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**Draft Scoping Report for the  
Proposed improvement on National  
Route N14 - Section 12 from  
Coligny (km 0.0) to Ventersdorp  
(km 58.40) and establishment of  
borrow pits at various locations, in  
North-West Province**

**Report No:** 24019-42-Rep-001-Draft scoping  
report Coligny to Ventersdorp-Rev0

**Submitted to:**

Department of Forestry, Fisheries and the  
Environment  
Private Bag X447  
Pretoria  
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May 2025

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## DOCUMENT CONTROL SHEET

**Project Title : Draft Scoping Report for the proposed improvement on National Route N14 - Section 12 from Coligny (km 0.0) to Ventersdorp (km 58.40) and the proposed establishment of borrow pits at various locations, in North-West Province**

**Project No: 24019**

**Document Ref. No :24019-42-Rep-001- Draft Scoping Report Coligny to Ventersdorp**

### DOCUMENT APPROVAL

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### RECORD OF REVISIONS

| <b>Date</b> | <b>Revision</b> | <b>Author</b> | <b>Comments</b> |
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## EXECUTIVE SUMMARY

Zitholele Consulting (Pty) Ltd was appointed by SMEC on behalf of the South African National Roads Agency SOC Limited (SANRAL) to conduct the Scoping and Environmental Impact Assessment (EIA) Reporting (S&EIR) process for the proposed improvement of National Route N14 Section 12 from Coligny (km 0.0) to Ventersdorp (km 58.40), in North-West Province.

The N14 road is a two-lane single carriageway road with gravel shoulders and is categorized in terms of TRH4 as a Category A Road. The proposed road upgrades will ensure that the functional classification at a design speed of 120km/h both horizontally and vertically along the full route will increase the overall mobility and capacity of the road. This design speed is preferred for a Class 1 route in terms of mobility and road user safety.

The proposed road upgrade aims to improve the road's capacity and design speed, with a focus on addressing pavement deterioration, which ranges from poor to severely deteriorated. Proposed improvements include widening certain sections, strengthening the pavement, re-alignment of the N14, construction of a road above the railway line, upgrade to existing culverts and bridges, construction of new bridges and culverts, upgrade to several intersections, and construction of an interchange.

The drainage system will be enhanced with kerbs, open earth drains, sub-surface drains, and side inlets where necessary.

The project also involves the use of material from proposed borrow pits, which will be assessed for environmental impacts.

A comprehensive desktop assessment of environmental sensitivities has been conducted, highlighting key concerns such as terrestrial and aquatic biodiversity, agricultural land capability, and palaeontological sensitivity. Specialist studies will be required to assess the impact of the road upgrade on the receiving environment.

The project is subject to the Environmental Impact Assessment (EIA) process, and an Environmental Authorization (EA) is required for the road upgrade. The Department of Forestry, Fisheries, and the Environment (DFFE) will oversee the Scoping and Environmental Impact Report (S&EIR) process for the road improvement, while the Department of Mineral Resources and Energy (DMRE) will be the authority overseeing the assessment of the proposed borrow pits. Additionally, the Department of Water and Sanitation (DWS) will require a Water Use Authorisation for water use activities related to the project.

### Structure of this report

The Draft Scoping Report (DSR) has been drafted in accordance with the NEMA EIA Regulations (GNR 326 of 2014), as amended. The DSR has been compiled in a diligent and independent manner. Table 1 below indicates the relevant GNR requirements and corresponding sections within this report.

**Table 1: Legislation requirements for DSR content as detailed in NEMA GNR 982**

| Legislated requirements as per the NEMA GNR 928  | Relevant Report Section                    |
|--|--|
| Details of the EAP who compiled the report.  | Section 1.4.2 and Appendix 3 (CVs)         |
| Details of the expertise of the EAP to carry out an Environmental Impact Assessment (EIA).   | Section 1.4.3 and Appendix 3 (CVs)         |
| The location of the activity, including-<br>The 21 digit Surveyor General code of each cadastral land parcel;<br>Where available, the physical address and farm name; and<br>Where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties.   | Section 1.2.1 and 1.2.2                    |
| A plan which locates the proposed activity or activities applied for at an appropriate scale, or, if it is-a linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken; or on land where the property has not been defined, the coordinates within which the activity is to be undertaken. | Appendix 1 and 2                           |
| A description of the scope of the proposed activity, including-<br>All listed and specified activities triggered; and<br>A description of the activities to be undertaken, including associated structures and infrastructure.   | Sections 2 and 3                           |
| A description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process.                      | Section 2                                  |
| A motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location.  | Section 3                                  |
| A full description of the process followed to reach the proposed preferred activity, site and location within the site, including -  |  |
| Details of all the alternatives considered.  | Section 4                                  |
| Details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs.  | Section 5                                  |
| A summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them.   | To be included in the Final Scoping Report |

| Legislated requirements as per the NEMA GNR 928  | Relevant Report Section   |
|--|---|
| The environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects.   | Section 6   |
| The impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts-<br>Can be reversed;<br>May cause irreplaceable loss of resources; and<br>Can be avoided, managed or mitigated. | Section 7 and 8<br><br>Will be investigated in more detail during the EIR Phase |
| The methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives.  | Section 8 <b>Error! Reference source not found.</b>                             |
| Positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects.  | Section 7<br><br>Will be investigated in more detail during the EIR Phase       |
| The possible mitigation measures that could be applied and level of residual risk.   | Will be investigated in more detail during the EIR Phase                        |
| The outcome of the site selection matrix.  | Will be investigated in more detail during the EIR Phase                        |
| If no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such.   | n/a   |
| A concluding statement indicating the preferred alternatives, including preferred location of the activity.  | Will be investigated during the EIR Phase                                       |
| A plan of study for undertaking the environmental impact assessment process to be undertaken,<br>including-  | Section 8   |
| A description of the alternatives to be considered and assessed within the preferred site, including the option of not proceeding with the activity.   | Section 8   |
| A description of the aspects to be assessed as part of the environmental impact assessment process.  | Section 8   |
| Aspects to be assessed by specialists.   | Section 8   |
| A description of the proposed method of assessing the environmental aspects, including a description of the proposed method of assessing the environmental aspects including aspects to be assessed by specialists.  | Section 8   |
| A description of the proposed method of assessing duration and significance.   | Section 8   |

| Legislated requirements as per the NEMA GNR 928  | Relevant Report Section                                  |
|--|--|
| An indication of the stages at which the competent authority will be consulted.  | Section 5.7  |
| Particulars of the public participation process that be conducted during the Environmental Impact Assessment process.  | Section 8.7  |
| A description of the tasks that will be undertaken as part of the Environmental Impact Assessment process.   | Section 8.9  |
| Identify suitable measures to avoid, reverse, mitigate or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored.   | Will be investigated in more detail during the EIR Phase |
| <p>An undertaking under oath or affirmation by the EAP in relation to-</p> <p>The correctness of the information provided in the report;</p> <p>The inclusion of comments and inputs from stakeholders and interested and affected parties; and</p> <p>Any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested or affected parties.</p> | Will be investigated in more detail during the EIR Phase |

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## LIST OF ACRONYMS

|       |   |
|-------|---|
| CA    | Competent Authority                                   |
| CRR   | Comments and Responses Report                         |
| DMRE  | Department of Mineral Resources and Energy            |
| DFFE  | Department of Forestry, Fisheries and the Environment |
| DEIR  | Draft Environmental Impact Report                     |
| DSR   | Draft Scoping Report                                  |
| DWS   | Department of Water and Sanitation                    |
| EA    | Environmental Authorisation                           |
| EAP   | Environmental Assessment Practitioner                 |
| ECA   | Environment Conservation Act                          |
| EIA   | Environmental Impact Assessment                       |
| EIR   | Environmental Impact Report                           |
| EIS   | Ecological Importance and Sensitivity                 |
| EMPr  | Environmental Management Programme                    |
| EN    | Endangered Ecosystem                                  |
| ESA   | Ecological Support Area                               |
| FEIR  | Final Environmental Impact Report                     |
| FSR   | Final Scoping Report                                  |
| GA    | General Authorisation                                 |
| GIS   | Geographic Information Systems                        |
| GNR   | Government Notice Regulation                          |
| HIA   | Heritage Impact Assessment                            |
| I&APs | Interested and Affected Parties                       |
| IDP   | Integrated Development Plan                           |
| IEA   | Integrated Environmental Authorisation                |
| IEM   | Integrated Environmental Management                   |
| IWULA | Integrated Water Use License Application              |
| LOS   | Level of Service                                      |

|          |  |
|----------|--|
| MPRDA    | Mineral Resources Petroleum Act  |
| MMSM     | Meteoblue Multi-Scale Model  |
| NEMA     | National Environmental Management Act  |
| NEM: WA  | National Environmental Management: Waste Act   |
| NFEPA    | National Freshwater Ecosystems Priority Area   |
| NWDEDECT | North West Department of Economic Development, Environment, Conservation and Tourism |
| NPAES    | National Protected Areas Expansion Strategy  |
| NWA      | National Water Act   |
| PoS      | Plan of Study  |
| PPP      | Public Participation Process   |
| PES      | Present Ecological State   |
| SAHRA    | South African National Heritage Resources Agency                                     |
| SANBI    | South African National Biodiversity Institute  |
| SANRAL   | South African National Roads Agency SOC Ltd  |
| SDF      | Spatial Development Framework  |
| SCC      | Species of Conservation Concern  |
| S&EIR    | Scoping and Environmental Impact Reporting   |
| TIA      | Traffic Impact Assessment  |
| ToR      | Terms of Reference   |
| WUL      | Water Use License  |

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## **1 INTRODUCTION**

### **1.1 Context and objectives of the report**

SANRAL has appointed Zitholele Consulting (Pty) Ltd to commence with the Scoping and Environmental Impact Reporting (S&EIR) process for the Proposed improvement on National Route N14 - Section 12 from Coligny (km 0.0) to Ventersdorp (km 58.40), in North-West Province.

The project necessitates Environmental Authorisation (EA) from the Competent Authority (DFFE), requiring adherence to the S&EIR process before construction can commence. This process aligns with Listing Notice No. 2 of the Environmental Impact Assessment (EIA) Regulations of 2014 (as amended) under the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA).

Several borrow pits will be established at various locations near the proposed road upgrade. An authorisation in terms of Section 106 of the Mineral Petroleum Resources Development Act (MPRDA) is required for the proposed borrow pits from Department of Mineral Resources and Energy (DMRE).

Furthermore, approval of a Water Use Authorisation (WUA) under the National Water Act, 1998 (Act No. 36 of 1998) is mandated by the Department of Water and Sanitation (DWS) due to the site's proximity to regulated wetlands and watercourses within the study area.

The S&EIR process is designed to evaluate potential impacts associated with the proposed project, identifying key factors for the DFFE's decision-making and proposing mitigation measures to protect the receiving environment. This initial Scoping phase report, as per NEMA requirements, documents these assessments for public, Interested and Affected Parties (I&APs), and other stakeholders to provide comments and reviews.

The Draft Scoping Report (DSR) forms a crucial part of the S&EIR process, fulfilling requirements for public consultation and addressing the Plan of Study (PoS) for the subsequent EIR phase under the NEMA EIA Regulations, 2014 (as amended).

The aims of the DSR are as follows:

- Outline the methodology for identifying and evaluating alternatives;
- Inform authorities, I&APs, and stakeholders about the project and the baseline environment;
- Identify key issues and potential impacts on the biophysical and socio-economic environment, along with proposed mitigation measures;
- Ensure compliance with relevant legislation;
- Detail opportunities for I&APs to contribute, raise concerns, and review the PoS for the EIR phase and Terms of Reference for Specialist Studies;
- Define the Terms of Reference (ToR) for Specialist Studies in the EIR phase; and

- Present Scoping Phase findings to facilitate review of the forthcoming Final Scoping Report (FSR) and approval of the PoS for EIR by the DFFE.

Feedback gathered during the Public Participation Process (PPP) will inform revisions to the Final Scoping Report (FSR), which will then be submitted to the DFFE for approval of the PoS for EIR. Upon approval, the EIR phase will commence, integrating findings from Specialist Studies and presenting impacts of project alternatives, with the Environmental Assessment Practitioner (EAP) making recommendations for project advancement.

## 1.2 Project Location

### 1.2.1 Proposed road upgrade

The proposed upgrade of National Route 14 (N14) Section 12 Coligny (km 0.0) to Ventersdorp (km 58.40), in the North West Province occurs within the Local Municipalities of Ditsobotla and JB Marks, which are under the District Municipalities of Ngaka Modiri Molema and Dr Kenneth Kaunda, respectively.

Coligny and Ventersdorp are the nearest major towns to the project (refer to the Locality Map in Appendix 1). This section is crossed by numerous local access routes, to small towns and settlements such as Ventersdorp, Klipplaatdrip, Verdoornpark, Coligny, Amanabad and Tlhabologang, along the N14.

The road upgrade traverses agricultural land use areas, natural areas, areas with alien invasive plant species, wetlands and watercourses, road crossings, rail crossings, and reserves and vacant / unspecified land. These wetland and watercourse crossings will be delineated by the wetland/freshwater specialist during the EIR phase, and its impact on the surface water bodies will be assessed by the specialist. Similarly, the vegetation along the road upgrade sections will be assessed by a Biodiversity Specialist and the findings of the Biodiversity Impact Assessment will be provided in the forthcoming EIR.

Refer to the co-ordinates of the road upgrade from Coligny to Ventersdorp in Table 1-1.

**Table 1-1: Co-ordinates of the road upgrade from Coligny to Ventersdorp**

|               |                  | Degrees | Minutes | Seconds  |
|---------------|------------------|---------|---------|----------|
| <b>Start</b>  | <b>Latitude</b>  | 26°     | 19'     | 35.34''S |
|               | <b>Longitude</b> | 26°     | 17'     | 28.75''E |
| <b>Middle</b> | <b>Latitude</b>  | 26°     | 19'     | 42.29''S |
|               | <b>Longitude</b> | 26°     | 33'     | 41.57''E |

|            |                  | Degrees | Minutes | Seconds |
|------------|------------------|---------|---------|---------|
| <b>End</b> | <b>Latitude</b>  | 26°     | 19'     | 41.97"S |
|            | <b>Longitude</b> | 26°     | 50'     | 08.58"E |

The property description of the cadastral land parcels that are affected by the proposed road upgrade are described in Table 1-2.

**Table 1-2: Property description of cadastral land parcels affected by the road upgrade**

|     | Property Description<br>Portion and Farm Number<br>Name of Farm | 21- digit SG Code     |
|-----|---|-----------------------|
| 1.  | 191<br>ROODEPOORT 191 IP  | TOIP00000000019100000 |
| 2.  | 243/191<br>ROODEPOORT 191 IP                                    | TOIP00000000019100243 |
| 3.  | 202/191<br>ROODEPOORT 191 IP                                    | TOIP00000000019100202 |
| 4.  | 201/191<br>ROODEPOORT 191 IP                                    | TOIP00000000019100201 |
| 5.  | 200/191<br>ROODEPOORT 191 IP                                    | TOIP00000000019100200 |
| 6.  | 198/191<br>ROODEPOORT 191 IP                                    | TOIP00000000019100198 |
| 7.  | 197/191<br>ROODEPOORT 191 IP                                    | TOIP00000000019100197 |
| 8.  | 196/191<br>ROODEPOORT 191 IP                                    | TOIP00000000019100196 |
| 9.  | 195/191<br>ROODEPOORT 191 IP                                    | TOIP00000000019100195 |
| 10. | 194/191<br>ROODEPOORT 191 IP                                    | TOIP00000000019100194 |
| 11. | 3/171   | TOIP00000000017100003 |
| 12. | 2/147<br>NIEKERK 147 IP   | TOIP00000000014700002 |
| 13. | 4/112<br>SNEL 112 IP  | TOIP00000000011200004 |
| 14. | 2/171<br>CHEYNE 171 IP  | TOIP00000000017100002 |
| 15. | 3/112<br>SNEL 112 IP  | TOIP00000000011200003 |
| 16. | 5/206<br>ELANDSKUIL 206 IP                                      | TOIP00000000020600005 |
| 17. | 5/205<br>ELANDSKUIL 205 IP                                      | TOIP00000000020500005 |
| 18. | VENTERSDORP Township  | TOIP0048              |
| 19. | 39/195<br>DOORNPAN 195 IP                                       | TOIP00000000019500039 |
| 20. | 37/195<br>DOORNPAN 195 IP                                       | TOIP00000000019500037 |
| 21. | 36/195  | TOIP00000000019500036 |



|     | <b>Property Description<br/>Portion and Farm Number<br/>Name of Farm</b> | <b>21- digit SG Code</b> |
|-----|--|--------------------------|
|     | DOORNPAN 195 IP  |                          |
| 22. | 35/195<br>DOORNPAN 195 IP  | T0IP00000000019500035    |
| 23. | 34/195<br>DOORNPAN 195 IP  | T0IP00000000019500034    |
| 24. | 202/208<br>ELANDSKUIL 208 IP   | T0IP00000000020800202    |
| 25. | 2/209<br>RATZEGAAISKRAAL 209 IP  | T0IP00000000020900002    |
| 26. | 62/204<br>RATZEGAAISKRAAL 204 IP   | T0IP00000000020400062    |
| 27. | 1/209<br>RATZEGAAISKRAAL 209 IP  | T0IP00000000020900001    |
| 28. | 61/204<br>RATZEGAAISKRAAL 204 IP   | T0IP00000000020400061    |
| 29. | 60/204<br>RATZEGAAISKRAAL 204 IP   | T0IP00000000020400060    |
| 30. | 52/203<br>MAKOKSKRAAL 203 IP   | T0IP00000000020300052    |
| 31. | 51/203<br>MAKOKSKRAAL 203 IP   | T0IP00000000020300051    |
| 32. | 50/203<br>MAKOKSKRAAL 203 IP   | T0IP00000000020300050    |
| 33. | 49/203<br>MAKOKSKRAAL 203 IP   | T0IP00000000020300049    |
| 34. | 47/203<br>MAKOKSKRAAL 203 IP   | T0IP00000000020300047    |
| 35. | 2/468<br>MAKOKSKRAAL 468 IP  | T0IP00000000046800002    |
| 36. | 1/501<br>ROOIKRAAL 501 IP  | T0IP00000000050100001    |
| 37. | 1/500<br>ROOIKRAAL 501 IP  | T0IP00000000050000001    |
| 38. | 29/201<br>WILDFONTEIN 201 IP   | T0IP00000000020100029    |
| 39. | 28/201<br>WILDFONTEIN 201 IP   | T0IP00000000020100028    |
| 40. | 27/201<br>WILDFONTEIN 201 IP   | T0IP00000000020100027    |
| 41. | 25/201<br>WILDFONTEIN 201 IP   | T0IP00000000020100025    |
| 42. | 24/201<br>WILDFONTEIN 201 IP   | T0IP00000000020100024    |
| 43. | 23/201<br>WILDFONTEIN 201 IP   | T0IP00000000020100023    |
| 44. | 21/201<br>WILDFONTEIN 201 IP   | T0IP00000000020100021    |
| 45. | 39/64<br>LEEUFONTEIN 64 IP   | T0IP00000000006400039    |
| 46. | 40/64<br>LEEUFONTEIN 64 IP   | T0IP00000000006400040    |
| 47. | 37/64<br>LEEUFONTEIN 64 IP   | T0IP00000000006400037    |
| 48. | 34/64<br>LEEUFONTEIN 64 IP   | T0IP00000000006400034    |
| 49. | 22/108   | T0IP00000000010800022    |

|     | <b>Property Description<br/>Portion and Farm Number<br/>Name of Farm</b> | <b>21- digit SG Code</b> |
|-----|--|--------------------------|
|     | RIETGAT 108 IP   |                          |
| 50. | 25/108<br>RIETGAT 108 IP   | T0IP00000000010800025    |
| 51. | 60/479<br>VOGELSTRUISKNOP 479 IP   | T0IP00000000047900060    |
| 52. | 59/479<br>VOGELSTRUISKNOP 479 IP   | T0IP00000000047900059    |
| 53. | 58/479<br>VOGELSTRUISKNOP 479 IP   | T0IP00000000047900058    |
| 54. | 7/67<br>LEEUFONTEIN 67 IP  | T0IP00000000006700007    |
| 55. | 21/67<br>LEEUFONTEIN 67 IP   | T0IP00000000006700021    |
| 56. | 27/67<br>LEEUFONTEIN 67 IP   | T0IP00000000006700027    |
| 57. | 5/67<br>LEEUFONTEIN 67 IP  | T0IP00000000006700005    |
| 58. | 4/67<br>LEEUFONTEIN 67 IP  | T0IP00000000006700004    |
| 59. | 3/67<br>LEEUFONTEIN 67 IP  | T0IP00000000006700003    |
| 60. | 44/67<br>LEEUFONTEIN 67 IP   | T0IP00000000006700044    |
| 61. | 59/67<br>LEEUFONTEIN 67 IP   | T0IP00000000006700059    |
| 62. | 43/67<br>LEEUFONTEIN 67 IP   | T0IP00000000006700043    |
| 63. | 66/67<br>LEEUFONTEIN 67 IP   | T0IP00000000006700066    |
| 64. | 14/67<br>LEEUFONTEIN 67 IP   | T0IP00000000006700014    |
| 65. | 76/67<br>LEEUFONTEIN 67 IP   | T0IP00000000006700076    |
| 66. | RE/30/67 LEEUFONTEIN 67 IP   | T0IP00000000006700030    |
| 67. | 38/73<br>TREURFONTEIN 73 IP  | T0IP00000000007300038    |
| 68. | 35/73<br>TREURFONTEIN 73 IP  | T0IP00000000007300035    |
| 69. | RE/28/73<br>TREURFONTEIN 73 IP   | T0IP00000000007300028    |
| 70. | RE/69<br>NOVA SCOTIA 69 IP   | T0IP00000000006900000    |
| 71. | RE/27/73<br>TREURFONTEIN 73 IP   | T0IP00000000007300027    |
| 72. | RE/21/73<br>TREURFONTEIN 73 IP   | T0IP00000000007300021    |
| 73. | RE/20/73<br>TREURFONTEIN 73 IP   | T0IP00000000007300020    |
| 74. | RE/40/73<br>TREURFONTEIN 73 IP   | T0IP00000000007300040    |
| 75. | 39/73<br>TREURFONTEIN 73 IP  | T0IP00000000007300039    |

### 1.2.2 Proposed borrow pits

As part of the road improvements, material sources from several proposed borrow pits, near the road reserve have been identified as borrow material for road construction material. The table below provides the location of the proposed borrow pits. Refer to Appendix 2 for the proposed location of the borrow pits.

**Table 1-3: Location of the proposed borrow pits**

| Potential source/Borrow pit | Approximate site centre         | Km chainage   | Approximate Area (ha) | Lithology                          |
|-----------------------------|---------------------------------|---|-----------------------|------------------------------------|
| Existing borrow pit         | 26° 18' 05.66"S 26° 46' 15.96"E | 2.8km north west of Ventersdorp                                   | 5.26                  | Quartzite                          |
| BP04                        | 26° 20' 27.76"S 26° 47'31.14"E  | Along R30<br>1,7km south of km54.4 on N14                         | 1.7                   | Basaltic lava, agglomerate, tuff   |
| Outcrop 1.0 (Part 1)        | 26° 20' 15.19"S 26° 44' 04.61"E | Along gravel road<br>151m north of km47.4 on N14                  | 4.29                  | Quartzite                          |
| Outcrop 1.0 (Part 2)        | 26° 20' 25.46"S 26° 44'01.91"E  | Along gravel road<br>151m north of km47.4 on N14                  | 4.44                  | Quartzite                          |
| Diabase cut                 | 26° 20'36.60"S 26°43'30.94"E    | 46.6 on N14   | 4.0                   | Diabase                            |
| BP01                        | 26° 20'28.08"S 26°18'07.96"E    | 69m west of km2.0 on N14  | 0.6                   | Granite                            |
| Granite quarry              | 26° 20'46.61"S 26°20'11.20"E    | Along gravel road,<br>1,2km south of km5 on N14                   | 0.4                   | Granite                            |
| BP02                        | 26° 20'41.97"S 26°20'21.88"E    | Along gravel road,<br>1,15km south of km5 on N14                  | 2.9                   | Granite                            |
| Site 1: Boulder field       | 26° 20'18.56"S 26°22'37.88"E    | Km10.2  | 4.98                  | Quartzite, greywacke, conglomerate |
| Gravel cut 1                | 26° 20'18.53"S 26°38'45.10"E    | Between km38.00 to km38.6   | 0.5                   | Quartzite, greywacke, conglomerate |
| BP03                        | 26° 20'45.88"S 26°39'42.74"E    | Between 40.2 to km40.4  | 3.6                   | Quartzite, greywacke, conglomerate |
| Quarry cut                  | 26° 20'48.04"S 26°39'51.01"E    | Between 40.4 to km40.6  | 4.97                  | Quartzite, greywacke, conglomerate |
| New B1103                   | 26° 19' 49.71"S 26° 29' 17.85"E | 266km south of km 21.6 on section of proposed re-alignment of N14 | 2.17                  | Basaltic lava                      |

Refer to Table 1-4 for the property information for the proposed borrow pits.

**Table 1-4: Property description of cadastral land parcels for the proposed borrow pits**

| No. | Proposed borrow pit   | Property Description  | 21-Digit SG Code                                   |
|-----|-----------------------|---|--|
| 1.  | Existing borrow pit   | Remainder of Portion 3 of the Farm DOORNPAN 193 IP  | T0IP00000000019300003                              |
| 2.  | BP04                  | Portion 12 of the Farm ELANDSKUIL 205 IP  | T0IP00000000020500012                              |
| 3.  | Outcrop 1.0           | Remainder of the Farm RATZEGAAISKRAAL 207 IP  | T0IP00000000020900000                              |
| 4.  | Diabase cut           | Remainder of the Farm RATZEGAAISKRAAL 207 IP<br><br>Remainder of Portion 2 of the Farm RATZEGAAISKRAAL 204 IP | T0IP00000000020900000<br><br>T0IP00000000020400002 |
| 5.  | BP01                  | Remainder of Portion 63 of the Farm TREURFONTEIN 73 IP  | T0IP0000000007300063                               |
| 6.  | Granite quarry        | Remainder of Portion 30 of the Farm LEEUWFFONTEIN 67 IP   | T0IP0000000006700030                               |
| 7.  | BP02                  | Remainder of Portion 30 of the Farm LEEUWFFONTEIN 67 IP   | T0IP0000000006700030                               |
| 8.  | Site 1: Boulder field | Portion 44 of the Farm LEEUWFFONTEIN 67 IP  | T0IP0000000006700044                               |
| 9.  | Gravel cut 1          | Remainder of the Farm MAKOKSKRAAL 203 IP  | T0IP00000000020300000                              |
| 10. | BP03                  | Portion 1 of the Farm MAKOKSKRAAL 203 IP  | T0IP00000000020300001                              |
| 11. | Quarry cut            | Portion 1 of the Farm MAKOKSKRAAL 203 IP  | T0IP00000000020300001                              |
| 12. | New B1103             | Remainder of Portion 6 of the Farm LEEUWFFONTEIN 64 IP<br><br>Remainder of the Farm LEEUWFFONTEIN 64 IP       | T0IP0000000006400006<br><br>T0IP0000000006400000   |

### 1.3 Project background

The N14 Section 12 is a single carriageway road with an average lane width of 3.7m and a varying paved shoulder width of between 300mm to 800mm wide, with a Class 1 Functional Classification. The Functional Classification implies a design speed of 120km/h both horizontally and vertically.

