associated initiatives. The document is concluded by identifying some opportunities and challenges within the provincial context, thus providing early insight into areas to be considered in ensuing project phases.

4.7.2 Current context: Policies and Plans

4.7.2.1 Gauteng 25 Year Integrated Transportation Master Plan

The Gauteng ITMP25, specifically Chapter 14 dealing with ITS, paves the way for various ITS developments in the wider Province and is therefore a critical document to consider in conjunction with the PLTF. The GITMP25 identified some ITS problem areas that should be considered throughout the development of ITS strategies, the impacts of each and creating potential solutions.

Most of the ITS initiatives outlined in the GITMP25 are being implemented and is an ongoing process. Some of the notable deliverables include:

- Establishment of a Provincial Transportation Management Centre;
- Establish an internal structure (ITS Directorate) to oversee ITS development;
- Improve Dissemination of Traveller information (including establishment of a provincial data warehouse);
- Ensure that provincial communications infrastructure is in place to support ITS deployment, and
- Implement a single fare media for public transport.

The underlying principles identified for ITS are integration, smart implementations, and sustainability, which govern the main idea of ITS. Although this document covers a lot of ground in terms of ITS, not much has been identified in terms of harnessing the power of big data that is available about 10 years later. This is a gap that needs to be addressed as data is the driver of the 4IR.

4.7.2.2 Gauteng 5-year Transport Implementation Plan

The 5-Year Transport Implementation Plan was published in October 2012. The purpose of this document was to identify the urgent, short-term measures that needed to be implemented by the Department of Roads and Transport in order to start off the re-shaping process of the transport system in the Province of Gauteng. It therefore contained the key short-term initiatives and strategic projects which were relevant at that time, based on the output of the GITMP25.

With respect to planning, some gaps were identified in the 5-year plan, essentially being institutional in nature. These issues were aimed to be addressed by establishing an ITS Education & Training programme, and ITS Directorate within Gauteng Department of Roads and Transport (DRT).

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Short-term key implementation initiatives and key focus areas were identified. Some of the actions and projects identified included:

- Establishment of an APTMS;
- Technical and operational scoping of a provincial public transport data warehouse;
- Development of a national Operational concept for integrated passenger Information;
- Provincial data warehouse for integrated fare collection;
- Development of a single fare media for public transport, and
- Travel demand management strategies using technology.

4.7.2.3 Gauteng PLTF 2010–2014

In the PLTF of 2010–2014, ITS is referenced in a cross-cutting manner and referenced in the following areas:

- Within the Gauteng Freight Strategy, Project Plan 13 (Prepare local freight planning guidelines for Gauteng) & 14 (Air cargo plan) required that "ITS be applied on the major routes of the Gauteng road network including the primary road network and the metropolitan routes as well";
- With regard to modal integration, it is mentioned that ITS can play an important role in integrated transport in general and information integration in particular;
- Reduction of road congestion by the use of ITS;
- SANRAL provided at the time ITS infrastructure and monitoring of traffic on the N1 highway from the N31/N1 interchange to the N4/N1 interchange. CoJ was in the process of providing ITS interventions on selected routes in the Province;
- The application of ITS was mentioned in the interventions of Incident Management, and
- Furthermore, there is a section devoted to the brief discussion of ITS in the context of the Transport Strategy and Travel Demand Management Chapter. It remains at a high-level while focusing on the outcomes that ITS can achieve.

The main issues listed that should be addressed through ITS technology implementations are as follows:

- Improve safety on the road system;
- Manage incidents;
- Optimize traffic flow on arterial and freeway networks;
- Reduce congestion;
- Inform road users with timely and accurate information, and
- Coordinate traffic operations between agencies.

The PLTF of 2010–2014 also comments on the ITS Implementation Framework for Gauteng – 2010, outlining its main purpose and objectives and forward strategy.

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The previous ITS Implementation Framework for Gauteng – 2010 outlines the subsystems that should be integrated when considering transportation in Gauteng, as referred to in Figure 4-45.



Figure 4-45: The transport subsystems that need to be integrated, as mentioned in the ITS Implementation Framework for Gauteng – 2010

Furthermore, the ITS Implementation Framework for Gauteng – 2010 defines that the purpose of the ITS Strategic Plan for Gauteng is to provide guidance to the further development and roll out of ITS in Gauteng Province, and thereby:

- Contribute to sustainable management of the transport network;
- Reduce traffic congestion (and improve air quality);
- Improve revenue collection;
- Provide better service to the public;
- Make traffic law enforcement more effective;
- Improve public safety;
- Foster greater economic development;

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- Identify best practice regarding Travel Demand Management for Gauteng, and
- Build capacity at all levels of government among officials, councillors and consultants.

The overall objective of the ITS implementation framework in Gauteng is the improvement of operations for transport systems and the enablement of seamless integration of transport subsystems, which in turn supports the general objectives of mobility, reliability, safety, effectiveness, efficiency, and environmental quality.

The following corresponding strategic objectives were identified:

- Management of Incidents on road network;
- Provision of information to travellers and media;
- Road space control and management;
- Optimisation of public transport services;
- Transport information management, and
- Vehicle control and management systems.

From a 4IR and technology perspective, relating to ITS components, the BRT section needs to be updated due to it only containing information about the CoJ's Rea Vaya BRT system, and the proposed BRT system for the CoT. Since then, the CoT's BRT system, A Re Yeng, has been established as envisioned, as well as a BRT system, Harambee, has been established for the CoE. Furthermore, little was mentioned about the ITS components that are included for each of the BRTs, mainly because they were still in their development phases, but currently various ITS components have been incorporated and should be reviewed. The previous PLTF does mention ITS to some degree, but being cross-cutting in nature, it can be considered and expanded upon, especially taking more cognisance of data and its applications.

4.7.3 Literature Review on ITPs

The literature review largely focuses on the extent to which technology applications within the transport environment have been considered in provincial and metropolitan integrated transport plans. The following sections therefore highlight references to Intelligent Transportation systems in these plans.

4.7.3.1 Review of Integrated Transport Plans

The most recent versions of the five ITPs (CoT, CoJ, CoE, Sedibeng, West Rand) were reviewed and highlights provided in this section. It should be noted that the information in the ITPs is somewhat outdated, and that many technological developments have transpired over the last few years, and that although ITPs show that some technologies are not addressed, it is not necessarily an accurate account of what the current reality is. When the ITPs are to be updated, these new technologies and/or systems should be addressed. A high-level summary of the status quo of ITS in the various ITPs of the different municipalities is provided in Table 4-39, indicating what ITS components are not addressed (red), what components are only addressed in the ITPs (orange), and the components that have already been

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implemented (green). When considering this high-level overview of the various ITS components within the ITPs, it is evident that that metropolitan municipalities have more ITS components than the district municipalities. This is, however, as expected due to higher levels of congestion, higher traffic flow rates and more complex mobility challenges within the metropolitan areas. It would be unwise to implement ITS components and technologies in areas where the transportation need does not justify the increased investment that these technologies would require. ITS deployment is not deemed a necessity, but should be aligned with the inherent transportation challenges, appropriate solutions and available budget.

Table 4-39: Summary of the various municipalities and the ITS components they address in their ITPs (A – addressed, I – implemented, N – not addressed)

Nr	ITS Component	CoT	CoJ	CoE	Sedibeng	West Rand
1	ITS Strategy	I	I	I	N	N
2	A communication network	I	I	I	A	A
3	Traffic management centre (TMC)	I	I	A	N	N
4	Close circuit television (CCTV)	I	I	A	A	A
5	Variable message sign (VMS)	I	I	A	A	A
6	Parking management system	I	I	N	N	N
7	Parking guidance signs (PGS)	I	N	N	N	N
8	A vehicle sensing system (Inductive loops and detectors)	I	I	A	N	N
9	Urban traffic control (UTC)	I	I	N	N	N
10	An APTMS	I	I	A	N	N
11	IFMS	I	I	I	A	A
12	Traveller Information	I	I	A	N	N
13	Incident management system (IMS)	I	I	I	N	N
14	Traffic Police or Dispatching	I	I	N	N	N
15	Emergency Medical Services (EMS) Dispatching	I	N	A	N	N
16	BRT System	I	I	I	N	N
17	Comprehensive traffic observation	A	N	N	N	N
18	Accident data / incident reporting	A	A	A	A	A
19	Urban freight movement monitoring	A	I	I	N	N
20	Smart payment methods like smart cards	I	I	I	N	N

4.7.3.1.1 City of Tshwane Metropolitan Municipality

The CoT CITP, last updated in March 2015, has a chapter devoted to ITS where various topics are covered within the metropolitan's context, outlining the various

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components of ITS, implementations and strategies. This is a well written CITP and provides excellent guidance in terms of ITS advancements. Integration of various systems is addressed, and there is a clear ITS strategy. The CoT has a BRT system called A Re Yeng that includes various ITS components and is further elaborated on in the ITS deployment overview.

4.7.3.1.2 City of Johannesburg Metropolitan Municipality

The CoJ mentions some aspects and components of ITS in and throughout their CITP, but it is not as clearly outlined as a specific ITS strategy that should be pursued, as was done in CoT's CITP. There is, however, a strong emphasis on ITS throughout the CITP, where many ITS components had already been implemented at the time of writing of the CITP. It should be noted that the Rea Vaya BRT system resides within the CoJ metropolitan area, including various ITS components. The Johannesburg Roads Agency (JRA) is the agency for Johannesburg through which these CoJ ITS technology components are addressed.

4.7.3.1.3 City of Ekurhuleni Metropolitan Municipality

Although the CoE mentions ITS quite frequently throughout the CITP, due to it being so old it mainly mentions some of the steps and approaches that may be taken, but little had been implemented at the time of writing of the CITP. Therefore, it mainly touches upon ITS in some instances, and omits some concepts as indicated in Table 4-39. The CoE has a BRT system called Harambee, utilising various ITS components.

4.7.3.1.4 Sedibeng District Municipality

ITS is not specifically mentioned in the ITP of Sedibeng, except within the context of the GITMP25 of 2013, and the 5-Year Implementation Plan, which only indicate possible measures that may be included, but not specifically how in the context of SDM. Integration of systems, integration of municipalities, 4IR and clear steps for innovation are not clearly addressed in this ITP.

4.7.3.1.5 West Rand District Municipality

The CITP for West Rand District Municipality (WRDM) is very similar in style, approach, and nature as that of SDM. Similarly, ITS is not specifically mentioned for WRDM except also within the context of the GITMP25 of 2013, and the 5-Year Implementation Plan, indicating only possible measures that may be included. Similar to Sedibeng district, integration of systems, integration of municipalities, 4IR and clear steps for innovation are not clearly addressed in this ITP.

4.7.4 Current Context: ITS and Technological Initiatives

Various ITS initiatives exist in the Gauteng Province and are summarised in Table 4-40.

Table 4-40: ITS and technological initiatives in Gauteng Province

Nr	Initiative	Current context
1	BRT Systems	There are currently three BRT systems in operation within the major metropolitan areas of Gauteng. The BRT systems called Rea Vaya, A Re

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Nr	Initiative	Current context
		Yeng , and Harambee are operational in CoJ, the CoT, and the CoE, respectively. They are all mostly fully functional and contribute greatly to the effective transportation of passengers in the metropolitan area and incorporate numerous ITS technological components.
2	Gautrain	The Gautrain connects the three Metropolitan areas with Hatfield, Pretoria and Centurion falling under the CoT; Midrand, Marlboro, Sandton, Rosebank and Braamfontein falling under the CoJ, and Rhodesfield and O. R. Tambo International Airport falling under the CoE. Numerous ITS technological components are incorporated into this high-speed rail transport.
3	Gauteng FMS	One overarching ITS application for the effective management of major freeways in the Gauteng Province is called the Gauteng FMS, integrating the use of various ITS components along the major freeways. The main aim of the FMS is to optimise the use of civil infrastructure, entailing the reduction of delays and safety improvement of persons travelling on the freeways and roadways. This project is funded by SANRAL, and the operations thereof is in the Traffic Management Centre (TMC) in Rooihuiskraal, Centurion.
4	Management Centres	A provincial TMC is in the process of being established in the Department of Roads and Transport on the 16th floor of 45 Commissioner Street. It is currently being furnished, but the Information and Communications Technology (ICT) infrastructure and equipment is in the process of being procured. The Gauteng Provincial Disaster Management Centre (GPDMC) is an operations centre that the Province uses for the purposes of coordinating activities of disasters, disaster preparedness, response and mitigation. This centre could assist with provincial-wide incident management. This centre is located at 11 Janadel Avenue, No 5 Riverview Block B, Midrand. In terms of the technological aspects present in this centre, there are not much automated systems in place to support the work and decision making that they do, and the ideal situation would be to have a command centre including a large video wall for easy monitoring, and an intelligent monitoring system that automatically pulls data from the various stakeholders.
5	Johannesburg Roads Agency initiatives	The Johannesburg Roads Agency (JRA) is currently developing an ITS Strategy for the CoJ. This is still a work in progress and details cannot be shared until internally approved. A first version should be available towards the end of 2022.
6	Gauteng Open Road Tolling (GORT)	GORT is the cashless collection of toll fees with an automated electronic toll collection system, without the use of physical toll booths along national roads. The national roads (N1, N3, N12 and R21) of the Gauteng Metropolitan areas that were upgraded and improved started collecting open road electronic toll fees from February 2012. This was part of SANRAL's GFIP.
7	Initiatives of Toll Concessions for freeways	In 2019, Express Toll Lanes were introduced to the local toll environment where a dedicated lane is used to allow users to drive at a maximum speed of 40km/h directly through the Plaza. This is different than the Tag-only lanes where vehicles need to come to an almost complete standstill to use their e-tag to open the toll booth gate. E-tags enable users to make use of the dedicated lanes.
8	DoT/SANRAL Transaction	SANRAL has established a Transaction Clearing House (TCH) acting as a clearing house for the GORT transactions within the toll industry, built on the E-toll backend of SANRAL. This TCH provides customers with one account

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Nr	Initiative	Current context
	Clearing House (TCH)	for all the different electronic toll authorities in South Africa, a national electronic toll collection (ETC) website, and a national call centre. This greatly simplifies the accounts management of having to deal with different accounts for different toll authorities. In a collective initiative between the NDoT and SANRAL, this infrastructure is now further developed and utilised to also provide the platform for electronic payment of fares for public transport.
9	Provincial Smart Mobility Department Initiatives	In 2017, the DRT gave a mandate to the Gautrain's Smart Mobility Department to act as the agent for the Fare Management Integration Program, with the main objective to implement a single ticketing system for Gauteng. This would enable, for example, a traveller to use one card or payment method to pay for his/her BRT service in any of the municipalities, and also the Gautrain, with the long-term goal of having every form of public transport integrated into this system. The current focus of the Provincial Smart Mobility Department, therefore, is mostly centred around integrated fare management (IFM).
10	MaaS	There is still a great disconnect between the various mobility providers, and no one truly integrated mobility service exists that connects all the various forms of transport. The one gap that still exists throughout the Gauteng Province is the disjoint nature of data, where public transport and traveller information is not digitised, and furthermore not gathered into one place or one format that is easily usable by other parties.
11	E-hailing	The year 2013 marked the advent of e-hailing with the introduction of the United States operator Uber making it's entry on South African markets. What disrupted the market in a great degree was the use of applications and utilising data for connecting travellers with drivers, giving the users of these smart apps the flexibility of ordering a ride on demand from almost any location.

4.7.5 Challenges and Opportunities

A number of challenges and opportunities were identified whilst scrutinising current plans, policies and initiatives as they relate to the use of ITS and 4IR related applications. These will be explored further and built upon as trends and applications are further explored in the next deliverable.

Some highlights of the current observations are listed in the paragraphs to follow.

Provincial-wide coordination: A lack of integration and creation of synergies in technology applications was observed within the Province. Opportunities exist for better integration, creating opportunities for economies of scale, as well as ensuring that technology infrastructure is not duplicated but shared;

Digital footprint: Identify and Expand digital footprint of transportation services. Services to be added could be scholar transport as well as the bus contracts;

APTMS and MaaS platform: the digitalization of various transport services creates the opportunity for the management of transportation systems as well as improvement of the passenger information systems;

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Piggy-back on current deployments: Opportunity to utilize current technology deployments between different levels of government and across jurisdictions. Immediate opportunities exist in expansion of the current FMS to other freeways and/or arterials, and utilizing the current GORT TCH for public transport payments;

Training and Education: It is recognized that continued training and education is required to ensure sustainable implementation of these systems. Vocational training is also required to ensure the necessary skills are in place to support these systems;

Awareness of 4IR and Technology applications: continued awareness needs to be created to ensure opportunities are identified and maximized on an ongoing basis

Principles regarding planning & implementation: ITS and 4IR cannot be implemented without proper planning. Critical elements include operational concept development and lifecycle costing considerations;

Seamless transport: Opportunity to improve/create seamless transportation experiences through the use of technology/data/information

Integrated Corridor management (ICM): Development of Integrated Corridor Management initiatives across municipal borders and jurisdictions through *inter alia* availability of digitized transport solutions

Data sharing principles: Identify data sharing (open data) opportunities

4.7.6 Future Considerations

It is imperative that areas that might be impacted by future disruptions by emerging 4IR applications are identified and considered as the PLTF is further developed. Immediate considerations include the following areas (PwC, "International Trends in 4IR Mobility, 2020):

- **The passenger journey:** Integrated ticketing, digital payment and route planning;
- **City planning & infrastructure:** test labs, spatial planning and predictive maintenance;
- **Data-driven mobility:** big data analysis, integrated and intelligent transport systems;
- **Safety & inclusion:** road safety, accessibility and gender inclusivity, and
- **Delivery and distribution**: distribution and sorting centres, freight and last mile delivery.

These and other factors will be further explored in developing the framework within the context of technology and the 4IR.

4.8 Funding of Transport Services and Infrastructure

The funds required for the provision of infrastructure and transport services usually far outstrips the funds that are available to provide it.

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The following sources of funds is generally available to GDRT:

- Own funds;
- Government Grants;
- Donor funding, and
- Public Private Partnerships (PPP).

Own funds and Government Grants are the major source of funds. Currently the GRRL concession is the flagship PPP between the Provincial Government and the concessionaire.

The GDRT has to budget for the funding of transport services and provincial infrastructure in the Province. As indicated in Table 4-41 the main sources of funding come from own funds and Grants allocated to the Province in terms of the DoRA, gazetted annually.

Table 4-41: Summary of GDRT Revenue

Revenue	2018/19 ('000)	2019/20 ('000)	2020/21 ('000)
Own Funds			
Motor Vehicle Licenses	R3 961 563	R4 135 192	R4 357 924
Sales of goods and services - non- fixed assets	R58 464	R60 692	R48 402
Interest, dividends and rent on land	R14	R13	R8
Financial transactions in assets and liabilities	R22 187	R327	R251
Sub Total	R4 042 228	R4 196 224	R4 406 585
Conditional Grants			
Provincial Road Maintenance Grant	R742 275	R767 506	R669 835
Public Transport Operations Grant	R2 078 324	R2 436 074	R2 599 291
Extended Public Works Programme (EPWP)	R6 490	R6 386	R9 970
Sub Total	R2 827 089	R3 209 966	R3 279 096
TOTAL	R6 869 317	R7 406 190	R7 685 681

Motor vehicle licences account for the majority of the revenue generated, whereas revenue from conditional grants makes up just over 40% of the total revenue received.

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Table 4-42 indicates the expenditure per program for the past three financial years.

Table 4-42: GDRT Expenditure per Program

Program	Sub-Program	2018/19 ('000)	2019/20 ('000)	2020/21 ('000)
Administration	Office of MEC	R285 736	R334 097	R314 878
	Management of Department			
	Corporate Support			
	Departmental Strategy			
Transport Infrastructure	Infrastructure Planning	R2 740 989	R2 159 347	R1 790 721
	Infrastructure Design			
	Construction			
	Maintenance			
	Program Support			
Transport Operation	Public Transport Services	R2 311 691	R2 226 733	R2 083 940
	Program Support			
Transport Regulation	Transport Administration and Licensing	R291 626	R289 325	R251 765
	Operator License and Permits			
GMA		R1 945 268	R2 153 314	R2 680 758
TOTAL		R7 575 310	R7 162 816	R7 122 062

Three programmes, Transport infrastructure, Transport Operations and the GMA, account for 92% of the total budget spent in 2020/21.

4.9 Information Systems Kept by the Province

Various digitised traveller and passenger information systems are in place in Gauteng that lays the foundation for future integrated services. These include A Re Yeng BRT Information System; Rea Vaya BRT Information System; Harambee BRT Information System; Gautrain Information System; TCH Information System by SANRAL; Advanced Traveller Information System (ATIS) from the FMS, and Public Transport Information Platform by the Provincial Smart Mobility department.

4.10 User Experience

In general, public transport is not attractive to the user and this was confirmed through the NHTS.

Table 4-43 provides a summary of the transport related problems that households in Gauteng experience.

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Table 4-43: Transport related problems experienced by households

Transport related problems	Percentage of households
General	
No problems	9.9%
Poor condition of roads	8.3%
Rude drivers	4.5%
Overload	1.7%
Congestion	6.1%
Crime	3.9%
Other	5.0%
MBT	
Too expensive	6.8%
Reckless driving	6.9%
Unavailable, incl at specific times	3.0%
Too far	2.4%
Bus	
Unavailable, incl at specific times	23.6%
Too far	1.5%
Too expensive	0.9%
Reckless driving	0.9%
Trains	
Unavailable, incl at specific times	11.2%
Too far	3.4%

The biggest problem raised by households is the unavailability of buses in the Province, followed by the unavailability of trains. The problems raised with regard to MBTs relate to reckless driving and the fact that the MBTs are too expensive.

In terms of freight, current or most recent user experience will be ascertained during the formal stakeholder engagement sessions to follow but in the meantime, it might be useful to take note of the last survey done by Barloworld Logistics through their **supply**chain**foresight** research in 2016[xiii]. Their research included the impact of supply chain factors on business performance, and a review of the elements impacting the supply chain is presented in Figure 4-46.

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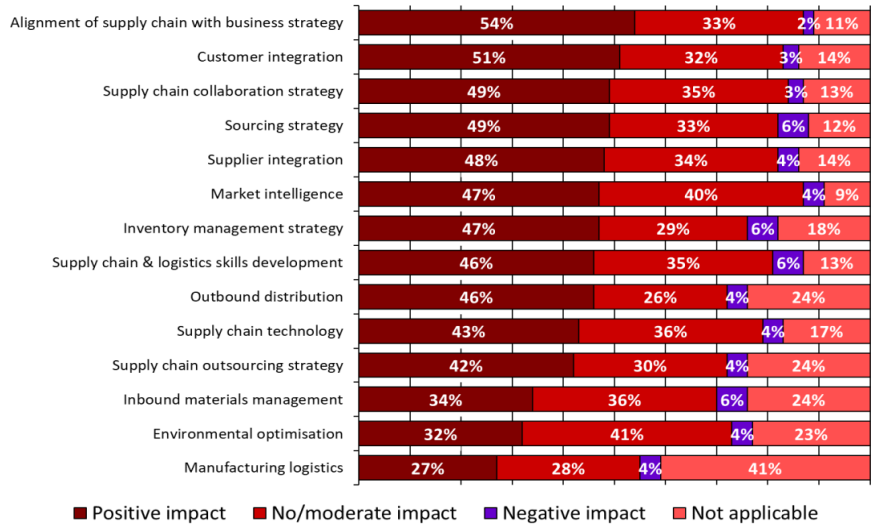


Figure 4-46: Review of Elements Impacting the Supply Chain

Respondents to the 2016 survey show that a strong focus on a diverse range of supply chain factors is delivering significant value to their companies. Universally, the alignment of the supply chain strategy with the business strategy has become more critical and is delivering very positive results for South African businesses. The integration of customers into the supply chain is recognised as an approach which delivers improved customer centricity, enabling improved performance and satisfaction levels. The strong focus on collaborative strategies is widespread and most likely adopted to minimise cost and reap the benefits of smart partnerships.

In looking at the Figure 4-46, there are some interesting revelations with outbound distribution and outsourcing seen as being of potential high impact but low on adoption. Similarly, inbound materials management has possibly a higher level of potential impact than is shown on this chart and is also low in terms of adoption.

In evaluating the overall impact of supply chain related issues, there is a high degree of acceptance in nearly all the areas, tabled as either being a positive or moderate impact on their business.

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4.11 Problems and Issues

The public transport problems and issues are summarised as follows:

- Most subsidised networks and large parts of the system are still largely reflective of pre-1994 state, except for Gautrain and the BRTs;
- Coordinated planning of the public transport network, covering the Gauteng City Region as a whole and crossing municipal and Provincial boundaries, is not optimal;
- Fragmented planning and funding of different public transport modes across the 3 spheres of government do not optimally facilitate coordination and integration;
- Agreement does not always exist on appropriate modal choice and role of modes;
- Integration between modes is not optimal, such as facilities, ticketing/fare media integration, timetables and information;
- Public transport systems are not easily accessible and are especially inaccessible for people with disabilities;
- Ability of planning authorities to influence the planning/design of subsidized bus contracts and awarding of OLs, impacts on municipal public transport networks;
- Safety and security of users remains a challenge, especially on access/First and Last Mile (1LM) and including issues around GBV. Protecting infrastructure against vandalism is a concern;
- Capacity constraints exist at regulatory entities in disposal of licence applications for mini-bus taxi, metered taxi, e-hailing and tourist operators;
- Fragmented and disconnected information of public transport operations, Operating Licence Administration System (OLAS), dated, skewed, incomplete or incorrect, and
- Regulation of road-based public transport services remains a challenge. The MBT and MaaS operations remain a challenge.

Barriers to entry for new entrants in providing subsidized public transport services remains a challenge.

In terms of freight, similar to the discussion on user experience in the previous section, it is important to note that problems and issues will be ascertained during the formal stakeholder engagement sessions to follow. However, in the meantime, a number of current issues in freight logistics have been identified from the literature review and include the following:

- The legislation around high-cube containers does not seem to be finalised and more engagement and debate is needed. It will cost the logistics industry enormous amounts to restrict the use of high-cube containers. There must be a technical solution;
- The increasing diesel price needs urgent attention;
- Working hours and related legislation to be clear and properly enforced;

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- Driver shortages and the issues regarding legal drivers from foreign countries require urgent attention;
- Disruption of road freight services should be addressed with urgent and appropriate government intervention. The safety of truck drivers and loads is currently severely compromised;
- Most attention should be given to provide suitable truck stops and staging areas along the corridors, but also close to terminals in the hinterland (e.g. City Deep in Gauteng) as well as in the port precincts (e.g. Port of Durban);
- Regional corridors remain crucial arteries in providing transport links, trade facilitation and development opportunities and the role of border posts are very important. Current and persistent delays at the border posts create disruption, add costs and move supply chains elsewhere to provide better customer service, to the detriment of the South African economy;
- Banning trucks in peak hours to reduce congestion and collisions involving heavy vehicles has been suggested but the increase in logistics costs is unlikely to be justified by the small reduction in congestion that will result. Heavy vehicles are often not the cause but the victims of congestion, which is caused by private vehicles with one occupant and an increasing number of light delivery vehicles that serve customers of online shopping. The increase in logistics costs such as travel time, driver wages and the cost of the additional fleet size required to transport the same goods in a shorter time will be significant. Reduced operating time from 24 to 18 hours per day implies fixed costs per operating hour will increase by 33 per cent. Logistics costs will consequently increase because of the increase in fixed costs which the market will unlikely be able to bear;
- Road infrastructure condition has deteriorated significantly and is indeed impacting negatively on operating costs of road transport service providers. Our highway network needs investment both to increase capacity and reduce journey time variability around our main cities (both through new road construction/rehabilitation and use of ITS technologies including tolling and information provision), and to better maintain the condition of the asset on a whole life cost efficient basis;
- Overloading is indeed contributing to damaging road infrastructure and more consistent enforcement will be appreciated;
- It would be great to have clarity on e-tolling as it remains unresolved. The principle of user-pay is sound from a transport economic perspective, but we need consistence in enforcement to make it work;
- The same applies to the (AARTO) system, where the Act has been found to be unconstitutional and the decision of the Constitutional Court is awaited;
- Sustainability in freight logistics is important and the use of hydrogen energy in transport has become a reality. The carbon footprint of road freight transport must be reduced. This needs to be further expanded and supported by government and industry;

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- The road freight industry is ready and eager to continue further developments in technological devices towards smart logistics (Industry 4.0, etc.);
- Similarly, the road freight industry supports performance-based standards (PBS) to improve efficiencies and reduce costs;
- Development of appropriate last mile logistics solutions, including micro hubs;
- Administrative burden with vehicle licences and registrations; and
- Allowing the private sector to issue permits and operator licences based on agreed standards such as the RTQS.

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5 INTEGRATED TRANSPORT PLANS

5.1 Introduction

For the purpose of land transport planning, three types of Planning Authorities (PA) have been distinguished as set out in the "Minimum Requirements for Preparation of an Integrated Transport Plans" as Type 1, Type 2 and Type 3. The Requirements further stipulate that "categorization of planning authorities into any one of the above three types, subject to the minimum requirements, will be the responsibility either of the MEC responsible for public transport in each of the provinces or of the Minister, in consultation with each other. Such categorization must be done in close consultation with all the planning authorities and municipalities in the province". In the Province of Gauteng, the following categorization has been followed:

- **TYPE 1**: Planning Authorities required to prepare a CITP are the 3 Metropolitan Municipalities in the Province, being:
  - The CoT;
  - The CoJ, and
  - The CoE.
- **TYPE 2:** All district municipalities are to prepare a DITP. In the case where a local municipality has prepared a CITP, this must then be incorporated as part of the DITP as well as Local Integrated Transport Plan (LITP). DITPs to be prepared are for the two (2) District municipalities, being:
  - Sedibeng District Municipality, and
  - West Rand District Municipality
- **TYPE 3**: All local municipalities are to prepare a Local Integrated Transport Plan (LITP). The local municipalities in Gauteng are:
  - Sedibeng District Municipality consist of three (3) local municipalities, namely:
    a Emfuleni Local Municipality,
    b Lesedi Local Municipality, and
    c Midvaal Local Municipality.
  - West Rand District Municipality consist of three (3) local municipalities, namely:
    a Mogale City Local Municipality,
    b Merafong City Local Municipality, and
    c Rand West City Local Municipality.

The minimum requirements further stipulate that the "MEC (Transport) must ensure the coordination of the planning process of all Planning Authorities (PA's) under the jurisdiction of the Province and, in doing so, must ensure that all plans address:

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- Public transport services operating across the boundaries of the areas of PA's, and
- Rivalry or lack of coordination between neighbouring PA's that may result in the duplication of planning, or the duplication or over-supply, or under-supply, of transport services, facilities and infrastructure in the region.

In terms of the NLTA 5 of 2009, Chapter 2, section 11 it is the municipalities' responsibility to prepare an Integrated Transport Plan and to improve the transport system within their jurisdiction. An Integrated Transport Plan (ITP) is a component of the Integrated Development Plan (IDP) for a municipality. It is prepared in accordance with the Provincial Land Transport Framework (PLTF), which serves as the basic framework for ITPs. In turn the PLTF is guided by the NLTSF.

It should be noted that ITPs must be submitted to the MEC in terms of section 36(4) of the Act for notification and approval and will also be reflected in the PLTF. LITPs will be submitted to the MEC as part of the relevant DITP and not separately. Approval by the MEC includes:

- The monitoring of compliance with PLTF and NLTA;
- Compliance with procedures and minimum requirements as stipulated in the NLTA;
- Adherence to provincial policies and alignment of principles regarding transport planning and infrastructure across PA boundaries;
- Modes and transport aspects which are mandates of the provincial government or provincial public entities, and
- Coordination, integration and alignment of transport issues between municipalities.

5.1.1 Frequency of Plan Preparation and Update

ITPs are prepared for a five-year period, thus a new ITP must be prepared every five years. On an annual basis, updating of selected aspects must be carried out. The minimum frequency of plan preparation and updating is shown in Table 5-1.

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Table 5-1: Minimum Frequency of Plan Preparation and Update

Plan	Frequency		Comments
	Preparation	Update	
1. Comprehensive ITP (CITP) and District ITP (DITP)	Total overhaul every 5th year	Annual update of selected aspects, in synchronization with IDP	Update to focus on action programme and budget. Prerogative of PA to do more comprehensive update.
2. Local Integrated Transport Plan (LITP)	Prepare every five years, as input to new DITP in the case of local authorities that fall within a district municipality	Update the budget and programme for the following year annually in synchronization with IDP	
3. Transport Register (forms part of ITP)	Total overhaul every 5th year	Update the TR if any significant new data collection occurs. GIS database and information systems to be updated on an ongoing basis as and when new information is collected	
4. Public Transport Plan (forms part of ITP)	Total overhaul every 5th year	Report annually on contracts that have been awarded or which have expired and any changes or additions to the proposed contracted services network. Database of operating licenses should be updated on an ongoing basing as OLs are awarded, lapse, or are renewed.	

5.1.1.1 Overhauling the Plan

The overhauling of a plan must be every fifth year meaning that every aspect of the plan must be re-examined to see if it is still up to date, revised and updated where necessary, and relevant new aspects must be added. This review must include a new transport register development, ahead of the new ITP and this needs to be reflected in Chapter 3. Revisions to the municipality's SDF must be reflected. Stakeholder engagement must be carried out, and the needs assessment updated accordingly. The Public Transport Plan must be revised to plan for any new contracts that will be issued over the next five years and to reflect the sequencing of any proposed restructuring of the network. The new ITP should reflect progress made in the previous five years with the implementation of the various strategies and programmes and update all strategies and programmes for the next five years. DITPs that reflect LITPs must be updated to summarise the new five-year LITPs of its constituent local municipalities.

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The list of projects, programmes and budgets in Chapter 13 must be completely revised for the next five-year period of the new plan, and a detailed budget and programme prepared for the following year.

5.1.1.2 Annual Updates

On an annual basis, the ITP should be updated where necessary, and this may take the form of a supplementary annual report, rather than the issuing of a new ITP document each year. The annual updating of the plan must at least involve the following:

- Update the TR if any significant new data collection occurs. The transportation GIS, databases and information systems must be updated on an ongoing basis as and when new information is collected;
- Describe progress with implementing the ITP in the previous year (e.g. new infrastructure built and contracts awarded);
- Document which contracts have been awarded or which have expired and any changes or additions to the proposed contracted services network. In municipalities that have prepared a CITP in particular, the annual plan submitted in support of the PTNG and other national funding must be documented;
- The database of operating licences, where a municipality has established such, should be updated on an ongoing basis as OLs are awarded, lapse, or are renewed. Any adjustments necessary to the Operating Licences Plan based on representations or new developments should be documented, and
- Revising and updating the projects, programmes and budgets in Chapter 13, so that a three-year period ahead is maintained, along with a detailed programme and budget for the next financial year. The expected sources of revenue to fund the budget must be documented. This chapter will serve as the basis for the municipality's annual transport sector component of the Integrated Development Plan (IDP). The budget and programme for the following year contained in each LITP must also be updated by the local municipality concerned, in synchronisation with the preparation of the annual IDP.

5.2 Coordination Structures

The coordination structures established by the GDRT to coordinate planning and integration in the Province are as follows:

- Gauteng Freight Forum;
- Gauteng Rail Committee;
- Integrated Transport Planning Committee, and
- TTWC.

5.3 Summary of ITPs Prepared

The paragraphs to follow provide a summary of the status of ITP preparation of the three Metropolitan municipalities and two District municipalities in the Province.

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5.3.1 City of Tshwane

The last CoT CITP covered the period 2015 to 2020. However, CoT has commissioned a service provider to update the CITP. The project commenced in December 2021 and will have a duration of 3 years. It is not the intention to redo the full CITP and the critical focus areas will be to review and update the following chapters:

- Chapter 4: Transport Register (Land Transport Status Quo);
- Chapter 5: SDF;
- Chapter 7: Public Transport Plan (PTP);
- Chapter 8: Transport Infrastructure Strategy;
- Chapter 10: Freight and Logistics Strategy;
- Chapter 19: Funding Strategy and Summary of Proposals & Programmes, and
- Chapter 21: Implementation, Monitoring & Evaluation.

The CoT's 2015-2020 CITP's Transport Vision, Mission and Goals is aligned with other spheres of governments' policies, strategies and priorities, as well as to meet the objectives of the Tshwane Vision 2055. The CoT's Vision 2055 is:

"In 2055, the City of Tshwane is liveable, resilient and inclusive, whose citizens enjoy a high quality of life, have access to social, economic and enhanced political freedoms and where citizens are partners in the development of the African Capital City of excellence."

In support of the CoT's Vision 2055 and its Growth and Development Strategy, the following Vision, Mission, and Goals have been formulated for the CITP:

Transport vision:

"A transport system developed to support a sustainable city".

Transport mission:

"To develop a transport system that positions the Capital City to meet the economic and social needs of its citizens".

The transport goals and objectives are aligned with the City's mission and are the targets which the City aims to achieve. To give effect to the transport vision and mission of the city, setting the goals and objective sets the basis for developing a monitoring system that may be used for evaluating progress in guaranteeing progress in meeting the Tshwane 2055 as well as the transport vision. The goals and objectives for Tshwane include the following:

- Plan and develop a transport system that improves accessibility and mobility whilst enhancing social inclusion;
- Provide a fully integrated public transport system;
- Develop a transport system that drives economic development;

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- Improve the safety and security of the transport system;
- Develop a transport system that reflects the image of the city;
- Develop an efficient, effective, development orientated public transport system and integrates land use and public transport plans, and
- Develop a transport system that is environmentally sustainable.

5.3.1.1 Key Pillars

The CITP is built on the following five key pillars. A few policies and/or strategies are provided for each pillar as a means of illustration:

- Sustainable transport
  - Provide a transport system with low negative environmental costs yet high positive social value, which supports resource efficient economic development
- Public-transport orientated
  - Prioritising public transport and Non-Motorised Transport (walking and cycling) over private transport;
  - Provide public transport access to all residents, including tourists and visitors;
  - Making substantial investments in high-quality, safe, reliable and affordable public transport, and
  - Land use to support and promote public transport e.g., linking economic nodes with public transport, increase land-use densities along routes and around modal transfer facilities.
- Integrated transport
  - Integration of land-use with transport, e.g., densification along public transport corridors;
  - Integration between networks, modes, fares and services, and
  - Integrated planning and implementation between CoT departments, as well as between the City and other national and provincial authorities.
- Transport in support of a Smart City
  - Affordability and accessibility of technology e.g., use of electronic communication connections for transport, safety and security (urban traffic control, passenger information, CCTV cameras, etc.);
  - Being “smart” by using scarce resources more effectively and through the application of suitable technology e.g., automatic fare collection using smart cards, and
  - Provide modern public transport modes e.g., BRT, LRT, Gautrain.

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- People-friendly
    - Social inclusion, with an emphasis on access, through the availability of public transport, to opportunities and services, and
    - Provide affordable, easy to use, safe and secure public transport, including universal access and facilities for walking and cycling.

5.3.1.2 Sustainable Transport

Sustainable transport is the main pillar of the CITP. Sustainable transportation is a system with low negative environmental costs yet high positive social value, which supports efficient economic development.

South Africa, including the CoT, has placed much emphasis on planning for sustainable transport and mobility, and endorsed the basic guiding principles for sustainable transport, namely:

- Access – provide reasonable access to other activities;
- Equity – strive to ensure social, inter-regional and inter-generational equity;
- Health and Safety – protects health and safety, and enhances the QoL of all communities;
- Individual Responsibility – all individuals are responsible to act as stewards of the environment, undertaking sustainable choices;
- Pollution Prevention – avoid generation of emissions that threaten health, global climate, and biological diversity, and
- Land and Resource Use – make efficient use of land and other natural resources while ensuring the preservation of vital habitats.

5.3.1.3 Main Strategies

The CITP listed the following main strategies:

- SDF

The SDF guides all the transport infrastructure strategies and plans, which in turn facilitates the development of the desired spatial structure of the city. The 24 priority activity nodes as identified in the MSDF are to be actively promoted as the major centres of economic development and job opportunities. The largest nodes in future are expected to be Tshwane CBD, Centurion CBD, followed by the Hatfield/Arcadia/Sunnyside Node and the Menlyn Node

- Integrated Public Transport Strategy

To implement the DoT's Public Transport Strategy and Action Plan, 2007, based on two key thrusts:

- Accelerated Modal Upgrading, and
- Integrated Public Transport Networks.

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To achieve a seamless integrated transport environment the City's CITP was set to focus on the areas of Network integration and Operational integration.

- NMT Strategy
  - Institutional
    - a Constitute a dedicated NMT unit;
    - b Integrate NMT sidewalk / bicycle lane projects as part of roads and urban design programmes;
    - c Traffic Impact Studies should include NMT;
    - d NMT infrastructure must be included in service agreements, and
    - e NMT infrastructure must be included as part of Bulk Infrastructure Contributions.
  - Integration of Planning and Network Development:
    - a Implementation of the NMT Priority Network (5 year);
    - b NMT planning to be integrated into IPTN so that it becomes a mode of choice;
    - c Appropriate facilities to be provided at public transport hubs and schools, and
    - d Planning to take goods traffic into account to promote LED activities with bicycle traffic.
- Traffic Strategies

Intelligent Transport Systems (ITS): The use of communications, computer and traffic technology to improve the efficiency of the transport system. These technologies provide data regarding the overall status of the network that feeds to a centralised control centre and is communicated to drivers, the public, authorities and the emergency services.

- Parking
  - Strategies include:
    - a Implementation of a City Parking Management Committee to integrate the planning and operation of parking in the city;
    - b Enforcement of parking restrictions with zero tolerance, including no parking zones, time limits on paid on-street parking, officers / marshals to enforce, as well as a judicial process to ensure fines are paid, and
    - c Implement paid on-street parking with strict law enforcement.
- Road Safety
  - Establish an active workgroup that ensures communication and collaboration between role players; implement an Internal and External Road Safety

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awareness programme; develop a central database system with access to all involved, monitoring and evaluation;

- Develop engineering solutions for hazardous locations i.e., review engineering design standards and practices, Road Safety audits on engineering projects and use of ITS to improve road safety;
- Law Enforcement Actions, including zero tolerance, targeted where most needed, monitoring and evaluation;
- Provide coordinated, sustainable and frequent road safety education to all learners and for targeted groups in Tshwane, and
- Implement Road Incident Management System (RIMS), which is a national requirement.

- Freight Strategies
  - Establish a Freight Transport working group in Tshwane to coordinate all freight related initiatives and a technical workgroup for Hazardous goods;
  - Develop a Freight Transport Master Plan;
  - Establish Weighbridges and truck stops/ fatigue management centres at the weighbridges;
  - Establish Abnormal Routes;
  - Provide access to intermodal facilities warehousing and rail sidings to Rosslyn and Waltloo industrial areas, and
  - Establish Pyramid South as a development zone.
- Infrastructure Strategy

The Tshwane Roads Master Plan indicates the road classification, proposed roads and declassification of certain roads. Only firm infrastructure schemes, which can realistically be expected to start within the next five years, were included in the CITP implementation plan.

5.3.2 City of Johannesburg

The CoJ's First Integrated Transport Plan (ITP) – 2003-2008, was approved by Council in August 2003. It was updated three times - in 2004, 2006 and 2007.

Work on the last ITP for 2013-2018 began in 2012 and a different approach was adopted by the Transport Department. Instead of a single document, the components in Figure 5-1 were to be developed.

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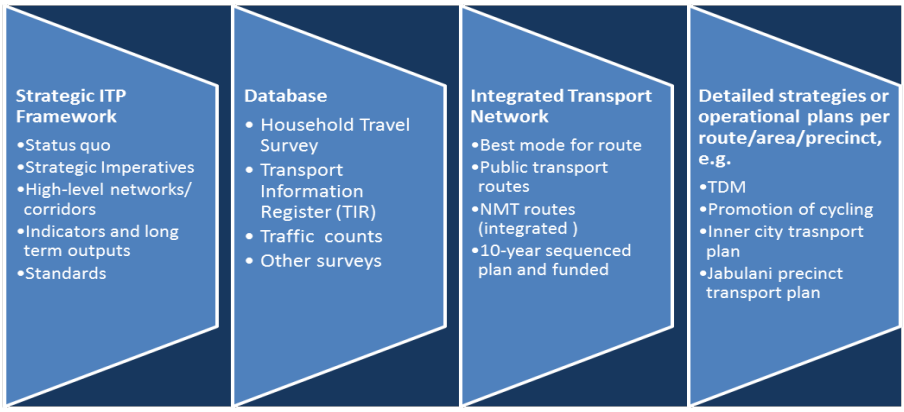


Figure 5-1: Components of the CoJ ITP

The first component, which we have called a Strategic Integrated Transport Plan Framework was completed on 30 August 2013. The aim of the document was to highlight the status quo and give an overview of some of the major developments and shortcomings in the last ten years; then to set out the City's objectives and vision for its transport system and the strategies which it intends to pursue to achieve them. Outputs, outcomes and indicators that will be used to measure the City's performance are set out, as well as standards for transport infrastructure and public transport services that can be expected by the public. A high-level spatial network has been developed which shows the main corridors and routes for public transport, freight and cycling and walking.

The second component, the Database component, dated 13 February 2014, was taking the form of a Johannesburg Household Travel Survey – being carried out during the first half of 2013 – and a Transport Information Register, for which data collection took place in 2012 and 2013

Although the other components were not officially completed, the city has executed or is in the process of executing, the studies shown in Table 5-2 in support of that.

Table 5-2: Studies Done or being done by CoJ

Name	Status
SITPF 2013-2018	Approved to be reviewed shortly as part of CITP from 2022 to 2025
IPTN 2025	Approved in 2020 to be reviewed as part of the CITP development
Secondary Network Plan	Under development
Freight Management Plan	Approved 2017
NEQ Operational Plan 2017	Approved in 2017
Phase 1Ca Business Plan 2017	Approved in 2017
Soweto Operational Plan 2017	Draft report

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Name	Status
Metrobus Operational Plan 2014	Approved 2014
Soweto Stabilisation Plan 2020	Approved in 2020
Sandton Transport Master Plan 2013	Approved
Rosebank Transport Master Plan 2011	Approved
Diepsloot Transport Master Plan	Under development
Greater Ivory Park Transport Master Plan	Approved in 2021
Region G Transport Master Plan	In the process of being approved
10-year Inner City Transport Master Plan 2020	Approved in 2020
Braamfontein Transport Plan 2011	Approved, under review
Randburg Transport Plan	Approved, under review
Roodepoort Transport Master Plan	In the process of being approved
Zandspruit Transport Master Plan	Under development
Travel Demand Management Strategy	Under development
Parking Policy	Under development
City Deep Transport Management Plan 2009	Approved
Feasibility studies for two BRT corridors i.e., Ivory Park to Sandton/Joburg CB and Soweto to Sandton	To be completed in October 2022 and February 2023 respectively
Feasibility studies for three Integrated Corridor Management (ICM) corridors i.e., Diepsloot to Sandton/Randburg, Orange Farm to Joburg CBD and Roodepoort to Joburg CBD	Diepsloot corridor completed to be sent for approval in November 2022 Orange Farm to Joburg CBD – to be completed in October 2022 Roodepoort corridor – underway to be completed in February 2023

This *Strategic Framework* of 2013 has been developed so as to be consistent with current government policies and objectives. The Transport Department of the CoJ has developed the *Strategic Framework* and bears the main responsibility for its implementation. It is responsible for transport planning, policy development, project implementation and services. It is responsible for providing infrastructure and services that support walking, cycling and public transport, for fostering behavioural change to improve road safety, and for enabling mobility, including that of freight.

The Department's vision, mission and goals are:

VISION:

"A people-centred transport system that is transformed."

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MISSION:

"To implement in a co-responsible and innovative way transport infrastructure and systems to improve the quality of life for present and future generations of residents of Joburg and which will contribute to the City's goals of:

- Nation building and social cohesion;
- Poverty alleviation, job creation, local manufacture and economic growth, and
- Human development and environmental sustainability."

5.3.2.1 Goals

- Building a leading, responsive and activist transportation sector in the city which works in partnership with stakeholders and residents;
- Planning, policies and coordination for integrated and sustainable transport;
- Promoting public transport, walking and cycling as modes of choice in Joburg;
- Building co-responsibility and a value-based culture to enable behavioural change towards transport issues;
- Providing high quality, safe, accessible, affordable and environmentally friendly public transport services;
- Building, maintaining and managing our road infrastructure and systems to ensure safety, accessibility and mobility for all road users including pedestrians;
- Transforming the construction, maintenance and management of storm water to respond to climate change and water scarcity and ensure the safety of residents and infrastructure, and
- Building, maintaining and managing public transport and non-motorised transport infrastructure to support walking, cycling and the use of public transport."

Transport strategies and programmes have been developed which seek to meet the policy objectives and outcomes of the City's Joburg 2040 Growth and Development Strategy as well as the imperatives described in other key government plans such as the National Development Plan and the national Public Transport Strategy.

These strategies and programmes have been organised into nine topics or "thrusts". The nine thrusts are:

- Thrust no. 1: Restructure and integrate the city;
- Thrust no. 2: Improve and expand provision of quality public transport and use of non-motorised transport;
- Thrust no. 3: Maintain, improve, extend and integrate transport infrastructure;
- Thrust no. 4: Support economic growth through improving freight mobility;
- Thrust no. 5: Manage congestion, travel demand and parking;
- Thrust no. 6: Improve transport safety through active, engaged citizenry;

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- Thrust no. 7: Transform the transport sector and encourage new, efficient and profitable transport enterprises and green jobs;
- Thrust no. 8: Plan and regulate the transport system, and
- Thrust no. 9: Resource and finance the transport plan.

5.3.3 Key Strategies

5.3.3.1 Thrust no. 1: Restructure and Integrate the City

The desired outcome is an efficient, city-wide public transport system located predominantly along high-density, mixed land use corridors.

Providing sustainable transport services that are efficient and inclusive is thus inextricably linked to the need for spatial change in South Africa's cities and related transport corridors. There is a need to establish more economic opportunities where people live, and to create new settlements close to centres of work.

The key strategy for restructuring the city using transport interventions is Transit-Oriented Development (TOD), which is to create strong high-frequency public transport corridors and to promote residential density along them and complexity of land use in the nodes on these corridors through attracting density and mixed-use developments to them

5.3.3.2 Thrust no. 2: Improve and Expand Provision of Quality Public Transport and Use of Non-Motorised Transport

The desired outcome is that public transport, walking and cycling become modes of choice, and to reach a stage where most trips are made using public transport or non-motorised transport. The aim is to link all people into a network of walking and cycling so they can access nearby destinations, and into a network of affordable, quality public transport for their more distant destinations.

This will require improving existing services and expanding the provision of new quality public transport, such as Rea Vaya BRT, and intervening in various ways to make walking or cycling very convenient for shorter trips

5.3.3.3 Thrust no. 3: Maintain, Improve, Extend and Integrate Transport Infrastructure

The outcome of the strategies and programmes under this thrust is for the City's transport infrastructure to be well-built, maintained and managed to that it supports the mobility needs of all its users in a safe and efficient manner, so that the value of the assets is preserved, and so that pedestrians, cyclists and public transport users are prioritised.

Transport infrastructure includes roads, bridges and storm water and public transport facilities. Roads include all classes of roads, infrastructure in the road reserve including footways, street lighting and signage, traffic lights and other installations in the road that regulate traffic etc.

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The storm water infrastructure needs to be constructed, maintained and managed so that it responds to climate change and water scarcity, and so that residents' safety is ensured.

A key component is the Complete Streets Principle. This involves an increased focus on sidewalks, dedicated lanes/managed lanes for public transport, cycling and freight; traffic calming, urban functionality and management, attractive public spaces, and different storm water design, including harvesting of storm water.

Complete Streets are streets which are safe, comfortable and convenient for travel for everyone, regardless of age or ability, and mode of movement. They are also aimed to be built in labour-intensive ways. Joburg aims for all its streets to be "complete" in the long term.

Complete streets are designed for:

- **Safety**: Move people and goods safely;
- **Access and Mobility**: Accommodate all street users, giving priority to the most energy- and space-efficient modes;
- **Context**: Respond to neighbourhood character;
- **Liveability:** Create a vibrant public realm with high-quality public spaces;
- **Sustainability**: Contribute to a healthier and more sustainable environment;
- **Visual Excellence**: Create coherent and harmonious streetscapes, and
- **Cost–Effectiveness**: Provide the greatest possible value to the public.

5.3.3.4 Thrust no. 4: Support Economic Growth through Improving Freight Mobility

The objective is that freight movement in the CoJ will be safe, reliable, and efficient to support the city's economy and be in balance with the needs of other transport users, the surrounding land use, the environment and QoL.

Freight transport is vital in the supply chain process to accomplish the cost-effective flow and storage of raw materials and finished goods from point-of-origin to point-of-consumption.

5.3.3.5 Thrust no. 5: Manage Congestion, Travel Demand and Parking

The desired outcome is improved mobility and reduced congestion on the city's road network to make Johannesburg a more liveable city and to boost economic growth. The Joburg 2040 GDS identifies the reduction of congestion as a critical objective for a more liveable city.

The current reality is that traffic congestion in Johannesburg is quite severe, and mobility is quite compromised on many of the arterials and freeways in peak periods

The City's approach to reducing and controlling traffic growth is to focus on mobility for people and goods, not vehicles *per se*. The solution to the city's growing

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congestion problems is not to build more roads, which will generate new traffic, but to:

- Use the strategy of TOD to reduce travel demand;
- Improve public transport to the extent that car users regard it as a realistic, quality alternative, and increasingly use it, especially for peak period regular trips to work and school;
- Encourage change in the behaviour, culture and mind set of city residents so there is a shift towards greater use of public transport, cycling and walking, and a willingness by employers and employees to support travel demand management strategies;
- Reduce the relative convenience of private car use through prioritising the movement of public transport vehicles on the roads;
- Increase the cost of private car use (through measures such as tolls and higher licence fees, along with ever-rising fuel prices);
- Manage travel demand thus reducing the need to travel in the peak, and reducing car use, especially single-occupancy vehicle use, and
- Get more out of the existing capacity in the road system (e.g., through Intelligent Transport Systems, managed lanes and better traffic management systems).

5.3.3.6 Thrust no. 6: Improve Transport Safety through Active, Engaged Citizenry

Various strategies set out in the Framework require behaviour, culture and mindset change. Many of them depend on the involvement and support of the City's residents. Participants in the Joburg 2040 GDS suggested the city should build a core of transport activists across Johannesburg to actively lobby for change and to build community ownership.

One of the most important outcomes that can benefit from the support and involvement of residents is road traffic safety and crime prevention. Johannesburg, along with the rest of South Africa, has a poor transport safety record by international standards. Every day an average of 36 lives are lost in South Africa due to road accidents. Of these 15 are pedestrians, and 3 are killed in taxi-related incidents. More than 90% of crashes are due to lawlessness.

5.3.3.7 Thrust no. 7: Transform the Transport Sector and Encourage New, Efficient and Profitable Transport Enterprises and Green Jobs

The promotion of public transport, walking and cycling, the expansion of infrastructure to support it, and the City's commitment to pursuing low-carbon growth and development creates great opportunities to expand the number of direct and indirect jobs in the transport sector and to increase the number of enterprises, large and small.

Large-scale transport improvement programmes also offer an ideal opportunity to promote scarce skills development and through which experiential training (e.g., for young engineers) can be provided. They also offer opportunities to involve young people in activities across the transport value chain.

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The strategy in the transport sector is to recognise the many opportunities for jobs creation and new enterprise development in the sector through the expansion of the quality public transport system, transport infrastructure development and the development of a green economy, and to actively enable that these are fully exploited.

The city will pursue the following major areas of job creation and enterprise development going forward:

- Labour intensive construction and the implementation of the Expanded Public Works Programme (EPWP) where jobs and skills training will be maximised in the construction of road infrastructure including complete streets, sidewalks and bicycle lanes, Rea Vaya BRT and rail upgrading;
- New enterprise development and the formalisation and growth of existing enterprises in the public transport sector including in respect of Public Transport Operating Companies with Rea Vaya contracts, other scheduled services contracts, operation of park and ride sites, etc;
- Creation of new enterprises and jobs in the promotion of a green economy. Three areas stand out here – firstly, shifting car users to public transport generates many direct and indirect jobs in public transport operations, construction and manufacturing; secondly, introducing new fuel sources such as bio gas and bioethanol can create enterprises and jobs in waste collection and the agricultural sector; and thirdly, in respect of cycle promotion including in the manufacture, assembly, sale, repair, rental and maintenance of bicycles;
- Creation of new enterprises enabled by the expansion of transport infrastructure provision, as well as by the associated requirements for infrastructure maintenance, cleaning and securing;
- New modes of transport that generate enterprise and jobs, such as in tuk-tuk and pedicab businesses;
- Associated job creation in the transport value chain such as bitumen for roads, and components for buses, and
- Job creation, especially for young professionals as we continue to innovate in the public sector and expand the public sector's role in transport regulation and contracting.

The minibus-taxi industry in the City and its employees are an important target group for transformation and mainstreaming into more formal operations and new enterprises. To facilitate these processes, particular effort and support will be given to address the current lack of commercialisation in the industry, and the instability of leadership and organisation in some sections in the taxi industry.

5.3.3.8 Thrust no. 8: Plan and Regulate the Transport System

In the light of the Transport Department's considerable and growing responsibilities, its planning capacity will be expanded and consolidated. There will be more systematic data collection, analysis and storage and regular updating of information. Planning tools including the Emme Model and the Transport GIS system will be maintained in an updated and functional state.

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5.3.3.9 *Thrust no. 9: Resource and Finance the Transport Plan*

The Transport sector going forward will be giving high priority to developing the high-quality human resources within and outside of the city both to be able to sustainably implement the transport strategies and to be able to share our experiences across the city, the country and the continent.

The Transport sector of the city aims to become a centre of excellence though implementing the following:

- A quality staff training and development programme which will include in addition to statutory requirements the hiring of interns, mentoring of young professionals, financial support to post-graduate study and local and international partnerships with institutes and institutions of higher education;
- Pro-active knowledge management and knowledge sharing;
- A specific staff retention and attraction policy aimed at scarce skills in transport, and
- Capacitation of ward transport representatives and other local level stakeholders to be able to address transport issues at a ward or sector level such as road safety, prevention of vandalism and commuter activism.

5.3.4 Public Transport

The following, pertaining to public transport, is of Provincial significance:

- Low levels of control over quality of public transport (excluding BRT);
- Fare integration and harmonisation between Gautrain and Rea Vaya. There remains very limited integration due to significant difference in fares as well as the rigid nature of the PPP signed between the Gauteng Province and the Bombela Concession Company;
- Management of all PTOG services to be devolved to CoJ;
- Integrating MBTs into EMV based fare collection systems;
- Work with the GDRT to develop a fare structure for metered taxi services that is gazetted, so that users experience consistency and certainty, and to develop regulations to set the standard and quality of metered taxis. Work with the regulatory authority to ensure that it is a requirement of operating licences that the gazetted fares are displayed and that metered taxis have functional calibrated meters;
- Government policy to devolve transport management to local government will succeed if there is a simultaneous strengthening of institutions and alignment of legislation, policy and practice. Where metropolitan municipalities are adjacent, a regional transport authority may be appropriate to support integration. In terms of the establishment of a regional transport authority, institutional frameworks for decision-making and co-operative governance with clear allocation of powers has still to be addressed;

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- The system of regulating non-contracted public transport services in Johannesburg is very poorly administered and enforced. Improve the regulatory environment to ensure safety of vehicles and a match between supply and demand, and
- The stated goal of PRASA's National Strategic Plan (2012) is to upgrade the existing rail network in high-volume corridors so that it can play a key role in TOD in the City and act as a quality mass carrier.

5.3.5 Freight

The SITPF for the CoJ[xiv] includes a freight logistics strategy in four of their thrusts. To accommodate freight in and around Gauteng in future the proposed Gauteng freight strategy includes:

- Development of intermodal facilities with supporting services on the periphery of Gauteng;
- Establishment of freight roads around the urban core of Gauteng;
- Identification of roads to link the intermodal facilities, and
- Development of sufficient road capacity for the distribution of freight to and from the inter-modal facilities.

5.3.6 City of Ekurhuleni

The last CITP for the CoE was done for the period 2013 to 2017. It has been prepared in terms of section 36(1) of the NLTA. This CITP satisfies the requirements of the NLTA, the minimum requirements and the guidelines published by the DoT.

The CITP describes the current land use transport system of the CoE, identifies land use and transport challenges and needs of stakeholders, provides long-term strategies and plans for passenger and freight transport infrastructure and services, as well as a five-year programme of projects subject to annual budgets and relevant funding sources. The CITP has been developed in terms of a comprehensive stakeholder and public participation programme and initiated various coordination structures for the continued implementation and monitoring of the CITP.

Since the development of the CITP the CoE has also completed the following studies:

- CoE Roads Masterplan, October 2017, and
- CoE Integrated Public Transport Network Plan (IPTN), 2020.

The Transport Vision set in the CITP of 2013 to 2017 for the CoE , which is stated be an ideal end state to strive for over the long term, is:

"Ekurhuleni to have a transformed transport system that is people oriented, sustainable and supports the economy of the CoE as well as Gauteng as a global city region."

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The following Goals have been formulated:

- To provide a transport system that will act as a catalyst for economic development;
- Support integrated planning through corridor and nodal development;
- Promote public transport to achieve the ideals of sustainable development;
- Provide an integrated transport system that meets the needs of all users, and
- Provide a transport system that is environmentally sustainable.

The following are key aspects included in the CITP:

5.3.6.1 Current Land use Transport System

One of the most important features of CoE is its strategic location in Gauteng, South Africa and even the Southern African context. It is located in the south-eastern quadrant of Gauteng Province and it represents the point of convergence of a number of national road and rail transport corridors which link the major urban centres and export harbours of South Africa to Gauteng Province.

The OR Tambo International Airport (ORTIA), by far the largest passenger and cargo airport in Southern Africa, is also situated in Ekurhuleni and is a very prominent feature in terms of the diversity and scale of secondary activities (manufacturing, warehousing etc). The airport and its surrounding area are also known as the Aerotropolis.

The area represents a fairly fragmented urban structure due to environmental features like drainage systems and dolomitic areas, historic mining activity and associated areas of shallow undermining, and the fact that the area developed as nine independent local municipalities: Alberton, Edenvale, Kempton Park, Germiston, Boksburg, Benoni, Brakpan, Springs and Nigel. As a result, there is no single main employment centre typical of any city.

5.3.6.2 SDF

In line with the spatial principles embedded in the National Development Plan (2030) and the Gauteng SDF, the CITP modelling exercise indicated that there is sufficient land available within the existing Ekurhuleni urban fabric to accommodate about 50% of the incremental population (1.146 million people) in close proximity to the proposed Ekurhuleni IRPTN network. An additional 35% within the existing urban fabric by way of infill development and densification, can also be accommodated.

However, in order to be successful, the CoE will have to implement dedicated Growth Management Strategies to dedicated priority corridors based on comprehensive Precinct Plans compiled for each of these corridors. If all corridors are implemented simultaneously, it will severely dilute the development impact on all the corridors. Instead, it is suggested that a phased, incremental approach towards the development/redevelopment of the individual corridors forming part of the CoE IRPTN, be followed.

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5.3.6.3 Freight Transport

The CITP (2013 – 2017) of the Ekurhuleni Metropolitan Municipality[xv] includes a freight and logistics strategy in Chapter 8 (Freight Transport Strategy). In summary the Freight Strategy is:

- Maintain a Road Freight Network consisting of primary and secondary routes, in order to protect the safety of other road users, the amenity of communities and their local environments, and the integrity of highway infrastructure;
- Continue to utilise traffic management techniques (weight and height restrictions, traffic calming etc) to ensure most road freight uses the identified routes of the freight network;
- Commit resources to support the EMPD and other law enforcement agencies in enforcement of the use of the freight network and restrictions on freight traffic where other measures to contain freight to designated routes have proved ineffective. and
- Work with government of all levels and with operators to develop positive and innovative approaches to enforcement that can be delivered at lower cost, such as requiring compulsory attendance at awareness training for drivers identified as breaking speed limits or travelling off designated routes as an alternative to prosecution.

CoE forms part of the main economic hub in southern Africa and large numbers of freight tonnage pass through it by either rail of road. It is therefore important for CoE to become involved in facilitation of and improved freight operations in order to ensure the continued growth in the commercial sector of CoE and to protect the infrastructure on which the road-based freight movements and all other traffic must operate.

Two major new developments incorporated into the freight strategy are:

- The development of an Aerotropolis at the OR Tambo International Airport, and
- The development of the freight hubs at Tambo Springs and Sentrarand.

5.3.6.4 Aviation Strategy

There are ten airports in the CoE ranging from very large to small. There are other airports in Gauteng that also compete with the air traffic and airspace of CoE. The following Airport strategies were formulated:

- Encourage the growth of ORTIA to its ultimate development of 55 million Air Passengers, which will in future include a midfield terminal and up to four parallel runways, according to the ACSA Airport Master Plan;
- Encourage the development of surrounding areas to ORTIA for airport and commercial activities to ensure the success of the aerotropolis;
- Ensure the surrounding road and transportation network can support the growth of ORTIA to its ultimate development;

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- Protect the current status of Rand Airport as a General Aviation (GA) airport, and retain its current function as a GA based airport, with the possibility to grow general aviation to include for regional flights in future to SADC countries, and
- A second major airport for CoE is not a realistic proposal for the foreseeable future, especially in light of the developments at Lanseria.

5.3.6.5 Public Transport Operational Strategies

The focus of the public transport operational strategy is on the integration of the full public transport network, services and modes in such a fashion that passengers can move optimally from origin to destination in the area most effectively, in the shortest possible time and with the minimum of fare-paying transactions.

To serve this purpose, an Integrated Public Transport Network (IPTN) was developed indicating the main public transport routes and modal transfer stations, based on the following:

- Existing and proposed land uses according to the MSDF;
- The approved SPTN and other information obtained from the 2007 ITP;
- Existing taxi and bus routes;
- The IRPTN, including the BRT routes and their feeder routes, the commuter rail network and Gautrain;
- The existing major transport infrastructure, and
- Major economic nodes and future development areas, especially residential.

Initiatives of provincial significance, pertaining to public transport, highlighted in this document:

- Establishment of a Provincial Transport Authority;
- OR Tambo International Airport identified as a key economic node;
- Promotion of rail as the backbone of the public transport system;
- Integration of transport between Ekurhuleni and external authorities;
- Bus Rationalisation Plan due to the implementation of the IRPTN, Phase 1, and
- MBT Operating Licence Strategy.

Public Transport Services of provincial significance relates to commuter rail, GRRIN Extensions, and a number of PTOG contracted services from Soweto, Ekangala, and the Evaton areas.

Seventeen inter-modal facilities were identified for upgrading, all linked to priority train stations. The provision of intermodal facilities will be a joint venture between Ekurhuleni, PRASA, and Gauteng Province. The intention is for PRASA to fund the new stations while EMM and Gauteng Province provide funds for the intermodal facilities at the stations.

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The role of PRASA in the modernisation of the railway system is well documented in the CITP. The upgrade of the Mabopane to Naledi corridor is specifically mentioned with a completion date of December 2014.

The CITP highlights that the objective, in relation to urban transport, is to develop a stronger institutional alignment between the Province, the Metropolitan Municipalities and PRASA in a manner that makes metropolitan government the key focus for decision-making.

5.3.6.6 Non-Motorised Transport (NMT)

There is a very high need for NMT facilities throughout CoE. In the short term (2-3 years), NMT should support the IRPTN and BRT network. In the medium term (4-6 years), NMT facilities should be implemented in support of remaining public transport route network and facilities, as well as areas with high NMT volumes e.g., routes to schools, hospitals, shopping malls and community service centres.

Over the short-term, 46 kms of NMT routes have been identified for upgrading.

It is further recommended that the CoE should develop an NMT policy and master plan to guide the implementation of NMT facilities throughout CoE as well as promote their use. An awareness campaign to sensitise the public of the role of NMT as a key mode of transport is also recommended. The campaign should start with the most vulnerable users, such as learners at schools and then filtered to the rest of the public through advertising and related marketing material.

5.3.6.7 Travel Demand Management

It is recommended that:

- Dedicated capacity be created in the CoE Transport Planning department to ensure effective management and implementation of TDM projects and related sustainability initiatives;
- The identified TDM measures be approved, and the pilot projects implemented to help alleviate traffic congestion, promote public transport and NMT modes;
- A detailed and comprehensive TDM implementation plan be commissioned, and
- A thorough consultation process be undertaken prior to any implementation.

5.3.6.8 Transport Infrastructure

Historically, roads and private transport received priority, which are reflected in the funding and budgets of transport authorities. The new national initiatives, such as the IRPTN, PRASA's rail modernisation program, BRT and public transport systems have changed priorities and funding around to give preference to public transport. This is illustrated by the proposed R3.3 billion budget for the Phase 1A BRT for the three-year MTEF period, compared to the total Roads and Stormwater budget of just below R2 billion for the same period.

Transport Infrastructure is one of the main structuring elements of the spatial development of the Ekurhuleni metropolitan area. The MSDF and Regional SDF's were used as the guiding framework for the infrastructure strategy and projects.

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5.3.6.9 Road Network

A comprehensive roads master plan was developed based on the most recent metropolitan and SDFs of the CoE, ensuring that the road network serves land use needs, and also guides future land use planning. The land use projections are also consistent with those used for the Gauteng Integrated Transport Master Plan, ensuring integration with the provincial planning.

Detailed road network and access management proposals have been made for ten sub-areas that are experiencing high development pressure. Sub-area traffic simulation models were used to test various scenarios proposed by the regional road engineers and solutions were subsequently formulated and tested in close cooperation with the various regions.

5.3.6.10 Public Transport Infrastructure

To support the IRPTN, it is proposed that for the next 3 years, CoE should concentrate on upgrading public transport facilities which support the intermodal concept. Possible upgrades include provision of park and ride facilities, fencing, upgrading of bus and taxi facilities, establishment of customer care centres and provision of ablution facilities.

5.3.7 Sedibeng District Municipality

The last DITP prepared for the Sedibeng District Municipality (SDM) was developed for the period 2019 to 2024 and was done in terms of section 36(1) of the NLTA. The DITP satisfies the requirements of the NLTA, the minimum requirements for the preparation of ITPs, 2016 and the guidelines published by the DoT.

The Transport Vision of SDM was formulated with the intent of guiding transport development in the area in terms of both the long- and short-term components of the transport plan. The Transport Vision of SDM is

“To provide a safe, reliable, efficient, effective and integrated transport system and infrastructure for both passengers and freight that will enhance social and economic growth and improve the quality of life for all.”

The following Goals have been formulated:

- To promote access to infrastructure to all spheres of the community and establish an integrated environment;
- To have optimum utilisation of an integrated public transport system;
- To provide a transport system that will enhance economic development, and
- To promote transport that is friendly to the environment.

Specific objectives to meet each goal were formulated and guided the prioritisation of projects for the DITP implementation plan.

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SDM consists of three local municipalities, namely:

- Emfuleni Local Municipality;
- Lesedi Local Municipality, and
- Midvaal Local Municipality.

The following paragraphs address key aspects included in the DITP.

5.3.7.1 SDF

The Sedibeng District SDF encourages land use densification in its identified nodal development areas, namely the Vereeniging/Sebokeng/Vanderbijlpark/Meyerton urban conurbation areas. Heidelberg has also been identified as an area where land use densification may occur which must ultimately support the integration of local settlements. These areas are usually characterised by high levels of accessibility in terms of transport networks, a high concentration of varied land uses, and high levels of economic activity.

The Sedibeng District Municipality (SDF) identifies several development objectives to address its status quo and realise its future spatial form. A description of the SDF strategies to support improved public transport utilisation and the integration of land use and transport are:

- “A system of functionally defined Development Nodes and Corridors”;
- “Establishing linkages to all areas”;
- “The enforcement of an Urban Development Boundary”;
- “Encouraging corridor development”, and
- “Focus areas for urban development”.

5.3.7.2 Public Transport Plan

According to the Emfuleni 2015 LED Strategy a so-called game changer project relates to the public transport development programme. It is stated that public transport in the region lags behind that of the Johannesburg region. Improvements are needed regarding local bus linkages, trains and water transport. The future linkage to the Gautrain is also a requirement to link the region with Johannesburg via a rapid rail system. The argument is made in this strategy that such a system will allow the region of Sedibeng DM to grow. It is thus of importance to consider if this game changer project forms part of the Gautrain Rapid Rail Integrated Network planning.

According to the ITMP of Gauteng a ‘clean slate’ approach was adopted in the IPTN design process for Sedibeng, as all existing bus and taxi services were not considered in the design process. There are a large number of bus and taxi services currently operating in Sedibeng. According to the study investigations found that it was extremely difficult to alter and change these routes on an individual basis and that it posed several risks.

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A total of 26 routes have been identified, 3 of which are suitable for articulated buses, 17 of which are suitable for standard buses, 3 for midibuses and 3 for minibuses. The said IPTN design report also stresses the strong cross-boundary passenger movement between Sedibeng and Johannesburg, as well as cross-boundary movements between Sedibeng and Ekurhuleni and West Rand.

In terms of provincial significance, the following was mentioned in relation to public transport:

- Unscheduled (minibus) services should operate along pre-designed routes registered with the PRE. The operating routes and conditions are set in terms of Operating Licences issued by the Province. Taxi routes were not available from the PRE;
- Bus service availability;
- Rationalisation of bus routes/services (increased/reduced services);
- Rationalisation of taxi routes/services (increased/reduced services);
- Develop and implement a strategy for Learner Transport, and
- Support the Gauteng Province with the finalisation of the main public transport corridors in Gauteng (IPTN design project).

5.3.7.3 Non-Motorised Transport (NMT)

A total of 22km of NMT routes are proposed for initial implementation over the 5 year period of the DITP, which is approximately 4.5km of implementation per financial year.

It is further recommended that an NMT Policy and NMT masterplan should be developed by SDM to guide NMT provision in SDM. The NMT policy and masterplan will direct the process of implementing NMT through a phased approach while prioritising the areas where NMT is most needed.

5.3.7.4 Future Freight Logistics Hub

The proposed Vaal Logistics Hub (VLH) was identified as one of the main logistics hubs in both the Gauteng Freight Implementation Strategy and the Gauteng Freight Mobility study. The importance of this hub has further been emphasised in the LTPF of Transnet, linking specifically this site and other logistics hubs with the planned NATCOR (Gauteng Natal) corridor. The importance of the VLH is further underlined by the geographic location that will serve the southern parts of Gauteng with logistics and supply chain solutions.

This freight transport strategy addresses the following aspects:

- Legislative and policy requirements;
- Freight strategies;
- Freight generated from imports and exports;
- Road freight volumes;
- Current and future rail freight volumes;

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- Overload strategy, and
- Dangerous Goods Movements.

5.3.7.5 *Transport Infrastructure and Planning Projects in Sedibeng*

Table 5-3 reflects the important projects from the relevant Midvaal LM documents.

Table 5-3: Midvaal LM Projects

Project	Description
Rural Logistics Study	A rural logistics study is required to facilitate the development of agri-processing plants in the rural areas to be used to process and package agricultural produce according to market standards. Relationships between organizations working with small-scale farmers, and communities interested in farming should be supported and strengthened.
Road Maintenance Projects	Road painting projects in support of the Kgatelopele Youth Development Programme forms part of this project.
Upgrading of Road R82	There is ongoing pressure on Gautrans to complete the upgrading of the R82
Construction of Road K154	The construction of the K154 is an important road linkage in linking the various communities in the Midvaal Local Municipality, and linking this with other local, regional, provincial and national markets. This is required as part of the sectoral growth strategy for Midvaal.
Rail Operational Improvements	The existing railway network need to be utilised optimally to transport goods out and to the municipality as part of the sectoral growth and development strategy.
Logistics and Roads Master Plan	A broader logistics plan is required to assess the inbound and outbound logistics movements in the municipal area. The potential of economies of agglomeration should be explored. The term economies of agglomeration describe the benefits that firms can obtain when locating near each other.
R59 Development Corridor	The individual programmes and action plans to initiate the development of the corridor forms part of this project.

Table 5-4 reflects the important projects from the relevant Emfuleni LM documents.

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Table 5-4: Emfuleni LM Projects[12]

Project	Description
Proposed VLH	The proposed Logistics Hub can be promote businesses that wish to access national and international markets. (Place marketing).
Future Gautrain Link	The future linkage to the Gautrain is also a requirement to link the region with Johannesburg via a rapid rail system. Such as system will allow the region to grow. (LED).
Transport Infrastructure Plan for the proposed Special Economic Zone (SEZ)	The development of a Special Economic Zone (SEZ) linked to logistical centre is needed. Such a SEZ will allow the revitalization of the local industrial sector. Land is already earmarked.
Public Transport Development Programme	Public transport development programme. Public transport in the region lags behind that of the Johannesburg region. Improvements are needed regarding local bus linkages and rail transport.

Table 5-5 reflects the important projects from the relevant Lesedi LM.

Table 5-5 Lesedi LM Projects

Project	Description
Major Development Corridor along N17	The N17, linking Devon/Impumelelo and Vischkuil with the East Rand conurbation towards the west and Mpumalanga towards the east forms part of this development corridor.
Major Development Corridor along N3	This development corridor runs along the N3, linking Heidelberg/Ratanda with Johannesburg and Durban. Potential development energy along these routes should be harnessed.
Secondary Development Corridor Along R42	A secondary development corridor is proposed Along Route R42, linking the Heidelberg/Ratanda, Nigel and Vischkuil nodes. Some development is already taking place along this corridor, e.g. Jameson Park.
Devon/Impumelelo and the R29 Corridor	Rural logistics strategy should be conducted for this area. The R29 corridor in Devon/Impumelelo has a massive potential for agro-processing and agro-industries due to

[12] https://municipalities.co.za/provinces/view/3/gauteng

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Project	Description
	the high agricultural potential in the hinterland. The area has also been earmarked for Comprehensive Rural Development Programs (CROP). The emphasis on this place should take priority in the implementation as Agriculture is the backbone of Lesedi economy and to locate agro-processing will be key considering proximity of the markets, national and regional arterials and corridors linking Lesedi to Gauteng and to the global village.
R42 (HF Verwoerd Street) Restricted development challenge (Access Management Plan)	The current SDF Review view the challenge as Development Management Plan) challenge (Access imperative in the business growth and expansion of businesses in the CBD. The restricted development on R42 (HF Verwoerd Street) was created due to the planned future Provincial road aimed at splitting the CBD by means of dual carriageway. The current SDF Review induces Lesedi Local Municipality to re-engage DOT to concede to the fact that the future road is de-proclaimed and the Louw Street by-pass be utilized an alternative.

5.3.8 West Rand District Municipality

The last DITP prepared for the West Rand District Municipality (WRDM) was developed for the period 2019 to 2024 and was done in terms of section 36(1) of the NLTA. The DITP satisfies the requirements of the NLTA, the minimum requirements for the preparation of ITPs, 2016 and the guidelines published by the DoT.

The Transport Vision of WRDM was formulated with the intent of guiding transport development in the area in terms of both the long- and short-term components of the transport plan. The Transport Vision of the WRDM is

“To provide a safe, reliable, efficient, effective and integrated transport system and infrastructure for both passengers and freight that will enhance social and economic growth and improve the quality of life for all.”

The following Goals have been formulated:

- To promote access to infrastructure to all spheres of the community and establish an integrated environment;
- To have optimum utilisation of an integrated public transport system;
- To provide a transport system that will enhance economic development, and
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WRDM consists of three local municipalities, namely:

- Mogale City Local Municipality;
- Merafong City Local Municipality, and
- Rand West City Local Municipality.

The following paragraphs address key aspects included in the DITP.

5.3.8.1 SDF

The WRDM SDF (2014 & 2017 Review) identifies four (4) primary nodes, eight (8) secondary nodes and four (4) rural nodes and acknowledges that these activity nodes are important public transport destinations. On a district scale, the WRDM identifies two major corridors earmarked for development in the district, namely the N12 Sub-Corridor Development located in Rand West City Local Municipality; and the N14/R28 Corridor Development located in Mogale City Local Municipality. These structuring elements aim to enhance spatial efficiency and consolidate economic development and infrastructure investment.

Land use densification, including both greenfield and brownfield development, are encouraged in the existing urban areas, particularly Krugersdorp, Randfontein and Westonaria, as well as along several primary arterial roads. The SDF emphasises that intensification and infill of industrial land use activity should occur within existing industrial areas to ensure that these areas are optimally developed.

5.3.8.2 Future Freight Logistics Hub

The proposed Freight Logistics Hub for the WRDM is situated approximately 2.5km from Lenasia. The proposed site location will provide access to the site via the R558 to the N12. Future planned provincial roads that will improve accessibility to the site include the PWV5, PWV16, K142 (R558, Moroka Bypass), and K15 (R558, Adcock Street). The existing Bank to Johannesburg rail line also passes along the southern border of the proposed site, thereby providing true inter-modality.

5.3.8.3 Non-Motorised Transport (NMT)

The NMT strategy for the WRDM highlights the following:

- Promote NMT as a key mode of transport in WRDM;
- NMT to incorporate passengers with a special category of need;
- Use NMT as a catalyst for economic development by connecting people with job opportunities, and
- Improve planning of NMT provision in WRDM.

It is recommended that an NMT Policy and NMT masterplan should be developed by WRDM to guide NMT provision in the district. The NMT policy and masterplan will direct the process of implementing NMT through a phased approach while prioritising the areas where NMT is most needed.

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5.3.8.4 Aviation Strategy

WRDM was not listed as an important aviation location in the ITMP25 for Gauteng as no planned airport developments were listed. In this regard it is important to note that the WRDM is in the process of planning a regional airport development.

One of the outcomes of the IDP (2016/17 to 2020/21 as revised in 2017/18) framework for the WRDM identifies the need for the development of the West Rand Regional Airport due to the need to promote regional economic development and growth.

An initial feasibility study only focussed on the West Rand Airport as a recreational Airport and the study was regarded to be commercially non-viable. According to GIFA (2018) this study will focus on the airport as a commercial airport. This project is in pursuit of achieving the objective of identifying and delivering of game changer projects in the district to make an impact on the local economy. Besides providing freight/transport logistics support to all sectors in the local economy, it will also lead to the development of a number of supplementary industries to support the airport and various operators.

5.3.8.5 Public Transport

The WRDM has conducted limited high-level planning for a primary strategic public transport network with some elements of the IRPTN. This has not gone much further than identifying a number of key corridors in the respective areas. These include the following:

- In terms of unscheduled (MBT) services, they should operate along pre-designed routes registered with the PRE. The operating routes and conditions are set in terms of Operating Licences issued by the Province. Taxi routes were not available from the PRE;
- Plan and implement a bus service on the R28 corridor (Westonaria - Randfontein - Mogale City);
- A planned BRT route from Lenasia to Westonaria;
- No subsidised bus services available in the district; the feasibility should be investigated;
- Magaliesberg intermodal regional facility, and
- Lack of stop bays on road infrastructure on higher volume corridors.

The DITP identified public transport as a problem in the municipality, stating that public transportation initiatives are not focused on a specific implementation plan. Public transport projects and public transport infrastructure are implemented on an ad-hoc basis. According to the ITMP the DITP advocates the proclamation of a Primary Strategic Public Transport Network (PSPTN). This requires the identification of pilot implementation corridors. In addition to this, feeder systems connecting into the PSPTN are needed, and the need to proclaim a Secondary Strategic Public Transport Network (SSPTN) for the WRDM is highlighted.

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The majority of the projects listed in the DITP, that pertain to public transport refer to either the upgrading or the construction of new taxi ranks. The responsibility is indicated as the local authority in all instances.

5.4 Conclusions

The CITP's prepared by the Cities are all beyond the effective dates as required by the NLTA. Table 5-6 indicates the status summary of the ITP's prepared.

It's important to note that none of the authorities focus on annual updates of the ITP.

Although the CITPs are all beyond the effective dates, all these authorities are busy with execution and/or have completed various, more topic specific, planning studies. The authorities must comply with the requirement by doing the annual updates of the ITPs, so that the outcomes of the planning studies can be captured in their respective ITP documents.

The DITPs all comply with the timeframe requirements as set, but are in need of Annual Updates as per the requirements.

Table 5-6: Status Summary of Prepared ITP's

High Level ITP Status		
Authority Name	**Last ITP**	**Comments and Observation**
City of Tshwane	2015-2020	Has commenced in December 2021 with an Update of 5 Chapters. Project Duration is 3 years
City of Johannesburg	2013-2018	Work on a new ITP for 2013-2018 began in 2012 and approach adopted was to prepare 4 documents. Two documents completed: 1. Strategic Integrated Transport Plan Framework. Dated: 30 August 2013 2. Database Component (Transport Information Register): 13 February 2014 It is a very thorough and comprehensive plan (Roadmap) with progressive policies and strategies. It took a long-term view on Transportation Various Planning studies have been executed and completed over past 10 years.
City of Ekurhuleni	2013-2017	Updates prepared in the form of: 1. City of Ekurhuleni Integrated Public Transport Network Plan (IPTN) prepared in 2020 2. City of Ekurhuleni Roads Masterplan, October 2017
Sedibeng DM	2019-2024	To focus on Annual Updates
Emfuleni LM		DITP contains information on the LM
Lesedi LM		DITP contains information on the LM

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High Level ITP Status

Authority Name	Last ITP	Comments and Observation
Midvaal LM		DITP contains information on the LM
West Rand DM	2019-2024	To focus on Annual Updates
Merafong LM		DITP contains information on the LM
Mogale City LM		DITP contains information on the LM
Rand West City LM		DITP contains information on the LM

The two District Municipalities have both recent DITPs covering the period 2019 to 2024. The Local Municipalities part of the district municipalities all must prepare LIDPs.

The National Minimum Requirements for the Preparation of Provincial Land Transport Frameworks state that this chapter must contain at least the following:

a) a list of planning authorities in the Province, with their classification and the types of plans to be prepared by them;

b) a programme for the preparation of the integrated transport plans and their coordination with the Provincial Land Transport Framework, and

c) a reference to the summary of Integrated Transport Plans required by section 35(7) of the Act, which must be contained in an annexure. The summary should be brief and focus on aspects and projects of regional or provincial significance.

5.4.1 Public Transport

The following is concluded from the review of the CITPs and DITPs:

- The CITP's for the three metropolitan planning authorities are outdated and do not reflect current reality;
- ITPs are prepared for a five-year period; thus a new ITP must be prepared every five years. On an annual basis, updating of selected aspects must be caried out. The annual update can take the form on of a supplementary annual report, rather than the issuing of a new ITP every year[xvi];
- Planning authorities lack the necessary funding and technical skill to compile and update the respective CITP's or DITP's annually. The Province should consider funding these plans.
- The Planning Authorities have an inward-looking focus on the development of their respective plans throughout the Province;
- Very little up to date and accurate information is available on MBTs and metered taxis, although MBTs transport around 70% of the public transport market;

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- An overall common vision of the public transport routes and nodes of provincial importance, and what the Planning Authority can do to support such routes and nodes, is not clear, and
- Funding for projects, either planning or implementation, listed in the ITP documents is highlighted as an issue in all plans. The list of projects and indicative budgets far outweighs the available funds. Some CITP's highlight possible additional sources of funding.

5.4.2 Freight

It is not possible to provide a comprehensive summary of the freight logistics issues covered in all the Integrated Transport Plans that have been analysed and evaluated, but the following represent the most important initiatives that were identified:

- The development of an Aerotropolis at the OR Tambo International Airport;
- The development of the freight hubs at Tambo Springs and Sentrarand;
- Develop detailed freight and logistics transport master plans;
- Establish and manage routes for transport of hazardous materials routes and for abnormal loads in cooperation with Gauteng Province;
- Define and implement plan to minimise overloading of heavy vehicles;
- Improve the mobility of freight;
- Collect adequate planning data on urban freight transport in CoJ;
- Development of intermodal facilities with supporting services on the periphery of Gauteng;
- Truck stop in Meyerton Industrial Area;
- Proposed VLH;
- Establish Freight Transport Working Group in CoT;
- Provide access to intermodal facilities;
- Create Pyramid South as development zone;
- Re-opening of freight rail sidings at Carletonville and for Losberg;
- Freight Logistics Hub at Rand-West City (Zuurbekom), and
- Feasibility study for freight vehicle holding and overnight facilities.

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6 INTEGRATED DEVELOPMENT FRAMEWORK

The following section provides an overview of the spatial direction and interventions in the Gauteng Province under the ambit of the Gauteng SDF, 2030 (GSDF 2030). It includes an assessment of the various spatial frameworks in the different municipalities and aims to highlight areas of importance in relation to the development of the PLTF.

6.1 Spatial development directives

The Spatial Planning Land Use Management Act, 2013 (SPLUMA) aims to provide a uniform, effective and comprehensive system of spatial and land use planning and management for South Africa, thus all prescripts of the Act are to be adhered to. Within the context of the PLTF it is important to highlight some of the key goals stated in the preamble of SPLUMA (2013), *viz:* "To provide a **framework for spatial planning and land use management** in the Republic; to **specify the relationship between the spatial planning and the land use** management system and other kinds of planning; to **provide for the inclusive, developmental, equitable and efficient spatial planning at the different spheres of government**; to provide a framework for the **monitoring, coordination and review of the spatial planning and land use management system**; to provide **a framework for policies, principles, norms and standards for spatial development planning and land use management**; to **address past spatial and regulatory imbalances**; to promote **greater consistency and uniformity in the application procedures and decision-making by authorities responsible for land use decisions and development applications**. This is to be done through the development of Spatial Development Frameworks (SDFs) within the three spheres of government.

In defining the role of Province, Chapter 3 of SPLUMA (2013: 20) states the need for Provincial Governments to ..." develop mechanisms to support, monitor and strengthen the capacity of municipalities to adopt and implement an effective system of land use management in accordance with this Act". Additionally, Chapter 4 of SPLUMA emphasises the need to coordinate, align and integrate development policies and plans emanating from the various sectors of the spheres of government as they apply within the municipal area.

Spatial development directives aim to provide authoritative guidance on the direction that development must take. Ensuring policy alignment from national to local spheres and allowing for resources and outcomes to be collaboratively targeted, efficient and focused, positively all the way to municipal level. This additionally fosters continuity in focus and efforts from conceptual to implementation level along all the spheres.

As the next section provides an overview of the national and provincial spatial directives, Figure 6-1 provides an indication of the three-sphere government system and where each spatial framework rests.

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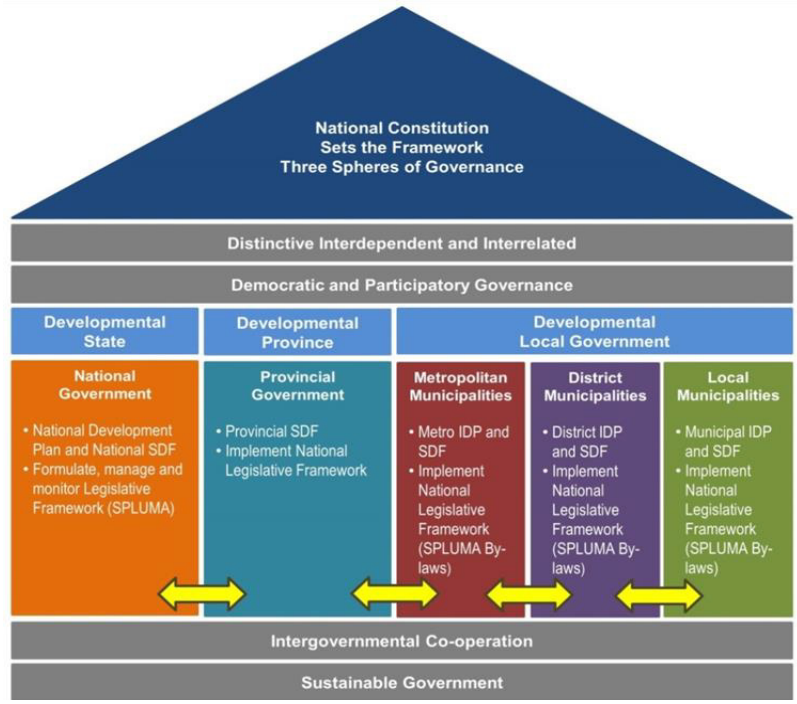


Figure 6-1: Three sphere government system

Adapted from Sharing Spatial Planning and Land Use Management: Lessons Learnt in the eThekweni Municipality, 2012.

6.1.1 National Directives

The goals and objectives of the National Development Plan (NDP) find spatial expression in subsequent policies and legislated frameworks highlighted in Figure 6-2. There is a common focus to provide guidance and create an enabling environment for socio-economic development in the country and to have principles practiced and implemented at all three spheres of government.

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NATIONAL SPATIAL AND LEGISLATIVE DIRECTIVES

National Development Plan, 2030

National Spatial Development Framework, 2021

Medium Term Strategic Framework, 2019 – 2024

Integrated Urban Development Framework, 2016

District Development Model, 2019.

South African Cities Framework, 2021

National Infrastructure Plan, 2050

Priority Human Settlements and Housing Development Areas, 2020

Spatial Planning Land Use Management Act, 2013

The national spatial logic is premised on the need to address the historical spatial imbalances and respond to the changing needs of the citizens in cities and towns in a manner that is resilient, sustainable, efficient, that promotes justice and follows good administration. Spatial planning at a national level aims to guide planning reform, promote a strong and efficient spatial planning system that is well integrated across all spheres of government, supported by a quality transport system that will bring people closer to work through the provision of economic opportunities.

Figure 6-2: National Spatial and Legislative Directives

The National Spatial Development Framework, 2030 (NSDF) provides an ideal national spatial development pattern that finds expression in National Strategic Action Areas (NSAAs). Implementation of national spatial directives within these NSAAs is supported through a number of sub-frames. In relation to transport and movement, Sub-Frame 3: National Connecting and Movement Infrastructure. This sub-frame responds to transitions in national spatial patterns, major economic activities and sectors, climate change as well as technological advances in transport, energy generation and communication networks. Within the movement and connection infrastructure networks, rail is prioritised over road, from an economic, ecological and efficiency perspective, which is to be supported by a rehabilitation an expansion programme. Additionally, roads in the core national network are prioritised for regular maintenance; logistics hubs, ports (airports and harbours) as well as border posts are to be maintained and expanded where required; and lastly ICT networks are to be extended throughout the country. Refer to Figure 6-3 for the national connectivity and movement infrastructure sub-frame.

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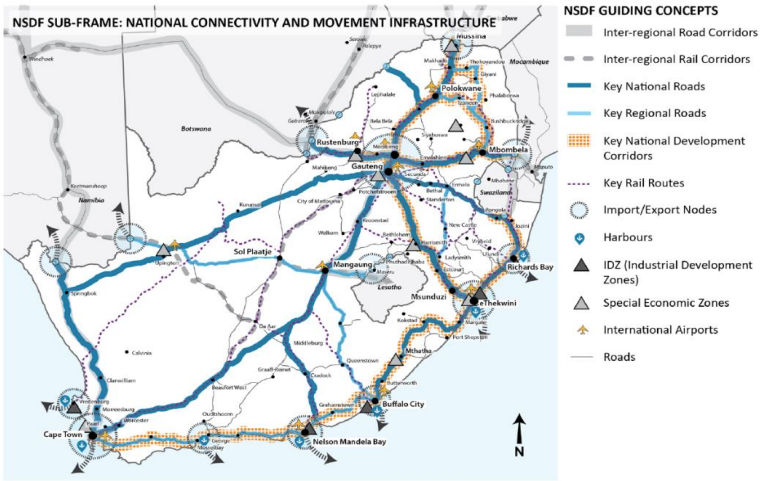


Figure 6-3: National Connectivity and Movement Infrastructure Sub-Frame

(Source: NSDF 2030)

6.1.2 Gauteng Spatial Development Directives

SPLUMA identifies that provincial governments should in Chapter 3, Section 10(5), "develop mechanisms to support, monitor, and strengthen capacities of municipalities". At the same time, Provincial Legislation should in Section 10(6) "promote local government capacity to enable municipalities to perform within their mandates". SPLUMA goes further to highlight the Provincial SDF in terms of regulatory reform by indicating in Section 17 (2) that: “All provincial development plans, projects and programmes must be consistent with the provincial spatial development framework”.

Spatial policy directives in Gauteng Province (GP) are therefore focussed on addressing the protection and enhancement of natural resources, enabling connectivity, organising urban form and the space economy, human settlements as well as infrastructure investment and provision. The frameworks and programmes indicated in Figure 6-4 are aligned in ensuring the Province continues to lead as an economic, social and political powerhouse by striving for coherent and coordinated development from provincial to municipal level.

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PROVINCIAL SPATIAL AND LEGISLATIVE DIRECTIVES

Gauteng Spatial Development Framework, 2030

Growing Gauteng Together, 2030

Gauteng Ten Pillar Programme: Transformation, Modernisation and Reindustrialisation

Gauteng Township Economic Act, 2022

Gauteng ITMP25, 2013

Gauteng Human Settlements Spatial Master Plan, 2020

Gauteng Provincial Environmental Management Framework, 2021

Gauteng Special Economic Zones

Gauteng 2055

The spatial directives seek to direct, guide, focus, coordinate and align all development and its associated spending in the Province. They are unified in their aim to combat urban sprawl by limiting development in unsustainable areas, promote compact or infill development and inclusivity, encourage township redevelopment, support economic opportunities close to where people live (through the sustainable integrated human settlements), protect the natural environment, and invest in sustainable infrastructure systems. All these actions are seen as requirements for decisive spatial transformation.

Figure 6-4: Gauteng Provincial Spatial Directives

These directives provide guidance to three interventions: spatial reconfiguration, township economy revitalisation and infrastructure investments which will be concentrated along five (5) development corridors that have distinct industries and different comparative advantages. The various development corridor projects have been spatially referenced and prioritised across spheres and sectors of government and are also aligned with the District Development Model (DDM). Figure 6-5 describes each development corridor within Province and its development focus.

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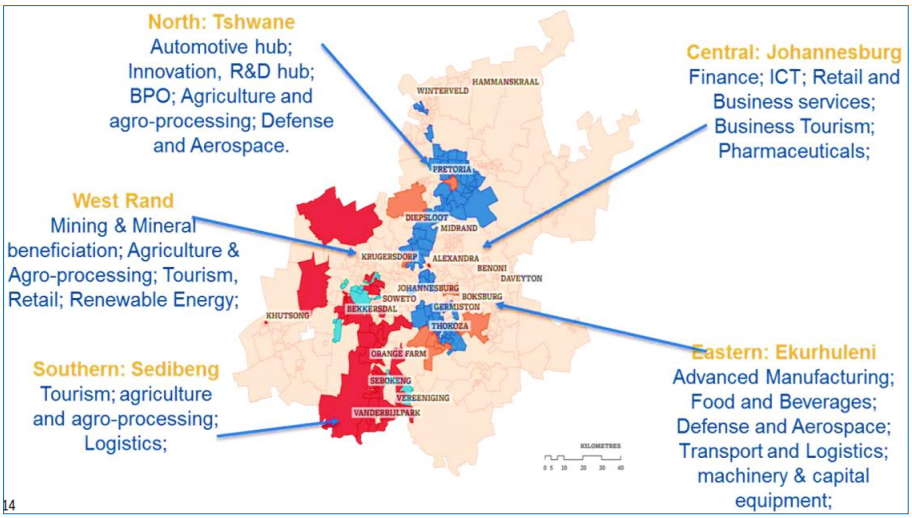


Figure 6-5: Gauteng Province Development Corridors

(Source: GGT2030)

6.2 Summary of the Gauteng SDF

The documents reviewed for this section include the GSDF 2030 (2016) as well as the GSDF 2030 Review (2021/22), which during the development of the PLTF was out for public comment. The GSDF 2030 is guided and informed by the national legal framework; international, national and provincial spatial policy directives; and municipal SDFs. GSDF 2030 is aligned with Gauteng's 10-Pillar Programme of Transformation, Modernisation and Re-Industrialisation 2014, the Gauteng ITMP25 2013, the Gauteng Provincial Environmental Management Framework 2020, the Gauteng Rural Development Plan 2014, and the Gauteng City-Region Integrated Infrastructure Master Plan 2030 (GSDF, 2030).

6.2.1 Spatial Development

Since the development of the GSDF 2030 (2016), Province has continued to develop in an outward, unsustainable, unequitable and inefficient manner (See Section 3.2). The GSDF, aspires to re-strategise the existing growth management model by strengthening the existing spatial strategies to enable:

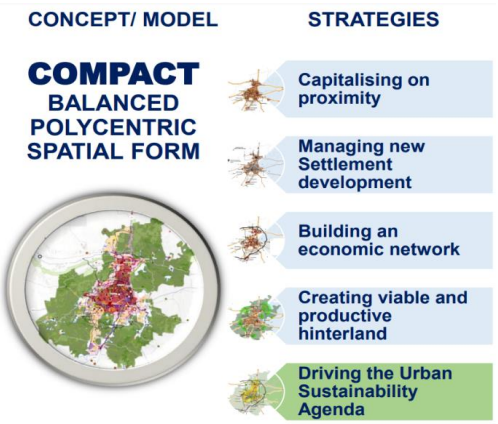
- A more coherent spatial entity in line with the NSDF;
- Creating a framework that places emphasis on marginalised communities, allowing them to take part in spatial economy;
- Expanding on existing service and social infrastructure investments;

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- A unified spatial logic;
- Strengthening spatial and a-spatial connectivity (integration of physical infrastructure with digital ICT networks) and
- Protecting the urban hinterland.

The provincial spatial ideal is therefore a balanced, polycentric spatial network, that allows for strong and resilient nodes that enable the mutually beneficial exchange of goods and services and the movement of people. To achieve this and a synergetic relationship between the economic centre and the surrounding peripheral areas, a concentrated effort on the development strategies and a collaborative effort from all spheres of government will be required.



By transforming the spatial economy, promoting sustainable development that integrates economic opportunities, creating enabling environments for transport corridors and integrated human settlements as well as investment in economic and social infrastructure, the Province will be on its way to achieving “decisive spatial transformation” and “modernisation of human settlements and urban development”.

6.2.1.1 Supporting Spatial Prioritisation and Development Interventions

Revising spatial prioritisation areas identified in 2016, the GSDF 2030 Review (2021/22) is consistent in the development intention of these areas. Taking into consideration that municipalities have limited budgets and are often fiscally strained the GSDF provides investment guidance through the spatial targeting focus areas



indicated in

Figure 6-6.

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Figure 6-6: GSDF Spatial Targeting Focus Areas

Furthermore, the GSDF 2030 Review (2021/22) looks to reinforce the spatial imperatives identified in the GSDF 2030 (2016) and direct them into a consolidated urban form over the upcoming years by incorporating previous high priority spatial development proposals and channelling their intent into 16 SSDIs (refer to Figure 6-7).

SUPPORTING SPATIAL DEVELOPMENT INTERVENTIONS

1. The GCR must be made more compact in extent.
2. Compaction of the GCR must be accompanied by complex intensification of the urban system.
3. The GCR must itself be re-defined and re-shaped to reflect a compact, complex pattern.
4. Growth management and associated governance must eliminate urban sprawl and marginalisation of communities.
5. Resources that at present direct settlement into and beyond the urban fringes must be re-directed to urban compaction and complex intensification.
6. The provision of lower-income rental accommodation through the formalisation of upgrading, re-purposing and re-development of sites in well-located areas must be encouraged.
7. Bolster service infrastructure and social facilities in nodes, suburbs and townships identified for this densification.
8. Inclusionary housing and social housing are to be encouraged in all new housing initiatives.
9. Further intensification will be directed into Transport Oriented Development (TOD) nodes and public transport corridors.

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10. Transport infrastructure (road and rail) is to be re-thought as a primary shaper of urban form and extent.
11. Historic peripheral townships (which have, over the years, become more integrated into the adjacent urban systems from which they were excluded) are to receive further direct integration focus.
12. Newer peripheral settlements that are not well located relative to urban integration are not to be expanded.
13. All development projects and economic investment programmes and initiatives are to be understood and directed in terms of the extent to which the precepts of the compact, complex city are being met and the multiplier effects that are likely to be generated.
14. The 'provincial hinterland' (the present loose assembly of land having environmental significance and ecological sensitivities and principle, conservatories, land with heritage and tourism principle, and land having agricultural potential), is to be consolidated into a spatial entity regarded as the Urban Support Zone (USZ).
15. The USZ is to be interfaced with an interwoven bio-diversity system that is laced through the compact, complex urban system.
16. Many aspects of sustainable infrastructure supporting a vast urban system cannot be considered at a local municipal level and need to be conceived holistically at the Provincial level. The GSDF plays a vital role in this.

The first 8 SSDIs are spatially targeted strategies and have a specific spatial focus and the remaining eight (8) are policy and process support focussed, crucial to the implementation of all the SSDIs

Figure 6-7: Gauteng Provincial SSDIs

The spatial strategies, focus areas and SSDIs are aligned in the ultimate goal to coordinate, integrate and align the plans of the three (3) spheres of government as well as bring people in close proximity to areas of social and economic opportunity complemented by an affordable, reliable and safe public transport system. Figure 6-8 indicates the consolidated map of the GSDF highlighting areas of focus and intervention.

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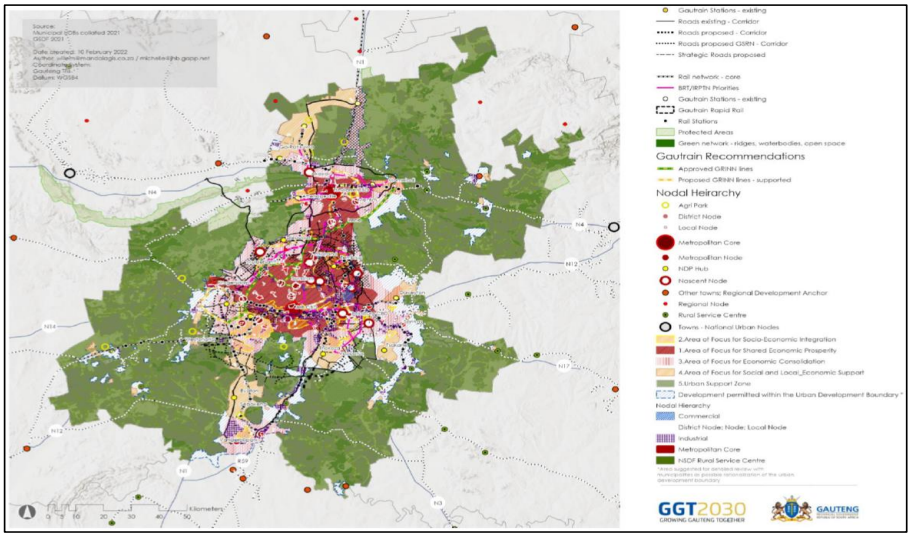


Figure 6-8: GSDF 2030

(Source: GSDF 2030 Review (2021/22))

6.2.2 Economic Development

Gauteng is South Africa's economic powerhouse, contributing to 34% of the nation's Gross Domestic Product (GDP). Johannesburg is the main contributor to the finance, real estate and business services sectors, Tshwane is the main contributor to the government services sector, while Kempton Park and Johannesburg are the main contributors to manufacturing. The three metropolitan municipalities account for 88% of provincial Gross Value Added (GVA) with economic activity concentrated in Randburg, Roodepoort, Kempton Park, Midrand and Soweto (CoJ), and Centurion, Pretoria Central and Pretoria East (CoT). Major economic development areas in the Province are mainly centred around 1) CBDs, which were the historical economic centres of former cities and towns and 2) major employment nodes and development corridors which are mixed use or specialised in nature.

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The Gauteng economy is both advanced and diversified relative to other provinces. Economic drivers of the Province in the Province include:

BUSINESS AND FINANCE	MANUFACTURING	PROXIMITY TO PRIMARY ACTIVITIES	GOVERNMENT	TOWNSHIP ECONOMY	RURAL ECONOMIES
Account for 22.5% of the economy and are mostly located in the three (3) metros	Continues to drive the economy despite recent decline and accounts 26.3% of provincial output, and the main driver of Sedibeng, West Rand and Ekurhuleni economies	The agglomeration and accessibility of economic and industrial development to complimenting services drives economic activity in neighbouring areas	Accounts for 16.2% of all activity and supports different sectors in key districts	The informal / township economy contributes to approximately 22% of all non-farm employment as well as an unconfirmed percentage of economic activity in city centres and affluent city suburbs.	Approximately 70% of the Province can fall under the "rural" classification. The rural economy of Gauteng comprises of farming, associated agro-processing, tourism and leisure and declining mining activities.

The demarcation of economic areas into development corridors allows each corridor to have a unique focus (see Figure 6-9).

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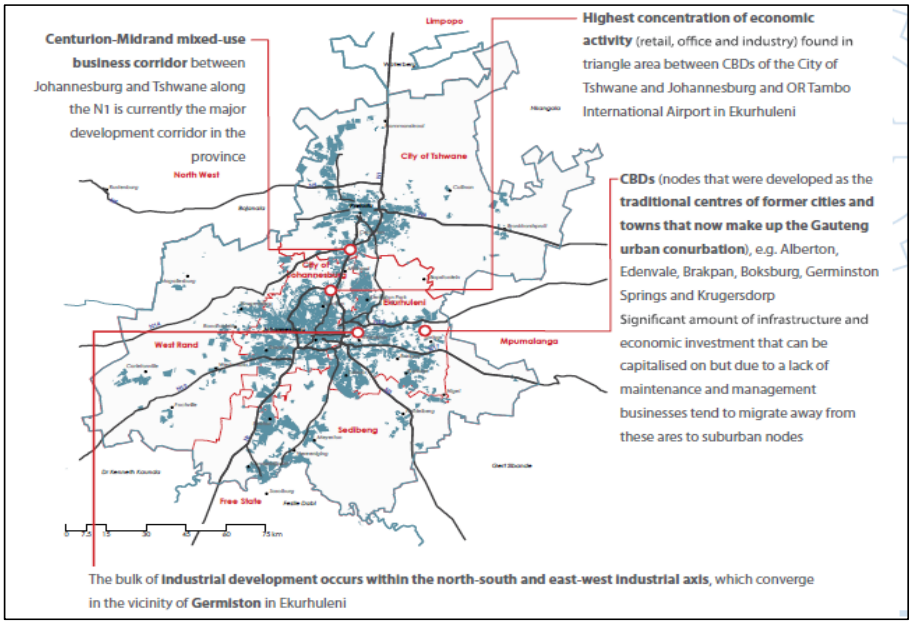


Figure 6-9: Location of Economic Activity in Gauteng Province GSDF 2030

(Source: GGT2030)

6.2.2.1 *Provincial Spatial Development Strategies to Facilitate Economic Growth*

The GSDF 2030 has been upfront about the need to consolidate development and accommodate urban growth (particularly new residential growth) at and around existing well-established nodes from the beginning as part of its spatial strategy of polycentricity. This is described as a strategy that builds on "economic proximity" and exploits growth in regions where "economic prospect" already exists and where there are the best chances for additional residential growth to be successfully absorbed into the urban system. Figure 6-10 indicates the existing nodes to accommodate growth in the Province.

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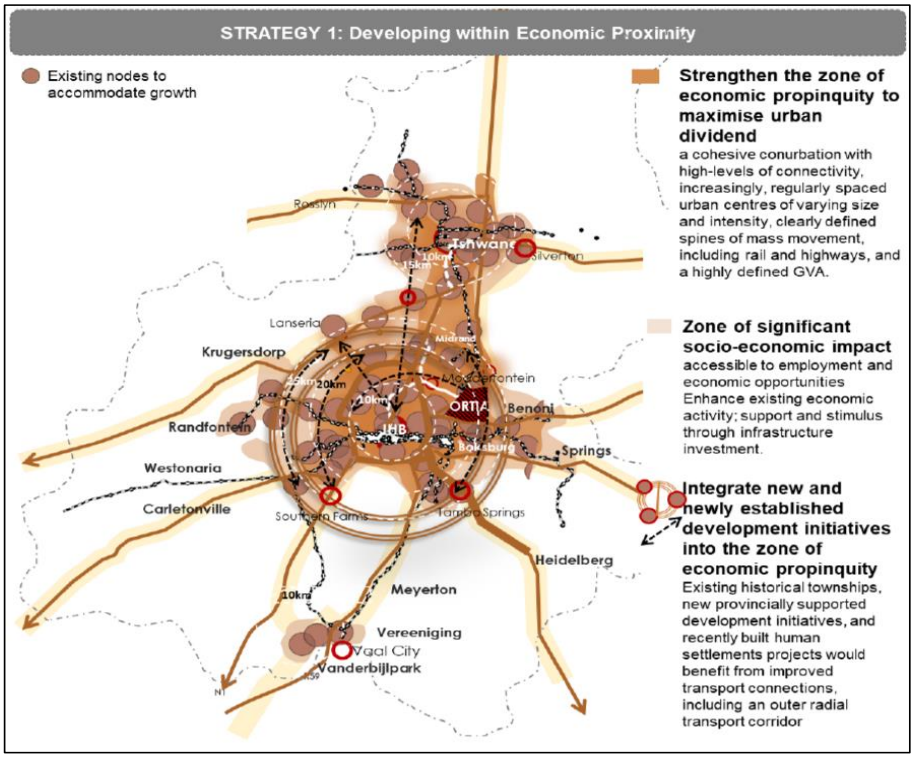


Figure 6-10: Developing within ecnomic proximity

(Source: GGT2030)

It is proposed that the Gauteng Strategic Road Network (GSRN) be utilised to evolve a “radial corridor” that, as shown in Figure 6-11, re-integrates the spatial system around the central activity system of central Johannesburg, the east-west activity corridor driven by the history of mining settlements, the dispersal of dormitory townships around the urban system’s periphery and the growth of surrounding and infill low-to-medium density suburbia over the years. Beyond the benefits of provincial investment in the proposed radial urban corridor, the connectivity of the road infrastructure realises the very real capacity of the central corridor from Johannesburg to Tshwane and, as a result, integrates the entire Tembisa/Ivory Park "marginalised" area into the economy. The same holds true for the R21 corridor's consolidation from ORTIA to Tshwane's city centre, which enables a sizable Province infill zone. Also helping to provide economic consolidation and 'urban sense' to the marginalised areas of Mamelodi, Ga-Rankuwa, and Hammanskraal will be continued financial support for the Auto-hub neighbourhood adjacent to Mamelodi, Rosslyn, and the

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Babelegi Industrial area on the N1 corridor connection between Tshwane and Polokwane.

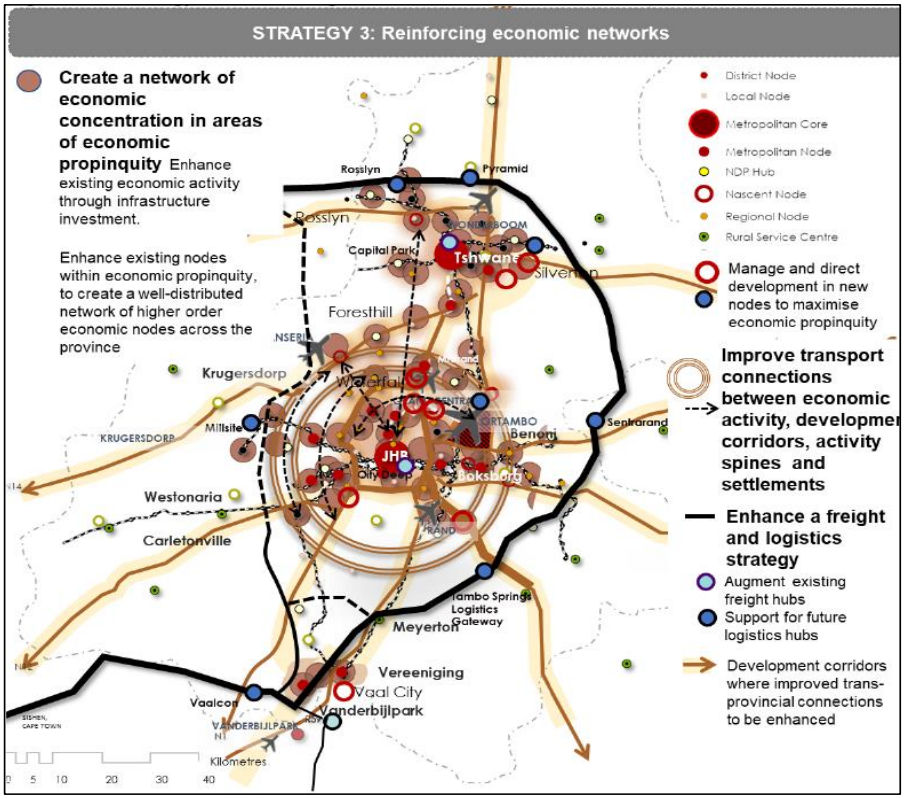


Figure 6-11: Reinforcing economic networks

(Source: GSDF 2030 Review (2021/22))

6.2.3 Housing Development

The GSDF 2030 (2016) takes a point on two housing related issues: the present approach to public housing delivery and the pressure it places on the Gauteng Province urban structure and infrastructure cost; and the "leapfrog" effect of private "lifestyle residential estates" beyond the fringes of the urban extent – which are both seen as detrimental to a sustainable urban structure.

The estimated current need for housing in the Province is estimated to be 878 246 homes, mainly comprising of households in informal conditions. Considering growth

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rates of the various municipalities, it is estimated that an additional 2.4 million households will require housing between 2016 and 2030.

Housing Issues
'Human settlements', whether consciously or otherwise, are a vehicle still for the delivery, essentially, of low-income housing, often taking us into the delivery of further marginalised housing beyond the urban fringe

Of the 136 Priority Human Settlements and Housing Development Areas (PHSHDAs) across the country, **26 PHSHDAs have been declared in Gauteng Province.** There remains however a disconnect between the intention and implementation of the spatial principle as noted in the location of some of these human settlements (with a minimum of 15 000 housing units, each with an estimated population of 60 000 people). Due to the size and land requirements thereof, a number of these settlements are planned on the periphery of Gauteng's cities, continuing to perpetuate the fragmented spatial form that leaves large numbers of people spatially disconnected from areas of opportunity and dependent on commuting. The location of existing and new informal development is also noted as in proximity to these settlements.

In a response to the location of human settlement areas, Gauteng Human Settlements Masterplan, 2021 identifies optimally located zones (OLZs). These include areas where urban accretion is supported and should be favoured for human settlements opportunities (i.e., the green circles on Figure 6-12); areas within the red boundary which should also be favoured, but with caution, (white circles); and areas that are outside municipal urban development boundaries (UDBs) or historical townships (yellow circles) and face several challenges which require further commitment to social and physical infrastructure, therefore new settlements should not be allowed. For instance, areas such as Ga-Rankuwa, the outer parts of Mamelodi, Tsakane, Vosloorus, Sebokeng, Ekangala and Etwatwa.

Response to Housing Need
The response to the need for housing in the Province has materialised in the development of policies at a municipal level that promote nodal and corridor development as well as inclusionary housing strategies .

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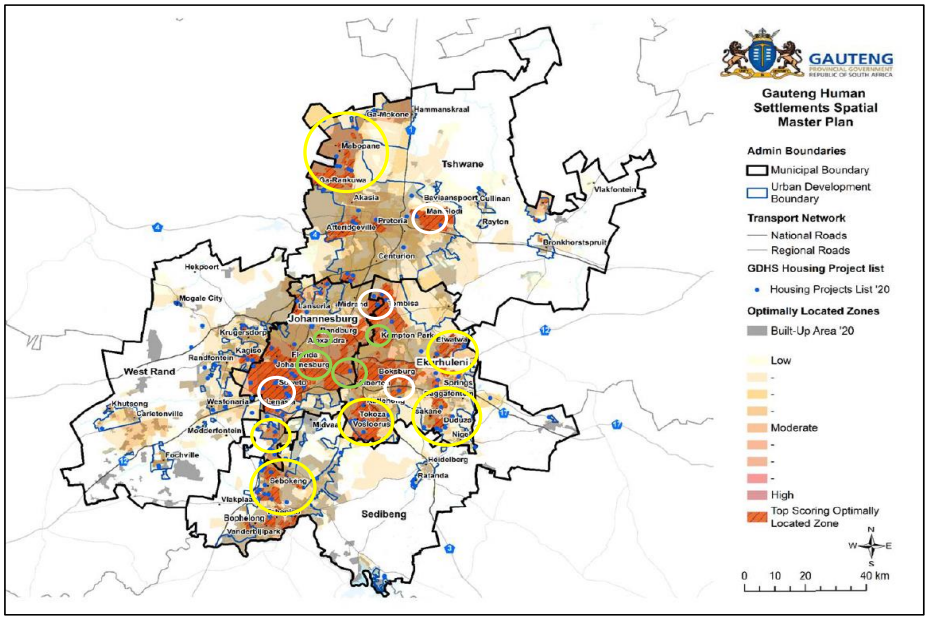


Figure 6-12:Assessment of Human settlements Masterplan Optimally located Zones in context of identified well located land

(Source: GSDF 2030 (2021/22))

The rationale behind the focus on nodal development is characterised as being a place of good accessibility, particularly with regard to differing modes of public transport (rail, bus and minibus-taxi) and supporting secondary road access (usually in the form of a grid-network). This is where public and private investment tends to concentrate, yielding mixed land-use activities (for example office, retail, residential and entertainment) with supporting social amenities and public facilities. Additionally, promoting higher densities and mixed-use development in well located parts reduces the infrastructure provision and other services costs. These policies indicate the response to housing development issues identified within the GSDF, with their impact to be seen within the next few years.

6.2.3.1 Provincial Spatial Development Strategy to Accommodate New Settlement

The GSDF 2030 Review (2021/22) advises that the primary thrust of growth management within Gauteng should be a model of consolidating urban accretion rather than further horizontal spread, despite the promulgation of a very extensive and expansive array of PHSHDAs and intentions to move ahead with extensive rapid land release programmes involving site and service schemes.

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While acknowledging the spatial influences, and taking into account the fact that the GSDF 2030 as it was developed in 2016 allowed for 25% of the Human Settlement budget to be invested within and beyond the urban periphery, further accommodating urban growth should concentrate on encouraging policies of intensification of the mixed-use activity patterns within and along connections between nodes as well as significant densification within a 10-minute walk of existing main roads that either have existing public transport or offer potential for future transport systems; and well-located vacant or underutilised land within the existing urban footprint of the city region. The strategy towards accommodating new settlement is illustrated in Figure 6-13.

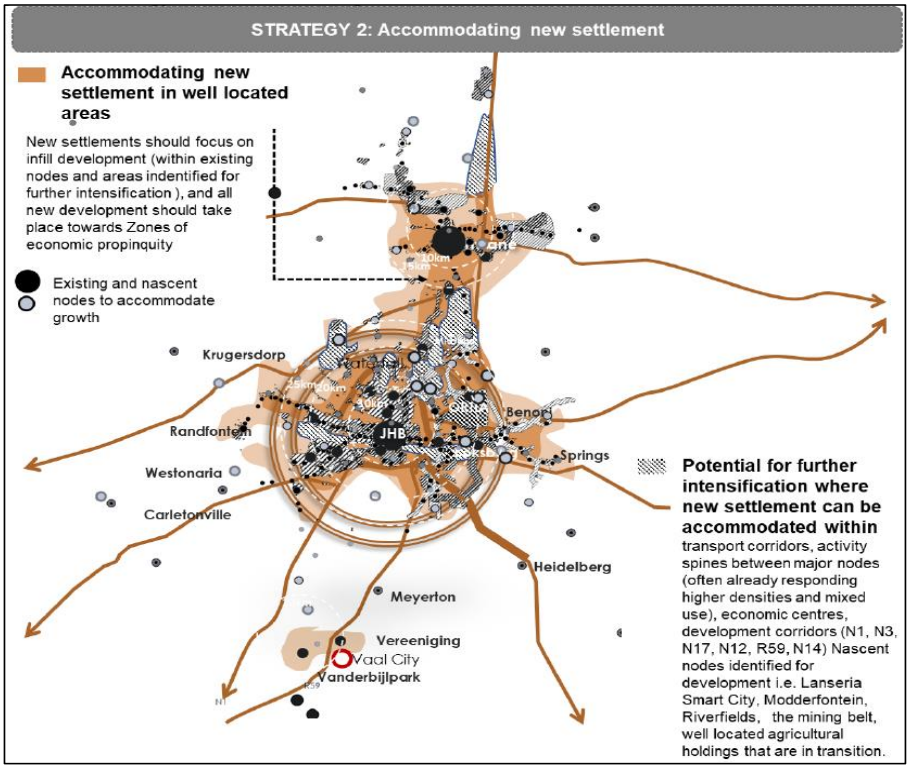


Figure 6-13: Developing within ecnomic proximity

(Source: GGT2030)

The strategy focused on new settlement development requires new settlements to be located close to urban areas, to optimise existing infrastructure investment and social services, and to promote population thresholds required for sustainable service delivery and economic growth.

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6.2.4 Other Development Initiatives

Moving towards a sustainable, resilient and just, balanced polycentric spatial development network will require a series of well-planned interventions which the GSDF 2030 recognises will need to be undertaken from a provincial perspective, with the necessary buy-in and support secured through intergovernmental collaboration and cooperation. Within the three metropolitan and two district municipalities the following initiatives were identified in the GSDF:

- The Greater Lanseria Master Plan shows real potential if well-directed;
- The existing economic investments into the Automotive Hub west of Mamelodi and Rosslyn north-west of the Tshwane city centre;
- The 'Vaal City' initiative as part of an expanded Vaal Triangle consolidation with Sasolburg to the south, across the Free State border;
- Provincial initiatives to resuscitate the industrial initiatives of Ekandustria and Babelegi on the N1 are necessary in trying to bolster economic support for Ekangala and the wider Hammanskraal areas respectively;
- The proposed Metro Rail Super Corridor, which included the Mabopane-Pretoria, Pretoria-Germiston-Johannesburg, and the Johannesburg-Soweto corridors, and GRRIN Extension are two of the major initiatives that will provide connectivity from the northern and eastern parts of Tshwane through to Soweto (GSDF 2030, (2016)), and
- Provincial priorities include:
  - Focus on TISH;
  - The release of land for appropriate developments, and
  - Development in, around and of Township Roads.