The design speed based on the class of road, will further increase mobility and capacity along the route.

The proposed road upgrade involves the following:

- Road widening on both sides of the N14;
- Proposed passing/crawling lanes to achieve the desired level of service as follows:
  - East-bound: 16.9km passing lanes
  - Westbound: 17.9km passing lanes
- Between km20.2 to km23.2, the existing N14 will be re-aligned. A new road over the existing railway line at km20.6 will be constructed. A river new bridge at km21.4 will be constructed
- All major and minor intersections are to be upgraded to Class 1 intersections.
- A proposed diamond interchange is proposed with the N14/R30, whereby the N14 traffic will be permitted free flow through the current 4- way stop intersection.
- The current T-junction intersection at km 0.0, where the N14/11 intersects with N14/12, requires a full stop of traffic entering from direction Biesiesvlei towards Coligny.
- Proposed re-alignment of the N14 to ensure free flow on the N14 in both directions, with a secondary access onto the R503 towards Lichtenburg.
- Existing culverts and bridges will be upgraded to meet the standards of a Class 1 road.
- New culverts and bridges will be constructed.
- The recommended pavement structure is as follows:

#### **Km 0.0 – 2.2:**

##### **(a) Existing lanes**

- Construct a new surfacing layer comprising of 50 mm thick asphalt.
- Construct a new 150 mm thick BSM1 base layer over the entire length of the road.
- Construct a new 300 mm thick Cemented subbase (C3) layer over the entire length of the road.
- Modifying the existing subbase with +-2% cement to form 150 mm thick G7 upper selected.

##### **(b) Widening**

Construct new layer works over the entire length of the widenings comprising of the following:

- A new surfacing layer comprising of 50 mm thick asphalt
- A 150 mm thick BSM1 base;
- A 300 mm thick C3 subbase layer;
- A 150 mm thick G7 selected layer;
- G9 quality subgrade material

#### **Km 2.2 – 58.4:**

##### **(c) Existing lanes**

- Construct a new surfacing layer comprising of 50 mm thick asphalt.
- Construct a new 125 mm thick BSM1 base layer over the entire length of the road.
- Construct a new 300 mm thick Cemented subbase (C3) layer over the entire length of the road

- Modifying the existing subbase with +-2% cement and form 150 mm thick G7

**(d) Widening**

Construct new layer works over the entire length of the widenings comprising of:

- A new surfacing layer comprising of 50 mm thick asphalt
  - A 125 mm thick BSM1 base;
  - A 300 mm thick C3 subbase layer;
  - A 150 mm thick G7 selected layer;
  - G9 quality subgrade material
- A significant amount of suitable construction materials will be extracted from several borrow pit sources and hard rock sources (quarries). The material that will be excavated from the base and partially the subbase, will be utilised as fill for the widenings as it is relatively good quality material. The following borrow pits will be established:
    - BP04
    - Outcrop 1.0 (Part 1)
    - Outcrop 1.0 (Part 2)
    - Diabase cut
    - BP01
    - Granite quarry
    - BP02
    - Site 1: Boulder field
    - Gravel cut 1
    - BP03
    - Quarry cut
    - New B1103
    - Existing borrow pit
  - Eleven of the major drainage culverts will be extended to accommodate the proposed road geometry and the required total surfaced of 13.4m.
  - There are two (2) river bridges out of a total of four (4) bridges that exist along the N14 Section 12. The two (2) river bridges were found to have insufficient hydraulic capacity and require hydraulic improvement. There is one road over rail bridge that will be extended to accommodate the 4-lane configuration proposed for the first 2.2km of section 12. A new road over the existing railway line is proposed at km 20.66 to replace the at-grade crossing and improve Level of Service (LOS) of the road. One of the two bridges requiring hydraulic improvement was also found to require replacement due to the raised road level, the structure will be demolished and replaced with a new 45m long bridge with height that will tie in with the proposed road level. The other bridge requiring hydraulic improvement will be improved by adding a new bridge with the same size as the existing approximately 50m away of the existing.
  - A new overpass bridge at km 53.10 is proposed.
  - A new bridge is proposed at the interchange at km54.4.

Zitholele has been appointed to undertake the following activities for the project:

- Scoping and Environmental Impact Reporting (S&EIR) process in terms of the EIA Regulations of 2014 (as amended) of the National Environmental Management Act, 1998 ([NEMA] Act No 107 of 1998);
- Water Use Authorisation (WUA) in terms of the Regulations regarding the procedural requirements for Water Use Licence Applications and Appeals (GN R.267 of 24 March 2017) of the National Water Act (Act No. 36 of 1998); and
- An authorisation into Section 106 of the Mineral Petroleum Resources Development Act (MPRDA) is required for the proposed borrow pits from Department of Mineral Resources and Energy (DMRE).

## 1.4 Key Role Players

### 1.4.1 Applicant

The South African National Roads Agency SOC Ltd (SANRAL) is a South African parastatal responsible for the management, maintenance and development of South Africa's proclaimed National Road network which includes many (but not all) National (N) and some Provincial and Regional (R) route segments.

**Table 1-5: Details of the applicant**

| Details of the applicant             |   |   |
|--------------------------------------|---|---|
| Name of Applicant                    | Contact person  | Contact Details   |
| SANRAL                               | Ms. Miriam Ramoba<br>Provincial Head of North West                      | Email address: mosiam@nra.co.za<br>Contact No: 081 013 2534 |
| Details of the SANRAL representative |   |   |
| Name of Applicant                    | Contact person  | Contact Details   |
| SANRAL                               | Ms. Victoria Bota<br>Environmental Co-ordinator<br>Northern Region (NR) | Email address: botav@nra.co.za<br>Contact No: 012 844 8031  |

#### 1.4.2. Environmental Assessment Practitioner (EAP) Details

In terms of the NEMA EIA Regulations of 2014 (as amended), the proponent must appoint an independent Environmental Assessment Practitioner (EAP) to undertake an environmental assessment for an activity regulated in terms of NEMA. In this regard, SANRAL appointed Zitholele Consulting to undertake the S&EIR process for the proposed project, in accordance with the aforementioned Regulations.

Zitholele Consulting is an empowerment company formed to provide specialist consulting services primarily to the public sector in the fields of Water Engineering, Integrated Water Resource Management, Environmental and Waste Services, Communication (public participation and awareness creation) and Livelihoods and Economic Development.

Zitholele Consulting has no vested interest in the proposed project and hereby declares its independence as required by the EIA Regulations. The details of the EAP representatives are listed below. Refer to the CV's of the EAP in Appendix 3.

**Table 1-6: Details of the EAP Team Members**

| Team member           | Area of Responsibility   | Address/ Contact Details  | Qualifications  | Experience |
|-----------------------|--|---|---|------------|
| Dr. Mathys Vosloo     | <ul style="list-style-type: none"> <li>Project leader</li> <li>Technical peer review of documents/ reports in terms of relevant legislation and support to EAP</li> </ul>  | Address: P O Box 6002,<br>Halfway House, 1685<br>Telephone 011 207 2079<br>Fax:086 545 8835<br>E-mail:<br>mathysv@zitholele.co.za   | <ul style="list-style-type: none"> <li>PhD Zoology</li> <li>Registered Professional Scientist (SACNASP, Reg No 400136/12)</li> </ul>                                  | 19         |
| Ms. Natasha Lalie     | <ul style="list-style-type: none"> <li>Environmental Assessment Practitioner (EAP)</li> <li>Project management and co-ordination</li> <li>Process management</li> <li>Specialist team management</li> <li>Public participation process</li> <li>Technical report-writing in terms of relevant legislation</li> <li>Liaison with Competent Authority and organs of state</li> </ul> | Address: P O Box 6002,<br>Halfway House, 1685<br>Telephone:011 207 2073<br>Fax: 086 676 9950<br>E-mail:<br>natashal@zitholele.co.za | <ul style="list-style-type: none"> <li>MSc. Environment and Society,</li> <li>Registered EAP (EAPASA Reg No. 2021/3611)</li> </ul>                                    | 20         |
| Ms. Londolani Sitsula | <ul style="list-style-type: none"> <li>Geographic Information System (GIS) Technician</li> <li>Public participation process</li> </ul>   | Address: P O Box 6002,<br>Halfway House, 1685<br>Telephone:011 207 2073<br>Fax:<br>E-mail:<br>londolanis@zitholele.co.za            | <ul style="list-style-type: none"> <li>Bachelor of Earth Sciences in Mining and Environmental Geology,</li> <li>Registered EAP (EAPASA Reg. No. 2022/6115)</li> </ul> | 5          |



### **1.4.3. Competent and relevant Authorities**

The DFFE is the Competent Authority for the S&EIR process for the proposed road upgrade. The mandate and core business of DFFE is underpinned by the Constitution and all other relevant legislation and policies applicable to the government. The North West Department of Economic Development, Environment, Conservation and Tourism (NW DEDECT) and several other organs of state are the commenting authorities for this application.

The DMRE is the Competent Authority for the mining authorisations for the proposed borrow pits.

## 2 LEGAL REQUIREMENTS

This chapter of the Draft Scoping Report details the applicable legal provisions and the policy context for the Scoping and Environmental Impact Reporting (S&EIR) process. It provides a review of relevant legislation, regulations and policy documents, which are applicable to (or have implications for) the proposed road improvements of the N14 – Section 12 between Coligny to Ventersdorp.

The authorisation process associated with the project will be carried out in line with South Africa’s environmental legislation to ensure that reasonable measures are taken to warrant environmental protection, prevent environmental degradation and to promote sustainable development. The following Acts and Regulations are applicable to this Project:

**Table 2-1: Relevant legislative permitting requirements applicable to the proposed development**

| Legislation  | Applicable Requirements  | Relevant Authority                  | Compliance requirements  |
|--|--|-------------------------------------|--|
| <b>National Legislation</b>  |  |                                     |  |
| The Constitution of the Republic of South Africa, Section 24 (Environmental Right) | 1) Everyone has the right<br>a) to an environment that is not harmful to their health or well-being; and<br>b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that:<br>i) prevent pollution and ecological degradation;<br>ii) promote conservation; and<br>iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.” | National Government of South Africa | The current environmental laws in South Africa concentrate on protecting, promoting, and fulfilling the Nation’s social, economic and environmental rights; while encouraging public participation, implementing cultural and traditional knowledge and benefiting previously disadvantaged communities. |

| Legislation  | Applicable Requirements  | Relevant Authority                       | Compliance requirements   |
|--|--|--|---|
| National Environmental Management Act (Act No 107 of 1998) | <p>The EIA Regulations have been promulgated in terms of Chapter 5 of the Act. Listed activities which may not commence without an environmental authorization are identified within these Regulations.</p> <p>In terms of S24(1) of NEMA, the potential impact on the environment associated with these listed activities must be assessed and reported on to the competent authority charged by NEMA with granting of the relevant environmental authorization.</p> <p>In terms of GNR No. 984 of December 2014, a Scoping and Environmental Impact Reporting (S&amp;EIR) Process is required to be undertaken for the proposed project.</p> | DFFE – Competent Authority.              | <p>An Environmental Authorisation (EA) is required, by way of a S&amp;EIR process.</p> <p>The relevance of potential activities that may be triggered in terms of GNR No. 983, 984 and 985 is provided in Table 2-2.</p> <p>The Scoping Report has been submitted to the DFFE.</p>  |
| National Environmental Management Act (Act No 107 of 1998) | In terms of the Duty of Care Provision in S28(1) the project proponent must ensure that reasonable measures are taken throughout the life cycle of this project to ensure that any pollution or degradation of the environment associated with this project is avoided, stopped or minimized. In terms of NEMA, it has become the legal duty of a project proponent to consider a project holistically, and to consider the cumulative effect of a variety of impacts.   | DFFE                                     | The licensing requirements above applies to the project. The Duty of Care Provision will continue to be applied throughout the life cycle of the project.   |
| Environment Conservation Act (Act No 73 of 1989)           | National Noise Control Regulations (GN R154 dated 10 January 1992)   | DFFE – lead authority.                   | There is no requirement for a noise permit, in terms of the legislation. Noise impacts may result from specific construction activities carried out during the construction phase, which will be of a short-term duration. With the implementation of noise mitigation measures, the significance of the impact may be low. |
| National Water Act (Act No 36 of 1998)                     | Water uses under S21 of the Act must be licensed, unless such water uses falls into one of the categories listed in S22 of the Act or falls under the general authorization (and then registration of the water use is required). Consumptive water uses may include the taking of water from a water resource and storage - Sections 21a and b. non-consumptive water uses may include impeding or  | Department of Water and Sanitation (DWS) | The proposed road upgrade occurs within the 500m regulated area of the wetland and within the Taabospuit and Skoonspruit. Therefore, a General Authorisation (GA) will be required in   |

| Legislation   | Applicable Requirements   | Relevant Authority  | Compliance requirements   |
|---|---|---|---|
|   | <p>diverting of flow in a water course - Section 21c; and altering of bed, banks or characteristics of a watercourse – Section 21i.</p>   |   | <p>terms of Section 21(c) and 21 (i) of the National Water Act, 1998 (Act No. 36 of 1998). Note: The Applicant is SANRAL and Appendix D2 of the GNR No. 509 of 2016: General Authorisation in terms of section 39 of the National Water Act, 1998 (Act No. 36 of 1998) for water uses as defined in Section 21(c) or Section 21(i) shall apply.</p>   |
| <p>National Environmental Management: Air Quality Act (Act No 39 of 2004)</p> | <p>Sections 18, 19 and 20 of the Act allow certain areas to be declared and managed as “priority areas” in terms of air quality. Declaration of controlled emitters (Part 3 of Act) and controlled fuels (Part 4 of Act) with relevant emission standards.</p> <p>Section 32 makes provision for measures in respect of dust control. Section 34 makes provision for:</p> <ul style="list-style-type: none"> <li>i. the Minister to prescribe essential national noise standards –</li> </ul> <p>(a) for the control of noise, either in general or by specified machinery or activities or in specified places or areas; or</p> <p>(b) for determining –</p> <ul style="list-style-type: none"> <li>(i) a definition of noise</li> <li>(ii) the maximum levels of noise</li> </ul> <p>(2) When controlling noise, the provincial and local spheres of government are bound by any prescribed national standards.</p> | <p>DFFE – air quality</p> <p>Local Municipality - Noise</p> | <p>No permitting or licensing requirements applicable for air quality aspects. The section of the Act regarding noise control is in force, but no standards have yet been promulgated. Draft regulations have however, been promulgated for adoption by Local Authorities. An atmospheric emission license issued in terms of Section 22 may contain conditions in respect of noise. This will, however, not be relevant to the facility, as no atmospheric emissions will take place. The Act provides that an air quality officer may require any person to submit an atmospheric impact report if there is reasonable suspicion that the person has failed to comply with the Act.</p> |

| Legislation  | Applicable Requirements   | Relevant Authority   | Compliance requirements   |
|--|---|--|---|
| <p>National Heritage Resources Act (Act No 25 of 1999)</p>                     | <p>Section 38 states that Heritage Impact Assessments (HIAs) are required for certain kinds of development including:</p> <ul style="list-style-type: none"> <li>• the construction of a road, power line, pipeline, canal or other similar linear development or barrier exceeding 300 m in length.</li> <li>• any development or other activity which will change the character of a site exceeding 5 000 m<sup>2</sup> in extent.</li> </ul> <p>The relevant Heritage Resources Authority must be notified of developments such as linear developments (such as roads and power lines), bridges exceeding 50 m, or any development or other activity which will change the character of a site exceeding 5 000 m<sup>2</sup>; or the re-zoning of a site exceeding 10 000 m<sup>2</sup> in extent. This notification must be provided in the early stages of initiating that development, and details regarding the location, nature and extent of the proposed development must be provided. Standalone HIAs are not required where an EIA is carried out, as long as the EIA contains an adequate HIA component that fulfils the provisions of Section 38. In such cases only those components not addressed by the EIA should be covered by the heritage component.</p> | <p>South African Heritage Resources Agency (SAHRA) is the authority that will provide statutory comment on the Heritage Impact Assessment.</p> | <p>A Heritage Impact Assessment (HIA) will be undertaken at the EIR Phase of the project. The HIA will confirm if there are any archaeological, heritage and cultural resources that may be affected by the proposed road upgrade and borrow pits.</p> <p>The findings of the HIA will be included in the forthcoming Draft EIR that will be available for public review and comment. The HIA will be submitted online on the South African Heritage Resources Information Systems (SAHRIS) website to obtain statutory comment from SAHRA on the proposed development.</p> |
| <p>National Environmental Management: Biodiversity Act (Act No 10 of 2004)</p> | <ul style="list-style-type: none"> <li>• Provides for the MEC/Minister to identify any process or activity in such a listed ecosystem as a threatening process (S53)</li> <li>• A list of threatened and protected species has been published in terms of S 56(1) - Government Gazette 29657.</li> <li>• Three government notices have been published, i.e. GN R 150 (Commencement of Threatened and Protected Species Regulations, 2007), GN R 151 (Lists of critically endangered, vulnerable and protected species) and GN R152 (Threatened or Protected Species Regulations).</li> <li>• Provides for listing threatened or protected ecosystems, in one of four categories: critically endangered (CR), endangered (EN), vulnerable (VU)</li> </ul>  | <p>DFFE</p> <p>Application for tree removal permit</p>   | <p>Under this Act, a permit would be required for any activity which is of a nature that may negatively impact on the survival of a listed protected species.</p> <p>A Terrestrial Biodiversity Impact Assessment (A Floral and Faunal Assessment) will be undertaken during the Environmental Impact Reporting (EIR) Phase.</p> <p>The above Specialist Study will confirm if any Species of Conservation</p>  |

| Legislation   | Applicable Requirements   | Relevant Authority | Compliance requirements  |
|---|---|--------------------|--|
|   | <p>or protected. The first national list of threatened terrestrial ecosystems has been gazetted, together with supporting information on the listing process including the purpose and rationale for listing ecosystems, the criteria used to identify listed ecosystems, the implications of listing ecosystems, and summary statistics and national maps of listed ecosystems (National Environmental Management: Biodiversity Act: National list of ecosystems that are threatened and in need of protection, (G 34809, GN 1002), 9 December 2011).</p> <ul style="list-style-type: none"> <li>• DFFE published Regulations on Alien and Invasive Species (AIS) in terms of the National Environmental Management: Biodiversity Act, on Friday 1st August 2014. A total of 559 alien species are now listed as invasive, in four different categories. A further 560 species are listed as prohibited, and may not be introduced into the country.</li> </ul>        |                    | <p>Concern (SCC) occurs within the road reserve earmarked for the proposed road upgrade and borrow pits.</p>   |
| <p>Conservation of Agricultural Resources Act (Act No 43 of 1983)</p> | <ul style="list-style-type: none"> <li>• Regulation 15 of GNR1048 provides for the declaration of weeds and invader plants, and these are set out in Table 3 of GNR1048. Declared Weeds and Invaders in South Africa are categorized according to one of the following categories:</li> <li>• Category 1 plants: are prohibited and must be controlled.</li> <li>• Category 2 plants: (commercially used plants) may be grown in demarcated areas providing that there is a permit and that steps are taken to prevent their spread. Category 3 plants: (ornamentally used plants) may no longer be planted; existing plants may remain, as long as all reasonable steps are taken to prevent the spreading thereof, except within the floodline of watercourses and wetlands.</li> <li>• These regulations provide that Category 1, 2 and 3 plants must not occur on land and that such plants must be controlled by the methods set out in Regulation 15E.</li> </ul> | <p>DFFE</p>        | <ul style="list-style-type: none"> <li>• While no permitting or licensing requirements arise from this legislation, this Act will find application during the S&amp;EIR process and will continue to apply throughout the life cycle of the project. In this regard, soil erosion prevention and soil conservation strategies must be developed and implemented. In addition, a weed control and management plan must be implemented.</li> </ul> |

| Legislation   | Applicable Requirements   | Relevant Authority | Compliance requirements  |
|---|---|--------------------|--|
| National Forests Act (Act No. 84 of 1998)                 | <p>» Protected trees: According to this Act, the Minister may declare a tree, group of trees, woodland or a species of trees as protected. The prohibitions provide that 'no person may cut, damage, disturb, destroy or remove any protected tree, or collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree, except under a license granted by the Minister'.</p> <p>» Forests: Prohibits the destruction of indigenous trees in any natural forest without a license.</p>  | DFFE               | A Terrestrial Biodiversity Impact Assessment (i.e. A Floral Assessment will be undertaken during the Environmental Impact Reporting (EIR) Phase. This Specialist Study will identify if any Protected Trees or indigenous trees in a forest, will be impacted by the proposed road improvements. |
| National Veld and Forest Fire Act (Act 101 of 1998)       | In terms of S12 the applicant must ensure that the firebreak is wide and long enough to have a reasonable chance of preventing the fire from spreading, not causing erosion, and is reasonably free of inflammable material. In terms of S17, the applicant must have such equipment, protective clothing, and trained personnel for extinguishing fires.   | DFFE               | No permitting or licensing requirements arise from this legislation, as fires will not occur on site.  |
| National Protected Areas Expansion Strategy (NPAES), 2009 | <p>The need for the development of the NPAES was established in the National Biodiversity Framework in 2009. South Africa's protected area network currently falls far short of representing all ecosystems and maintaining healthy functioning ecological processes. In this context, the goal of the NPAES is to achieve cost effective protected area expansion thus enabling better ecosystem representation, ecological sustainability, and resilience to climate change.</p> <p>A comprehensive set of priority areas was compiled based on the priorities identified by provincial and other agencies in their respective protected area expansion strategies. These focus areas are generally large, intact and unfragmented and are therefore of high importance for biodiversity, climate resilience and freshwater protection (DEA, 2016).</p> | DFFE               | The project area does not overlap with priority focus areas for expansion according to the 2016 NPAES dataset.   |
| National List of Ecosystems that are threatened and in    | A national list of threatened terrestrial ecosystems and provides supporting information to accompany the list, including the purpose and rationale for listing ecosystems, the criteria used to identify listed ecosystems, the implications of listing ecosystems, and summary statistics and national maps of listed   | DFFE               | The project area was superimposed on the terrestrial ecosystem threat status database, and it largely falls  |

| Legislation   | Applicable Requirements   | Relevant Authority   | Compliance requirements  |
|---|---|----------------------|--|
| need of Protection, No 1002 of 2011.                                    | terrestrial ecosystems. It also includes individual maps and detailed information for each listed ecosystem.  |                      | across an Endangered (EN) ecosystem.   |
| Hazardous Substances Act (Act No 15 of 1973)                            | <p>This Act regulates the control of substances that may cause injury, or ill health, or death by reason of their toxic, corrosive, irritant, strongly sensitizing or inflammable nature or the generation of pressure thereby in certain instances and for the control of certain electronic products. To provide for the rating of such substances or products in relation to the degree of danger; to provide for the prohibition and control of the importation, manufacture, sale, use, operation, modification, disposal or dumping of such substances and products.</p> <p>» Group I and II: Any substance or mixture of a substance that might by reason of its toxic, corrosive etc., nature or because it generates pressure through decomposition, heat or other means, cause extreme risk of injury etc., can be declared to be Group I or Group II hazardous substance;</p> <p>» Group IV: any electronic product;</p> <p>» Group V: any radioactive material.</p> <p>The use, conveyance or storage of any hazardous substance (such as distillate fuel) is prohibited without an appropriate license being in force.</p> | Department of Health | It is necessary to identify and list all the Group I, II, III and IV hazardous substances that may be on the site and in what operational context they are used, stored or handled. If applicable, a license is required to be obtained from the Department of Health. |
| Occupational Health and safety Act, 1993 (Act No.85 of 1993)            | Relevant sections include Section 8. General duties of employers to their employees. Relevant sections include Section 9. General duties of employers and self-employed persons to person other than their employees.   | Department of labour | A permit or a license is not required, however the Applicant must take note and implement Section 8 and 9 of the Occupational Health and Safety Act.   |
| National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) | <p>The Minister may by notice in the Gazette publish a list of waste management activities that have, or are likely to have, a detrimental effect on the environment. The Minister may amend the list by –</p> <p>» Adding other waste management activities to the list.</p>   | DFFE                 | There are no listed activities in terms of the Waste Regulations that will be triggered for the proposed road improvements and the borrow pits.  |



| Legislation  | Applicable Requirements   | Relevant Authority  | Compliance requirements  |
|--|---|---|--|
|  | <ul style="list-style-type: none"> <li>» Removing waste management activities from the list.</li> <li>» Making other changes to the particulars on the list. In terms of the Regulations published in terms of this Act (GN 921), a Basic Assessment or Environmental Impact Assessment is required to be undertaken for identified listed activities. Any person who stores waste must at least take steps, unless otherwise provided by this Act, to ensure that:               <ul style="list-style-type: none"> <li>» The containers in which any waste is stored, are intact and not corroded or in any other way rendered unfit for the safe storage of waste.</li> <li>» Adequate measures are taken to prevent accidental spillage or leaking.</li> <li>» The waste cannot be blown away.</li> <li>» Nuisances such as odor, visual impacts and breeding of vectors do not arise; and</li> <li>» Pollution of the environment and harm to health are prevented.</li> </ul> </li> </ul> |   |  |
| <p>NEM:WA: National Waste Management Strategy (GN 344 of 4 May 2012)</p> | <p>The objects of the NEM:WA and National Waste Management Strategy (NWMS) are structured around the steps in the waste management hierarchy, which is the overall approach that informs waste management in South Africa. The waste management hierarchy consists of options for waste management during the lifecycle of waste, arranged in descending order of priority: waste avoidance and reduction, re-use and recycling, recovery, and treatment and disposal as the last resort.</p>   | <p>DFFE</p>   | <p>It is necessary that the Contractor consider the re-use and recycling of all waste products during the construction phase. The waste management hierarchy must be implemented in the Method Statement for waste management.</p> |
| <p>National Road Traffic Act (Act No 93 of 1996)</p>                     | <p>» The technical recommendations for highways (TRH 11): “Draft Guidelines for Granting of Exemption Permits for the Conveyance of Abnormal Loads and for other Events on Public Roads” outline the rules and conditions which apply to the transport of abnormal loads and vehicles on public roads and the detailed</p>  | <p>Provincial Department of Transport (Provincial Roads)</p> <p>South African National Roads Agency Limited (SANRAL) (National Roads)</p> | <p>An abnormal load / vehicle permit may be required to transport the various components to site for construction.</p> <p>These include: Route clearances and permits will be required for vehicles</p>                            |

| Legislation   | Applicable Requirements   | Relevant Authority  | Compliance requirements  |
|---|---|---|--|
|   | <p>procedures to be followed in applying for exemption permits are described and discussed.</p> <p>» Legal axle load limits and the restrictions imposed on abnormally heavy loads are discussed in relation to the damaging effect on road pavements, bridges, and culverts.</p> <p>» The general conditions, limitations, and escort requirements for abnormally dimensioned loads and vehicles are also discussed and reference is made to speed restrictions, power/mass ratio, mass distribution, and general operating conditions for abnormal loads and vehicles. Provision is also made for the granting of permits for all other exemptions from the requirements of the National Road Traffic Act and the relevant Regulations.</p> |   | <p>carrying abnormally heavy or abnormally dimensioned loads. Transport vehicles exceeding the dimensional limitations (length) of 22m. Depending on the trailer configuration and height when loaded.</p>   |
| <p>Promotion of Access to Information Act, 2000 (Act No. 2 of 2000)</p> | <p>The Act recognises that everyone has a Constitutional right of access to any information held by the state and by another person when that information is required to exercise or protect any rights. The purpose of the Act is to foster a culture of transparency and accountability in public and private bodies and to promote a society in which people have access to information that enables them to exercise and protect their rights.</p>  | <p>DFFE</p>   | <p>The Public Participation Process (PPP) has been undertaken in an open and transparent manner to ensure all stakeholders have access to information regarding the proposed development and have the opportunity to register and comment on the application (refer to the Public Participation Process that was undertaken in Section 5.5).</p> |
| <b>Provincial Legislation</b>   |   |   |  |
| <p>North West Biodiversity Sector Plan (2015)</p>                       | <p>The Provincial Biodiversity Sector Plan is intended to be the biodiversity sector's input into government sector planning and development processes. The aim of the Biodiversity Sector Plan is to identify the minimum area necessary to conserve and maintain biodiversity and major ecological infrastructure in the province.</p> <p>Critical Biodiversity Areas (1) (CBA1): Irreplaceable Sites. Areas required to meet biodiversity pattern and/or ecological processes targets. No alternative</p>  | <p>North West Department of Economic Development Environment Conservation and Tourism (NW DEDECT)</p> | <p>The proposed road upgrade and borrow pits occurs within the CBA 1, ESA 1 and ESA 2 of the Terrestrial Critical Biodiversity Areas and CBA 1, ESA 1 and 2 of the Aquatic Critical Biodiversity</p>   |

| Legislation | Applicable Requirements  | Relevant Authority | Compliance requirements  |
|-------------|--|--------------------|--|
|             | <p>Sites are Available to Meet targets. Maintain In a natural state with limited or no biodiversity loss. Rehabilitate degraded areas to a natural or near natural state and manage for no further degradation.</p> <ul style="list-style-type: none"> <li>• Critical Biodiversity Areas (CBAs) are terrestrial and aquatic areas of the landscape that need to be maintained in a natural or near-natural state in order to ensure the continued existence and functioning of species and ecosystems and the delivery of ecosystem services. In other words, if these areas are not maintained in a natural or near natural state then biodiversity targets cannot be met. Maintaining an area in a natural state can include a variety of biodiversity compatible land uses and resource uses.</li> <li>• Ecological Support Areas (ESAs) are terrestrial and aquatic areas that are not essential for meeting biodiversity representation targets (thresholds), but which nevertheless play an important role in supporting the ecological functioning of critical biodiversity areas and/or in delivering ecosystem services that support socio-economic development, such as water provision, flood mitigation or carbon sequestration. The degree or extent of restriction on land use and resource use in these areas may be lower than that recommended for CBAs.</li> <li>• Other categories included in the CBA Map are Protected Areas, Other Natural Areas and areas with No Natural Habitat Remaining.             <ul style="list-style-type: none"> <li>○ Protected Areas are declared and formally protected under the Protected Areas Act, such as National Parks, legally declared Nature Reserves, World Heritage Sites and Protected Environments that are secured by appropriate legal mechanisms.</li> <li>○ Other Natural Areas are areas that still contain natural habitat but that are not required to meet biodiversity targets.</li> </ul> </li> </ul> |                    | <p>Areas as identified in the North West Biodiversity Plan (2015).</p> |

| Legislation  | Applicable Requirements  | Relevant Authority            | Compliance requirements   |
|--|--|-------------------------------|---|
|  | <ul style="list-style-type: none"> <li>○ No Natural Habitat Remaining includes areas without intact habitat remaining.</li> </ul>  |                               |   |
| <b>Provincial Legislation, Policy and Other Guidelines</b>                           |  |                               |   |
| Ditsobotla Local Municipality Integrated Development Plan (IDP) 2023 – 2027 approach | <p>The 2023 - 2027 approach takes into consideration the integration of social, economic, and environmental concerns through an analysis of environmental and socio-economic issues, the formulation of strategic development objectives, and the development of assessment and prioritization criteria, the setting of indicators, targets, and performance assessment.</p> <p>The Spatial Development Framework (SDF) is based on an agreed vision and planning principles that will promote equity, sustainability, fair and good governance. It seeks to address spatial restructuring issues, promote the sustainable use of land resources, stimulating economic opportunities in rural and urban areas and channelling resources to areas of greatest need (social investment).</p> | Ditsobotla Local Municipality | The development plans will ensure that the upgrade of the N14 adheres to the strategic development objectives of the IDP and SDF. |
| JB Marks Local Municipality Integrated Development Plan (IDP) 2022-2027              | <p><u>Provincial Priority Area 6:</u> Environmental Sustainability Investment in skills, technology and institutional capacity is crucial in all aspects regarding a sustainable society and low-carbon economy. Commitment to the protection of biodiversity Resource Critical Areas must be identified and protected through a ‘spatial contract’ binding on all spheres of government and relevant role-players. Waste management must be effective and focus on recycling and re-use and value of the waste as a resource for socio-economic upliftment. Prepare for climate change and other environmental pressures through coordinated planning. The protection of the freshwater eco-system and Water Critical Biodiversity Areas must be adhered to.</p>                          | JB Marks Local Municipality   | The development plans will ensure that the upgrade of the N14 adheres to the strategic development objectives of the IDP.         |
| SANRAL Land Acquisition Guidelines Manual  | <p>Additional land will be required outside the road reserve of the existing SANRAL road reserve. The extent of land that is required, will be influenced by the standard of road improvement accepted.</p> <p>The process for the land acquisition will be aligned and integrated with the SANRAL Land Acquisition Guidelines Manual. Following approval of the</p>   | SANRAL                        | The Property Reports must be submitted to SANRAL and PropsoL JV for approval. SANRAL will deal with the land acquisition process. |

| Legislation   | Applicable Requirements  | Relevant Authority   | Compliance requirements  |
|---|--|--|--|
|   | horizontal alignment offsets, vertical alignment and the final road reserve requirements, landowners will be consulted, and their inputs will be included in the property reports.   |  |  |
| National Environmental Management Act (NEMA), (Act No. 107 of 1998) | Sustainable development is required to ensure the integration of social economic and environmental factors in decision-making so that development serves present and future generations. Furthermore, sustainable development requires that a risk-averse and cautious approach be applied to decision-making.   | DFFE   | SANRAL must ensure that the proposed road upgrade meets the requirements of sustainable development. |
| Municipal Bylaws  | <p>“By-laws are laws passed by the Executive Council of a municipality to regulate the affairs and the services it provides within its area of jurisdiction”.</p> <p>A municipality derives the powers to pass a by-law from the Constitution of the Republic of South Africa, which gives certain specified powers and competencies to local government as set out in Part B of Schedules 4 and Part B of 5 to the Constitution.”</p> <p>By-laws for the following may be applicable for the project:</p> <ul style="list-style-type: none"> <li>• Advertising signs</li> <li>• Encroachment on Property <ul style="list-style-type: none"> <li>• Public Space;</li> <li>• Public Roads &amp; Miscellaneous;</li> <li>• Relating to Nuisances;</li> <li>• Relating to the Removal of Refuse;</li> <li>• Cemetery;</li> <li>• Street Trading;</li> <li>• Waste Management;</li> <li>• Disaster Management Bylaws;</li> <li>• Electricity Supply Bylaws;</li> <li>• Environmental Health;</li> <li>• Keeping of Animals;</li> <li>• Storm Water Management Bylaws; and</li> <li>• Water Services Bylaws.</li> </ul> </li> </ul> | Ditsobotla Local Municipality<br>J.B. Marks Local Municipality | SANRAL must consider the above during the implementation of the project.                             |

### 2.1.1 National Environmental Management Act, 1998 (Act No. 107 of 1998)

The National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended 2014 (NEMA) is the primary South African legislation governing the requirements for Environmental Impact Assessment (EIA). In the context of the project, the provisions of NEMA and the associated EIA Regulations (regarding Scoping and EIR) have reference.

NEMA is the most significant single piece of legislation dealing with environmental management in the Republic of South Africa (RSA). The stated purpose of NEMA is, amongst other things, “to provide for co-operative environmental governance by establishing principles for decision-making on matters affecting the environment, institutions that will promote cooperative governance and procedures for co-ordinating environmental functions exercised by organs of state...”<sup>1</sup>

NEMA takes the form of “framework” legislation. It establishes a set of 18 principles which apply throughout the RSA to the actions of all organs of state that may significantly affect the environment. NEMA also contains provisions on the creation of environmental management plans and environmental implementation plans and stipulates the respective organs of state responsible for doing so, as well as the content to be incorporated in such management and implementation plans<sup>2</sup>.

Chapter 5 of NEMA, entitled “Integrated Environmental Management” establishes the environmental impact assessment regime in the RSA. Since 3 July 2006, the procedural and substantive requirements for undertaking EIAs in South Africa have been regulated in terms of the provisions contained in Section 24 of NEMA and the NEMA EIA Regulations 2014.

The NEMA 2014 EIA Regulations identifies the lists of activities which have a potential to result in detrimental environmental impacts and thus require either “Basic Assessment” or “Scoping and Environmental Impact Reporting Assessment”; and prescribe the procedural and substantive requirements for the undertaking of EIAs and the issue of environmental authorisations. Activities identified in terms of section 24(2)(a) and (d) of NEMA, which may not commence without environmental authorisation from the Competent Authority (CA) and in respect of which the investigation, assessment and communication of the potential impact of such activities must thus follow the procedure as described in the NEMA 2014 EIA Regulations.

In terms of the amendments to the EIA Regulations of 2014, activities listed in Listing Notice 2, GNR No. 985, require an Environmental Authorisation (EA) by way of a S&EIR process before the activity can proceed and be implemented, and the following listed activities are deemed applicable to the proposed development.

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<sup>1</sup> Long title of NEMA. Section 239 of the Constitution defines an “organ of state” as:

- a) any department of state or administration in the national, provincial or local sphere of government; or
- b) any other functionary or institution-
  - i. exercising a power or performing a function in terms of the Constitution or a provincial constitution; or
  - ii. exercising a public power or performing a public function in terms of any legislation, but does not include a court or a judicial officer.

<sup>2</sup> Chapter 3 of NEMA (Sections 11-16)

**Table 2-2: Listed activities in terms of NEMA EIA Regulations (2014), as amended**

| Listed Activity No.  | Listed Activity Description  | Description as per project description  |
|--|--|---|
| <b>Listing Notice 1: GNR 983 of EIA Regulations of 2014 (as amended)</b> |  |   |
| 12   | <p>The development of—</p> <p>(ii) infrastructure or structures with a physical footprint of 100 square metres or more; where such development occurs—</p> <p>(a) within a watercourse;</p> <p>(c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse;</p> <p>excluding—</p> <p>(aa) the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour;</p> <p>(bb) where such development activities are related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies;</p> <p>(cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies;</p> <p>(dd) where such development occurs within an urban area;</p> <p>(ee) where such development occurs within existing roads, road reserves or railway line reserves; or</p> <p>(ff) the development of temporary infrastructure or structures where such infrastructure or structures will be removed within 6 weeks of the commencement of development and where indigenous vegetation will not be cleared.</p> | <p>The proposed road improvements for N14, Section 12, such as the proposed by-pass lanes, upgrade of the culverts and bridges, new bridges and culverts, new road over rail, and new interchange may trigger this activity. Similarly, this activity may be triggered for the proposed establishment of the borrow pits. There may be several watercourses that will be traversed or occur within 32m of the edge of a watercourse by the above proposed activities. However, this will be confirmed by the Aquatic/Wetland Assessment that will be undertaken as part of the EIR phase.</p>               |
| 19   | <p>The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse; but excluding where such infilling, depositing, dredging, excavation, removal or moving—</p> <p>(a) will occur behind a development setback;</p> <p>(b) is for maintenance purposes undertaken in accordance with a maintenance management plan;</p> <p>(c) falls within the ambit of activity 21 in this Notice, in which case that activity applies;</p> <p>(d) occurs within existing ports or harbours that will not increase the development footprint of the port or harbour; or</p>  | <p>There may be various portions along the N14 – Section 12, where the road improvements, such as construction of the proposed by-pass lanes, upgrade of the culverts and bridges, new bridges and culverts, new road over rail, and new interchange may require the excavation, infilling and removal of 10m<sup>2</sup> or more of soil and sand from a watercourse. Similarly, this activity may be triggered for the proposed establishment of the borrow pits. However, this listed activity will be confirmed by the Aquatic/Wetland Assessment that will be undertaken as part of the EIR phase.</p> |

| Listed Activity No.  | Listed Activity Description  | Description as per project description   |
|--|--|--|
|  | (e) where such development is related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies.  |  |
| 21E  | Any activity including the operation of that activity for which the Minister responsible for mineral resources has issued an exemption in a Government Notice in terms of section 106(1) of the Mineral and Petroleum Resources Development Act, as well as any other applicable activity as contained in this Listing Notice or in Listing Notice 3 of 2014, required for the exercising of such exempted activity. | Several borrow pits will be established as material sources for the proposed road upgrade and authorisations for this mining activity will be required from the Department of Mineral Resources and Energy (DMRE) for these proposed borrow pits.  |
| 27   | The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for—<br><br>(i) the undertaking of a linear activity; or<br><br>(ii) maintenance purposes undertaken in accordance with a maintenance management plan.  | There may be clearance of more than 1ha of indigenous vegetation for along the N14 – Section 12, where the road improvements, such as construction of the proposed by-pass lanes, upgrade of the culverts and bridges, new bridges and culverts, new road over rail, and new interchange. Similarly, this activity may be triggered for the proposed establishment of the borrow pits. However, this activity will be confirmed by the Terrestrial Ecological Assessment that will be undertaken as part of the EIR phase. |
| 48   | The expansion of—<br>(i) infrastructure or structures where the physical footprint is expanded by 100 square metres or more; or where such expansion occurs—<br>(a) within a watercourse;<br>(b) in front of a development setback; or<br>(c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse.  | The proposed road improvements for N14, Section 12, such as the proposed by-pass lanes, upgrade of the culverts and bridges, , new road over rail, and new interchange may trigger this activity. There may be several watercourses that will be traversed or occur within 32m of the edge of a watercourse by the above proposed activities. However, this will be confirmed by the Aquatic/Wetland Assessment that will be undertaken as part of the EIR phase.  |
| 56   | The widening of a road by more than 6 metres, or the lengthening of a road by more than 1 kilometre—<br>(i) where the existing reserve is wider than 13,5 meters; or<br>(ii) where no reserve exists, where the existing road is wider than 8 metres; excluding where widening or lengthening occur inside urban areas.  | The proposed road upgrade will include widening of the road by more than 6 metres.   |
| <b>Listing Notice 2: GNR 984 of EIA Regulations of 2014 (as amended)</b> |  |  |
| 27   | The development of a road—<br>(iii) with a reserve wider than 30 metres; or<br>(iv) catering for more than one lane of traffic in both directions; but excluding a road—   | The deviation (re-alignment) of the N14 – Section 12 from km20 to km23 is in a greenfields area. The minimum road new reserve required is 40m. The deviation will be a single carriageway.   |



| Listed Activity No.  | Listed Activity Description   | Description as per project description  |
|--|---|---|
|  | <p>(a) for which an environmental authorisation was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Government Notice 545 of 2010, in which case activity 24 in Listing Notice 1 of 2014 applies;</p> <p>(b) which is 1 kilometre or shorter; or</p> <p>(c) where the entire road falls within an urban area.</p>  | <p>An EA was not obtained for the proposed re-alignment. The length of the re-alignment is 3km.</p> <p>The area is rural.</p>   |
| <b>Listing Notice 3: GNR 985 of EIA Regulations of 2014 (as amended)</b> |   |   |
| 12   | <p>The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes maintenance management plan, in.</p> <p>h. North West, in</p> <p>iv. Critical biodiversity areas (CBA) as identified in systematic biodiversity plans adopted by the competent authority;</p> <p>vi. Areas within a watercourse or wetland, or within 100 metres from the edge of a watercourse or wetland.</p>   | <p>There may be more than 300m<sup>2</sup> of indigenous vegetation that will be impacted as a result of the proposed road upgrade and borrow pits, which will occur within the CBA and Ecological Support Area (ESA), as identified in the North West Biodiversity Sector Plan.</p> <p>The proposed road upgrade and proposed borrow pits, which will occur within the CBA 1, ESA 1 and ESA 2 of the Terrestrial Critical Biodiversity Areas and CBA 1, ESA 1 and 2 of the Aquatic Critical Biodiversity Areas as identified in the North West Biodiversity Plan.</p>  |
| 14   | <p>The development of—</p> <p>ii. infrastructure or structures with a physical footprint of 10 square metres or more; where such development occurs—</p> <p>(a) within a watercourse;</p> <p>(c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse;</p> <p>excluding the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour.</p> <p>h. North West</p> <p>iv. Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority.</p> | <p>The road improvements, such as construction of the proposed by-pass lanes, upgrade of the culverts and bridges, new bridges and culverts, new road over rail, and new interchange is / maybe within or 32 meters from a watercourse. Similarly, there may potentially be proposed borrow pits that are located within, or 32m from a watercourse. However, the location and extent of the watercourses will be confirmed by the Aquatic/Wetland Assessment that will be undertaken as part of the EIR phase.</p> <p>The proposed road upgrade and proposed borrow pits will occur within the CBA 1 and 2, and ESA 1 and 2 of the Terrestrial Critical Biodiversity Areas and CBA 1 and ESA 1 and 2 of the Aquatic Critical Biodiversity Areas as identified in the North West Biodiversity Plan.</p> |
| 18   | <p>The widening of a road by more than 4 metres, or the lengthening of a road by more than 1 kilometre.</p> <p><b>h. North West</b></p>   | <p>The existing Section 12 of the N14 road will be upgraded by more than 4 meters, which may occur near a watercourse or 100 meters from its margin.</p>  |

| Listed Activity No. | Listed Activity Description   | Description as per project description   |
|---------------------|---|--|
|                     | v. Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority;<br>ix. Areas within a watercourse or wetland, or within 100 metres from the edge of a watercourse or wetland.   | The proposed road upgrade which will occur within the CBA 1 and 2 and ESA 1 and ESA 2 of the Terrestrial Critical Biodiversity Areas and CBA 1 and ESA 1 and 2 of the Aquatic Critical Biodiversity Areas as identified in the North West Biodiversity Plan.   |
| 23                  | The expansion of—<br>(i) infrastructure or structures where the physical footprint is expanded by 10 square metres or more;<br>where such expansion occurs—<br>(a) within a watercourse;<br>(c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse;<br><b>h. North West</b><br>iv. Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority. | The existing Section 12 of the N14 will be upgraded as part of the proposed improvement. The upgrade may occur within 32 meters from a watercourse.<br>The proposed road upgrade which will occur within the CBA 1 and 2 and ESA 1 and 2 of the Terrestrial Critical Biodiversity Areas and CBA 1, ESA 1 and 2 of the Aquatic Critical Biodiversity Areas as identified in the North West Biodiversity Plan. |

It must be noted that activities requiring a Basic Assessment process i.e. (GNR No. 983 and GNR No. 985), as well as activities requiring a S&EIR process (GNR 984) are triggered by the proposed project. Therefore, a situation arises whereby; the legal requirements of the activity listed in terms of GNR 984 supersede those of the activities listed in terms of GNR 983 and GNR 985 of 2014, as amended, and as such this proposed project's application will require a S&EIR process to be undertaken.

The aforementioned listed activities are deemed to include activities that could potentially have a detrimental impact on the social and biophysical state of an area and as such, are required to undergo an S&EIR process. Therefore, an Application for Environmental Authorisation has been lodged to the Competent Authority (CA), which in this case is the Department of Forestry, Fisheries and the Environment (DFFE).

An Application for Environmental Authorisations has been submitted to the DMRE for the proposed borrow pits to be established for the proposed road upgrade.

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### **3 PROJECT DESCRIPTION**

#### **3.1 Project motivation**

The N14 Section 12 is classified as a Class 1 road according to the South African Road Classification and Access Management Manual (TRH 26, August 2012) due to its strategic importance. Section 12 project limits fall within the North West Province and encompasses approximately 58.4km of road length starting from Coligny KM 0.0 to Ventersdorp (KM 58.4) in the eastbound direction.

The N14 road is a two-lane single carriageway road with gravel shoulders and is categorized in terms of TRH4 as a Category A Road.

The proposed upgrade of Section 12 of the N14 by the South African National Roads Agency SOC Limited (SANRAL) is crucial for maintaining the economic vitality of one of South Africa's primary freight corridors. The N14 facilitates long-distance travel and the transportation of goods across key provinces, including Gauteng, North West, and Northern Cape. As a strategic route linking major cities such as Pretoria, Lichtenburg, Vryburg, and Upington, it supports trade and connectivity, directly contributing to regional and national economic growth.

Environmental considerations have been integrated into the project planning, including the evaluation of culverts, stormwater management, and the careful selection of borrow pits to minimize ecological impacts. These measures align with SANRAL's commitment to sustainable infrastructure development, balancing ecological integrity with infrastructural needs.

The proposed road upgrade is an improvement solution, to relieve congestion to an acceptable level of service, improve road safety, and adequate pavement capacity for a 20-year design period.

The N14 Section 12 is a major freight route that traverses the Gauteng, North West, and Northern Cape provinces. It is a route of economic importance for the country that runs from Springbok in the Northern Cape to Pretoria in Gauteng passing through towns such as Upington, Vryburg, Krugersdorp and Centurion. Thus, the N14 is a mobility route whose primary and strategic function is to serve long distance travel and movement of goods across major parts of the country.

Land use along the project road is largely restricted to game and livestock farming including crop farming.

##### **3.1.1 Need and desirability for the proposed development**

The need and desirability of the proposed upgrade of N14-Section 12 was determined by traffic forecast demands.

Although there were no significant land use development plans identified within the vicinity of the project limits based on the reviewed Spatial Development Plan (SDP), traffic projections were developed using the base year (2022) traffic data and considering GDP growth rates. Thus, future year 2040 traffic forecasts and the associated traffic volume growth factors were estimated by considering historical traffic trends and some potential economic recovery. Difference annual traffic growth rates ranging from 1.49% to 5.21% were assumed for light vehicles, heavy vehicles, and a combination of both light and heavy for the short- and long-term period outlined below.

- 1.49% (light vehicles) and 3.65% (heavy vehicles) – short term: 2022-2027
- 2.0% combination – medium term: 2027-2037
- 2.47% (light vehicles) and 5.21% (heavy vehicles) – long term: 2037-2042

The N14 Section 12 traverses mainly rural area with limited sections (3%) passing the periphery of two urban areas (Coligny and Ventersdorp). Passing the urban areas, the posted speed is reduced varying between 80km/h and 60m/h, reducing the general level of service. With proper planning, this route can be upgraded to suit a full Class 1 classification in terms of the Geometric Guidelines.

The N14 Section 12 has a functional classification of a Class 1 road; however, the existing infrastructure consists of a single carriageway road width an average lane width of 3.7m and a varying paved shoulder width of between 300mm to 800mm wide.

The projected traffic assessment has indicated that the future traffic will exceed 3000 vehicles per day, therefore the standard typical cross section of 13.4m surfaced width cross section was adopted.

The Functional Classification implies a design speed of 120km/h both horizontally and vertically. Achieving a design speed of 120km/h along the full route will increase the overall mobility and capacity of the road.

The existing horizontal and vertical alignment was generated from the available topographical survey and assessed to determine its suitability based on the existing alignment, and subsequently improved to achieve a minimum 100km/h standard and ultimately for 120km/h, which is preferred for a Class 1 route in terms of mobility and road user safety.

**(a) Passing/Crawling Lanes**

The Traffic Assessment recommended new passing / crawling lanes to achieve the desired level of service. The following combined outcome was achieved:

- Eastbound: 16.9km passing lanes
- Westbound: 17.9km passing lanes

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**(b) Rail Crossing and Re-alignment of N14**

An existing rail crossing is located at km 20.6. This poses a serious safety risk to the travelling public and reduces the level of service to unacceptable levels.

The recommendation is to introduce a road over rail option, whereby through traffic is not restricted and the risk of accidents are eliminated. Between km20.2 to km23.2, the existing N14 will be re-aligned in a greenfields area to accommodate the road over rail. A new river bridge will be constructed in this section of the N14 re-alignment.

**(c) Intersections**

All major and minor intersections are to be upgraded to Class 1 intersections.

**(d) Interchanges**

Based on planned urban development in the Ventersdorp area along the N14/ R30 routes, a proposed diamond interchange with a fly-under the R30 is proposed. The intention is for the R30 to cross the N14, whereby the N14 traffic will be permitted free flow through the current 4- way stop intersection.

**(e) Re-Alignment of N14 / R503 Intersection**

The current T-junction intersection at km 0.0, where the N14/11 intersects with N14/12, requires a full stop of traffic entering from direction Biesiesvlei towards Coligny. The current intersection provides free-flow from direction Ventersdorp, past Coligny on towards Lichtenburg (R503), requiring a 90-degree left turn onto N14/11 direction Biesiesvlei.

**(f) Stormwater and lesser culverts**

Existing structures that have hydraulic capacities that satisfy the requirements of a class road one below the specified class of the road can be considered acceptable. For this section of road, the structures have been assessed for a Class 1 road. Where the structures fail the requirements of a Class 1 road, it was assessed for a Class 2 road. A structure that does not meet the requirements as specified above, will be replaced with a new structure that meet the requirements of a Class 1 road.

**(g) Structures**

The N14 Section 12 consists of a total of five (5) bridges and 15 major culverts. To accommodate the road improvement, the structures were assessed for the hydraulic capacity for Class 1 Road requirements and Class 2 Road requirements along with the structures capability to accommodate the proposed road geometry.

Out of the 15 existing major culverts, 14 are classified as drainage culverts and 1 is classified as a culvert for agricultural use. For the 14 drainage culverts, only six (6) were found to have adequate hydraulic capacity for a Class 1 Road and/or Class 2 Road requirements, seven (7) of the major culverts required hydraulic improvement and one (1) major culvert was found to have insufficient proof load to accommodate the additional fill load to be imposed to the structure by the proposed road level. Eleven of the major drainage culverts will be extended to accommodate the proposed road geometry and the required total surfaced of 13.4 m.

There are two (2) river bridges out of a total of four (4) bridges that exist along the N14 Section 12. The two (2) river bridges were found to have insufficient hydraulic capacity and require hydraulic improvement. There is one road over rail bridge that will be extended to accommodate the 4-lane configuration proposed for the first 2.2 km of section 12.