6.2.5 Social, Demographic and Environmental Issues Affecting Transport

The QoL 2017/18 survey showed that inequality, especially with regard to overall QoL and evidence of a weak economy unable to sustain all residents equally, was still a major concern. A steady decline in those living below the poverty line, shifts in shopping patterns and use of transport modes, high food insecurity, high crime rates indicating a very violent society are some elements highlighted in the QoL. As poverty and unemployment remain highly concentrated in the urban periphery, including in townships and formal 'low-income' areas, the long-term integration of these areas with spatially adjacent focus areas is crucial and tied to successful socio-economic development. Localised interventions which focus on early childhood development, basic health care, quality primary and secondary education, community-based research and planning, sports infrastructure development, skills development, food security initiatives, sustainable livelihood initiatives, substance abuse prevention, treatment and rehabilitation, as well crime prevention and support will lay the foundation for economic development and transformation.

These marginalised and peripheral areas together with the predominantly "rural" nature of the Province are closely linked in their land use and transport integration

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challenges. As 70% of the Province is used for rural purposes (farming, tourism and leisure), emphasis is also placed on the protection of the different natural environmental systems. The dispersed nature of the Province requires transport systems and infrastructure that ensures these rural economies are supported. The GSDF proposes responsible environmental management and protection through the allocation of Gauteng Provincial Environmental Management Framework (GPEMF) zones of opportunity where processes and areas become a part of the overall planning and are clearly demarcated and defined.

Province is fortunate to have a comprehensive railway system, which municipalities have used as the anchor of their spatial form, however this system has been marred with inefficiencies and is considered dysfunctional due to under-investment and mismanagement over the years. The destruction of rail infrastructure during and after COVID-19 has contributed to the perception of rail being dysfunctional. This is exacerbated by further investment into new or upgraded roads for ease of private car-based mobility which detracts from the very extensive investment in public transport and compared to the lack or slow investment on transport infrastructure maintenance and servicing of the hinterland and peripheral areas needed to connect these dispersed areas. The view adopted for purposes of the GSDF is that much of the un-built portions of that network should be abandoned and focus should be on the mass transit systems, comprising the upgraded rail network and certain components of the GSRN. The limited funding available for transport infrastructure requires that tough choices have to be made as to where to invest. The investment should support the policy objectives of the Government. Funding for future rail extensions should be prioritised to serve areas where sufficient spatial growth has occurred (in other words existing areas) that will support rail as a viable mode. Future spatial growth should be focussed on high density development around nodes and infilling along public transport corridors, including TOD at commuter stations.

6.3 Land Use Transport Integration Strategy

The previous sections highlight how urban growth and transportation are symbiotic elements that require collaborative and focused efforts (from the different spheres of government, in policy, prioritisation and implementation) to be sustainable and efficiently integrated. A continuous theme indicates that transport infrastructure expansion strongly correlates with population growth, spatial expansion, and land use change. Therefore, in the same manner that transport systems provide essential mobility options for people and goods, urban growth patterns which are influenced by population, technology, the economy and policy in the same manner, influence transport, making the two interrelated. This interrelationship is illustrated in Figure 6-14.

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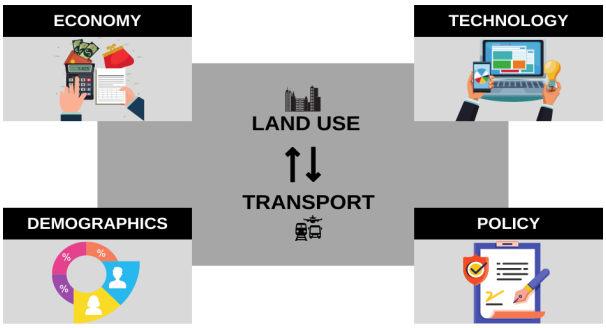


Figure 6-14: Land use and transport interactions

(Source: CITEPLAN, 2018)

An understanding of this interrelationship has influenced the development of a vision, objectives, focus areas and strategies for the successful and sustainable integration of land use and transport that the PLTF aims to support and promote.

6.3.1 Land Use Transport Integration Planning Vision

A province that is well planned and efficient, with coherent and collaborative planning that enables the integration of land use and transport for a spatially and economically equitable urban environment resulting in cohesive and sustainable communities.

6.3.2 Land Use Transport Integration Objectives

The land use and transport planning integration objectives of the Gauteng PLTF aim to, through (a) good governance and institutional mechanisms (b) enable coherent and sustainable urban development, that is (c) resilient and (d) improves accessibility, connectivity and mobility. These focus areas additionally take into consideration the most recent provincial priorities.

6.3.3 Focus Areas: Moving Towards an Enabling Environment for Land Use Transport Integration

The PLTF aims to provide guidance to development within the Province in order to achieve land use and transport integration and in doing so proposes focus areas and strategies for Province and local municipalities to use as tools to achieve unified spatial development in the Province.

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Points of departure for land use and transport integration:

- The aim is to **provide strategic guidance** for the integration of land use and transport integration in the Province ensuring that transport systems are aligned with the rollout of development;
- The principle of using **public transport as the backbone** of the future urban structure of the Province, leading to densification and infill development along all major public transport routes and railway stations, is supported by the Gauteng SDF and the SDFs of all metropolitan and district municipalities in the Province;
- To **build on the work already done**. Therefore, the PLTF is a broad-based strategy founded on the principles and proposals of the National Development Plan (NDP), National Spatial Development Framework (NSDF), Integrated Urban Development Framework (IUDF) and DDM and other spatial directives (See section 5.1),
- The PLTF will not serve as a detailed analysis of land use and transport in the province, but is a **framework under which land use and transport integration planning takes place**; and
- The **integration of land use and transportation** is critical for, amongst other factors, the long-term sustainability of the Province and municipalities.

Most methodologies to strategic integration focus on one of two types of principles: the pursuit of synergy and efficiencies and the removal of obstacles. To achieve this, Province needs to follow a PLAN, CREATE, AND IMPLEMENT approach that should guide development and its discourse within the different spheres of government. PLAN focusses on elements that need to be considered and planned for to create enabling environments. CREATE addresses the development of specific mechanisms or tools and IMPLEMENTATION deals with actions to be executed. Following the above approach, the following focus areas and strategies are proposed for the integration of land use and transport within the PLTF.

6.3.3.1 Focus Area 1: Promote Coherent and Sustainable Urban Development

Focus Area 1: Promote coherent and sustainable urban development

Addressing: Fragmented urban structure | Dispersed pressure on service delivery and transport systems

A well-designed urban form is an effective tool to improve accessibility, increase social cohesion and promote well-being in urban areas. It requires ensuring a sufficient level of density to make the most of the agglomeration benefits; integrating land use and transport policies through TOD strategies; building the infrastructure for pedestrian-friendly cities to improve connectivity; and offering different mobility alternatives (transport solutions) by promoting public transit, walking and cycling. The following aspects receive attention under Focus Area 1:

Table 6-1 indicates aspects that aim to support Focus Area 1.

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Table 6-1: Elements that support coherent and sustainable urban development

Concentrate in centres	• Concentration that encourages mixed use, infill development as well as the retrofitting of existing centres and nodes resulting in spill over agglomeration benefits. These centres and nodes should be supported by investment in economic and physical infrastructure.
Sustainable corridors	• Centres and nodes that are aligned or within corridors that encourage land uses which will optimize investment in transit. These corridors should include intensified activity around stations and other areas of strategic opportunity to facilitate sustainability, promote renewable energy and public amenity. These corridors should also provide a range of low cost housing options within proximity of transit opportunities.
Link public transport with land use strategies	• Promote compact polycentric development by linking the location of people near economic and social opportunities and the upgrading and management of existing transport infrastructure. Linking development, densities and concentration with supporting transport facilities. For instance, encouraging mixed uses, higher densities and varying typologies in and around concentrated centres and nodes and decreasing densities further from economic and social centres and towards peripheries – following transect-based environmental and land development principles. • Redirect housing subsidies towards the development of low cost housing close to employment and public transport areas of opportunity.
Appropriate densification	• Focus appropriate densities (and intensification) that support social facilities, business and economic nodes, township enterprise zones as well as existing (rail) and future (BRT and rail) public transport routes. • Prioritise densification along existing Integrated Management Corridors (ICMS), BRT Routes and (improved cross connections) rather than planned future BRT routes, as construction often takes longer than anticipated.
Growth management	• Strengthening and supporting the objectives of the urban development boundary, through infill development, protection and management of agricultural and natural systems, locating new investment within prioritized nodes or identified strategic areas as per municipal plans. This is to be supported by the provision and maintenance of infrastructure and will lead to reduced travel distances and a more compact and efficient urban form.
Transit Oriented Development	• Ensure that land use schemes and spatial frameworks encourage mixed land use development and supportive densities as well as mixed housing typologies that will cater to a wider range of people

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	and which are contextually appropriate and respond to the needs of the community. • Improving the public realm of stations through aesthetically pleasing as well as functional urban design that contributes to placemaking, safety and security and is pedestrian oriented. • Manage parking requirements, bus and vehicular traffic efficiently so as to support TOD initiatives and promote the public transport agenda.
Incentivising development	• Provincial regulations on incentivising private development that promotes land use and transport integration, for example developing mechanisms to fast-track development within land use and transport integration zones and township enterprise zones.

Summary of solutions towards a coherent and sustainable urban form include:

- Making provision for mixed, diverse and sustainable land uses working in collaboration with public transport;
- Prioritising investment and infrastructure firstly towards existing and earmarked/ areas ensures that sectoral efforts as well as efficient use of resources for both public and private are utilised;
- Promoting densification in appropriate locations, especially those close to urban opportunities (services, facilities and jobs) and public transport and not dispersed settlement patterns that continue to locate large numbers of people away from economic centres;
- Growth management that seeks to advance compaction, residential densification, in-fill development, encourage urban sustainability and the restriction of sprawl. This entails strategies used by all spheres to help protect and guide the type, intensity, location, and timing of new development;
- Planning and design that consists in promoting urban development that is compact, mixed-use, pedestrian- and bicycle-friendly, and closely integrated with mass transit by clustering jobs, housing, services, and amenities around public transport stations, and
- Develop regulations for developers to unlock incentives in a prioritized area. Possible actions can include:
    - Incentivizing private development: To ensure infilling, brown field development can be incentivised. Mechanisms can be created to fast-track development in identified corridors and nodes. These nodes can be identified as Special Economic Zones and can include a tax relief, and
    - Private equity can be obtained through private (unlisted) raisings. In South Africa, primary equity investors in transport infrastructure have been private

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contractors and equipment suppliers, both local and foreign, investment companies and financial institutions.

STRATEGY 1 TO IMPLEMENT FOCUS AREA 1

- Embed land use, economic and transport planning integration into all approaches.
  - Promote and support the use of public transport as a catalyst for nodal and corridor development;
  - Improve the strategic public transport network, including rail as a vital tool for spatial structuring and land and transport integration;
  - Support NMT and TOD development;
  - Promote complete communities, and
  - Base transport network to be aligned with rollout of development.
- Provincial regulations on incentivising private development that promotes land use and transport integration, for example developing mechanisms to fast-track development within land use and transport integration zones;
- Long term integrated land use/transport strategies should be intimately linked to (integrated with) short to medium term (5-10 year) implementation plans (IDPs, BEPPs, etc), and
- In the drafting of the Gauteng ITMP, identify areas of provincial interest in alignment with spatial provincial legislation, policies, frameworks, norms and standards, that can be evaluated and selected as a pilot project for targeted investment, collaboration and integration between land use and transport across all spheres of government.

ALIGNMENT OF PLTF STRATEGY WITH GSDF		
STRATEGY 1 Developing within Economic Proximity	**STRATEGY 2** Accommodating new settlement growth	STRATEGY 3 Reinforcing economic networks

6.3.3.2 Focus Area 2: Accessibility and Mobility

Focus Area 2: Accessibility and mobility

Addressing: Inability of many people to access economic and social opportunities.

A wide variety of demand patterns based on widely differing urban typologies, income levels and access priorities will continue to exist for many decades. Addressing the country's transport challenges therefore requires a mixture of many different modes able to differentially service the market (MTSF, 2021: 150). This focus area identifies

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elements that will enable accessibility and mobility. Table 6-2 indicates aspects to receive attention under Focus Area 2.

Table 6-2: Elements that support accessibility and mobility

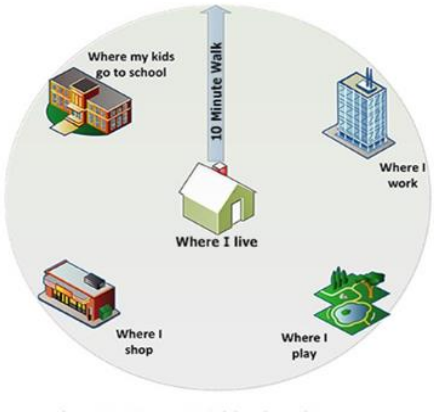
Promotion of different modalities	• Non-motorised transport: ○ Improve pedestrian access. ○ Improve cycling access. ○ Ensure universal access design is incorporated into all transport planning.
Ease of movement	• Improve choice by creating an environment that is friendly to pedestrians, cyclists and public transport users, including people with disabilities. This includes improving connectivity between different locales and connecting areas not sufficiently serviced by transport to areas of concentration. • Promote safety, security and Universal Access through urban and traffic design details, such as street orientation of active uses to provide natural surveillance, footpaths, kerb ramps, signal timing, lighting, gradients, weather protection and shade, as well as other design features that improve safety, security, amenity and convenience. Safety from traffic is provided by traffic calming and appropriate road crossing facilities — these should cater for all pedestrians, including older people, children and the mobility and vision impaired. • 10-15min Neighbourhoods that comprise of policy actions that provide residents access to most of their needs within a short walk or bike ride from their home. This will reduce car usage and encourage non-motorised transport use, making life more liveable for residents, by improving air quality and making neighbourhoods safer, quieter, more diverse, inclusive and economically vibrant. • Promote affordability and quality by reducing reliance on private mobility in favour of safe, convenient, well maintained and affordable public transport and non-motorised transport. • Encourage seamless inter-municipal movement by connecting the different BRT systems and public transport linkages enabling more people to reach a broader area of opportunity.
Transport hierarchy	• Clear network hierarchy that provides balance between mobility and accessibility. • Road typology and design should take surrounding land uses as well as most appropriate public transport system to be support efficiently function.

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Summary of solutions towards the ensuring accessibility and mobility include:

- Promote more than one transport mode for the movement of people and goods – for example, taxi, mini-busses, busses, rail, air, but also NMT – walking and cycling;
- Create environments that are thoughtfully designed, easy to navigate in and around, able to connect with broader areas because there is a choice in transport mode and seamless integration of different municipal transport systems. These are quality environments that are affordable, safe and secure, where all needs (social, economic, recreational) can be met within a 10-15 minute walking radius;



- Strengthen urban sustainability by prioritizing walking over private car usage and supporting this by providing the adequate infrastructure, and
- Ensure that the appropriate road typology is serviced by the appropriate transport system.

STRATEGY TO IMPLEMENT FOCUS AREA 2

- Develop well designed integrated and connected settlements that prioritise the end user and environment;
- Create a clear Public Transport Network hierarchy that provides a balance between mobility and accessibility, through optimal deployment of modes onto the network*, and
- Develop a transport system that allows for continuity of travel across the Province in terms of road network; public transport systems and services; and freight and logistic networks.*

Note: *Addressed more in-depth as part of the Public Transport and Infrastructure Strategies.

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ALIGNMENT OF PLTF STRATEGY WITH GSDF		
STRATEGY 1: Developing within Economic Proximity	STRATEGY 3: Reinforcing economic networks	STRATEGY 5: Advancing urban sustainability and resilience

6.3.3.3 Focus Area 3: Resilience

Focus Area 3: Resilience

Addressing: Inability of many people to access economic and social opportunities.

Environmental sustainability, climate change and resilience are important elements affecting the sustainability of many cities and regions. Resilient spatial and land use patterns and smart land use management as a means to enable diverse settlements to respond to events such as intense levels of urbanization require an understanding of different development outcomes and a change in the typology, provision and implementation of infrastructure. Table 6-3 shows aspects to receive attention under Focus Area 3.

Table 6-3: Elements that support resilience

Scenario Planning	• Identify ranges of potential outcomes and impacts, evaluate responses and manage for both positive and negative possibilities. For example, the Indlulamithi South African Scenario Planning of the GSDF (Gwara Gwara, IShbujwa and Nayi le Walk scenarios). • Land use strategies that are flexible and able to deal with changes in environment – for instance adapting of buildings for different uses to enable response to economic conditions.
Green Infrastructure	• Promoting NMT as a viable transport mode that is supported by safe and accessible environments and public transport as a means to reduce carbon emissions. • Reducing distances travelled within the Province by ensuring that land use, jobs, population and opportunities are located within proximity of each other – promoting compactness and limiting sprawl. • Encouraging the planning for, incorporation and integration of smart technologies within the built environment to increase efficiencies and dependence transport focussed interactions.
Dealing with informality	• Provision (where appropriate) of social and economic support for informal settlements and back-yard development. • Spatially transforming townships to ensure land is efficiently utilised to enable economic and infrastructure investment, provision and

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	management in line with the Gauteng Township Economic Development Act, 2022. • Developing provincial wide regulations on disaster risk management, specifically for marginalised, peripheral and informal areas.

Summary of solutions towards promoting resilience include:

- Scenario planning that provides various possible outcomes and options taking into consideration different environmental, economic and social factors for the most appropriate land use-transport mixes;
- Incorporate sustainable, green technologies and infrastructure into land use and transport planning, so that inevitably down the road, traditional infrastructure acts as a support to green infrastructure;
- Provide social and economic support and opportunities to townships and informal areas by ensuring efficient use of land and investment in economic and physical infrastructure, and
- Pro-actively plan for disaster management for areas that are marginalised and prone to risk.

STRATEGY TO IMPLEMENT FOCUS AREA 3

- Embed resilience principles into all approaches for land use, economic development and transport planning, and
- Embed adaptation and mitigation strategies in all approaches for land use, economic development and transport planning.

ALIGNMENT OF PLTF STRATEGY WITH GSDF	
STRATEGY 1: Developing within Economic Proximity	STRATEGY 5: Advancing urban sustainability and resilience

6.3.3.4 Focus Area 4: Good Governance

Focus Area 4: Good Governance

Addressing: Institutional arrangements and process that will strengthen land and transport integration.

To achieve regional coherence, planning and development need to be the responsibility of all three spheres of government, with due regards to the constitutional allocation of functions. Additionally, within each sphere, there should be

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a clear focus and direction for development. The following elements speak to the institutional environment wherein the different spheres operate and highlight what is required for these spheres to efficiently collaborate. Table 6-4 indicates aspects are to receive attention under Focus Area 4.

Table 6-4: Elements that support good governance

Institutional mechanisms to facilitate land use and transportation integration	• Spatial planning rationale must serve as baseline for growth management, investment and prioritization which demands rigorous spatial governance. • Support for institutional arrangements that encourage joint planning as part of provincial development prioritisation by enforcing integration of land use with lower order transport plans and strategies.
Data management	• Identify and consolidate different institutional geo-spatial data (administrative boundaries, property information, addresses, streets and utility and transport networks etc) under one centralized management system which is accessible to all. • Promote sound knowledge management and peer learning amongst different sectors and spheres of government to elevate skills and capacitate departments in data management.
Monitoring and evaluation	• Province to strengthen its oversight role through robust institutional mechanisms and capacity for monitoring and evaluation. M & E activities should support the achievement of sectoral and inter-governmental-wide land use and transport integration objectives in the immediate, short, medium and long-term.

Summary of Solutions towards good governance include:

- Spatial planning should be linked to and strengthened by spatial governance;
- Joint planning which includes sector departments and different spheres of government should be supported and promoted to ensure coherence and a provincial wide focus to integrating land use and transport development;
- Data collection and consolidation, knowledge management together with peer learning should be encouraged to develop an integrated provincial database as well as skills and capacities, and
- Province to strengthen its oversight role through more robust monitoring and evaluation mechanisms.

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STRATEGY TO IMPLEMENT FOCUS AREA 4

- Establish a provincial multi-sectoral forum to strengthen coordination between Province and municipalities to ensure effective integration of land use, economic development and transport planning. So as not to duplicate efforts, where such a forum/s exists, its mandate and operational function should be consolidated, redefined and strengthened;
- Develop an integrated data repository to ensure integration of information, and
- Assessment and development of municipal capacity to monitor the integration of land use, economic development and transport.

ALIGNMENT OF PLTF STRATEGY WITH GSDF
Response to Governance to be finalised after public participation period of GSDF.

6.3.4 Initiatives and Interventions of Provincial Significance towards Land Use and Transport Integration

Through all Gauteng's problems and constantly seeking solutions it has become clear that all three spheres of government have a relevant role to play in land use and transport integration and planning. The issues of environmental impact and especially climate change and biodiversity loss are now being recognised as critical to the longer-term viability/sustainability of the Gauteng region. Thus, there is a need for these aspects to form an integral part of any planning and development going forward. SPLUMA provides the ambit wherein development is defined for all spheres of government, therefore requires that all prescripts to it should be adhered to.

Although land use development manifests at a local level and municipal planning is constitutionally a municipal function, inputs, impetus, capacitation and co-operation from national and provincial government are essential. In order to give effect to the rapidly changing systems there should be focus on new policy development leading to relevant legislation (acts and regulations) at a provincial level.

Also, Gauteng is the one province that is different from the others, since it comprises three metropolitan municipalities adjoining one another, is further made up of prominent local municipalities, has the smallest percentage of rural land and is the most urbanised region in South Africa. Therefore, it is argued that Gauteng should be handled differently to the other provinces with provincial government having a distinct role to play. Gauteng almost exists as a megalopolis where Province must assume an overarching role and be an interface with the state and local government. Broadly their roles can be defined as in Figure 6-15.

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National Government	Provincial Government	Local Government
• Capacitating • SPLUMA monitoring • Financial Resources • Policy Development	• Communication • Coordination • Oversight • Resources • Policy Development • Capacitating municipalities	• By-laws • Implementation on the ground
Co-operation and resource sharing		

Figure 6-15: Role of the three-tier government

In view of the role and role limitations of provincial government, as well as the four focus areas, **seven primary intervention areas**[13] have been identified in order to move towards progressive land use and transport integration in Gauteng (refer to Figure 6-16).

[13] Adapted from Research on Progressive Land Use Management Models, Office of the Premier 2016

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Figure 6-16: Proposed primary provincial government interventions

In terms of SPLUMA the mandate of province is to **support, monitor and strengthen municipalities,** to **provide technical support** and **resolve disputes**. Therefore, the focus of the seven primary interventions is not only to promote and improve land use and transport integration in Gauteng but also to enable province to fulfil their obligations in terms of SPLUMA.

Through the implementation of the proposed interventions, the provincial government will now fulfil a new role of streamlining and aligning spatial and transport planning, in order to ensure sustainable land use and transport integration practices across Gauteng.

6.3.4.1 Intervention 1: Provincial Multi-sectoral Forum

There is an absolute need for a provincial multi-sectoral forum. It is believed that such a forum could manage a host of issues and see to vastly **improved interaction and communication between provincial departments**, in this case those who are involved with land use and transport management and sustainability (i.e. infrastructure and environmental).

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The forum must be **established and chaired by the Office of the Premier** (a designated official appointed by the Premier). For the forum to effect change it needs rank, standing and authority. For the very reason Development Planning was absorbed in the Office of the Premier, the forum must be run from that same office. It must take the lead in Gauteng – refer to Figure 6-17.

The forum must **comprise all the departments** involved in land use and transport planning / management and sustainability. The obvious departments and institutions, to name a few, would be TAG, PRASA, Gautrans, GDARDE, Infrastructure Development, Human Settlement and Economic Development, though the other departments/institutions should be welcome to attend and should be specifically invited if there are land use management issues to be discussed which involves them.

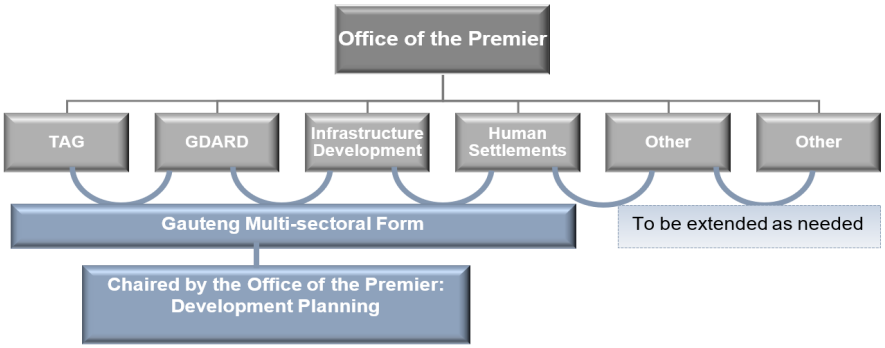


Figure 6-17: Example of the Provincial Multi-sectoral Forum structure

The purpose of the forum will be to:

- Establish a channel / platform for regular interaction;
- Generally, to establish / improve communication, coordination, interaction, discussion, information sharing, professional exchange and involvement;
- Consider the broader socio-economic impact and environmental issues affecting and affected by land use and transport planning and development;
- Address the planning of intra-provincial and interprovincial long-distance services, which must be linked where applicable with other public transport services;
- Ensure all provincial development plans, projects and programmes are consistent with the provincial spatial development framework, to ensure compliance with section 17(2) of SPLUMA; and
- Develop a monitoring mechanism, linked to, the Gauteng City Region Over-arching Climate Change Response Strategy and Action Plan, GITMP and GSDF, municipal SDFs and ITPs, to track land use and transport integration over a 5-year period.

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The aim of the forum will be to get to know the role players, to build relationships, to discuss matters on sustainable land use and transport planning, to learn from other sectors and to be an **ombudsman** (watchdog). As ombudsman it should watch over departments and institutions that:

- Fail to ensure sustainable land use and transport integration in their strategic plans;
- Fail to ensure alignment in land use and transport planning development projects (for example Human Settlement development projects);
- Don't make provision for sustainable land use and transport integration and management in brown and greenfield developments (private as well as public sector developments);
- Operate outside their assigned / legal responsibilities or infringe on the responsibilities of other departments, and
- Fail to be accountable for their role in the sustainable land use and transport integration planning and management process.

A **core function of the forum** will be to resolve land use and transport integration blockages and thus to discuss specific sustainable measures to be implemented / put in place to ensure land use and transport integration.

The forum should further be used to:

- Train other departments on the importance of land use and transport integration in which the value-chain and their roles and responsibilities thereto will be explained;
- Advocate, promote and train departments in respect of the future provincial planning portal, and
- Be an element in implementing IGR.

Regular forum meetings should be held (if arranged too sparsely the forum will lose its power and authority) to expedite land and transport integration.

It is proposed that Gauteng **must not wait** with the establishment of this forum.

6.3.4.2 Intervention 2: GIS and Technical Assistance

Lack of GIS and technical assistance is a greater problem for the local municipalities than the metros. The latter tend to have the resources (human and financial) to run fully-fledged GIS departments. However, this is not the case for the local municipalities. Indeed, they seriously and urgently require assistance from provincial government. They need both financial and human resource assistance in this field.

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Province should assist as follows:

- Purchase a provincial GIS license giving access to all local municipalities (cost saving at local level);
- Assist with human resources to update and maintain the GIS system by:
    - Making a trained team available to update all outdated systems (technically update the system and uploading all outstanding GIS data / maps, etc. and rotate this team from municipality to municipality;
    - Co-contract selected staff from the metropolitan municipalities to rotate from municipality to municipality to update their outdated GIS systems. This would qualify as resource sharing, or
    - Appoint retired GIS specialists to undertake above work (area specific) as a once-off project and or on a retainer basis.
- It is crucial that the appointed people be suitably trained in town and transport planning GIS since it is a specialist field of GIS and random GIS people will not understand the work or execute it as required;
- As part of the process contractors must do on-the-job-training of in-house staff;
- Gauteng to seek funds / fund this entire process (it might be able to channel funds from national treasury);
- Have all plans for a municipal area available on the web accessible to land use development applicants. To include SDFs, IDPs, precinct plans - all plans electronically referenced and accessible to the public, and
- Create instructions for applicants on exact land use and transport integration requirements for plan submissions and create controlled access to the GIS for Metropolitan and Local Municipalities and registered applicants (private sector) whereby they can extract locality plans, transport routes (planned and future), etc.

6.3.4.3 Intervention 3: Alignment and harmonisation of local municipal plans

While the local development planning forum will be used to deal with cross border issues, it should also **provide a platform** for municipalities to present and share their spatial and transport plans. In doing so conflicts can be resolved and alignments strengthened.

This is a matter of **communication and information sharing**. Thus, undertaking this under supervision of Development Planning (as mediator and facilitator) will ensure good working relations.

Provincial government can develop a **policy and guidelines to assist** its **own departments** as well as the departments in other spheres to improve integrated land use and transport planning and the alignment and harmonisation of plans.

The aligned municipal plans will improve efficiency through Gauteng and create a seamless Provincial Plan.

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Proposed Project: Identification of a land use transport integration pilot project for targeted investment, collaboration and integration between and across all spheres of government.

6.3.4.4 Intervention 4: Integrated Provincial Data Repository Portal

Province should initiate a project to **research** the establishment of an Integrated Provincial Data Repository Portal, which will provide an open-source platform for all development applications to be viewed by all stakeholders. The portal should include information from, amongst other, human settlements, infrastructure development, etc. In the establishment of the Integrated Provincial Data Repository Portal, Province, should investigate, amongst others, what electronic land use application systems are currently implemented by which municipalities, how they work and their pros and cons. Based on the findings it can either select a system or design a better system, fund it and purchase provincial or individual licences making them available to local government at a nominal cost / free of charge.

To achieve provincial integration especially with the proposed Provincial Data Repository Portal it is highly advisable that a **standard e-submission system** (for land use applications) **be adopted throughout the province**.

The provincial portal is to accelerate and manage the integrated data repository to ensure exchange and sharing of information and documentation, as well as the external (provincial) circulation of land use applications that impact on sustainable land use and transport integration.

Its purpose will be to:

- Ensure integration and access to information;
- Ensure exchange and sharing of information between all relevant role players;
- Identify applications that do not contribute to sustainable land use and transport integration;
- Identify land use and transport integration solutions for the sustainable development of brown and possible greenfield developments;
- Monitor the land use and transport integration the process at provincial level, and
- Expose problem areas / cases / applications.

Gauteng should design / appoint someone to design an integrated Provincial Data Repository Portal. In this, Gauteng will be the first province to do so, because the other provinces are not a megalopolis, and their provincial governments will have a different role to play. Critically, the Provincial Data Repository Portal must be linked to the e-submission system at local level to be compatible and vice versa.

6.3.4.5 Intervention 5: Provincial Legislation/Policy

Province is in a position to compile provincial legislation to facilitate systems and processes towards sustainable land use and transport integration, planning and management. Province should be **cautious not to over-regulate or over-complicate** land use and transport planning and management or overburden the

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system. As new legislation may take years to **establish and implement, a policy document or guidelines** might be an easier, faster and cheaper alternative to legislation, although the latter are not legally binding.

The Gauteng PLTF has served a purpose in recognising that Provincial Development Planning is important and that it has many roles to play, and of these, the provincial multi-sectoral forum and local development planning forum are key components. The development of a sustainable land use and transport integration policy, spearheaded by GDRT and the Office of the Premier is proposed to ensure integrated land use and transport planning and development.

It should set out:

- **appropriate development approaches** that a) address socio-economic equity; and b) enable economic opportunity in remote settlements, thus, reducing the need to travel to economic opportunities;
- land uses, provide **locational and design criteria** for a range of land uses, as well as address initiatives and best practice examples to improve and achieve sustainable land use and transport planning and implementation, and
- the **direction** for how planning authorities should consider the transport system in land use planning and infrastructure provision decisions (and vice versa) to support a sustainable, safe, integrated land use and transport system.

Included in the policy document should be regulations for developers to unlock incentives in prioritised areas as earmarked by spatial planning and transport frameworks and aligned with infrastructure provision. Recommended actions should include:

- **Incentivizing private development**: To ensure infilling, brown field development can be incentivised. Mechanisms can be created to fast-track development in identified corridors and nodes. These nodes can be identified as Special Economic Zones and can include a tax relief, and
- **Private equity can be obtained through private (unlisted) raisings**. In South Africa, primary equity investors in transport infrastructure have been private contractors and equipment suppliers, both local and foreign, investment companies and financial institutions.

6.3.4.6 Intervention 6: Financing

Many of the local municipalities are incapacitated due to a severe lack of finances. Province should **assist these municipalities**, not to implement development in their area, but simply to **run an effective organisation** through which the private sector can achieve development.

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Province has greater access to financial resources and has more clout than the local municipalities. It should search for avenues to help these struggling authorities. There is no end to the creativity that could be applied here, for example:

- Province could approach the metros to become involved in resource sharing, and
- Possibly officials could be contracted out to struggling municipalities to work away backlogs. This could be moulded to suit all parties involved.

6.3.4.7 Intervention 7: Capacity building

A lack of capacity is a **detrimental problem** to local government, in particular the smaller municipalities who are financially severely encumbered. Province must investigate how it can help these municipalities and it must be creative in seeking solutions towards sustainable land use and transport integration. It could **consider** resource sharing, channel financial resources to local level, fund projects, systems and operations, train and educate staff, supply equipment and resources, etc. The list is endless.

A few of the strategies Province should use to capacitate local municipalities include:

- Province should embark on a **motivation mission**, whereby it visits local government and actively encourages and motivates the staff, hearing their concerns and finding ways to assist;
- It could establish an annual award gala whereby it **rewards** / awards municipalities and individuals for **outstanding work** in different categories (this will go a long way to encouraging staff letting them know their efforts are recognised), and
- It should establish **training workshops** for interns, junior planners and all other land use and transport planning professionals. This should be done in cooperation with professional registration associations, for example SACPLAN, SAICE, etc.

6.3.5 Key Land Use Transport Integration Aspects

Key to the successful implementation of the objectives of the PLFT is the successful integration of transport and land use. It is therefore important to ensure alignment in the spatial development direction of the Province in terms of the location of social, economic, industrial, residential developments and ensuring the transport planning responds through the provision of adequate, efficient, inclusive, safe and affordable transport infrastructure. Taking cognisance of the national to local directives, the different spheres of government, and the end user, this section concludes in the identification of strategies aimed at promoting land use and transport integration.

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7 PUBLIC TRANSPORT STRATEGY

7.1 Introduction

The NLTSF, gazetted on 17 February 2017, refers to the National Development Plan (NDP) and its 18 Strategic Integrated Projects as the guiding principles for the development of the respective PLTF's and Integrated Transport Plans for the provinces and municipalities. The SIPs were developed in support of economic development.

Of the 18 SIPs, the focus of SIP7 is on transport, and it specifically addresses integrated urban space and public transport. It specifically refers to:

"Coordinated planning and implementation of public transport, human settlement, economic and social infrastructure, and location decisions into sustainable urban settlements, connected by densified corridors"

The NLTSF is aligned with the Strategic Plan of the DoT, which in turn is aligned with the NDP and Medium-Term Strategy Framework (MTSF), in terms of its focus and strategic thrusts. In this regard the DoT is focusing on improving the public transport system by ensuring an effective, efficient, affordable, and accessible public transport system through the implementation of integrated public transport networks, the strengthening of regulatory entities, acquisition of new rolling stock and the development and upgrading of priority passenger rail corridors.

Transport is an economic enabler in the economy as it provides a means of moving people and goods, whereas an inefficient transport system strangles growth, as access to opportunities is restricted and mobility becomes costly from a financial, social, and environmental perspective. Economic growth opportunities are unlocked by connecting nodes and development corridors and by investing, maintaining, and using the transport system more efficiently.

In terms of land use and transport integration, the NLTSF acknowledges that integration between land use and transport planning potentially offers the biggest positive impact that transport can have on the environment and sustainability. By encouraging densification along corridors and by creating economic activity (mixed land use) that requires less mobility, unnecessary trips can be avoided or shortened and therefore vehicle emissions and associated congestion and pollution reduced. The land transport vision is described as:

"An integrated and efficient transport system supporting a thriving economy that promotes sustainable economic growth, supports a healthier lifestyle, provides safe and accessible mobility options, socially includes all communities and preserves the environment."

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In support of the vision and from a public transport perspective, the following were identified as the key strategic objectives for the next 5 years:

- A much-improved sustainable public transport system with better and safer access, more frequent and better-quality services, and facilities to an agreed standard;
- Safer and easier walking;
- Better infrastructure, links, and interchange with other means of transport;
- An improved and better maintained road and rail network;
- Improved journey time reliability on all modes, and
- Different travel pattern and transport usage and, where appropriate, reduced need to travel by motor vehicles from having achieved an integrated land use and transport system.

The NLTSF puts a high emphasis on the customer, yet also acknowledges that recent transport statistics indicate inefficiency in the transport system, as well as with the degeneration of infrastructure and facilities.

The 25-year Gauteng Integrated Transport Master Plan's (GITMP25) vison for transport for the Province is:

"An integrated and efficient transport system that promotes sustainable economic growth, skills development and job creation, fosters quality of life, and socially includes all communities and preserves the environment."

The policy focus areas in the GTIMP25 that would influence the future of transport, were identified as:

- transport in support of social and economic development;
- transport integration with development in pursuance of greater efficiencies and social integration;
- environmental soundness and sustainability;
- optimum utilisation of existing and new transport resources;
- development, maintenance and operation of an efficient transport network and system, and
- institutional efficiency.

Key to the ITMP25 is the focus on public transport, with the rail system being the backbone of the network. This focus is to enable a shift from private vehicles to reduce congestion, enhance efficiency and promote sustainability. A key principle is for planning to be for people and considering person trips, as opposed to vehicle trips. It is acknowledged that where private transport infrastructure and the use of cars tends to separate communities, create barriers, and promote an individual "conscience", with public transport on the other hand being a catalyst towards the social integration of society.

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The GDRT Growing Gauteng Together Through Smart Mobility Plan 2030 and approved in 2020, has through its vision of placing growing the economy at the apex of its strategic vision, positioned transport as a critical pillar in growing Gauteng's economy and transforming the lives of the people in the Province. This is with an emphasis on the smooth movement of people and goods as an intervention that could turn the economy around. This has been termed 'Smart Mobility'.

The Smart Mobility Plan's key focus areas are Infrastructure, Operations, Strengthening Institutions and enabling Technology. This is aimed at transforming the current transport system into an integrated smart transport network utilising information technology to facilitate the smart mobility of the citizens of Gauteng.

Transport is viewed as a catalyst for the socio-economic recovery and growth of the economy. The Growing Gauteng Together through Smart Mobility Plan 2030 aims to deliver on this objective. The Plan outlines four (4) pillars, namely:

- Restructured urban form;
- Gauteng as a freight and Logistics Hub;
- Data Centric Mobility, and
- Building strong institutions.

Each pillar has a set of interventions and identified projects which are aimed at ensuring smart connectivity and integration across all modes of transport forming a compact, integrated, and efficient transport system leveraging upon available intelligent digital technologies.

The abovementioned policies and strategies provide the over-arching framework within which the public transport network and system should be planned, developed, operated, managed and maintained.

7.2 Deficiencies in the Public Transport System

The deficiencies in the Public Transport system are summarised below based on inputs from the consultative workshops with I&APs as well as the broader stakeholder group, with a brief description of each of the particular deficiencies.

7.2.1 Land Use and Transport Integration

The integration of land use and transportation planning remains one of the biggest challenges for the promotion of an optimal and efficient public transport system in the Province. Any public transport system requires a combination of high-density development and mixed-use land use along corridors or at specific nodes, typically close to railway stations (also referred to as Transit Orientated Development) to be viable. Mixed land use developments are instrumental in avoiding/ shortening travel distance and travel time with the associated cheaper fare to the user and improving the utilisation of public transport by selling more seats and potentially improving contra-flow demand.

Low-cost housing developments are usually located on the outskirts of existing townships, where the land is cheap, but far from the public transport network, job

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opportunities, public amenities and social services. Providing formal, subsidised bus services to these areas takes time to plan and implement and is a drain on the fiscus, however the real issue is continuation of the services in the future (i e long-term sustainability).

7.2.2 Affordable, Accessible and Attractive Public Transport Services

The recent draft Revised White Paper on Transport Policy states that users should not spend more than 10% of their disposable income on public transport. Government recognises that the spatial distortion caused by apartheid policies in the past, where poor people were located far from job opportunities, required that operational subsidies be paid to the operators for transporting workers commuters to and from economic opportunities.

In Gauteng, the rail network expanded in line with this policy and rail services were made available to marginalised communities. Subsequently commuter bus operators were contracted by Government to supplement the rail services. The reason being that rail could no longer service the areas where job opportunities were located, together with the influx of people resulting in increased demand, to access the increasing job opportunities. Furthermore commuter bus services could no longer serve the growing demand, which resulted in the MBT industry coming into being which provided a flexible and responsive service. The taxi industry was founded on economic principles as operators had to survive economically based on the fares charged.

The public transport offering in Gauteng consists mainly of passenger rail services, commuter bus services, and MBT services. The three modes are responsible for moving the majority of commuters in Gauteng. Of the three modes, rail and commuter bus services currently receive operating subsidies from Government. Their operations are subsided to the tune of 75% for rail and upwards of 50% for commuter bus. It should be noted that without this financial support from Government the commuter fare would more than double.

Even with two modes being heavily subsidised, the cost of transport remains expensive in that 60% of users spend more than 10% of their disposable income on public transport at present. It is possible that the majority of the commuters who fall in this category make use of MBTs as the industry reportedly enjoys a 70% share of the public transport market currently.

It is evident that a major deficiency in the public transport system is that it is expensive and the reasons for this lack of affordability is complicated and is entrenched in the spatial and structural fabric of the Province and relate to the following:

- Long travel distances;
- Directional demand;
- No off-peak demand, and
- Lack of modal integration.

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Accessibility to public transport services needs to be addressed especially in the light of safety and security concerns of the users, especially in the parts of the journey referred to as the first and last mile. Users appreciate that some form of walking will be required to access the public transport system yet women and children in particular feel vulnerable. In many instances there is a lack of convenient pedestrian facilities and safe pedestrian crossings, and where there are sidewalks, the condition of these facilities is not good. This is aggravated early in the morning or late in the afternoon when the natural light is compromised, as well as at night. Accessing the public transport system takes on average 14 minutes, which includes time spent walking and waiting.

Apart from Gautrain, the overall attractiveness of the public transport system does not do much to attract choice users, as it is almost exclusively geared to serve users captive to public transport. This comes at a much higher cost to society in the long-term, than what is generally appreciated, as car users do not have an attractive alternative way to get to work other than their car. The choice user may consider public transport as a viable alternative if the service offering is attractive (safe, convenient, affordable) and it reduces travel time. The overall economic benefit of getting cars off the roads and thereby freeing up road space, and its associated benefits such as reduced travel time, reduced emissions and less accidents, is likely to outweigh the cost of such a system.

7.2.3 Congestion, Pollution and Environmental Impact

Transport contributes 40% to total Green House Gas Emissions in urban areas in South Africa, such as the Gauteng City Region. Overall congestion levels are on the increase as is evident from the GHTS, which indicates that the average commuter time in the Province increased from 47 minutes to 56 minutes over the last 5 years. The increased congestion levels have a negative effect on the environment (primarily through vehicle emissions) which in turn negatively impacts on the QoL of the citizens in Gauteng.

According to the Growing Gauteng Together Through Smart Mobility Report, 2030, traffic volumes are still escalating by approximately 7% per year in the Johannesburg-Tshwane corridor, resulting in increased road-based vehicles carbon dioxide (CO_2) emissions, contributing towards global warming. As migration into Gauteng intensifies, pollution caused by road-based vehicles is expected to increase.

7.2.4 Decline in Public Transport

The commuter rail network is acknowledged to form the backbone of the public transport system in Gauteng. The network links previously disadvantaged areas (mainly residential) to major economic opportunities in the Province. Although the patronage on the rail system declined since the early 2000s, it still transported around 350 000 passengers on a daily basis in 2014. Since then, commuter rail operations have declined even further to the point where very little to no services were available in 2022, post the COVID-19 pandemic. Vandalism of the infrastructure and illegal invasion by informal dwellers of the rail reserve are impacting on PRASA's mandate to deliver rail services in Gauteng. But even prior to the pandemic commuter rail market share has declined to 3.6% of the total number of commuters in 2019. This

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Printed by the Government Printer, Bosman Street, Private Bag X85, Pretoria, 0001,
for the ***Gauteng Provincial Administration***, Johannesburg.

Contact Centre Tel: 012-748 6200. eMail: info.egazette@gpw.gov.za
Publications: Tel: (012) 748 6053, 748 6061, 748 6065

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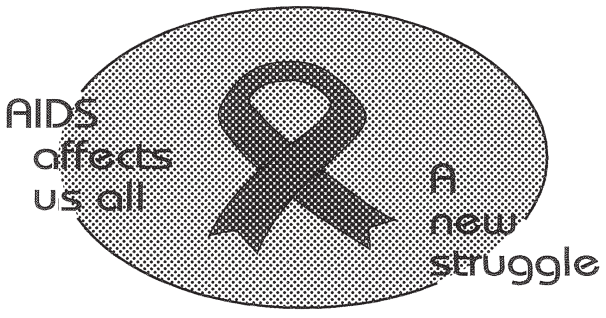
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Vol: 31 **PRETORIA** **No: 449**
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9 771682 452005 00449

could be attributed to spatial growth in Gauteng over the last 20 years happening (and accelerating) on the periphery of the Province where land is generally more available and less expensive. The densification and infilling policy as mooted in the GITMP25, has not materialised. These outlying residential areas offer very limited economic opportunities with the result that the people have to look for employment outside these areas. In the short term the MBT industry is best placed to respond to the demand.

As a result, users of the rail services have had to find alternative means of transport in the absence of rail. The MBT industry mostly filled the void as the industry is known to respond to demand much faster than any other mode. Due to the fact that the MBT industry relies on income from the passenger fares only to be economically viable, it can be assumed that the passengers that relied on commuter rail before its decline, now have to pay substantially more for their trip to work. In addition, more road-based vehicles on the road, impacted negatively on congestion. According to the GHTS, MBTs are transporting 88% of all public transport commuters on a daily basis.

Bus services contracted by the GDRT and subsidised through the PTOG, have also seen a steady decline over the last few years. The reasons are less obvious than is the case with commuter rail, but can nevertheless be ascribed to the following:

- Contracted routes substantially the same since 1994

  The bus routes serving previously disadvantaged areas were planned in isolation and did not consider integration with other public transport modes. The majority of these routes serve major employment nodes directly. These contracted routes have therefore remained substantially the same since 1994.

- Age of the buses

  Issues experienced over the years with converting the bus contracts from interim contracts to tendered contracts have impacted negatively on the operators' ability and willingness to invest in their fleets. An aged bus fleet is less reliable as it is more prone to breakdowns and the overall attractiveness impacts on the user's acceptance and use of the service.

- Rigidity of the tendered contracts

  The interim and tendered contract principle is that the subsidy is based on a rate/km and each contract has a set number of revenue kilometres that it is contracted by government to operate. Although the overall total number of kilometres is fixed, the contract does allow for slight deviations based on capacity utilisation of the buses on trips. The operators are allowed to cancel trips and introduce trips, as long as it remains within the overall contracted kilometres. Even these slight adjustments can only be done in line with the rules of the contract. In the current contracting regime, it is not possible to introduce new routes or extend existing routes, as it would increase the revenue kilometres to fall outside the budgeted revenue kilometres.

  Another contributing factor to the inefficiency and exorbitant cost of the public transport system (apart from land use and public transport integration), is the that

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public transport services are planned by operators and compete for passengers. The principle of competing for a route and not on a route is established in terms of the PTOG and NLTA tender environments and to a lesser extent economic regulation in the MBT industry through the issuing of operating licences for specific routes. In theory, operating licences should only be issued to the extent that they satisfy the demand on the relevant route or corridor.

The fragmented manner is which public transport is planned and funded contributes to the inefficiencies of the overall system.

- Entry barriers for new entrants in providing subsidised PT

  The intention of the policy and legislation is that all road-based subsidised public transport services will be put out to a competitive tendering process. The DoT has prepared and made available and gazetted Model Tender and Contract Documents (MTCDs) for this purpose.

  In terms of the MTCD issued by the GDRT as recently as October 2021, the Government intends to contract only with bidders that have a Level 1 or 2 B-BBEE status. In addition to this, a condition of the tender regarding sub-contracting states that the successful bidder will be required to sub-contract at least 30% of the value of the contract to any public transport operator registered on one or more of the categories as stipulated in Regulation 4 of the Preferential Procurement Regulations, 2017.

  The subsidised public transport market needs to be opened up to enable new entrants to be established in the market. This should over time enhance competitiveness and possibly even lower the cost of providing the service.

The current tender documents and process favours the incumbent operator. A high-level review of the current tender process revealed the following stumbling blocks:

- Time allowed to compile a compliant, competitive bid is not sufficient
- Appreciation of the bus supply market
  - Used commuter buses generally not available
  - Acquiring new fleet is expensive
  - Impacts negatively on bid price and competitiveness
- Acquiring a new fleet a long and drawn-out process
  - Impact on bid compliance with contract requirements
- Appreciation for the financial sector processes
  - Tenderer must prepare a bankable business plan
  - Financial model must be up to standard
  - Fare revenue based on old data
  - Reluctant to provide financial guarantees at bid submission

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The MBT industry has also benefited from the decline in PTOG ridership since 2014. The efficient deployment of modes on the network and deploying the modes on the corridors where the demand, distance, and network requirements are taken into account does not seem to have been a consideration when deciding on the awarding of operating licences to road-based public transport modes.

7.2.5 Lack of Modal Integration

The lack of modal integration between the different transport modes is a contributing factor to the decline in public transport ridership. The reasons for lack of modal integration are complex and can be found in the way in which public transport in general, and specifically the individual modes, are planned and funded. Modes continue to be planned in silos with funding streams also flowing in silos to the different modes.

Modal integration requires integration on different levels for it to be successful. Infrastructure, timetables and ticketing systems should as a minimum be integrated, for modal integration to work and provide passengers with a seamless experience in making their journey on the public transport system.

Intermodal facilities can be found at Metrorail stations and modal integration between Metrorail and Gautrain can be found at the Hatfield, Pretoria, Park and Rhodesfield stations. The formal intermodal facilities at Metrorail stations were designed and constructed around the requirement of operators and not necessarily around the needs of the user. For example, there are limited raised pedestrian crossings provided to avoid conflict between passengers and vehicles, the pedestrian walkways within the facility are seldom covered and the ablution facilities are inadequate and located away from the foot traffic. Informal hawkers often compete with the queuing space provided, forcing passengers to wait in the lane of the approaching vehicle. Provision for special needs passengers is lacking in most cases.

Timetable and ticket integration in lagging behind and is not yet at the integration level that would improve the existing passenger experience or would attract new passengers to the system. Apart from Gautrain and the BRT systems, timetable and fare information is difficult, if not impossible, to obtain.

The biggest challenge in achieving modal integration on the public transport system in Gauteng, is the fact that the MBT industry is informal and operates in its own unique way. In this regard, the fare structure probably is the most critical issue to be addressed before the MBT industry can participate in a transport network where the modes are fully integrated. Currently passengers can only pay cash for their trip and the fares on corridors are based on a flat fare structure.

7.2.6 Strengthening Regulatory Oversight

Any person that transports passengers for financial gain by road, must obtain a public operating licence, and this applies to MBT operators, metered taxi, and bus operators. New regulations are being finalised to regulate e-hailing services. A new section 66A will be inserted into the NLTA by the NLT Amendment Bill to regulate e-hailing services. The Bill is currently being finalised by Parliament.

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Since its establishment in 2011, the Gauteng PRE has been grappling with fulfilling its mandate of efficiently disposing with operating license applications, faced the following challenges:

- Capacity;
- Planning Authorities Co-regulatory challenges, and
- System inefficiencies (NLTIS, OLAS & RAS).

The PRE has further indicated the following reasons for the current state regarding the issuing of OLs:

- System inefficiencies
    - For over a decade, the current NLTIS has been compromised by inefficiencies which contributed largely to the backlog. The competency to develop an operating licensing system lies with the DOT, which has not been successful in its efforts to review the current system and overcome inefficiencies.
- Capacity deficiency
    - The unit has been suffering chronic under-capacity over a decade subjecting each official to perform the work volume of 2 to 4 officials.
- External regulatory dependencies
    - Section 55 of the NLTA mandates the GPRE to refer received applications to Planning Authorities for their directions and guidance in terms of their Integrated Transport Plans. The GPRE has challenges in obtaining input from certain municipalities for processing of operating licences.
- Non-compliance by the applicant
    - The delay by the applicants/ operators to uplift operating licences following the granting of applications has been condoned by the GPRE and that exacerbated the accumulation of backlogs.

The timely issuing of operating licences to especially MBT operators, has been plaguing the regulation of the industry for many years and is one of the biggest problems that prevent the MBT industry from fulfilling its rightful role in the public transport offering in Gauteng.

The Gauteng Taxi Summit, held in 2019, to specifically identify issues that plague the development of the industry, established 5 commissions to oversee the implementation of issues raised at the summit. One of the commissions was tasked with what was labelled as the “Regulatory Framework”.

The concerns centre around the time it takes from applying for an operating licence (OL). Regulation 25(2) of the NLT Regulations provides that where an operator has applied for renewal of an OL and the OL has not been issued by the expiry date, the receipt that is issued upon payment of the administrative fee at the time of application will be regarded as proof of a legal OL. However, this regulation is apparently not applied, with the result that many operators who renewed their OLs are deemed to be operating illegally on the roads as their OLs have expired. Where the regulations

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provide for 60 days to finalise the application process, the PRE is currently taking up to a year to issue an OL. The issuing of fraudulent OLs was also flagged as a concern. It was acknowledged that PRE officials as well as MBT owners play a role in this. OLs are issued after hours and during public holidays which tends to be suspicious, and in most instances, results in fraudulently issued licences.

The number of legal operating licences issued by the PRE does not accurately reflect the actual number of MBT vehicles operating in the Province. There is a substantial backlog between the application for operating licences and the issuing of the OL. The conversion of permits to operating licenses has also lost momentum over time.

The impact of this gap in understanding the real extent of the MBTs operations in the Province impacts negatively on the ability of planning authorities to plan for the industry needs, especially in terms of infrastructure requirements. Planning cannot happen in a coordinated and effective manner, if the planning authorities do not know how many MBTs to plan for. This void in the regulatory environment creates space for illegal operators to enter the market, which leads to an oversupply of vehicles and potential conflict between operators and associations.

To highlight the extent of the problem, the following information was obtained from the PRE:

- Backlog 'inherited' in 2012: 60 000
- By July 2019, reduced to: 26 000
- By July 2021, increased to: 33 000
- By July 2022: 11 000

7.2.7 Safety and Security

The safety and security of the transport system is a major concern for the users of the system, especially more vulnerable groups such as women and children who are at risk.

Due to the large number of households (70% of households in Gauteng do not own a car) that depend on the public transport system for their daily commute, it is critical for the authorities to keep the system secure and the passengers safe. The elements of the system are broken down into infrastructure security, vehicle safety and passenger safety.

Commuter rail has failed from an infrastructure security perspective over the past few years mainly, due to vandalism and theft of the infrastructure on the rail network. This is to a large part attributed to issues related to contracting of security companies. Cable theft is a major cause of concern as it brings the services to a halt on the specific corridor, which then impacts on the rail services on the network as a whole. Securing the infrastructure along the network and stations is key for the commuter service to fulfil its rightful place as the backbone of public transport in Gauteng. The infrastructure also needs to be protected against illegal squatters in the rail reserve. In times of unhappiness with the rail service, vandalism escalated to arson attacks on the rolling stock which resulted in carriages being destroyed. In-vehicle passenger

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security on commuter rail services has also been a challenge where passengers are being robbed while travelling, due to crowding.

Attacks on road-based public transport infrastructure are less common in the Province. The largest investment in road-based public transport infrastructure is MBT ranks that are planned, designed and constructed by the planning authorities, and located throughout the Province. Although incidence of violence occurs within and nearby these ranks, evidence of ranks being destroyed to the extent where they need to be rebuilt is not available.

The safety of passengers, whether perceived or real, plays a major role in the passenger's decision to use public transport. Passengers want to be and feel safe when accessing the system, waiting in a rank or at a stop on a route, and in the vehicle. While travelling in the vehicle, passengers also want to be safe in the knowledge that the vehicle is roadworthy and will not be involved in an accident.

In general, public transport users do not feel safe in accessing the modes (walking to and from the mode) and waiting at a bus stop/ taxi pick-up point on the route. Crowding in taxi ranks during the peak times is also perceived as unsafe.

The Gauteng Taxi Summit established a commission that specifically focussed on road safety. The industry acknowledged that roadworthiness of MBTs is a concern. The industry is also concerned that it was not possible to scrap old vehicles due to the unavailability of OLs.

In terms of driver and commuter behaviour, the following was noted at the Summit:

- Operators are hiring unskilled drivers;
- There is a lack of professional conduct, unbecoming behaviour and reckless and negligent driving by taxi drivers;
- There is non-compliance by taxi drivers with traffic rules and regulations;
- There is a lack of regular health and wellness assessments for taxi drivers to test their fitness to drive;
- Drinking and driving is an issue that endangers passengers and other road user's lives, and
- Commuters create safety challenges by hailing and stopping taxis anywhere due to a lack of dedicated laybys. For example, commuters often request a stop in an intersection, which creates unsafe road and passenger conditions.

Poor road conditions, such as potholes and the lack of proper road signage, are viewed by the industry as major contributing factors to unsafe driving behaviour. Drivers utilise all means possible to keep on moving, including weaving through oncoming traffic in an effort to miss potholes.

In terms of security, the Gauteng Taxi Summit established a Crime Prevention Commission that intends to address taxi violence, amongst other issues. The Commission recognised that taxi violence has an impact on taxi operators, passengers and innocent by-standers and, in fact, poses a threat to the public

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transport fraternity. It was further recognised that the impact of taxi violence is far-reaching as it:

- Prevents the participation of women, youth and people with disabilities to make use of the industry for their daily commute because of fear, and
- Affects the credibility of the taxi industry by scaring away potential business partners and investors.

In terms of issues regarding security at specifically taxi ranks, the following was noted:

- The abuse of alcohol and drugs by employees of the taxi industry, such as rank marshals, at taxi ranks is increasingly a concern to the industry;
- Movement within taxi ranks and the area surrounding taxi ranks is not conducive to the safe and free movement of passengers;
- The current rank management structure of taxi ranks was inefficient as it promotes illegal activities, and
- Firearms, both legal and illegal, can be found at taxi ranks.

7.2.8 Universal Access

Special needs passengers are not well catered for in the public transport system in Gauteng. Public transport infrastructure provision, including non-motorised transport, has until recently not been designed and constructed in such a way that the needs of people with disabilities have been catered for.

Lack of physical access, both to and within the built environment, is a major factor contributing to the ongoing exclusion of people with disabilities from mainstream society and using public transport. The accessibility of the built environment concerns how easily, safely and equally people with special needs or impairments can use buildings, facilities and public spaces. Physical and other barriers discriminate against some people by not allowing them to move freely and independently within their built surroundings (SAHRC, 2002). The Gauteng Provincial Disability Rights Policy addresses Universal Barrier-Free Access with the objective that all persons with disabilities have equal access to the physical built environment and to other facilities and services provided for or open to the general public in rural and urban areas.

Problems with many existing Public Transport systems include the following:

- Pre-travel confidence and information – lack of information to give passenger confidence that trip can be made;
- Origin to point of access – poor provision/ maintenance of public facilities (sidewalks, directional signage, etc);
- Point of access – difficulties identifying the vehicle needed for travel and distinguishing vehicle destination;

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- Boarding and alighting – vehicles are generally inaccessible, overcrowded and the dwell time of vehicles at stops is prolonged, and
- On-board the vehicle – unsafe speeds and lack of restraint systems make it unsafe to use the services and be comfortable.

7.2.9 Funding

Funding is becoming increasingly problematic in the current environment where the economy has contracted substantially mainly due to sluggish growth due to Government policies, state capture and more recently the impact of the COVID-19 pandemic. During the height of the pandemic (hard lockdown in 2020) government had to re-prioritise and re-allocate funds to cover the costs of fighting the pandemic. The lack of sufficient funding is affecting the public transport system as follows:

- Extent and rate at which networks and services can be expanded and extended;
- Extent to which the affordability of services can be promoted;
- Ability to allocate sufficient funds to be able to maintain infrastructure and facilities at required levels, and
- Ability to refurbish and replace rolling-stock and vehicles as required.

It is appreciated that demands on the fiscus will always outstrip available government funding. Government revenue is directly linked to the strength and continued growth of the economy, as a strong economy will provide more taxes from profit generated by the private sector and payroll tax as more people are employed. A strong and growing economy also provides comfort to international rating agencies regarding the stability of the country, which in turn impacts on the credit rating of the country. A good credit rating means that international lenders are more willing to lend money to the country at more favourable interest rates as the risk of defaulting on payments is reduced. The cost of borrowing becomes less expensive which means more can be done with the funds as less funds are required to pay back the loans.

South Africa has experienced a stagnant economy for over a decade, with GDP growth constantly less than 2% per annum and a contraction of 6% in 2020 due to COVID-19.

The National Treasury has capped the budget allocation increases through the MTEF to 3% per annum for the 2022/23 – 2024/25 period. Any additional expenditure from provinces must be funded from either inter-departmental savings or through re-allocation between different Departments within the Province.

The reality is that attempting to maintain the status quo will be a challenge as goods and services required for the transportation system historically increased more than the cap put on the MTEF as some of these goods and services are imported. The weakening of the Rand against major trading partners creates pricing distortions that are difficult to contain. As the Rand weakens less goods and services can be imported which eventually impacts on government's ability to deliver.

The Province receives most of its funding from the national fiscus through the equitable share and grant funding allocations mechanism provided for in the DoRA.

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As a result of the reduced allocation and capped increases, Gauteng Province will have to investigate additional sources of funding to supplement these traditional sources.

Sourcing partnerships with the private sector, through PPPs is possibly one such an alternative source of funding. It is also not a new concept to the Province as the Gautrain was funded and is operated on a PPP model.

Funding of public transport is dealt with more extensively in Chapter 13.

7.3 Public Transport Strategies

In addressing the deficiencies, the Province will focus on the following priority areas:

7.3.1 Land-Use and Transport Integration

The relationship between transportation and land-use is key for sustainable development. Investment in transportation systems in Gauteng prioritised high speed mobility, with the focus on moving vehicles, rather than on public transport systems, with the focus on moving people. This resulted is development that is spread out and dependent on private car to access. This places all other modes of travel at a disadvantage.

When considering integrated land use and transport planning, place-making promotes a simple principle: if you plan cities for cars and traffic, you get cars and traffic. If you plan for people and places, you get people and places. The power of this simple idea is that it reflects basic truths that are rarely acknowledged. One such truth is that more traffic and road capacity are not the inevitable results of growth. They are in fact the products of very deliberate choices that have been made to shape our communities around the private automobile.

The focus areas for land-use and transportation integration are:

- the establishment of a hierarchy of nodes coupled with the improvement of linkages and connectivity between these nodes and areas of economic opportunity;
- land use-public transport integration through nodal and corridor development;
- the promotion of viable public transport systems and reduction of reliance on private mobility with strong emphasis on densification along the priority public transport corridors, especially rail and BRT trunk routes, which form the basis of the IRPTN system, and
- public transport routes become the priority areas for densification and infill development.

It is evident from these principles that there is the strong emphasis on public transport becoming the basis of the 'movement system' in the Province, and urban corridors, activity spines and public transport routes create the framework for future processes of densification and intensification, including Transit Oriented Development (TOD) comprising mixed uses around road- and rail-based public transport facilities.

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This topic is also dealt with in Chapter 5, where the Integrated Development Framework is discussed

7.3.1.1 Strategies

The responsibility of the strategies lies with the Province (TAG) and metro and district municipalities as part of the planning and development of their integrated (rapid) public transport networks and the following is proposed:

- Focus on high-priority public transport corridors, that form the structural component for focussed spatial development and city building;
- Support a public transport corridor with a few routes and frequent services (rather than many routes with fewer frequencies) to establish the concept of a priority corridor and provide developers with confidence in the permanency of the public transport system;
- Support IPTN linkages and public transport services to major new developments and existing, high density nodal developments of Provincial significance;
- Support in-filling and mixed-use along IPTN corridors and TOD developments;
- As part of development applications, Transport Impact Assessments should be done, not only Traffic Impact Assessments considering motorized and/or private vehicles. Although this is a requirement in terms of section 38(2)(b) of the NLTA, some municipalities are not insisting on these assessments. The TAG should request the DoT to give attention to this when drafting the updated regulations;
- Bulk services contributions should be targeted towards public and non-motorised transport infrastructure and facilities, and
- A forum should be established for regular engagement with the industry on development proposals.

7.3.2 Provincial Wide IPTN

A Provincial Integrated Public Transport Network should be informed by the provincial commuter and passenger rail (PRASA and Gautrain) networks, as well as the IPTNs with dedicated bus rapid transport trunk lines at its core, as a minimum.

- Network Continuity across municipal/ provincial borders

  The overall principle of providing network continuity is to support the transport demand in the Province by improving the linkages, and to provide for future linkages, taking account of future employment opportunities. The network should also address regional mobility by extending linkages beyond planning authority boundaries.

  The characteristics of the individual network components are indicated in Table 7-1.

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Table 7-1: Characteristics of individual road-based network components

Network Component	Service Type	Typical function	Route characteristics	Typical station/Stops spacing
Rail	Rapid Rail	Regional Mobility	Right of Way	8 - 10 km
	Metro Rail			3 - 5 km
	Commuter Rail			2 - 3 km
Rapid Road Transit	BRT	Urban Mobility	Separate Right of Way	500 - 800 m
		Continuity	Class 1 - 3 roads	
Quality Bus Service	High throughput	Urban Continuity	Partial separate Right of Way (HOV)	350 - 600 m
	road-based	Medium Accessibility	Mixed traffic	
			Class 1 - 3 roads	
Commuter bus service	Road based	Urban Continuity	Partial separate Right of Way (HOV)	300 - 500 m
			Mixed traffic	
		Medium Accessibility	Class 1 - 3 roads	
MBT	Lower throughput	Local Continuity	Mixed traffic	100 - 400 m
		High accessibility	Class 4 and 5 roads	
MaaS	Metered taxi, e-hailing	High accessibility	Mixed traffic	0 - 100 m
	Tuk-tuks		Class 4 and 5 roads	

(Source: ITMP25)

- The Role of Modes

  The role of transport modes along corridors should be decided in principle and implemented over time. It is influenced by the availability of infrastructure and facilities, distance travelled and passenger volumes.

  The departure point should be that the appropriate mode should be selected and planned for on the basis of where they have the highest impact on reducing the total system's cost of travel.

  If the role of the different modes is taken into account and the most appropriate mode determined using the information in Figure 7-1 as a guideline, the planning authorities would have a much stronger case when deciding which mode should be supported through the operating licensing regime.

  Similar to the concept of a hierarchy of roads, a concept was developed for the hierarchy of public transport modes. In terms of this concept, each mode should be deployed where it is best suited.

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Figure 7-1 provides a useful guideline for the determination of the most appropriate mode to be deployed on a corridor.

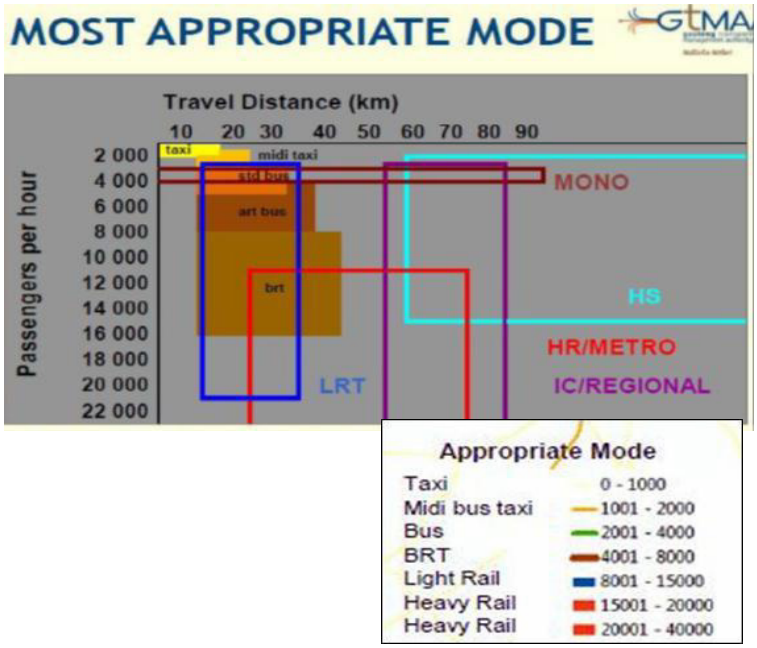


Figure 7-1: Appropriate Mode

(Source: ITMP25)

The figure shows that there is a potential role for each mode in an urban public transport network. The lower capacity mode (MBT) is best suited to travel distances less than 20 kilometres, with a demand of 2 000 passengers/hour, whereas commuter buses are best suited for distances between 20 and 40 kilometres, with passenger volumes ranging between 2 000 to 4 000 per hour. What is clear from Figure 7-1 is that a number of road-based modes can be deployed on corridors with a travel distance of between 20 and 40 km, with passenger demand of 3000 – 16 000 per hour. Rail seems to be the most appropriate mode on the longer (30 km +), high volume (12 000 passenger/h+) corridors.

The information in Figure 7-1 serves as a guideline only and is not meant to restrict planning authorities in determining the most appropriate modes to be deployed onto the respective integrated public transport networks.

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- Modal Integration

  Although cities and municipalities produce Integrated Transport Plans, in practice very little integration has occurred. Integration can occur at institutional, fare, information-sharing, network and infrastructure levels. The three spheres of government plan, fund and operate separate transport systems with very little integration apart from a few limited exceptions.

  The lack of integration requires commuters to have significant knowledge of the different systems to be able to move between them. Movement across modes is also not seamless and requires some effort. Captive users are more familiar with the 'integration possibilities' offered by the existing system.

  Although all components should ideally be integrated, fare integration is probably the most critical aspect that must be addressed for modal integration to be successful. The establishment of an Account Based Ticketing System facilitated by SANRAL means that commuters can move away from multiple, non-integrated fare collection systems to systems that require only a single account identifier. This will allow commuters to utilise multiple modes of transport, regardless of whether the services are managed by a single operator or by multiple operators.

7.3.2.1 Strategy

The responsibility of the strategies lies with the Province (TAG) in collaboration with the metro and district municipalities, and the following strategies are proposed:

- Obtain consensus among all the municipalities in Gauteng on the role of modes to be deployed on the IPTNs and the associated efficiencies that it can provide;
- Consider an awareness program amongst the existing users for them to trust the system, gain confidence and support EFC in its totality;
- Establish an inter-governmental Modal Integration Working Group at the TAG, and
- Set up and support collaboration efforts with the private sector to agree on a roadmap for implementing Account Based Ticketing as an essential step to implement EFC.

7.3.3 Quality Public Transport

The focus is not only to improve the quality of the existing public transport offering which mainly caters for captive users, but also to improve the system to such an extent that choice users are attracted to the system. In this regard accessibility, reliability and quality of services and infrastructure, inclusive of providing access to people with disabilities, is the focus.

From a sustainability point of view and keeping with the climate change protocols to reduce GHG emissions over time, it is essential that private car usage be minimised. For such a shift to take place, there needs to be a viable alternative for the car user in the form of a quality public transport system.

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The introduction of Gautrain to the public transport landscape in the Province over a decade ago has proven that car users can and will make a shift to public transport, if it is offered at a high quality, in terms of convenience, safety, speed and affordability.

As part of the quality improvement initiatives, the norms and standards in Table 7-2 are suggested as a guideline to be used in the Province. They refer to norms and standards for infrastructure, vehicles and services for road-based public transport.

Table 7-2: Norms and standards for road-based public transport

Component	Norms and Standards
Infrastructure	
Separation of travel modes	Designated entrance, separating vehicle and NMT movement
Ease of transfer between modes	Waiting areas and connection spaces integrated
User requirements	Designed with safety and security in mind. Universally Accessible. Operational information readily available
Passenger facilities	Seating, ablution facilities, covered walkways, Wi-Fi access
Way finding	Signage and way-finding standardised across the Province.
Safety and Security	Adequate lighting, activities visible from outside, CCTV monitoring
Vehicles	
Condition	Universally Accessible. Roadworthy and licensed at all times
Age	Not be older than 10 years, taking into account rebuilt and rehabilitated vehicles in the case of buses
Safety and Security	All vehicles fitted with safety belts, CCTV and fire extinguishers
Services	
Availability	At least 18 hours per weekday and 12 hours on weekends
Reliability	Every 10 min during peak period and at least every 30 min during off peak
Accessibility	Access a public transport service within 15 minute's walk
Waiting time	Maximum 10 min in peak period and 30 min during off peak
Information availability	Timetable and fare information readily available on App/Call Centre
Vehicle comfort	Working air conditioner, regulating in-vehicle temperature

7.3.3.1 Strategy

The responsibility of the strategies lies with the Province (GDRT and TAG) and metropolitan and district municipalities, and the following is proposed:

- Ensure that the arrangements, contracts and concessions for the provision of formalised public transport services include minimum performance standards (i.e. performance regimes), as well as incentives and penalties for either exceeding or not meeting performance standards, such as availability, punctuality, quality, safety, etc. This could also include sharing in or being allocated some fare revenue income when patronage increases above pre-determined levels;

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- Set up reporting mechanisms in consultation with the municipalities to report on the agreed norms and standards to be maintained;
- Minimum norms and standards need to be developed and agreed on by all stakeholders, for the facilities and amenities to be provided at ranks and holding areas;
- Adequate provision needs to be made for the management and maintenance of taxi ranks, including responsibility matrices, agreements between stakeholders, budgets, etc;
- *Gauteng on the Move* initiative needs to be rolled out and awareness created of the quality of services provided and availability to travellers;
- A scheme such as the one tested during the Blue Dot Pilot in the Western Cape needs to be considered, to enhance to quality and perception of taxi services;
- An enabling environment for the Industry to provide MaaS type service offerings needs to be pursued' and
- E-Ticketing and an electronic passenger travel information platform needs to be developed, to enhance the accessibility to such services

7.3.4 Devolution of the Passenger Rail Function

Passenger rail planning, implementation and operations are currently the responsibility of PRASA. Although rail is often referred to as the backbone of the public transport system in Gauteng, the services that are operated by PRASA, are planned and budgeted for by PRASA. The planning authority has limited input into the services offered currently as there is no service level agreement between the operator and the planning authority. Section 11(1)(c)(xix) of the NLTA provides that municipalities are responsible for service level planning for passenger rail on a corridor network basis in consultation with PRASA.

The White Paper on Rail Policy intends to change the way in which rail services are operated in that transport functions will be devolved to the most appropriate sphere of government. A devolution strategy will be formulated.

Due to the uniqueness of the Gauteng Province (with three metropolitan cities bordering each other), the Province is well positioned to explore taking over the rail function. In addition, the Province has proven experience in managing Gautrain, through the GMA, to manage passenger rail concessions and contracts over the last decade.

7.3.4.1 Strategy

It is proposed that the responsibility lies with the Province (TAG), and that it commissions a due diligence study for the assignment or devolution of the passenger rail function or elements thereof to the Province, including the devolution of associated grants and funding.

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7.3.5 Passenger Safety and Security

This section deals with passenger safety and security on the public transport system. Car accidents and road safety is dealt with in Section 9: Transportation Management Strategy.

Passenger safety and security, whether experienced or perceived, impacts negatively on the usage of public transport services. When passengers do not feel safe, they are generally reluctant to use the system. Research has shown that it is especially women and children that feel vulnerable.

There are many reasons for the overall state of security in the country, stemming from social reasons to economic reasons, which falls outside the scope of the PLTF.

Keeping the public transport system, in all its components (walking/ waiting along routes, at facilities and in vehicles), safe for the users is the overall responsibility of government. Implementing safety and security measures requires substantial resources in terms of manpower and the use of technology as a tool to improve safety and security.

A proven way of keeping passengers safe in the public transport system is through constantly reminding them of the importance of keeping vigilant while on the system. Messages on keeping your personal belonging close to you, walking/ waiting in groups rather than alone and avoiding eye contact with strangers has led to a decrease in the number of personal attacks on public transport systems. This intervention works well in systems where public announcements are a part of the information provided.

The huge strides made with technology in the last 5 years and the advent of big data and machine learning, has opened up new ways of communicating with the passengers. Technology can now be used to communicate similar messages to the passenger and can even inform the passengers of incidents as they are reported. The private sector has already developed an App that is used as a panic button. It is linked to private security companies and when the user activates the panic button the closest vehicle is dispatched to the location.

7.3.5.1 Strategy

This is not seen as a TAG responsibility, but for improvement in the area of passenger safety and security, TAG is required to play a coordination role.

The following strategies are proposed:

- TAG to collaborate with SAPS and other agencies to improve visible policing at public transport facilities and at stops along major corridors;
- TAG to collaborate with the private sector to provide social media solutions to improve policing, and safety and security of travelers, and
- TAG, in collaboration with municipalities to actively pursue small scale PPPs in the safety and security space with technology providers.

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The responsibility of the following strategy lies with TAG:

- Provide minimum standards for public transport facilities of provincial significance to enhance the safety and security at these facilities, and
- In collaboration with municipalities, provide minimum standards for public transport facilities to enhance the safety and security at these facilities.

The responsibility of the following strategy lies with the Provincial Government:

- Adherence to court orders needs to be monitored and enforced. This to be given priority in terms of law enforcement agencies and the Public Transport Inspectorate.

7.3.6 Regulation of Road-Based Modes and Services

The regulation of road-based public transport is governed by the NLTA and its Regulations. Since the promulgation of the Act, and previously under the National Land Transport Transition Act, the MBT industry has been under pressure, and required by the legislation, to convert area-based permits to route based OLs, and where applicable to apply for new OLs.

The legislation is clear on the functions of each entity, their responsibilities, and the process of dealing with the application for an OL. For the sake of clarity and due to the importance of regulating the public transport industry, a high-level interpretation of the legislation, specifically pertaining to the issuing of operating licenses in the Province follows.

Although the Act makes provision for 3 regulating entities to be established, only the National Public Transport Regulator (NPTR) and PRE have been established. No municipality has managed to establish a Municipal Regulatory Entity (MRE). The NPTR and the PRE are responsible for regulating road-based public transport through the issuing of operating licences.

The functions of the NPTR, relevant to the issues facing the industry, are indicated below:

- It must produce and regularly update a standardised procedures manual for itself and for Provincial Regulatory Entities;
- In the case of an application for an operating licence for an interprovincial service, it must then consult the relevant PRE and planning authorities, and
- Where a PRE delays an application, the applicant may submit the application to the NPTR.

The NPTR currently only deals with tourist transport services and is not yet in a position to deal with interprovincial OL applications.

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The PRE must inform all planning authorities in whose areas the services will be operated and request them to give directions with regard to the application based on their integrated transport plans (ITPs), within the period stated in the notice. The planning authority must:

- Indicate whether there is a need for the service on the route or routes in terms of its integrated transport plan or not, and, if there is a need, direct the PRE to grant the OL and if its ITP is not yet finalised or is inadequate, it must take the decision based on due inquiries and investigations carried out by it, and
- Submit such response to the PRE, within the prescribed period or the period stipulated in the notice.

Where the public transport requirements for the particular route are adequately served by an existing public transport service of a similar nature, standard or quality provided in terms of a commercial service contract or subsidised service contract in terms of operating licences as shown by its ITP, the planning authority must direct the PRE to refuse the application.

A PRE, in disposing of an application, must act in accordance with the relevant ITP and directions of the planning authority and must not grant an OL contrary to the directions of the ITP of the planning authority. Where the planning authority has failed to respond to the request, the PRE may dispose of the application without any input from the planning authority based on information at its disposal.

The NLT Regulations detail the process of applying for an OL or converting a permit to an OL. The main steps in the process, relevant to the current issues facing the regulation of the public transport industry, are as follows:

- An application to a PRE for the granting, renewal, amendment or transfer of an operating licence must be lodged by submitting the completed standard application form;
- The PRE must notify every planning authority in whose area passengers will be picked up or set down by e-mail or fax of an application received and those planning authorities must supply their comments or recommendations to the PRE within the 30 days;
- Where a planning authority fails to respond to such a notice within the specified time, the PRE may proceed to process and decide upon the application without their input, and
- A notification must be in accordance with the standard form and contain particulars sufficient to enable the planning authority to submit a response based on its ITP.

The focus is on improving the functioning of the PRE to eradicate the backlog and improve the efficiency of the entity with the disposal of OL applications going forward.

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7.3.6.1 *Strategy*

The responsibility of the following strategies lies with the GDRT, being:

- Commence with an independent evaluation of the efficiency of the regulatory process and capacity at the PRE and if required improve efficiency;
- Initiate discussions with DOT/ NPTR to streamline processes related to interprovincial and tourism services;
- Facilitate discussions with the planning authorities, addressing the possible gaps in the ITPs should the authority not be able to adequately respond to the PRE for operating licence applications in terms of its approved ITP;
- Changes to the current dispensation can only be brought about by a changes/amendment of the Act. This is to be lobbied by SANTACO and NTA at a national level;
- Renewal notices to be issued to operators in advance of expiry date;
- The finalisation of the regulations for e-hailing type services needs to be expedited and the Province needs to petition this with national government;
- The Act allows for additional licences to be issued for the same vehicle for which route-based licences had already been issued, i.e. for the provision of charter services. The PRE needs to consider issuing additional licences, which will enable the industry to provide MaaS type service offerings;
- In eradicating the backlog, outsourcing should be considered, and
- Walk-in functionality and electronic applications (e-filing), to deal with applications and renewals should be pursued.

7.3.7 Affordability, Subsidies and Funding

For the captive user, there exists a direct relationship between affordability and the distance of the trip. In most instances, these users are settled in areas far away from economic and other opportunities. Hence the importance to pursue integration of land use and transport interventions as matter of urgency. Affordability to the user will remain an issue for the foreseeable future.

In addition to the interventions mentioned above, for a public transport system to become more affordable to the user, initiatives should be explored to make the operators more effective and efficient. These initiatives should focus on managing the cost down of the operator, increasing the fare income and maintaining acceptable service standards in terms of availability, punctuality and quality.

The minibus taxi industry experience service quality challenges with no operational support from government. This cannot be ignored any longer and government must take some action to alleviate the challenges facing the industry. In this regard, the provincial government should explore the Blue Dot Com initiative that was piloted by the Western Cape Government for 18 months, ending November 2022. The main focus was a taxi improvement initiative that focussed on an incentive programme that

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aimed to shift driver behaviour and transform the services on offer. The objectives of the pilot project were to:

- Improve service quality and safety;
- Leverage technology to drive change;
- Address taxi violence and illegal operations, and
- Support formalisation and empowerment.

The broad principles of the Blue Dot Com scheme are highlighted below:

- All potential Blue Dot Com participants had to achieve and maintain Green Status;
- Operators with Green Status would receive a daily payment, based on how well they perform against performance standards based on driver behaviour;
- Performance was scored using a star rating;
- Performance standards were monitored using a bespoke technology system, and
- No payments were received for achieving Green Status – only if the taxi was operated well (no weaving, speeding or harsh braking), driver behaved well and delivered a good quality service did they receive a rating, and based on this rating was compensated by the Western Cape Government.

The subsidy mechanisms used in the Province are limited to a deficit subsidy mechanism (PRASA and municipal bus services), a concession which includes a patronage guarantee for Gautrain and producer side subsidy mechanisms for subsidised bus services and BRTs. Consideration needs to be given and subsidy allocation mechanisms need to be re-assessed to ensure that in future allocations mechanisms are deployed that optimise efficiency, optimally target intended beneficiaries, enable effective management of service provision and fairly allocate risks to operators and contracting entities.

Sufficient financial support should be provided to maintain, upgrade and expand the infrastructure, as well as operational financial support. Operational support and subsidies should not only be sufficient to target affordability of services to workers, but also to potentially widen the targeted groups to include people with disabilities, learners and the unemployed.

The need for improved public transport systems is such that Government funding sources, on their own, will not be sufficient to sustain the investment required to affect the required modal shift from private to public transport. Government will have to pursue all avenues of funding/partnerships that are available and leverage them as far as possible. The GDRT has proven experience in successfully implementing a PPP project and this knowledge and experience should be tapped into for projects of a similar scope.

It is also necessary to re-confirm the current funding sources and flow of funds for public transport operations. Even in an environment where funding is limited, there is a sense that more can be done with the existing funding if it is under the control of one contracting authority or greater integration and collaboration exists between the

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various spheres of government responsible for contracting and managing public transport service providers.

7.3.7.1 Strategy

The responsibility of the following strategies lies with TAG:

- Collaborate with all spheres of government to obtain agreement on consolidation of operational subsidies, targeted beneficiaries and appropriate subsidy allocation mechanisms;
- Collaborate through existing and new platforms to attract funding for public transport infrastructure, facilities and services;
- Lobby the DoT to ensure that the subsidy policy being developed at national level, includes the taxi industry;
- The Province needs to develop a financial support strategy for public transport, including the taxi industry, and
- A scheme such as was tested during the Blue Dot Pilot Project in the Western Cape needs to be considered in Gauteng.

7.3.8 Expedite the Expansions and Extensions of the Gauteng Rapid Rail Integrated Network

The proposed expansions and extensions of the Gauteng Rapid Rail Integrated Network are important to the economy of Gauteng, as they will provide much needed access, specifically to the western and south-eastern areas of the Province, linking those areas with Sandton, ORTIA and the eastern parts of the CoT. It will also impact positively on the current ridership of the existing system both for commuters and airport travellers.

The feasibility of Phase 1 of the network extensions from Marlboro to Little Falls has been completed and is awaiting approval from National Treasury.

7.3.8.1 Strategy

The responsibility of the strategy lies with the GMA, with the TAG in a supportive role to provide assistance to the Agency where required, to expedite the expansion and extension of the Gauteng rapid rail integrated network.

7.3.9 Investigation on the feasibility of high-speed rail between Gauteng and KwaZulu-Natal and Limpopo Provinces

In some quarters it is perceived that high-speed passenger rail as an alternative to inter-city road-based passenger transport over longer distances can become increasingly plausible. This is due to the long-term economic benefits that can be attributed to travel time savings, savings in accident cost and the impact on a reduction of GHG emissions.

The Limpopo Province is promoting more frequent longer-term passenger rail services from Gauteng to Polokwane and Musina in the short-term. In the longer-term it envisages high-speed rail as a more appropriate option, linked to the development

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of the Makado-Musina SEZ, the anticipated increase in both passenger travel and freight movements.

7.3.9.1 Strategy

A high-level prefeasibility investigation should be conducted in partnership with the National Department of Transport and the Limpopo Province on the implementation of high-speed rail along the N1 corridor to Musina and possibly also with the KwaZulu-Natal Government for a high-speed rail link to eThekwini within the TransNat Corridor. Such a link to eThekwini would most probably also include the Free State Government in relation to developments around specifically Harrismith.

7.3.10 Restructure, Rationalise and Integrate the PTOG Services into the IPTNs

The PTOG subsidised bus services have been operating substantially on the same routes for over 30 years. There have been many legal obstacles in the way of restructuring the PTOG services. One of the obstacles has been various court actions brought against the GDRT and other entities. These actions and the orders made by the Courts will be monitored and appropriate action will be taken in response. The process of restructuring and rationalising the bus contracts is likely to be delayed until these issues are resolved. Over the last decade, new public transport systems such as Gautrain and BRT systems in the three Metros have appeared on the landscape. The spatial structure and urban form of Gauteng has also changed over this time and significant expansion of urban developments has taken place.

The focus is on rationalising the existing routes to respond to the current urban form and changed public transport landscape. The existing PTOG routes must be rationalised to support the rail and IPTNs in such a way as to eliminate, or at least minimise, parallel services, and to provide feeder services to rail where necessary. At provincial level, such an intervention can lead to a reduction in the overall contracted kilometres on the PTOG contracts, which can lead to a direct saving on the PTOG subsidies. This saving can then be used to improve the quality and safety of public transport services, or to extend the subsidy to include all operators that are contracted on the IPTN.

The current bus operator market is very small, with a few large players and not sufficient competition in the market to render the tender process competitive and efficient. The Model Tender and Contract Documents do make provision for a 30% set-aside of any contract for previously disadvantaged companies, but this is not sufficient to get new role-players active and successful as stand-alone entities in the market.

7.3.10.1 Strategy

The responsibility of the following strategies lies with TAG:

- Restructure the PTOG operations to reflect the Gauteng spatial structure and urban form, participate in modal integration and align with the IPTNs;
- Get a full understanding of the legal issues facing the restructuring of the PTOG services and address with relevant departments;

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- PTOG subsidised contracts review to be based on rationalised routes and services, and which incorporates green bus technologies, integrated fare collection technologies, and universal design features, and
- Engage with the DoT on possible changes to the MTCDs that will encourage participation by new entrants in the market.

7.3.11 Minibus Taxis

The focus on MBTs is aligned with the resolutions taken at the Gauteng Taxi Summit in 2019.

The summit framed its own vision for the taxi industry, that is aligned with the Growing Gauteng Together vison, with the difference that its vision can only be achieved through modernising the Taxi Industry.

In addition to the vision, the strategic objectives that were formulated at the summit, relate to:

- Working within the existing regulatory framework;
- Modernising the MBT industry;
- Upholding and working within the road safety prescripts;
- Corporatizing and empowering the MBT industry, and
- Eradicating violence, fraud and corruption.

The challenges listed by the industry representatives can be summarised as relating, overall, to high levels of violence in the industry, poor road safety practices and conditions and the lack of a trusted regulatory environment.

The outcome of the summit was the establishment of the following commissions, that were tasked to address the issues facing the industry:

- Regulatory Framework;
- Modernisation of the taxi industry;
- Road Safety;
- Corporatisation, and
- Crime prevention.

As a major player in the public transport sector and the Gauteng economy, the Government is committed to address the issues emanating from the summit in a holistic, integrated way that will ensure lasting solutions.

7.3.11.1 Strategy

The responsibility of the following strategies lies with GDRT, yet the TAG will play a coordination and supporting role:

- Establish working groups for each commission, consisting of GDRT and TAG officials as well as representatives of the taxi industry;

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- Assist and facilitate discussions between the industry and the metropolitan authorities regarding the best use of dedicated lanes in their area of responsibility;
- Assist with and facilitate the implementation of the recommendations of the task teams established at the Gauteng Taxi Summit;
- Continue to support the process of conflict resolution within the taxi industry;
- The establishment of the Taxi Academy to be pursued;
- The Department of Economic Development resuscitates and further assists with the formation of the Cooperative Bank; and
- An enabling environment be created for commercialisation/corporatisation and the transfer of licences from individuals to companies.

7.4 Provincial Initiatives and Projects

The following policy updates, initiatives and projects are being undertaken or are proposed to improve public transport, its efficiencies, effectiveness and to promote good governance.

7.4.1 Policies That are Being Reviewed

- The Policy Framework on Bus and MBT Facilities on Major Provincial Roads in Gauteng

  The policy and its guideline manually seek to address the challenges experienced by using public transport lay-bys, ranking and holding facilities, which lead to congestion and conflict. Lack of proper public transport facilities also threatens the safety of all road users and commuters.

- The Policy for Non-Motorised Transport on Gauteng Provincial Roads

  The conflict between road users, particularly pedestrians and cyclists, who compete for road space with vehicles and freight, warrants a policy that not only promotes the use of the road by pedestrians and cyclists but also ensures their safety.

- Policy on Developer's Contribution towards the Implementation of the Gauteng Strategic Network

  The current economic constraints faced by both government and the private sector warrant collaboration between all spheres of government and the private sector to address the issue. The policy aims to ensure that prospective developers have a clear set of guidelines and rules for co-funding departmental projects as well as putting in place a good governance structure which will protect the parties and guide processes.

- Policy for Provincial Registration and Monitoring of Modes of Public Transport

  The policy will outline registration processes for various modes of transport and the role of associations. It will prescribe documents, roles and responsibilities and provide departmental details in the registration process, whilst assigning a

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compliance monitoring role to the Department to reduce conflict and confusion in terms of owners/ operators, drivers and associations.

7.4.2 Regulations That are Being Reviewed

- Gauteng Public Transport Regulatory Entity Amendment Regulations

  These Regulations have been amended to introduce an alternative mechanism which will address public transport dispute conflicts/ violence and inculcate behavioural changes within the public transport industry.

- Gauteng Taxi Association Regulations

  These proposed regulations will further assist in combating violence, criminal activities and other instances of non-compliance with legal requirements by taxi associations and operators of MBT-type services.

  However, the draft regulations are under review to focus on establishment of an inspectorate, a code of conduct for the GPRE and taxi operators, co-operation and joint venture agreements. The regulations are expected to be finalised in the financial year 2022/23.

7.4.3 Promotion of Public Transport over Private Transport

- Review of the ITMP25

  The GDRT adopted its long-term transport plan, the 25- year Integrated Transport Master Plan (ITMP25) in 2013 which set out its programme for service delivery in the Province.

  The ITMP25 is due for review to accommodate changes in the transport policy and planning ecosystem which includes the new BRT systems, GRRIN Extension, as well as the latest Gauteng Household Travel Survey data.

- Household Travel Survey to measure the impact of COVID-19 on mobility patterns

  The Department completed the 2019/20 Household Travel Survey in March 2020, before COVID-19 impacted on travel patterns. Fundamentally, travel behaviour of households in the Province may have been significantly altered, albeit temporarily and permanently.

  It is for this reason that the Department seeks to carry out a supplementary household travel survey which will reflect the impact of the COVID-19 pandemic and measure the extent to which travel behaviour has changed during the nationwide lockdown regulations at different alert levels. The final survey report will be completed in the financial year, 2022/2023.

- Gauteng Integrated Smart City Modelling Centre (GISCMC) for Road, Rail and Transport Planning (maintain functionality)

  The Department has identified a tool which is being utilised to meet the growing set of functional requirements needed for transportation system modelling called the Transport Modelling Centre. This tool will provide transport evidence based decision making capabilities which are required to improve the mobility of goods

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and people in the Province, and determine the need for transport infrastructure and public transport demand. The improved functionality of the transport model will continue in 2022/23.

- Feasibility of BRT integration between CoJ and CoE

  Various possible options were investigated for an inter-municipal BRT integration service in the Province. The investigation established the feasibility of such a service, and the draft feasibility and service design have been completed.

  The 2022/23 financial year will focus on the development and approval of a Memorandum of Understanding between CoJ and CoE in order to establish the institutional arrangements and funding options for the BRT integration between the Cities.

- Investigation into an appropriate network hierarchy and support infrastructure for MBT operations.

  The project entails a primary data collection exercise relating to MBT facilities and ranks to improve the Province's analysis and reporting on the MBT industry.

  The survey is required for strategic planning as part of the legislative requirement of authorities to maintain adequate record keeping that will aid the development of operational designs of MBT services and infrastructure. The project is supportive of safe, effective and efficient MBT operations and is expected to be completed in the 2022/23 financial year.

7.4.4 Transport Operations

- Affordability of Public Transport

  The TAG is to undertake and study and develop a strategy for the subsidization and providing financial support to public transport, which will optimize the targeting of intended users, efficiently allocate financial support and promote the affordability of public transport to users, operators, government and the broader society.

- Public Transport Operations Grant

  The Department has signed Inter-Governmental Authorization Agreements (IGAAs) with all Contracting Authorities where PTOG services operate. It provides for the GDRT to enter into Tendered Subsidised Bus Service Contracts on behalf of the PAs. It provides for the PAs to capacitate themselves to take over the contracts once the duration of the agreement has lapsed.

  The tender for 8 subsidies bus contracts was published during 2021/22, however the process was stopped during April 2022.

- Electronic Monitoring System

  The Department appointed Supervisory and Monitoring Firms for a 36-month period in 2020. An Electronic Monitoring System was to replace the physical monitoring of the PTOG operations to improve the monitoring information to 100%

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real time information. The installation of the electronic monitoring system has commenced, and reports are being generated to assist in finalising the monthly claims. The department will ensure 100% compliance with electronic monitoring in the 2022/23 financial year.

- Gautrain Rapid Rail Link Expansions and GRRIN Extensions

  The projects and programmes planned for the Gautrain Rapid Rail Link Expansions and GRRIN Extensions are indicated in Table 7-3.

Table 7-3: Projects and programmes planned for the Gautrain Rapid Rail Link Expansions and GRRIN Extensions

Project/ Programme	Description	Status
Phase 1of the Gauteng Rapid Rail Integrated Network Extensions	The Implementation of Phase 1(Marlboro-Little Falls} of the proposed Gauteng Rapid Rail Integrated Network (GRRIN} Extensions Project including an enhanced Sandton Station as well as new stations at Randburg, Cosmo City, and Little Falls from where the future extension to Soweto will connect	Feasibility Completed, awaiting Treasury approval
Waterfall Station Development	The Implementation of a new station at Waterfall in Midrand Including commercial developments In the Station precinct	Planning
Samrand Station Development	The Implementation of a new station at Samrand Including commercial developments in the Station precinct	Planning
Midrand Station Development	Implementation of commercial developments and Infrastructure enhancements to Increase operational efficiency and customer experience at Midrand Station	Planning
Centurion Gautrain Station	Implementation of commercial developments and infrastructure enhancements to increase operational efficiency and customer experience at Centurion Station	Planning
Rhodesfleld Station Development	Implementation of commercial developments and Infrastructure enhancements to increase operational efficiency and customer experience at Rhodesfield Station	Planning

- Passenger rail

  Passenger rail services are operated by PRASA. In relation to PRASA, the provincial initiative focusses on a due diligence study regarding the assignment or devolution of the PRASA services to the Province.

  PRASA's plans for rail in the foreseeable future is to rebuild a new rail system that will allow PRASA to provide commuters with a consistently good service - a service that is fast, reliable and safe. This will involve all disciplines to rebuild, replace and repair, namely Electrical (OHTE & Substations); Perway; Telecommunications, Stations and Signalling. Of particular concern to PRASA is the destruction of the re-signalling programme over the last 10 years, as well as the significant loss of fare revenue and rental income. This initiative is referred to

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as the Recovery Plan which intends to revive/reintroduce the services that were stopped because of the damage to the network.

The immediate focus will be on the lines that transported the bulk of the commuters pre-2019 in line with the level of damages as a second factor.

PRASA has identified 4 priority corridors in Gauteng, which will be implemented in a phased approach as follows:

- Phase 1 – Restore full electrical service (peak and off-peak) without signalling and ensure functional stations, and
- Phase 2 – Complete signalling; revitalize & upgrade stations; footbridges, walling and fencing.

In terms of modernisation a major drive is the re-signalling to enhance the safety of the operations, which includes:

- Automated Train Protection;
- Automated train authorisation to replace manual authorization;
- Optical Transmission Network, and
- GSM-R redundancy.

In terms of creating value around stations, the following is proposed:

- Creating nodes for multimodal transport;
- Develop station precincts with Private Sector;
- Modernise stations with retail & services, and
- Working with Local Government for Social Housing developments.

In addition to the Recovery Plan, PRASA is also working on a Future Rail Services Plan that is meant to serve new developments. Working with local authorities, PRASA has identified a number of these lines on a national level. These new lines are in various stages of planning, ranging from conceptual to detailed feasibility studies.

7.4.5 Public Transport Integration

- IFM

  The focus of the project is to operationalize the Account Based Ticketing system and the integration of all modes of transport.

- Transport Management Centre

  As part of the IFM Project, the TMC is the focal point for communicating transport related information. The objective is to reduce transportation problems by controlling the circulation of all modes or focusing on specific modes, such an public transport.

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- Taxi Transformation

  Initiatives identified as part of the Gauteng Taxi Summit, and taken forward since then include:

  - Road Safety Drivers Training Module for MBT Drivers, and
  - Financial support to the industry.

7.4.6 Transport Regulation

- Issuing of Operating Licences

  The Department is committed to finalising applications for OLs within 6 months. In this regard the Department obtained commitment from the Planning Authorities to acknowledge receipt of direction seeking referrals to enable the GPRE to dispose of applications.

  In addition, the Department is in the process of implementing the following:

  - Capacitating the PRE with resources;
  - Establishing an inspectorate capacity in the Department, and
  - Developing an automated Operating Licence System.

  To reduce the turnaround time of applications, the Department has resolved to develop a provincial Land Transport Information System.

- MBT Route Electronic Monitoring

  The purpose of this initiative is to monitor MBT routes where violence occurs. This initiative intends to modernise the public transport system by improving MBT route management and to ensure taxis operate according to their allocated routes. Planning for the electronic monitoring system is scheduled for the 2022/23 financial year and the launch of the fist route by the end of the year. A total of 10 routes are to be monitored electronically by 2025.

7.5 Municipal Projects of Provincial Significance

Table 7-4 reflects a summary of public transport strategies of Provincial significance.

Table 7-4: Significant provincial public transport strategies

Planning Authority	Strategy	Actions/Projects
City of Ekurhuleni	Development of the IPTN	Consists of 7 BRT trunk routes, implemented in 5 phases.
	Phase out existing services and align with IPTN	Of the 348 routes, 17 will be affected and 58 replaced.
	Upgrade public transport facilities	Modal integration upgrade at Metrorail stations. Co-funded by Province
City of Johannesburg	Development of the IPTN	Phase 1A and 1B operational. Phase 1C planning finalised.

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Planning Authority	Strategy	Actions/Projects
City of Tshwane	Streamlined Administration of Operating Licenses	Standard procedure to evaluate each application
		Decisions to be informed by the individual network plans
		Database to interface with Operating License Application System
	Development of the IPTN	Phased implementation. Operational from Rainbow Junction via CBD to Hatfield
	Cross Border Transport Strategy	Appropriate planning and funding for facilities
		Strengthen planning and operational relationship with CBRTA
	Learner Transport Strategy	Identify key role players, inclusive of GDE and GDRT
	Operating License Strategy	Informing public transport supply and demand on corridors
	Rationalisation Plan	IPTN, Rail Modernisation, GRRIN extensions and the Moloto rail corridor
	Adjust bus services according to demand	Routes identified where additional capacity is required and reduced services could be considered
	Adjust taxi services according to demand	Routes identified where additional capacity is required
Sedibeng District Municipality	Develop a TDM strategy	Implement NMT measures and improve Universal Access to make public transport accessible to vulnerable groups
		Secure Park-and-Ride (P & R) services at rail stations and bus stops;
		Extension of public transport routes and services to residential areas
		Implemented and enforced HOV lanes leading into major employment centres;
		Parking pricing to promote public transport in favour of private transport
		Ride share matching and lift clubs;
	Reduce the number of crimes at public transport facilities, public transport and private vehicles and all transport environments	Identify and address high risk locations
	Promote road user involvement in road safety and security	Education and Awareness campaigns to all road users
	Improve the recording of crime crash statistics to enable monitoring the completeness of data so that interventions can be made more specific	Crime statistics to include GPS location of incident to enable spatial representation
West Rand District Municipality	To reduce vehicle kilometres travelled	Secure park-and-ride services at rail stations and bus stops
		Extension of public transport routes and services to residential areas

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Planning Authority	Strategy	Actions/Projects
	To improve accessibility of public transport	Implement NMT measures and improve Universal Access to make public transport accessible to vulnerable groups
		Secure park-and-ride services at rail stations and bus stops
	To increase mode share of walking and cycling	Implement NMT measures such as Sidewalks and cyclist paths
		Bicycle parking facilities in major centers and at rail stations
	Reduce the number of crimes at public transport facilities, public transport and private vehicles and all transport environments	Identify and address high risk locations
	Promote road user involvement in road safety and security	Education and Awareness campaigns to all road users
	Improve the recording of crime crash statistics to enable monitoring the completeness of data so that interventions can be made more specific	Crime statistics to include GPS location of incident to enable spatial representation

7.6 Key Issues to be Addressed in CITPs

An overall key issue that requires attention relates to the non-compliance with the timeframes set out in the NLTA in terms of planning which states that CITP's are to be prepared every 5 years with annual updates on selected aspects. The CITP's of the 3 metropolitan municipalities all fall outside of this requirement.

The transport landscape is continuously evolving, and the statutory plans require regular updates specifically for this reason.

Key issues that need specific attention in the development for CITP's going forward relate to:

- Section 11 of the NLTA provides that PAs are responsible for service level planning for passenger rail in agreement with PRASA. Intermodal planning committees must be established by each PA that has an IPTN or substantial passenger rail services. It must facilitate the conclusion of appropriate service level agreements between the PA and PRASA;
- ITPs must be submitted to the Minister for approval of the rail component where there is one. All ITPs must be made available to the National Public Transport Regulator (NPTR) and the relevant PRE by planning authorities and they must make recommendations to them relevant to applications for new operating licences. In addition, these transport plans also need to become part of the integrated development plans (IDPs) of the applicable metropolitan, district and local municipalities;
- In terms of the 5 year overhaul, the Public Transport Plan must be revised to plan for any new contracts that will be issued over the next five years and to reflect the

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sequencing of any proposed restructuring of the network. The new ITP should reflect progress made in the previous five years with the implementation of the various strategies and programmes, and update all strategies and programmes for the next five years;

- The annual updating of the plan must at least address the following:
  - Update the Transport Record if any significant new data was collected. The transportation GIS, databases and information systems must be updated on an ongoing basis as and when new information is collected;
  - Describe progress with implementing the ITP in the previous year (e.g. new infrastructure built and contracts awarded);
  - Document which contracts have been awarded or which have expired and any changes or additions to the proposed contracted services network. In Schedule1 the annual plan submitted in support of PTIS grant and other national funding must be documented, and
  - The database of operating licences, where a municipality has established such, should be updated on an ongoing basis as OLs are awarded, lapse, or are renewed. Any adjustments necessary to the Operating Licences Plan based on representations or new development should be documented.
- Evidence of progress made with addressing the oversupply of MBTs as provided for in the CITPs and DITPs must be reported on for the annual update of the plans.

The problems experienced with particularly the MBT industry and the PTOG contracts are partly due to the dated CITP's, and the lack of clarity in terms of the service required on the IPTN. It not only creates uncertainty with regard to the issuing of operating licences to MBT operators, but stalls the tender process for the PTOG contracts as the existing operators claim that the services are not put out in terms of an approved CITP/DITP. In the past these issues have been successfully challenged in court proceedings.

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8 NON-MOTORISED AND SUSTAINABLE TRANSPORT STRATEGY

Sustainable Transport is crosscutting across all aspects of transport planning and should underpin and be incorporated in every aspect of transport planning and development.

8.1 Deficiencies in the Transport System

The broader deficiencies of the transport system are described under each of the sections in this document. From an NMT and Sustainable Transport perspective the key deficiencies are:

- Urban sprawl - the current urban form that requires long travel distances to access opportunities and provide services whilst having low densities that are primarily single use. This is further affected by the lack of integration between urban and land use planning and transport planning as well as the broader aspects of socioeconomic development and the broader environmental impacts;
- Affordability of travel – both in terms of financial cost and long travel times the cost of travel impacts severely on a significant portion of the population within excess of 60% of the population paying more than 10% of take home earnings on travel;
- Vehicle / Car centric transport planning – walking, cycling and public transport are not the de facto departure points for the majority of transport planning projects and for freight the default approach is road vehicle based. The present focus on Green Transport (shifting from internal combustion engines (ICEs) to alternative energy systems) which whilst addressing in part the need to reduce GHG emissions does not address the broader socioeconomic and environmental issues;
- Sustainability and Climate Change – whilst identified as critical transport systems and infrastructure are not designed for climate change impacts and resilience or the broader environmental impacts. Current planning paradigms and methodologies could lock out required resilience and adaptation and the shifting requirements for GHG emissions reductions, limit the social equity opportunities of sustainable transport as well as compound environmental impacts, and
- Safety and security – both safety and security are key issues across all modes of transport and the needs of the physically disadvantaged, the elderly and women and children should be included in all approaches.

8.2 Sustainable Transport

The generally accepted definition[14] of a sustainable transport system is a system that:

- Meets the basic access and development needs of individuals, companies and society safely and in a manner consistent with human and ecosystem health;
- Promotes intergenerational equity;

[14] https://www.eltis.org/glossary/sustainable-transport-system

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- Is affordable, accessible to all, fair and efficient;
- Offers a choice of transport modes;
- Supports socioeconomic development;
- Limits emissions and waste;
- Uses renewable resources at or below their rates of generation, and
- Uses non-renewable resources at or below rates of development of renewable substitutions.

The effectiveness of any sustainable mobility approach is determined by the degree to which an area, town, city or region as a whole is accessible to all its residents, including low-income earners, the elderly, the young, the disabled and visitors whilst considering social, economic, environmental and institutional aspects throughout the planning and delivery processes. This is well encapsulated as the ".. development of sustainable transportation systems starts with the organization of urban space. The main objective is to reduce the need for mobility by reducing the number of trips and length of travel distance"[15]

Thus, planning for sustainable transport solutions requires a broad approach that considers both long run (intergenerational) and spatial aspects that, in addition to the institutional components essential to ensure delivery, encompass Social and (not or) Economic and (not or) Environmental considerations as fundamental to any planning process.

8.2.1 Sustainable Transport Focus Areas

As shown in Figure 8-1 three focus areas are key to developing a sustainable transport system. These are the "Avoid Shift Improve" (ASI) approach which reflect the opportunities for socio-cultural, infrastructural and technological changes:

- Avoid – is the reduction / removal of the need to travel based on changing accessibility and proximity through changes in urban form and work practices;
- Shift – as utilising less carbon-intensive modes – that is, for personal mobility from private vehicles and flight to walking and cycling, public transport, and shared mobility, and for freight from vehicles and aircraft to water-based freight, electrified road-rail freight, pipelines and cargo bikes for first/last-mile collections and deliveries. Less car dependent infrastructure and travel demand initiatives are considered key here, and
- Improve - Improving vehicle design and energy efficiency and developing clean energy sources for different types of freight and passenger vehicles. The use of hydrogen as a fuel source is considered with a caveat of the challenges facing its effective commercialisation. This is the focus of the Green Economy approaches.

[15] Planning and Design for Sustainable Urban Mobility; Global Report on Human Settlements; 2013.

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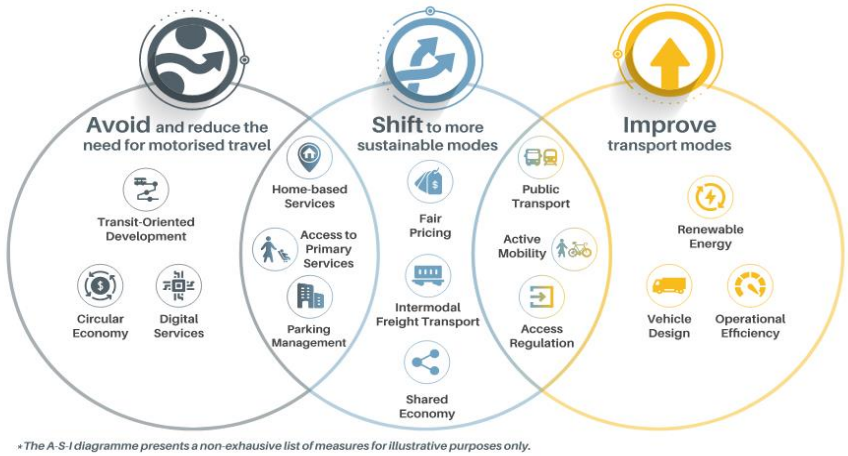


Figure 8-1: SLoCAT[16] depiction of the ASI Approach

A further consideration is the design of transport systems to be resilient to the effects of climate change including extreme weather events whilst reducing the Carbon Footprint of the construction processes and long run environmental impacts.

8.2.2 Sustainable Transport Strategy

Although incorporated into each of the other transport themes certain strategies provide the basis for an overarching approach to shifting towards a sustainable transport system.

- Mixed use densification - the primary departure point for transport to become sustainable in Gauteng is the need to rapidly change the approach to urban and land use planning and development to higher density mixed use form;
- Incorporate ASI - within the transport sector itself each of the aspects of transport should consider the opportunities to avoid and shift the need to and mode of travel or transport in addition to considering technological improvements where this is not possible or immediately feasible. This will require that transport planning becomes people centric and considers the needs and movement of people rather than vehicles;
    - Avoid – Reducing need to travel will require:
        - changed and integrated urban form;
        - Travel demand management including changing work practices, and

[16] https://slocat.net/asi/

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- Supply chain management integration.

- Shift – changing the mode of travel to lower GHG emissions generation per person per kilometre travelled and more affordable modes will require:
  - Changed and integrated urban form including accessible, safe and secure routes for active mobility;
  - The rapid roll out of integrated and accessible public transport systems;
  - Shifting freight from road to rail or to pipelines and changing the first / last mile mode of collection and delivery, and
  - Developing SMART systems to enable shifts, especially TDM approaches.
- Improve – the technology improvements and changes of energy sources and propulsion systems will require:
  - Alternate fuels – clean fuel substitution (biomass, hydrogen etc.) for fossil fuels, and
  - Clean or renewable energy – Electricity and possibly hydrogen as energy sources and the systems required to enable and support these.

- Climate Change Risks – incorporate climate resilient design into all new infrastructure and systems;
- Full Life Cycle Assessments – cost benefit analyses to incorporate social and environmental benefits (including biodiversity impacts) and costs;
- Awareness raising – enhance awareness of the need for and benefits of sustainable transport in all stakeholder groups and the requirement to include Universal Design in all planning and development, and
- Funding – consideration of accessing climate related funding through international agreements. This will require specific undertakings and qualifying criteria.

8.2.3 Sustainable Transport Initiatives and Projects of Provincial Significance

- Develop transport corridor cross sections to incorporate active mobility and public transport / high occupancy vehicle (HOV) lanes. This should also include intersections and crossings for pedestrians and cyclists;
- Building on existing capacity develop and implement an emissions reduction and air quality monitoring programme specifically related to vehicle emissions;
- Develop a set of key principles to inform the basis of the approach to sustainable transport at provincial and municipal / metropolitan level. This should include the requirement for the whole systems approach for universal design as well as the need for full life cycle assessments;

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- A pilot be considered around Green Hydrogen and/or electric propulsion for minibus taxi vehicles, including the necessary infrastructure at one or more ranks,
- A framework proposal be developed and Green funding applications be done to fund such a pilot.
- Conduct a review of possible e-charging facilities on provincial roads and initiate pilot projects for both private vehicle charging and at selected public transport interchanges, and
- Develop a communications and awareness raising campaign – including a safety campaign linked to the Decade of Road Safety. Develop and implement a campaign to raise awareness with all stakeholder groupings of the need for and approach to sustainable transport.

8.2.4 Key Sustainable Transport Aspects to be addressed in ITPs

ITPs will incorporate the ASI approach and all the aspects that are required to deliver on this including mixed use densification, ensuring that active mobility and public transport underpin all transport planning and development, the rapid rollout of public transport, supporting TDM programmes and incorporating universal design into all planning and development.

Further requirements of ITPs should be the inclusion of full life cycle assessments incorporating social, environmental and economic aspects in planning and development and the incorporation of climate resilient infrastructure that considers aspects broader than just transport resilience such as Sustainable Urban Drainage Systems (SuDS).

It is also recommended that all ITPs have separate sections that cover Sustainable Transport and Universal Design.

8.3 NMT Focus Areas

8.3.1 NMT Strategy

As NMT remains a primary mode of travel for the majority of residents and is fundamental to sustainable transport, cycling and walking should be included as a key departure point for all transport and urban and land use planning and development.

Premised on the sustainable transport goals of all having ready access to public transport, an NMT policy and strategy should be developed for Gauteng. The policy should be based on the complete streets approach and should provide guidance for all municipalities requiring that each prepare an NMT or Active Mobility Strategy incorporating Universal Access and considers the safety of vulnerable users as essential.

Cycle corridors along routes of provincial significance should be identified and established. This will form part of the redesign of cross sections identified as part of the infrastructure and sustainable transport aspects of the PLTF.

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NMT should be promoted as a preferred and accepted mode of transport within the broader sustainable transport awareness campaign.

In order to enable higher levels of cycling bicycle distributions linked to the NDoT Shova Kalula and Department of Education Learner Transport programmes should be established.

Funding of NMT will require prioritisation and could be linked to Climate Change funding as a means of augmentation.

8.3.2 NMT Initiatives and Projects of Provincial Significance

Most NMT projects are linked to sustainable transport approaches.

- Develop the provincial NMT/Active Mobility policy ensuring that UA is incorporated and that safety and security are considered through the complete streets concept;
- Ensure that NMT is incorporated in the cross-section development for provincial road corridors;
- Investigate routes for cycling corridors (“Cycle Highways”) on roads of provincial significance;
- Ensure an NMT safety campaign is incorporated in the sustainable transport awareness programme, and
- Investigate and develop a bicycle distribution programme.

8.3.3 Key NMT Aspects to be addressed in ITPs

All ITPs should have an NMT strategy that considers the following as a minimum:

- The requirement that NMT be a fundamental departure point for all transport and urban planning and development;
- The accessibility, safety and comfort of all users especially the elderly, women and children and physically disadvantaged persons;
- The incorporation of NMT into all urban (re)developments;
- Using complete streets (including Universal Design) as the departure point for all designs;
- The establishment of adequate capacity to support the growth of NMT as a key mode of transport, and
- The development of a suitable monitoring and evaluation programme for NMT.

8.4 Conclusion

The majority of previous plans have identified both sustainable transport and NMT as important aspects of planning and delivery and yet they appear to be given little priority thus far.

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It is suggested that a set of overarching principles that can then be used as measures of success be established for Sustainable Transport. These can then be used as a metric for delivery on the programmes required.

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9 TRANSPORT INFRASTRUCTURE STRATEGY

9.1 Introduction

South Africa, and Gauteng Province, faces many developmental obstacles, including infrastructure bottlenecks, and economic and social challenges such as unemployment, poverty and inequality. Economic infrastructure, including the road network, is one of the key levers for economic growth. Road infrastructure has the potential to deliver a high economic return on investment. Road transportation is an important industry in the economy, yet various challenges inhibit the sector's contribution to South Africa's economic and social developmental objectives. One such challenge is the implementation of road infrastructure projects, where increased road use, low investment, and poor maintenance have led to higher transportation costs and transport bottlenecks, such as traffic congestion.

The effective design, construction and maintenance of roads is crucial to a well-functioning and prosperous modern economy. Roads also play a role in meeting societal needs for connection and mobility in ever-expanding human settlements, and their construction and on-going maintenance provide opportunities to address social challenges like unemployment. With mounting concerns over climate change and air pollution, the role of roads needs to shift away from serving predominantly private vehicles and road-based freight, toward supporting more integrated mobility systems centred on walking, cycling and public transport.

Road users are reliant on a safe and efficient road network. Roads must be developed and maintained also taking into consideration the marginalisation of rural communities due to the state of access roads. Public transport users using buses and taxis are also reliant on a sound road network and public transport services require roads to be developed and maintained in such a manner to further the use of public transport. Freight is a major contributor to the economy and also requires an efficient transport system.

Road Authorities in South Africa have the obligation to provide a reliable, effective, efficient and integrated transport system that supports the sustainable economic and social development objectives of the country. All Road Authorities also have an obligation to plan, design, construct and maintain the road network, to protect the public investment in the road infrastructure, to ensure the continued functionality of the transportation system, and to promote the safety of traffic on the road network

9.2 Deficiencies in the Road Transport System

Problem areas and issues have been identified through the following processes:

- Comprehensive literature review;
- Knowledge and experience from the industry;
- Input from engagement with stakeholders, and
- Feedback from public consultation workshops.

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The issues and problems are:

- Transport infrastructure provision and land use integration;
- Transport infrastructure provision backlog;
- Protection and development of the Provincial Strategic Road Network. Continued pressure to reduce and downscale allowance for future Right of Way corridors and/or even to scrap as a whole;
- Poor levels of maintenance and maintenance backlogs;
- Base data and information used for maintenance priorities are dated;
- "Road reserves" are private transport (car) orientated. Should be considered as fence-to-fence space shared by NMT, public transport and utilities;
- The working from home and use of technology to enable this during the peak COVID-19 period, demonstrated that the demand for travel can be reduced and shifted to off-peak periods. This must be encouraged and embraced;
- Demand for travel impacts negatively on the environment;
- Illegal invasion of road reserves;
- Design and plan for passengers with special needs: Apply universal access design principles;
- Travel demand modelling often uses dated information due to budgetary constraints;
- Poor road safety levels and adherence to traffic laws, and
- Authorities face problems with understaffing and technical skills shortages, as well as the lack of integration among authorities or departments within the same authority.

9.3 Road Transport Infrastructure Strategy

9.3.1 Road Transport Infrastructure Development Focus Areas

For the development of the strategy, five (5) focus areas have been identified as listed below and illustrated in Figure 9-1.

- Planning considerations;
- Design aspects;
- Construction and Implementation;
- Maintenance, and
- Elements dealing with systems and software as well as those transversal aspects which cut across.

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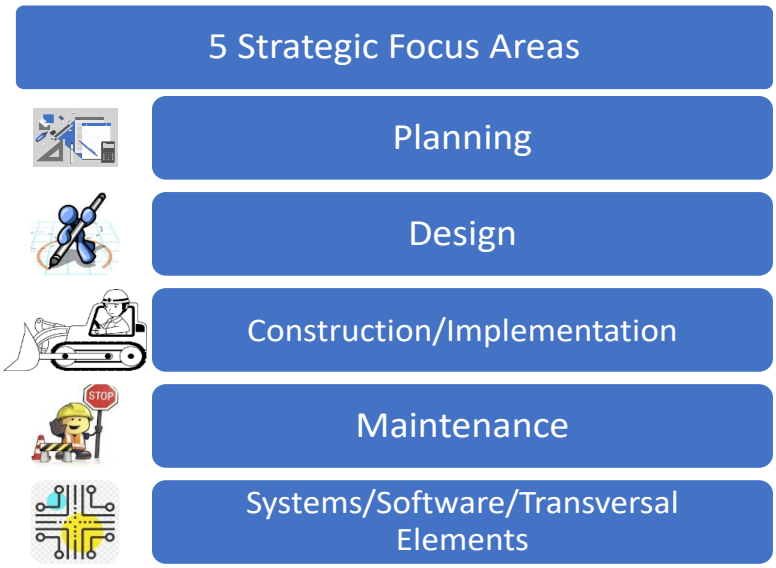


Figure 9-1: Strategy Development Focus Areas

9.3.2 Road Transport Infrastructure Strategies

9.3.2.1 Planning

It is estimated that during this century over half of the world's population will be living in cities. To make cities environmentally, economically and socially sustainable and liveable is one of today's great challenges. To ensure sustainable urban mobility in Gauteng, a range of inter-related measures designed to satisfy the mobility needs of residents and business requires implementation. Careful and responsible planning is required for this.

- Protection and Development of Gauteng (Provincial) Strategic Road Network

  Transport infrastructure is the backbone of the economy. To keep pace and allow for growth, the planned transport network developed over many years must be protected for the future. The Gauteng Strategic Road Network (GSRN) planning is in place and provides structure to the development of the Province. The Strategic Road Network Plan has to a large extent been taken into account in the road master planning undertaken by SANRAL and the Metropolitan and District/Local Municipalities. There is a general cohesion with regard to road planning between the three spheres of Government. Available road reserves may be utilised differently than originally anticipated with emphasis on integrated transport corridors where public transport and non-motorised transport play a more important role than private cars alone.

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The Gauteng (Provincial) Strategic Road Network Plan must be protected and continuously be updated and reviewed to respond to spatial development initiatives and economic development pressures. The protection of the "right of Way" reserves should be secured and developed through the ITP, SDF and GTIA processes. Movement towards creating/linking a priority for implementation of the planned routes must be developed.

- Protect and Maintain Mobility also considering Accessibility

  Mobility is the ease with which traffic can move at relatively high speeds with the minimum of interruptions or delay. Access provides entry to the road network through driveways, intersections or interchanges. Any access, intersection, or associated activity, even if properly designed, will affect the mobility requirement because the act of turning into or out of a driveway or intersection is a low-speed manoeuvre and crossing a road requires interruption or breaks in traffic flow. If not well managed, unregulated access results in unsafe travel conditions and delays for both the users of the access and passing traffic.

  High levels of both mobility and access are unfortunately not compatible and cannot be provided in the same road space. Greater numbers of access points impair mobility, and mobility creates safety hazards for both vehicle and pedestrian access users. Hence to safely achieve accessibility, it is necessary to dedicate some parts of the road network primarily to mobility and other parts primarily to access and related activities.

  If high levels of both mobility and access could be achieved on the same road, there would be no need to classify roads according to function for access management purposes. However, in practice and without exception, increasing the number of accesses reduces operating speed and increases interruptions along a road, which is detrimental to the function of mobility. The activities associated with such accesses further aggravate this disruption.

  If fast moving (high mobility) traffic is mixed with high levels of access and pedestrian traffic, unsafe conditions inevitably result. Collisions become a regular occurrence. Due to the relatively high speed of mobility routes, these collisions, particularly those involving pedestrians, are serious and often fatal. Having routes which try to serve both functions equally is counterproductive and dangerous.

  It is of paramount importance and central to the entire safety and efficiency of the road network therefore that the functions of mobility and access are not confused and not mixed. Clearly high levels of both mobility and access activities on the same road section cannot be allowed.

  Hence the need for a functional road classification according to which every section of the entire road network must be split into one of two groups, according to whether it will primarily serve a mobility or an access/activity function. By providing a suitable balance between mobility roads and access/activity streets, it is possible to provide a high level of connectivity, while maintaining a high level of road safety, accessibility and mobility along critical corridors.

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Functional road classification refers to the process of classifying roads according to the characteristics of traffic service and the function that they are intended to provide. This determines the significance of roads within a network. Roads are assigned to a Class according to the relative amounts of traffic mobility they provide on the one hand, and the amount of land access they provide on the other.

The classification systems, with class numbering and name descriptions have developed over time. Currently the commonly used system definitions are as defined in The Road Infrastructure Strategic Framework of South Africa (RISFSA) (DOT, 2006). The South African Road Classification and Access Management Manual (TRH 26) (COTO, August 2012) uses a slightly different terminology. Table 9-1 contains the road classification definition from both documents and how they correlate to each other.