A new road over rail bridge is proposed at km 20.66 to replace the at-grade crossing and improve LOS of the road. One of the two bridges requiring hydraulic improvement was also found to require replacement due to the raised road level, the structure will be demolished and replaced with a new 45 m long bridge with height that will tie in with the proposed road level. The other bridge requiring hydraulic improvement will be improved by adding a new bridge with the same size as the existing, approximately 50 m away of the existing.

### **3.1.2 Need and desirability of the activity in the context of the preferred location**

The following project motivations are relevant:

- The preferred location for the proposed upgrade of Section 12 of the N14 aligns strongly with both strategic and practical considerations. Situated in a vital freight corridor connecting Gauteng, North West, and Northern Cape, this section of the N14 plays a critical role in facilitating long-distance travel and the movement of goods. Its connection to cities like Pretoria, Lichtenburg, Vryburg, and Upington makes it indispensable for regional and national economic activities, particularly in agriculture, mining, and trade.
- The N14 Section 12 lies in a key geographic area where economic and transportation demands intersect. Its proximity to major intersections, including those leading to industrial and agricultural zones, reinforces its necessity as a mobility route. Upgrading this segment ensures the seamless movement of heavy vehicles and supports industries reliant on this corridor, such as mining and logistics. Additionally, its role as an alternative to other major routes, such as the N1, reduces overall transportation pressure on South Africa's road network.
- The physical and structural conditions of Section 12 of the N14 road, while currently inadequate, make it a suitable candidate for upgrades. The existing alignment minimizes the need for extensive land acquisition, and the project's design incorporates careful adjustments to meet modern engineering and safety standards. The proposed borrow pits

for material sourcing are strategically located to minimize haulage distances, environmental impact, and cost, further enhancing the viability of the location.

- The proposed activity's need and desirability are amplified by the strategic importance of the N14 Section 12's location. Upgrading this segment not only addresses pressing infrastructural deficiencies but also supports long-term economic growth and regional connectivity, aligning with both local and national development priorities.

### **3.2 PROPOSED ROAD UPGRADE ACTIVITIES**

Based on traffic recommendations, a 13.4m carriageway is proposed for SANRAL's Geometric

Design Guidelines to provide climbing lanes, where deemed necessary in future, if growth exceeds the forecast. The final traffic analysis will determine the extent of the proposed improvements on the route, which may comprise of climbing / passing lanes.

The road improvement includes widening of some structures along the route to accommodate the proposed geometric design and lane arrangement consisting of total surfaced width 13.4m. The N14 section 12 consists of road over rail, overpass, by-pass lanes and river bridges. There 4 existing bridges and 15 major culverts along the route.

To accommodate the proposed road widening, including the extension of the existing culvert, the surfaced width of the N14 will be 16.5m.

Existing bridges, culverts, the N14/R30 interchange and a new road over rail bridge is proposed. New bridges and culverts will also be constructed. Passing lanes are proposed on the east bound and west bound sections along the N14. A section of the N14 between km20.2 to km23.4 will be re-aligned outside of the SANRAL road reserve. A new bridge will be constructed along the re-aligned section of the N14.

Material sources from proposed borrow pits (thirteen on total), are required for the road upgrade. The application for mining authorisations will be lodged with the Department of Mineral Resources and Energy (DMRE). There will be mitigation of environmental impacts through careful selection of sites and obtaining necessary environmental clearances.

#### **3.2.1 Bridges**

Please refer to the below paragraphs for a description of proposed bridge upgrades and new bridges that will be required.

##### **(a) B3552: Coligny Rail Bridge at km1.3**

The Coligny Rail Bridge B3552 carries the N14 over a railway line at a crew of 8°. The existing bridge will be widened and rehabilitated as follows:

- Installation of an erosion protection solution such as gabions and pitching stone;
- Repair of concrete spalling on the barriers;
- Lift the asphalt layer to prevent damming of water on the deck; and
- Repair and install side drains to approaches.

**(b) New road over rail bridge at km20.66**

A new road over rail bridge is to be located near Bodenstein at km20.66 at the N14 road and railway crossing. The proposed bridge is going to have a skew of 31°. The minimum clear span of bridge is 11.9 m and a minimum vertical clearance of 5.08 m.

**(c) B1103: Taaibospuit Tributary 5 River km 21.4**

Due to the change in road level at km 20.66 to accommodate the railway crossing bridge; the road is lifted by 3.2 m at location of structure B1103. To accommodate this change in road level, it is recommended that the existing bridge be demolished and be replaced with a new bridge that will be at the level of the proposed road. The new bridge will consist of precast beams and slab deck with wall type piers.

**(d) B5194 : Schoonspruit River Bridge km 55.7**

The solution considers extending the existing structure to accommodate the recommended lane arrangement at a fill slope of 1:2 and to avoid the risk of overloading the structure with additional load. The extended part of the structure will be doweled into the existing structure.

**(e) New bridge at km55.65**

A new bridge with 5 spans (cell structure) is proposed at km55.65 to accommodate the road widening.

**(f) B5316 : Stasie Avenue Overpass Bridge km 58.35**

The underpass bridge B5316 is located at km 58.35 and carries the N14 over Stasie Avenue at a skew of 30°. It is a supported bridge consisting of one span that is approximately 16.5 m. The road width measured from parapet to parapet is approximately 13.0 m.

The available width of 13.0 m is insufficient to accommodate the required the full 13.4 m surfaced road. Keeping the existing structure will require the available 13.0 m width to be utilised for the lane arrangement which will result in a reduced surfaced shoulder of 2.6 m and 3.0 m on the eastbound and westbound lane respectively. Though this is option does not accommodate the required full lane arrangement, it is a highly cost-effective solution. The relevant signage is required to work in conjunction with this solution to ensure safety.

### **3.2.2 Culverts**

Some of the major drainage culverts will be extended to accommodate the proposed road geometry and the required total surfaced width of 13.4m. Some of the culverts will be demolished and replaced and some will be widened and extended to accommodate the road widening. At least four new culverts will be constructed. There are several minor culverts along the N14. Six culverts need to be upgraded due to their current size being smaller than the proposed minimum



size to facilitate maintenance. Two of the culverts will be upgraded to accommodate a Class 1 runoff evaluation. Five culverts meet the requirements for a Class 2 road. Fourteen culverts will be upgraded to suit Class 2 requirements.

Refer to Table 3-1 below that provides a summary of the major culverts that will be upgraded and new culverts that will be constructed

**Table 3-1: Major culverts to be upgraded and constructed**

| Culvert Structure Number | Chainage (km)  | Description<br>(no. cells) | Comment                            |
|--------------------------|----------------|----------------------------|------------------------------------|
| C1276                    | 3.6            | 2                          | Demolish to replace                |
| C002                     | 7.4            | 6                          | Extension on both sides            |
| New                      | 7.6            | 3                          | New structure                      |
| New                      | 7.65           | 3                          | New structure                      |
| New                      | 7.88           | 2                          | New structure                      |
| C4357                    | 8.1            | 6                          | Extension on both sides            |
| C43                      | 12.41          | 4                          | Demolish to replace                |
| C42 (CM A-U)             | 16.75          | 1                          | Extension on both sides            |
| C4850                    | 22.5           | 4                          | Extension on both sides & widening |
| C40                      | 28.82          | 2                          | Extension on both sides            |
| C4354                    | 30.1           | 1                          | Extension on both sides            |
| New                      | 30.24          | 2                          | New structure                      |
| C38                      | 31.81          | 2                          | Extension on both sides & widening |
| C233                     | 37.7           | 2                          | Extension on both sides            |
| C4849                    | 45.2           | 4                          | Extension on both side             |
| C4848                    | 46.1           | 3                          | Demolish to replace                |
| C34                      | 52.2           | 2                          | Extension on both sides & widening |
| Unknown 21               | 57.3 (was 2.9) | 1                          |                                    |

### 3.2.3 N14/R30 Interchange

Currently, there is an at-grade four way intersection with the N14/R30, located at km 54.4 of the N14. Available information indicates future planned developments in the area.

The current at-grade intersection will be upgraded to a grade separated intersection to alleviate the traffic generated due to the development. Preliminary information indicates that the N14 will pass under the R30.

A proposed diamond interchange with a fly under the R30 is proposed at the N14/R30 interchange.

### 3.2.4 Possible Future Developments – N14/R503 intersection

A butterfly-type intersection is proposed at the N14/R503 intersection. The design is to be approved by SANRAL.

### 3.2.5 Passing lanes

Passing lanes are proposed on both sides of the N14 and will alternate between the east bound (towards Pretoria) and westbound (towards Lichtenburg). The proposed surfaced width will be 13.4 where there would be no passing lanes. In instances where there would be passing lanes, an additional 3.5m of surfaced width is required on the N14 where the passing lane will be located. In such instances, the required lane width from the edge of the surfaced roadway, will be 16.9m in width.

Tables 3-2 and 3-3 indicates where the passing lanes may be located along the N14 – Section 12.

**Table 3-2: Proposed location of the passing lanes going east bound on the N14 – Section 12 (towards Pretoria)**

| Start (km chainage) | End (km chainage) | Proposed Length of passing lane (km) |
|---------------------|-------------------|--------------------------------------|
| 0.15                | 1.2               | 1.05                                 |
| 6.6                 | 12.3              | 5.7                                  |
| 21.6                | 25.3              | 3.7                                  |
| 37.6                | 40.9              | 3.3                                  |
| 46.2                | 48.35             | 2.15                                 |
| 56.6                | 57.8              | 1.2                                  |

**Table 3-3: Proposed location of the passing lanes going west bound on the N14 – Section 12 (towards Lichtenburg)**

| Start (km chainage) | End (km chainage) | Proposed Length of passing lane (km) |
|---------------------|-------------------|--------------------------------------|
| 1.4                 | 2                 | 0.6                                  |
| 16.7                | 19.6              | 2.9                                  |
| 25.7                | 29.3              | 3.6                                  |
| 41.2                | 45.9              | 4.7                                  |
| 48.9                | 54.2              | 5.3                                  |
| 55.6                | 56.4              | 0.8                                  |

### 3.3 ACTIONS TO BE UNDERTAKEN DURING EACH LIFECYCLE PHASE

#### 3.3.1 Pre-Construction and Construction Phase

The pre-construction and construction of the proposed road improvements will be undertaken in the following steps:

- Completion and approval of detailed design for the road improvements;
- Obtain the relevant permits and siting approval (Undertake the S&EIR and WULA process, obtain mining authorisations from the DMRE, local authorities, land acquisitions, etc.);
- Pre-construction site work, such as geotechnical investigations;
- Undertaking of, and compliance with pre-construction activities and conditions in terms of the Environmental Authorisation (EA);
- Site preparation (vegetation clearance and blasting (including the borrow pits));
- Establishment of the site camps along the disturbed areas (low sensitivity ecological areas) along the road;

The construction phase for the proposed project will take approximately 30 months. The proposed borrow pits will be used for the 30 month construction period and will be rehabilitated after decommissioning of the borrow pits.

#### 3.3.2 Operational Phase

After the commissioning of the upgrade N14: Section 12 from Coligny to Ventersdorp, the responsibility for safe operation and road management will be transferred to the maintenance team at SANRAL. A plan for maintenance of the road should be available. Maintenance may be performed manually. In case of manual maintenance, a high level of safety precaution needs to be undertaken.

### **3.3.3 Decommissioning Phase**

The decommissioning of the N14 – Section 12 is not envisioned; however, a permitting process will be undertaken, if decommissioning is required. An Application for Closure of the borrow pits will be submitted to the DMRE, prior to decommissioning of the borrow pits.

## **4 CONSIDERATION OF ALTERNATIVES**

In terms of the EIA Regulations, reasonable and feasible alternatives are required to be considered within the EIA process. All identified, feasible alternatives are required to be assessed in terms of social, biophysical, economic and technical factors. A key challenge of the EIA process is the consideration of alternatives. Most guidelines use terms such as 'reasonable', 'practicable', 'feasible' or 'viable' to define the range of alternatives that should be considered. Essentially there are two types of alternatives:

- Incrementally different (modifications) alternatives to the project; and
- Fundamentally (totally) different alternatives to the project.
- Fundamentally different alternatives are usually assessed at a strategic level, and EIA practitioners recognise the limitations of project specific EIA's to address fundamentally different alternatives.

Incrementally different alternatives relate specifically to the project under investigation. "Alternatives", in relation to a proposed activity, means different ways of meeting the general purposes and requirements of the activity, which may include alternatives to:

- the property on which, or location where, it is proposed to undertake the activity;
- the type of activity to be undertaken;
- the design or layout of the activity;
- the technology to be used in the activity; and
- the operational aspects of the activity.

These alternatives are discussed below.

### **4.1 APPROACH TO THE ASSESSMENT OF ALTERNATIVES**

This section discusses the alternatives that will be considered as part of the EIA. NEMA requires that alternatives to a proposed activity must be considered (NEMA, Section 24). Alternatives are different means of meeting the general purpose and need of a proposed activity. In the S&EIR process, the consideration of alternatives is always important, should the proposed site not fit into the parameters of the EIA framework. The alternatives can be categorised as follows.

- Location / Site alternatives
- Layout Alternatives
- Technology Alternatives
- No-Go alternative

### **4.2 Location / Site Alternatives**

The proposed development involves the proposed improvement on National Route N14 – Section 12 from Coligny (km 0.0) to Ventersdorp (km 58.40), in North-West Province. Alternative

sites have not been addressed in the Scoping Report, as this site has been predetermined during the planning stage.

The original design for the proposed N14-Section 12 upgrade was carried out to accommodate an improvement solution, to relieve congestion to an acceptable level of service, improve road safety, and adequate pavement capacity for a 20-year design period.

The proposed upgrade is crucial for maintaining the economic vitality of one of South Africa's primary freight corridors. The N14 facilitates long-distance travel and the transportation of goods across key provinces, including Gauteng, North West, and Northern Cape. As a strategic route linking major cities such as Pretoria, Lichtenburg, Vryburg, and Upington, it supports trade and connectivity, directly contributing to regional and national economic growth.

The implication of the road upgrade on the N14-Section 12 will result in greater width of the road prism over certain sections. Majority of the proposed road upgrade will occur within the existing road reserve, however, there will be land acquisition of privately-owned properties outside the existing SANRAL road reserve.

The process for the land acquisition will be aligned and integrated with the SANRAL Land Acquisition Guidelines Manual. The property report details the properties adjacent to and within the project battery limits which are affected by the project. The Property Report is still to be submitted to SANRAL for approval. Once approved the compilation of the land acquisition diagrams can be commenced with.

*Given the reasons outlined above, there are no other site alternatives for the proposed N14-Section 12 road upgrade.*

There are no site alternatives for the proposed borrow pits, as the proposed use of materials for the road upgrade were sought from nearby identified proposed borrow pit sites to reduce transportation costs and environmental impacts. This enables high-quality materials from nearby borrow pits to meet the specific design needs to and the reduction of haulage costs and potential impacts on other regions.

## **4.3 Design / Layout Alternatives**

### **4.3.1 Proposed Rail Crossing**

The existing level crossing at km20.6 gives right of way to rail traffic, resulting in vehicular and truck traffic stopping in the area of the crossing. This reduces the level of service (LOS) within the area.

Three alternatives were considered for the existing rail crossing at km20.6 as follows:

- Level at-grade rail crossing – Do nothing approach
- Road under rail option
- Road over rail option

(a) Level at-grade rail crossing – Do nothing approach

The current railway at grade crossing poses a serious safety hazard to the travelling public, which requires vehicular traffic to come to a dead stop, to evaluate safe crossing conditions, before proceeding. This results in a very low level of service in terms of capacity of this section of road. This level crossing is further seen as a high risk for incidents and accidents due to potential direct conflict of crossing rail and vehicular traffic. This alternative is therefore, not preferred.

(b) Road under rail option

This alternative is to re-align the N14 to pass underneath the existing railway line. This option poses constructability constraints as well as access to existing connecting roads within the area. The construction effort will be a lengthy process and will introduce extended disruptive periods to Transnet's active railway line, which Transnet was not in favour of during consultations with them.

(c) Road over rail option

This alternative is to re-align the N14 to pass over the existing railway line. This option allows the bulk of construction activities to take place around the existing railway line, with limited disruption to the Transnet's active railway line. Access to existing roads and accesses will also be more feasible to tie into, as that of the road under rail option.

Transnet is also in favour of this option as it poses the least effort and disruption to its current activities along the route.

#### **4.4 Technology Alternatives**

There are no alternative technologies relevant to the proposed road upgrade and borrow pits.

#### **4.5 No-go Alternatives**

The 'do-nothing' alternative (i.e. no-go alternative) is the option of not constructing the development and operation of the proposed N14-Section 12 upgrade. Should this alternative be selected, the status quo of the environment will remain. Should the DFFE decline the application, the biophysical and socio-economic impacts (as indicated in Section 7) would not occur.

There would be a lack of adequate road infrastructure to meet the traffic growth demand in the next 20 years, that is projected locally on SANRAL routes.

There would be no job opportunities that would be created during the construction phase, to benefit the local community on a short-term basis for several construction activities. Therefore, there would be no short-term economic opportunities created, and skills transfer to the local communities during the construction phase.

Therefore, the no-go alternative is not considered to be feasible.



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## **5 SCOPING PROCESS**

### **5.1 Scoping Phase**

The Scoping Phase serves to define the scope of the later detailed assessment of potential impacts resulting from a proposed project and to establish the baseline conditions of the receiving environment. The Scoping Phase has been undertaken in accordance with the requirements of sections 24 and 24 (d) of the NEMA, as read with Government Notices R982 (Section 21 and Appendix 2), 983, 984 and 985 of the EIA Regulations (2014) and the Integrated Environmental Management (IEM) Information Series (DEAT, 2002). The objectives of the Scoping Phase are thus to:

- Ensure that the process is open and transparent and involves the relevant Authorities, the project Applicant, and key stakeholders;
- Engage with stakeholders at an early stage of the development so that they may contribute their views and raise any concerns regarding the project;
- To identify and describe the affected environment;
- Ensure that feasible and reasonable alternatives are identified and selected for further assessment;
- Determine possible impacts of the proposed project on the biophysical and socio-economic environment and associated mitigation measures;
- To define the scope and methodology of the Environmental Impact Reporting (EIR) Phase within a Plan of Study for EIR;
- To provide sufficient information, to enable the environmental authorities to make an informed decision on the project (including the scope and extent of specialist studies that will be required to be undertaken as part of the EIR Phase of the process);
- To comply with the requirements of NEMA, 1998 (Act No. 107 of 1998), as amended and the EIA Regulations of 2014, as well as the Integrated Environmental Series (DEAT, 2002); and
- Ensure compliance with the relevant legislation.

### **5.2 Compilation, submission and acknowledgement of application forms**

An Application for Environmental Authorisation form (attached as Appendix 4 ) for the proposed project was submitted to the DFFE on 6 May 2025.

### **5.3 Pre-application consultation with relevant authorities**

Consultation with the DFFE has commenced and will follow throughout the duration of the project.

A Pre-Application Meeting took place with the DFFE regarding the applicable environmental process for the project on 13 August 2024. The purpose of this meeting was as follows:

- To confirm the listed activities in terms of the Applicable Environmental Authorisation process; and

- To confirm the requirements for the project in terms of Specialist Studies.

Refer to the minutes of the meeting with the DFFE in **Appendix 5**. An enquiry regarding the applicability of Listing Notice No. 2, Activity 27 was made to the Interpretation Query (IQ) Department at the DFFE. It was confirmed that this activity will be triggered for the proposed re-alignment of the N14 from chainage km20 to km23 and therefore, a S&EIR process will be required. In a telecom between Ms. Sindiswa Dlomo (DFFE) and Ms. Natasha Lalie (EAP at Zitholele Consulting) it was confirmed that a follow-up Pre-Application Meeting with the DFFE is not required, as it is understood that this is a S&EIR process (refer to the email dated 6 February 2025 and the minutes of the Pre-Application Meeting with the DFFE in Appendix 5.1).

### **5.3.1 Consultation With Other State Departments**

The Draft Scoping Report was also provided to the other relevant Authorities, requesting their input into the S&EIR process.

A full list of key stakeholders consulted to date is included in the Interested and Affected Party (I&AP) database attached in Appendix 6.1 of this report. Authority and I&AP consultation will continue throughout the remainder of the S&EIR process, and the list will be updated accordingly.

## **5.4 Site Screening/Site Sensitivity Verification, Identification and Consideration of Alternatives**

### **5.4.1 Identification of Specialist Studies**

A site visit was conducted by the EAP team on 25 June 2024 to identify impacts to be assessed during the EIR phase and Specialist Studies to be undertaken. The sections of the proposed road improvements along the N14 - Section 12 was visited as well as the sites earmarked for the proposed borrow pits. Refer to the Site Sensitivity Verification Report in Appendix 7.

The DFFE Screening Tool was used to generate a Screening Report which assisted in identifying Specialist Studies that would be required for the assessment phase of the project.

The National Web based Environmental Screening Tool is a geographically based web-enabled application, which allows a proponent intending to submit an Application for Environmental Authorisation in terms of the EIA Regulations 2014 (as amended) to screen their proposed site (N14- Section 12 from Coligny to Ventersdorp and the proposed borrow pit sites) for any environmental sensitivity. Refer to the Screening Tool Reports for the proposed road upgrade and the borrow pits in Appendix 8. According to the Screening Report generated by the DFFE Screening Tool, low to very high sensitivities for various themes were highlighted and therefore, these themes need to be assessed in more detail by means of assessment of its relevance to the EAP, and undertaking the relevant Specialist Studies, where relevance has been confirmed.

Accordingly, the following Specialist Studies were identified to be included in the Environmental Application, as per the findings of the Screening Report:

1. Agricultural Impact Assessment;
2. Landscape/Visual Impact Assessment;
3. Archaeological and Cultural Heritage Impact Assessment;
4. Palaeontological Impact Assessment;
5. Terrestrial Biodiversity Impact Assessment;
6. Aquatic Biodiversity / Wetland Impact Assessment;
7. Noise Impact Assessment;
8. Traffic Impact Assessment;
9. Geotechnical Assessment;
10. Socio-Economic Impact Assessment;
11. Ambient Air Quality Impact Assessment;
12. Plant Species Assessment; and
13. Animal Species Assessment.

**Table 5-1: Themes identified by the DFFE Screening Tool for N14-Section 12**

| Theme                                      | Very High sensitivity | High sensitivity | Medium sensitivity | Low sensitivity |
|--|-----------------------|------------------|--------------------|-----------------|
| Agriculture Theme                          |                       | X                |                    |                 |
| Animal Species Theme                       |                       | X                |                    |                 |
| Aquatic Biodiversity Theme                 | X                     |                  |                    |                 |
| Archaeological and Cultural Heritage Theme | X                     |                  |                    |                 |
| Civil Aviation Theme                       |                       | X                |                    |                 |
| Defense Theme                              |                       |                  |                    | X               |
| Paleontology Theme                         |                       |                  | X                  |                 |
| Plant Species Theme                        |                       |                  | X                  |                 |
| Terrestrial Biodiversity Theme             | X                     |                  |                    |                 |

Based on the site visit by the EAP and the outcome of the Screening Report, it is recommended that the following Specialist Studies (*with motivation*) be undertaken during the EIR phase (refer to Table 5-2):

**Table 5-2: Proposed Specialist Studies for the N14-Section 12**

| Specialist Study               | Motivation  |
|--------------------------------|---|
| Agricultural Impact Assessment | Based on the observations on site and consideration of satellite imagery, some of the land adjacent to the sections to be widened to accommodate the road improvements, were agricultural land uses, such as maize farming and agricultural practises such as central pivots irrigation, ploughed land, areas under grazing etc were taking place |

| Specialist Study                                       | Motivation  |
|--|---|
|  | <p>along the N14. Therefore, some agricultural land may be acquired for the new road reserve in light of the improvements that are proposed. Since the upgrade will include limited widening and therefore loss of potential land, and due to the fact that the upgrade is for a national road in national interest, the sensitivity is anticipated to be low. However, in terms of the Agriculture Assessment Protocol, a compliance statement is required even if the sensitivity is low. A Soil /Agricultural Specialist compliance statement is therefore required in terms of the Agriculture specialist assessment protocol. This will be applicable to the both the road improvements along the N14-Section 12 and the proposed borrow pit sites.</p>  |
| Landscape/Visual Impact Assessment                     | <p>The nature of the development (road improvements) for majority of the road upgrade sections, will not alter the character, nor sense of place of the study area, as the N14 already exists. Furthermore, visual impacts will only occur during the construction period which will be of a short-term duration. With the implementation of mitigation measures to minimise the impacts on a limited number of sensitive receptors, occurring in proximity to the site for majority of the study area, the visual character of the site will not be compromised by views by these receptors. Furthermore, the road improvements will be at road level, thereby not impacting on views of the surrounding receptors.</p> <p>However, there will be one section of the N14 at km20.66, where a raised road will be constructed over the existing railway line. This raised road may impact on the sensitive views of the nearby business/community. It is only for this section that a Landscape / Visual Impact Assessment is deemed necessary.</p> |
| Archaeological and Cultural Heritage Impact Assessment | <p>According to the Screening Tool and existing heritage sensitivity data, the study area falls within a very high sensitivity area for archaeological and heritage sites. Furthermore, the National Heritage Resources Act, 1999 (Act No. 25 of 1999) legislates the necessity for undertaking an Archaeological and Cultural Heritage Impact Assessment, where linear developments (including roads) exceed 300 metres in length. In terms of Section 38 (8) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999), statutory comment is required from the South African Heritage Resource Agency (SAHRA).</p> <p>The outcome of the findings by the Archaeologist will be provided in the forthcoming Draft Environmental Impact Report (DEIR). This will be applicable to the both the road improvements along the N14-Section 12 and the proposed borrow pit sites.</p>  |
| Paleontological Impact Assessment                      | <p>The outcome of the findings by the Palaeontologist will be provided in the forthcoming DEIR. This will be applicable to the both the road improvements along the N14-Section 12 and the proposed borrow pit sites.</p>   |

| Specialist Study                           | Motivation  |
|--|---|
| Terrestrial Biodiversity Impact Assessment | <p>The outcome of the findings by the Terrestrial Ecologist will be provided in the forthcoming DEIR.</p> <p>Kindly note that the Terrestrial Biodiversity Impact Assessment will cover both the floral and faunal (mammals, herpetofauna and avifauna) components of the receiving environment. This will be applicable to the both the road improvements along the N14-Section 12 and the proposed borrow pit sites.</p>  |
| Aquatic Biodiversity Impact Assessment     | <p>As per the findings of the Screening Report, the study area falls within a very high sensitive area of aquatic ecosystems and crosses several watercourses and wetlands.</p> <p>The outcome of the findings by the Wetland/Aquatic Ecologist will be provided in the forthcoming DEIR. A Wetland/Aquatic Impact Assessment will be undertaken.</p> <p>In accordance with the requirements of the National Water Act, 1998 (Act No. 36 of 1998), wetlands within a 500m regulated area must be delineated and its functionality assessed to determine the risk that the road upgrade will have on the wetlands. This is required for the Water Use License Application (WULA) to ensure all crossings affected by the road upgrade are included in the Section 21 (c) and Section 21 (i) water use activities. This will be applicable to the both the road improvements along the N14-Section 12 and the proposed borrow pit sites.</p> <p>Therefore, the Wetland/Riparian Delineation and Functional Assessment and the Aquatic Impact Assessment will be combined into one study that addresses the Freshwater Ecological environment for both the S&amp;EIR and WULA processes.</p> |
| Noise Impact Assessment                    | <p>Limited noise may be generated during the construction phase that will be of a short-term duration. With the implementation of noise abatement measures, to minimise the impacts on a limited number of sensitive receptors, occurring in proximity to the site where the intersection upgrade will occur area, the significance of noise impacts will be minimised to low. A Specialist Noise Impact Assessment is therefore not deemed necessary due to the short-term duration of the construction activities and the noise mitigation measures that will be implemented.</p>   |
| Traffic Impact Assessment                  | <p>A Traffic Impact Assessment was undertaken during the Detailed Design Phase to inform the requirement for the road improvements, as well as the traffic recommendations. The findings of this study will be included in the forthcoming Draft EIR.</p>   |

| Specialist Study                      | Motivation   |
|---------------------------------------|--|
| Geotechnical Assessment               | This study will be commissioned to determine the sensitivity of the underlying geological features and the requirements for stability of the proposed road infrastructure.   |
| Socio-Economic Impact Assessment      | <p>The EAP disputes the requirement for a Socio-Economic Impact Assessment as the road upgrades will improve the safety needs for all road users. The impacts during the construction phase will be of a short-term duration and a limited extent. Potential socio-economic impacts will be addressed in the forthcoming Draft EIR that will be made available for public review and comment.</p> <p>A limited number of jobs will be provided during the construction phase which will be of a short- term duration that will have a positive impact on the local community residing the local municipal area.</p> <p>Comments received during public review of the Draft EIR will be included in the Comments and Responses Report of the Final EIR. Comments received during the public review period will be addressed by the EAP directly with the Interested and Affected Parties (I&amp;APs).</p> |
| Ambient Air Quality Impact Assessment | There may be air quality impacts (such as dust entrainment) during the construction phase, but with the implementation of dust suppression measures, this impact will be of low significance and of a short-term duration. Therefore, a specialist Air Quality Impact Assessment is not deemed necessary.  |
| Plant Species Assessment              | The outcome of the findings by the Terrestrial Ecologist will be provided in the Draft EIR. This will be applicable to the both the road improvements along the N14-Section 12 and the proposed borrow pit sites.  |
| Animal Species Assessment             | The outcome of the findings by the Terrestrial Ecologist will be provided in the Draft EIR. This will be applicable to the both the road improvements along the N14-Section 12 and the proposed borrow pit sites.  |

**Table 5-3: Themes identified by the DFFE Screening Tool for proposed borrow pit – BP04**

| Theme                                      | Very High sensitivity | High sensitivity | Medium sensitivity | Low sensitivity |
|--|-----------------------|------------------|--------------------|-----------------|
| Agriculture Theme                          |                       |                  | X                  |                 |
| Animal Species Theme                       |                       |                  | X                  |                 |
| Aquatic Biodiversity Theme                 |                       |                  |                    | X               |
| Archaeological and Cultural Heritage Theme | X                     |                  |                    |                 |
| Civil Aviation Theme                       |                       | X                |                    |                 |
| Defense Theme                              |                       |                  |                    | X               |
| Paleontology Theme                         |                       |                  | X                  |                 |
| Plant Species Theme                        |                       |                  | X                  |                 |
| Terrestrial Biodiversity Theme             | X                     |                  |                    |                 |

**Table 5-4: Themes identified by the DFFE Screening Tool for proposed borrow pit – Outcrop 1.0**

| Theme                                      | Very High sensitivity | High sensitivity | Medium sensitivity | Low sensitivity |
|--|-----------------------|------------------|--------------------|-----------------|
| Agriculture Theme                          |                       |                  | X                  |                 |
| Animal Species Theme                       |                       |                  | X                  |                 |
| Aquatic Biodiversity Theme                 |                       |                  |                    | X               |
| Archaeological and Cultural Heritage Theme |                       |                  |                    | X               |
| Civil Aviation Theme                       |                       |                  | X                  |                 |
| Defense Theme                              |                       |                  |                    | X               |
| Paleontology Theme                         |                       |                  | X                  |                 |
| Plant Species Theme                        |                       |                  | X                  |                 |
| Terrestrial Biodiversity Theme             | X                     |                  |                    |                 |

**Table 5-5: Themes identified by the DFFE Screening Tool for proposed borrow pit – Diabase Cut**

| Theme                                      | Very High sensitivity | High sensitivity | Medium sensitivity | Low sensitivity |
|--|-----------------------|------------------|--------------------|-----------------|
| Agriculture Theme                          |                       |                  | X                  |                 |
| Animal Species Theme                       |                       |                  | X                  |                 |
| Aquatic Biodiversity Theme                 |                       |                  |                    | X               |
| Archaeological and Cultural Heritage Theme |                       |                  |                    | X               |
| Civil Aviation Theme                       |                       |                  | X                  |                 |
| Defense Theme                              |                       |                  |                    | X               |
| Paleontology Theme                         |                       |                  | X                  |                 |
| Plant Species Theme                        |                       |                  | X                  |                 |
| Terrestrial Biodiversity Theme             | X                     |                  |                    |                 |

**Table 5-6: Themes identified by the DFFE Screening Tool for proposed borrow pit – BP01**

| Theme                                      | Very High sensitivity | High sensitivity | Medium sensitivity | Low sensitivity |
|--|-----------------------|------------------|--------------------|-----------------|
| Agriculture Theme                          |                       |                  | X                  |                 |
| Animal Species Theme                       |                       |                  |                    | X               |
| Aquatic Biodiversity Theme                 |                       |                  |                    | X               |
| Archaeological and Cultural Heritage Theme |                       |                  |                    | X               |
| Civil Aviation Theme                       |                       |                  |                    | X               |
| Defense Theme                              |                       |                  |                    | X               |
| Paleontology Theme                         |                       |                  | X                  |                 |
| Plant Species Theme                        |                       |                  | X                  |                 |
| Terrestrial Biodiversity Theme             | X                     |                  |                    |                 |

**Table 5-7: Themes identified by the DFFE Screening Tool for proposed borrow pit – Site boulder field**

| Theme                                      | Very High sensitivity | High sensitivity | Medium sensitivity | Low sensitivity |
|--|-----------------------|------------------|--------------------|-----------------|
| Agriculture Theme                          |                       |                  | X                  |                 |
| Animal Species Theme                       |                       | X                |                    |                 |
| Aquatic Biodiversity Theme                 |                       |                  |                    | X               |
| Archaeological and Cultural Heritage Theme |                       |                  |                    | X               |
| Civil Aviation Theme                       |                       |                  |                    | X               |
| Defense Theme                              |                       |                  |                    | X               |
| Paleontology Theme                         |                       |                  | X                  |                 |
| Plant Species Theme                        |                       |                  | X                  |                 |
| Terrestrial Biodiversity Theme             | X                     |                  |                    |                 |

**Table 5-8: Themes identified by the DFFE Screening Tool for proposed borrow pit – Gravel cut 1**

| Theme                                      | Very High sensitivity | High sensitivity | Medium sensitivity | Low sensitivity |
|--|-----------------------|------------------|--------------------|-----------------|
| Agriculture Theme                          |                       |                  | X                  |                 |
| Animal Species Theme                       |                       |                  | X                  |                 |
| Aquatic Biodiversity Theme                 |                       |                  |                    | X               |
| Archaeological and Cultural Heritage Theme |                       |                  |                    | X               |
| Civil Aviation Theme                       |                       |                  |                    | X               |
| Defense Theme                              |                       |                  |                    | X               |
| Paleontology Theme                         |                       |                  | X                  |                 |
| Plant Species Theme                        |                       |                  | X                  |                 |
| Terrestrial Biodiversity Theme             | X                     |                  |                    |                 |



**Table 5-9: Themes identified by the DFFE Screening Tool for proposed borrow pit – BP03**

| Theme                                      | Very High sensitivity | High sensitivity | Medium sensitivity | Low sensitivity |
|--|-----------------------|------------------|--------------------|-----------------|
| Agriculture Theme                          |                       | X                |                    |                 |
| Animal Species Theme                       |                       |                  |                    | X               |
| Aquatic Biodiversity Theme                 |                       |                  |                    | X               |
| Archaeological and Cultural Heritage Theme |                       |                  |                    | X               |
| Civil Aviation Theme                       |                       |                  |                    | X               |
| Defense Theme                              |                       |                  |                    | X               |
| Paleontology Theme                         |                       |                  | X                  |                 |
| Plant Species Theme                        |                       |                  | X                  |                 |
| Terrestrial Biodiversity Theme             | X                     |                  |                    |                 |

**Table 5-10: Themes identified by the DFFE Screening Tool for proposed borrow pit – Quarry cut**

| Theme                                      | Very High sensitivity | High sensitivity | Medium sensitivity | Low sensitivity |
|--|-----------------------|------------------|--------------------|-----------------|
| Agriculture Theme                          |                       | X                |                    |                 |
| Animal Species Theme                       |                       |                  |                    | X               |
| Aquatic Biodiversity Theme                 |                       |                  |                    | X               |
| Archaeological and Cultural Heritage Theme |                       |                  |                    | X               |
| Civil Aviation Theme                       |                       |                  |                    | X               |
| Defense Theme                              |                       |                  |                    | X               |
| Paleontology Theme                         |                       |                  | X                  |                 |
| Plant Species Theme                        |                       |                  | X                  |                 |
| Terrestrial Biodiversity Theme             | X                     |                  |                    |                 |

**Table 5-11: Themes identified by the DFFE Screening Tool for proposed borrow pit – BP02**

| Theme                                      | Very High sensitivity | High sensitivity | Medium sensitivity | Low sensitivity |
|--|-----------------------|------------------|--------------------|-----------------|
| Agriculture Theme                          |                       |                  | X                  |                 |
| Animal Species Theme                       |                       | X                |                    |                 |
| Aquatic Biodiversity Theme                 |                       |                  |                    | X               |
| Archaeological and Cultural Heritage Theme |                       |                  |                    | X               |
| Civil Aviation Theme                       |                       |                  |                    | X               |
| Defense Theme                              |                       |                  |                    | X               |
| Paleontology Theme                         |                       |                  | X                  |                 |
| Plant Species Theme                        |                       |                  | X                  |                 |
| Terrestrial Biodiversity Theme             | X                     |                  |                    |                 |

**Table 5-12: Themes identified by the DFFE Screening Tool for proposed borrow pit – Granite Quarry**

| Theme                                      | Very High sensitivity | High sensitivity | Medium sensitivity | Low sensitivity |
|--|-----------------------|------------------|--------------------|-----------------|
| Agriculture Theme                          |                       |                  | X                  |                 |
| Animal Species Theme                       |                       | X                |                    |                 |
| Aquatic Biodiversity Theme                 |                       |                  |                    | X               |
| Archaeological and Cultural Heritage Theme |                       |                  |                    | X               |
| Civil Aviation Theme                       |                       |                  |                    | X               |
| Defense Theme                              |                       |                  |                    | X               |
| Paleontology Theme                         |                       |                  | X                  |                 |
| Plant Species Theme                        |                       |                  | X                  |                 |
| Terrestrial Biodiversity Theme             | X                     |                  |                    |                 |

**Table 5-13: Themes identified by the DFFE Screening Tool for proposed borrow pit – New B1103**

| Theme                                      | Very High sensitivity | High sensitivity | Medium sensitivity | Low sensitivity |
|--|-----------------------|------------------|--------------------|-----------------|
| Agriculture Theme                          |                       | X                |                    |                 |
| Animal Species Theme                       |                       |                  | X                  |                 |
| Aquatic Biodiversity Theme                 | X                     |                  |                    |                 |
| Archaeological and Cultural Heritage Theme |                       |                  |                    | X               |
| Civil Aviation Theme                       |                       |                  |                    | X               |
| Defense Theme                              |                       |                  |                    | X               |
| Paleontology Theme                         |                       |                  | X                  |                 |
| Plant Species Theme                        |                       |                  | X                  |                 |
| Terrestrial Biodiversity Theme             | X                     |                  |                    |                 |

**Table 5-14: Proposed Specialist Studies for the borrow pits**

| Specialist Study                   | Motivation  |
|------------------------------------|---|
| Agricultural Impact Assessment     | Based on the observations on site and consideration of satellite imagery, the proposed borrow pits sites are vacant and could potentially have high agricultural potential. A Soil /Agricultural Specialist compliance statement is therefore required in terms of the Agriculture specialist assessment protocol.  |
| Landscape/Visual Impact Assessment | There are no sensitive receptors (such as residential and business operations) located close to the proposed pits. The proposed borrow pits will be at ground level. Furthermore, visual impacts will only occur during the construction period which will be of a short-term duration. With the implementation of mitigation measures, the visual character of the site will not be compromised.<br><br>Therefore, a Landscape / Visual Impact Assessment is not deemed necessary. |

| Specialist Study                                       | Motivation  |
|--|---|
| Archaeological and Cultural Heritage Impact Assessment | <p>According to the National Heritage Resources Act, 1999 (Act No. 25 of 1999) legislates the necessity for undertaking an Archaeological and Cultural Heritage Impact Assessment (HIA) for any development or activity that will change the character of a site.</p> <p>In terms of Section 38 (8) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999), statutory comment is required from the South African Heritage Resource Agency (SAHRA).</p> <p>The outcome of the findings by the Archaeologist for the HIA, will be provided in the forthcoming Draft Environmental Impact Report (DEIR).</p>  |
| Paleontological Impact Assessment                      | <p>The outcome of the findings by the Palaeontologist will be provided in the forthcoming DEIR.</p>   |
| Terrestrial Biodiversity Impact Assessment             | <p>The outcome of the findings by the Terrestrial Ecologist will be provided in the forthcoming DEIR.</p> <p>Kindly note that the Terrestrial Biodiversity Impact Assessment will cover both the floral and faunal (mammals, herpetofauna and avifauna) components of the receiving environment.</p>  |
| Aquatic Biodiversity Impact Assessment                 | <p>There may be aquatic ecosystems and several watercourses and wetlands that would be impacted by the proposed establishment of the borrow pits.</p> <p>The outcome of the findings by the Wetland/Aquatic Ecologist will be provided in the forthcoming DEIR. A Wetland/Aquatic Impact Assessment will be undertaken.</p> <p>In accordance with the requirements of the National Water Act, 1998 (Act No. 36 of 1998), wetlands within a 500m regulated area must be delineated and its functionality assessed to determine the risk that the road upgrade will have on the wetlands. This is required for the Water Use License Application (WULA) to ensure all crossings affected by the proposed borrow pits are included in the Section 21 (c) and Section 21 (i) water use activities.</p> <p>Therefore, the Wetland/Riparian Delineation and Functional Assessment and the Aquatic Impact Assessment will be combined into one study that addresses the Freshwater Ecological environment for both the S&amp;EIR and WULA processes.</p> |
| Noise Impact Assessment                                | <p>Limited noise may be generated during the construction phase that will be of a short-term duration. With the implementation of noise abatement measures, to minimise the impacts on a limited number of sensitive receptors, occurring in proximity to the site</p>  |

| Specialist Study                      | Motivation   |
|---------------------------------------|--|
|                                       | where the proposed borrow pits are to be located, the significance of noise impacts will be minimised to low. A Specialist Noise Impact Assessment is therefore not deemed necessary due to the short-term duration of the construction activities and the noise mitigation measures that will be implemented.   |
| Traffic Impact Assessment             | No additional Traffic Impact Assessment will be conducted during the Detailed Design Phase. The existing data from the assessment and Preliminary Design Report, will be used.   |
| Geotechnical Assessment               | This study will be commissioned to determine the sensitivity of the underlying geological features and the requirements for stability of the proposed borrow pits.   |
| Socio-Economic Impact Assessment      | <p>The EAP disputes the requirement for a Socio-Economic Impact Assessment as the impacts during the construction phase will be of a short-term duration and a limited extent. Potential socio-economic impacts will be addressed in the forthcoming Draft EIR that will be made available for public review and comment.</p> <p>A limited number of jobs will be provided during the construction phase which will be of a short- term duration that will have a positive impact on the local community residing the local municipal area.</p> <p>Comments received during public review of the Draft EIR will be included in the Comments and Responses Report of the Final EIR. Comments received during the public review period will be addressed by the EAP directly with the Interested and Affected Parties (I&amp;APs).</p> |
| Ambient Air Quality Impact Assessment | There may be air quality impacts (such as dust entrainment) during the construction phase, but with the implementation of dust suppression measures, this impact will be of low significance and of a short-term duration. Therefore, a specialist Air Quality Impact Assessment is not deemed necessary.  |
| Plant Species Assessment              | The outcome of the findings by the Terrestrial Ecologist will be provided in the Draft EIR.  |
| Animal Species Assessment             | The outcome of the findings by the Terrestrial Ecologist will be provided in the Draft EIR.  |

Further details of the proposed Specialist Studies are provided in the Plan of Study (PoS) for the EIR. Refer to Section 8. The findings/results of the above Specialist Studies will be included in the forthcoming Draft Environmental Impact Report (EIR) that will be made available for public

review and comment. The EIR will include a detailed assessment of the impacts identified by the Professional Team, Specialists, the Stakeholders and the Authorities.

## **5.5 Public Participation Process during the Scoping Phase**

Zitholele will conduct the Public Participation Process (PPP) for the project in line with Chapter 6 of the Regulations and Appendix 2 for Scoping Reports. The principles of NEMA govern the Public Participation Process, including consultation with Interested and Affected Parties (I&APs).

Public participation is the involvement of all parties who potentially have an interest in a development or project or may be affected by it. The principal objective of public participation is to inform and enrich decision-making. This is also its key role in the Scoping Report.

These principles include the provision of sufficient and transparent information to I&APs on an on-going basis, to allow them to comment and ensuring the participation of historically disadvantaged individuals, including women, the disabled and the youth.

The PPP aims to:

- Ensure all relevant key stakeholders and I&APs have been identified and invited to engage in the Scoping Phase;
- Raise awareness, educate, and increase understanding of stakeholders about the proposed project, the affected environment and the environmental process being undertaken;
- Create open channels of communication between key stakeholders and I&APs and the project team;
- Provide opportunities for key stakeholders and I&APs to identify issues or concerns and propose suggestions for enhancing potential benefits and to prevent or mitigate impacts; and
- Accurately document all opinions, concerns and queries raised regarding the project.

### **5.5.1 Identification of Stakeholders and I&APs**

The identification of key stakeholders was done in collaboration with SMEC Consulting Engineers, the Local Municipalities and other organisations in the area. The identification of stakeholders is on-going and is refined throughout the process. As the “on-the-ground” understanding of affected stakeholders improves through interaction with various stakeholders in the area, the database will be updated.

The stakeholders’ details are captured in a database, thus providing an on-going record of communications - an important requirement by the authorities for public participation. In addition, comments and contributions received from stakeholders are recorded, linking each comment to the name of the person who made it.

A preliminary I&AP database is included in Appendix 6.1. Interested and Affected Parties (I&APs) representing the following sectors of society has been identified:

- 
- National, provincial and local government;
  - Ward councillors and committees;
  - Community Based Organisations;
  - Non-Governmental Organisations;
  - Business, Religious and Civic Organisations;
  - Service Providers; and
  - Research.

According to the NEMA: EIA Regulations of 2014 (as amended), a register of I&APs (Regulation 55 of GNR 543) must be kept by the Public Participation Practitioner. Such a register has been compiled and will be updated with the details of involved I&APs throughout the process (See Appendix 6.1).

### **5.5.2 Notification of Draft Scoping Report for Public Review and Comment and invitation to register as an Interested and Affected Party**

The project and S&EIR process has been widely announced with an invitation to the general public to register as I&APs and comment on the Draft Scoping Report and to actively participate in the PPP. Proof of publication of the advertisements and site notices placement will be included in the Final Scoping Report. Public announcement of the project, the invitation to comment on the Draft Scoping Report and to register as I&APs, were announced as follows:

- Direct notification to landowners
- Publication of media advertisement in English and Setswana in the Citizen and “Die Noordwester” on 6 May 2025 (**Appendix 6.2**);
- Distribution of notification letters to organs of state, service providers, Non-Governmental Organizations, Ward Councillors and committees on 6 May 2025 (**see Appendix 6.3**) for reference to the notification letter providing details of availability of the Draft Scoping Report for public review and comment;
- Site notices were strategically located at public places, along the N14 and at the borrow pit sites (**Appendix 6.4**).

In accordance with the requirements of the EIA Regulations (2014), as amended, the I&AP registration period commenced with the advertisement of the project in the Citizen and “Die Noordwester” newspapers and the placement of site notices. As stated, the purpose of the advertisements and site notices was to notify the public about the proposed project and to invite them to register as I&APs and comment on the Draft Scoping Report (from 6 May 2025 to 5 June 2025).

### **5.5.3 Comments and Responses Report**

The issues raised during the DSR comment period will be captured in a Comments and Responses Report (CRR) that will be included in the Final Scoping Report that will be submitted

to DFFE. The CRR will be updated to include additional I&AP contributions that may be received throughout the EIA process.

#### 5.5.4 Scoping of Specialist Studies

During the Scoping Phase, it is the responsibility of the EAP to determine the scope of specialist studies that are to be undertaken with input from stakeholders during the subsequent EIA phase of the project. Zitholele Consulting has compiled the Terms of References (ToR's) for identified specialist studies, which are documented in Section 8.

#### 5.5.5 Draft scoping report - Obtaining comment and contributions

The DSR was made available for public review from 6 May 2025 to 5 June 2025.

This DSR was made available and distributed for comment as follows:

- Placed in public venues within the vicinity of the project area (these are listed in Table below);
- Electronic version on the Zitholele websites;

I&APs could comment on the report in various ways, such as submitting individual comments in writing or telephonically to the contact person at Zitholele.

**Table 5-7: List of public places where the Draft Scoping Report is available**

| Contact                    | Location  | Contact      |
|----------------------------|---|--------------|
| <b>Printed Copies</b>      |   |              |
| Ventersdorp Public Library |   | 018 264 8574 |
| Coligny Public Library     |   | 018 673 1007 |
| <b>Electronic Copies</b>   |   |              |
| Ms. Natasha Lalie          | <a href="https://zitholele.co.za/environmental/">https://zitholele.co.za/environmental/</a> under the heading National Route N14 - Section 12 from Coligny (km 0.0) to Ventersdorp (km 58.40), in North-West Province | 011 207 2060 |

#### 5.6 Final Scoping Report

All comments received during public review of the Draft Scoping Report will be included in the Comments and Responses Report (CRR) and attached as an Appendix to the Final Scoping Report (FSR).

The FSR will be submitted to the DFFE for consideration and decision, with regards to acceptance of the Plan of Study (PoS) for EIR.

## **5.7 Authority Consultation**

The Commenting Authority will be consulted with at the Scoping and EIR phases. There will be ongoing consultation with the Commenting Authorities (organs of state).



## **6 RECEIVING ENVIRONMENT**

### **6.1 Climate**

#### **6.1.1 Temperature**

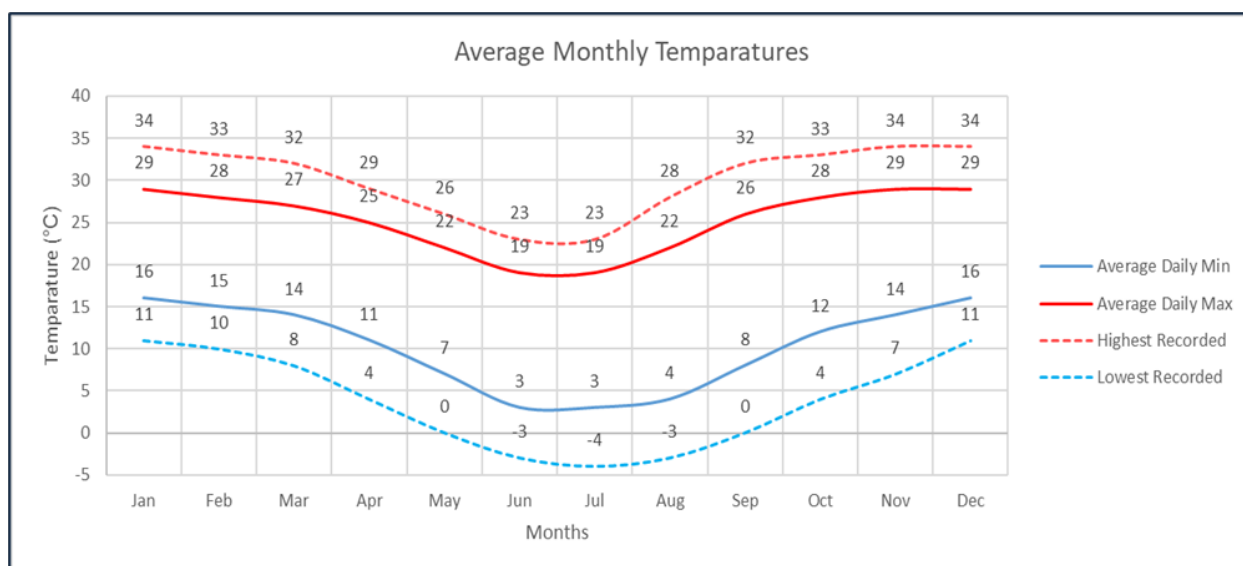
The prevailing climate in which the project is situated is as a subtropical highland climate, which can be described as warm and temperate with high summer rainfalls compared to winter periods typical of the highveld.

The historic temperatures for study area were derived from the Meteoblue Multi-Scale Model (MMSM) weather models which are based 30 years of daily weather model simulations. The hottest time of the year is between the months November and January, with the coldest months of the year during June and July. The average annual maximum temperature is 25.3°C and the average annual minimum is 10.3°C.

Table 6-1 and Figure 6-1 below presents the monthly average temperatures for Ventersdorp.