Table 9-1: Road Classification Definitions

Road Class Number	RIFSA Description	TRH26 Description	Function
Class 1	Primary Distributor	Principal Arterial	Mobility
Class 2	Regional Distributor	Major Arterial	
Class 3	District Distributor	Minor Arterial	
Class 4	District Collector	Collector Street	Access/Activity
Class 5	Access Road	Local Street	
Class 6	Non-motorised Access Way	Walkway	

Further definitions for the descriptions are:

- **Distributor**. Long distance arterials which distribute traffic over wide areas. Although all roads have a “distribution function”, the term “distributor” is reserved for Class 1 to 3 roads and is often preferred to the word arterial in rural areas.
- **Arterial.** Any Class 1, 2 or 3 vehicle priority, access managed, mobility routes whose major function is to provide for movement of person and goods vehicles between cities, towns or urban districts with as few restrictions as possible.
- **Collector.** A road which collects (or distributes) traffic in a local district. Collectors should not carry traffic passing through the district with destinations elsewhere but can serve as activity spines and streets. Although all roads have a “collection function”, the term “collector” is reserved for Class 4 roads.

Figure 9-2 illustrates the classification versus the functionality diagrammatically.

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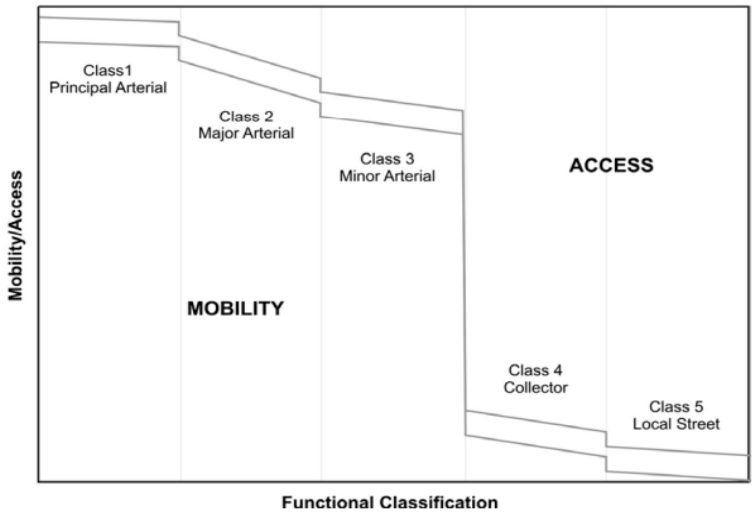


Figure 9-2: Classification versus Functionality

Because the main focus of the GDRT is related to the planning, design, development, management and maintenance of the Provincial Strategic Road Network, and that this network mainly consists of Classes 1, 2 and 3 roads, the emphasis is more on the protection of mobility. This must be achieved by applying already developed guides, norms, standards and manuals.

- Road reserves are transportation corridors with full fence-to-fence utilisation, allowing for a variety of modes of transport and utilities.

  Road reserves are to be utilised differently than in the past with emphasis on integrated transport corridors where public transport and non-motorised transport play a bigger role. Also, the utilisation of the reserves to accommodate other utilities like engineering services and data/communication infrastructure through a way-leave procedure.

  For this to be realised, a fresh look will be required in terms of the spaces allowed in the cross-sections for a variety of uses and reserve widths. Depending on the functional classification of a corridor, the determination must be made to the extent and physical position in the reserve for allowance of utilities, non-motorised transport use, HOV and dedicated public transport lanes, freight traffic and other private transport vehicles.

  The current set of standard cross-sections in the Provincial Road Design Manual will have to be reviewed, adjusted and realigned to allow for the aspects and uses stipulated above.

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In doing so, the concept of Complete Streets can be used to reimagine the use of spaces in the reserves.

Complete Streets are streets designed and operated to enable safe use and support mobility for all users. Those include people of all ages and abilities, regardless of whether they are travelling as drivers, pedestrians, cyclists, or public transportation riders. The concept of Complete Streets encompasses many approaches to planning, designing, and operating roadways and rights of way with all users in mind to make the transportation network safer and more efficient.

Complete Streets approaches vary based on community and corridor context. They may address a wide range of elements, such as sidewalks, bicycle lanes, bus lanes, public transportation stops, crossing opportunities, median islands, accessible pedestrian signals, curb extensions, modified vehicle travel lanes, streetscape, and landscape treatments. Research has indicated that Complete Streets reduce motor vehicle-related crashes and pedestrian risk, as well as cyclist risk when well-designed bicycle-specific infrastructure is included. They can promote walking and cycling by providing safer places to achieve physical activity through transportation.

- Facilitate mobility continuity across municipal and provincial boundaries

  The reality is that, more often than not, when you travel and you cross one municipality to another and/or one province to another, the extent and condition of the same piece of infrastructure substantial changes. Also applicable is public transport services where often transfers are forced, and the quality and extent of the services are different.

  The mobility continuity must be maintained, not mattering if boundaries are crossed. Province must play a coordination role with the Municipalities in order to facilitate this outcome.

- Transport Demand Modelling by making use of Big Data (Floating Car Data)

  The current trend and practice are to optimise the use of existing- and opensource available data in the development of the transportation models. Models are equipped to incorporate Big Data sources (like floating car movement data from cell phones and tracking devices, GTFS, e-Ticketing and other sources) into transport models.

  Floating Car Data (or FCD) have many different applications in transport modelling. FCD can be used to estimate the gravitational parameters for the distribution functions in transport demand models.

  The start and end point of the FCD probes can be intersected onto the origin and destination zones during a selected time period. The resulting matrix is then classified according to travel distance (or other impedance) in order to calculate the gravitational parameters for the trip distribution function.

  The FCD probe track can also be map matched onto the transport supply model. The map matching function is a standard GIS function built into these models. Regression models can then be used to compare the number of probes that were

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map matched with a reliable count (like the SANRAL Continuous Traffic Observation counts) to estimate flows on portions of the supply network where there are no counts available.

It is also important to validate that the transport model can accurately reflect path shares (path choice proportions). Probe tracks travelling from specific traffic analysis zones can now be selected and the resulting path shares could be used to calibrate the path choice models.

FCD can also be used to estimate the trip chain. It is often difficult to calculate statistically significant trip chains using the household survey data. Now specific places of work or education can be highlighted, and the trip-chains can be traced to the final destinations in the selected modelled time period.

FCD data has so many other transport modelling uses and applications These uses include:

- Estimating transit lines from public transport facilities;
- Estimating origin-destination matrices;
- Estimating traffic fundamental diagram parameters for models;
- Estimating volume delay functions for static assignment methods, and
- Calculating travel times.

Historically, transit assignments in strategic models were main mode matrix based. The disadvantages of these types of models are that it is difficult for the models to accurately replicate the combination of access and egress modes that are used by a person in the model.

In the new modelling approach, the choice of the combination of modes must be replicated in the route assignment itself. The public transport assignment must then consider the possible combination of modes, including associated utilities (number of transfers, fares, capacity of service and many more) in the assignment and loading of passengers according to several possible discreet choice models.

The public transport assignment must have the ability to assign passenger demand to paths and services using *Logit* and other more advanced discreet choice models.

The majority of the strategic models developed in South Africa are still based on the classical four step transport demand model principles that were originally proposed in the 1960s. Internationally, more and more transport demand models have been developed using improved methodologies, like tour-based, or agent-based micro demand models, to address some of the shortcomings of the classical four step demand models.

The Province should adopt the more internationally recognised modelling techniques in the development of their new transport demand model.

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9.3.2.2 Design

Strategies related to design are:

- Maintain and Improve Road Design Standards

  The current road design standards used by GDRT were developed over many years and are based on international best practice. The application thereof is also a contributing factor to the success of the mobility achieved on the general network and an enabler with the assisting of economic growth in Gauteng. However, as experienced in the recent past, the standards are not without flaws and need on-going review and updating with particular reference to the cross-section and the utilisation of the fence-to-fence space.

  Concerns have been raised regarding the road reserves that have been protected over the years and whether the width of these are able to support roads/corridors that effectively support public transport and associated facilities, non-motorised transport and space allocation for other utilities.

  Although standard cross- sections for roads supporting public transport are available in the Provincial Road design manual, these have been used in isolated cases for road planning purposes. These cross-sections would require re-evaluation in the light of the transport expected on the roads in future and should be made applicable to the status of the road in terms of the road hierarchy. Once confirmed and/or remodelled, this cross section would be used in establishing whether the strategic road network to be developed can support this strategic requirement placed upon it.

  The design standards are to embrace Complete Streets and modal hierarchy principles with specific reference to adequately accommodate for pedestrians.

- Ensure and apply Universal Access Design principles

  'Among the yardsticks by which to measure a society's respect for human rights, to evaluate the level of its maturity and its generosity of spirit, is by looking at the status that it accords to those members of society who are most vulnerable, disabled people, the senior citizens and its children.'

  Republic of South Africa, (1997). White Paper on an Integrated National Disability Strategy.

  The concept of universal design and access impacts on the lives of all citizens, and in particular on the 20% of the population which falls in the first and last standard deviation of the 'norm' bell curve graph. These citizens often find themselves marginalised and excluded from their communities and from opportunities if the design of the environment and of services is not inclusive of age, gender, cultural and disability differentiation through the normal human life cycle.

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The GDRT has the obligation to strive to see that all transport related activities and infrastructure that are designed and implemented comply with the approved Universal Access Design principles.

9.3.2.3 Implementation/Construction

Strategies related to construction are:

- Continue with multi-year programme for the construction of new roads and upgrade of existing roads guided by a review of the existing and planned road network.

  The GDRT, in terms of the Constitution, has a mandate to continue with multi-year programmes for the construction of new roads and upgrade of existing roads guided by a review of the existing and planned road network.

- **Partnership with Municipalities on construction of major arterials and other agreed roads especially in disadvantaged areas**

  Section 154 of the Constitution states that:

  "…national government and provincial governments MUST support and strengthen the capacity of municipalities to manage their own affairs, to exercise their powers and to perform their functions…"

  A specific area in which the GDRT can support and join efforts with the municipalities relates to the provision of arterial roads especially located near or in disadvantaged areas.

  Memoranda of agreement can be prepared to facilitate this strategy.

- Maintain High Quality Control Practices in Construction

  Over the years the road network mainly withstood the demands required from it and that was not only because of the good design standard but also due to the assurance of high-quality construction. The GDRT will maintain these standards to ensure that the transport infrastructure can reach its design life expectancy.

- Support Contractor Development Programmes

  The GDRT is currently busy with the implementation of the Contractor Development Programme as per the applicable Preferential Procurement Regulations whereby all projects above R30 million and feasible to implement should sub-contract thirty percent (30%) of the contract value of projects implemented by the GDRT. Furthermore, the GDRT is driven towards increased investment in the economic development of all Small, Medium or Micro Enterprises (SMMEs) with focus on SMMEs emanating from townships, deteriorating areas and peri-urban areas. The GDRT aims to redirect discretionary procurement spend of at least thirty percent (30%) towards township businesses with the added commitment of ensuring that all valid goods and services procured from SMME's are paid for within a fifteen (15) day period.

  These programmes and initiatives must continue.

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9.3.2.4 Maintenance

Maintenance strategies are:

- Maintain Provincial Road infrastructure to the Highest Standards acceptable

  The GDRT has the obligation to maintain its transport infrastructure. The Road Infrastructure Strategic Framework for South Africa (RISFSA), October 2006, provided the framework for the management of roads infrastructure. The visual assessments are carried out in accordance with TMH 9: Manual for Visual Assessment of Road Pavements, Part B: Flexible Pavements, Committee Draft Final, May 2016. From this the VCI is determined.

  The draft Roads Policy of South Africa also states that: "The VCI of all provincial and national roads should be within international norms"

  The GDRT therefore should plan and execute maintenance activities that ensure that the highest road infrastructure conditions are met.

  The GDRT should therefore continue with multi-year maintenance programmes to protect infrastructure safety.

  The above is also applicable to all Municipalities which must adhere to these requirements.

- **Partnership with municipalities on maintenance of major arterials and other identified roads especially in disadvantaged areas**

  The MEC for Transport of Gauteng, has embarked through his Smart Mobility initiatives, the drive to coordinate maintenance activities in the road reserves with municipalities in Gauteng. As already indicated, the mandate has been created in the Constitution to do this.

  Memoranda of agreement can be prepared between GDRT and the municipalities to facilitate this strategy.

- Support contractor development programmes

  As already indicated in the Construction section, these contractor support initiatives and programmes should continue. This is also applicable in the maintenance sector.

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9.3.2.5 Operations/Systems/Tools

This section deals with aspects of cross-cutting nature, and systems and tools required.

- Pavement Management Systems

  As already indicated, pavement visual assessment must be conducted. Results of these are captured in the Pavement Management System (PMS) from where actions are defined. It is a requirement that:

  - Pavement Visual Assessments: To be carried out at the following frequencies:
    - Road Classes 1-3: Every 2 years, and
    - Road Classes 4-5: Every 3 years.
  - Structures Visual Assessments: To be carried out every 5 years

- Active physical protection of road reserves from illegal invasion and developments

  Illegal invasions of open areas have become a real problem not only nationally but also specifically within Gauteng. This is also occurring within existing road reserves of already built roads and reserves protected for future transport infrastructure. Many projects by the GDRT are detailed and/or can't be completed due to these invasions. A considerable amount of effort and money has been spent to clear these areas and relocate the invaders.

  The GDRT must concentrate and focus effort on protection of land earmarked for the provision of transport infrastructure.

- Travel Demand Management
  - Use technology to reduce the demand for travel, and
  - Land Use Planning and Transport integration: Concentrate on Infill and densification: Reduce demand for travel.

  Without significant interventions in the provision of transport infrastructure and services, the on-going growth in population and expected long term growth in the economy, coupled with rising motorisation, will put a significant strain on the Province's transport system. In addition to investing into the supply side of the transport system, it will be very critical to manage demand through focussed Travel Demand Management (TDM) interventions.

  Travel Demand Management (TDM) is a strategy to reduce demand for single occupancy vehicle use in the transport system. As a regional strategy to improve transportation system performance, TDM can reduce congestion and travel times, reduce emissions and improve air quality; offer alternative / sustainable modes of travel to access jobs, schools, and other opportunities, improve Gauteng residents' health and fitness; create a liveable City Region; and improve transport affordability.

  TDM is a system management strategy. The focus of TDM techniques is on supporting travel choices and minimising the need to travel. The myriad of

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available TDM strategies typically have a modest impact individually, but the cumulative impact of a comprehensive TDM programme can be significant. The development of the TDM approach Should be done in a context of the proposed A-S-I framework, which works in three tiers.

- Avoid – reducing the need to travel/transport goods i.e., integration with land use and urban development, working from home, allowing flexi-hours so that travel can shift to off-peak periods;
- Shift – shifting modes for both people and goods, i.e., modal change / shared travel, and
- Improve – using renewable / green energy fuels and improving system efficiencies.

- Activate/Establishment of Inter-governmental Coordination Structures for Transport Planning

  A dedicated effort should be made to activate and/or to re-establishment inter-governmental coordination structures for transport planning where Province and the municipalities can coordinate efforts. This will also enhance integrated transport planning.

- Traffic Safety

  "South Africa's Road traffic fatality rate is among the highest in the world. In 2018, 12 921 fatalities were recorded, with pedestrians and passengers the bulk of victims. In Gauteng, 2398 fatalities were recorded over the same period, with more than 50% of this total recorded over weekends and at night. Private Vehicles were involved in 46% of fatalities, Light Delivery Vehicles 20% and MBT 8%. Human error and factors leading to fatalities were recorded in 75% of incidents." This is according to *Growing Gauteng Together Through Smart Mobility, 2030.*

  The National Road Safety Strategy (NRSS) which was developed for the period of 2016-2030 was a product of both national and international policy on road safety. The purpose of the NRSS is to enable the reduction of fatalities and crashes on the country's roads through effective action by all South Africans led by the RTMC. The NRSS vision is for "Safe and Secure Roads" and aims to achieve a reduction in road fatalities by 50% from the 2010 baseline, by 2030. To achieve this the NRSS recognises four areas which require critical intervention namely:

  - Road User Behaviour;
  - Effective Leadership, Management and Coordination;
  - Data and Knowledge Management, and
  - Road Infrastructure and Design.

  The responsibility of implementation of the NRSS is shared across several key road safety departments namely Transport, Health and Justice.

  The RTMC, as the lead agency, must coordinate, monitor and ensure the implementation of road safety programmes.

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The GDRT are to:

- Support RMTC to achieve reduction in fatalities and accidents, and
- Together with RTMC and other authorities, coordinate and implement traffic safety strategies, initiatives and programmes.

9.4 Provincial Transport Infrastructure Projects and Initiatives

The main source for the determination of the provincial infrastructure projects and initiatives was the GDRT's annual performance plan supported by the MTEF.

The following projects Transport Planning, Route Determination, Infrastructure Design, Construction and Maintenance projects were identified:

9.4.1 Transport Planning

Transport planning projects are to:

- Review of the ITMP25 for Gauteng;
- Household Travel Survey to measure the impact of COVID-19 on mobility patterns;
- Gauteng Integrated Smart City Modelling Centre (GISCMC) for Road, Rail and Transport Planning (Maintain functionality);
- Emissions Study to Measure, Monitor and Certify exact emission contribution of Transport in Gauteng;
- Feasibility of BRT Integration Between Cities of Ekurhuleni and Joburg, and
- Integrated Transport Services Centre.

9.4.2 Route Determination Projects

Table 9-2 provides a list of route determination projects.

Table 9-2: Route Determination Projects

Route	Section	Municipality	Importance
K27	K46 to K73	CoJ/CoT	Supports the expansion of the GSRN to connect new nodes and to improve efficiencies in the movement of people and goods. Supports the extension of the East west link to Steyn City (links K46 2nd phase).
K215	K33 to K31	CoJ	Supports Lanseria Mega Project and **Lanseria Airport** expansion which is part of the **Western Corridor** development.
K54	PWV9 to K73	CoT	East-west expansion of the GSRN which supports Olievenhoutbosch residential development expansion. East-west link Class 2 link & support function for N14.

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Route	Section	Municipality	Importance
K147	K40 to PWV19	CoT	Expanding the GSRN to connect new nodes. New north-south link and will support the development of the **Tshwane's Eastern corridor developments including Mooikloof Mega Housing** project.
K44	K29 to K27	CoT	Supports access, mobility and new node developments including the Lanseria Smart City and the development around the Lanseria Airport Masterplan.
PWV5	P157-2 to K62	CoE	Supports the further development of the Class 1 (freeway) network, which forms the backbone of road-based freight mobility in the Province. High mobility East-west links to **Sentrarand Freight Hub.**
K109	K220 to K60 (K101?)	CoE	Expanding the GSRN to connect new nodes. Support north-south mobility for **R21 eastern development corridor**.
K27	R21 to K62	CoE	Expanding the GSRN to connect new nodes. Extension of the east-west link to support the **Sentrarand Freight Hub** and the **R21 eastern development corridor**.
K105	K66 to P91-1	CoE	Supports the development of the **Eastern Corridor** which includes Aerotropolis and associated public transport routes and planned intermodal facilities.
K86	K88 to K157	CoE	Supports the expansion of the **ORTIA Masterplan and Precinct** which is in the **Eastern Corridor and part of the Aerotropolis.**
K113 (East)	Aitken Road to K113W (Longmeadow)	CoJ	Supports new node development **(Central Development Corridor)** and links high density residential development to Long Meadow Commercial and industrial developments. Linksfield Mega Project and possible link with CoJ BRT network.
K232	N3-12 to K58	CoJ	Supports Modderfontein & Long Meadow Commercial and Industrial node developments (**Central Development Corridor**).
K115	PWV3 to K58	CoJ	Supports Modderfontein & Long Meadow Commercial and Industrial node developments (**Central Development Corridor**).
K118/K116	K109 to PWV17	CoE	Supports the expansion of the GSRN to connect new nodes and to improve efficiencies in the movement of people and goods.
K170	D2271 to K180	SDM	Supports the expansion of the GSRN to connect new nodes and to improve efficiencies in the movement of people and goods.

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Route	Section	Municipality	Importance
			Supports formalised informal settlement and facilitates link to R59.
K178	PWV1 to K13	WRDM	Supports the expansion of the GSRN to connect new nodes and to improve efficiencies in the movement of people and goods.
K176	K9 to N1?	WRDM	Supports the expansion of the GSRN to connect new nodes and to improve efficiencies in the movement of people and goods.
K190	K188 to K174	SDM	Supports the Southern Corridor development, east-west link to support **Vaal River developments** and expansion of the GSRN to connect new nodes and to improve efficiencies in the movement of people and goods.
K31	K29 to K33	WRDM	Support **Lanseria Airport and Greater Lanseria Masterplan**
PWV8/K72 proposed expressway	K31 to PWV1	WRDM	Supports a need a high mobility east-west link to support the existing N14 in the south of the Cradle of Mankind Heritage Site.

9.4.3 Infrastructure Design projects

Infrastructure design projects are:

- New Freeway: PWV 15

  PWV15 is a 35.5km dual carriageway, located East of the O R Tambo International Airport in CoE. The road will provide a link between Pomona, OR Tambo International airport, Green Reef development and the Tambo Springs Freight Hub. PWV15 will reduce congestion from Geldenhuys to Gillooly's. It will also unlock economic opportunities and allow free flow of freight from the N3 to the N1 freeways.

  During the MTEF the GDRT will be implementing Phase 1 of PWV15. Phase 1 is the link from the R21 (in proximity of the Pomona Road) across the N12 and the K94 (North Rand Rd) and ends 600m South of the PWV15/K94 interchange (10.9km) approximately 100m before the K94 road-over-road bridge.

- Road K111 Phase 1 is a North - South Corridor portion of K111 alignment

  Road K111 Phase 1 is a North - South Corridor portion of K111 alignment. The K111 alignment is planned to provide the link between the areas of Nellmapius and Midrand.

- K43 (P219) from K142 to K122 approximately 6.24 km

  Road K43 Phase 1 is a North - South Corridor portion of K43 alignment. The K43 alignment is planned to provide the link between the areas of Lenasia, Eldorado Park and Walter Sisulu Square (Kliptown).

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- R59 Pedestrian Bridge

  Pedestrian Bridge over R59 is part of Premier's Ntirhisano projects. The project is aimed at alleviating deadly and fatal pedestrian accidents along the R59 in the Meyerton area.

- D2204: Construction of road D2204 over rail

  The existing level crossing at D2204 commences from road D1182 over the Lenasia to Vereeniging railway line about 250 metres North of the Lenasia station and terminates on Lenasia Avenue in Lenasia. The crossing was closed at the end of October 2006 by Metrorail due to fatalities, serious injuries and broken booms at the crossing.

- P241-1 from K15 (R558) to K11 (R28) Bekkersdal approximately 19km

  Road P241 /D405 (R554) Lenasia to Swartkoppies Ave Alberton (19km) is planned for Light Rehabilitation. It is located in the West - East Corridor linking the Mogale City and the CoE areas.

- K217 from K8 (R566) to K4 (Ruth First Road) Phase 1

  K217 is part of the planned roads in the Strategic Road Network linking the N4 in the South to P230/1 in the North, linking the Rosslyn and Soshanguve areas. The approximate length is 11km. This road is planned for construction to support the proposed Rosslyn Autocity.

- D2150 from P73/1 (Golden Highway) and Link Road Transport Corridor

  Road D2150 is a West - East Corridor linking the areas of Palm Springs, Orange Farm and Grasmere. The road is planned for capacity improvements to alleviate traffic congestion, pollution and road accidents in the area. Project forms part of the Premier's Ntirhisano Programme.

- P66/1 / (K71 Phase 3) – between road P71/1 and road D795) Links Kyalami in Midrand and Noordwyk R562

  The road P66/1 (K71) is located in the North – South Corridor in Midrand linking the areas of Woodmead, Midrand and Pretoria. The road is also an alternative road between Johannesburg and Pretoria.

The following design project are ongoing in the City of Tshwane area which involves the private sector:

- K34 Graham Road section, K69 to (Basic planning report = preliminary design)
- Garsfontein Road (De Villebois to Impala Road) access to Eastern most township in Mooikloof Mega City /or beyond to PWV 1) – linked to and necessary for development of the Mooikloof Mega City, a proclaimed presidential project.
- K97 northward from the current interchange on the N4 Platinum Toll. This link is crucial for better access to the Wonderboom Airport to the south of N4, and the Pyramid Freight Hub being developed, to the north of the N4.

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- Finalization N14 ramp completion – to Rooihuiskraal Road / was part of N14 major rehabilitation project, and element delayed due to wayleave/protection of Rand Water pipeline.

9.4.4 Construction

Construction Projects are:

- Integrating Non-Motorised Transport (NMT)– providing dedicated cycle lanes and walkways

  Road infrastructure design ensures the integration of NMT across the Province and allowing for seamless travel. The design criteria provide for pedestrians and cyclists and public transport vehicles and private cars. The William Nicol Road upgrade incorporated NMT infrastructure to cater for cyclists and pedestrians. The NMT inclusion also seeks to promote a healthy lifestyle for residents and improve the QoL of the people in Gauteng.

- K69 (Upgrading and doubling of Hans Strijdom (Solomon Mahlangu) from the N4 to Mamelodi to K54)

  The K69 links Pretoria East and Mamelodi. The project involves the doubling of 9km of an existing single carriageway. K69 will increase capacity, safety and accessibility for existing and future developments.

- Vaal River City Interchange

  The K174, Vaal River City Interchange will serve as a route to the Free State Province (South), (inter provincial connection) and Sebokeng (North). The project involves the upgrading of 2km in the Vaal River Interchange, Ascot Ave (future K55) and the Barrage Road (K174).

- K31 access to Green Gate Development: Reconstruction and upgrade of the M5 Beyers Naude Road

  K31 will be upgraded from a single to a 2.3km dual carriageway road to accommodate the increase in traffic. The road will provide access to the new Green Gate Development.

- Upgrading of K73 between Woodmead Drive and Allandale Road (D58) Mushroom farm

  K73 project involves the upgrading and construction of the link between Allandale Road and the R55/Allandale. The road will provide access to the Mushroom farm and alleviate congestion on the R55/Allandale intersection. The upgrade will also assist the Industries in the North of Johannesburg to access the Lanseria Airport. An upgrade of 5.1km of road will be completed to accommodate the increase in traffic.

- K46 (P79 /1): Upgrading from single to dual carriageway of Road K46 (P79/1) William Nicol from PWV5 to Diepsloot /N14 Phase 2

  The upgrading of K46 comprises the dualisation of 7.2km single carriageway between PWV5 and Diepsloot. The road will provide a link between Diepsloot and

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Johannesburg. It will also act as an access for developments along the Central Corridor (Lanseria, Fourways, Hartbeespoort Dam and Sandton).

- Upgrade of K101 from D795 Olifantsfontein to N1 Brakfontein

  The project involves the construction of 5.4km of an existing road and the interchange between K27 and K101. The road is parallel to the N1 toll road between Johannesburg and Pretoria. It also serves as an alternative route for the N1 toll road. K101 is between Rooihuiskraal (Brakfontein Road) and D795. The construction of the road will alleviate traffic congestion during peak hours in the Midrand area around the Waterfall developments.

- Construction of K56 between K46 (William Nicol) and P71/1 (Main Road) and the extension of Erlings Road from Dorothy Road

  The project involves the construction of new road K56 between K46 William Nicol Drive and P71/1 (Main Road). This is a new road which transverses Greenfields. The road will be constructed as a dual carriageway road with a road reserve of 48.4 metres. The length of the road is 4.4km.

- K14 between Cullinan and Rayton Road (D483)

  K14 is located on the R513 South of Cullinan, approximately 25km East of the Sefako Makgatho Drive Off-Ramp from the N1. The project entails the construction of a section of K14 (1.76 km), the rehabilitation of a short section (0.57 km) and the re-alignment of a section of Zonderwater Road (0.32 km). The works will include the construction of a rail-over-road bridge.

- R82 phase 3 (between D1073 (Walkerville) and K164 (De Deur))

  The road forms part of the Southern Corridor and the Maize Belt. The project involves the dualisation of R82 Phase 3 (11.3km) between road D1073 and K164. The project will provide an alternative link between Johannesburg and Vereeniging, including access to existing and future developments in Walkerville, Eikenhoff and De Deur. The implementation of the project will enhance economic development, create job opportunities for the community, provide skills training and development and develop small emerging contractors within the areas.

- K54: Mamelodi (Tsamaya Road) to R104 Pretoria Bronkhorstspruit

  K54 is in Mamelodi, CoT. The project involves the dualisation of 9kms of green field from K22 to K69. This road will be an important link between Mamelodi, Moloto Road and the N4. The road entails the construction of several structures, including a bridge over rail and will serve as a major collector. The project will also include upgrading of access roads located along the road K54. The project commenced in the financial year 2018 and construction activities were halted and progress is at seventy-six (76%) complete. Twenty-one (21) months of extension of time was granted due to encroachment on the road reserve.

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The following construction projects are ongoing in the City of Tshwane area which involves the private sector:

- Upgrading of Garsfontein Road (From K69 to De Villebois Drive) – Subject of a Memorandum of Agreement between GDRT and City of Tshwane, Current design completion, construction anticipated to completed within the five-year period of the PLTF.
- K14 link between Rachel de Beer Street to Lavender Road at Rainbow Junction.

9.4.5 Maintenance

Maintenance projects are:

- Provincial Road Maintenance Grant (PRMG)

  The DOT allocates funds for the Provincial Road Maintenance Grant (PRMG) to alleviate the backlog of road maintenance. Various functions and activities that will be performed will include reseal, roads maintenance, potholes patching, vegetation control and diluted emulsion.

- Routine Maintenance

  The GDRT network has been classified in the Road Infrastructure Strategic Framework for South Africa (RISFSA) classification models with classes ranging from 1 to 3. The roads are maintained through in-house and outsourced routine roads maintenance contractors. The Routine Maintenance Programme adheres to roads safety standards and promotes smart mobility across the Province, creating job opportunities, skills transfer, delivery of quality and cost-effective services in the process.

- Periodic Road Maintenance

  The GDRT will appoint new service providers during the financial year 2022/23 as part of term-contracts for the provisioning of materials such as supply of cement, roads marking, roads signs, grass cuttings and diluted emulsions. The periodic maintenance is also conducted on the road network to improve the riding quality and reduce VOC.

- Periodic Assessment of the Provincial Roads

  The GDRT evaluates the infrastructure network bi-annually through visual conditioning inspections and the report determines the maintenance programme as well as the identification of roads requiring upgrade, rehabilitation and re-construction.

- Repair of sinkholes

  Various sinkholes have developed throughout Gauteng in the recent past. Sufficient allowance should be made for the timeous repair thereof. These sinkholes affects important mobility and connecting roads which place sever pressure on alternatives which is often roads not designed for that.

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- Vala Zonke Pothole Repair Programme in conjunction with SANRAL

  Municipalities are participating with SANRAL in the Vala Zonke pothole repair programme.

9.4.6 Road Rehabilitation

Road rehabilitation projects are:

- Rehabilitation of road D483 between P6/1 (Bapsfontein) and D713 Cullinan

  D483 entails the rehabilitation of a single carriageway with gravel shoulders, located between P6/1 (Bapsfontein) and D713 (Cullinan). The project commenced in financial year 2021 and the project is at three percent (3%) complete.

- P39/1 Heavy Rehabilitation from Diepsloot to Muldersdrift

  The road forms part of the Central and Western Corridors. The project involves rehabilitation of 14.45kms of road P39/1 between Diepsloot and Muldersdrift in the Westrand. The rehabilitation of road P39/1 will increase structural capacity and safety on the road through the reconstruction of the gravel shoulders. The project is at eighty-nine percent (89%) complete.

- Rehabilitation of P122/1 from P36/1 (R10) (Solomon Mahlangu Drive Olifantsfontein)

  The project involves the rehabilitation of 9.4km of road P122/1 located in Tshwane. The road is a major route from P36/1(R10) (Solomon Mahlangu Drive) to Olifantsfontein, P122/1. The initial subgrade will be removed and re-compacted.

- Rehabilitation of Road P73/1 (R553) Golden Highway between Ennerdale (41.0 km) and Eldorado Park (62.24km) Approximately 21.24 km

  The project involves the rehabilitation of road P73/1 Golden Highway between Ennerdale and Eldorado Park. P73/1 is in the South-West of Gauteng in the West Rand. The road is more commonly known as the Golden Highway and merges on the Northern end with the M1 into the Johannesburg CBD.

- K175: Rehabilitation of the Road from N4/2 to D670 (8.1km)

  The road is in the North-Eastern section of Gauteng next to Bronkhorstspruit and is identified as a rural major arterial road. It serves as a collector / distributor for the residential and farm areas surrounding the route. The existing intersection will be widened and surfaced on the shoulders.

- Rehabilitation of Eight (8) Bridges and One Major Culvert in the Krugersdorp Region within the Gauteng Province

  The project involves eight (8) Bridges and One Major Culvert in the Krugersdorp Region within the Gauteng Province. All bridges and major culverts are inspected in detail every five (5) to six (6) years, and any repair works prioritised in terms of risk. The Bridge management system employs the Overall Condition Index (OCI) to measure the soundness of bridge structures, and to identify the need for

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maintenance. The GDRT's management system aims to ensure the safety of the travelling public on bridges and major culverts.

9.5 SANRAL Transport Infrastructure Projects

Table 9-3 shows the SANRAL projects in Gauteng.

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Table 9-3: Gauteng SANRAL Projects

Municipality	Project Number	Description	Project Status	Start Date	End Date
GAUTENG					
CITY OF TSHWANE	Non-Toll				
CITY OF TSHWANE	X.002-063-2018/1	MSBBR: Structural/Drainage Services NR	Construction	01/04/2017	30/11/2025
CITY OF TSHWANE	R.104-012-2019/1	MONRM: R104 Pretoria to MP/GP Border	Design	01/11/2018	31/03/2023
CITY OF TSHWANE					
CITY OF TSHWANE	Toll				
CITY OF TSHWANE	N.004-010-2015/1	MOTRM: Middelburg N4/1, N4/11 & 12	Construction	01/07/2015	24/12/2021
CITY OF TSHWANE	N.004-112-2014/1	MOTTE: Magalies toll systems & opera	Construction	03/02/2014	01/02/2023
CITY OF TSHWANE	N.004-028-2006/1	MOTOC: Mpumalanga TCC Law Enforcemen	Construction	01/03/2006	01/04/2026
CITY OF TSHWANE	N.004-028-2006/3	MOTOC: N4 East TCC Ops Maintenance	Construction	01/03/2006	05/06/2021
CITY OF TSHWANE	N.004-028-2006/4	MOTOC: TRAC TCC Operations	Construction	01/03/2006	01/04/2023
CITY OF TSHWANE	N.004-130-2008/9	MOTOC: Bapong TCC	Construction	01/03/2006	01/04/2023
CITY OF TSHWANE	N.004-112-2017/1	MPRS2: Rebecca street to Pelindaba	Construction	01/04/2016	31/03/2024
CITY OF TSHWANE	R.021-020-2020/1	MPRAC: Olifantsfontein to Hans Stryd	Construction	01/04/2018	29/03/2023
CITY OF TSHWANE	N.004-010-2019/1	MSPGA: Donkerhoek TCC Pavem Repairs	Construction	01/04/2019	30/03/2022
CITY OF EKURHULENI	Non-Toll				
CITY OF EKURHULENI	N.003-120-2017/1	DICAL: Dwars in die weg to Heidelber	Design	01/04/2017	31/03/2022
CITY OF EKURHULENI	N.003-112-2019/1	MONRM: Ekurhuleni & Lesedi Non Toll RRM	Design	01/11/2018	30/06/2023
CITY OF EKURHULENI					
CITY OF EKURHULENI	Toll				
CITY OF EKURHULENI	R.021-010-2017/9	DSCPR: Pomona rd to Olifantsfontein	Design	15/01/2017	15/12/2022

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Municipality	Project Number	Description	Project Status	Start Date	End Date
CITY OF EKURHULENI	N.012-190-2016/1	DIBBW: Culvert widening (Improve Dra	Design	01/04/2015	31/03/2021
CITY OF EKURHULENI	N.003-120-2019/1	MPRAC: Heidelberg Rd to Geldenhuys	Construction	01/04/2019	29/03/2021
CITY OF EKURHULENI	R.021-010-2017/9	DSCPR: Pomona rd to Olifantsfontein	Design	15/01/2017	15/12/2022
CITY OF EKURHULENI	N.017-023-2019/1	MPRAC: R29/Springs to R50/Leandra I/	Construction	04/04/2018	31/03/2022
CITY OF EKURHULENI	N.017-020-2018/1	MPRMC: Rifle to Tonk Meter	Construction	01/04/2016	31/07/2022
CITY OF EKURHULENI	X.002-078-2018/1	MRNRS: Toll Road Marking NR - MP	Design	01/08/2015	31/12/2022
CITY OF EKURHULENI					
CITY OF JOHANNESBURG	Non-Toll				
CITY OF JOHANNESBURG	N.017-010-2016/1	MONRM: Nasrec to Soweto RRM	Construction	01/10/2015	01/10/2021
CITY OF JOHANNESBURG	N.017-010-2019/1	MONRM: Johannesburg Metro RRM	Design	01/11/2018	30/06/2023
CITY OF JOHANNESBURG	X.002-119-2019/1	MONRM: Merafong N12/N14/R54/R500/R501	Design	01/04/2019	22/12/2023
CITY OF JOHANNESBURG					
CITY OF JOHANNESBURG	Toll				
CITY OF JOHANNESBURG	X.002-116-2020/1	DNNTC: FMS Gauteng	Design	01/05/2020	01/05/2025
CITY OF JOHANNESBURG	N.001-201-2010/1	DNNTC: National FMS DBOM	Construction	03/05/2010	31/12/2024
CITY OF JOHANNESBURG	N.001-201-2016/1	MOTRM: Western Freeways RRM	Construction	01/10/2015	01/10/2021
CITY OF JOHANNESBURG	X.002-014-2016/1	MOTRM: Eastern Freeway RRM	Construction	01/10/2015	01/10/2021

Municipality	Project Number	Description	Project Status	Start Date	End Date
CITY OF JOHANNESBURG	X.002-015-2016/1	MOTRM: Southern Freeways RRM	Construction	01/10/2015	01/10/2021
CITY OF JOHANNESBURG	X.002-020-2011/1	MOTTE: ORT/ITS Communications Backbo	Construction	01/12/2010	30/03/2022
CITY OF JOHANNESBURG	X.002-055-2016/1	MOTEM: Western Freeways Lighting	Construction	01/01/2016	31/03/2022
CITY OF JOHANNESBURG	X.002-056-2016/1	MOTEM: Southern Freeways Lighting	Construction	01/01/2016	31/03/2021
CITY OF JOHANNESBURG	X.002-057-2016/1	MOTEM: Eastern Freeways Lighting	Construction	01/01/2016	31/03/2022
CITY OF JOHANNESBURG	X.002-065-2017/1	MOTTM: Traffic Flow Management	Construction	01/04/2017	29/05/2020
CITY OF JOHANNESBURG	N.001-190-2017/2	MPRAC: Vaal River to Klein Rietspruit	Construction	01/04/2016	05/01/2020
CITY OF JOHANNESBURG	N.001-200-2020/1	MPRAC: 14th Avenue to Buccleuch	Construction	01/04/2020	29/03/2022
CITY OF JOHANNESBURG	N.001-210-2019/1	MPRAC: Brakfontein to Scientia	Construction	01/04/2019	29/03/2021
CITY OF JOHANNESBURG	N.003-120-2020/1	MPRAC: Geldenhuys to Buccleuch	Construction	01/04/2020	29/03/2022
CITY OF JOHANNESBURG	N.001-190-2017/1	MSPCF: Klein Rietspruit to N12/Potch	Construction	04/02/2019	29/01/2021
CITY OF JOHANNESBURG	N.001-200-2019/1	MSBBR: Repair Hans Schoeman Bridge	Construction	03/09/2018	30/06/2023
CITY OF JOHANNESBURG	N.012-159-2017/1	MSBBR: N12 Bridge Repairs	Construction	01/04/2015	31/03/2022
SEDIBENG	**Toll**				
SEDIBENG	N.003-110-2018/3	DSRCU: Heidelberg TCC Pavement Rehab	Design	01/10/2017	31/03/2020
SEDIBENG	N.001-230-2006/1	MOTOC: Montsole TCC Operations	Construction	01/04/2017	01/04/2024

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TRANSPORT AUTHORITY FOR GAUTENG

GAUTENG ON THE MOVE

Growing Gauteng Together Through Smart Mobility

Municipality	Project Number	Description	Project Status	Start Date	End Date
SEDIBENG	N.003-110-2018/1	MOTOC: Heidelberg TCC Operations	Construction	01/04/2017	01/04/2024
SEDIBENG	N.003-110-2019/1	N3: BALFOUR TO DWARS IN DIE WEG	Design	10/01/2022	10/01/2025
SEDIBENG	N.003-120-2017/1	DWARS IN DIE WEG TO GELDENHUIS INTERCHANGE	Design	04/01/2022	09/01/2024
SEDIBENG	N.017-023-2019/1	R29/SPRINGS TO R50/LEANDRA I/C	Tender evaluation stage	N/A	N/A

Note: Not indicated in the table above, is the Moloto Road upgrade (an inter-provincial project) that SANRAL is busy with.

In addition, SANRAL is doing the Vala Zonke programme in conjunction with municipalities on pothole repairs.

10 FREIGHT LOGISTICS

10.1 Introduction

Economic and social development of South Africa depends to a large extent on the level and cost of mobility within the supply chain to ensure that raw materials, work-in-process and finished goods are delivered on time and at reasonable cost. Transport is one of the most important and costly logistics functions performed in the supply chain, both on the inbound and outbound side.

The traditional view of transport is that it is a derived demand, based on some form of land-use development or economic activity that generates or attracts passengers or freight. This is indeed correct and applies in particular to the need for transport of passengers, whether private or public transport. However, it is also true that freight transport induces development, where existing transport infrastructure such as roads, railways, ports and intermodal terminals attracts potential developers.

Freight logistics refers to all logistics activities related to the movement of freight, such as transport, warehousing, inventory management and procurement where relevant. The term freight is used as a collective term that includes raw materials, finished goods, agricultural products, consumer goods and air cargo as well as road and rail freight.

This chapter covers deficiencies in the freight logistics system, a proposed freight logistics strategy, provincial initiatives in freight logistics as well as freight logistics projects of provincial significance, done by planning authorities in Gauteng Province.

10.2 Deficiencies in the transport system

A number of problems and issues in freight logistics have been identified from a comprehensive literature review as well as industry knowledge and experience perspective. These deficiencies have been supplemented with input from engagement with stakeholders and feedback from public consultation workshops. A summary of these issues has been listed in Table 10-1 under the headings of user needs, deficiencies (problems and/or issues) and gaps.

Table 10-1: Freight Logistics User Needs, Deficiencies and Gaps

Category	Description
User needs	• Reduced cost of logistics • More reliable services • Improved cargo security • Faster speed in the supply chain • Ability of tracking cargo
Deficiencies (problems and/or issues)	• Increasing diesel price • Driver shortages • Disruption of road freight services • Ineffective overload control strategy

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Category	Description
	• Sustainability in freight logistics (need to reduce the carbon footprint and greenhouse gases) • Insufficient freight logistics facilities • Inappropriate last (and first) mile logistics services • Poor waste management services for disposal of waste • Increasing development of freight logistics hubs without rail access (unimodal and not intermodal) • Lack of maintenance of weighbridges • PSPs and/or PPPs needed for rail operations • Enforcement of legislation needed for eliminating level crossings (road/rail) • Lack of funding for the development of freight logistics facilities (terminals, truck stops, etc) • Insufficient security of freight in transit and at terminals • Illegal invasion of rail reserves • Poor condition of road vehicle fleet (gas emissions) • Information on logistics costs in South Africa absent or very outdated • Administrative burden with vehicle licences and registrations • Allowing the private sector to issue permits and operator licences based on agreed standards such as the RTQS
Gaps	• Clarity around use of high-cube containers • Working hours and related legislation to be clear and properly enforced • Driver shortages and labour issues around appointment of foreign drivers • Development of suitable truck stops and staging areas • Delays at border posts to be addressed • Clarity around banning of trucks in peak hour • Deteriorating road infrastructure condition • Ineffective overload legislation enforcement • Use of Weigh-in-Motion (WIM) technology • Clarity around e-tolling • Clarity around the AARTO system • Development of smart freight logistics • Increased use of performance-based standards needed • Lack of freight logistics skills and competence • Implementation of circular economy principles in freight logistics • More rail friendly freight to be transported by rail • Freight databank or data warehouse (relevance, accessibility, etc) • Annual cost of logistics surveys to be resuscitated

10.3 Freight Logistics Strategy

10.3.1 Framework for Freight Logistics Strategy

It was decided to use the typical planning hierarchy as a framework for the freight logistics strategy. This consists of four levels as indicated in a logical sequence from top to bottom in Figure 10-1.

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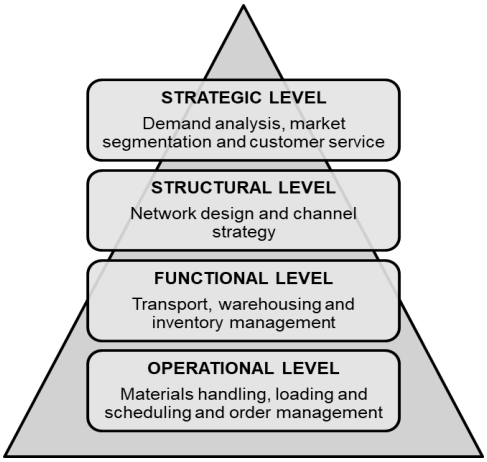


Figure 10-1: Planning Hierarchy

Typical freight logistics aspects are addressed on each level as follows:

1. Strategic: Demand analysis, market segmentation and customer service.
2. Structural: Network design and channel strategy.
3. Functional: Transport, warehousing and inventory management.
4. Operational: Materials handling, loading and scheduling as well as order management.

This planning hierarchy was customised for analysing freight logistics in a number of focus areas, as indicated in the next section.

10.3.2 Freight Logistics Focus Areas

The Revised draft White Paper on National Transport Policy[17] postulates a number of policy objectives and these objectives have been summarised and linked to focus areas that are suitable for addressing freight logistics issues, as follows:

- Overarching plan for development (Focus area: Freight logistics demand);
- Enable access to best meet chosen criteria (Focus area: Freight logistics network);
- Invest in infrastructure (Focus area: Freight logistics infrastructure);
- Improve competitiveness (Focus area: Freight logistics operations);

[17] *White Paper on National Transport Policy 2021*, Notice 1050 of 2022, Department of Transport.

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- Improve safety, security and reliability (Focus area: Freight logistics legislation), and
- Achieve objectives economically and sustainable (Focus area: Freight logistics implementation).

These focus areas are presented in Figure 10-2 with an indication of the process flow on the right-hand side.

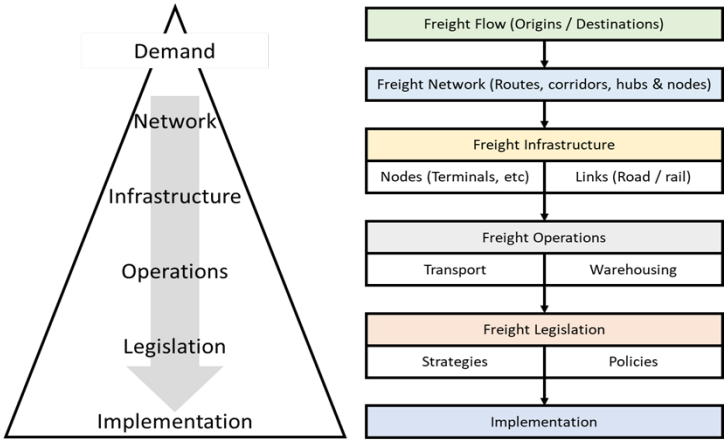


Figure 10-2: Freight Logistics Focus Areas and Process Flow

The focus areas can further be broken down into strategic objectives, which form the core of the freight logistics strategy. The final step in the strategic planning process is to list specific freight logistics issues under each of the strategic objectives and hence provide for a structured approach to prioritise attention and resources to address the issues systematically.

This process is explained with examples of logistics issues in Figure 10-3.

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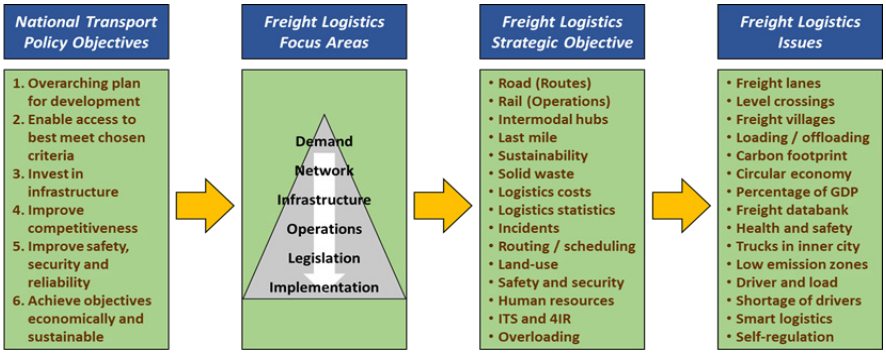


Figure 10-3: Policy Objectives, Focus Areas, Strategic Objectives and Freight Logistics Issues

A summary of the results of this process is discussed in the next section.

10.3.3 Freight Logistics Strategies

10.3.3.1 Freight Logistics Demand

The first aspect to be addressed in this freight logistics strategy is the demand for freight. Freight traffic can be split into the following categories in Gauteng:

- Through traffic (originates and destined outside Gauteng);
- Local traffic (originates and destined inside Gauteng);
- Outbound traffic (originates inside but destined outside Gauteng), and
- Inbound traffic (originates outside but destined inside Gauteng).

The freight movements that originate or end in Gauteng are relevant as those origins and destinations (nodes) generate or attract freight traffic, that has to be distributed by mode (predominantly road and rail) and assigned to specific roads or routes (links) in the network.

A summary of the freight logistics demand strategic objectives and related freight logistics issues is provided in Table 10-2. The primary mandates of the different spheres of government are also indicated in the mentioned analyses as national government (N), provincial government (P) and municipal government (M).

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Table 10-2: Freight Logistics Demand Strategic Objectives

Focus Area	Strategic Objective	Freight Logistics Issue	Mandate
1. Freight demand	1.1 Determine the origins and destinations of freight traffic	1.1.1 Freight origins	N / P / M
		1.1.2 Freight destinations	N / P / M
	1.2 Determine the demand for freight traffic	1.2.1 Through traffic (originates and destined outside Gauteng)	N / P / M
		1.2.2 Local traffic (originates and destined inside Gauteng)	N / P / M
		1.2.3 Outbound traffic (originates inside but destined outside Gauteng)	N / P / M
		1.2.4 Inbound traffic (originates outside but destined inside Gauteng)	N / P / M
	1.3 Determine the type of freight traffic	1.3.1 Dry bulk and liquid bulk	N / P / M
		1.3.2 Containers (TEU and FEU) and unitised (pallets or bulk bags)	N / P / M
		1.3.3 Break-bulk (bags, cartons and crates)	N / P / M
		1.3.4 Vehicles on auto carriers (road) or automotive trains (rail)	N / P / M

10.3.3.2 Freight Logistics Network

The freight logistics network can be defined as a number of freight nodes that are linked with roads (or routes to accommodate all modes). In fact, it might be more correct to refer to those links as “corridors of freight mobility”, to allow flexibility in using appropriate freight transport modes. Primary modes include mainly road and rail while secondary modes may include conveyors, ropeways and drones.

The need for developing a freight network strategy is to ensure that dangerous or hazardous goods as well as abnormal loads follow certain routes that can accommodate vehicle and load sizes exceeding the normal limitations on vehicle dimensions and axle loads that a vehicle using a public road must comply with. The specifications are stipulated in the National Road Traffic Act 93 of 1996 as well as the National Road Traffic Regulations, 2000.

A summary of the freight logistics network strategic objectives and related freight logistics issues is provided in Table 10-3.

Table 10-3: Freight Logistics Network Strategic Objectives

Focus Area	Strategic Objective	Freight Logistics Issue	Mandate
2. Freight network	2.1 Define suitable freight road network	2.1.1 Freight strategy should include a clearly indicated and signposted freight network of roads and routes to be followed by freight vehicles, in particular for movement of dangerous goods and abnormal loads	P / M
	2.2 Enforce use of freight network	2.2.1 Freight network definition to be accompanied with appropriate law enforcement measure to ensure that freight traffic complies with the requirements	P / M

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10.3.3.3 Freight Logistics Infrastructure

The freight logistics infrastructure strategy should focus on those facilities and projects that are of provincial significance. The current Integrated transport plans of the respective planning authorities in Gauteng include examples of those projects but a more comprehensive list of freight logistics infrastructure strategic objectives and related freight logistics issues is provided in Table 10-4.

Table 10-4: Freight Logistics Infrastructure Strategic Objectives

Focus Area	Strategic Objective	Freight Logistics Issue	Mandate
3. Freight infrastructure	3.1 Suitable road infrastructure	3.1.1 Freight road infrastructure where needed	P / M
		3.1.2 Freight lane infrastructure where appropriate	P / M
		3.1.3 Arrestor beds where needed	N / P
		3.1.4 Develop truck stops next to road infrastructure	P / M
		3.1.5 Provide weighbridges at specified locations	P / M
		3.1.6 Consider weigh-in-motion (WIM) on freight roads	P / M
		3.1.7 Develop electric vehicle charging stations	P / M
		3.1.8 Develop hydrogen vehicle filling stations	P / M
	3.2 Suitable infrastructure in industrial areas	3.2.1 Develop truck stops in industrial areas	M
		3.2.2 Provide staging areas for trucks in industrial areas	M
		3.2.3 Develop electric vehicle charging stations	M
		3.2.4 Develop hydrogen vehicle filling stations	M
	3.3 Suitable rail infrastructure	3.3.1 Provide new or re-open existing railway sidings	N / P / M
		3.3.2 Elimination of railway level crossings	N / P / M
		3.3.3 Allocate roles and responsibilities according to the new National Rail Policy	N / P / M
	3.4 Suitable intermodal terminals	3.4.1 Determine most suitable locations for inland intermodal terminals	P / M
		3.4.2 Facilitate development of freight villages at those suitable locations for inland intermodal terminals	P / M
		3.4.3 Facilitate development of urban consolidation centres	M
		3.4.4 Facilitate development of micro hubs in the inner cities	M
		3.4.5 Prevent development of freight logistics hubs without rail access to ensure terminals provided intermodal and not unimodal services	P / M

10.3.3.4 Freight Logistics Operations

Although freight logistics operations occur per definition at operational and not strategic level, it nevertheless requires a strategic perspective to ensure that clear guidance is provided at strategic level to plan for freight logistics operations.

One example of the need for a strategic perspective is sustainability on freight logistics operations. The concept of sustainability is addressed in more detail as a separate workstream, but it might be good to reiterate the principles on which the systems approach towards sustainability in freight logistics should be based:

- **Avoid:** Reduce the need to move freight unnecessary over long distances through developing inland intermodal terminals at the most cost-effective locations (based on centre-of-gravity analyses);

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- **Shift:** Change the mode of transport where possible from road to rail for rail-friendly freight; and
- **Improve:** Technology improvements in term of green/renewable energy propulsion (Electric / Hydrogen) as well as 4IR.

A comprehensive list of freight logistics operations, strategic objectives and related freight logistics issues is provided in Table 10-5 and Table 10-6.

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Table 10-5: Freight Logistics Operations Strategic Objectives (1 of 2)

Focus Area	Strategic Objective	Freight Logistics Issue	Mandate
4. Freight operations	4.1 Efficient last mile logistics	4.1.1 Provide suitable loading and offloading zones	M
		4.1.2 Develop efficient staging facility operations	M
		4.1.3 Facilitate efficient urban consolidation centre operations	M
		4.1.4 Facilitate efficient micro hub operations	M
		4.1.5 Plan for online shopping deliveries (Home deliveries)	M
		4.1.6 Plan for use of motorcycles, cargo cycles and e-bikes in deliveries (Inner city)	M
		4.1.7 Prepare for the use of delivery drones	M
		4.1.8 Prepare for the use of delivery robots	M
	4.2 Sustainable freight logistics	4.2.1 Mitigate environmental externalities (Emissions, noise, etc)	P / M
		4.2.2 Manage reduction in greenhouse gases (GHG)	P / M
		4.2.3 Manage reduction in carbon footprint	P / M
		4.2.4 Provide for eco-vehicles (Electric, hybrid, hydrogen, etc)	P / M
		4.2.5 Manage condition of freight vehicles (Fitness of vehicles)	P / M
		4.2.6 Encourage modal shift (Move rail friendly traffic from road to rail)	P / M
	4.3 Efficient solid waste logistics	4.3.1 Manage solid waste disposal	M
		4.3.2 Provide for reverse logistics (Product returns, recycling, etc.)	M
		4.3.3 Encourage implementation of the circular economy to reduce waste	P / M
	4.4 Measure freight logistics costs	4.4.1 Present logistics costs as percentage of GDP	N / P
		4.4.2 Analyse logistics costs per function (transport, warehousing, inventory and administration)	N / P
		4.4.3 Monitor input costs such as the fuel price	N / P
	4.5 Monitor freight logistics statistics	4.5.1 Freight volumes by mode (Road, rail, air and	N / P
		4.5.2 Freight volumes by type (Dry bulk, liquid bulk, containers, unitised in pallets or bulk bags, break-bulk in cartons or crates and vehicle on auto carriers or automotive trains)	N / P
		4.5.3 Origins and destinations of freight	N / P
		4.5.4 Maintaining the freight databank	N / P
	4.6 Manage construction logistics	4.6.1 Prepare construction logistics plan	M
		4.6.2 Collect construction site information to determine traffic generation and attraction	M
		4.6.3 Stipulate traffic management measures	M
		4.6.4 Monitor procedures of compliance	M
	4.7 Effective incident management	4.7.1 Maintain health and safety when hazardous or dangerous goods are involved	N / P / M
		4.7.2 Manage recovery operations (Both equipment and spillage)	N / P / M
		4.7.3 Repair of damage to infrastructure	N / P / M
	4.8 Effective routing and scheduling	4.8.1 Manage capacity of urban freight transport system to alleviate congestion	M
		4.8.2 Manage freight vehicle movement in the inner city	M
		4.8.3 Manage freight vehicle access to urban areas	M
		4.8.4 Consider night deliveries	M
		4.8.5 Evaluate truck bans during peak hours	P / M

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Table 10-6: Freight Logistics Operations Strategic Objectives (2 of 2)

Focus Area	Strategic Objective	Freight Logistics Issue	Mandate
4. Freight operations (Continue)	4.9 Appropriate land-use guidance	4.9.1 Allocate freight logistics zones	M
		4.9.2 Manage conflict and interference of passenger and freight movements	M
		4.9.3 Determine and implement low emission zones	M
	4.10 Ensure safety and security	4.10.1 Driver safety on and off the road at truck stops, loading / offloading	N / P / M
		4.10.2 Vehicle and load security on and off the road at truck stops, loading / offloading	N / P / M
		4.10.3 Disruption of road freight services	N / P / M
		4.10.4 Illegal invasion of railway reserves	N / P / M
		4.10.5 Driver and load safety and security during delays at border posts	N / P
	4.11 Efficient human resource management	4.11.1 Ensure driver fitness	P / M
		4.11.2 Address driver shortages	N / P
		4.11.3 Labour issues around appointment of foreign drivers	N / P / M
		4.11.4 Working hours and related matters	N / P / M
		4.11.5 Lack of freight logistics skills and competence	N / P / M
	4.12 Appropriate ITS and 4IR	4.12.1 Develop and implement appropriate smart freight logistics	N / P / M
		4.12.2 Prepare for the use of autonomous freight vehicles	N / P / M
	4.13 Efficient rail operations	4.13.1 Stimulate private sector participation	N / P / M
		4.13.2 Focus on rail friendly traffic	N / P / M
		4.13.3 Devolution of rail transport function to provincial authorities	N / P / M
		4.13.4 Allocate roles and responsibilities according to the National Rail Policy	N / P / M

10.3.3.5 Freight Logistics Legislation

The strategic aspects of freight logistics legislation are important when developing a freight logistics strategy. Alignment of legislation at national, provincial and municipal level as well as appropriate enforcement is crucial to ensure compliance.

A list of freight logistics legislation, strategic objectives and related freight logistics issues is provided in Table 10-7.

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Table 10-7: Freight Logistics Legislation Strategic Objectives

Focus Area	Strategic Objective	Freight Logistics Issue	Mandate
5. Freight legislation	5.1 Manage overloading	5.1.1 Develop appropriate modal shift regulations	N / P / M
		5.1.2 Implement appropriate policy guidance such as vehicle and axle weight restrictions	N / P / M
		5.1.3 Encourage self-regulation through performance-based standards	N / P / M
		5.1.4 Voluntary vehicle management systems	N / P / M
	5.2 Enforce appropriate land-use guidance	5.2.1 Define and implement restricted access zones	M
		5.2.2 Define and implement low emission zones	M
	5.3 Manage congestion	5.3.1 Consider suitable congestion charging	N / P / M
		5.3.2 Implement truck bans during peak hour if recommended	P / M
	5.4 Manage freight vehicles	5.4.1 Enforce restrictions on use of high-cube containers	N / P / M
		5.4.2 Enforce regulations on zero emission trucks	N / P / M
		5.4.3 Enforce non-motorized transport such as cargo cycles or e-bikes in the inner city	M
	5.5 Manage road traffic offences	5.5.1 Implement AARTO if approved	P / M
		5.5.2 Enforce user-pay instruments such as e-tolling	P / M
	5.6 Implement rail transport legislation	5.6.1 Implement devolution of rail transport function to provincial authorities	N / P / M
		5.6.2 Enforce relevant rail transport legislation according to the National Rail Policy	N / P / M
	5.7 Manage last mile logistics	5.7.1 Formalise and regulate use of motor cycles such as Sixty60 for home deliveries	M
		5.7.2 Formalise and regulate use of cargo cycles or e-bikes for inner city deliveries	M
	5.8 Facilitate regional cooperation	5.8.1 Evaluate suitability of cross border operations with the Cross-Border Transport Agency	N / P
		5.8.2 Implement Tripartite Transport and Transit Facilitation Programme (TTTFP) regulations - COMESA, EAC and SADC	N / P
	5.9 Freight traffic management and regulation	5.9.1 Consider allowing private sector associations to issue permits, special permits and operator licences, based on agreed standards such as RTQS	N / P / M
		5.9.2 Remove administrative lag and burdens with licences, vehicle registrations and other traffic management processes	N / P / M

10.3.3.6 Freight Logistics Implementation

The focus area of freight logistics implementation includes reference to efficiency and monitoring, as to what gets measured, and gets managed. Two strategic objectives are listed under this focus area and a few issues mentioned as indicated in Table 10-8.

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Table 10-8: Freight Logistics Implementation Strategic Objectives

Focus Area	Strategic Objective	Freight Logistics Issue	Mandate
6. Implementation	6.1 Effective implementation of freight logistics solutions	6.1.1 Encourage planning authorities in the efficient and cost-effective implementation of their respective freight logistics programmes and solutions	P / M
	6.2 Monitor successful implementation of freight logistics solutions	6.2.1 Develop appropriate key performance indicators (KPIs) for the implementation of freight logistics programmes and solutions	P / M
		6.2.2 Measure performance and manage performance accordingly	P / M

10.4 Provincial Initiatives

The Annual Performance Plan 2022/23[18] of the GDRT refers to freight logistics in a number of places, but the most important freight logistics initiatives in the Province include the following:

- Route Determinations

  The Gauteng Road Network is the most important infrastructure asset in the Province that underpins and supports provincial economic growth which results in job opportunities within the identified corridors (inclusive of freight corridors supporting freight hubs) and development nodes.