**Table 6-1: Average temperature data**

| Month     | Average Daily Min (°C) | Average Daily Max (°C) | Highest Recorded (°C) | Lowest Recorded (°C) |
|-----------|------------------------|------------------------|-----------------------|----------------------|
| January   | 16                     | 29                     | 34                    | 11                   |
| February  | 15                     | 28                     | 33                    | 10                   |
| March     | 14                     | 27                     | 32                    | 8                    |
| April     | 11                     | 25                     | 29                    | 4                    |
| May       | 7                      | 22                     | 26                    | 0                    |
| June      | 3                      | 19                     | 23                    | -3                   |
| July      | 3                      | 19                     | 23                    | -4                   |
| August    | 4                      | 22                     | 28                    | -3                   |
| September | 8                      | 26                     | 32                    | 0                    |
| October   | 12                     | 28                     | 33                    | 4                    |
| November  | 14                     | 29                     | 34                    | 7                    |
| December  | 16                     | 29                     | 34                    | 11                   |



**Figure 6-1: Average mean daily minimum and maximum temperatures (courtesy of meteoblue.com)**

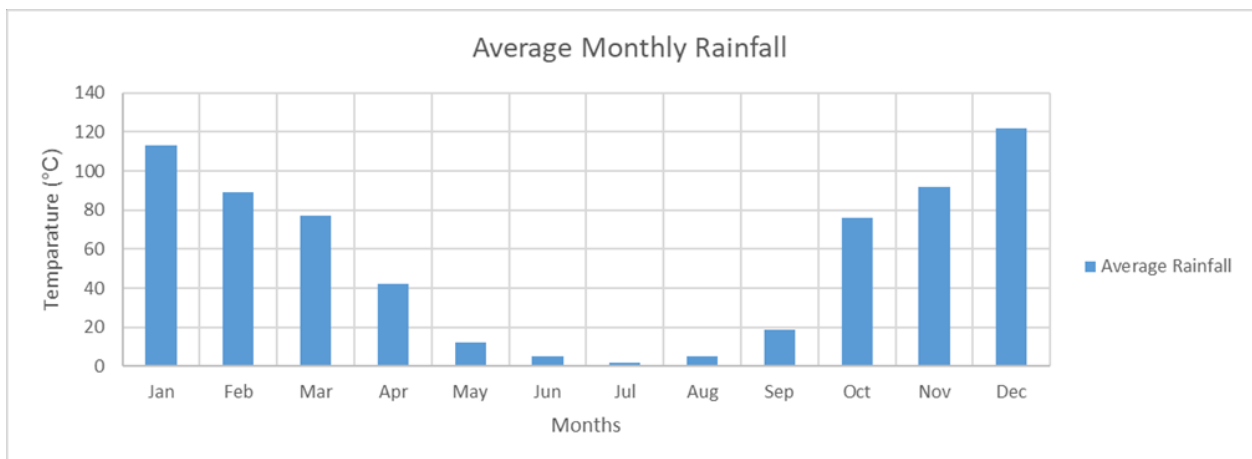
**6.1.2 Rainfall**

The rainfall data was obtained from Meteoblue (NEMS) weather models as mentioned above. The data obtained contains average monthly rainfall as shown Table 6-2. The average number of rain days is also shown in Figure 6-2 and Figure 6-3. The area could be classified as a summer rainfall area, with December as the month with the highest mean rainfall of 122 mm. May to September could be classified as the months in which the lowest rainfall occurs at less than 20mm.

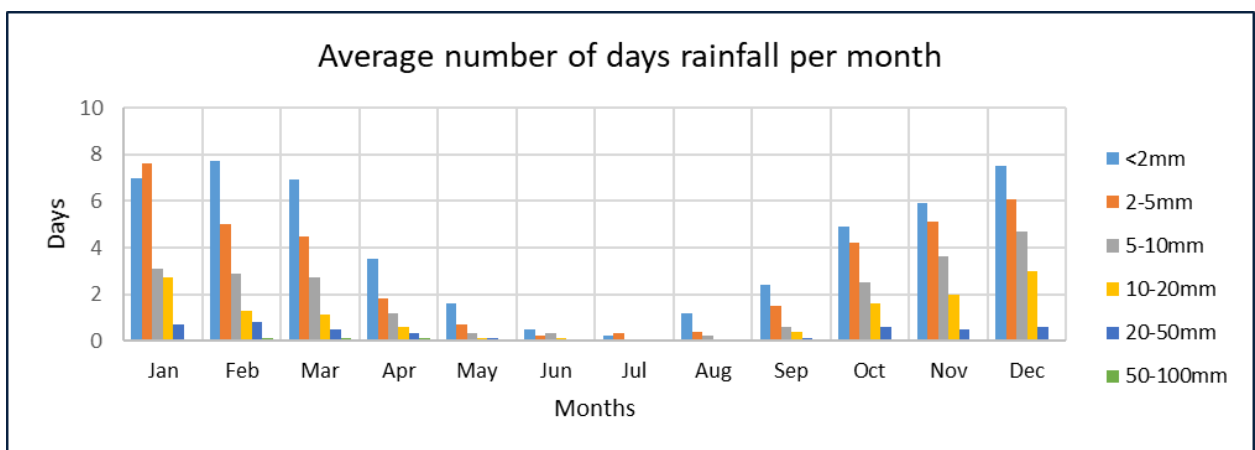
The rainfall data will be further evaluated along the scope of work during the detailed design phase to determine the “N” rainfall days to be provided for during construction in line with SANRAL’s pro-forma document.

**Table 6-2: Average historic precipitation data**

| Month     | Average number of days with <=2mm | Average number of days between 2mm and 5mm | Average number of days between 5-mm and 10mm | Average number of days between 10mm and 20mm | Average number of days between 20mm and 50mm | Average number of days between 50mm and 100mm |
|-----------|-----------------------------------|--|--|--|--|---|
| January   | 7                                 | 7.6  | 3.1  | 2.7  | 0.7  | 0   |
| February  | 7.7                               | 5  | 2.9  | 1.3  | 0.8  | 0.1   |
| March     | 6.9                               | 4.5  | 2.7  | 1.1  | 0.5  | 0.1   |
| April     | 3.5                               | 1.8  | 1.2  | 0.6  | 0.3  | 0.1   |
| May       | 1.6                               | 0.7  | 0.3  | 0.1  | 0.1  | 0   |
| June      | 0.5                               | 0.2  | 0.3  | 0.1  | 0  | 0   |
| July      | 0.2                               | 0.3  | 0  | 0  | 0  | 0   |
| August    | 1.2                               | 0.4  | 0.2  | 0  | 0  | 0   |
| September | 2.4                               | 1.5  | 0.6  | 0.4  | 0.1  | 0   |
| October   | 4.9                               | 4.2  | 2.5  | 1.6  | 0.6  | 0   |
| November  | 5.9                               | 5.1  | 3.6  | 2  | 0.5  | 0   |
| December  | 7.5                               | 6.1  | 4.7  | 3  | 0.6  | 0   |



**Figure 6-2: Average monthly rainfall**



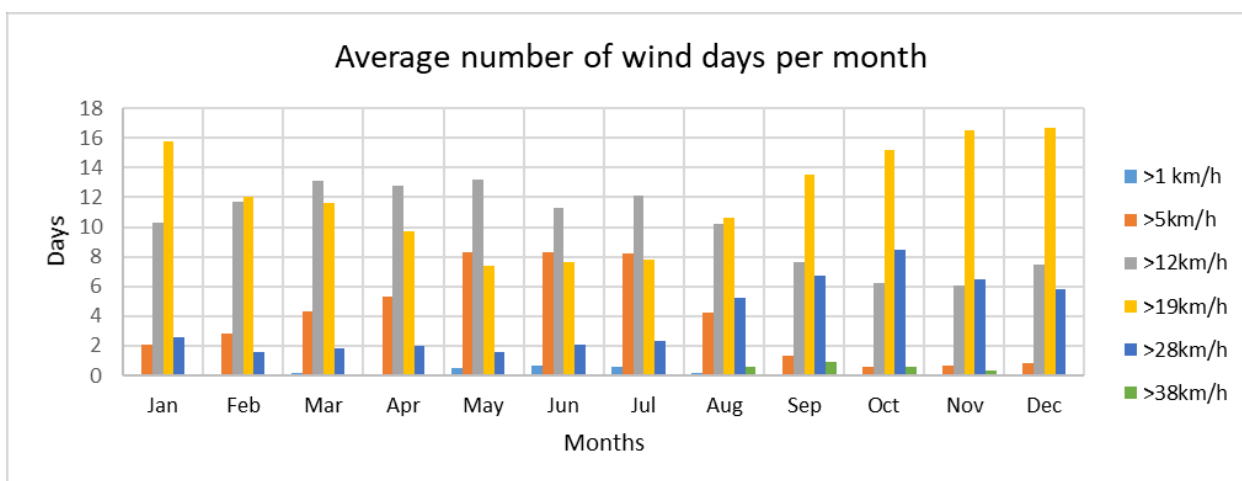
**Figure 6-3: Average monthly rain days for Ventersdorp**

### 6.1.3 Wind

The wind data was also obtained from Meteoblue (NEMS) weather models. The fastest average wind speed occurs during the autumn from August to November. The wind speed in the project area is not significant enough to impact the construction process. Table 6-3 and Figure 6-4 showcase the average historical wind data.

**Table 6-3: Number of days per wind speed**

| Month     | Average number of days with >1km/h | Average number of days >5km/h | Average number of days >12km/h | Average number of days >19km/h | Average number of days >28 | Average number of days >38 |
|-----------|------------------------------------|-------------------------------|--------------------------------|--------------------------------|----------------------------|----------------------------|
| January   | 0.0                                | 2.1                           | 10.3                           | 15.8                           | 2.6                        | 0.1                        |
| February  | 0.0                                | 2.8                           | 11.7                           | 12                             | 1.6                        | 0.0                        |
| March     | 0.2                                | 4.3                           | 13.1                           | 11.6                           | 1.8                        | 0.0                        |
| April     | 0.1                                | 5.3                           | 12.8                           | 9.7                            | 2                          | 0.1                        |
| May       | 0.5                                | 8.3                           | 13.2                           | 7.4                            | 1.6                        | 0.1                        |
| June      | 0.7                                | 8.3                           | 11.3                           | 7.6                            | 2.1                        | 0.0                        |
| July      | 0.6                                | 8.2                           | 12.1                           | 7.8                            | 2.3                        | 0.0                        |
| August    | 0.2                                | 4.2                           | 10.2                           | 10.6                           | 5.2                        | 0.6                        |
| September | 0.1                                | 1.3                           | 7.6                            | 13.5                           | 6.7                        | 0.9                        |
| October   | 0.0                                | 0.6                           | 6.2                            | 15.2                           | 8.5                        | 0.6                        |
| November  | 0.0                                | 0.7                           | 6.1                            | 16.5                           | 6.5                        | 0.3                        |
| December  | 0.0                                | 0.8                           | 7.5                            | 16.7                           | 5.8                        | 0.1                        |



**Figure 6-4: Number of days per wind for each month**

## 6.2 Topography and Drainage

The road traverses a rolling terrain in the eastbound direction, with an average slope of approximately 1.3% and a maximum slope of 6.9%. The elevation ranges between 1423 m and 1506 m as shown in Figure 6-5.

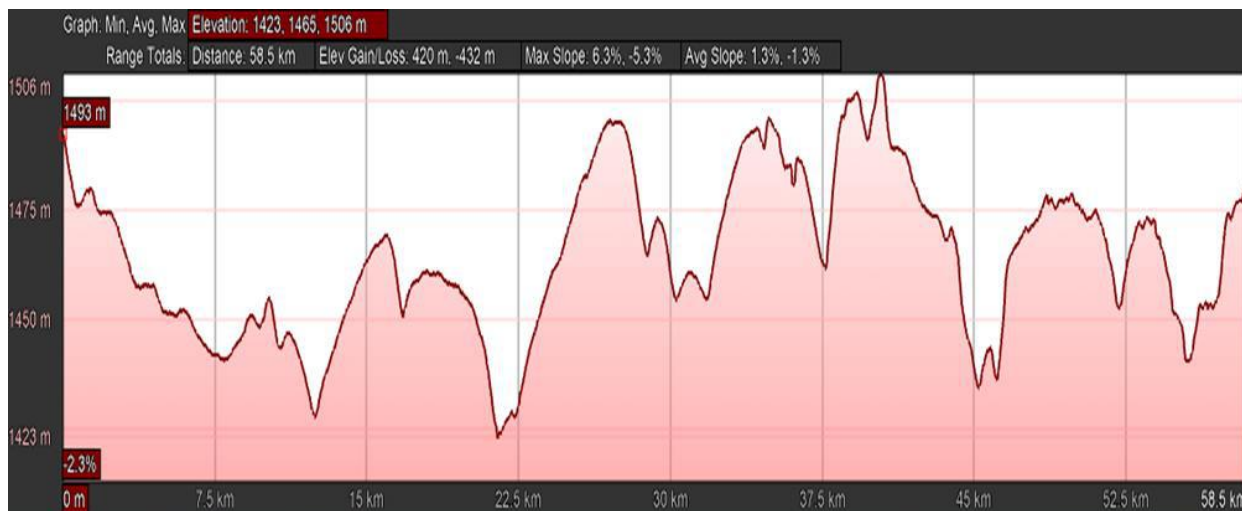


Figure 6-5: N14 Section 12 topography (courtesy of google earth)

## 6.3 Hydrology

There are several bridges along the N14-Section 12 that will be upgraded and new river bridges will be constructed across watercourses, namely the Taaibosspuit River and the Schoonspuit River. Several existing culverts crossing wetlands and watercourses will be upgraded and new culverts will be constructed at various points along the N14.

According to the web-based Screening Tool Report by the DFFE, the wetlands and aquatic sensitivity analysis for the N14 – Section 12 indicates low sensitivity for most of the study area, with the exception of areas along the study area falling within the Critical Biodiversity Area (CBA 1), Ecological Support Area (ESA) 1 and ESA 2, rivers, and wetlands of the Dry Highveld Grassland Bioregion (seep, depression and channelled valley bottom wetlands), which exhibit very high sensitivity. In some areas along the proposed upgrades, there are wetlands/drainage lines traversing or are located close to the study area. Tributaries of the Taaibosspuit and the Skoonspuit are traversed or are located close to the proposed road upgrade. Some of the wetlands and rivers falls within the National Freshwater Ecosystem Priority Area (NFEPA).

The impact of the proposed road upgrade and the establishment of proposed borrow pits on the receiving wetlands and watercourses, will be assessed by a Wetland/Aquatic Ecologist during the Environmental Impact Reporting (EIR) Phase and the findings thereof, will be included in the forthcoming Draft EIR that will be made available for public review and comment.

## **6.4 Geology**

### **6.4.1 Underlying Geology**

The primary geological information source guiding this assessment report is map sheet 2626 for West Rand (scale of 1:250 000) and its supporting geological information booklets (Council for Geoscience, 1986).

The eastern extremity of the route is underlain by Archean granites which are only exposed in the vicinity of Coligny. The granites are covered mainly by quaternary and younger rock types for much of the route section alignment (Figure 6-6 and legend in Table 6-4). These granites are overlain by a poorly exposed southeast dipping sedimentary sequence of the Witwatersrand Supergroup. The volcano-sedimentary succession of the Ventersdorp Supergroup unconformably overlies the Witwatersrand Supergroup and is interposed between the Archean granite, the Witwatersrand Supergroup and the younger Transvaal sequence. The Transvaal sequence comprises the Black Reef Formation forming the basal layer of the sequence and the overlying Malmani Subgroup or rocks. Preliminary observations of the geological conditions within the study area are provided in the paragraphs that follows. Further details regarding the impact of the proposed development on the underlying geological conditions, will be assessed by a Geotechnical Engineer in a Geotechnical Assessment that will be conducted at the EIR phase. The findings of the Geotechnical Assessment will be included in the forthcoming Draft EIR that will be made available for public review and comment.

#### **(a) Archean Granites**

The Archean granites are the oldest and the foundation on which the Witwatersrand Supergroup and younger formations rest. The granites are only exposed in the eastern extremity of the study area. According to Zircon analyses, these granites were emplaced around 3 050 Ma (Robb et al. 1992). The granites are well exposed in the Ventersdorp region (Westerdam Dome), and to a lesser extent, in the Coligny area (Coligny Dome), as most of it is covered by quaternary deposits (Figure 6-6). According to Robb et al. (1992), the granitoids in the Ventersdorp area range in composition from granodiorite to granite and are characterised by extensive weathering and veining. The veins comprise chlorite-pyrite-fluorite-calcite paragenesis. The granite in the Coligny area is characterised by high SiO<sub>2</sub> and low CaO (Robb et al., 1992).

#### **(b) Witwatersrand Supergroup**

There is only limited exposure of the Witwatersrand Supergroup in the study area. A small patch of the Witwatersrand rocks is observed near the Ventersdorp area and is covered/ separated by the younger volcano-sedimentary succession of the Ventersdorp Supergroup. The exposed sedimentary rocks of the Hospital Hill Subgroup (~2985 Ma) are dipping between 20° and 45° southeast and are characterised by a series of NE-SW trending faults.

### (c) Ventersdorp Supergroup

The rocks of the Ventersdorp Supergroup consist of lavas and pyroclastic rocks of the older Platberg Group (2709±4 Ma), which is overlain by a tuffaceous-sedimentary Bothaville Formation and the upper Allanridge Formation, which is of basaltic-andesitic and komatiitic lava flows. The Ventersdorp Supergroup is one of the least deformed late Archaean-early Proterozoic low-grade metamorphosed supracrustal sequences, and by their high resistance to weathering, they tend to form elevated ridges in the Northwest region. The Ventersdorp rocks in the study area are slightly folded and slightly tilted to the north <20° (see Figure 6-6).

### (d) Transvaal Supergroup

The Black Reef Formation (~2 600 Ma) forms a lower part of the Transvaal sequence. It occurs as a thin belt in this region and has gradational contact with the overlying Malmani Subgroup. The Malmani Subgroup (~2 500 Ma) comprises dolomite and chert and some remnants of chert breccia from the Rooihogte Formation. The main characteristic of dolomite is its dissolution over the years under slightly acidic conditions. The dissolution of dolomites results in the formation of underground caves and bedrock voids. These ultimately may result in the manifestation of sinkholes on the surface.

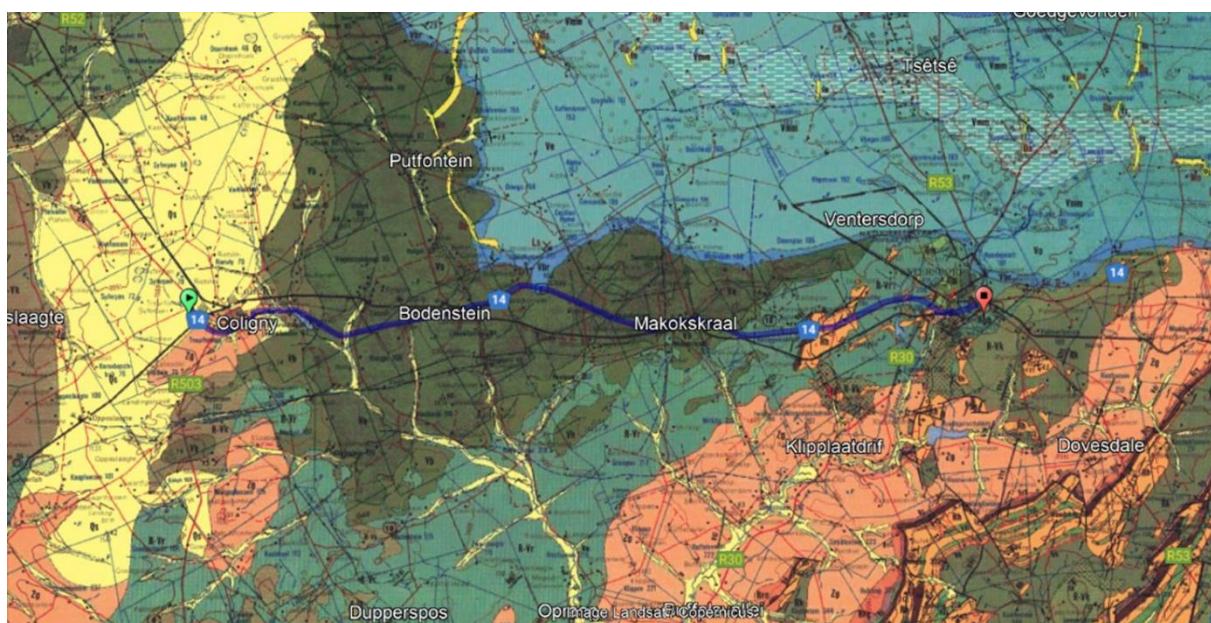


Figure 6-6: Regional Geological Plan (Extract of 2626 West Rand, 1:250 000 Geological Series)

**Table 6-4: Geology Legend**

| Age         | Supergroup    | Group     | Subgroup/Formation     | Map Symbol   | Lithology                                    | Rock Type  | Km                       |  |
|-------------|---------------|-----------|------------------------|--------------|--|--|--------------------------|--|
| Quaternary  |               |           |                        |              | Alluvium                                     | Soil deposits  |                          |  |
|             |               |           |                        |              | Soil Cover                                   | Soil deposits  |                          |  |
| Proterozoic | Transvaal     |           | Black Reef Fm          |              | Quartzite, conglomerate, shale               | Sedimentary  |                          |  |
| Archean     | Ventersdorp   |           | Allanridge             |              | Basaltic amygdaloidal lava                   | Volcanic igneous   |                          |  |
|             |               |           | Bothaville             |              | Quartzite, greywacke, conglomerate           | Sedimentary  |                          |  |
|             |               |           | Platberg               | Rietgat      |  | Basaltic lava, agglomerate, tuff   | Volcanic igneous         |  |
|             |               |           |                        | Kameeldoorns |  | Breccia, conglomerate, greywacke, shale, limestone, tuff, basaltic amygdaloidal lava | Sedimentary and volcanic |  |
|             | Witwatersrand | West Rand | Hospital Hill Subgroup |              | Quartzite, shale, banded ironstone, hornfels | Sedimentary  |                          |  |
|             |               |           |                        |              | Undifferentiated granite and gneiss          | Intrusive igneous  |                          |  |

### 6.5 Terrestrial Biodiversity

The study area falls within the Critically Endangered Ecosystem and falls within the endangered Vaal-Vet Sandy Grassland. The study area occurs within CBA 1, CBA 2, ESA 1 and ESA 2 of the North West Biodiversity Sector Plan and the National Protected Area Expansion Strategy (NPAES). These areas show very high sensitivity in terms of the terrestrial biodiversity theme. The road upgrades will mainly be located within the existing road reserve.

The project area is located in the Grassland Biome of South Africa and within the Rocky Highveld Grassland and Dry Sandy Highveld Grassland as shown in Figure 6-7. Species within grasslands are non grassy herbs (forbs), most of which are perennial plants with large underground storage structures. Frost, fire, and grazing maintain the herbaceous grass and forb layer, and ultimately prevent the establishment of tall woody plants (Draft biodiversity assessment). The Vaal-Vet Sandy Grassland is distributed South of Lichtenburg and Ventersdorp, stretching southwards to Klerksorp, Ieeudoringstad, Bothaville and to the Brandfort area north of Bloemfontein. Altitude 1220 – 1560m, generally 1260 – 1360m. Plains dominated land scape with some scattered, slightly irregular undulation plains and hill. Mainly low-tussock grasslands with and abundant karroid element. Dominance of *Themeda triandra* is an important feature of this vegetation unit. Locally low cover of *Triandra* and the associated increase in *Elionurus muticus*, *Cymbopogon pospischilii* and *Aristida congesta* is attributed to heavy grazing and/or erratic rainfall.

Further details of the impact of the proposed development on the receiving terrestrial biodiversity (*floral and faunal assemblages*) will be provided in the Terrestrial Biodiversity Impact Assessment that will be provided in the forthcoming Draft Environmental Impact Report (DEIR).



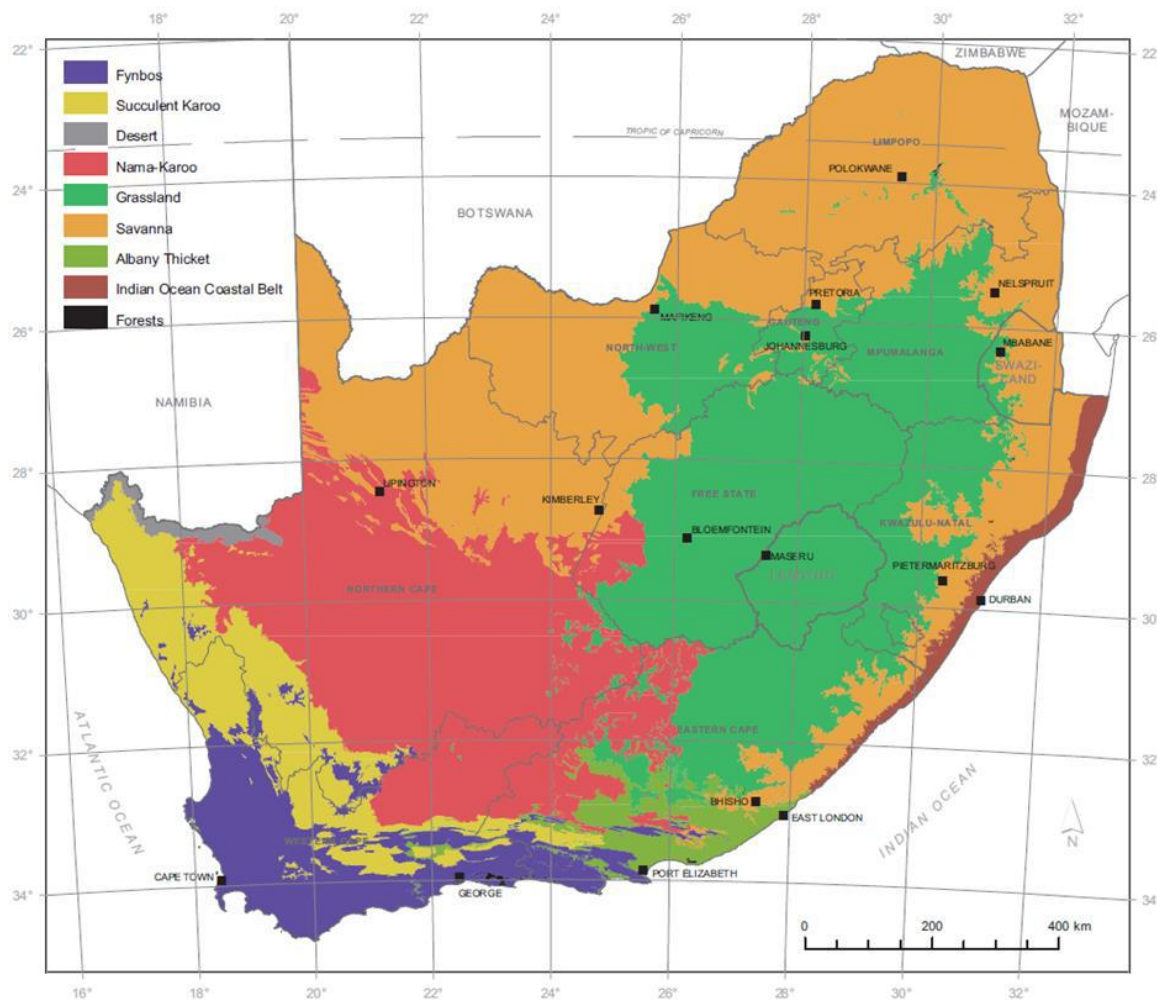


Figure 6-7: Biomes of South Africa, Lesotho, and Swaziland

### 6.6 Land Use

Land use along the study area is largely game and livestock farming including crop farming. Based on the observations on site and consideration of satellite imagery, some of the land adjacent to the sections to be widened to accommodate the road improvements, were agricultural land uses, such as maize farming and agricultural practises such as central pivots irrigation, ploughed land, areas under grazing etc were taking place along the N14. There are large expanses of open vacant veld adjacent to the existing N14.

Therefore, some agricultural land may be acquired for the new road reserve and borrow pits, in light of the improvements that are proposed. Since the upgrade will include limited widening and therefore loss of potential land, and due to the fact that the upgrade is for a national road in national interest, the sensitivity is anticipated to be low.

However, in terms of the Agriculture Assessment Protocol, a compliance statement is required even if the sensitivity is low. A Soil/Agricultural Specialist compliance statement is therefore required in terms of the Agriculture Specialist Assessment Protocol. The outcome of the findings of the Soil/Agricultural Compliance Statement will be provided in the forthcoming DEIR that will be made available for public comment.

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The outcome of the findings of the Soil/Agricultural Compliance Statement will be provided in the Basic Assessment Report.

### **6.7 Archaeological and Palaeontological Resources**

According to the DFFE Web-Based Screening Tool Report, very high sensitivity has been assigned to the archaeological and cultural heritage within the study area. A medium sensitivity rating has been assigned to the palaeontological resources within the study area.

The presence of heritage and paleontological resources will be confirmed by an Archaeological and Palaeontological Impact Assessment, respectively. These studies will be conducted during the EIR phase and the findings thereof, will be included in the forthcoming Draft EIR that will be made available for public review and comment.

### **6.8 Visual Environment**

Scenic value can be described as the reaction to aesthetics of the environment as perceived by an individual or a group and therefore it is a very subjective perception. The existing N14 is at ground level and is not visually intrusive on the sensitive receptors.

The nature of the development (road improvements) for majority of the road upgrade sections, will not alter the character, nor sense of place of the study area, as the N14 already exists. Furthermore, visual impacts will only occur during the construction period which will be of a short-term duration. With the implementation of mitigation measures to minimise the impacts on a limited number of sensitive receptors, occurring in proximity to the site for majority of the study area, the visual character of the site will not be compromised by views by these receptors. Furthermore, the road improvements will be at road level, thereby not impacting on views of the surrounding receptors.

However, there will be one section of the N14 at km20.66, where a raised road will be constructed over the existing railway line. This raised road may impact on the sensitive views of the nearby business/community. It is only for this section that a Landscape / Visual Impact Assessment is deemed necessary. Therefore, a Visual Impact Assessment will be undertaken at the EIR phase and the findings thereof, will be included in the forthcoming DEIR that will be made available for public review and comment.

### **6.9 Socio-Economic Environment**

The study area is located within two local municipalities as follows, viz, JB Marks Local Municipality and Ditsobotla Local Municipality.

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a) JB Marks Local Municipality<sup>3</sup>

JB Marks Local Municipality is part of Dr Kenneth Kaunda District Municipality.

It is the largest municipality of three in the district, making up almost half its geographical area. It was established by the amalgamation of the Ventersdorp and Tlokwe City Council Local Municipalities in August 2016.

The N12 route that connects Johannesburg and Cape Town via the city of Kimberley runs through the Municipality. The main railway route from Gauteng to the Northern and Western Cape also runs through one of the municipality's main cities, Potchefstroom. The City is 145km south-east of OR Tambo International Airport but has its own airfield, which can accommodate bigger aircraft and was formerly a military air base.

Gold mining is the dominant economic activity in the district, with Potchefstroom and Ventersdorp being the only exceptions. While Ventersdorp to the north-west of Potchefstroom focuses on agricultural activity, Potchefstroom's economic activity is driven by services and manufacturing. A big role-player in the provision of services in Potchefstroom is the world-class North-West University, which has its main campus in Potchefstroom.

Potchefstroom's industrial zone has many companies, focusing mainly on the industries of steel, food and chemicals, with big entities such as King Korn, Kynoch, Naschem and the Soya Protein Process (SPP) company. Within the city centre, the infrastructure of Potchefstroom supports roughly 600 businesses.

The main economic sectors are agriculture, community services, manufacturing, trade, finance, transport, and mining.

b) Ditsobotla Local Municipality<sup>4</sup>

The Ditsobotla Local Municipality is a Category B municipality situated within the Ngaka Modiri Molema District in the North West Province. It is one of the five municipalities in the district, making up almost a quarter of its geographical area. The seat of the local municipality is Lichtenburg. The municipality was established through the amalgamation of the former Lichtenburg, Coligny and Biesiesvlei Transitional Councils.

Its main attractions are cultural, heritage and agricultural museums; the burning vlei – a unique vlei consisting of the thick layers of subterranean peat that burnt for years, creating a rare natural

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<sup>3</sup> <https://municipalities.co.za/overview/1246/jb-marks-local-municipality>

<sup>4</sup> <https://municipalities.co.za/overview/1202/ditsobotla-local-municipality>

phenomenon; the Lichtenburg Game Breeding Centre; Eufees and Duch Roode Dams, situated between the CBD and Burgersdorp; and Molopo Oog/Wondergat.

The main towns in the municipality are Biesiesvlei, Coligny and Lichtenburg.

The main economic sectors are manufacturing (38.5%), agriculture (16.5%), wholesale and retail (7.4%).

## 7 POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS

The proposed project is anticipated to have impacts on the biophysical and socio-economic environment. The main purpose of the EIR process is to identify and evaluate potential impacts and to determine possible mitigation measures and management plans to address such impacts that may arise.

The potential environmental impacts identified during the Scoping Phase, which will be investigated further (*through Specialist Investigations*) in the EIR phase of the project, are summarised in **Table 7-1** below.

**Table 7-1: Potential Environmental Impacts to be investigated in the EIR Phase**

| Environmental Element     | Potential Impact  | Specialist Study                        |
|---------------------------|---|---|
| Geology                   | Potential destruction of geological strata caused by: <ul style="list-style-type: none"> <li>Cut and fill operations</li> </ul>   | Geotechnical Assessment                 |
| Soils and Land Capability | <p>Potential loss of soil and agricultural resources by:</p> <ul style="list-style-type: none"> <li>The proposed road improvements and borrow pits</li> </ul> <p>Potential impacts on soil by:</p> <ul style="list-style-type: none"> <li>Erosion during the construction phase over exposed areas</li> <li>Pollution of soils (i.e. hydrocarbons from construction / maintenance vehicles)</li> </ul> <p>Some soils will only be temporarily impacted by compaction during the construction phase and will be rehabilitated.</p> | Soils/Agricultural Compliance Statement |

| Environmental Element     | Potential Impact   | Specialist Study   |
|---------------------------|--|--|
| Wetlands and watercourses | <p>Potential disturbance and destruction of wetlands and watercourses caused by:</p> <ul style="list-style-type: none"> <li>• Traversing through the wetlands and watercourses</li> <li>• Erosion and sedimentation of wetlands and watercourses</li> </ul> <p>Reduction in surface water flow caused by:</p> <ul style="list-style-type: none"> <li>• Alteration of flow regimes causing run-off to be impeded or obstructed as a result of hardened surfaces</li> </ul> <p>Pollution of surface / ground water resources caused by:</p> <ul style="list-style-type: none"> <li>• Surface water runoff over exposed soils may result in the sedimentation or increased turbidity of surface water features.</li> <li>• Surface water and groundwater features may become contaminated by hydrocarbons from construction / maintenance vehicles and dust entrainment.</li> </ul> | Wetland/Aquatic Freshwater Impact Assessment   |
| Terrestrial Ecology       | <p>Potential for vegetation and habitat loss due to the following:</p> <ul style="list-style-type: none"> <li>• Fragmentation of habitat</li> <li>• Loss of species conservation importance</li> <li>• Possible displacement of species;</li> <li>• Propagation of alien invasive species;</li> <li>• Loss of biodiversity; and</li> <li>• Disruption of natural processes and functionality.</li> </ul>   | Terrestrial Biodiversity Impact Assessment   |
| Air Quality               | <p>Decrease in air quality during the construction phase, as a result of increased airborne emissions and dust particulates caused by:</p> <ul style="list-style-type: none"> <li>• Vehicles traversing the construction servitude during construction;</li> <li>• Dust from the exposed surfaces of the construction footprint;</li> <li>• Release of fumes from construction vehicles and equipment.</li> </ul>  | There may be air quality impacts ( <i>such as dust entrainment</i> ) during the construction phase, but with the implementation of dust suppression measures, this impact will be of low significance and of a short-term duration. Therefore, a specialist Air Quality Impact Assessment is not deemed necessary. |

| Environmental Element | Potential Impact   | Specialist Study   |
|-----------------------|--|--|
| Noise                 | <p>Potential negative impacts on the sensitive receptors due to the following:</p> <ul style="list-style-type: none"> <li>• Increased movement of construction crew and equipment</li> <li>• Construction activities of a short-term duration</li> </ul>   | <p>Limited noise may be generated during the construction phase that will be of a short- term duration. With the implementation of noise abatement measures, to minimise the impacts on a limited number of sensitive receptors, occurring in proximity to the site where the intersection upgrade and proposed borrow pits will occur, the significance of noise impacts will be minimised to low. A Specialist Noise Impact Assessment is therefore not deemed necessary due to the short-term duration of the construction activities and the noise mitigation measures that will be implemented.</p> |
| Social                | <p>Potential negative impacts to social well-being may be caused by:</p> <ul style="list-style-type: none"> <li>• Increased crime during the construction phase</li> <li>• Threat to safety of residents and occupiers near the site</li> </ul> <p>Potential positive impacts during construction, through the following:</p> <ul style="list-style-type: none"> <li>• Temporary job creation (direct and indirect) through sourcing of local labour</li> <li>• Skills transfer and capacity building</li> </ul> | <p>A limited number of jobs will be provided during the construction phase, which will be of a short- term duration that will have a positive impact on the local community residing the local municipal area.</p> <p>Comments received during public review of the DSR/DEIR will be included in the Comments and Responses Report of the FSR/FEIR. Comments received during the public review period will be addressed by the EAP directly with the Interested and Affected Parties (I&amp;APs).</p>  |

| Environmental Element                  | Potential Impact   | Specialist Study  |
|--|--|---|
| Visual impact                          | <p>Potential visual impacts on sensitive receptors, due to the proposed re-alignment of the N14 from km20.2 to km23.2, proposed new road over the existing railway line at km20.6 and a new river bridge at km21.4:</p> <ul style="list-style-type: none"> <li>Alteration of landscape character due to a change in land use of land affected by the project.</li> </ul> | <p>The nature of the development (road improvements) for majority of the road upgrade sections, will not alter the character, nor sense of place of the study area, as the N14 already exists. Furthermore, visual impacts will only occur during the construction period which will be of a short-term duration. With the implementation of mitigation measures to minimise the impacts on a limited number of sensitive receptors, occurring in proximity to the site for majority of the study area, the visual character of the site will not be compromised by views by these receptors. Furthermore, the road improvements will be at road level, thereby not impacting on views of the surrounding receptors.</p> <p>However, there will be one section of the N14 at km20.66, where a raised road will be constructed over the existing railway line. This raised road may impact on the sensitive views of the nearby business/community. It is only for this section that a Landscape / Visual Impact Assessment is deemed necessary.</p> |
| Traffic                                | <p>Potential positive impacts on traffic flows during the operational phase, due to the following:</p> <ul style="list-style-type: none"> <li>Projected improvement in the Level of Service (LoS) along the upgraded Section 12 of N14.</li> </ul>   | Traffic Impact Assessment   |
| Heritage and Paleontological Resources | <p>Potential loss of significant symbols of heritage, culture and fossil resources as a result of the proposed road upgrade and establishment of borrow pits.</p>  | Heritage and Palaeontological Impact Assessment   |



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## **8 PLAN OF STUDY FOR EIA**

### **8.1 Introduction**

The EIR phase is the second phase of the project, which is aimed at assessing the significance of the environmental impacts of the proposed development. The Scoping Phase of the environmental process determines that more information on certain aspects of the development is required. As a follow up to the Scoping phase, a comprehensive EIR will be required.

In accordance with the application procedure of the NEMA, 1998 (Act No. 107 of 1998) as amended and the Environmental Impact Assessment Regulations of 2014 (as amended), a number of potential environmental impacts (biophysical, social-economic and cultural) were identified during the Scoping phase. All potentially significant and cumulative impacts will be investigated and assessed within the EIR phase of the project through Specialist Studies. Mitigatory measures for each significant impact are to be determined. Details of the Public Participation Process (PPP) to be undertaken at the EIR phase will be described. Impacts and issues raised during the Scoping Phase will be assessed and addressed at the EIR phase. Knowledge gaps will be identified and descriptions of the arrangements for monitoring and management of the environmental impacts will be given.

This Plan of Study (PoS) for the EIR outlines the procedure to be followed and methods to be employed in investigating and assessing all the issues identified in the Scoping Phase.

Zitholele has as such compiled this PoS for the EIR, which outlines the sequence of actions to be taken, in order to complete the EIR.

The Plan of Study for EIR is based on the findings and recommendations of the Scoping Report and the related process. Mitigation measures recommended in the EIR phase will also be included in the Environmental Management Programme (EMPr), which will form part of the EIR. The Plan of Study is set out below describing the manner in which Zitholele, as the appointed EAP, intends undertaking the detailed EIR phase of the S&EIR process.

### **8.2 Purpose of the plan of Study for EIR**

The Plan of Study for the EIR phase sets out the proposed approach to the EIR phase. The following requirements of Regulation 28 of Government Notice R. 982 promulgated in terms of section 24 of NEMA have been considered in compiling this Plan of Study:

- i. A description of the tasks that will be undertaken as part of the Environmental Impact Reporting phase, including any specialist reports or specialised processes, and the manner in which such tasks will be undertaken;
- ii. An indication of the stages at which the Competent Authority will be consulted;
- iii. A description of the proposed method of assessing the environmental issues and alternatives, including the option of not proceeding with the activity;

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- iv. Comments and issues raised by the I&APs and key stakeholders during the Public Participation Process will be collected, processed and addressed in the Comments and Responses Report, which will form part of the Scoping Report and EIR;
- v. Particulars of the Public Participation Process that will be conducted during the Environmental Impact Reporting process.

The Plan of Study for EIR thus aims to:

- a) Describe how the EIR phase of the project will be conducted ;
- b) Provide the Terms of Reference for Specialists Studies;
- c) Provide the impact assessment methodology to be used to rate impacts; and
- d) Indicate deliverables of the EIR phase and the proposed timeframe.

### **8.3 Terms of Reference for Specialist Studies**

A team of specialists will be involved in undertaking the following Specialist Studies during the detailed Environmental Impact Reporting (EIR) phase of the process:

- Agricultural Compliance Statement;
- Visual Impact Assessment;
- Archaeological and Cultural Heritage Impact Assessment;
- Palaeontological Impact Assessment;
- Terrestrial Biodiversity Impact Assessment (including Plant Species Assessment and Animal Species Assessment);
- Aquatic Biodiversity Impact Assessment;
- Traffic Impact Assessment;
- Geotechnical Assessment;

#### **8.3.1 ToR: Agricultural Compliance Statement**

The Agricultural Compliance Statement will address the following:

This assessment must be conducted in accordance with the amendments to the Environmental Impact Assessment Regulations. 2014 (GNR 326, 7 April 2017) of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA). The approach has taken cognisance of the published Government Notices (GN) 320 in terms of NEMA, dated 20 March 2020: "Procedures for the Assessment and Minimum Criteria for Reporting on Identified Environmental Themes in terms of Sections 24(5)(a) and (h) and 44 of the National Environmental Management Act, 1998, when applying for Environmental Authorisation" (Reporting Criteria).

In addition to the above requirements, the Agricultural Impact Assessment must address the following as per the protocol dated 20 March 2020, for the specialist assessment and minimum report content requirements for environmental impacts on agricultural resources:

- Undertake the Site Sensitivity Verification and minimum report content requirements, as per Section 2 of the above protocol.
- Provide an Agricultural Agro-Ecosystem Specialist Assessment for very high and high sensitivity ratings as per Section 3 of the above protocol. The report is to cover all the requirements listed in Table 1: Assessment and reporting of impacts on agricultural resources of the above protocol.
- Provide an Agricultural Compliance Statement for medium and low sensitivity ratings as per Section 3 of the above protocol. The report is to cover all the requirements listed in Table 1: Assessment and reporting of impacts on agricultural resources of the above protocol.
- Provide a Rehabilitation Plan for the disturbance of the construction footprint and the proposed borrow pit sites.

### **8.3.2 ToR: Visual Impact Assessment**

The Visual Impact Assessment will address the following (*note this study is applicable to the proposed road over the railway line to accommodate the re-alignment of the N14*):

Kindly note that the Specialist Report is to include a checklist with reference to the section of the report that addresses how the report conforms to Government Notice Regulation (GNR) No. 982 of Appendix 6 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) and the Environmental Impact Assessment (EIA) Regulations of 2014 (as amended) i.e. Requirements for Specialist Studies. Refer to the requirements in Appendix 1 attached that must be generated in tabular format with the executive summary of the Specialist Report.

In addition to the above requirements, the Visual Impact Assessment must address the following for construction and operational phase impacts:

- Determine the extent of the study area.
- Conduct a site visit (site analysis).
- Understand the proposed project, provide a description of the receiving environment.
- To identify and describe the landscape character of the surrounding area and to identify the elements of particular visual value and quality that could be affected by the proposed project.
- To undertake a broad photographic/modelling simulation of the proposed development in order to identify the potential landscape and visual impacts.
- To identify the landscape and visual receptors in the study area that will be affected by the proposed project and assess their sensitivity (viewshed analysis);
- To identify views of significance (sensitivity, severity, significance) of the landscape and visual impacts (distance of views, number of affected viewers, duration of views, degree of intrusion etc.).
- Establish the view catchment area, view corridors, viewpoints and receptors.
- To make recommendations of mitigation measures to reduce and/or alleviate the potential adverse landscape and visual impacts during the construction phase e.g. operational and

maintenance of the construction sites, positioning of construction camps and material stockpiles, dust suppression and long-term maintenance of the landscaped areas.

- Identify views that are likely to be highly affected from the viewpoints and generate 3D images showing the visual impact from these viewpoints.
- Assess both the existing “sense of place” and the “sense of place” inherent in the proposed development.
- Establish the Visual Envelope, (or View Shed); the Zone of Visual Influence; viewer incidence and distance, and screening elements (where required).
- Provide a Specialist Assessment describing the above. In addition, the assessment must identify and predict the anticipated visual impacts associated with the proposed project. A standalone baseline report must be compiled and submitted to Zitholele.
- Provide input into layouts for the Preliminary Design Layout.
- Compile a Visual Impact Assessment that assesses the potential direct, indirect impacts and cumulative impacts of the proposed project (including alternatives) using Zitholele Consulting’s standard Impact Assessment methodology, which will be provided to all specialists in due course.
- The Visual Impact Assessment report must include, amongst other, a concise Executive Summary, relevant legislation applicable to the study, demonstrate compliance with specialist specific norms and standards, guidelines and policies, as well as information and geographic (GIS) data sources utilised during the study.
- Provide Zitholele with any geographic data compile by the specialist during the study in shapefile (.shp) and Google Earth file (.kmz or .kml) formats.
- Provide mitigation/management measures to reduce the negative impacts.
- Together with other specialist consultants, provide responses to comments directly related to the Impact Assessment, including addressing issues raised by Interested and Affected Parties (I&AP’s) during the Scoping and EIR process.
- Provide an opinion as to whether the proposed activity, activities or portions thereof should be authorised, with recommendations for any avoidance, management and mitigation measures for identified impacts.
- Provide a concise impact assessment conclusion and reasoned opinion based on the findings of the assessment.

### **8.3.3 ToR: Archaeological and Cultural HIA**

Kindly note that the Specialist Report is to include a checklist with reference to the section of the report that addresses how the report conforms to Government Notice Regulation (GNR) No. 982 of Appendix 6 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) and the Environmental Impact Assessment (EIA) Regulations of 2014 (as amended) i.e. Requirements for Specialist Studies. Refer to the requirements in Appendix 1 attached that must be generated in tabular format with the executive summary of the Specialist Report.

In addition to the above requirements, the following must be undertaken:

- Undertake a Phase 1: Archaeological and Cultural Heritage Impact Assessment (HIA) must be conducted to fulfil the requirements of Section 38 (1) of the National Heritage Resources Act (No 25 of 1999). The Archaeological and Cultural HIA must include the following:

- 
- Conducting a detailed desk-top study to identify all archaeological, cultural, and historic sites along the proposed road upgrade.
  - Conduct appropriate physical cultural properties field work and survey to verify results of desktop investigation.
  - Document (GPS coordinates and map) all archaeological and heritage sites, objects and structures and physical cultural properties identified within the project's receiving environment.
  - Compile a Phase 1: Archaeological and Cultural Heritage Impact Assessment Report which would include the following:
    - ✓ Production of a Specialist Assessment which identifies archaeological, cultural, and historic sites within the affected development areas.
    - ✓ Assess the sensitivity and significance of archaeological remains within the affected development areas.
    - ✓ Provide spatial representation (maps) showing the sensitivity of heritage resources that were identified.
    - ✓ Provide input into alternative layouts for the Preliminary Design Layout.
    - ✓ Compile a Phase 1: Archaeological and Cultural Heritage Impact Assessment that assesses the potential direct, indirect impacts and cumulative impacts of the proposed project (including alternatives) using Zitholele Consulting's standard Impact Assessment methodology.
    - ✓ The Phase 1: Archaeological and Cultural Heritage Impact Assessment must include, amongst other, a concise Executive Summary, relevant legislation applicable to the study, demonstrate compliance with specialist specific norms and standards, guidelines and policies, as well as information and geographic (GIS) data sources utilised during the study.
    - ✓ Provide Zitholele with any geographic data compile by the specialist during the study in shapefile (.shp) and Google Earth file (.kmz or .kml) formats.
    - ✓ Provide mitigation options with respect to the proposed project layout and alternatives impacting on sensitive heritage resources.
    - ✓ Estimate and evaluate the potential impacts of the proposed construction, operation, and maintenance of the proposed development on archaeological, cultural and historic sites in the proposed project receiving areas.
    - ✓ Provide appropriate recommendation of mitigation measures that may add positive impacts, while reducing the identified negative impacts on archaeological, cultural and historic sites in the proposed project receiving areas.
    - ✓ The recommendations should be applicable enough to effectively guide the compliance authorities in issuing a decision regarding the authorisation of the proposed development.
    - ✓ Consideration of the Provincial Heritage Agency and SAHRA, as well and international best practices guidelines; and Development Heritage Management Planning guideline: "Guideline for involving heritage stakeholders in the processes".
  - Provide responses to comments directly related to the Impact Assessment, including addressing issues raised by Interested and Affected Parties (I&AP's) during the S&EIR process.

- 
- o Provide a concise impact assessment conclusion and reasoned opinion based on the findings of the assessment.

#### **8.3.4 ToR: Palaeontological Impact Assessment**

Following the “South African National Heritage Resources Agency (SAHRA) Application for Permit (APM) Guidelines: Minimum Standards for the Archaeological & Palaeontological Components of Impact Assessment Reports” the aims of the palaeontological impact assessment are as follows:

- To identify exposed and subsurface rock formations that are considered to be palaeontologically significant.
- To assess the level of palaeontological significance of these formations.
- To comment on the impact of the development on these exposed and/or potential fossil resources.
- To make recommendations as to how the developer should conserve or mitigate damage to these resources.
- Provide responses to comments directly related to the Impact Assessment, including addressing issues raised by Interested and Affected Parties (I&AP's) during the S&EIR process.
- Provide a concise impact assessment conclusion and reasoned opinion based on the findings of the assessment.

The Specialist is required to do the following:

- Provide a Specialist Assessment describing the above and address the key findings. The Specialist Assessment must identify and assess potential impacts of construction activities on palaeontological resources.
- Assess the sensitivity and significance of archaeological remains within the affected development areas.
- Provide spatial representation (maps) showing the sensitivity of heritage resources that were identified.
- Provide input into alternative layouts for the Preliminary Design Layout.
- Compile a Palaeontological Impact Assessment that assesses the potential direct, indirect impacts and cumulative impacts of the proposed project (including alternatives) using Zitholele Consulting's standard Impact Assessment methodology.
- The Palaeontological Impact Assessment Report must include, amongst other, a concise Executive Summary, relevant legislation applicable to the study, demonstrate compliance with specialist specific norms and standards, guidelines and policies, as well as information and geographic (GIS) data sources utilised during the study.
- Provide Zitholele with any geographic data compile by the specialist during the study in shapefile (.shp) and Google Earth file (.kmz or .kml) formats.
- Provide mitigation options with respect to the proposed project layout and alternatives impacting on sensitive heritage resources.
- Estimate and evaluate the potential impacts of the proposed construction, operation, and maintenance of the proposed development on archaeological, cultural and historic sites in the proposed project receiving areas.

- Provide appropriate recommendation of mitigation measures that may add positive impacts, while reducing the identified negative impacts on archaeological, cultural and historic sites in the proposed project receiving areas.
- The recommendations should be applicable enough to effectively guide the compliance authorities in issuing a decision regarding the authorisation of the proposed development.
- Provide a concise impact assessment conclusion and reasoned opinion based on the findings of the assessment.

### **8.3.5 ToR: Terrestrial Biodiversity Impact Assessment**

This assessment must be conducted in accordance with the amendments to the Environmental Impact Assessment Regulations, 2014 (No. 326, 7 April 2017) of the National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998). The approach has taken cognisance of the recently published Government Notice 320 in terms of NEMA dated 20 March 2020 as well as the Government Notice 1150 in terms of NEMA dated 30 October 2020: "Procedures for the Assessment and Minimum Criteria for Reporting on Identified Environmental Themes in terms of Sections 24(5)(a) and (h) and 44 of the National Environmental Management Act, 1998, when applying for Environmental Authorisation". The National Web based Environmental Screening Tool has characterised the terrestrial biodiversity theme for the area as 'Very High' sensitivity (National Environmental Screening Tool, 2024).

The Specialist must include a checklist in the Executive Summary that indicates where the information to be included (as per GN 320, 20 March 2020) is referenced in the Specialist Report. The following procedure must be undertaken:

#### **a) Site Verification Assessment**

Undertake a site sensitivity verification assessment in accordance with the Procedures for the Assessment and Minimum Criteria for Reporting on Identified Environmental Themes in terms of Sections 24(5)(a) and (h) and 44 of the National Environmental Management Act, 1998, when applying for Environmental Authorisation (Government Notice Regulation No. 320 of 20 March 2020).

The site sensitivity verification must be undertaken through the use of:

- (a) a desk top analysis, using satellite imagery;
- (b) a preliminary on-site inspection; and
- (c) any other available and relevant information.

The outcome of the site sensitivity verification must be recorded in the form of a report that:

- (a) confirms or disputes the current use of the land and environmental sensitivity as identified by the screening tool;
- (b) contains a motivation and evidence (e.g. photographs) of either the verified or different use of the land and environmental sensitivity; and
- (c) is submitted together with the relevant assessment report prepared in accordance with the requirements of the Environmental Impact Assessment Regulations.

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The Specialist must compile a Terrestrial Biodiversity Specialist Assessment or a Terrestrial Biodiversity Compliance Statement in accordance with the requirements of Table 1: Assessment and Reporting of Impacts on Terrestrial Biodiversity.

b) Terrestrial Biodiversity Specialist Assessment

If the Specialist identifies very high sensitivity rating for terrestrial biodiversity features, the Specialist Report must be compiled that covers Sections 2 (2.1 to 2.2) and Sections 2.3 of the SPECIALIST ASSESSMENT AND MINIMUM REPORT CONTENT REQUIREMENTS as outlined in the Protocol.