  The Department has identified a number of routes over the Medium-Term Expenditure Framework (MTEF) to be amended to include support for road freight hubs.

- Gauteng as a Freight Logistics Hub

  Freight transportation is a vital element in prosperity planning, albeit one that tends to be superficially dealt with in transportation planning departments at all levels of government. The road to rail strategy as envisaged in the ITMP25 should be implemented and this should be supported by key road and rail infrastructure integrated in physical elements providing efficient movement of goods.

  The overarching objective of all freight transport is the economic efficiency of the movement of goods so that freight transport policy and investment is primarily directed at creating conditions that support that objective.

  The Department will focus on the provision of transport infrastructure required for the prioritised freight hubs, such as Tambo Springs and Pyramid Freight Hub.

- Building of a New Freeway - PWV15

  PWV15 is a 35.5km dual carriageway, located East of the O R Tambo International Airport in Ekurhuleni Metropolitan Municipality. The road will provide a link between Pomona, OR Tambo International airport, Green Reef development and the Tambo Springs Freight Hub. PWV15 will reduce congestion from Geldenhuys

[18] *3rd Draft Annual Performance Plan for 2022/23*, Department of Roads and Transport, Gauteng Province, 2022.

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to Gillooly's. It will also unlock economic opportunities and allow free flow of freight from the N3 to the N1 freeways.

- Overload Control Management

  This is not specifically mentioned in the Annual Performance Plan although indirect reference is made to it in mentioning the outcome of the reduction of freight on the Gauteng road network by 2025.

10.5 Freight Logistics Projects of Provincial Significance done by Planning Authorities

In conclusion of this chapter on freight logistics, it might be useful to list those freight logistics projects that are of provincial significance, as indicated for implementation by the respective planning authorities.

10.5.1 Ekurhuleni Metropolitan Municipality

- The development of an Aerotropolis at the OR Tambo International Airport;
- The development of the freight hubs at Tambo Springs and Sentrarand;
- Develop detailed freight and logistics transport master plan;
- Establish and manage routes for transport of hazardous materials routes and for abnormal loads in cooperation with Gauteng Province; and
- Define and implement plan to minimise overloading of heavy vehicles.

10.5.2 Johannesburg Metropolitan Municipality

- Improve the mobility of freight;
- Collect adequate planning data on urban freight transport in CoJ;
- Development of intermodal facilities with supporting services on the periphery of Gauteng;
- Investigate introduction of access time regulations for urban goods transport; and
- Reduction in overloading by freight vehicles.

10.5.3 Sedibeng District Municipality

- Strategy for movement of dangerous goods;
- Freight Transport Management Plan;
- Truck stop in Meyerton Industrial Area;
- Overload control strategy; and
- Proposed VLH.

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10.5.4 Tshwane Metropolitan Municipality

- Establish Freight Transport Working Group;
- Develop a Freight Transport Master Plan;
- Establish abnormal load routes;
- Provide access to intermodal facilities; and
- Create Pyramid South as development zone.

10.5.5 West Rand District Municipality

- Re-opening of freight rail sidings at Carletonville and for Losberg;
- Freight Logistics Hub at Rand-West City (Zuurbekom);
- Dangerous goods movement strategy;
- Implementation of freight movement and overloading control; and
- Feasibility study for freight vehicle holding and overnight facilities.

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11 TRANSPORT MANAGEMENT STRATEGY

11.1 Introduction

Transportation management is a process of coordinating all the individual elements involved in road transportation in order to ensure the optimum and safe movement of people and goods by means of vehicles on the road network. Although transportation management is generally aimed at an increase in road capacity and an improvement in road safety, effective transportation management in reality encompasses the cooperation of a wide spectrum of disciplines, including law-enforcement officers, educationists, engineers, emergency services, the media and legal practitioners.

This chapter addresses Transport Management with a strong emphasis on technology and data applications within the context of the transport within Gauteng, as well as strategies of how to improve and grow the various areas mentioned. Smart Mobility and initiatives associated with the 4IR principles typically involve the use of technology within the transportation sphere, currently better known as Intelligent Transportation Systems (ITS). This paradigm shift towards a more digitised environment is creating the foundation for tapping into the potential of the 4IR, and therefore whenever data and digitisation are mentioned, it should be kept in mind that digitisation is a prerequisite in order to make this paradigm and technological shift. This data rich environment is therefore the foundation on which a sustainable transport management strategy can be built.

A Complete Guide to Digital Transformation[xvii] provides helpful principles on how to facilitate transformation into a digitised environment, enabling the use of technology to improve efficiency and effectiveness.

11.2 Deficiencies in the management of the transport system

Several deficiencies are identified as possible barriers to exploit the full potential of transport management within Gauteng, as discussed hereafter.

11.2.1 Digital Footprint Coverage

The digitisation of public and private transport i.e. leaving an electronic trace of movement is a key step towards improved management of the transport system. Within the Gauteng Province, the Gautrain and the three BRT systems, A Re Yeng, Rea Vaya, and Harambee, are the only public transport services that are digitised, apart from the e-hailing companies operating in the Province which are also digitised. The SANRAL FMS also utilises technology to provide a continuous status of mobility on the national freeways in Gauteng.

However, several gaps in this regard still exist. The primary public transport mode i.e. the MBT is a key missing element in the digitised mobility sphere. Other services such as scholar transport as well as subsidised bus contracts are candidates to add to this pool of data. In the Growing Gauteng Together Through Smart Mobility 2030[xviii] plan, the vision was cast to digitise the Government Fleet Services, and this would be a step in the right direction for further expansion of the digital footprint.

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11.2.2 Data Availability

Transport data is generally not available from a single platform to facilitate coordinated planning and operations. A central transport data centre would be ideal, not only as a central repository, but also as a facility that will enable real time management of the provincial transport system.

A provincial TMC is in the process of being established in the Department of Roads and Transport on the 16th floor of 45 Commissioner Street. It is currently being furnished, but the Information and Communications Technology (ICT) infrastructure and equipment is in the process of being procured. Currently, this TMC does not yet have all the digitised public transport data connected to it, and is not functioning as a Data Centre, which would be beneficial for the Province.

11.2.3 Transportation Modelling & Data Visualisation Tools

The plethora of mobility data being generated by current transport systems needs to be fully utilised and integrated into the operations and planning environment. Various operational centres exist and provide active monitoring of the system. Within the planning context, typical Transportation Planning Models exist at provincial as well as metropolitan levels. These models reflect the four-step process of trip generation, trip distribution, modal split, and trip assignment. It is quite onerous and often expensive to develop and maintain these models.

The big data type modelling trend has received considerable attention recently and is potentially going to disrupt the market. Albeit that these big data type models are not mature at the moment in terms of forecasting, and could potentially have risks associated with them, this is the paradigm shift that is being adopted globally. New integrated modelling and visualisation tools accommodate extensive data inputs and facilitate both operational and planning applications.

11.2.4 Integrated Fare Management

In 2017, the DRT gave a mandate to the Gautrain's Smart Mobility Department to act as the agent for the Fare Management Integration Programme, with the main objective to implement a single ticketing system for Gauteng. This would enable, for example, a traveller to use one card or payment method to pay for his/her BRT service in any of the municipalities, and the Gautrain, with the long-term goal of having every form of public transport integrated into this system. The current focus of the Provincial Smart Mobility Department, therefore, is mostly centred around IFM.

SANRAL has established a Transaction Clearing House (TCH) acting as a clearing house for the Gauteng Open Road Tolling (GORT) transactions within the toll industry, built on the E-toll backend of SANRAL. This TCH provides customers with one account for all the different electronic toll authorities in South Africa, a national electronic toll collection (ETC) website, and a national call centre. This greatly simplifies the accounts management of having to deal with different accounts for different toll authorities. In a collective initiative between the NDoT and SANRAL, this infrastructure is now further developed and utilised to also provide the platform for electronic payment of fares for public transport. This is a platform that could also be utilised to facilitate a single ticketing system in Gauteng.

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There are modes of public transport that do not have a means of facilitating electronic payments and therefore cannot be integrated into one ticket for public transport payments.

Furthermore, the requirements on the left-hand side in Table 11-1 should all be met in order to establish a successful IFMS, while the status quo of each requirement is highlighted on the right-hand side.

Table 11-1: Requirements for establishing an IFMS

No	Requirement	Status quo
1	A central management centre from which to manage this system	A provincial TMC is in the process of being established and ICT infrastructure and equipment is being procured.
2	An automated fare system for all modes of transport	The BRT systems, as well as the Gautrain have AFC systems. The majority of MBTs are completely cash-based, and there are still buses using paper tickets.
3	An integrated transport information platform that can provide users information about the system as required	The aim was to achieve this with the Gauteng-on-the-move app, but since it was discontinued no such platform exists at the moment. However, an API is currently being developed by the Gautrain Smart Mobility department for the Public Transport Information Platform.
4	A public transport data platform acting as a central data repository	It is envisioned that the transportation public data be stored on cloud-based platforms.
5	A telecommunications network facilitating the required connectivity between various institutions and role players	This is up to standard for the required connectivity. One risk is a loss of connectivity during loadshedding as various communication towers are affected.

11.2.5 Integrated mobility management

There is still a great disconnect between the various mobility providers, and no one truly integrated mobility service exists that connects all the various forms of transport. The one gap that still exists throughout the Gauteng Province is the disjointed nature of data, where public transport and traveller information is not digitised, and furthermore not gathered at one place or one format that is easily usable by other parties.

Integrated mobility solutions should ideally be linked and functioning off a digital platform and often referred to in this context as MaaS. MaaS has the goal of creating a smooth mobility experience for users by the integration and smart aggregation of various mobility service providers. The MaaS provider supplies the users with a digital

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platform through which this mobility experience is enabled. The Gautrain app is an example of a MaaS provider where the integration of trains and buses under the Gautrain's management is achieved.

11.3 Transport Management Focus Areas

11.3.1 Data Centric Mobility

"Data is the new oil" is a phrase that has been popularised in the past few years, and just as unrefined oil has little value, so also unrefined and unanalysed data has little value, but once refined and analysed, the information that leads from it is valuable for the insights it provides. On another level, the required foundation for engaging with the 4IR is data, and like oil, it should be extracted and contained for further use. It is therefore critical that a data centric approach be adopted, where the correct requirements are set in place to fully harness the potential that data has to offer, specifically focused in the transport sector. This section introduces the concept that may be adopted to move the Gauteng Province in the direction of a more data centric approach, creating an enabling environment and harnessing the potential of the data that pertains to transport. This is in line with the GDRT Annual Performance Plan 2022-23[xix].

The Priority Outcomes for Smart Mobility 2030 that were identified, from a Data Centric Mobility perspective, are as follows[xx]:

- Fully integrated ITS;
- Gauteng City Region Smart Mobility Data Centre;
- Integrated Smart Ticketing, and
- Smart Apps and Websites.

As mentioned previously, the 4IR is upon South Africa and it will only advance to greater degrees. To recap on the dream that emanated from the Presidential Commission on the 4IR, the dream states:

"South Africa will have a globally competitive, inclusive and shared economy with the technological capability and production capacity that is driven by people harnessing the 4IR to propel the country forward towards its social and economic goals, instead of falling behind.[xxi]"

If this dream is to be realised, great strides need to be taken to ensure that South Africa (and Gauteng Province) stays on top of the ever-changing environments that are prevalent in the 4IR. The foundation of the 4IR is data, and having a digitised environment is the starting point for moving into a direction of harnessing the opportunities that the 4IR brings. Without digitising the environment, especially with respect to transportation in the context of the PLTF, South Africa might risk falling behind in this 4IR.

It is, therefore, key to shift our current approaches to a more digitised platform or way of thinking. This thinking should be incorporated into all the developments and projects so that this does not need to be added additionally at a later stage, as this

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will incur more costs than necessary than if it would have been incorporated from the start. A paradigm shift needs to take place where the digitisation of as much of the transport network and services as possible should be a key component of any project. In the long run this would save on costs, and create an enabling environment for the future, that would facilitate better decision making and more efficient use of the transportation system.

Furthermore, in preparation for future provincial planning efforts, digitalisation of Gauteng's transport system should be at the forefront of any planning initiatives and a key point of departure to ensure that the opportunities associated with economic development are unlocked, of which the 4IR form part. It is recognised on a global scale that it is an opportune time to reinvent the transport sector, but this is only possible with a well-constructed digitalisation strategy. Digital is driving new sources of growth and value creation, but can only be tapped into by wise investment choices in ensuring efficiency, growth, and value.

Overall, digital is driving a new source of growth and value creation but must be implemented through wise investment choices in ensuring efficiency, growth, and value within the transport industry. As a minimum, this strategy should consider the main pillars of the digitalisation process, namely innovation, processes, and technologies. A Digitalisation Framework, as a blueprint for smart mobility within the Province, is discussed.

Three key elements should be recognised to ensure a successful transition within this Digitalisation Framework:

- Strategic analysis and setting targets: Establish the digital vision and agenda;
- Operationalising the digitalisation strategy: Identify critical actions to operationalise the strategy, and
- Implementing the digitalisation strategy: Provide a roadmap of actions, schedules, and projects.

11.3.2 Smart Public Transport

The development of strategies and solutions for public transport need to enhance the system for all users. Making public transport "smart" involves the provision of infrastructure and technology in order to improve mobility. The commuter must benefit from enhanced systems through a safer, more reliable, and predictable ride. The driver must experience a safer work environment with access to trip status on a real-time basis. The public transport operators will be enabled to improve their operations through better fleet and vehicle management, resulting in greater cost efficiency and ultimately sustainability.

11.3.3 Smart Road System

Smart roads solutions is a process whereby the transportation environment is becoming increasingly digitally enabled with new technologies. Roads make use of smart road technology, smart road infrastructure solutions as well as various computing solutions to improve the quality of mobility to users. The physical infrastructure includes the instrumentation of roads by means of sensors and devices

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connected to a central control centre. The devices combine with computing solutions such as Artificial Intelligence, edge and cloud computing and big data solutions. These elements all combine in order to improve day-to-day traffic management, provide safer and more sustainable road systems, decrease the environmental impact and improve the lives of citizens in general.

11.4 Transport Management Strategies

11.4.1 Data Centric Mobility

11.4.1.1 Data Digitalisation

Areas for expansion of the digital mobility footprint should continue to be identified. These should include MBTs, learner transport and the subsidised bus contracts.

The digital devices should, at a minimum, provide live updates of vehicle movement and location.

Digitisation of mobility will promote the creation of a single digital platform, also providing information and insight into the transportation system to enhance decision making.

11.4.1.2 Digital Infrastructure

The necessary connectivity should be ensured across the Province to support the digital mobility strategy. This includes a communications backbone with the necessary redundancy to enable and ensure connectivity across the network. This will also enable future applications requiring connectivity.

Hardware and software appropriate for supporting deployed digital infrastructure, need to be provided. These need to support the real time and close-to-real time applications.

11.4.1.3 Infrastructure Automation

Infrastructure providers continue to look for ways to adapt the road environment to enable its automation to function more efficiently and reduce the need for human interventions.

In order to make the shift towards a 4IR aligned infrastructure, some automations that should be considered and prepared for include

- autonomous traffic counts and subsequent real-time monitoring of traffic patterns through pushing data to a visualisation platform, and
- self-optimising intersections and/or networks whereby traffic signals adjust automatically based on current traffic levels, resulting in minimising delay.

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11.4.1.4 Vehicle Automation

The global shift towards CAV needs to be acknowledged and general awareness raised.

Readiness for CAV ought to be considered and these should be planned for appropriately, specifically as it pertains to:

- Provision of digital infrastructure;
- Connectivity across the mobility network;
- Hardware and software to support the mobility data environment;
- Developing an understanding of new business models e.g. vehicle insurance, and
- Cognisance of national legal, regulatory and guidelines development for CAV.

11.4.1.5 Data Services

Extensive mobility data is generated by digitised modes of transport, opening up numerous opportunities for the provision of data services. Mobility data enables data services such as:

- The real-time monitoring and management of the transport network, and
- The creation of a MaaS platform allowing a mobility operator to offer mobility services.

A prerequisite for developing and maximising the use of these data services, is the availability of mobility data. Open data is a concept underpinning the principle that public mobility data is made available free of charge, based on Transport Data Terms and Conditions. Extensive mobility data is generated by various modes of transport within the Province. Where this mobility data is generated through projects funded by public entities, the data is publicly owned.

Open data sets made available to developers can realise Value Added Service (VAS). This will result in:

- Economic benefits – since it will facilitate the development of technology enterprises;
- Innovation – developers can work on designing and building applications, services and tools, using public data and API's, and
- Increase and enrich traveller information – with additional travel applications on the market.

When considering making data publicly available, there are certain considerations that need to be taken into account. Legislation such as the POPI Act must be considered. "Sustainable Mobility: Policy Making for Data Sharing"[xxii] provides helpful guidelines that should be consulted for creating policy for mobility data sharing. Five layers of policy intervention are identified and explored, namely data collection and merging, data standards, data infrastructure, governance and accountability, and data use and analysis.

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It is suggested that an "Open Data" regulation be implemented to facilitate availability of mobility data.

11.4.1.6 Transport Data Centre

A well planned and equipped Transport Data Centre should serve as the nerve centre for transport data management and operations, supporting the data centric approach and provincial digitalisation strategy.

The data centre will provide a mobility data platform and should facilitate both planning and operational activities. Various related activities such as land use, transportation and economic aspects can be integrated, visualised, and monitored. Data scientists and transport professionals can work shoulder-to-shoulder utilising predictive analytical tools for real-time management of the transport network. Dashboards for KPI monitoring and key transport indicators can be developed to support the operational environment.

11.4.1.7 Transport Demand Model

A new generation of Transport Demand Models is being developed with a focus on integrating the planning and operational environment. This is possible through the abundance of mobility data, supporting the traditional data sources. Base year models are developed much quicker and calibrated by relying on mobility (big) data.

Whilst hybrid models, i.e. demand models developed from historical four-step process models enriched by mobility data, are frequently used by practitioners, fully fledged big data-type models still lack the predictive ability. As a point of departure any existing models should be enriched with big data sources. Modelling software combined with Artificial Intelligence/Data mining techniques should support this environment.

11.4.2 Smart Public Transport

11.4.2.1 Electronic Payment/IFM

One of the visions of the Province is encapsulated in the phrase "One ticket, one province," which describes the desired future state of electronic payment for public transport services within the Province, where underlying smart technologies are required to form part of this vision. For this to happen, integration of fare media, transit data, and fare collection for Public Transport services into a central fare management system is required[xxiii]. Figure 11-1 provides a timeline for the integration of various operators in the Ticket Integration Framework.

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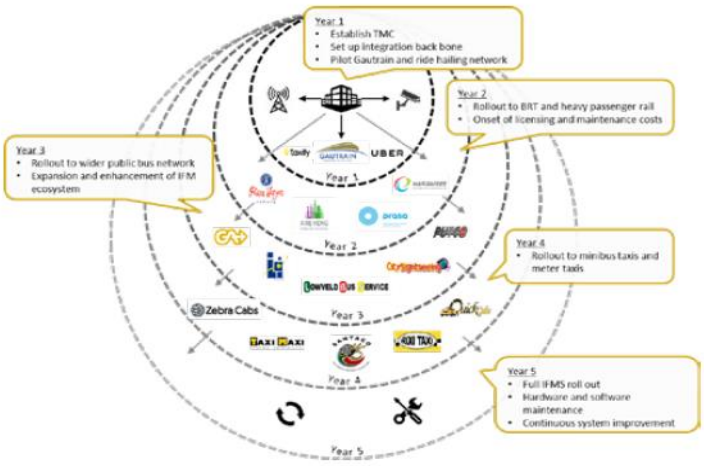


Figure 11-1: Ticket Integration Framework from Growing Gauteng Together Through Smart Mobility 2030[xxiv].

The DoT/SANRAL TCH initiative may be utilised to facilitate or support this type of central fare management and would lead to significant cost benefits due to it already being established and could be extended for public transport fare management with little additional effort.

This, however, is not that simple. With regard to integrated fares, it is difficult to put everything on one fare media, as there are different implementation authorities, and coordination between them is cumbersome. An agreement is required between the authorities in terms of how to split the fares. Five measures are listed in the previous PLTF[xxv] regarding the measures required for integrating fare management, namely:

- **Physical integration**: Close proximity to and easy access at mode interchanges significantly enhances public transport services. Transit stops should be located within walking distance from passenger residences. Walkways should be designed in a way that enables passengers to change mode;
- **Network integration**: Each BRT and rail system should be an individual integrated network, as well as complement each other, allowing movement between the systems. Feeder services, including buses and MBTs, should be designed to maximise patronage of the trunk routes. Network and physical integration are closely linked, and both contribute towards infrastructure integration;
- **Fare integration**: A single payment method for multiple transit services would facilitate easy transfer between modes. For passengers transferring between modes, rebates can be implemented as an incentive;

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- **Information integration**: A comprehensive, user-friendly travel guide is critical for successful multi-modal travelling. Appropriately designed signage at rail and bus stations is required to effectively convey trip information. ICT and VMSs can play an important role in successful information integration, and
- **Institutional integration**: When dealing with land-use planning and integrated public transport services, a common institutional framework is key in successful coordination and cooperation among government agencies and between the public and private sectors.

A prerequisite in achieving the "One province one ticket" vision is that public transport services should be digitised. Without digitisation of public transport there will be no digitised records of the payments. The service areas requiring urgent digitisation for the advancement of the one ticket vision are:

- Scholar transport;
- Bus contracts, and
- The MBT industry.

These forms of public transport may be digitised by simply installing an electronic payment device equipped with GPS onboard the vehicle. This puts the technology in place to later integrate with an APTMS. This would lead to the real-time monitoring of public transport movements, and things like transport subsidies, calculated by a formula including the distance travelled, can then also be determined automatically and accurately.

11.4.2.2 Expand Digitised Footprint

The Smart Public Transport environment is the prime area of application requiring an extended digital footprint. This will enable other applications such as IFM as well as APTMS.

Public transport systems not digitally enabled should be identified and solutions generated to add these to the Smart Mobility Data platform.

11.4.2.3 Advanced Public Transport Management Systems (APTMS)

The lack of integration of public transport may be addressed by establishing an APTMS which will enable the management of demand and supply, provide a MaaS-type platform, provide an operations and management platform for public transport, and hold road safety benefits.

Ensure that from a traveller information perspective, there is an availability of modal options, as well as location and arrival of vehicles. The digitalization of various transport services creates the opportunity for the management of transportation systems as well as improvement of the passenger information systems, which can then be pulled into an APTMS or a MaaS platform. The APTMS should have real-time information about public transport, including location data and driver behaviour, monitoring of movements, and this system should be manageable.

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11.4.2.4 Traveller Information

Enhanced traveller information is a key contributor in improving the service offering to the commuter. All the different data streams of transport services should be integrated into the Provincial TMC and housed within the Data Centre, after which this may be accessible from a digital platform.

An ATIS provides information to travellers in moving from an origin to a desired destination. It should be made available on easily accessible applications. It will greatly enhance the mobility experience for users and enable a better integration of public transport services.

The concept of Open Data is critical to full exploitation of the available mobility data. Whilst the Province could rekindle its initiative to provide a traveller information application, the commuter would be best served through options also made available from the private sector. One of the most advanced MaaS applications, called Whim[xxvi], is privately owned and may give an indication of the direction that the Province should be considering as to how to create such an enabling environment by ensuring the availability of the various public transport data.

11.4.3 Smart Roads

11.4.3.1 Freeway Management

The main aim of the FMS is to optimise the use of the freeway network, entailing maximisation of throughput and improvement of road safety of persons travelling on the freeways and roadways. FMS entails the instrumentation of the freeway network, feeding data from devices to a central traffic management centre, and providing data to the travelling public.

In Figure 11-2**Error! Reference source not found.** the roads highlighted in blue are the national roads currently forming part of the FMS in Gauteng. There are other provincial roads that have the opportunity, as main roads, to be incorporated into the FMS, and this would lead to an improved integrated management of the overall road network. The word “piggyback” describes this opportunity well. The definition of piggyback is “to use something that already exists or has already been done successfully to do something else quickly or effectively[xxvii]”.

There are various ways that the existing FMS may further be utilised by piggybacking on the existing system. One suggestion is that the Province could piggyback on the FMS contract by integrating some of their roads into the FMS. These roads could mainly include freeways and strategic arterials leading towards freeways to expand the FMS network further than the roads highlighted in blue in **Error! Reference s ource not found.** and so achieve greater management of the road network and the associated benefits.

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Figure 11-2: The FMS in Gauteng, with the roads demarcated in blue

11.4.3.2 Arterial Management

Major arterials can be instrumented to monitor and manage traffic flow to enhance mobility, similar to FMS. Implementation of Arterial Management Systems (AMS) should be considered along strategic arterials, often associated with major public transport routes. AMS can be deployed along busy sections of the roadway, or only

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on sections leading towards freeways. The latter application is integrated with the FMS to warn motorists of freeway conditions prior to entering the freeway.

An opportunity exists for the Province and metropolitan authorities to help align and coordinate some of these initiatives to ensure a greater level of integration and traffic management. This will enable authorities to piggy-back on the existing SANRAL FMS, reducing implementation costs. Consideration should be given towards adding arterial links or key arterials with a public transport function.

11.4.3.3 Freight: Overload Control

Freight applications and strategies within the context of technology applications largely focus on addressing overload control. The historic approach of construction of static weigh bridges is deemed not to be economically viable. Various static weighbridges are spread across the Province, however few of them are operational and are mostly in a state of disrepair.

Virtual weigh stations (or e-WIMS) provide an alternative to the costly static weigh bridge systems. E-WIMs provide data on freight in real time and can be spread across the freeway network (at regular intervals, say 20km), or major heavy vehicle routes. These WIMs enable the development and compilation of freight movement and developing a list of habitual offenders. These offenders can then be approached by traffic law enforcement officials.

11.4.3.4 Integrated Corridor Management

The development of Integrated Corridor Management (ICM) initiatives offers significant opportunities in improving the movement of people and goods through proactive integration of existing infrastructure and services along major corridors. Through an ICM approach the corridor is managed as a multimodal system and operational decisions are made for the benefit of the corridor as a whole.

Facilities and services are often independently operated, and efforts to date to reduce congestion and improve mobility have focused on the optimisation of the performance of individual assets and/or services.

The difficulty and often lack of integration and cooperation between various municipal entities may be addressed by developing a multijurisdictional transportation system that will help to optimise corridor capacity. For this to take place coordination is required between the following components:

- FMS;
- Arterial Management;
- Public Transport Management;
- Traveller Information Systems, and
- Incident Management System.

When these components are integrated and working together, the corridor in essence will work as a system instead of individual parts, leading to greater throughput and safety.

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11.4.3.5 Road Safety

Road safety continues to be a major challenge within the Province. Technology can assist in various ways to address road safety. These include:

- Managed lanes on highways can be applied at crash hot spots in order to regulate and "calm" traffic, thus reducing the risk of crashes, and
- Several opportunities exist to apply ASOD monitoring whereby road users' speeds are monitored, measured over a freeway section. The segment speed average is then utilised to determine whether the user was speeding, and then fined accordingly.

The digitisation of especially public transport services provides a potential (unintended?) opportunity to enhance road safety. Numerous vehicles operate from a commercial perspective, and often times road safety may be neglected in order to maximise the returns. If, however, a device that may track the movement of commercial vehicles and certain penalties or rewards may be applied based on the driver's driving behaviour that is observed via the telematic data, this would significantly change the way drivers behave as they will be incentivised to drive better as to not incur penalties, and rather get rewarded by, for example, reduced insurance premiums.

11.4.3.6 Traffic Incident Management Systems

Traffic Incident Management Systems consist of a planned and coordinated multi-disciplinary process to detect, respond to, and clear traffic incidents so that traffic flow may be restored as safely and quickly as possible. Effective Incident Management reduces the duration and impacts of traffic incidents; improves the safety of motorists, crash victims, and emergency responders; and reduces the frequency of secondary crashes.

The provision of emergency services is currently provided by the Provincial DCS, Metropolitan Municipalities, District Municipalities, and the private sector. SANRAL set up ITS infrastructure along the major national freeways within the Province and is monitoring freeways on a continuous basis. On Road Services are provided along these freeways, resulting in immediate dispatch of appropriate response vehicles when a crash occurs.

Road Incident Management Systems are established in the five metropolitan regions within Gauteng as well as a sixth system focusing on the FMS only. The RIMS currently functions under the authority of the Provincial Coordination Advisory Committee (PCAC), which is chaired by the Gauteng DCS (this is a nominated position on a three-year cycle). Members of the PCAC comprise the following representatives:

- Chairpersons and deputies of each local system;
- Gauteng Emergency Medical Service;
- Gauteng Disaster Management;
- Department of Health – Forensic Pathology Services;

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- SAPS National;
- RTMC;
- RAF, and
- Towing associations.

The five regional RIMS are represented by:

- Local traffic departments;
- GDCS local offices;
- SAPS local stations;
- Fire and rescue departments;
- Local EMS offices;
- Local FPS offices, and
- Towing companies.

Each system has its own Central Communications Centre (CCC), although not all are functioning to full potential partially due to budget and resource constraints.

A number of challenges with RIMS are currently experienced. These include:

- Lack of commitment from the agencies to give priority to its statutory mandate, thus creating fragmentation in managing road incidents;
- Autonomous call centres are not efficient and impact negatively on information sharing and dissemination to enable quick response to incidents;
- Lack of hospitals involvement to manage and prioritise patient treatment;
- Lack of towing industry regulation;
- Lack of enforcement on private ambulances to prioritise critical patients on crash scenes, and
- Systematic scene management at fatal crashes is not adhered to by law enforcement agencies, often resulting in excessive delays.

A number of actions are proposed to improve the provision of incident management systems. These include:

- The implementation of a single CCC where incidents are reported and responded to;
- The Province will assist the municipalities to provide a 24 hour service and also handle hazardous materials;
- The Province will designate a common emergency number e.g. 112 (internationally standardised number for emergencies) for reporting emergencies and incidents along the road network, and
- The DCS will provide emergency support and roadside assistance to effectively clear breakdowns and reduce delays and congestion.

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11.4.4 Cross Cutting

Several cross-cutting activities were identified, and specific strategies are provided for each.

11.4.4.1 Safety and Security

Safety and security is a large concern in the Gauteng Province as, with the advent of the 4IR, new security risks are also introduced, for example opportunities to hack and intercept data transfer, steal information, and other malicious threats on a digital level, as well as potential vandalism of ITS devices, as has been experienced in the past.

11.4.4.1.1 Cybersecurity

With the emphasis on the digital environment and associated digitized data, new operational risks are introduced. Cybersecurity is often mentioned as one of the most serious threats to development of the CAV market. Cybersecurity can be categorized in five distinct types, i.e.

- Critical infrastructure Security;
- Network Security;
- Cloud Security;
- Application Security, and
- Internet of Things Security.

The Province already has a unit called the Gauteng Security Operations Centre (GSOC). It was created to protect the provincial government against increasing threats of cyber-attacks. This facility is responsible for the continuous monitoring of the GPG ICT environment, including at schools, hospitals and other facilities to prevent such attacks from interrupting the services offered to Gauteng citizens.

It is advised that the GSOC should establish a separate function for cybersecurity for the transportation sector for the Gauteng Provincial transportation services and ensuring that transportation services in the Province are protected against potential cyber-attacks.

Various technology solutions are being developed to address these cybersecurity issues and challenges. It is acknowledged that a critical issue that is arising in the increasing trend of ITS towards centralisation, is the security risks involved.

Fast-growing technologies like cloud computing and Internet-of-Things create the possibilities for most of the data, analyses and decisions that are processed by centralised authorities or cloud-based platforms to be vulnerable if the proper cyber-security measures are not put in place. These factors could make ITSs vulnerable by possibly being temporarily unavailable due to malicious attacks, performance limitations or improper operations[xxviii]. These type of security risks may be mitigated by the safety and decentralised approach that technologies such as blockchain technology provides.

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Blockchain is a disruptive technology that has emerged in recent years and is experiencing rapid growth. Furthermore, it has the potential to revolutionise the increasingly centralised ITSs in applications[xxix]. One of the major benefits of blockchain is its ability to establish a secured, trusted, and decentralised autonomous ITS ecosystem, and thereby creating the opportunity for better usage of legacy ITS infrastructure and resources and may prove effective for crowdsourcing technology[xxx].

Peer-2-peer car sharing is one of the practical applications of Blockchain. It provides a way to verify accurate user data, for example the Innomovo[xxxi] platform that connects users in a safe and verifiable way to share their cars by relying on various blockchain-based data sources. La'Zooz, a completely decentralised and autonomous organisation, is a case study where blockchain technology is used for decentralised ridesharing, where empty seats of vehicles can be filled by utilising the La'Zooz blockchain network maintained by the users' devices[xxxii].

11.4.4.1.2 Vandalism and Theft

Vandalism and theft collectively are a serious threat to ITS devices and equipment on the Gauteng transport network. Damage to existing technology and communications infrastructure on the freeways across the Province is extensive. It is jeopardizing overall operations and management of the freeway system.

Several actions should be taken to minimise the risk. These include

- Continuous innovation in making devices vandal proof, and
- Coordinating security initiatives across the Province to collectively improve roving along the road network as well as response plans and immediate action plans to prevent vandalism.

11.4.4.2 Organisational & Coordination

The full value of technology and data applications within the Province can only be realised if co-operation and coordination across all spheres of government is in place.

Provincial-wide coordination may be achieved by addressing the lack of integration and creating synergies in technology applications. Opportunities exist for better integration, creating opportunities for economies of scale, as well as ensuring that technology infrastructure is not duplicated but shared.

It is imperative that provincial organisation structures are reviewed to accommodate a position that heads up "Innovation and Technology". This individual should coordinate the application of technology across the various departments within the provincial structures, as well as coordinate such initiatives across the Province.

In order to ensure better coordination of technology initiatives across the Province, the following actions are identified:

- Reorganisation of provincial structures and allowing for the position of "Innovation and technology", and

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- The Province taking up the responsibility for the establishment of a provincial-wide coordination committee for "Innovation and Technology (in the transport sphere)" for all levels of government.

11.4.4.3 Training and Education

It is recognized that continued training and education is required to ensure sustainable implementation of these systems. The local awareness and maturity level is not yet at the point where the opportunities of new technology and 4IR may be fully exploited.

Training and education need to be addressed in the following areas:

- Planning and implementation principles to implementing authorities, with an emphasis on life cycle planning and costing of technology projects;
- Continued awareness of new technology and 4IR development, and
- Identifying areas for vocational training to support deployment of these systems and contribute towards job creation. Different and new skills and skill levels are required in this field.

11.5 Transport Management Projects

11.5.1 Multifunctional Data Centre

A Transport Data Centre is seen as a key element in ensuring and underpinning a provincial digitalisation strategy. This centre is seen as multifunctional by nature and would support activities much wider than the typical transport management centre (TMC) encountered in the industry.

The Data Centre should be implemented in a phased manner, starting out with development of a Concept of Operations (ConOps). The ConOps should describe the functionality of the centre, roles and responsibilities of stakeholders and provide a high-level overview of software, hardware, devices, communications and operational requirements.

The functionality of the Data Centre should be wide ranging and could include aspects such as:

- Providing the mobility data platform for digitised data;
- Hosting various data including land use data, economic data, census data and other demographic data;
- Provide the platform for real-time operational as well as historical data visualisation;
- Providing the IFM platform;
- Enabling the hosting of an APTMS for monitoring and managing public transport. This includes road-based public transport as well as passenger rail;
- Development of predictive tools and dashboards to enhance operations of the transport system, and

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- Providing a disaster recovery facility for metropolitan operational centres.

It is envisaged that the facility will host personnel that will include transportation engineers, data scientists and traffic management operators.

The nature of activities within the transport data centre, also lends itself well to a PPP, especially as it relates to the opportunities created by the mobility platform.

This data centre will enable integrated planning and operations which would be a great gain, having a transportation model platform that updates in real-time, providing insights to operators at the TMC that can take action accordingly with the ITS tools at their disposal, and this would lead to enhanced collaboration. Setting up test labs, conducting spatial planning from a data perspective and determining predictive maintenance schedules would take the Province forward in the 4IR from a transportation perspective.

11.5.2 Digitisation Expansion

A systematic approach should be followed to consider transport services that can contribute towards expansion of the digital footprint. The largest and most valuable contributor in this regard will be the MBT industry. Other candidates are the scholar transport services as well as the subsidised bus contracts. Digitisation will assist a great deal in also addressing operational and management challenges within these industries.

Digitisation of these services entails the provision of a tracking device within the vehicles, an application on the driver's mobile device, and connectivity in the cloud with the centralised data platform. The benefits of providing such a system should outweigh the cost of providing this rather basic technology.

11.5.3 Integrated Corridor Management (ICM)

Increased congestion forces authorities to ensure that available capacity across modes is used to its full capacity. The international move towards ICM implementation, has underlined the great potential of this concept. The vision of ICM is that transportation networks will realize significant improvements in the efficient movement of people and goods through institutional collaboration and aggressive, proactive integration of existing infrastructure along major corridors.

Potential corridors within Gauteng should be identified for possible ICM implementation. Once a corridor has been identified, an operational concept will have to be developed as a first step. This proposed corridor must ensure the coordination of public transport, freeway and AMS, traveller information systems and incident management systems.

A potential candidate for ICM implementation is the Ben Schoeman corridor between Johannesburg and Pretoria. This corridor contains several digitised mobility options which include the Gautrain, the N1 freeway under FMS instrumentation, several parallel arterial systems (not instrumented), a regional rail link as well as three BRT systems supporting the larger mobility needs.

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11.5.4 Public Transport Management System

The digitisation of public transport systems makes it possible to provide real-time passenger information to commuters, but also offers the necessary information to operators to manage vehicles. This enables controlling and managing of public transport network operating conditions.

In order to maximise the opportunity created through digitising public transport modes, decision support systems should be put in place that will enable monitoring and managing public transport vehicles.

It is prudent to expand the system over time i.e. to start with a single mode or purpose (e.g. scholar transport) and add functionality as the system is developed and becomes more mature.

11.6 Transport Management Aspects to be Addressed in ITPs

Several aspects are identified that need to be addressed in ITPs. These include:

- **Technology and 4IR Strategy for Transport:** The various areas for development of local applications should be considered against this framework. This is in essence an update of existing ITS Strategies;
- **Coordination & Cooperation:** Areas for cooperation and coordination with other spheres of government or neighbouring municipalities should be highlighted in order to ensure consideration of possible economy of scale benefits in deploying technology, and
- **Training and Education:** These needs should be identified to ensure that the necessary awareness and skills are acquired to ensure sustainable planning and implementation.

Several strategies are identified within the document. Whilst it is acknowledged that not all are applicable within the municipal environment, a number of strategies should be considered for local implementation in order to align and support the provincial Smart Mobility Initiative. These include:

- Data digitalisation: identify areas for digital expansion;
- Digital infrastructure: consider ICT infrastructure required to support digitalisation;
- Electronic Payment: alignment with provincial IFM initiative, and
- Freeway and arterial management: consider instrumentation of freeways or key arterials through linkage with current systems to ensure economies of scale.

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12 TOURISM TRANSPORT

The provision of adequate transportation is essential for the growth and development of tourism. Transportation is one of the key elements affecting the tourism industry. It affects the mobility of tourists, in addition to influencing their demand and motivation to visit certain tourist destinations. The accessibility and connectivity to the existing transport network is critical for the success of tourist destinations.

Transport connects tourism generating regions (both domestic and international) to destinations, and facilitates the internal movement of visitors between attractions, accommodation, and commercial services. The location, capacity, efficiency and connectivity of transport can therefore play a significant role in how a destination develops, significantly influencing mobility of visitors and the connectivity of tourist experiences within destinations. At the same time growing numbers of travellers might create numerous challenges in terms of transport infrastructure and capacity, inter-modality, and information for travellers.

Given the context above, it has become critical that tourism facilitation is incorporated into the overall transport strategic planning and that systematic collaboration with stakeholders in tourism policy development is necessary. The converse is also true, i.e. that tourism policy development should recognise inclusion of transport aspects as well as the need for stakeholders within the transport industry in development of tourism policy.

12.1 Tourism Transport Challenges

12.1.1 Backlog in Issuing Operating Licences to Tourist Operators

Tourist operators play a key role in providing mobility options to tourists, both international and domestic. This industry's ability to provide transport to tourists, is subject to operating licences allocated to them for providing such services. An operating licence authorises a person to use a specific vehicle for providing road-based public transport services, and in this case for purposes of a tourist operator. Application forms need to be submitted to the National Public Transport Regulator (NPTR).

A severe backlog in issuing operating licences is currently experienced. The lack of these licences being issued, is creating widespread uncertainty amongst such service providers. New entrants are reluctant to enter the market, and many incumbents might be forced to leave the industry if the matter is not resolved timeously. It is recognised that growth in the tourism industry is impacted negatively by virtue of this administrative process.

12.1.2 Public Transport Links to the Main Ports of Entry

The provision of quality and dependable public transport links to and from main ports of entry is an expectation of both international tourists, as well as domestic tourists. Current public transport linkages to the two main ports of entry into Gauteng i.e. the Oliver Tambo International Airport (ORTIA) as well as the Lanseria International airport, are not adequate.

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The two main (air) ports of entry are served with limited public transport options. At ORTIA, the following options exist:

- Gautrain;
- E-hailing (Uber, Bolt etc), and
- Metered taxi.

Similarly, at Lanseria International Airport, the only current public transport options are:

- E-hailing (Uber, Bolt etc), and
- Metered taxi.

A future GRRIN extension might be linked to Lanseria.

Clearly, public transport linkages to these facilities are lacking.

12.1.3 Access to Intra-provincial Public Transport

Local tourist attractions need to be accessible and connected to the local public transport systems. However, this is largely not the case within Gauteng. The following observations are made:

- There is a lack of information on fares, timetables as well as destinations;
- There is little or no integration between different modes of transport;
- It is not clear to the non-local tourist where to find public transport, and
- Signage for public transport facilities is not the norm.

The above factors contribute to a culture of not utilising available public transport systems by both domestic and international travellers.

12.1.4 Safety and Security

Tourists generally need to be assured that they will be travelling within a free and safe environment. The current crime situation in South Africa in general makes this a major challenge. Apart from references to general crime, crime on-board trains, buses, MBTs as well as crime associated with some of the e-hailing options, confirm challenges within this environment.

It is recognised, however, that the responsibility for safety and security lies with law enforcement agencies.

12.1.5 Institutional Alignment

It is imperative that Transport Policy and Planning within the context of the Tourism and Hospitality industry is aligned. Whilst tourism cannot function in isolation, this is also true for transport interventions within the context of tourism.

Many role players are identified which should form part of inter-governmental initiatives to ensure the delivery of a complete tourism experience. These role players

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should also be aligned with regard to transport-specific aspects regarding the Tourism "Big Picture". Within the context of the GPG, clearly the Gauteng Tourist Authority has the provincial tourism mandate.

Alignment of transport initiatives first and foremost involves interaction with the Gauteng Tourist Authority. However, other stakeholders are recognised and need to be engaged with in order to maximise transport interventions in this space. These stakeholders include:

- South African Police Service (SAPS);
- DoT;
- Airports Company of South Africa (ACSA);
- Department of Cooperative Governance (COCG);
- Department of Arts & Culture (DAC);
- Department of Sport & Recreation (DSR), and
- Department of Forestry, Fisheries and the Environment (DFFE).

12.2 Tourist Transport Focus Areas

The key focus areas for Tourist Transport are briefly listed and discussed below.

Industry alignment: It is imperative that the tourism and hospitality industry is aligned with the transport industry as it relates to transport planning and implementation that supports, benefits, and facilitates tourism.

Infrastructure development: Linkages to major tourist attractions within Gauteng, as well as to major ports of entry (such as airports), need to be enhanced or provided to ensure its sustainability and growth.

Operational improvement: Areas for improvement of mobility services to tourists to advance their overall tourist experience, need to be identified and enhanced on a continuous basis. This could include availability of public transport modes, integration of schedules, ease of fare payment etc.

Information sharing: Tourists have an expectation to have full information at hand. This could be provided by means of on-line applications, but should be supported by visible infrastructure such as directional signage to major tourism destinations.

12.3 Tourism Transport Strategy

The Tourism Transport Strategy aims at addressing the various challenges within the industry, as well as recognising advances in technology in order to work towards a complete tourism solution.

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12.3.1 Coordination of Transport Function within Tourism

The transport function within tourism needs to be coordinated between the GDRT and the Gauteng Tourism Authority. This interaction will guide the improvement of transport services to tourist market segments.

Formal engagement with Gauteng Tourism Authority (GTA) is an imperative as a point of departure. Consideration should be given as to how Gauteng on the Move can enhance the experience of a tourist from a transport perspective. This perspective could include:

- Availability of information;
- Connectivity to major provincial tourist destinations, and
- Ease of fare payment.

Some minor adjustments or additions to the overall transport strategy could also be considered when alignment is discussed with the GTA.

Several other stakeholders were identified and listed in earlier sections. These stakeholders need to collectively support the transport-related tourism initiatives. A role and responsibility matrix could be drawn up to highlight the involvement of these stakeholders and to form the basis of an overall agreement and alignment.

12.3.2 Public Transport Links to Ports of Entry

Public transport mobility options have been shown as an important service to the mobility needs of tourists, especially linking the major ports of entry i.e. ORTIA and Lanseria Airport. However, the specific demand is not clearly and fully understood i.e. what are the destinations served, what is the temporal nature of this need, and what is the magnitude of the need?

In order to better cater for the needs of tourists entering the major airports within the Province, surveys need to be performed to establish and benchmark their needs. These surveys should include for each port of entry:

- What is their origin and destination within Gauteng? What is their origin and destination outside Gauteng?
- What mode of transport are they utilising i.e tour operator, hotel shuttle, Gautrain, e-hailing option, metered taxi, rental vehicle?
- What information sources did they scrutinise to obtain transport options?

The surveys can be extended and contents supplemented by other stakeholders to gain the maximum from these surveys.

12.3.3 Address the Backlog with Operating Licences

It is critical for growth and support to the tourism industry, that the backlog with regard to operating licences are resolved. Further to addressing the backlog, it is necessary to obtain sustainable solutions to prevent similar situations to occur in future.

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Actions identified include:

- Early engagement with the DoT and the National Public Transport Regulator (NPTR);
- Options need to be considered to do away with the current backlog, as well as find ways of improving the application process, and
- The feasibility of devolution of the function to the PRE should be investigated.

12.3.4 Fare Payment

Payment of fares for public transport can be complex to the tourist and/or might not necessarily meet their need.

The envisaged one-province-one-ticket should recognize the need of tourists. The nature of their typical mobility needs is not necessarily reflected in current fare strategies.

Provision should be made for day and week passes in fare options for the provincial wide fare media.

12.3.5 Development of a Smart Tourist Platform

Online-based tourist platforms with an emphasis on mobility have become a reality with the tools offered by the 4IR. Sources such as digitized mobility data, social media options and resultant crowd sourcing information, can be made accessible on a tourist platform that strengthens the linkages between service providers and the tourists.

This Smart Tourist Platform could provide the following functionality:

- Indicate mobility options to access tourist sites;
- Show parking availability and real time occupation at the site;
- Indicate traffic congestion near the tourist destination;
- Show how crowded the tourist destination is, and
- Provide micro-mobility options and or rental at the site.

As a point of departure an operational concept needs to be developed, indicating stakeholders, their roles and responsibilities, the functionality of the tourist platform, the high-level ICT requirements - all to make sure that the concept is clearly understood and that implementation risks are identified.

It is envisaged that this functionality could be developed at the Data Centre, as referenced in the Transport Management chapter.

12.3.6 Incorporating Tourism Transport in Provincial and Local Planning

The transport elements of a tourism strategy need to be embedded also in provincial and local transport planning. In this manner land transport service levels for domestic and international tourists will be maintained and improved.

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Transport plans at provincial and local level should address the following within this context:

- The need for transport infrastructure which serves major tourist hubs and interchanges (including airports and central stations), major corridor services and associated infrastructure linking major tourist trip attractors;
- An understanding of tourist market segments based on research. This understanding will direct thoughts and plans in addressing tourism transport.
- Initial lower-cost tourist transport interventions such as:
    - Service intervention and signage;
    - Directional tourist signage;
    - Improved safety and performance standards of niche tourist transporters, and
    - Coordination between land transport and other modes, especially air transport.

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13 FUNDING STRATEGY AND IMPLEMENTATION PROGRAMME

13.1 Introduction

The Gauteng Department of Roads and Transport (GDRT) is responsible for ensuring that the provincial transport network and public transport services are able to support current economic activity, promote new growth opportunities, and facilitate spatial transformation. Within this broad mandate, the GDRT's main responsibilities relate to delivering and maintaining the provincial road infrastructure and the provision of public transport services through the management of the PTOG contracts and through the PRE, the regulation of public transport services throughout the Province.

The GDRT delivers on this mandate through their expenditure and revenue generation plans. The current set of expenditure and revenue generation plans, which forms part of the funding strategy of this Provincial Land Transport Framework, must take account of the subdued economic environment.

Transport is the lifeline of economic activity, and the efficient and effective movement of people and goods is essential for the economy to grow. There is enormous pressure on the fiscus from all sectors, and transport is competing for funds against all other sectors.

A high-level scan of the transport environment focussing on the funding requirement split between Capital-, Operational-, and Maintenance expenditure reveals the pressure on capital funding required for the upfront investment and the high ongoing financial requirement as part of subsidising the operations and routine maintenance. This is indicated in Table 13-1.

Table 13-1: Demands on Transport Funding

Expenditure Item	Funding pressure
Capital	Rehabilitation of rail infrastructure
	Gautrain – new contract from 2026 plus Gauteng Rapid Rail Integrated Network Extension plans (GRRINE)
	GFIP (resolution of e-tolls)
	Road network – National, Provincial and Local
	BRT across 3 Metropolitan Areas
	Plans for corridor development - CoJ
	Rehabilitation of freight infrastructure (Supposed to be self-funding)
	Cater for People with Special Needs from an infrastructure and vehicles perspective
Operations and Maintenance	Metrorail
	Gautrain Rapid Rail Link
	BRT's require operational subsidy (50 – 80%)
	MBT's – asking for operational subsidy
	Provincial bus contracts (PTOG not sufficient)
	Municipal Bus Services

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Expenditure Item	Funding pressure
	Scholar Transport
	Road maintenance
	Safety and Security

The investment in the items mentioned under CapEx is essential and critical for the Province to improve its competitiveness on the global stage. It is also true that the expenditure on the rehabilitation of the PRASA corridors and Transnet's freight rail operations is due to vandalism, stemming mainly from poor protection of their assets. Funds that could have been used to improve the network and overall service offering had to be allocated to upgrade the vandalised infrastructure.

GRRIN extensions, although capital intensive, are essential to improve access to the western parts of the Province, as this is where development pressure is and will continue to be experienced. GRRIN extensions will improve mobility and access to these areas, and further enhance the patronage on the existing services.

Investment in the road network at all spheres of government is required, as focussing on provincial roads will not be sufficient to enhance economic growth. SANRAL and the municipalities should invest sufficiently in the roads by firstly protecting and maintaining the existing asset, with some priority given to improving the regional mobility and connectivity as well.

Public transport needs to be accessible to all citizens in Gauteng. Consideration given to the requirements of Special Needs passengers, but further enhancements should be considered. was and enhanced provision must be made for Special Needs categories of travellers. Additional funds will be required to improve all public transport and NMT facilities to adequately cater for them. In addition, the adaptation of vehicles to cater for people with disabilities has received attention and strides have been made in this regard (BRT buses), but much more needs to be done in this regard with the MBT industry.

The ongoing nature of the operational and maintenance costs for all the services mentioned in the table puts enormous pressure on existing transport funding, with the result that there is very little scope for introducing new services, extending current services or improving existing services.

PRASA's operating model is based on a deficit subsidy regime. Although operating and maintenance cost are budgeted for, collecting the fare revenue is problematic as a large number of stations in Gauteng have no ticket office or fare gates and neither is the rail reserve properly secured. It is estimated that 25 – 30% of the passengers do not pay for using the services. Any shortfall over and above the operational subsidy budgeted for, is made good through an allocation by National Treasury. There is no consequence for poor operations and the high occurrence of fare evasion.

The revenue received from fare paying passengers on BRT services does in many instances not cover the direct operating cost of the services. The PTNG, the main source of funding for the BRT systems, has now been split into an infrastructure

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component, the Public Transport Network Infrastructure Grant (PTNIG) and an operations component, the Public Transport Network Operations Grant (PTNOG). In addition to this, it is also expected that cities would supplement the shortfall through their own revenue sources (mostly rates and taxes).

The provincially subsidised commuter bus contracts are funded from the PTOG and have been underfunded for many years. The consequence of this is mainly two-fold, namely i) minimal investment in vehicles, with a resulting ageing of the fleet that costs more to operate and the service is more unreliable as breakdowns occur more frequently, and ii) the routes cannot be extended to new areas, due to funding shortages.

Municipally owned bus services were introduced as a social service, including a significant number of scholar services, where the fares were determined through political decisions at council level, with no evidence that the cost of operating the services was used as a benchmark. These services are particularity unproductive and cost the local taxpayer a large sum of money annually.

Scholar transport has been introduced when the Department of Basis Education's Policy on Scholar Transport required that all school going children that walk more than 5 kilometres to school, must be provided with reliable and safe transport. These services are planned and contracted by the GDE and are managed separately from the IPTNOG or PTOG regimes.

The preservation of the road and street network is of critical importance as it ensures that the investment will last its design life, and includes maintenance, both routine and periodic maintenance, and rehabilitation of roads and streets. Unfortunately, the current public budgets do not adopt such a functional categorisation of expenditure, but only categorize expenditure according to sub-programmes and an economic classification (current, transfers and subsidies and capital). However, all authorities are struggling to fund the maintenance of the existing road and street infrastructure, let alone the necessary rehabilitation of the network or capacity improvements, not even to mention extending the network.

Safety and security are major concerns on the overall transport system, ranging from car and pedestrian accidents on the road network, to personal incidents on individuals, specifically women and children, while accessing the public transport network (walking to a stop/taxi rank), waiting at a stop or even in the vehicle (train, bus or MBT). A coordinated safety and security approach is lacking, and additional funds and investments will be required to address this.

13.2 Funding Definitions

Given the fact that funding related terms are often being used interchangeably and to ensure that there is a clear understanding of what is being meant in this chapter, the following definitions are provided for clarity purposes: [19]

[19] Source: NATMAP Chapter 13

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- **Funding** relates to how the project is ultimately paid for, i.e., revenue derived from budgets, user charges and/or government support through subsidies;
- **Financing** refers to the activity of amortising (postponing and smoothing) what would have been upfront financial obligations, so that the cost stream becomes more aligned with the revenue stream *(and always entails off-budget financing from "outside" sources),* and
- **Charging** refers to the mechanics of how users pay, the type and level of fee they pay and the form of payment (it therefore is a sub-set of Funding).

(Source: NATMAP Chapter 13)

13.3 Status of Transport Funding

13.3.1 SANRAL

The funding information has not been received from SANRAL and will be included when received in the next update of the PLTF.

13.3.2 PRASA

The actual PRASA CapEx and OpEx for the 2020/21 and 2021/22 are shown in Table 13-2, as well as the budgeted MTEF figures for Gauteng.

Table 13-2: 2020/21 and 2021/22 PRASA CapEx and OpEx

Gauteng R Thousands	Actual 2020/21	Actual 2021/22	Budget 2022/23	Budget 2023/24	Budget 2024/25
Investment Rolling Stock*	1 227 398	545 667			
Investment Infrastructure	518 856	960 144	2 653 618		
Operational					
Maintenance	30 422	41 058	87 690	91 592	95 705
Material	10 493	42 499	93 157	97 303	101 672
OpEx	2 188 608	2 212 042	2 687 994	3 399 931	3 523 036

* New trains and refurbishment of current fleet

Only the infrastructure investment budget has been finalised for the 2022/23 financial. The infrastructure investment for this financial year is earmarked for the rebuilding of corridors and repair of stations, as well as re-signalling.

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This includes all infrastructure and rolling stock. For the new rolling-stock the allocation per region is based on actual train sets allocated to the region (2020/21). The budget is not split per region.

Giving the full Rolling Stock FRP allocation for the MTEF would not be reflective of the sets that will be provided to Gauteng.

Allocations for the overhaul and renewal of the old fleet for Gauteng for 2022/23 is still to be finalised. PRASA do not allocate new trains to the regions in terms of this budgeting.

The planning for 2023/24 MTEF will be done per corridor or line and will funding will be allocated to each region for the rebuilding of corridors.

13.3.3 Provincial Budget

The Gauteng Department of Roads and Transport is one of 15 Departments that make up the provincial administration for Gauteng. The overall MTEF allocation for the Province increased from R 153 billion to R 157 billion in the MTEF period (2022/23 to 2024/25).

The GDRT is allocated around 6% of the budget over the MTEF period, with a total of R 9.3 billion in 2024/25.

The GDRT budget allocation is in support of its mandate to provide an integrated transport system that is reliable, accessible, safe, affordable and has a wide range of socio-economic benefits. The Department also contributes to the provincial outcome of providing an environmentally sustainable road infrastructure that is inclusive of increased accessibility and efficiency, employment creation and social inclusion of all the citizens of the Province.

In this regard, the GDRT manages its responsibilities in terms of the following 5 programmes:

- Administration;
- Transport Infrastructure;
- Transport Operations;
- Transport Regulation, and
- Gautrain, through the GMA.

The **Administration programme** provides the overall management and administrative support function to the Office of the Member of the Executive Council (MEC) and the Department. The objectives of the programme include rendering advisory, secretarial, parliamentary and administrative support services to the MEC, rendering strategic support to the Department as well as to manage personnel, procurement, finance, administration and related support services.

The **Transport Infrastructure programme** entails supporting social empowerment and economic growth through the promotion of accessibility and the safe movement of people, goods and services through the delivery and maintenance of transport

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infrastructure that is sustainable, integrated and environmentally sensitive. Key outputs and service delivery measures for the programme are upgrading and maintaining the provincial roads and transport infrastructure.

The programme consists of 5 sub-programmes, namely: Infrastructure Planning; Infrastructure Design; Construction; Maintenance and Support.

The **Transport Operations programme** entails planning for, regulating and facilitating the provision of integrated land transport services to enhance the mobility of all communities. The objectives of the programme are to manage the integration of land transport contracts and to manage, coordinate and facilitate transport safety and compliance in all modes.

The **Transport Regulation programme** entails the provision of a safe environment through the regulation of traffic on public infrastructure, limited law enforcement, implementation of road safety education and the registration of vehicles and drivers. The programme's objectives are to monitor and control licensing of all motor vehicles and to render services regarding the administration of operating licence applications, manage approve and control the registration of transport operators and the issuing of all licenses and permits required in terms of legislation.

The **Gautrain programme** is a special project that seeks to plan for, design and construct the Rapid Rail Link system and to ensure its implementation and efficient management. The programme's objective is to manage and oversee the rail system in terms of a concession agreement.

The GDRT budget for the MTEF period is shown in Table 13-3.

Table 13-3: GDRT Allocation per Programme - MTEF[20]

Programme	2022/23		2023/24		2024/25	
	R '000	% Allocation	R '000	% Allocation	R '000	% Allocation
Administration	R402 036	4.6%	R343 451	3.8%	R356 777	3.8%
Transport Infrastructure	R2 528 167	29.0%	R2 886 252	31.5%	R2 847 148	30.7%
Transport Operations	R2 977 187	34.1%	R3 067 917	33.5%	R3 204 758	34.6%
Transport Regulation	R354 326	4.1%	R341 811	3.7%	R351 386	3.8%
Gautrain	R2 457 566	28.2%	R2 509 568	27.4%	R2 509 568	27.1%
TOTAL	**R8 719 282**	**100.0%**	**R9 148 999**	**100.0%**	**R9 269 637**	**100.0%**

[20] Source: Estimates of Provincial Revenue and Expenditure, 2022

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The largest allocation goes to the Transport Operations programme. This programme makes up 34% of the Department's budget and the total allocation goes to the bus operators providing PTOG subsidised services in the Province.

The GDRT is funded from the equitable share, conditional grants and to a lesser extent the Expanded Public Works Programme (EPWP). The allocated grants refer to the PTOG, which is exclusively used for the payment of subsidised bus operators, the Provincial Roads Maintenance Grant (PRMG) that is allocated for the maintenance of the provincial road network and the EPWP Incentive Grant that is intended to incentivise departments based on creation statistics from the preceding year. The Grant Funding for the MTEF period is indicated in Table 13-4.

Table 13-4: Sources of Funding

Source	2022/23		2023/24		2024/25	
	R '000	% Allocation	R '000	% Allocation	R '000	% Allocation
Equitable Share	R5 298 817	60.8%	R5 584 385	61.0%	R5 540 584	59.8%
Conditional Grants	R3 420 465		R3 564 614		R3 729 053	
Provincial Roads Maintenance Grant	R680 058	7.8%	R713 716	7.8%	R750 123	8.1%
Expanded Public Works Programme	R9 857	0.1%		0.0%		0.0%
Public Transport Operations Grant	R2 730 550	31.3%	R2 850 898	31.2%	R2 978 930	32.1%
Total	**R8 719 282**	**100.0%**	**R9 148 999**	**100.0%**	**R9 269 637**	**100.0%**

The equitable share is responsible for 60% of the funds received, and the remainder is made up by Conditional Grants, of which the PTOG is the largest. The Provincial Roads Maintenance Grant (PRMG) remains throughout the MTEF period at around 8%. The Expanded Public Works Programme (EPWP) grant for the outer years can only be allocated once the job creation figures have been reported on by the Province. It is unlikely to differ substantially from the reported figure in 2022/23.

In addition to the grants received, the GDRT generates provincial revenue through the sources that are indicated in Table 13-5.

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Table 13-5: Provincial Revenues

Source	2022/23		2023/24		2024/25	
	R '000	% Allocation	R '000	% Allocation	R '000	% Allocation
Motor Vehicle Licenses	R4 695 173	97.9%	R4 901 761	97.9%	R5 121 850	97.9%
Sale of goods and services	R97 972	2.0%	R102 283	2.0%	R106 876	2.0%
Interest, dividends and rent on land	R79	0.0%	R82	0.0%	R86	0.0%
Transactions in financial assets and liabilities	R1 955	0.0%	R2 041	0.0%	R2 133	0.0%
Total	**R4 795 179**	**100.0%**	**R5 006 167**	**100.0%**	**R5 230 945**	**100.0%**

The GDRT is a major contributor to the Provincial Revenue Fund (PRF) in that it accounts for more than half of the Provincial Government's own revenue collection. The revenue is largely generated through income arising from motor vehicle registration and licensing fees. The increase in the MTEF period can be attributed to an increase in the vehicle population, annual inflationary increases and improved revenue collection.

The sales of goods and service, other than capital assets refers to sales of tender documents. This revenue stream is directly related to the number of tenders issued by the department.

The remaining two revenue sources are minor contributors to the revenue stream and are difficult to project accurately due to the uncertain nature of the source.

13.3.4 Municipal Budgets

The Municipal expenditure for the 3 metropolitan municipalities and 2 district municipalities for the MTEF period is indicated in Table 13-6.

Table 13-6: Municipal Expenditure

Municipality	2022/23 R 000	2023/24 R 000	2024/25 R 000
City of Ekurhuleni			
Capital Expenditure	R808 680	R916 771	R913 032
Operational Expenditure	R2 976 459	R3 130 395	R3 327 087
Maintenance Expenditure	R527 341	R566 875	R624 748
City of Johannesburg			
Capital Expenditure	R1 739 123	R2 163 429	R2 409 195

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Municipality	2022/23 R 000	2023/24 R 000	2024/25 R 000
Operational Expenditure	R4 984 967	R4 791 654	R5 024 187
Maintenance Expenditure	R918 480	R961 723	R1 006 505
City of Tshwane			
Capital Expenditure	R808 680	R1 156 950	R1 665 870
Operational Expenditure	R2 050 757	R2 065 228	R2 182 125
Maintenance Expenditure	R221 080	R230 999	R242 500
Sedibeng District Municipality			
Capital Expenditure	R0	R450	R0
Operational Expenditure	R104 100	R110 673	R113 028
Maintenance Expenditure	R0	R0	R0
West Rand District Municipality			
Capital	R64 297	R68 155	Not Available
Operational Expenditure	R0	R0	Not Available
Repairs and Maintenance	R99 000	R106 500	Not Available
Total Capital	R3 420 780	R4 305 755	R4 988 097
Total Operations	R10 116 283	R10 097 950	R10 646 427
Total Maintenance	R1 765 901	R1 866 097	R1 873 753
TOTAL	**R15 302 964**	**R17 674 271**	**R17 508 277**

Note: Sources for all municipalities are MMTEFs for the 2022/23 municipal financial years, except for West Rand District Municipality where the IDP was used, in the absence of the MMTEF.

The operational expenditure includes cost items for deprecation and asset impairment.

From Table 13-6 it is clear that on average, over the MMTEF period, operating expenditure accounts for 61%, CapEx for 25% and expenditure on maintenance for 14% of the total budget allocations.

13.3.5 Project Funding and Implementation

A summary of the provincial transport planning and implementation projects is indicated Table 13-7.

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Table 13-7: Provincial Transport Planning and Infrastructure Projects

Provincial Projects

Project	Location	Budget R'000	Target Date	Main Milestones
Update of the ITMP25	Gauteng		Mar-24	Long term plan, required by the TAG Act. Second tier plan in the overall 4 tier planning hierarchy
Household Travel Survey to measure the impact of COVID-19 on mobility patterns	Gauteng		Mar-23	Understanding new mobility patterns
Gauteng Integrated Smart City Modelling Centre for Road, Rail and Transport Planning	Gauteng		Ongoing	Provide evidence based decision making to improve mobility of goods and people
Study to Measure, Monitor and Certify exact emission contribution of transport in Gauteng	Gauteng		Mar-24	Measure, monitor and certify the exact emission contribution of transport
Feasibility study on integrating BRT services between Cities of Johannesburg and Ekurhuleni	CoJ, CoE		Mar-23	Feasibility and service design completed. MoA to be developed and approved.
Integrated Transport Customer Services Centre	CoT		Ongoing	Finalise land acquisition, site studies and commence with detail designs
Appropriate network hierarchy and support infrastructure for MBT operations	Gauteng		Ongoing	Data collection and network design activities in support of safe, effective and efficient taxi operations
Route determinations	Gauteng		Mar-22	Twenty new routes have been identified for initiation in the tender process
Feasibility study to determine financial viability of the PWV15	Gauteng		Mar-23	Determine whether public sector, PPP or an alternative procurement mechanism is best
Route determination as part of amending the GSRN/GSTN	Gauteng		Mar-25	Identified 20 new routes to support freight hubs, SEZ's, Mega Settlement Projects and Township Economy development nodes
PWV15 - Phase 1	CoE		Mar-23	Prelim design review from R 21 to N3, detail design from R 21 to K94
PWV15 - Phase 2	CoE		Mar-24	Detail design from K94 to P58-1

Provincial Projects

Project	Location	Budget R'000	Target Date	Main Milestones
PWV15 - Phase 3	CoE		Mar-26	Detail design from P58-1 to N3
Road K111 - Phase 1	CoT, CoJ		Mar-23	Design
K43 - K142 to K122	CoJ		Mar-23	Design
R59 - Pedestrian bridge	Sedibeng		Mar-23	Design
D2204 - Construction of road over rail	CoJ		Mar-24	Design
P241-1 - From R558 to R28	CoJ, CoE		Mar-24	Design
K217 - Phase 1- R566 to K4	CoT		Mar-25	Design
D2150 - From P73/1 to Link Road	CoJ		Mar-25	Design
P66/1 From P71/1 - D795	CoJ		Mar-25	Design
K54	CoT	R529 000	Mar-22	Upgrading of K54 to R104
K148	CoJ	R440 000	Sep-25	Intersection with N3
K69 -	CoT	R310 000	Sep-22	Doubling of Solomon Mahlangu from N4 to Mamelodi
K174 - Vaal River Interchange	Sedibeng	R186 000	Oct-24	Improve access to the Free State to the south and Sebokeng to the north.

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Provincial Projects

Project	Location	Budget R'000	Target Date	Main Milestones
K46	CoJ	R500 000	May-23	Willian Nicol from PWV 5 to Diepsloot
K73 - Upgrade	CoJ	R274 000	Jun-23	Upgrade link between Allandale road and R55
K60	CoJ	R394 000	Mar-25	Woodmead Drive to Allandale Road
K46	CoJ	R500 000	May-23	Dualisation of single carriageway between PWV5 and Diepsloot
K101	CoJ, CoT	R450 000	Jan-25	Upgrade of existing road and interchange between K27 and K101.
R82 - Phase 3	Sedibeng	R875 000	Mar-25	Dualisation of the R 82 between Walkerville and De Deur
K31	CoJ	R204 000	Feb-24	Reconstruction and upgrade of K31 from Zandspruit to N14
K14	CoT	R120 000	Jan-25	Construction on R513, between Rayton and Cullinan
K15	CoJ	R315 000	Mar-25	Upgrade between K102, Dobsonville and Wild Chestnut , Protea Glen
K56	CoJ	R500 000	Mar-24	New road (dual carriageway) between William Nicol and Main Road
K175		R80 000	Jun-24	Rehabilitation from R586 to K14
P156/3		R110 000	Mar-22	P155/1 to D2568
P39/1	CoJ, WR	R153 110	Mar-23	Rehabilitation from Diepsloot to Muldersdrift

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Provincial Projects

Project	Location	Budget R'000	Target Date	Main Milestones
P122/1	CoT	R180 000	Sep-23	Solomon Mahlangu drive to Olifantsfontein
P241-1		R110 500	Mar-22	Rehabilitation from R 554 and D405
D483	CoE, CoT	R110 000	Aug-22	Between Bapsfontein and Cullinan
P73/1	CoJ	R246 000	Oct-24	Between Ennerdale and Eldorado Park
DLTC and TOLAB construction	Sedibeng	R73 046	Mar-23	Sebokeng DLTC and TOLAB constructed
Eight major bridges and one major culvert	West Rand		Mar-25	Rehabilitation in Krugersdorp
Electronic Monitoring System	Gauteng		Mar-23	Moved from manual monitoring of PTOG contracts to electronic monitoring.
Digital solution for law enforcement in the MBT Industry	Gauteng		Ongoing	Create a platform (database) to manage and structure the routes with legal OL
IFM	Gauteng		Ongoing	Operationalise the Account Based Ticketing System and integration with all modes - focus on One Province, One Ticket
Transport Management Centre - Phase 1	Gauteng		Mar-23	Establishing and operationalising the TMC with skills and systems
Taxi transformation	Gauteng		Mar-23	Implement the action plan developed from the findings from the Gauteng Taxi Summit
MBT route electronic monitoring	Gauteng		Mar-25	Implement on major corridors where taxi conflict and violence takes place. 10 routes identified for implementation

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A summary of the municipal planning and implementation projects of provincial significance is shown in Table 13-8.

Table 13-8: Municipal Projects of Provincial Significance

Municipality	Project	2022/23	2023/24	2024/25
		R 000	R 000	R 000
City of Ekurhuleni	IPTN Planning, Implementation and Operations	R260 000	R277 956	R278 575
City of Johannesburg	IPTN Planning, Implementation and Operations	R320 006	R726 021	R718 602
City of Tshwane	IPTN Planning, Implementation and Operations	R269 700	R289 075	R218 089

(Source: Respective IDP's)

The conditions of the PTNG, which are of importance to the PLTF, are highlighted below:

- Projects must be based on, and form part of, a strategic, municipal wide, long-term IPTN plan and strategy approved by the municipal council;
- Projects funded by this grant must be based on an operational and business plan, which must include a multi-year financial operational plan approved by the municipal council. This multi-year financial operational plan must cover the full duration of any contracts for each phase funded by the PTNG and include operating and maintenance costs and universal design access plans;
- Projects must support an integrated multi-modal network approach as defined in the NLTA and the Public Transport Strategy and municipalities must manage operations to progressively achieve the standard of service defined in the Public Transport Strategy within available resources;
- Projects should follow an environmental strategy and consider energy efficiency and environmental aspects, such as emission standards; mandatory specifications regarding average fleet emissions should be considered;
- All public transport infrastructure and services funded through this grant must ensure that there is provision for the needs of special categories of passengers (including disabled, elderly, and pregnant passengers) in line with the requirements of section 11(1)(c)(xiv) of the NLTA, and
- All new intelligent transport solutions (ITS) related contracts that will incur grant expenditure must be jointly approved by DoT and National Treasury before grant funds may be spent on them.

Table 13-9 reports on the expected sources of revenue and estimates of expenditure arising from the preparation, implementation and operation of the different strategies in the 5-year period.

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Table 13-9: Schedule 2

Key Strategy	Programme/project	Budget estimates	Source	Gaps/shortfalls	Period	Location	Responsibility
Sustainable Transport	Emissions reduction / air quality measurement programme	R 7.5 million			2023 - 5 years		
Sustainable Transport / NMT	Route investigation for piloting of "Cycle Highways" on intercity provincial routes with existing / potential high demand for cycling	R800 000			2023		
Sustainable Transport / NMT	Developing suitable "standard" cross sections that incorporate NMT (and UA) & Public Transport/HOV lanes on provincial roads	R500 000			2023		
Sustainable Transport / Safety	NMT safety campaign that should form part of a broader awareness campaign linked to the decade of Road Safety.	R 3.5 million			2023 - 5 years		
Non-Motorised Transport	Bicycle distribution programme - through the Shova Kalula initiative shift towards one that looks to building social cohesion and economic empowerment through localised smaller distributions that identify	R 10 million			2023 - 5years		
Sustainable Transport	Communication and awareness raising programme: incorporating all aspects of Sustainable Transport measures targeting specific stakeholder groups.	R 3 million			2023 - 5 years		
Transport Management	Multifunctional Data Centre: The Data Centre should be implemented in a phased manner, starting out with development of a ConOps.	R900 000			2023 - 1 year		
Transport Management	Establish the Multifunctional Data Centre: Provide a mobility data platform for hosting various digitised data and hosting transportation engineers, data scientists and traffic management operators.	R20 million			2024 - 5 years		

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Key Strategy	Programme/project	Budget estimates	Source	Gaps/shortfalls	Period	Location	Responsibility
Transport Management	Compile a Digitalisation Strategy.	R1.5 million			2023 - 18 months		
Transport Management	Digitisation expansion: A systematic approach should be followed, considering a MBT industry pilot project that can contribute towards expansion of the digital footprint.	R5 million			2024 - 3 years		
Transport Management	Integrated Corridor Management (ICM): Identify a corridor and develop a ConOps.	R800 000			2023 - 18 months		
Transport Management	Public Transport Management System: Create a ConOps.	R600 000			2023 - 9 months		
Transport Management	Public Transport Management System: Conduct a pilot project.	R3 million			2024 - 2 years		
Integrated Land use and Transport Planning	Development of Provincial Regulations on incentivising private development	R1.1 million			2023 - 18 months		
Integrated Land use and Transport Planning	Identification of a land use transport integration pilot project for targeted investment, collaboration and integration between across all spheres of government.	R800 000			2023 - 12 months		
Integrated Land use and Transport Planning	Establish a provincial land use integration task team / multi-sectoral forum (where such a forum exists, its mandate and operational function should be redefined and strengthened) with defined Key Performance Indicators (KPIs).	R600 000			2023 - 6 months		

Key Strategy	Programme/project	Budget estimates	Source	Gaps/shortfalls	Period	Location	Responsibility
Integrated Land use and Transport Planning	Prepare Scope of work for the assessment and development of municipal capacity to monitor the integration of land use, economic development and transport.						
Integrated Land use and Transport Planning	Develop a monitoring mechanism, linked to the GITMP and municipal ITPs, to track land use and transport integration over a 5-year period.						
Transport Infrastructure	Activate/Establishment of Inter-governmental Coordination Structures dealing with Transport Planning and Implementation						
Transport Infrastructure	Establishment of a programme to monitor road reserves and right of way corridors to identify illegal invasions and development of resettlement strategy.						
Transport Infrastructure	Develop an integrated data repository to ensure integration and access of information						
Freight Logistics	Revitalise Gauteng Freight Databank (or Freight Data Warehouse)	R5.0 million	Province		2023/24 – 18 months	Gauteng	Province
Freight Logistics	Conduct and document a feasibility study on truck stops and their location in Gauteng	R2.0 million	Province		2023 – 6 months	Gauteng	Province
Freight Logistics	Conduct and document an overload control strategy for Gauteng	R5.0 million	Province		2023/24 – 18 months	Gauteng	Province
Monitoring	The development of a dashboard for monitoring of Key Performance Indicators	R2.0 million	Province		2023 – 6 months	Gauteng	Province
Public Transport	Due Diligence for the devolution of rail	R2.0 million	Province		2024-12 months	Gauteng	Province

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Key Strategy	Programme/project	Budget estimates	Source	Gaps/shortfalls	Period	Location	Responsibility
Public Transport	PRASA corridor upgrades, including revitalisation of areas of impact around key stations						
Public Transport	Subsidies & financial support strategy	R2.0 million	Province		2023-12 months	Gauteng	Province
Public Transport	Public Transport Safety and Security Strategy	R3.0 million	Province		2023-18 months	Gauteng	Province
Tourism	Surveys at ORTIA and Lanseria to determine transport needs of tourists	R 2.2 million			2023 - 1 year		
Tourism	Develop ConOps for Smart Tourist platform	R 0.9 million			2023 - 1 year		

13.4 Funding Requirements

The ITMP25 indicated that by 2025, the funding requirement for the upgrading and preservation of transport infrastructure and public transport subsidies would be 2.6 times the funding levels of 2013, and by 2037 it would be 4.5 times (at nominal prices).

If anything, the need for funding increased due to more rapid urbanization than anticipated, the move from freight rail to road-based transport, with associated damage to the road network and impact of COVID-19 on the public transport system.

Over the years, the MTEF, the main budget instrument for the 3-year period, has barely kept up with CPI and fell well short of inflation.

The position taken in the ITMP25 is well supported in that inadequate funds are allocated to transport infrastructure and operations, especially to preserve assets. Stable sources of funding are required, and transport budgets should be doubled in the short-term and increased to 4 times the current funding levels over the next 25 years.

13.5 Sources of Funding

The following sources of provincial funding are currently available to national, provincial and local transport authorities:

- Equitable share allocated in terms of the DoRA;
- Conditional grants allocated in terms of the DoRA such as the Provincial Roads Maintenance Grant, the Municipal Systems Improvement Grant; the Expanded Public Works Programme Integrated Grant for Municipalities; the Urban Settlements Development Grant (former Municipal Infrastructure Grant); Neighbourhood Development Partnership Grant (Capital Grant); the Public Transport Infrastructure and Systems Grant; the Public Transport Operations Grant, and Regional Bulk Infrastructure Grant;
- Sharing of a portion of the General Fuel Levy as primary replacement for the former Regional Services Council levies and Joint Services Board levies;
- Additional generated revenue, including public contributions and donations;
- Other revenue such as eNatis fees, foreign operating permits, etc;
- Borrowing of funds, and
- Private sector investment from either PPPs or private sector investment in infrastructure and facilities.

The traditional funding sources, listed below, will remain the major source of funding for the foreseeable future.

1. National
    i. Allocation through DoT to:
        1. PRASA, for infrastructure, rolling stock and operations

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2. Minibus TRP

ii. Conditional Grants, through DoRA

1. PTOG for Provincial bus subsidies
2. PTNG for Municipal IPTN development (BRT)
3. Provincial Roads Maintenance Grant

2. Provincial

i. Provincial roads

1. Equitable Share
2. Conditional Grants, which include the Provincial Roads Maintenance Grant, Expanded Public Works Programme and Public Transport Operations Grant.

ii. Contribution to Gautrain

iii. Bus contracts as part of the Northwest Star demarcation contracts

3. Local

i. Municipal subsidisation of own bus services

ii. Top up of BRT operations

4. Fare Revenue

i. Rail, Gautrain, PTOG buses and MBTs to operator

ii. BRT and municipal bus services to respective Municipality

13.6 Funding Focus Areas

The funding strategy should focus on the following aspects:

- Promoting Land Use and Transport Integration;
- Affordability of Public Transport;
- Promoting sustainability;
- Quality of Transport;
- Funding of Infrastructure;
- Additional sources of funding, and
- Partnerships.

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13.7 Funding Principles

13.7.1 Basis for Funding across Project Life Cycle

As Gauteng is in the process of developing its urban transport systems, large capital investments are still required to expand and extend the network. As the network grow, capital investments generally reduce, while costs for operations and maintenance increase with the size of the network.

Because the public transport system in Gauteng needs to still be significantly expanded to address the demand and transformation thereof, both large further capital investments, as well as already large and growing costs for maintenance and operations, create an "underfunding gap". While expenses are high, revenue generation is limited, as a result the small scale of the public transport network.

Investing, operating and maintaining transportation systems is costly and requires careful consideration of the funding source for each individual cost item. The main cost items can be categorised as:

- CapEx; this applies to the physical assets of transportation, mainly infrastructures, terminals, and vehicles. They include the purchase or major enhancement of fixed assets, which can often be one-time events that can be amortized over several decades. Since physical assets tend to depreciate over time, capital investments are required on a regular basis for maintenance.
- Operational Expenditure (OpEx); this refers to the ongoing expenses incurred from the normal day-to-day of running a business.
- Preservation Costs or expenditure on maintenance are the recurring costs incurred to maintain facilities, property, vehicles or equipment. Major maintenance or rehabilitation of road networks and refurbishment or overhauls of fixed equipment can be viewed as CapEx and often referred to as OpEx, whereas general or preventative maintenance should be viewed as part of OpEx and sometimes also referred to as light maintenance.

Generally, government is more inclined to fund the CapEx of major infrastructure and public transport systems. This upfront cost is ringfenced and irrespective of how it is funded, has no bearing on the financial sustainability of the system. Such an approach should have a positive impact on the number of projects implemented, as the project participates in an upfront "grant" that can impact positively on the Benefit/Cost ratio. Major maintenance and upgrades, when planned for and scheduled, normally would also be funded by government.

CapEx can be funded by government, the private sector, or a combination of both. Government can fund projects through the tax base, issuing of government bonds or from international donor funding sources. The private sector will be willing to fund CapEx, on a commercial basis if the project can pay back the loan at a predetermined interest rate and at pre-determined payment intervals.

Operational cost and preventative maintenance cost should be paid for the by the user as far as possible, along with the user pay principle that has been embraced in the White Paper on National Transport Policy. Ideally, the direct operating cost of providing the service should be covered from the fare revenue, and even better still

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Printed by the Government Printer, Bosman Street, Private Bag X85, Pretoria, 0001,
for the ***Gauteng Provincial Administration***, Johannesburg.

Contact Centre Tel: 012-748 6200. eMail: info.egazette@gpw.gov.za
Publications: Tel: (012) 748 6053, 748 6061, 748 6065

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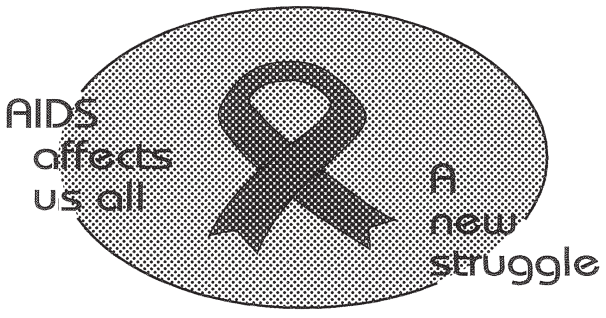
Provincial Gazette
Provinsiale Koerant

Selling price • Verkoopprys: **R2.50**
Other countries • Buitelands: **R3.25**

Vol: 31 **PRETORIA** **No: 449**
26 NOVEMBER 2025
26 NOVEMBER 2025

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ISSN 1682-4520
9 771682 452005 00449

if the fare revenue can also cover part or all of the routine maintenance cost. However, none of this is possible in Gauteng and operational subsidies are part and parcel of the public transport operational landscape. The users are not able to afford the fare, even if set at covering the direct operating cost only, and therefore the operators require an operational subsidy, over and above the fare revenue.

The following are a number of funding principles across the life cycle of projects:

- The CapEx and OpEx investments, as well as the maintenance associated with public roads should be funded by government or municipalities, depending on the ownership of the road. Public funding sources typically are MTEF funding and Grants.
- When it comes to toll roads, the CapEx is proportionally funded by government and a concessionaire through a PPP. The concessionaire's source of funding, to finance its investment, should be based on the user paying for using the facility. OpEx and maintenance are also to be funded through user-pay recovery through toll collection.
- Although the initial CapEx investment in the freight rail network was done by government, any future expansions, the acquisition of rolling-stock, OpEx and maintenance costs are funded through tariffs charged to customers and access charges to the freight network (user pay).
- General commuter rail, CapEx and maintenance of infrastructure, facilities and rolling-stock are funded by government through grants. A portion of the OpEx is to be recovered by revenue collected through fares (user pay) and the balance by government through subsidies. The level of subsidisation should be based on the affordability to passengers of using the service.
- For concessioned passenger rail, CapEx and cOpEx are fully or proportionally funded by government and a concessionaire through a PPP. The revenue from fare should be the concessionaire's source of funding, to finance its capital investment, as well as the operations and light maintenance.
- The CapEx, OpEx and maintenance costs for facilities for road-based public transport facilities and infrastructure should be funded by government or municipalities, depending on who owns the facility, through the MTEF or grants. In the case of BRT systems the buses are to be funded from grants.

13.7.2 Prioritising Funding for projects

The prioritisation of candidate projects should consider, among others:

- Financial viability and economic feasibility should not be the only considerations, but also socio-economic impact and benefits. The numerical value of the socio-economic benefits (cost of accidents, travel time savings, health and societal benefits, impact of environment, etc) should ideally be calculated by a reputable institution on a national level and used as inputs on all projects;
- Cost Benefit Analysis (CBA) is essential to projects with a CapEx value > R1bn. Benefits and costs that accrue to users, funders, operators and general society should be considered. CBA should achieve at least a ratio in excess of 1 to be considered for funding or to proceed with the planning and design thereof. CBA

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should attempt full life cycle costing and hence match the 'investment term' to the period of economic benefits flowing from the project. CBA should attempt full life cycle costing and hence match the 'investment term' to the period of economic benefits flowing from the project;

- "Going Green" and the enhancement of sustainability is an important consideration;
- Promotion of land use restructuring needs to receive priority;
- Investment in inter-modal facilities needs to receive priority, and
- Maintenance requirements of public roads needs to be prioritised - guideline should be a maximum percentage of the network that is in poor and very poor condition.

In an environment of limited funding, where many projects must compete for funds, the custodian of the funds should ensure that the projects that are allocated funds, provide the most benefits to society as a whole, and not only to the direct users of the intended project.

Projects are often appraised for financial feasibility only. A financial model is set up over the life cycle of the project and if the output of the model predicts a positive cash flow, the project is financially feasible. This approach is one dimensional and does not measure the economic benefits (and disbenefits) that accrue to society in general. Benefit-Cost Analysis (BCA) seeks to overcome the gap in project appraisal by providing a comprehensive assessment of the total costs and benefits that accrue to the users, the operators, the funders and general society, by taking account of and evaluating externalities that are impacted by the project. This is done over the project life cycle and by using the NPV appraisal method: it can be determined whether the project will realise net benefits or net costs to society.

Given the nature of transportation projects (either road infrastructure investment or investing in a public transport system), it will always attract attention due to the financial impact of the investment required, the environmental impact during construction and beyond, and the impact on the economy.

BCA uses monetised (measured in monetary units) values to compare total incremental benefits with total incremental costs. The results are presented as a ratio, with benefits divided by costs. It is most applicable for evaluating projects that meet the following criteria:

- The potential project expenditure is significant enough to justify spending resources on forecasting, measuring, and evaluating the expected benefits and impacts, and
- The project motivation is to improve the transportation system's efficiency in serving travel and access-related needs, rather than to meet some legal requirement or social goal.

It has been widely used to evaluate transportation projects, as it is designed to inform the practical decision-making of investors focusing on optimizing their social and environmental impacts and is typically used by governments to evaluate the desirability of a given intervention.

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The reasons for using Cost Benefit Analysis relate to:

- It is an analysis of the cost effectiveness of different alternatives to see whether the benefits outweigh the costs;
- The costs and benefits of the impacts of an intervention are evaluated in terms of the public's willingness to pay for them (benefits) or willingness to pay to avoid them (costs);
- The guiding principle is to list all parties affected by an intervention and place a monetary value of the effect it has on their welfare as it would be valued by them, and
- The process involves monetary value of initial and ongoing expenses vs. expected return.

Benefit Cost Analysis methodology was used for the Gautrain project to determine the economic feasibility and benefit cost of the project.

Due to the reasons highlighted above, it is essential that the Province adopts the principle of CBA for major roads and public transport infrastructure projects as an essential tool to be considered in the overall process of evaluating projects.

13.7.3 User Pay

There is government acceptance that the user pay principle should be applied to infrastructure upgrades, expansions, road network extensions and maintenance.

This is generally applicable to formalized public transport, but the extent of user pay contributions should be linked to affordability of fares.

13.7.4 Affordability of Public Transport Services

For social reasons, formalised public transport (PT) should as far as possible be supported financially by Government to:

- Target the captive user, and
- Improve quality and safety to make public transport more attractive to choice-users.

Financial Support and subsidies should be provided in a consistent manner and based on a clear policy.

Enhance the sustainability of the mini-bus taxi industry through assistance with recapitalisation, corporatize and participation in IPTN subsidised service contracts.

13.7.5 Quality and Efficiency

- Roads to be constructed and maintained at acceptable standards;
- Constructed according to specifications prescribed by the national, provincial and local facility owners;
- Existing roads should be preserved to ensure that they will last at least for their design life, and

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- Mechanisms used to provide financial support to public transport services should enhance efficiency, quality and safety of users.

There is currently very little evidence that any efficiency and effectiveness measures are built into the operations for the user to obtain value for money by experiencing a safe, acceptable, accessible and user-friendly service.

There is no incentive for the PRASA, BRT operations and the municipally owned bus services to improve their operations. It is well documented that PRASA experiences ongoing fare evasion upward of 25%, in fact 80 of its Gauteng stations do not have facilities where passengers can pay for their trip. The deficit subsidy mechanism is clearly not conducive to improving efficiency.

Municipally owned bus services are the worst performing road-based public transport system in Gauteng. The staff to bus ratio is much higher than private sector operators, their salary bill is substantially higher and the operating ratio of passenger trips/day is the lowest in the industry. These services are also funded through a deficit subsidy mechanism.

The BRTs are slightly different in that the operator is not responsible for the fare revenue. The operator determines the cost of operations, based on the routes and schedule provided by the Contracting Authority, and adds a profit margin to the cost. There is no incentive to increase passenger numbers or even passenger experience, as it does not affect the bottom line.

It is essential that efficiency measures be built into the contract documents with operators to encourage performance and improve efficiency over and above the requirements in the contract documents. Especially on contract regimes where the operator is responsible for the fare revenue, the operator should be encouraged to increase ridership, by targeting specific user groups by offering discounts on trips during the off-peak. Consideration should be given to rewarding operators only when they achieve improvements in bus-service reliability that benefit commuters and are penalised if a service is not reliable.

The current MTCD's provides for a penalty regime should the operator fail to provide services in accordance with the schedule, deviate from the contracted routes, provide services in buses that are not to the standard as prescribed in the tender documents.

13.8 Funding Strategies

13.8.1 Land-Use and Transport Integration

The lack of land-use and transport integration impacts negatively on funding of public transport as the services are operated over longer distances, with low productivity of the capital assets, making them expensive to operate.

Although the principle of high density, mixed land use development within the IPTN and rail network area of influence has been established for many years, the reality is that development is happening further away from the urban core. The availability of sufficient bulk infrastructure in areas prioritised for high density and mixed land use development can be a hurdle for infill development. Lack of funding to upgrade the infrastructure is often the stumbling block.

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The strategy for the PLTF period is:

- The GDRT to establish a provincial fund or provide funding that will assist local authorities to provide and upgrade bulk infrastructure along the IPTN priority corridors and in nodes of provincial significance, inclusive of areas designated as Strategic Economic Zones (SEZ);
- That funds be made available by the provincial government for this initiative over the 5-yrear period;
- The GDRT, in consultation with the municipalities, develop criteria for applying for funding, including, but not limited to co-funding principles:
  - Local authority to contribute a minimum of 50% in a co-funding agreement;
  - Each application to be evaluated on its merit and on a project basis;
  - The project must demonstrate support to the priority corridors of the IPTN, and
  - The project must be located within a Strategic Economic Zone.
- Regulations to be developed in partnership with the municipalities to:
  - Incentivise private developers to develop in SEZ or in areas close to the IPTN, with due consideration to public transport linkages and the IPTN and NMT linkages within the SEZ
    - ➢ Lower the parking requirements for ToDs
    - ➢ Provide a rebate on rates and taxes for developing in close proximity to public transport corridors and nodes
  - Public developers to specifically address public transport linkages to their development and provide a high-level costing of servicing the area with public transport over the life cycle of the development.

13.8.2 Financial Support to Public Transport

The following strategies are proposed:

- Integrated funding and financial support approach across all modes;
- The feasibility study for the devolution/assignment of commuter rail to the Province to consider funding implications and the potential devolvement of grants as well;
- Target designated groups through appropriated financial support mechanisms. This would include commuters, scholars, mobility impaired, social travel needs, etc.
- Strengthen existing subsidy mechanisms by introducing incentives for operators to:
  - manage costs down;
  - increase fare income, and
  - maintain acceptable service standards (availability, punctuality, quality, etc.).

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Although current financial support to public transport is not sufficient and even less so when consideration should be given to include the MBT industry under the financial support blanket, the current fragmented approach to funding exposes the inefficiency of the current system.

13.8.3 Funding of Road Infrastructure

The funding of road infrastructure should:

- Develop a strategy of equitable application of the user-pay principle;
- Identify partnerships for inter-governmental and private sector cooperation, and
- Allocate sufficient budget for preservation of the road infrastructure at acceptable standards.

Apart from the current situation where users of transportation infrastructure and facilities are already responsible to pay for the level of usage as summarised before, the introduction of a comprehensive user pay approach is challenging to ensure that users contribute equitably to the provision, preservation and expansion of transportation infrastructure and facilities. Furthermore, it may require changes to the current legislation framework. The possible introduction of a "balanced road user tariff" would require significant changes as it would include:

- Vehicle licence fees to access the network;
- A dedicated fuel levy to provide for the extent of the usage of the network;
- Weigh-distance levy to allocate responsibility for the structural impact on the network;
- Congestion charges to allocate responsibility for users travelling during peak periods, and
- Environmental charges to allocate responsibility for the level of negative impact to the environment.

13.8.4 Sustainable Transport Projects

The stratgey is to investigate opportunities offered by international funding agencies, such as:

- Global Facility to Decarbonize Transport (World Bank) - assist in creating conditions to attract investment, and
- Global Environment Facility - focus on mitigation actions, bilateral arrangement.

International Climate Initiative - Developing proposals and source financing:

- Encourage and assist municipalities to pursue funding available for local projects;
- Programme: Technical Handbook on Issuance of Sustainable Municipal Bonds in South Africa - includes transport as a sectoral theme, and
- Carbon taxes.

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Typical criteria for funding consideration:

- Clear definition of how to meet sustainability goals – considering SEE goals (Social, Environmental and Economic) where Social Equity is a key consideration;
- Clear legally binding targets and supporting regulations;
- Transparent reporting framework covering Scope 1, 2 and 3 emissions, and
- Embed sustainability into strategic thinking (SA Taxonomy currently being finalized).

With respect to the development of electric vehicles the recently announced investment plan[7] arising from the Just Energy Transition Partnership indicates that, over the next 5 years, R128 billion will be allocated to new energy vehicles and to support communities affected by the shift away from ICEs.

13.8.5 Inter-Governmental Co-operation on land availability

Pursue bilateral agreements between public sector owners of land and potential public sector users of land for the development of stations, facilities and associated amenities and develop a framework for dealing with funding of TODs.

13.9 New and Additional Funding Sources

The following new and additional funding sources could be considered:

- **Transportation Integration Network Grant.** The introduction of a new conditional grant should be considered that should aim to promote an integrated transportation network in Gauteng. Projects that would enhance the integration of transport should be financed through this grant;
- **Traffic Safety Grant.** These grants should be allocated to local authorities to subsidise safety-related maintenance of MBTs, training of drivers, road safety programmes, etc.;
- **Increased private sector involvement.** The private sector can be appointed to undertake routine road maintenance activities, or to design, build, operate, and maintain new transport infrastructure and facilities that are funded through shadow tolls, and
- **Widen development levies.** Bulk Infrastructure Levies could be widened to finance the preservation and expansion of transportation networks. Development Levies could be introduced for properties around new inter-modal hubs such as public transport nodes and airports
- **Investment and Infrastructure Office.** The office was established by the President to coordinate and align the work of various structures responsible for economic and social infrastructure development. A key role of this office is its mandate to solve regulatory and other bottlenecks which are prohibitive to investment, as well as play a leading role in accelerating decision-making in order for high priority investments to be speedily and efficiently implemented.
- **Green funding.** Green funding is increasingly becoming available for projects that can demonstrate reduction in GHG emissions and infrastructure projects that is constructed that impacts positively on climate change in terms of sustainability of

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materials used during construction and energy use during the life cycle of the project.

- **Licences, levies and taxes.** Consideration should be given that over a period of time, the vehicle license fee is increased by 2% per annum for a period of 5 years, and that increase is then ringfenced for Public Transport, NMT infrastructure improvements. The carbon tax introduced a few years ago by Government on the sale of new vehicles currently flows to the national fiscus. It is a relatively new tax
- **Advertising rights.** Advertising rights and revenue related to public transport facilities and contracted public transport services vehicles should be utilised in more effectively in the future.

In addition to the traditional funding sources, additional funding sources should be pursued in an effort to increase the funding for public transport.

Additional funding sources, highlighted below, have not been evaluated for market acceptance and/or complexity of implementing them.

- National Sphere
  - Carbon Tax
  - Improved prioritisation of transport
    - Fuel Levy
    - Road Accident Fund restructuring
- Provincial Sphere
  - New taxes (e.g. Provincial Fuel Levy, Provincial Carbon Tax, Congestion Charge)
  - Increase of existing taxes (e.g. Motor Vehicle Licences)
- Local Sphere
  - Utilisation of land (Transit Oriented Development (TOD))
  - Tax Increment Financing (TIF)
  - Special Ratings Area, Business Rate Supplement, Community Infrastructure Levy
- Private Sector
  - Linked to TOD (Land Value Capture) – development of property that benefits from the transport network
  - Private sector participation in operations (increased competition, increased efficiencies)
  - Station auctioning
- PPPs

  The focus on funding sources has traditionally been on funding the infrastructure components of the transport system, with not much attention on funding the ongoing operations.

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Funding transport operations has gained some traction over the years, and although existing efforts do in no way cover the direct operating cost, they at least contribute in a small way to the revenue of the operator. What is referred to is the selling of advertising space at stations and taxi ranks, and on the outside and inside of public transport vehicles. Private companies see this as an opportunity to get their product and message to a specific segment of the market, namely the public transport user.

Other opportunities, to be considered, that have proven successful in Europe are entering into a PPP with the private sector on bike sharing, in an effort to promote cycling as a sustainable mode in identified local areas initially. The private sector provides the facilities required to park and store the bicycles, and also provides the bicycles, inclusive of the maintaining of the bicycles. The private sector is allowed to sell advertising space on the bicycles at the facilities and along the dedicated cycling network, in additional to charging a nominal fee for renting the bicycle.

Although the concepts are based on PPP principles, it is less complicated than traditional PPP processes, and should be pursued at local level, with a partnership between the municipality and private sector

13.10 Provincial Funding Initiatives

The Provincial Funding Initiatives confirm and implement the Funding Plan as set out in the ITMP25 that are based on an integrated inter-modal and sustainable approach to the management, preservation, upgrading and extension of the transport network, public transport services and inter-modal facilities and focus on:

- **Move more with less.** The focus of this initiative is to optimize the utilisation of the existing transport network, public transport services and inter-modal facilities by:
    - Diverting private transport users to public transport by improving the image of public transport, promoting the use of public transport, enhancing the quality of public transport services and subsidising safety-related maintenance of MBTs.
    - Introducing Travel Demand Management (TDM) measures in congested road network areas by encouraging car users to shift modes. TDM measures should be directed to manage congestion, encourage the use of public transport, reduce environmental impacts, and generate additional revenue that should be earmarked for transportation. The TDM measures include the introduction of restrictive access zones or “Cordon Tolling” that are fees paid by vehicle owners to drive into a specific area. Differential fees can be introduced that would apply to different vehicle classes or the emission classification of the vehicle. Congestion charging could be implemented by the introduction of toll rates that vary during the time of day to discourage travelling during peak periods. The extended roll-out of Intelligent Transport Systems and related technologies and the introduction of HOV lanes are other TDM measures.

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- Introduce the mandatory adoption of uniform standards and specifications to facilitate competition and interoperability between transport service providers and payment service providers, which will support the introduction of integrated ticketing systems.
- Divert freight transport from road to rail by constructing and improving access to freight rail facilities and improving freight rail service provision.

- **Move more, shorter.** This initiative focusses on the promotion of land-use densification and mixed land-use, especially along public transport corridors and inter-modal transfer facilities such as train stations, BRT stations, public transport termini and airports.

The TAG should play a pivotal role in the implementation of the proposed Provincial Funding initiatives. The "Enabling investment in an integrated plan" in the ITMP25 should be considered and aligned with regard to the responsibilities of TAG.

Additional initiatives relate to:

- Finalise framework for institutional responsibilities and related financial instruments;
- Identification of funding streams and mechanisms to support local government with their planning functions as contemplated in the NLTA and promotion of land use restructuring and development in support of Public Transport;
- Identify projects that meet green/sustainable funding sources requirements best, prepare proposal based on criteria and submit application;
- Development of a Provincial Strategy on Financial Support to Public Transport;
- Develop a user-pay strategy to be applied to the upgrade and extension of the existing provincial strategic road network (and consider the appropriateness of associated regulations);
- Develop and/or confirm norms and standards that meet minimum needs/requirements, but could also be funded adequately by Government;
- Public roads development and adequate maintenance;
- Public transport quality, affordability and safety, i.e. IPTN infrastructure, facilities and services, and
- Study the feasibility of new/other additional funding sources and instruments.

There are many funding sources available for transportation projects, especially if they can demonstrate that by implementing the projects the GHG emissions will reduce substantially.

For example, National Treasury provides guidance on how infrastructure programmes and project proposals should be planned, appraised and evaluated before significant funds are committed. The guidelines are designed to ensure thorough planning of capital projects and the prioritisation of projects that offer maximum economic and social benefits to society.

Valuation of proposals submitted to the National Treasury will involve detailed analysis of whether the planned project meets its objectives, is the most suitable

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option available and whether the best procurement mechanism to deliver the project has been selected.

The following information must be submitted for each capital project. Every project must address all the elements - the detail and rigor applied at a particular stage will be dependent upon the size and complexity of the project.

- Preparatory Work
  - Needs and demand analysis with specified outputs of the project
  - Options Analysis
    - Demand Analysis
    - Technical Engineering Analysis
    - Environmental Analysis
    - Socio-economic Analysis
- Legal and Regulatory Due Diligence
  - Viability Evaluation
    - Financial analysis
    - Economic Analysis
    - Cost benefit Analysis
    - Economic Effectiveness Analysis
    - Economic Impact Assessment
- Risk Assessment and Sensitivity Analysis
  - The Preferred Option
- Implementation Readiness
  - Institutional capacity
  - Procurement plan

The above is intended to guide the GDRT on preparing a project submission for funding consideration to National Treasury. In the absence of guidelines to prepare submissions for projects funding at green funding sources, these guidelines should suffice as a good basis to start from.

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14 MONITORING

14.1 Introduction

The minimum requirements for monitoring according to the NLTA Regulations are as follows:

- A list of key performance indicators in line with national key performance indicators set out in the NLTSF;
- A report on how and to what extent the key performance indicators set for the Province in the NLTSF have been met, and
- A report on how and to what extent the key performance indicators set in the previous years' Provincial Land Transport Frameworks have been met.

These matters are addressed in this chapter as well as a concluding section on current context for the way forward and some guidelines on norms and standards.

14.2 Key Performance Indicators (KPIs) set out in the NLTSF

The NLTSF[21] proposes a practical approach for measuring progress with the implementation of the PLTF, that includes proper monitoring and review of specific key performance indicators (KPIs). This will ensure accountability by the DoT and planning authorities and monitor value for money.

The purpose of the transport indicators is to ensure a balanced view at the national, regional and local levels of the critical role of transport services in reducing poverty, facilitating growth and contributing to achievement of key development targets and sustainability.

The KPIs in the NLTSF are intended to cascade into the PLTFs and the ITPs and subsequently escalate to the DoT annual monitoring and evaluation report on the performance of the transport system.

Responsibility for the main implementation sphere of the respective KPIs as provided in the NLTSF, is split between national, provincial, metros, other municipalities and other, such as PRASA, SANRAL and the CBRTA. It further indicates where a particular sphere has the lead coordinating and monitoring role. Those KPIs for which Provincial Government has the lead role, are presented in Table 14-1. This table also indicates suggested targets and comments on the priority of each KPI.

[21] *National Land Transport Strategic Framework*, Notice 823 of 2015, Final Draft - March 2015, Department of Transport.

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Table 14-1: KPIs for which Provincial Government has Lead Coordinating and Monitoring Role

Strategic Element	Key Performance Indicators (KPIS)	Target	Priority
Integrated Land Use and Transport	Update PLTFs	2015/16	High
Public Transport	Increase in the proportion of households in rural areas within 2 km of a transport service	40% by 2022	Medium
	Utilisation	Vehicle utilisation during peak and off-peak periods	Low
	GHG emissions	Reduce GHG emissions by 10% from current levels by 2020	High
	Promotion of public transport	ROI on marketing spend for public transport	High
	Regulation and control of public transport	Number of operating licences issued	High
Urban Transport	Traffic network performance	Traffic flow rate; queue lengths; network delays; and person trips-km	Medium
Rural Transport	Strategic rural road network upgrade and maintenance plan with budgets	2016	Medium
	Performance of rural public transport services	Cost per passenger trip; Fare revenue per passenger trip; Passenger trip time; Operating subsidy per passenger trip; Vehicle revenue kilometres; Customer satisfaction index; number pf passengers; VOC; and number of bicycles distributed to rural learners	Medium
Learner Transport	Monitor and evaluate the learner transport programmes	Punctuality of learners	Low
		Accessibility mapping for learners in urban and rural areas	Medium
	Monitor travel behaviour / mode choice of learners	Majority share in sustainable modes	Low
Freight Transport	Reduction in overloading by enforcing limits on gross vehicle mass	% Reduction in overloading	High
	Improve heavy goods vehicle safety performance; and self-regulation	% Increase in RTMS certification and compliance	High
Road Infrastructure	Asset management system	Provinces with updated asset management system	Medium
	S-Hambe Sonke Road Maintenance Program	% Budget on transport infrastructure provided	High

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Strategic Element	Key Performance Indicators (KPIS)	Target	Priority
		% Budget spent on transport infrastructure	High
		Km maintained	High
	Social investment	Number of people employed through infrastructure projects	Medium
		% Budget on labour	Medium

It is important to mention again that the KPIs in this table represent only 20 out of the total of 58 KPIs listed under Provincial Government, as the balance are not the lead coordinating and monitoring responsibility of Provincial Government.

14.3 Extent to which the KPIs in the NLTSF have been met

The extent to which the KPIs in the NLTSF have been met is unfortunately not available, although the current version of the NLTSF[22] provides a summary of the progress made by the various government organs relative to some of the KPIs set out in the NLTSF (2006 - 2011).

The progress assessment of NLTSF outcomes against those KPI targets for which Provincial Government has the lead coordinating and monitoring role is presented in Table 14-2.

Table 14-2: Progress Assessment of NLTSF Outcomes Against KPI Targets

KPI Strategic Aim	NLTSF Target / KPI	Progress
Improve public transport usage	Reduce commuter travel time	Marginal increase in public transport usage but slight decrease in private vehicle usage. Public transport usage decreased to 39% in 2013, from 40% in 2003 (Stats SA; 2013)
	Modal shift to public transport	
Freight transport	Number of overloaded trucks	Construction of new weighbridges (15 - 20% of trucks are overloaded)

14.4 Extent to which the KPIs in the previous year's PLTF have been met

The ITMP25 does not have any reference to KPIs, but only qualitative mentioning of performance areas, criteria or standards. This implies that unfortunately, no information is available on the extent to which the KPIs in the previous year's PLTF have been met.

[22] *National Land Transport Strategic Framework (2017 - 2022)*, Government Gazette, 17 February 2017, Department of Transport.

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14.5 Current Context for the Way Forward

The KPIs as discussed in the previous sections, are based on the guidelines of the NLTSF. These KPIs are obviously relevant, but much has happened in the transport planning sector and it might be useful to refer to the current context for the way forward.

The latest thinking around measurement of KPIs, suggests that it makes much sense to present these KPIs in a dashboard where progress and/or challenges with the respective KPIs can be seen in summary.

The dashboard needs to be populated with appropriate KPIs and the first step should probably be to define the categories that need to be measured, similar to what has been proposed in the NLTSF. Once the categories have been agreed, the indicators that should be measured, need to be considered. An example of some categories, which are largely aligned with the contents of the PLTF, as well as potential KPIs, are shown in Table 14-3.

Table 14-3: Potential Key Performance Indicators (KPISs)

Potential Key Performance Indicators (KPIs)

No	Main Category	Potential Indicator
1	Transport network / Infrastructure	• Paved and gravel kilometres Road kilometres that are paved vs gravel to show the change in development over the years • Infrastructure condition (Facilities) Public transport and pedestrian facility conditions ranked according to a scale. Road conditions ranked according to a conditional scale • Infrastructure condition (Pavements) Visual Condition Index (Road Infrastructure Strategic Framework for SA) • Overall congestion index Indicating hotspots of congestion on a national level • Vehicle ownership Number of cars per 1 000 inhabitants
2	Cross-border operations	• Measure of efficiency Average waiting time/delay as a measure of user satisfaction and operational efficiency
3	Freight logistics	• Average percentage of overloaded trucks Percentage of the truck fleet that is overloaded as well as the efficiency of the WIM stations • Road freight movements in the inner city and strategic road network Percentage of the trucks entering the city and on the road network

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Potential Key Performance Indicators (KPIs)

No	Main Category	Potential Indicator
4	Transport of passengers / public transport	• Public transport trip share Share of all trips by public transport modes/transit • Access to public transport Percentage of the population that has access to public transport services within a certain distance of walking (TBD). Ease of access for disabled people needs to be captured. Availability of learner transport is also important. • Average travel times A measure of the average travel time for typical work and education trips. • Average travel cost Index of relative household transport costs. Also, the percentage of households spending more than 20% of disposable income on public transport. • User satisfaction for public transport A subjective measure of user satisfaction of the general public transport experience • Intermodal connectivity/integration A measure of the ease of transitioning between modes of travel by indicating intermodal facilities and services. Also, an indication of multimodality/different mode options • Average daily distance travelled Average total distance travelled per person per day
5	Road safety and security	• Number of road traffic fatalities per vehicle type Vehicle type specific traffic fatalities per 100 000 inhabitants • Number of road traffic pedestrian fatalities Pedestrian fatalities per 100 000 inhabitants • Safety and security of truck drivers, vehicles and loads Number of incidents involving truck drivers, vehicles and/or loads
6	Sustainable transport	• Emissions of air pollutants from road transport Air pollutant emissions (mass unit) per capita • Air Quality Concentrations (µg/m3) of air pollutant emissions • Transportation that does not endanger public health or ecosystems and meets needs for access consistent with (a) use of renewable resources at below their rates of regeneration, and (b) use of non-renewable resources at below the rates of development of renewable substitutes.
7	Technology adoption	• Strategic ITS document Regular evaluation of ITS and the updating of a strategic document.

Potential Key Performance Indicators (KPIs)

No	Main Category	Potential Indicator
8	Law enforcement	• Unroadworthy vehicles Indicating vehicle testing facilities and actions towards increasing overall vehicle roadworthiness • Number of traffic violations Violations by type and location • Regulatory oversight Level of regulatory oversight as evident in enforcement of legislation
9	Financial sustainability	• Annual expenditure target for transport infrastructure and operations A measure of the allocated budgets/investments into the transportation system.
10	Integrated development	• Land use and transport planning integration Level of intentional integration of land use and transport planning integrating in all planning authorities
11	Transport policy	A measure of successfully developed and utilised policy documentation in light of the above preliminary indicators.

14.6 Norms and Standards

The need for providing more information and guidance on particular norms and standards that should apply in the implementation of the proposed PLTF, has been mentioned a few times under different topics throughout the framework. It is correct to suggest that these norms and standards are not the same or to be confused with the KPIs, but it was decided to nevertheless discuss it at the conclusion of this chapter on monitoring, as it requires the same logic for determining measurable indicators, as was needed for defining the KPIs.

The scope of the PLTF does not include stipulating actual norms and standards, but it could be useful to suggest some indicators under appropriate categories. It was consequently decided to use the same categories of the potential KPIs as listed in the previous table, as headings for categories of norms and standards.

Transport network / Infrastructure:

- Provincial roads, including cross-sections that provide for public transport, NMT and other services and utilities
- Roads within urban environments
- Public road maintenance

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Cross-border operations:

- Truck stops and staging areas for freight
- Facilities and amenities for passengers

Freight logistics:

- Truck stops and staging areas
- Traffic control centres, including weighbridges
- Freight movement in inner cities

Transport of passengers / public transport:

- Accessibility of all to all public transport modes
- Facilities and amenities at bus terminals and stops
- Facilities and amenities at taxi ranks and holding areas
- Connectivity, layout and accessibility of intermodal terminals
- BRT infrastructure and facilities

Road safety and security:

- Truck drivers, vehicles and loads
- Arrestor beds
- Freight lanes
- Pedestrian crossings
- Suitable sidewalks
- Cycle lanes
- Facilities for NMT

Sustainable transport:

- Emission control
- Use of renewable resources versus non-renewable resources

Technology adoption:

- Measure of technology adaption

Law enforcement:

- Overloading control
- Safety of public transport modes

Financial sustainability:

- Legal requirements for financial management
- Legal requirements for financial reporting

Integrated development:

- Need for integrated land use, transport planning and development focus

Transport policy:

- Legal requirements for developing and implementing land transport policies

14.7 Conclusion

The chapter covered the importance of measuring and monitoring and suggested a number of relevant performance indicators that should be considered for managing the successful implementation of the proposed PLTF.

It could seem slightly overwhelming to achieve this in practice and hence it was recommended that a dashboard be considered for presenting these KPIs where progress and/or challenges with the respective KPIs can be seen in summary.

The development of such a dashboard should preferable be done by identifying a small number of projects in each planning authority, that could be regarded as pilot projects for testing the effectiveness of the dashboard. Once the pilot projects have been completed successfully, the measurement and monitoring could be extended at a pace for which resources will be made available, until it has been implemented throughout all planning authorities in the Province.

Finally, the chapter concludes with a section on norms and standards to provide for the important setting of measurable norms and standards that could be monitored, similar to the KPIs as discussed.

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15 COORDINATION STRUCTURES AND MEASURES, LIAISON AND CONFLICT RESOLUTION

15.1 Measures to Ensure Proper Coordination

15.1.1 Coordination at National Level

Chapter 3 of the Constitution (sections 40 and 41) provides for co-operative government. Section 41 provides that the three spheres of government must co-operate with one another in mutual trust and good faith *inter alia* by coordinating their actions and legislation and avoiding disputes where possible. This is also required by the IGRFA 13 of 2005.

Section 11(1)(a)(iii) of the NLTA 5 of 2009 provides that the national sphere of government is responsible for coordination between provinces and addressing arrangements between the three spheres of government and public entities, with a view to ensuring the effective and efficient execution of land transport functions. It is also responsible for coordinating transport relations between the Republic and other countries and implementing international agreements, such as the SADC Protocol on Transport, Communications and Meteorology, 1996.

The Minister has established MINMEC as a Ministerial Committee between the Minister and provincial executive council members (MECs) responsible for transport matters. The NDoT has also established the COLTO as a coordination structure between the Director-General of the NDoT and the provincial heads of department.

The Province will participate actively in these structures and other coordinating structures at national level, such as the Presidential Climate Commission to implement measures to combat climate change and GHG emissions, and the National Planning Commission to implement the National Development Plan, 2030. It will also lobby for the effective functioning of these structures and the establishment of new coordinating structures where required.

15.1.2 Coordination at Provincial Level

Section 11(1)(b)(iii) of the NLTA provides that the provincial sphere of government is responsible for coordination between municipalities with a view to ensuring the effective and efficient execution of land transport in the Province.

The MEC has established a committee with MMCs responsible for transport as a provincial coordinating committee at political level between the MEC and Members of the Mayoral Committees of the municipalities, known as the MEC/MMCs Transport Forum.

The Province has established the TTWC as a coordinating structure between officials of the Province and the municipalities. The TTWC meets quarterly and is chaired by the DDG: Transport of the Province.

The TTWC has the following four sub-committees:

- The Rail Steering Committee (GRSC) which meets quarterly and is chaired by the Chief-Director: Planning of the Provincial Department;

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- The Freight Forum which also meets quarterly and is also chaired by the Chief-Director Planning;
- The Driving Licence and Motor Vehicle Licence Technical Working Committee (DLTC) which meets quarterly and is chaired by the Chief-Director: Motor Vehicle and Driver Registration and Licensing, and
- The Public Transport Integration Committee (PTIC) which is newly established and will be chaired by the Chief-Director: Public Transport.

Section 19 of the NLTA provides that where there are significant transport movements between municipalities, as is the case in Gauteng, the municipalities may establish an inter-municipality forum in terms of the IGRFA or a multi-jurisdictional service utility in terms of the Municipal Systems Act 32 of 2000. The TAG has been established by the Gauteng Transport Authority Act 2 of 2019 and in terms of section 12 of the NLTA as a coordinating, as well as executive structure.

Section 2(c) of the TAG Act provides that TAG must foster co-operation and coordination between public transport authorities and operators in the Province. It must develop an integrated transport system.

The Growing Gauteng Together through Smart Mobility 2030 Plan identified the need for a single Transport Authority as an important institution to enhance transport planning across the different spheres of government. This is also provided for in section 12 of the NLTA, which envisages the joint and coordinated exercising of transport functions between the Province and municipalities in a single structure, especially in a Province like Gauteng where public transport services are not confined to specific municipal areas. TAG will undertake integrated transport planning and coordination in Gauteng across all local boundaries, set uniform transport policies, norms and standards and facilitate and coordinate the road-based public transport function. It will be the focal point of public transport in Gauteng, where transport planning, regulatory matters and contracting functions will be centralised into one institutional coordinating body, with due regards to the statutory functions of other entities such as the GPRE. TAG was established in the 2020/21 financial year and will be fully operationalised as soon as possible.

The MEC/GDRT and TAG in collaboration with the municipalities will negotiate and decide on more specific functions to be allocated/delegated to TAG.

Section 4(c) of the GMA Act 5 of 2006 provides that the GMA must liaise with and promote co-operation between government structures in all three spheres of government in relation to the Gautrain project and liaise with persons having an interest in the Project. It must also produce a strategic plan which must, among others, enhance the integration of the Project with other transport services within the framework of the PLTF (section 34). TAG and the GMA will liaise closely with PRASA and Transnet to achieve the aspirations of the National Rail White Paper, 2022, e.g. to make rail the backbone of the transport system in the Province in the longer term and to implement the more detailed aspects of the PLTF.

The TAG will play an active role in establishing appropriate coordinating mechanisms in the Province, between the Province and municipalities, between municipalities themselves and between the various organs of state and the private sector if the

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existing structures are not adequate or appropriate. It will consider establishing formal structures such as the Gauteng Transport Consultative Forum, Transport Coordination Committee (TCC) and Joint Planning Structure that were formerly provided for in the Gauteng Transport Framework Revision Act 8 of 2002.

15.1.3 Coordination at Municipal Level

Section 11(1)(c)(iii) of the NLTA provides that each municipality must ensure coordination between departments and agencies in the municipal sphere with responsibilities that impact on land use and planning issues and bringing together the relevant officials.

Section 11(1)(c)(xix) of the NLTA provides that municipalities must in their ITPs include service level planning for passenger rail on a corridor network basis in consultation with PRASA. The National Land Transport Amendment Bill which is currently being considered by Parliament, will provide for the entering into of a service level agreement (SLA) between the municipality and PRASA. The Bill will also amend section 23 of the Legal Succession to the South African Transport Services Act, 1989 to provide that PRASA must provide rail commuter services at the request of the DoT or a municipality, subject to the abovementioned SLA and operational budget availability.

With regard to rail, the passenger rail services in the Province cross municipal and provincial boundaries and cannot easily be separated. The White Paper on National Rail Policy has recommended that the issue of the rail function being devolved/assigned to Provinces or municipalities be investigated. In the case of Gauteng with “wall-to-wall” metros it would make sense for the Province to take responsibility for rail matters, depending on decisions taken regarding devolution and on the devolution process.

Section 15 of the NLTA provides that municipalities that are establishing IPTNs or that have significant rail services in their areas, i.e. the three Metros in the Province (Ekurhuleni, Joburg and Tshwane), must establish Intermodal Planning Committees (IPCs) between technical officials and representatives of rail operators, other public transport (PT) modes, users and organised business. The purpose of the IPC is to coordinate public transport between the modes. Section 16 provides that municipalities may establish Land Transport Advisory Boards (LTABs) between government and the private sector to advise the municipality on land transport matters. The Minister may make regulations on the structure and functioning of IPCs and LTABs, but has not done so to date.

The GDRT and/or TAG will actively engage with municipalities and with IPCs and LTABs and similar structures to ensure effective coordination and co-operation as required by the legislation, policy and guidelines. They will also engage with public transport associations and operators and other stakeholders and investigate the establishment of appropriate coordinating structures at provincial level.

15.1.4 Coordination on Bus Contracts

In 2009 the Public Transport Integration Committee (PTIC) was established between the NDoT, Province and municipalities to rationalise the bus contracts concluded or recognised under the National Land Transport Transition Act 22 of 2000 (Transition

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Act) as required by the NLTA and to manage the PTOG provided annually in terms of DoRA. The NLTA envisages that these contracts be incorporated into the IPTNs being developed by the Metros and replaced by negotiated contracts as a first phase or subsidised service contracts.

The NLTA contemplates and indeed requires that municipalities should take over these functions eventually. This would be subject to normal processes required by the Constitution and other legislation applicable to assignment and devolution.

The GDRT has signed an IGAA with all municipalities as contracting authorities which provide among other things that the GDRT is willing to enter into tendered subsidised bus service contracts in terms of section 42 of the NLTA. The IGAA further provides for capacitation of the Metros and District Municipalities to take over the contracts once the duration of this agreement has lapsed provided that they have the capacity to do so, either when the agreement has lapsed or any earlier period. The Department is engaging on an ongoing basis with all municipalities throughout the process in the quest to introduce new bus contracts through the tender process. As indicated above, the Province has established the PTIC as a coordinating structure between the Province and municipalities as a sub-committee of the TTWC.

15.2 Regulations

Section 10 of the NLTA empowers the MEC to make regulations on various issues, including the establishment, membership and procedures for coordinating structures for transport planning in the Province. The MEC will investigate the possibility of making such regulations, rather than passing new or amending legislation, which is a time-consuming process that is likely to extend beyond the 5-year horizon of the PLTF.

15.3 Assistance to Municipalities

Section 11(1)(b)(v) and (vi) of the NLTA requires the Province to ensure that municipalities that lack capacity and resources are capacitated to perform their land transport functions and to build capacity in municipalities to monitor implementation of the Act (i.e. NLTA). Section 5 of the TAG Act requires TAG to secure the provision of public passenger transport services and foster good relations and co-operation with and between organs of state. This implies that it must work closely with the municipalities to achieve its objectives, with due regards to section 11(1)(c) of the Act which allocates specific functions to the municipalities.

The Province and/or TAG will make themselves available to assist and capacitate municipalities within the limits of available resources and in line with the prevailing legislation.

15.4 Ensuring Implementation of the Provincial Integrated Development Strategy

The Province has developed the Gauteng Growth and Development Strategy and various related strategies such as the GGT2020, the Gauteng Youth Development Strategy etc. The GDRT and/or TAG will implement these strategies as they relate to transport and related matters.

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15.5 Conflict Resolution

As stated above, the Constitution requires organs of state to co-operate with one another in mutual trust and good faith, to coordinate their actions and legislation and avoid legal proceedings against one another. Section 45 of the IGRFA provides that no government or organ of state may institute court proceedings against another unless certain procedures are followed. It also provides Guidelines for Intergovernmental Dispute Resolution and guidelines for agreements (called protocols) between them, as well as a pro forma agreement.

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LOCAL AUTHORITY NOTICES • PLAASLIKE OWERHEIDS KENNISGEWINGS

LOCAL AUTHORITY NOTICE 1453 OF 2025

NOTICE OF APPLICATION FOR THE REMOVAL OF RESTRICTIONS APPLICATION IN TERMS OF SECTION 50 OF THE CITY OF EKURHULENI METROPOLITAN MUNICIPALITY SPATIAL PLANNING AND LAND USE MANAGEMENT BY-LAW OF 2019
ERVEN 96 AND 251 CASON TOWNSHIP

I Marzia-Angela Jonker, being the authorised agent of the owner/s hereby give notice in terms of Section 10 of the City of Ekurhuleni Metropolitan Municipality Spatial Planning and Land Use Management Act (SPLUMA) By-Law of 2019, that I have applied to the City of Ekurhuleni Metropolitan Municipality (Boksburg Sub Section) for the Removal/Amendment of conditions (a), (b), (c), (d), (e), (f), (g), (h), (i)(i) and (i)(ii), (k), (l), (m)(i), (m)(ii) and (m)(iii) from Deed of Transfer T 33194/2005 pertaining to Erf 96 Cason Township and conditions (a), (b), (c), (d), (e), (f), (g), (h), (i)(i) and (i)(ii), (j), (k), (l)(i), (l)(ii) and (l)(iii) from Deed of Transfer T. 49742/2018 pertaining to Erf 251 Cason Township, which properties are located at No's 10 and 8 Brown Street respectively in Cason Township, Boksburg.

Particulars of the application will be open for inspection during normal office hours at the office of The Manager: City Planning, Boksburg Sub Section, 3rd Floor, Civic Centre, Trichardt Street, Boksburg, for the period of 28 days from 19 November 2025.

Objections to or representations in respect of the application must be lodged with or made in writing with the said authorised local authority at the above address or at P. O. Box 215, Boksburg, 1460, or Email: Francois.Vos@ekurhuleni.gov.za, on or before 17 December 2025.

Name and Address of the Authorised Agent: MZ Town Planning & Property Services, P. O. Box 16829, ATLASVILLE, 1465 – Tel (011) 849 0425 – Email: info@mztownplanning.co.za

Dates of Publications: 19 and 26 November 2025.

19-26

LOCAL AUTHORITY NOTICE 1456 OF 2025

NOTICE OF APPLICATION FOR THE REMOVAL OF RESTRICTIONS APPLICATION IN TERMS OF SECTION 50 OF THE CITY OF EKURHULENI METROPOLITAN MUNICIPALITY SPATIAL PLANNING AND LAND USE MANAGEMENT BY-LAW, 2019. ERF 1733 RYNFIELD TOWNSHIP

We, Planit Planning Solutions CC. being authorized agent of the owner, hereby give notice in terms of Section 10 of the City of Ekurhuleni Metropolitan Municipality Spatial Planning and Land Use Management By-Law, 2019, that we have applied to the City of Ekurhuleni Metropolitan Municipality (Benoni Customer Care Centre) for the removal of certain conditions contained in the Title Deed T17733/2025 of Erf 1733 Rynfield Township, which property is situated at 12 Lapping Street, Rynfield, Benoni.

Particulars of the application will lie for inspection during normal office hours at the office of the Area Manager: Town Planning, Benoni Sub Section of the City of Ekurhuleni Metropolitan Municipality, 6th Floor, Benoni Civic Centre, Treasury Building, Corner Tom Jones Street and Elston Avenue, Benoni, for a period of 28 days from 19 November 2025.

Objections to or representations in respect of the application must be lodged with or made in writing to the Manager: Town Planning, Benoni Sub Section of the City of Ekurhuleni Metropolitan Municipality, Benoni CCC: 6th Floor, Benoni Civic Centre, Treasury Building, Corner Tom Jones Street and Elston Avenue, Benoni or Private Bag X014 BENONI, 1500 or by email to Mdumiseni.Mkhize@ekurhuleni.gov.za, within a period of 28 days from 19 November 2025.

Address of authorised agent: 10 Fairbairn Street, Rynfield.

19-26

LOCAL AUTHORITY NOTICE 1459 OF 2025

NOTICE OF APPLICATIONS FOR REZONINGS & REMOVAL OF RESTRICTIONS IN TERMS OF SECTIONS 68 OF THE CITY OF EKURHULENI METROPOLITAN MUNICIPALITY SPATIAL PLANNING AND LAND USE MANAGEMENT BY-LAW, 2019
ERF 782 RYNFIELD

We, Planit Planning Solutions being authorized agent of the owner of Erf 782 Rynfield, which property is situated at 21 Dingler Street, Rynfield, Benoni, hereby give notice in terms of Section 10 of the City of Ekurhuleni Metropolitan Municipality Spatial Planning and Land Use Management By-Law, 2019, that I have applied to the City of Ekurhuleni Metropolitan Municipality Benoni Care Centre for the removal of certain conditions contained in Title Deed T7478/2020 of the property and for the amendment of the City of Ekurhuleni Land Use Scheme, 2021, by the rezoning of the property from "Residential 1" to "Business 3" (for a Beauty/Health Spa only), subject to certain conditions.

Particulars of the application will lie for inspection during normal office hours at the office of the Area Manager: Town Planning, Benoni Sub Section of the City of Ekurhuleni Metropolitan Municipality, 6th Floor, Benoni Civic Centre, Treasury Building, Corner Tom Jones Street and Elston Avenue, Benoni, for a period of 28 days from 19 November 2025.

Objections to or representations in respect of the application must be lodged with or made in writing to the Manager: Town Planning, Benoni Sub Section of the City of Ekurhuleni Metropolitan Municipality, Benoni CCC: 6th Floor, Benoni Civic Centre, Treasury Building, Corner Tom Jones Street and Elston Avenue, Benoni or Private Bag X014 BENONI, 1500 or by email to Mdumiseni.Mkhize@ekurhuleni.gov.za. within a period of 28 days from 19 November 2025.

Address of authorised agent: 10 Fairbairn Street, Rynfield, Benoni

19-26

LOCAL AUTHORITY NOTICE 1460 OF 2025

NOTICE IN TERMS OF SECTION 48 OF THE CITY OF EKURHULENI METROPOLITAN MUNICIPALITY SPATIAL PLANNING AND LAND USE MANAGEMENT ACT (SPLUMA) BY-LAW OF 2019 – PORTION 5 OF ERF 119 WITFIELD TOWNSHIP - CELUS NO. F 0615C

I Marzia-Angela Jonker, being the authorised agent of the owner/s hereby give notice in terms of Section 10 of the City of Ekurhuleni Metropolitan Municipality Spatial Planning and Land Use Management Act SPLUMA) By-Law of 2019, that I have applied to the City of Ekurhuleni Metropolitan Municipality (Boksburg Sub Section) for the Amendment of the City of Ekurhuleni Land Use Scheme of 2021 (CELUS No: F 0615C) for the Rezoning of Portion 5 of Erf 119 Witfield Township, which is located at No. 24 Lowther Street, Witfield , Boksburg from its current "Residential 3" zoning for 12 Dwelling Units to a zoning of "Residential 3" for a maximum of 16 Dwelling Units.

All relevant documents relating to the application will be open for inspection during normal office hours at the office of the Area Manager: City Planning Department, Boksburg Sub Section, Third Floor, Civic Centre, Trichardt Road, Boksburg, for a period of 28 days from 19 November 2025.

Any person who wishes to object to the application, or submit representations in respect thereof, must lodge the same in writing with the said authorised local authority at the above address or P. O. Box 215, Boksburg, 1460, or Email: Francois.Vos@ekurhuleni.gov.za - on or before 17 December 2025.

Name and address of owner: c/o MZ Town Planning & Property Services, P. O. Box 16829, ATLASVILLE, 1465. Tel (011) 849 0425 – Email: info@mztownplanning.co.za

Dates of publications: 19 & 26 November 2025.

19-26

LOCAL AUTHORITY NOTICE 1472 OF 2025

NOTICE OF APPLICATION FOR THE AMENDMENT OF THE TOWN PLANNING SCHEME IN TERMS OF SECTION 48 OF THE CITY OF EKURHULENI METROPOLITAN MUNICIPALITY SPATIAL PLANNING AND LAND USE MANAGEMENT BY-LAW, 2019. ERF 1311 BARDENE EXTENSION 92 AND ERF 1315 BARDENE EXTENSION 98 TOWNSHIPS (CELUS AMENDMENT SCHEME F0611C)

I, Eugene A. Marais of Eugene Marais Town Planners, being authorised agent of the owners of **ERF 1311 BARDENE EXTENSION 92 AND ERF 1315 BARDENE EXTENSION 98 TOWNSHIPS**, hereby give notice in terms of Section 10 of the City of Ekurhuleni Metropolitan Municipality Spatial Planning and Land Use Management By-Law, 2019, that I have applied to the City of Ekurhuleni Metropolitan Municipality for the amendment of the City of Ekurhuleni Land Use Scheme, 2021 (CELUS), by the rezoning of the properties described above, situated at the corner of View Point Road and Trichardt Street, Bardene, Boksburg, from Erf 1311 Business 2 for “Hotel and conferencing”, and erf 1315 “Parking for hotel” to Erf 1311 “Recreation for parking and consent uses”, and Erf 1315 “Recreation (hotel) including conferencecing with 1 500 seats”.

Particulars of the application will lie for inspection during normal office hours at the office of The Manager: Town Planning, Boksburg Subsection, Second Floor, Boksburg Civic Centre, corner of Trichardt Street and Market Street, Boksburg, for a period of 28 days from 19 November 2025.

Objections to or representations in respect of the application must be lodged with or made in writing to The Manager: Town Planning, Boksburg Subsection, Second Floor, Boksburg Civic Centre, corner of Trichardt Street and Market Street, Boksburg, 1459 or P.O. Box 215, Boksburg, 1460, or by e-mail to Francois.Vos@Ekurhuleni.gov.za, within 28 days from 19 November 2025.

Address of the authorised agent: Eugene Marais Town Planners, Postnet Suite 49, Private Bag X4, Elspark, 1418 or em-townplan@mweb.co.za

Dates of publication: 19 November 2025 and 26 November 2025

19-26

LOCAL AUTHORITY NOTICE 1480 OF 2025

CORRECTION NOTICE

ERF 55 CHISLEHURSTON

A. It is hereby notified in terms of Section 23 of the City of Johannesburg Municipal Planning By-Law 2016 that Local Authority Notice 339 of 2024 which appeared on the 13th March 2024, with regards to Erf 55 Chislehurston, contained the incorrect Title Deed number and any reference to "T40340/2019", shall be replaced by:

"T 40348/2019"

Hector Bheki Makhubo
Deputy Director: Legal Administration
City of Johannesburg Metropolitan Municipality

LOCAL AUTHORITY NOTICE 1481 OF 2025

CORRECTION NOTICE

The City of Johannesburg Metropolitan Municipality herewith gives notice that Proclamation Notice 21 of 2023 dated 12 April 2023 and correction notice 1458 of 2024 dated 30 October 2024 in respect of Cancellation of the General Plan of Erven of part of **Jabavu Extension 2,** has been amended as follows:

By the substitution of the heading, first paragraph and schedule of the notice with the following:

PARTIAL CANCELLATION OF THE GENERAL PLAN OF THE TOWNSHIP OF JABAVU EXTENSION 2

Notice is hereby given, in terms of Section 39(8) of the City of Johannesburg Municipal Planning By-Law, 2016, read with the provisions of the Spatial Planning and Land Use Management Act, 2013 (Act 16 of 2013), that the City of Johannesburg Metropolitan Municipality has approved the partial cancellation of the General Plan to effect the Cancellation of Erven 3118, 3196, 3197 and 10319 on part of the Township Jabavu Extension 2, as set out in the below Schedule.

SCHEDULE

General Plan SG Number 11161/2007 is hereby partially cancelled and reverts to Portion 113 of the farm Register No. 388-IQ.

Hector Bheki Makhubo
Deputy Director: Legal Administration
City of Johannesburg Metropolitan Municipality
Notice No. T116/2025/C

LOCAL AUTHORITY NOTICE 1482 OF 2025

COSMO CITY EXTENSION 40

A. The City of Johannesburg Metropolitan Municipality herewith gives notice that Local Authority Notice 3 of 2025 dated 08 January 2025 in respect of **Cosmo City extension 40**, is hereby amended as follows:

Under the heading "1. CONDITIONS OF ESTABLISHMENT" Clause

(2) DESIGN

The township consists of erven as indicated on General plan SG No 1179/2020.

Hector Bheki Makhubo
Deputy Director: Legal Administration
City of Johannesburg Metropolitan Municipality
Notice Number: T243/2025

LOCAL AUTHORITY NOTICE 1483 OF 2025

AMENDMENT SCHEME 20-01-5725

Notice is hereby given in terms of Section 22(4) of the City of Johannesburg Municipal Planning By-Law, 2016, that the City of Johannesburg Metropolitan Municipality has approved the amendment of the City of Johannesburg Land Use Scheme, 2018, by the rezoning of Erf 231 Lorentzville from "Residential 1" to "Business 1", subject to certain conditions as indicated in the approved application, which Amendment Scheme will be known as Amendment Scheme 20-01-5725. Amendment Scheme 20-01-5725 will come into operation on the date of publication hereof.

The Amendment Scheme is filed with the Executive Director: Development Planning, 158 Civic Boulevard, Metropolitan Centre, A Block, 8th Floor, Braamfontein 2017 and is open for inspection at all reasonable times.

Hector Bheki Makhubo
Deputy Director: Legal Administration
City of Johannesburg Metropolitan Municipality /
Notice No. 086/2025

LOCAL AUTHORITY NOTICE 1484 OF 2025

AMENDMENT SCHEME 20-02-5284

Notice is hereby given in terms of Section 22(4) of the City of Johannesburg Municipal Planning By-Law, 2016, that the City of Johannesburg Metropolitan Municipality has approved the amendment of the City of Johannesburg Land Use Scheme, 2018, by the rezoning of Erf 304 Eastgate Extension 7 from "Business 4" to "Residential 2", subject to certain conditions as indicated in the approved application, which Amendment Scheme will be known as Amendment Scheme 20-02-5284 Amendment Scheme 20-02-5284 will come into operation on the date of publication hereof.

The Amendment Scheme is filed with the Executive Director: Development Planning, 158 Civic Boulevard, Metropolitan Centre, A Block, 8th Floor, Braamfontein 2017 and is open for inspection at all reasonable times.

Hector Bheki Makhubo
Deputy Director: Legal Administration
City of Johannesburg Metropolitan Municipality /
Notice No. 019/2025

LOCAL AUTHORITY NOTICE 1485 OF 2025

ERVEN 863, 865 AND 867 HIGHLANDS NORTH

Notice is hereby given in terms of Section 41 of the City of Johannesburg Municipal Planning By-Law, 2016 (as amended 2023) that the City of Johannesburg Metropolitan Municipality has approved the following:

(1) The removal of the following Conditions from Deed of Transfer T2695/2022 in terms of reference number 20/13/1454/2023; which will come into operation on date of publication
   (a) (2), (b), (c) and (e) in respect of Erf 863 Highlands North
   (b) (b), (c) and (e) in respect of Erf 865 Highlands North
   (c) (b), (c) and (d) in respect of Erf 867 Highlands North

(2) The amendment of the City of Johannesburg Land Use Scheme, 2018, by the rezoning of the erf from "Residential 1" to "Special", subject to certain conditions as indicated in the approved application, which Amendment Scheme will be known as Amendment Scheme 20-01-4834. Amendment Scheme 20-01-4834 will come into operation on date of publication.

The application and the Amendment Scheme are filed with the Executive Director: Development Planning, 158 Civic Boulevard, Metropolitan Centre, A Block, 8th Floor, Braamfontein 2017 and is open for inspection at all reasonable times.

LOCAL AUTHORITY NOTICE 1486 OF 2025

CITY OF TSHWANE

TSHWANE AMENDMENT SCHEME 5529T

DECLARATION OF AN APPROVED TOWNSHIP AND NOTICE OF ADOPTION OF AN AMENDMENT SCHEME IN TERMS OF SECTION 16(9) OF THE CITY OF TSHWANE LAND USE MANAGEMENT BY-LAW, 2016 FOR AN APPROVED TOWNSHIP

SUNNYSIDE EXTENSION 2

It is hereby notified in terms of the provisions of Section 16(9) of the City of Tshwane Land Use Management By-law, 2016 that the City of Tshwane has approved and hereby adopted the land development application for the amendment scheme with regard to the property(ies) in the township of Sunnyside Extension 2, being an amendment of the Tshwane Town-planning Scheme, 2008 (Revised 2014).

The Tshwane Town-planning Scheme, 2008 (Revised 2014), and the adopted scheme map and the adopted annexures of this amendment scheme are filed with the Municipality, and are open to inspection during normal office hours.

This amendment is known as Tshwane Amendment Scheme **5529T** and shall come into operation on the date of publication of the notice.

(CPD 9/2/4/2-5529T (Item 31428))

CITY OF TSHWANE METROPOLITAN MUNICIPALITY

26 NOVEMBER 2025
(Notice 151 of 2025)

CITY OF TSHWANE

DECLARATION OF SUNNYSIDE EXTENSION 2 AS APPROVED TOWNSHIP

It is hereby declared that in terms of the provisions of Section 16(9) of the City of Tshwane Land Use Management By-law, 2016, that Sunnyside Extension 2 is an approved township, subject to the conditions as set out in the schedules hereto.

(CPD 9/2/4/2-5529T (Item 31428))

SCHEDULE

CONDITIONS UNDER WHICH THE APPLICATION MADE BY 3B INVESTMENTS 102 (PTY) LTD (REGISTRATION NR 1999/015609/07), IN TERMS OF SECTION 16(4)(f)(i) OF THE CITY OF TSHWANE LAND USE MANAGEMENT BY-LAW, 2016 FOR THE ESTABLISHMENT OF A TOWNSHIP ON THE REMAINING EXTENT OF PORTION 250 OF THE FARM ELANDSPOORT 357JR, PROVINCE OF GAUTENG, HAS BEEN GRANTED

1. CONDITIONS OF ESTABLISHMENT

1.1 NAME

The name of the township shall be Sunnyside Extension 2.

1.2 DESIGN

The township consists of erven as indicated on General Plan SG No 1137/2022.

1.3 PROVISION AND INSTALLATION OF ENGINEERING SERVICES

The township owner shall at his cost provide the township with such engineering services, social infrastructure and open spaces as the Municipality may deem necessary for the proper development of the township and comply with the engineering services agreement entered into between the township owner and the Municipality as required in terms of Section 21(3) of the By-law and in accordance with section 49 of the Spatial Planning and Land Use Management Act, (Act 16 of 2013).

1.4 ACCEPTANCE AND DISPOSAL OF STORMWATER

The township owner shall arrange for the drainage of the township to fit in with that of the adjacent road and all stormwater running off or being diverted from the road and higher lying areas shall be received and disposed of, to the satisfaction of the Municipality.

1.5 CONDITIONS IMPOSED BY THE GAUTENG PROVINCIAL GOVERNMENT: DEPARTMENT OF ROADS AND TRANSPORT

None

1.6 CONDITIONS IMPOSED BY THE GAUTENG PROVINCIAL GOVERNMENT: DEPARTMENT OF AGRICULTURE AND RURAL DEVELOPMENT (GDARD)

The township owner shall at his own costs comply with and strictly adhere to all the conditions and/or requirements (if any) imposed by the Department of Agriculture and Rural Development including those by which exemption has been granted from compliance with the Environmental Impact Assessment Regulations, 2014, promulgated on 4 December 2014 in terms of section 21, 22 and 26 of the Environmental Conservation Act, (Act 73 of 1989) or the National Environmental Act, 1998 (Act 107 of 1998) as amended and the Regulations thereto, as the case may be for the development of this township.

1.7 ACCESS CONDITIONS

Access to or egress from the township shall be provided to the satisfaction of the Municipality.

2. CONDITIONS TO BE COMPLIED WITH BEFORE THE ERVEN IN THE TOWNSHIP BECOME REGISTERABLE WHICH SHALL BE READ WITH THE CONDITIONS OF ESTABLISHMENT INDICATED IN 1 ABOVE IN TERMS OF SECTION 16(10) OF THE BY-LAW AND SECTION 53 OF THE SPATIAL PLANNING AND LAND USE MANAGEMENT ACT, 16 OF 2013

2.1 REFUSE REMOVAL

2.1.1 The township owner shall at his own expense have all litter within the township area removed to the satisfaction of the City of Tshwane, when required to do so by the City of Tshwane.

2.1.2 The township owner shall provide sufficient refuse collection points in the township and shall make arrangements to the satisfaction of the Municipality for the removal of all refuse.

2.2 REMOVAL OR REPLACEMENT OF EXISTING SERVICES

If, by reason of the establishment of the township, it should be necessary to remove or replace any existing municipal, TELKOM and/or ESKOM services, the cost of such removal or replacement shall be borne by the township owner. For purposes of removal or replacement the township owner shall, at its own costs, protect the services by means of the registration of servitudes in favour of the City of Tshwane, TELKOM and/or ESKOM should it be deemed necessary.

2.3 DEMOLITION OF BUILDINGS AND STRUCTURES

The township owner shall at his own costs cause all existing buildings/structures situated within the building line reserves, side spaces, or over common boundaries to be demolished to the satisfaction of the Municipality, when requested thereto by the Municipality or where buildings/structures are dilapidated.

2.4 CONSOLIDATION OF ERVEN

The erven in the township will not be consolidated.

2.5 RESTRICTION ON REGISTRATION AND TRANSFER OF ERVEN FROM THE TOWNSHIP

In terms of section 16(10) of the By-law read with section 53 of Spatial Planning and Land Use Management Act, (Act 16 of 2013) no property(ies) or land and/or erf/erven and/or sections and/or units, sectional title schemes/registers or other registration transaction/s, in a land development area, which registration transactions results from a land development application(s), may be submitted by the applicant and/or owner, to the Registrar of Deed for registration, including transfer and the registration of a Certificate of Consolidated Title and/or Certificate of Registered in the name of the owner; prior to the Municipality certifying to the Registrar of Deeds that:

2.5.1 all engineering services have been designed and constructed to the satisfaction of the Municipality, including the provision of guarantees, and maintenance guarantees, for services having been provided to the satisfaction of the Municipality as may be required;

2.5.2 all engineering services contributions and open spaces and parks contributions and/or development charges and/or other monies have been paid;

2.5.3 all engineering services have been or will be protected to the satisfaction of the Municipality by means of servitudes;

2.5.4 all conditions of the approval of the land development application have been complied with or that arrangements for compliance to the satisfaction of the Municipality have been made, which arrangements shall form part of an agreement read with Chapter 7 of the By-law, to the satisfaction of the Municipality;

2.5.5 it is in a position to consider a final building plan; and

2.5.6 all the properties have either been transferred in terms of subsection 16(11) hereof or shall be transferred simultaneously with the first transfer or registration of a newly created property or sectional title scheme.

2.6 PROVISION OF OPEN SPACES AND PARKS IN TERMS OF SECTION 47 OF THE BY-LAW

The township owner shall, in terms of the provisions of Section 47(3) read with Schedule 16 of the By-law, pay an amount of money to the Municipality for the shortfall in the provision of land for the provision of open spaces and parks, if applicable.

3. DISPOSAL OF EXISTING CONDITIONS OF TITLE IN TERMS OF SECTION 16(4)(g)

All erven shall be made subject to existing conditions of title and servitudes, if any, excluding the following for the reasons confirmed below -

3.1 The following perpetual right of way servitudes for a tramway which do not affect the erven in the township due to geographical location:

"With a perpetual right of way over a street 24,87 metres broad over a portion measuring 10,6569 square metres of the said farm transferred to the Pretoria Tramway Company Limited on the 28th February 1899 and shown on the diagram thereof."

3.2 The following paragraphs that will not be passed on to the erven in the township as the rights have lapsed:

"The property hereby transferred together with certain Portion B of portion "c" of Portion A of the said portion called Sunnyside of the said farm Elandspoort 357, situate as aforesaid, measuring 4 484 square metres transferred to Gilbert Kelsey Loveday on the 3rd April 1915, by Deed of Transfer No 1533/1915; certain portion "c" of Portion C of Portion A of the said farm Elandspoort 357 situate as aforesaid, measuring 4 484 square metres, transferred to Helen Ruth Loveday, Major Spinster by Deed of Transfer No 1534/1915; Certain portion "D" of Portion 'c' of Portion A of the said portion called Sunnyside of the said farm Elandspoort 357, situate as aforesaid measuring 4 484 square metres transferred to Joyce Reinette Loveday, minor Spinster by Deed of Transfer No 1535/1915; certain portion E of portion 'c' of Portion A of the said portion called Sunnyside of the said farm Elandspoort 357, situate as aforesaid, measuring 4 484 square metres, transferred to Melicent Clare Loveday - major Spinster by Deed of Transfer No 1536/1915; certain remaining extent of portion 'c' of Portion A of the said portion called Sunnyside of the said farm Elandspoort 357, situate as aforesaid, measuring, 2 395 square metres transferred to Conrad Julius Kelsey Loveday by Deed of Transfer No 1538/1915; and certain portion 1 of Portion 'F' of portion 'c' of portion A of the said portion called Sunnyside of the said farm Elandspoort No 357, situate as aforesaid measuring 2 014 square metres originally transferred to Robert Hillhouse Ireland by Deed of Transfer No 135/1917, ARE FURTHER SUBJECT to the following conditions appearing in Deed of Transfer No 1397/1899, namely:-

That the said Richard Kelsey Loveday, the Pretoria Tramway Company Limited, Edward Philip Arnold Meintjies and Johann Friedrich Bernhard Rissik, their Heirs, Executors, Administrators or Assigns shell have the right to construct a dam above the fountain and dam formerly belonging to James Edward Mears, and to take all the water out of the Spruit;

Said Portion C is subject to a servitude relating to the existing water furrow as shown on the diagram thereof in favour of the lower portions of the said portion A to construct a water furrow out of the dam and fountain, to convey water therefrom as high as possible.

The owners of the lower portions shall, if they so desire, have the right to convey water by means of iron or other pipes to their portions.

The owner of each portion shall be entitled to the use of a fourth share in the water out of the spruit and fountain and further the owners of the lower portions shall have the right to proceed along the said water furrow or to send others to remove obstructions and further the joint owners of the portions "A" "B" "C" and "D" of the said farm shall jointly be obliged to keep the said fountain situate on the said portion "A" the dams and water furrow in good order and repair at their joint expense."

4. CONDITIONS OF TITLE

4.1 Conditions of Title imposed in favour of the Municipality in terms of the section 16(4)(g) of the By-law

4.1.1 ERF 1462

4.1.1.1 Each erf is subject to a servitude, 2m wide, in favour of the Municipality, for sewerage and other municipal purposes, along any boundary other than a street boundary and in the case of a panhandle erf, an additional servitude for municipal purposes 2m wide across the access portion of the erf, if and when required by the Municipality: Provided that the Municipality may dispense with any such servitude.

4.1.1.2 No building or other structure or any part of its foundation shall be erected within the aforesaid servitude area and no large rooted trees shall be planted within the area of such servitude or within 2m thereof.

4.1.1.3 The Municipality shall be entitled to deposit temporarily on the land adjoining the aforesaid servitude such material as may be excavated by it during the process of the construction, maintenance or removal of such sewerage mains and other works as it, in its discretion may deem necessary and shall further be entitled to reasonable access to the said land for the aforesaid purpose subject to any damage done during the process of the construction, maintenance or removal of such sewerage mains and other works being made good by the Municipality.

4.1.2 ERF 1461

4.1.2.1 The erf shall be subject to a servitude, 2m wide, for municipal services (stormwater), along the southern and part of the western boundary of the erf, in favour of the City of Tshwane, as indicated on the General Plan SG No 1137/2022.

4.1.2.2 No building or other structure or any part of its foundation shall be erected within the aforesaid servitude area and no large rooted trees shall be planted within the area of such servitude or within 2m thereof.

4.1.2.3 The Municipality shall be entitled to deposit temporarily on the land adjoining the aforesaid servitude such material as may be excavated by it during the process of the construction, maintenance or removal of such sewerage mains and other works as it, in its discretion may deem necessary and shall further be entitled to reasonable access to the said land for the aforesaid purpose subject to any damage done during the process of the construction, maintenance or removal of such sewerage mains and other works being made good by the Municipality.

LOCAL AUTHORITY NOTICE 1487 OF 2025

CITY OF TSHWANE METROPOLITAN MUNICIPALITY

AMENDMENT SCHEME 107TL

It is hereby notified in terms of the provisions of section 16(1)(y) of the City of Tshwane Land Use Management By-law, 2016, that the City of Tshwane has approved and hereby adopted the land development application known as Tshwane Amendment Scheme **7359T** of the Tshwane Town-planning Scheme, 2008 (Revised 2014) read with Clause 4 to be incorporated into the Tshwane Land Use Scheme, 2024 as Amendment Scheme **107TL**, being the rezoning of Portion 1 of Erf 441 and Erf 1250, Arcadia, to **"Educational"**, Place of Instruction, Place of Worship, subject to certain further conditions.

The Tshwane Land Use Scheme, 2024, and the scheme clauses and annexure as adopted of this amendment scheme are filed with the Municipality and are open to inspection during normal office hours.

This amendment is known as Amendment Scheme **107TL** of the Tshwane Land Use Scheme, 2024 and shall come into operation on the date of publication of this notice.

(CPD 9/2/4/2-7449T (107TL) (Item 39108))

CITY OF TSHWANE METROPOLITAN MUNICIPALITY

26 NOVEMBER 2025
(Notice 352/2025)

LOCAL AUTHORITY NOTICE 1488 OF 2025

CITY OF TSHWANE METROPOLITAN MUNICIPALITY

NOTICE IN TERMS OF SECTION 16(1)(y) OF THE CITY OF TSHWANE LAND USE MANAGEMENT BY-LAW, 2016 FOR THE REMOVAL, AMENDMENT OR SUSPENSION OF RESTRICTIVE CONDITIONS IN TITLE

It is hereby notified in terms of the provisions of Section 16(1)(y) of the City of Tshwane Land Use Management By-law, 2016, that the City of Tshwane has **approved** and adopted the land development application for the removal of certain conditions contained in Title Deed T76002/2024 with reference to the following property: Erf 1083, Queenswood, Extension 2.

The following conditions and/or phrases are hereby removed: Condition(s), 1,2,3,4,5,6,7,9,10,11,12,13,17.(a) and 17.(b).

This removal will come into effect on the date of publication of this notice.

(CPD/568/1083/X2 (Item 50620))

CITY OF TSHWANE METROPOLITAN MUNICIPALITY

26 NOVEMBER 2025
(Notice 567/2025)

LOCAL AUTHORITY NOTICE 1489 OF 2025

CITY OF TSHWANE METROPOLITAN MUNICIPALITY

NOTICE IN TERMS OF SECTION 16(1)(y) OF THE CITY OF TSHWANE LAND USE MANAGEMENT BY-LAW, 2016 FOR THE REMOVAL, AMENDMENT OR SUSPENSION OF RESTRICTIVE CONDITIONS IN TITLE

It is hereby notified in terms of the provisions of Section 16(1)(y) of the City of Tshwane Land Use Management By-law, 2016, that the City of Tshwane has **approved** and adopted the land development application for the removal of certain conditions contained in Title Deed T18973/2025 with reference to the following property: Erf 503, Lynnwood.

The following conditions and/or phrases are hereby removed: Conditions, A, A(a), A(b), A(c), A(d), A(e), A(f), A(g), B(a), B(b), B(c), B(d), B(e), E, E(a), E(b), F, F(a) and F(b).

This removal will come into effect on the date of publication of this notice.

(CPD LYN/0376/503 (Item 50793))

CITY OF TSHWANE METROPOLITAN MUNICIPALITY

26 NOVEMBER 2025
(Notice 568/2025)

LOCAL AUTHORITY NOTICE 1490 OF 2025

CITY OF TSHWANE METROPOLITAN MUNICIPALITY

NOTICE IN TERMS OF SECTION 16(1)(y) OF THE CITY OF TSHWANE LAND USE MANAGEMENT BY-LAW, 2016 FOR THE REMOVAL, AMENDMENT OR SUSPENSION OF RESTRICTIVE CONDITIONS IN TITLE

It is hereby notified in terms of the provisions of Section 16(1)(y) of the City of Tshwane Land Use Management By-law, 2016, that the City of Tshwane has **approved** and adopted the land development application for the removal of certain conditions contained in Title Deed T26529/2024 with reference to the following property: Erf 584, Menlo Park.

The following conditions and/or phrases are hereby removed: Condition(s), (b), (c), (e), (g) and (j).

This removal will come into effect on the date of publication of this notice.

(CPD MNP/0416/584 (Item 40643))

CITY OF TSHWANE METROPOLITAN MUNICIPALITY

26 NOVEMBER 2025
(Notice 569/2025)

LOCAL AUTHORITY NOTICE 1491 OF 2025

CITY OF TSHWANE METROPOLITAN MUNICIPALITY

NOTICE IN TERMS OF SECTION 16(1)(y) OF THE CITY OF TSHWANE LAND USE MANAGEMENT BY-LAW, 2016 FOR THE REMOVAL, AMENDMENT OR SUSPENSION OF RESTRICTIVE CONDITIONS IN TITLE

It is hereby notified in terms of the provisions of Section 16(1)(y) of the City of Tshwane Land Use Management By-law, 2016, that the City of Tshwane has **approved** and adopted the land development application for the removal of certain conditions contained in Title Deed T61107/2014 with reference to the following property: Erf 849, Valhalla.

The following conditions and/or phrases are hereby removed: Conditions, C.(c), C.(g), C.(h), C.(l)(i), C.(l)(iii), C.(m)(i) and C.(n).

This removal will come into effect on the date of publication of this notice.

(CPD VAL/0688/849 (Item 50520))

CITY OF TSHWANE METROPOLITAN MUNICIPALITY

26 NOVEMBER 2025
(Notice 570/2025)

LOCAL AUTHORITY NOTICE 1492 OF 2025

CITY OF TSHWANE METROPOLITAN MUNICIPALITY

NOTICE IN TERMS OF SECTION 16(1)(y) OF THE CITY OF TSHWANE LAND USE MANAGEMENT BY-LAW, 2016 FOR THE REMOVAL, AMENDMENT OR SUSPENSION OF RESTRICTIVE CONDITIONS IN TITLE

It is hereby notified in terms of the provisions of Section 16(1)(y) of the City of Tshwane Land Use Management By-law, 2016, that the City of Tshwane has **approved** and adopted the land development application for the removal of certain conditions contained in Title Deed T53190/1991 with reference to the following property: Portion 1 of Erf 246, Lynnwood.

The following conditions and/or phrases are hereby removed: Conditions, A.II (b), A.II (c), A.II (d), A.II (e), A.II (f), A.II (g), A.III (a), A.III (b), A.III (c), A.III (c)(i), A.III (c)(ii), A.III (c)(iii), A.III (d), A.III (e), A.V, A.VI (a), and A.VI (b).

This removal will come into effect on the date of publication of this notice.

(LYN/0376/246/1 (Item 50780))

CITY OF TSHWANE METROPOLITAN MUNICIPALITY

26 NOVEMBER 2025
(Notice 571/2025)

LOCAL AUTHORITY NOTICE 1493 OF 2025

CITY OF TSHWANE METROPOLITAN MUNICIPALITY

NOTICE IN TERMS OF SECTION 16(1)(y) OF THE CITY OF TSHWANE LAND USE MANAGEMENT BY-LAW, 2016 FOR THE REMOVAL, AMENDMENT OR SUSPENSION OF RESTRICTIVE CONDITIONS IN TITLE

It is hereby notified in terms of the provisions of Section 16(1)(y) of the City of Tshwane Land Use Management By-law, 2016, that the City of Tshwane has **approved** and adopted the land development application for the removal of certain conditions contained in Title Deed T59031/2022 with reference to the following property: Erf 224, Waterkloof Ridge.

The following conditions and/or phrases are hereby removed: Condition(s), (i), (ii), 1, 2, 3, 4, 4(i), 4(ii), 4(iii), 5, 6(i), 6(ii), 6(iii), 6(iv), 7, 8, 9, 10 and 11.

This removal will come into effect on the date of publication of this notice.

(CPD WKR/0744/224 (Item 50792))

CITY OF TSHWANE METROPOLITAN MUNICIPALITY

26 NOVEMBER 2025
(Notice 573/2025)

LOCAL AUTHORITY NOTICE 1494 OF 2025

CITY OF TSHWANE METROPOLITAN MUNICIPALITY

NOTICE IN TERMS OF SECTION 16(1)(y) OF THE CITY OF TSHWANE LAND USE MANAGEMENT BY-LAW, 2016 FOR THE REMOVAL, AMENDMENT OR SUSPENSION OF RESTRICTIVE CONDITIONS IN TITLE

It is hereby notified in terms of the provisions of Section 16(1)(y) of the City of Tshwane Land Use Management By-law, 2016, that the City of Tshwane has **approved** and adopted the land development application for the removal of certain conditions contained in Title Deed T55067/2020 with reference to the following property: Erf 1251, Waterkloof Ridge Extension 2.

The following conditions and/or phrases are hereby removed: Condition 1.(a), 1.(b), 1.(d), 1.(f), 1.(g), 1.(h), 1.(i), 1.(k), 1.(k), 2.(a), 2.(b); 2.(b)(i); 2.(b)(ii); 2.(c) and 3.

This removal will come into effect on the date of publication of this notice.

(CPD WKR/0744/1251 (Item 50466))

CITY OF TSHWANE METROPOLITAN MUNICIPALITY

26 NOVEMBER 2025
(Notice 572/2025)

LOCAL AUTHORITY NOTICE 1495 OF 2025

CITY OF TSHWANE METROPOLITAN MUNICIPALITY

NOTICE IN TERMS OF SECTION 16(1)(y) OF THE CITY OF TSHWANE LAND USE MANAGEMENT BY-LAW, 2016 FOR THE REMOVAL, AMENDMENT OR SUSPENSION OF RESTRICTIVE CONDITIONS IN TITLE

It is hereby notified in terms of the provisions of Section 16(1)(y) of the City of Tshwane Land Use Management By-law, 2016, that the City of Tshwane has **approved** and adopted the land development application for the removal of certain conditions contained in Title Deeds T51991/2021, T89381/2002 and T95236/1995 with reference to the following property: Remainder of Erf 508, Portion 1 of Erf 508 and Erf 509, Muckleneuk.

The following conditions and/or phrases are hereby removed:

1. Condition(s), A.(b), A.(c), A.(d) and A.(e) on Title Deed T51991/2021, Remainder of Erf 508, Muckleneuk.
2. Conditions (a), (b), (c), (d) and (e) on Title Deed T89381/2002, Portion 1 of Erf 508, Muckleneuk.
3. Conditions (a), (b), (c), (d) and (e) on Title Deed T95236/1995, Erf 509, Muckleneuk.

This removal will come into effect on the date of publication of this notice.

(CPD/0476/00508/1 (Item 40451))

CITY OF TSHWANE METROPOLITAN MUNICIPALITY

26 NOVEMBER 2025
(Notice 575/2025)

LOCAL AUTHORITY NOTICE 1496 OF 2025

CITY OF TSHWANE METROPOLITAN MUNICIPALITY

NOTICE IN TERMS OF SECTION 16(1)(y) OF THE CITY OF TSHWANE LAND USE MANAGEMENT BY-LAW, 2016 FOR THE REMOVAL, AMENDMENT OR SUSPENSION OF RESTRICTIVE CONDITIONS IN TITLE

It is hereby notified in terms of the provisions of Section 16(1)(y) of the City of Tshwane Land Use Management By-law, 2016, that the City of Tshwane has **approved** and adopted the land development application for the removal of certain conditions contained in Title Deed T61370/2024 with reference to the following property: Erf 326, Murrayfield, Extension 1.

The following conditions and/or phrases are hereby removed condition(s), 1.(b), 1.(c), 1.(d), 1.(e), 1.(f), 1. (h), 1.(i), 2.(a), 2.(b), 2.(b)(i), 2.(b)(ii), 2.(c) and 3.

This removal will come into effect on the date of publication of this notice.

(CPD MRFX1/0484/326 (Item 50345))

CITY OF TSHWANE METROPOLITAN MUNICIPALITY

26 NOVEMBER 2025
(Notice 576/2025)

LOCAL AUTHORITY NOTICE 1497 OF 2025

CITY OF TSHWANE METROPOLITAN MUNICIPALITY

NOTICE IN TERMS OF SECTION 16(1)(y) OF THE CITY OF TSHWANE LAND USE MANAGEMENT BY-LAW, 2016 FOR THE REMOVAL, AMENDMENT OR SUSPENSION OF RESTRICTIVE CONDITIONS IN TITLE

It is hereby notified in terms of the provisions of Section 16(1)(y) of the City of Tshwane Land Use Management By-law, 2016, that the City of Tshwane has **approved** and adopted the land development application for the removal of certain conditions contained in Title Deed T3451/2025 with reference to the following property: Erf 582, Constantia Park.

The following conditions and/or phrases are hereby removed condition(s) I.; II.(a); II.(b); II.(c); II.(d); II.(d)(i) and II.(d)(ii).

This removal will come into effect on the date of publication of this notice.

(CPD CTP/0116/582 (Item 50361))

CITY OF TSHWANE METROPOLITAN MUNICIPALITY

26 NOVEMBER 2025
(Notice 577/2025)

LOCAL AUTHORITY NOTICE 1498 OF 2025

CITY OF TSHWANE METROPOLITAN MUNICIPALITY

NOTICE IN TERMS OF SECTION 16(1)(y) OF THE CITY OF TSHWANE LAND USE MANAGEMENT BY-LAW, 2016 FOR THE REMOVAL, AMENDMENT OR SUSPENSION OF RESTRICTIVE CONDITIONS IN TITLE

It is hereby notified in terms of the provisions of Section 16(1)(y) of the City of Tshwane Land Use Management By-law, 2016, that the City of Tshwane has **approved** and adopted the land development application for the removal of certain conditions contained in Title Deeds T49288/2024 and T54181/2024 with reference to the following property: Erf 438 and 439, Lynnwood Glen.

The following conditions and/or phrases are hereby removed:

1. Conditions (2)A.(a), (2)A.(b), (2)A.(c), (2)A.(d), (2)A.(e), (2)A.(f), (2)A.(g), (2)A.(h), (2)A.(i), (2)B.(a), (2)B.(b), (2)B.(c), (2)B.(c)(i), (2)B.(c)(ii), (2)(B).(d), (2)C, (2)D.(a), (2)D.(b), (2)D.(c), (2)E, (2)E.(i) and (2)E.(ii) in the Title Deed T49288/2024 of Erf 438, Lynnwood Glen.

2. Conditions (2)A.(a), (2)A.(b), (2)A.(c), (2)A.(d), (2)A.(e), (2)A.(f), (2)A.(g), (2)A.(h), (2)A.(i), (2)B.(a), (2)B.(b), (2)B.(c), (2)B.(c)(i), (2)B.(c)(ii), (2)B.(d), (2)C., (2)D.(a), (2)D.(b), (2)D.(c), (2)E., (2)E.(i) and (2)E.(ii) in the Title Deed T54181/2024 of Erf 439, Lynnwood Glen.

This removal will come into effect on the date of publication of this notice.

(CPD LWG/0384/438 (Item 50204))

CITY OF TSHWANE METROPOLITAN MUNICIPALITY

26 NOVEMBER 2025
(Notice 578/2025)

LOCAL AUTHORITY NOTICE 1499 OF 2025

CITY OF TSHWANE METROPOLITAN MUNICIPALITY

NOTICE IN TERMS OF SECTION 16(1)(y) OF THE CITY OF TSHWANE LAND USE MANAGEMENT BY-LAW, 2016 FOR THE REMOVAL, AMENDMENT OR SUSPENSION OF RESTRICTIVE CONDITIONS IN TITLE

It is hereby notified in terms of the provisions of Section 16(1)(y) of the City of Tshwane Land Use Management By-law, 2016, that the City of Tshwane has **approved** and adopted the land development application for the removal of certain conditions contained in Title Deed T42268/2016 reference to the following property: Erf 382, Lynnwood Ridge.

The following conditions and/or phrases are hereby removed conditions 3(a), 3(b), 3(c), 3(d), 3(e), 3(f), 3(g), 3(h), 4(a), 4(b), 4(b)(i), 4(b)(ii), 4(c) and 7.

This removal will come into effect on the date of publication of this notice.

(CPD LWR/0389/382 (Item 50464))

CITY OF TSHWANE METROPOLITAN MUNICIPALITY

26 NOVEMBER 2025
(Notice 579/2025)

LOCAL AUTHORITY NOTICE 1500 OF 2025

LINBRO PARK EXTENSION 214

A. In terms of Section 28(15) of the City of Johannesburg Municipal Planning By-Law, 2016, the City of Johannesburg Metropolitan Municipality declares **Linbro Park Extension 214** to be an approved township subject to the conditions set out in the Schedule hereunder.

STATEMENT OF THE CONDITIONS UNDER WHICH THE APPLICATION MADE BY MARLBORO ELITE PROPRIETARY LIMITED (HEREINAFTER REFERRED TO AS THE TOWNSHIP OWNER) IN TERMS OF THE PROVISIONS OF PART 3 OF CHAPTER 5 OF THE CITY OF JOHANNESBURG MUNICIPAL PLANNING BY-LAW, 2016 (HEREINAFTER REFERRED TO AS THE BY-LAW), FOR PERMISSION TO ESTABLISH A TOWNSHIP ON PORTION 369 (A PORTION OF PORTION 13) OF THE FARM MODDERFONTEIN NO 35-IR, GAUTENG PROVINCE, HAS BEEN APPROVED.

1. CONDITIONS OF ESTABLISHMENT.

(1) NAME
The name of the township is **Linbro Park Extension 214.**

(2) DESIGN
The township consists of erven and roads as indicated on **General Plan 915/2024**.

(3) DESIGN AND PROVISION OF ENGINEERING SERVICES IN AND FOR THE TOWNSHIP
The township owner shall, to the satisfaction of the local authority, make the necessary arrangements for the design and provision of all engineering services of which the local authority is the supplier.

(4) ELECTRICITY
The local authority is not the bulk supplier of electricity to or in the township. The township owner shall in terms of Chapter 6 Part 1 of the By-law make the necessary arrangements with ESKOM, the licensed supplier of electricity for the provision of electricity.

(5) ACCESS
(a) Access to or egress from the township shall be provided to the satisfaction of the local authority and/or Johannesburg Roads Agency (Pty) Ltd and/or the Department of Roads and Transport.

(6) ACCEPTANCE AND DISPOSAL OF STORMWATER DRAINAGE
The township owner shall arrange for the stormwater drainage of the township to fit in with that of the adjacent road/roads and all stormwater running off or being diverted from the road/roads shall be received and disposed of.

(7) REFUSE REMOVAL
The township owner shall provide sufficient refuse collection points in the township and shall make arrangements to the satisfaction of the local authority for the removal of all refuse.

(8) REMOVAL OR REPLACEMENT OF EXISTING SERVICES
If, by reason of the establishment of the township, it should be necessary to remove or replace any existing municipal, TELKOM and/or ESKOM services, the cost of such removal or replacement shall be borne by the township owner.

(9) DEMOLITION OF BUILDINGS AND STRUCTURES
The township owner shall at its own costs cause all existing buildings and structures situated within the building line reserves, side spaces or over common boundaries to be demolished to the satisfaction of the local authority, when requested thereto by the local authority.

(10) ERF/ERVEN FOR MUNICIPAL PURPOSES
Erven 342, 343 and 344 Linbro Park Extension 214 shall, prior to or simultaneously with registration of transfer of the first erf in the township and at the cost of the township owner, be transferred to the City of Johannesburg Metropolitan Municipality for municipal purposes (public open space). All refuse, building rubble and/or other materials shall be removed from the erf/erven prior to the transfer thereof to the City of Johannesburg Metropolitan Municipality.

(11) OPEN SPACE CONTRIBUTION
The township owner shall, if applicable, in terms of section 48. of the By-law pay an open space contribution to the local authority *in lieu* of providing the necessary open space in the township or for the shortfall in the provision of land for open space.

(12) OBLIGATIONS WITH REGARD TO THE CONSTRUCTION AND INSTALLATION OF ENGINEERING SERVICES AND RESTRICTIONS REGARDING THE ALIENATION OR TRANSFER OF ERVEN
(a) The township owner shall, after compliance with clause 2.(3) above, at its own costs and to the satisfaction of the local authority, construct and install all engineering services including the internal roads and the stormwater reticulation, within the boundaries of the township. Erven and/or units in the township, may not be transferred into the name of a purchaser, prior to the local authority certifying to the Registrar of Deeds that these engineering services had been constructed and installed.

(b) The township owner shall fulfil its obligations in respect of the installation of electricity, water and sanitary services as well as the construction of roads and stormwater drainage and the installation of systems therefor, as agreed between the township owner and the local authority in terms of clause 2.(3) above. Erven and/or units in the township, may not be transferred into the name of a purchaser, prior to the local authority certifying to the Registrar of Deeds that sufficient guarantees/cash contributions in respect of the engineering services have been submitted or paid to the said local authority.

(13) OBLIGATIONS WITH REGARD TO THE PROTECTION OF ENGINEERING SERVICES
The township owner shall, at its costs and to the satisfaction of the local authority, survey and register all servitudes required to protect the constructed/installed services. Erven and/or units in the township, may not be transferred into the name of a purchaser, prior to the local authority certifying to the Registrar of Deeds that these engineering services had been or will be protected to the satisfaction of the local authority.

(14) NOTARIAL TIE OF ERVEN
The township owner shall, at its own costs, after proclamation of the township, submit an application for consent to notarially tie Erven 340 and 341 Linbro Park Extension 214, to the local authority for approval. The notarial tie may not be registered prior to the local authority certifying to the Registrar of Deeds that sufficient guarantees/cash contributions in respect of the supply of engineering services to the township and the erven to be notarially tied, have been submitted or paid to the said local authority.

2. DISPOSAL OF EXISTING CONDITIONS OF TITLE.

All erven shall be made subject to existing conditions and servitudes, if any.

3. CONDITIONS OF TITLE.

(A) Conditions of Title imposed in favour of the local authority in terms of the provisions of Chapter 5 Part 3 of the By-law.

(1) ALL ERVEN
(a) The erf lie in an area where soil conditions can affect and damage buildings and structures. Building plans submitted to the local authority for consideration shall indicate measures to be taken, to limit possible damage to buildings and structures as a result of

detrimental foundation conditions. These measures shall be in accordance with the recommendation contained in the Geo-technical report for the township, unless it is proved to the local authority that such measures are unnecessary or that the same purpose can be achieved by other more effective means. The NHBRC coding for foundations is classified as C2/S, **Soil Zone II.**

(2) ALL ERVEN

(a) Each erf is subject to a servitude, 2m wide, in favour of the local authority, for sewerage and other municipal purposes, along any two boundaries other than a street boundary and in the case of a panhandle erf, an additional servitude for municipal purposes 2m wide across the access portion of the erf, if and when required by the local authority: Provided that the local authority may dispense with any such servitude.

(b) No building or other structure shall be erected within the aforesaid servitude area and no large rooted trees shall be planted within the area of such servitude or within 2m thereof.

(c) The local authority shall be entitled to deposit temporarily on the land adjoining the aforesaid servitude such material as may be excavated by it during the process of the construction, maintenance or removal of such sewerage mains and other works as it, in its discretion may deem necessary and shall further be entitled to reasonable access to the said land for the aforesaid purpose subject to any damage done during the process of the construction, maintenance or removal of such sewerage mains and other works being made good by the local authority.

(3) ERF 340 AND ERF 341

(a) The entire erf as indicated on the General Plan, is subject to a servitude for municipal purposes and right of way in favour of the local authority.

(4). The City of Johannesburg Metropolitan Municipality herewith in terms of the provision of Section 54 of the City of Johannesburg Municipal Planning By-Law, 2016, declares that it has approved and amendment scheme being an amendment of the Johannesburg Land Use Scheme 2018, comprising of the same land use as indicated in the township **Linbro Park Extension 214,** Map 3 and the scheme clauses of the amendment schemes are filed with the Executive Director: Development Planning: City of Johannesburg and are open for inspection at all reasonable times. This amendment scheme is known as Amendment Scheme **20-02-4246**.

Hector Bheki Makhubo
Deputy Director: Legal Administration
City of Johannesburg Metropolitan Municipality
Notice No. T242/2025

LOCAL AUTHORITY NOTICE 1501 OF 2025

MOGALE CITY LOCAL MUNICIPAL NOTICE 38 OF 2025
MOGALE CITY LUS AMENDMENT SCHEME 0132

Notice is hereby given in terms of Section 46(4) of the Mogale City Local Municipality Spatial Planning and Land Use Management By-law, 2018, that the Mogale City Local Municipality has approved the amendment of the Mogale City Land Use Scheme, 2022, by rezoning Erf 447 Noordheuwel from "Residential 1" with a density of 1 dwelling per 1500m² to "Residential 1" with a density of 'one dwelling per 1000m²". The proposed Remainder of Erf 447 will furthermore include an annexure for a second dwelling unit and a guesthouse.

The municipality also approved the removal of restrictive conditions (a) to (m) from Deed of Transfer T11718/2018 (originally registered against Deed of Transfer T39537/1994).

The Zoning Map and Scheme Clauses regarding the amendment scheme are filed with the Manager: Development Planning, Mogale City Local Municipality, located at the corner of Human and Monument Streets, Krugersdorp, for inspection at all reasonable times.

The amendment scheme known as the Mogale City LUS Amendment Scheme 0132 will come into operation on the date of publication of the notice.

M MSEZANA
Municipal Manager, PO Box 94, Krugersdorp

LOCAL AUTHORITY NOTICE 1502 OF 2025

AMENDMENT SCHEME 20-02-6010

Notice is hereby given in terms of Section 22(4) of the City of Johannesburg Municipal Planning By-Law, 2016, that the City of Johannesburg Metropolitan Municipality has approved the amendment of the City of Johannesburg Land Use Scheme, 2018, by the rezoning of Portion 10 of Erf 534 Sandown Extension 11 from "Special" to "Special", subject to certain conditions as indicated in the approved application, which Amendment Scheme will be known as Amendment Scheme 20-02-6010 Amendment Scheme 20-02-6010 will come into operation on the date of publication hereof.

The Amendment Scheme is filed with the Executive Director: Development Planning, 158 Civic Boulevard, Metropolitan Centre, A Block, 8th Floor, Braamfontein 2017 and is open for inspection at all reasonable times.

Hector Bheki Makhubo
Deputy Director: Legal Administration
City of Johannesburg Metropolitan Municipality /
Notice No. 552/2025

LOCAL AUTHORITY NOTICE 1503 OF 2025

PORTIONS 9 AND 10 OF ERF 823 PARKWOOD

Notice is hereby given in terms of Section 41 of the City of Johannesburg Municipal Planning By-Law, 2016 (as amended 2023) that the City of Johannesburg Metropolitan Municipality has approved the following:

(1) The removal of Conditions 1.A.(a), 1.A(c), 1.A.(d), 1.A.(e), 1.A.(f), 1.A.(g), 1.A.(h), 1.A.(i), 1.A.(j), 1.A(k), 1.A(l) and 2.A. from Deed of Transfer T3688/1994 in terms of reference number 20/13/4388/2021 which will come into operation on date of publication;

(2) The amendment of the City of Johannesburg Land Use Scheme, 2018, by the rezoning of the erf from “Residential 1” to “Residential 3”, subject to certain conditions as indicated in the approved application, which Amendment Scheme will be known as Amendment Scheme 20-01-3718. Amendment Scheme 20-01-3718 will come into operation on date of publication.

The application and the Amendment Scheme are filed with the Executive Director: Development Planning, 158 Civic Boulevard, Metropolitan Centre, A Block, 8th Floor, Braamfontein 2017 and is open for inspection at all reasonable times.

Hector Bheki Makhubo
Deputy Director: Legal Administration
City of Johannesburg Metropolitan Municipality
Notice No. 050/2025

LOCAL AUTHORITY NOTICE 1504 OF 2025

LESEDI LOCAL MUNICIPALITY

We, Sonnekus Attorneys, hereby lodge a Proclamation Notice in terms of Section 62(4) and (5) of the Lesedi Spatial Planning and Land Use Management Bylaw of 2015, previously Section 6(8) of the Gauteng Removal of Restrictions Act (Act 3 of 1996), that Lesedi Local Municipality has approved the Removal of Restrictive Title Deed Application in terms of Section 61(4) of the Bylaw.

Conditions C. (a), (b) i) ii) iii) (c) are hereby proclaimed to be removed from the Certificate of Consolidated Title T75077/2005 of Erf 8826 Ratanda Township and all future title deeds of the abovementioned erf.

The copy of the approved Removal of Restriction Application and Letter of Approval is filed with the Executive Manager, Local Economic Development and Planning Department, Civic Centre Building, No 1 HF Verwoerd Street, Heidelberg. The documents can also be requested via e-mail at dineo@lesedi.gov.za and will be open for inspection during normal office hours at the above address.

SONNEKUS ATTORNEYS. Tel: 016 341 3525. E-mail: dawid@tslaw.co.za

LOCAL AUTHORITY NOTICE 1505 OF 2025

AMENDMENT SCHEME 20-01-5171

Notice is hereby given in terms of Section 22(4) of the City of Johannesburg Municipal Planning By-Law, 2016, that the City of Johannesburg Metropolitan Municipality has approved the amendment of the City of Johannesburg Land Use Scheme, 2018, by the rezoning of the Remaining Extent of Portion 1 of Erf 124 Lyndhurst from "Residential 1" to "Residential 2", subject to certain conditions as indicated in the approved application, which Amendment Scheme will be known as Amendment Scheme 20-01-5171. Amendment Scheme 20-01-5171 will come into operation on the date of publication hereof.

The Amendment Scheme is filed with the Executive Director: Development Planning, 158 Civic Boulevard, Metropolitan Centre, A Block, 8th Floor, Braamfontein 2017 and is open for inspection at all reasonable times.

Hector Bheki Makhubo
Deputy Director: Legal Administration
City of Johannesburg Metropolitan Municipality /
Notice No. 006/2025

LOCAL AUTHORITY NOTICE 1506 OF 2025

MIDVAAL LOCAL MUNICIPALITY

NOTICE OF THE DRAFT MIDVAAL SPATIAL PLANNING AND LAND USE MANAGEMENT BY-LAW

Notice is hereby given in terms of Section 7 read in conjunction with Section 8 of the Gauteng Rationalisation of Local Government Affairs Act, 1998 (Act 10 of 1998) and the Spatial Planning and Land Use Management Act, 2013 (Act 16 of 2013), that the Midvaal Local Municipality invites all interested and concerned parties to scrutinise and comment on draft Midvaal Spatial Planning and Land Use Management By-Law. The draft Midvaal Spatial Planning and Land Use Management By-Law document will lie for inspection during normal office hours at the Development and Planning Department from 26 November 2025 to 17 February 2026.

Any comment or representation on the draft Midvaal Spatial Planning and Land Use Management By-Law document should be submitted in writing no later than the 17th of February 2026 to the Development and Planning Department at the Midvaal Municipal Offices, Civic Centre situated at 25 Mitchell Street, Meyerton, during normal office hours between 07:30 to 13:00 and 13:30 to 16:00, Monday to Friday. Comments can also be submitted via email to planning@midvaal.gov.za

MR. P MAGODI
MUNICIPAL MANAGER
Midvaal Local Municipality

LOCAL AUTHORITY NOTICE 1507 OF 2025

MERAFONG CITY LOCAL MUNICIPALITY

APPLICATION FOR THE REMOVAL/AMENDMENT OF RESTRICTIVE CONDITIONS FROM TITLE DEED T52653/07 AND THE SIMULTANEOUS REZONING OF ERVEN 1218 AND 1219, CARLETONVILLE EXTENSION 1, GAUTENG PROVINCE (AMENDMENT SCHEME NO: 27/2025)

Notice is hereby given in terms of Section 37(2)(a) of Part 2 of the Merafong City Local Municipality Spatial Planning and Land Use Management By-law, 2020, that the under mentioned application has been received by the Merafong City Local Municipality and is open for inspection during normal office hours at the Office of the Manager: Spatial Planning, Merafong City Local Municipality, Office G21, Ground Floor, Halite Street, Carletonville, for a period of 28 days from the date of the first appearance of the notice, 26 November 2025.

Any objections/representations must be lodged with or made in writing, or verbally if unable to write, to the Municipal Manager, at the above mentioned addresses or posted to P.O. Box 3, Carletonville, 2500 on or before the closing date for the submission of objections/representations; quoting the above mentioned heading, the objectors' interest in the matter, the ground(s) of the objection/representation, the objectors' erf, phone numbers and address.

CLOSING DATE FOR SUBMISSION OF OBJECTIONS/REPRESENTATIONS: 24 DECEMBER 2025

NATURE OF THE APPLICATION
I, Jaun Hester Smith (ID No: 7008060057086), of the firm Towntactix (Pty) Ltd (Reg nr 2023/112818/07), being the authorized agent of the owner, applied to the Merafong City Local Municipality for the following applications:

1.) In terms of Section 37 of Part 2 of the Merafong City Local Municipality Spatial Planning and Land Use Management By-Law, 2020, read with the Spatial Planning and Land Use Management Act, 2013 (Act 16 of 2013), for the amendment of the Merafong Land Use Management Document, 2020 by rezoning Erven 1218 and 1219, Carletonville Extension 1, Gauteng Province, from "Residential 1" to "Business 1" with an annexure to permit a car wash. The property is located on the corners of Bornite and Reinecke Street, Carletonville. It is the intention of the owner to build shops, motor showroom and car wash on the properties.
2.) Simultaneous application in terms of Section 59 of Part 6 of the Merafong City Local Municipality Spatial Planning and Land Use Management By-Law, 2020, read with the Spatial Planning and Land Use Management Act, 2013 (Act 16 of 2013) for the Removal of Restrictive Conditions, Paragraphs (a) on page 2, (i) on page 3, and (k) and (l) on page 4, and the amendment of condition (n) on page 4, as contained in Title Deed T52653/07, in order to remove- or amend restrictive conditions.

Owner: Elliot Mojalefa Mokoena
Address of Authorized Agent: Towntactix (Pty) Ltd, 82 Kingfisher Street, Tuscany Ridge Estate, Potchefstroom, 2531. P.O. Box 1614, Carletonville, 2500. Tel: 083 648 7614, e-mail: jaun@towntactix.co.za
Municipal Manager: D.D. Mabuza

LOCAL AUTHORITY NOTICE 1508 OF 2025

CITY OF TSHWANE METROPOLITAN MUNICIPALITY

NOTICE IN TERMS OF SECTION 16(1)(y) OF THE CITY OF TSHWANE LAND USE MANAGEMENT BY-LAW, 2016 FOR THE REMOVAL, AMENDMENT OR SUSPENSION OF RESTRICTIVE CONDITIONS IN TITLE

It is hereby notified in terms of the provisions of Section 16(1)(y) of the City of Tshwane Land Use Management By-law, 2016, that the City of Tshwane has **approved** and adopted the land development application for the removal of certain conditions contained in Title Deeds T108065/2002 and T80653/2014 with reference to the following property: Erf 432, Muckleneuk.

The following conditions and/or phrases are hereby removed: Conditions, (a), (b), I, III, VI, and VII.

This removal will come into effect on the date of publication of this notice.

(CPD /0500/00432 (Item 40105))

CITY OF TSHWANE METROPOLITAN MUNICIPALITY

26 NOVEMBER 2025
(Notice 574/2025)

LOCAL AUTHORITY NOTICE 1509 OF 2025

CITY OF EKURHULENI METROPOLITAN MUNICIPALITY

REMOVAL OF RESTRICTIONS TITLE CONDITIONS: PORTIONS 3 AND 4 (A PORTION OF PORTION 1) OF ERF 150 PARKHILL GARDENS TOWNSHIP

It is hereby notified in terms of the provisions of Section 50 of the City of Ekurhuleni Metropolitan Municipality Spatial Planning and Land Use Management By-law, 2019 that the City of Ekurhuleni Metropolitan Municipality has approved application in relation to Portion 3 Erf 150 Parkhill Gardens: The removal of conditions A., B., C.(a), C.(b), C.(c), and C.(d) from Deed of Transfer T43867/1987 And Portion 4 Erf 150 Parkhill Gardens: The removal of conditions A., B., C.(a) and C.(b) from Deed of Transfer T43867/1987. The approved application will lie for inspection at the Area Manager: City Planning Department, Germiston Sub Section during normal office hours. This approval comes into effect on the date of this notice.

Printed by the Government Printer, Bosman Street, Private Bag X85, Pretoria, 0001,
for the ***Gauteng Provincial Administration***, Johannesburg.

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Publications: Tel: (012) 748 6053, 748 6061, 748 6065

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