The Specialist Report must describe the vegetation in the surrounding landscape and address the key findings. The Specialist Report must identify and assess potential impacts of ecologically sensitive areas, and identify areas of low sensitivity.

Provide spatial representation (maps) showing the ecological sensitivity (low, medium and high) within the study area, in relation to the status quo.

Provide input into alternative layouts (following the mitigation hierarchy) for the Preliminary Design Layout.

The Terrestrial Biodiversity Specialist Assessment Report must contain, as a minimum, the information contained within Section 3.1 of the Protocol.

The Terrestrial Biodiversity Specialist Assessment Report must be compiled that assesses the potential direct, indirect impacts and cumulative impacts of the proposed project (including alternatives) using Zitholele Consulting's standard Impact Assessment methodology.

The Terrestrial Biodiversity Specialist Assessment Report must include, amongst others, a concise Executive Summary, relevant legislation applicable to the study, demonstrate compliance with specialist specific norms and standards, guidelines and policies, as well as information and geographic (GIS) data sources utilised during the study.

Provide Zitholele with any geographic data compile by the specialist during the study in shapefile (.shp) and Google Earth file (.kmz or .kml) formats.

Provide mitigation options with respect to the proposed project layout and alternatives impacting on sensitive areas.

Provide mitigation options with respect to the long-term management of vegetation affected.

Provide responses to comments directly related to the Impact Assessment, including addressing issues raised by Interested and Affected Parties (I&AP's) during the Environmental process.



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Comment on whether or not biodiversity processes would be affected by the proposed project, and if so, how these would be affected.

Provide a concise impact assessment conclusion and reasoned opinion based on the findings of the assessment.

Provide a Rehabilitation Plan with a monitoring programme.

If the site verification assessment identifies low sensitivity rating for terrestrial biodiversity features, a Terrestrial Biodiversity Compliance Statement must be compiled in accordance with Section 4 of the Protocol.

c) Terrestrial Animal Species

Where applicable, the PROCEDURES FOR THE ASSESSMENT AND MINIMUM CRITERIA FOR REPORTING ON IDENTIFIED ENVIRONMENTAL THEMES IN TERMS OF SECTIONS 24(5)(a) AND (h) AND 44 OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998, WHEN APPLYING FOR ENVIRONMENTAL AUTHORISATION (Government Notice Regulation No. NO. 1150 of 30 October 2020) in terms of the Protocol for the specialist assessment and minimum report content requirements for environmental impacts on terrestrial animal species must be followed, in terms of compiling site sensitivity verification assessment in accordance with Section 2 of the Protocol: SITE SENSITIVITY VERIFICATION AND MINIMUM REPORT CONTENT REQUIREMENTS.

The Specialist must compile a Terrestrial Animal Species Specialist Assessment or a Terrestrial Animal Species Compliance Statement in accordance with the requirements of Table 1: Assessment and Reporting of Impacts on Terrestrial Animal Species.

If the Specialist identifies very high to high sensitivity rating for terrestrial animal species, a Terrestrial Animal Species Specialist Assessment must be compiled that covers Sections 2 (2.1 to 2.2) and Sections 2.3 of the SPECIALIST ASSESSMENT AND MINIMUM REPORT CONTENT REQUIREMENTS as outlined in the Protocol.

If the Specialist identifies medium sensitivity rating for terrestrial animal species where Species of Conservation Concern (SCC) are found on site or have been confirmed to be likely present, a Terrestrial Animal Species Specialist Assessment must be submitted in accordance with the requirements specified for “very high” and “high” sensitivity in the protocol.

Similarly, where no SCC are found on site during the site inspection or the presence is confirmed to be unlikely, a Terrestrial Animal Species Compliance Statement must be submitted.

Where LOW SENSITIVITY RATING – for terrestrial animal species are identified by the Specialist, A Terrestrial Animal Species Compliance Statement must be compiled in accordance with Section 5 and 6 of the Protocol.

d) Terrestrial Plant Species

Where applicable, the PROCEDURES FOR THE ASSESSMENT AND MINIMUM CRITERIA FOR REPORTING ON IDENTIFIED ENVIRONMENTAL THEMES IN TERMS OF SECTIONS 24(5)(a) AND (h) AND 44 OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998, WHEN APPLYING FOR ENVIRONMENTAL AUTHORISATION (Government Notice Regulation No. NO. 1150 of 30 October 2020) in terms of the Protocol for the specialist assessment and minimum report content requirements for environmental impacts on terrestrial plant species must be followed, in terms of compiling site sensitivity verification assessment in accordance with Section 2 of the Protocol: SITE SENSITIVITY VERIFICATION AND MINIMUM REPORT CONTENT REQUIREMENTS.

The Specialist must compile a Terrestrial Plant Species Specialist Assessment or a Terrestrial Plant Species Compliance Statement in accordance with the requirements of Table 1: Assessment and Reporting of Impacts on Terrestrial Animal Species.

If the Specialist identifies very high to high sensitivity rating for terrestrial plant species, a Terrestrial Plant Species Specialist Assessment must be compiled that covers Sections 2 (2.1 to 2.2) and Sections 2.3 of the SPECIALIST ASSESSMENT AND MINIMUM REPORT CONTENT REQUIREMENTS as outlined in the Protocol.

If the Specialist identifies medium sensitivity rating for terrestrial plant species where Species of Conservation Concern (SCC) are found on site or have been confirmed to be likely present, a Terrestrial Plant Species Specialist Assessment must be submitted in accordance with the requirements specified for “very high” and “high” sensitivity in the protocol.

Similarly, where no SCC are found on site during the site inspection or the presence is confirmed to be unlikely, a Terrestrial Plant Species Compliance Statement must be submitted.

Where LOW SENSITIVITY RATING – for terrestrial plant species are identified by the Specialist, A Terrestrial Plant Species Compliance Statement must be compiled in accordance with Section 5 and 6 of the Protocol.

In addition to the above, the Floral Component of the Specialist Study is to address the following:

- Conduct a desktop study and field survey to assess and describe the vegetation of the study area that will potentially be affected by the proposed development.
- Identify and describe biodiversity patterns at community and ecosystem level (main vegetation type, plant communities in vicinity and threatened/ vulnerable ecosystems species), at species level (species of conservation concern as listed in the Red List of South African Plants – [redlist.sanbi.org](http://redlist.sanbi.org); presence of alien species) and in terms of significant landscape features.
- Must include the services of a species specialist where Species of Conservation Concern (SCC) is identified and must be assessed if the specialist does not have the expertise in-house.

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- Provide a Specialist Assessment describing the vegetation in the surrounding landscape and address the key findings. The Specialist Assessment must identify and assess potential impacts of ecologically sensitive areas, and identify areas of low sensitivity.
  - Provide spatial representation (maps) showing the ecological sensitivity (low, medium and high) within the study area, in relation to the status quo.
  - Provide input into alternative layouts (following the mitigation hierarchy) for the Preliminary Design Layout.
  - Compile a Biodiversity Impact Assessment (addressing the floral components) that assesses the potential direct, indirect impacts and cumulative impacts of the proposed project (including alternatives) using Zitholele Consulting's standard Impact Assessment methodology.
  - The Biodiversity (floral) Impact Assessment report must include, amongst other, a concise Executive Summary, relevant legislation applicable to the study, demonstrate compliance with specialist specific norms and standards, guidelines and policies, as well as information and geographic (GIS) data sources utilised during the study.
  - Provide Zitholele with any geographic data compile by the specialist during the study in shapefile (.shp) and Google Earth file (.kmz or .kml) formats.
  - Provide mitigation options with respect to the proposed project layout and alternatives impacting on sensitive areas.
  - Provide mitigation options with respect to the long-term management of vegetation affected.
  - Provide responses to comments directly related to the Impact Assessment, including addressing issues raised by Interested and Affected Parties (I&AP's) during the S&EIR process.
  - Comment on whether or not biodiversity processes would be affected by the proposed project, and if so, how these would be affected.
  - Guidelines and recommendations for environmental assessment from Cape Nature and the Botanical Society must be followed, along with those published by the Department of Environmental Affairs and Development Planning (Brownlie, 2005, De Villiers et al. 2005).
  - Provide a concise impact assessment conclusion and reasoned opinion based on the findings of the assessment.

In addition to the Specialist Requirements, the Faunal Component of the Specialist Study is to address the following:

- The assessment must provide a description of the dominant bird, mammal, reptile and amphibian species occurring in the area as well as those expected to occur, and must include faunal and avifaunal habitat diversity. It must also describe the threatened, endemic, rare or protected bird, mammal, reptile and amphibian species, and/or potential habitats that occur in the study area for these species.
- Must include the services of a species specialist where Species of Conservation Concern (SCC) is identified and must be assessed if the specialist does not have the expertise in-house.
- The methodology for the assessment must entail a preliminary desktop assessment followed by a field assessment, and must be undertaken as follows:

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- Review of all relevant literature including distribution data of fauna, avifauna and vegetation types / habitat types expected to occur on the site, as well as the conservation status of the vegetation types and faunal species.
  - Review of any available information layers within the GIS e.g. Land Cover, relevant systematic biodiversity plan, Protected Areas.
  - Analysis of Google Earth imagery to determine broad habitat types and land use (i.e. transformed areas, riparian areas, cliffs, exotic plantations etc.) and to plan the field survey.
  - Desktop analysis to ascertain the location of habitats for sensitive faunal species as well as the information described above.
  - Field survey of the proposed road upgrade and immediate surroundings; and
  - Field survey to confirm the presence or absence of threatened or protected as well as sensitive faunal species on the study site and immediate surrounds or to identify suitable habitat for these species.
  - Provide a Terrestrial Biodiversity Compliance Statement describing the faunal and avifaunal assemblages that are expected to occur in the area to the actual communities present within the study site and address the key findings. The Specialist Assessment must describe the broad vegetation communities and faunal and avifaunal habitats identified during the field survey and their ecological connectivity, and identify areas of low sensitivity.
  - Provide a spatial representation (maps) of the sensitivity of the faunal habitat in relation to the proposed development.
  - List of bird, mammal, reptile and amphibian species identified during the field survey.
  - List of threatened, endemic, rare or protected bird, mammal, reptile and amphibian species that could occur in the area as well as those confirmed to occur.
  - Map(s) indicating the locality of confirmed populations and/or suitable habitat of threatened, endemic, rare or protected fauna.
  - Provide input into alternative layouts (following the mitigation hierarchy) for the Preliminary Design Layout.
  - Compile a Biodiversity Impact Assessment (addressing the faunal components) that assesses the potential direct, indirect impacts and cumulative impacts of the proposed project (including alternatives) using Zitholele Consulting's standard Impact Assessment methodology.
  - The Biodiversity (faunal) Impact Assessment report must include, amongst other, a concise Executive Summary, relevant legislation applicable to the study, demonstrate compliance with specialist specific norms and standards, guidelines and policies, as well as information and geographic (GIS) data sources utilised during the study.
  - Provide Zitholele with any geographic data compile by the specialist during the study in shapefile (.shp) and Google Earth file (.kmz or .kml) formats.
  - Provide mitigation options with respect to the proposed project layout and alternatives impacting on sensitive areas.
  - Provide mitigation options with respect to the management of faunal habitats affected, to aid the conservation of these species, and to minimise the negative impacts on the species most susceptible to the impacts of the proposed development.

- Provide responses to comments directly related to the Impact Assessment, including addressing issues raised by I&AP's during the S&EIR process.
- Comment on whether or not biodiversity processes would be affected by the proposed project, and if so, how these would be affected.
- Provide an opinion as to whether the proposed activity, activities or portions thereof should be authorised, with recommendations for any avoidance, management and mitigation measures for identified impacts.
- Provide a concise impact assessment conclusion and reasoned opinion based on the findings of the assessment.

### **8.3.6 ToR: Aquatic Biodiversity Impact Assessment (incorporating a Wetland / Riparian Delineation and Functional Assessment)**

#### Terms of Reference for an Aquatic Biodiversity Impact Assessment

This assessment was conducted in accordance with the amendments to the Environmental Impact Assessment Regulations (2014) (GNR 326, 7 April 2017) of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA). The approach has taken cognisance of the recently published Government Notices (GN) 320 (20 March 2020) and GN 1150 (30 October 2020) in terms of NEMA, dated 20 March and 30 October 2020: "Procedures for the Assessment and Minimum Criteria for Reporting on Identified Environmental Themes in terms of Sections 24(5)(a) and (h) and 44 of the National Environmental Management Act, 1998, when applying for Environmental Authorisation" (Reporting Criteria).

The Specialist must include a checklist in the Executive Summary that indicates where the information to be included (as per GN 320, 20 March 2020) is referenced in the Specialist Report.

The aim of the Aquatic Impact Assessment is to determine the potential impacts of the proposed road upgrades, and associated infrastructure, culvert upgrades, site camps and borrow pits on the aquatic environment, as required by the Department of Water and Sanitation (DWS) for Water Use License Applications (WULAs) and as input into the S&EIR process. The scope of work will include the following:

- *In situ* water quality assessment and determination of water quality variables of concern, where available.
- Habitat assessment.
- Aquatic Macroinvertebrate Assessment, including the generation of reference conditions and determination of Present Ecological State utilizing the South African Scoring System Version 5 (SASS5) and the Macro-Invertebrate Response Assessment Index (MIRAI); Ichthyological assessment, including the evaluation of reference conditions and determination of present ecological state utilizing the Fish Response Assessment Index (FRAI).
- Identification of any aquatic species of conservation concern associated with the study area.
- Ecological Importance and Sensitivity (EIS) must be determined according to the most applicable method (as prescribed by the Department of Water Affairs).

- Present Ecological State (PES) must be determined.
- Note that the EIS and PES must be presented in tabular format.
- Identification of impacts associated with the proposed activity.
- Provide an Aquatic Impact Assessment describing the above findings within the study area. The Aquatic Impact Assessment must provide spatial representation (maps) showing the sampling sites within the study area.
- Provide input into alternative layouts (following the mitigation hierarchy) for the Preliminary Design Layout.
- Compile an Aquatic Impact Assessment that assesses the potential direct, indirect impacts and cumulative impacts of the proposed project using Zitholele Consulting's standard Impact Assessment methodology.
- The Aquatic Impact Assessment report must include, amongst other, a concise Executive Summary, relevant legislation applicable to the study, demonstrate compliance with specialist specific norms and standards, guidelines and policies, as well as information and geographic (GIS) data sources utilised during the study.
- Provide Zitholele with any geographic data compile by the specialist during the study in shapefile (.shp) and Google Earth file (.kmz or .kml) formats.
- Assess the potential impacts and recommend mitigation measures with respect to the proposed project layout and alternatives impacting on sensitive areas for the proposed development.
- Provide recommendations on the protection and management of any significant ecological sites that occur within the study site and for any ongoing monitoring that may be necessary for all phases of the project life-cycle (i.e. planning, construction, operation and decommissioning phases).
- Provide responses to comments directly related to the Impact Assessment, including addressing issues raised by I&AP's during the S&EIR process.
- Comment on whether or not aquatic ecological processes would be affected by the proposed project, and if so, how these would be affected.
- Provide a concise impact assessment conclusion and reasoned opinion based on the findings of the assessment.
- Development of an appropriate bio-monitoring programme (inclusive of mapping) based on the findings of the investigation and DWS WULA requirements.

#### Terms of Reference for a Wetland / Riparian Delineation and Functional Assessment

This assessment must be conducted in accordance with the requirements of the published General Notice (GN) 4167 by the Department of Water and Sanitation (DWS) (previously GN 509 of 2016 and GN 3139 of 2023). The said notice was published in the Government Gazette (No. 49833) under Section 39 of the National Water Act (Act no. 36 of 1998) in December 2023, for a Water Use Licence (WUL) in terms of Section 21(c) & (i) water uses. The GN 4167 process provides an allowance to apply for a WUL for Section 21(c) & (i) under a General Authorisation (GA), as opposed to a full Water Use Licence Application (WULA). A water use (or potential) qualifies for a GA under GN 4167 when the proposed water use/activity is subjected to analysis using the DWS Risk Assessment Matrix (RAM), provided the identified risks are all considered a low risk and the applicant is listed under Appendix D1 or Appendix D2 of the same notice. This

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assessment must implement the RAM and provide a specialist opinion on the appropriate water use authorisation.

In addition to the above requirements, the Wetland/ Riparian Delineation Functional Assessment must discuss the approach and findings of a desktop and field survey carried out on the study area, to assess and verify watercourse sensitivities occurring within the study area, in an effort to identify any issues regarding wetland ecology that needs to be taken into account with regards to the proposed road upgrade project. The terms of reference for the wetland assessment are as follows:

Corroborate field and desktop data and classify confirmed wetlands occurring within the 500m regulated area, into Hydrogeomorphic units.

Identify relevant systematic biodiversity plans and elements of bioregional plans and biodiversity sector plans. These spatial biodiversity plans are the core attributes of bioregional plans are intended to serve as the primary spatial biodiversity informant guiding proactive conservation action and directing land-use planning and reactive decision-making in local, provincial and national spheres of government and are therefore highly relevant to the proposed development. In the case of National Freshwater Ecosystem Priority Areas (NFEPA), this information forms a single national consistent information source for a wide variety of policy and legislative contexts. The information is most appropriately applied as a proactive planning tool at the water management level or the national level but can equally be applied at the reactive decision-making stage such as water use regulation (e.g. water use authorisations) and land use regulation (e.g. environmental impact assessments). The National Biodiversity Assessment, 2018 must be referenced as it has up to date NFEPA layers.

Undertake a site visit to qualitatively assess the extent and present status of the wetland. Results of this site visit must be used to inform the following: (i). The identification, delineation and classification of all wetland areas in the development area in accordance with methods stipulated by the Department of Water Affairs and Forestry (DWAf 2008), Kotze & Marnewecke (1999), Ollis et al. (2013) and the National Wetland Classification Systems (NWCS) developed by the South African National Biodiversity Institute (SANBI).

Wetland delineation will the methods of and the DWAf (2008) guidelines. Four main factors for delineation will be considered:

- Terrain Unit Indicator (assessment of the surrounding topography and landscape for signs a wetland).
- Soil Form Indicator (evaluation of soil types present).
- Soil Wetness Indicator (diagnostic characteristics that are present within the soil column as a result of prolonged and frequent saturation).
- Vegetation Indicator (hydrophilic vegetation associated with wetland areas).
- Establish the Present Ecological State (PES) of identified wetlands.
- Determine the Ecological Importance and Sensitivity (EIS) of identified wetlands.

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Provide a Specialist Report describing the wetlands occurring within a 500m radius of the study area and address the key findings. The Specialist Report must provide spatial representation (maps) showing the wetland/riparian delineation within the study area.

Provide input into alternative layouts (following the mitigation hierarchy) for the Preliminary Design Layout and recommend suitable scientifically determined buffer zones.

Compile a Wetland/Riparian Delineation and Functional Assessment that assesses the potential direct, indirect impacts and cumulative impacts of the proposed project using Zitholele Consulting's standard Impact Assessment methodology.

The Wetland/Riparian Delineation and Functional Assessment must include, amongst other, a concise Executive Summary, relevant legislation applicable to the study, demonstrate compliance with specialist specific norms and standards, guidelines and policies, as well as information and geographic (GIS) data sources utilised during the study.

Provide Zitholele with any geographic data compile by the specialist during the study in shapefile (.shp) and Google Earth file (.kmz or .kml) formats.

Undertake the Risk Matrix (Based on DWS 2015 publication: Section 21 c and I water use Risk Assessment Protocol) for inclusion into the Wetland/Riparian Delineation and Functional Assessment.

Assess the potential impacts and recommend mitigation measures with respect to the proposed project layout and alternatives impacting on sensitive areas for the proposed development.

Provide recommendations on the protection and management of any significant ecological sites that occur within the study site and for any ongoing monitoring that may be necessary for all phases of the project life-cycle (i.e. planning, construction, operation and decommissioning phases).

Following application of the mitigation hierarchy, indicate the requirement for a wetland offset (including the quantity of offset receiving area required) based on the findings of the Impact Assessment.

Provide responses to comments directly related to the Impact Assessment, including addressing issues raised by I&AP's during the S&EIR process.

Comment on whether or not wetland ecological processes would be affected by the proposed project, and if so, how these would be affected.

Provide a concise impact assessment conclusion and reasoned opinion based on the findings of the assessment.



Provide a Wetland Rehabilitation Plan with a monitoring programme.

### 8.3.7 ToR: Geotechnical Impact Assessment

Undertake a desktop and site walkover of the road upgrade areas to determine the soil condition, rock types and make inferences for further investigation. Assess the potential for the material sources, constraints for material haulage, identify preliminary sources of G5 material and quantify the material from the proposed borrow pits to be used for the road upgrade.

### 8.3.8 ToR: Traffic Impact Assessment

The Traffic Impact Assessment will address the following:

- Undertake traffic analysis by reviewing available traffic data from SANRAL and traffic data to be collected, through site observation to understand historical and existing traffic conditions and to allow effective future planning and design.
- Compare historical traffic data and baseline traffic data
- Provide traffic forecast demands
- Undertake road section capacity and intersection capacity analysis
- Provide recommendations for Non-Motorised Transport (NMT) and public transport

## 8.4 Impact Assessment Methodology

The impacts will be ranked according to the methodology described below. Where possible, mitigation measures will be provided to manage impacts. In order to ensure uniformity, a standard impact assessment methodology will be utilised so that a wide range of impacts can be compared with each other. The impact assessment methodology makes provision for the assessment of impacts against the following criteria, as discussed below.

### 8.4.1 Direct, Indirect & Cumulative

Impacts can either be direct impact, indirect impacts or cumulative impacts. Impact type descriptors are defined in Table 8-1 below.

**Table 8-1: Impact type descriptors**

| Descriptor        | Definition  |
|-------------------|---|
| Direct Impact     | Direct impacts are impacts that are caused directly by the activity and generally occur at the same time and at the place of the activity. These impacts are usually associated with the construction, operation or maintenance of an activity and are generally obvious and quantifiable.              |
| Indirect Impact   | Indirect impacts of an activity are indirect or induced changes that may occur as a result of the activity. These types of impacts include all the potential impacts that do not manifest immediately when the activity is undertaken, or which occur at a different place as a result of the activity. |
| Cumulative Impact | Cumulative impacts are impacts that result from the incremental impact of the proposed activity on a common resource when added to the impacts of other past, present or reasonably foreseeable future  |

|  |  |
|--|--|
|  | activities. Cumulative impacts can occur from the collective impacts of individual minor actions over a period of time and can include both direct and indirect impacts. |
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### 8.4.2 Impact Direction

Impact direction can either be a positive impact, negative impacts or neutral impact. Impact direction descriptors are defined in Table 8-2 below.

**Table 8-2: Impact Direction Descriptors**

| Descriptor | Definition  |
|------------|---|
| Positive   | Environment overall will benefit from the impact/risk             |
| Negative   | Environment overall will be adversely affected by the impact/risk |
| Neutral    | Environment overall will not be affected                          |

### 8.4.3 Spatial Extent of Impact

Spatial extent intends to assess the footprint of the impact. The larger the footprint, the higher the impact rating will be. Table 8-3 below provides the descriptors and criteria for assessment.

**Table 8-3: Criteria for the assessment of the extent of the impact**

| Extent Descriptor | Definition  | Rating |
|-------------------|---|--------|
| Site              | Impact footprint remains within the boundary of the site.   | 1      |
| Local             | Impact footprint extends beyond the boundary of the site to the adjacent surrounding areas.                     | 2      |
| Regional          | Impact footprint includes the greater surrounds and may include an entire municipal or provincial jurisdiction. | 3      |
| National          | The scale of the impact is applicable to the Republic of South Africa.  | 4      |
| Global            | The impact has global implications  | 5      |

### 8.4.4 Duration of Impact

The duration of the impact is the period of time that the impact will manifest on the receiving environment. The concept of reversibility is linked to some degree to the duration rating. The longer the impact endures, the less likely it is to be reversible. Table 8-4 provides the criteria for rating duration of impacts.

**Table 8-4: Criteria for the rating of the duration of an impact**

| Duration descriptor                       | Definition   | Rating |
|---|--|--------|
| Construction / Decommissioning phase only | The impact endures for only as long as the construction or the decommissioning period of the project activity. This implies that the impact is fully reversible.   | 1      |
| Short term                                | The impact continues to manifest for a period of between 3 and 5 years beyond construction or decommissioning. The impact is still reversible.   | 2      |
| Medium term                               | The impact continues between 6 and 15 years beyond the construction or decommissioning phase. The impact is still reversible with relevant and applicable mitigation and management actions.             | 3      |
| Long term                                 | The impact continues for a period in excess of 15 years beyond construction or decommissioning. The impact is only reversible with considerable effort in implementation of rigorous mitigation actions. | 4      |
| Permanent                                 | The impact will continue indefinitely and is not reversible.   | 5      |

#### 8.4.5 Potential Intensity of Impact

The concept of the potential intensity of an impact is the acknowledgement at the outset of the project of the potential significance of the impact on the receiving environment. For example, SO<sub>2</sub> emissions have the potential to result in significant adverse human health effects, and this potential intensity must be accommodated within the significance rating. The importance of the potential intensity must be emphasized within the rating methodology to indicate that, for an adverse impact to human health, even a limited extent and duration will still yield a significant impact.

Potential intensity provides a measure for comparing significance across different specialist assessments. This is possible by aligning specialist ratings with the potential intensity rating provided here. This allows for better integration of specialist studies into the environmental impact assessment. See Table 8-5 and Table 8-6 below.

**Table 8-5: Criteria for impact rating of potential intensity of a negative impact**

| Potential Intensity Descriptor | Definition of negative impact   | Rating |
|--------------------------------|---|--------|
| Low                            | Negative change with no associated consequences.  | 1      |
| Moderate-Low                   | Nuisance impact   | 2      |
| Moderate                       | Substantial alteration and/or reduction in environmental quality/loss of habitat/loss of heritage/loss of welfare amenity | 4      |
| Moderate-High                  | Severe alteration to faunal or floral populations/loss of livelihoods/individual economic loss.                           | 8      |
| High                           | Extreme alteration to human health linked to mortality/loss of a species/endemic habitat.                                 | 16     |

**Table 8-6: Criteria for the impact rating of potential intensity of a positive impact**

| Potential Intensity Descriptor | Definition of positive impact                                   | Rating |
|--------------------------------|---|--------|
| Low                            | Positive change with no other consequences.                     | 1      |
| Moderate-Low                   | Economic development  | 2      |
| Moderate                       | Improved environmental quality/improved individual livelihoods. | 4      |
| Moderate-High                  | Net improvement in human welfare                                | 8      |

It must be noted that there is no HIGH rating for positive impacts under potential intensity, as it must be understood that no positive spinoff of an activity can possibly raises a similar significance rating to a negative impact that affects human health or causes the irreplaceable loss of a species.

#### 8.4.6 Probability / Likelihood of Impact

This is the likelihood of the impact potential intensity manifesting. This is not the likelihood of the activity occurring. If an impact is unlikely to manifest, then the likelihood rating will reduce the overall significance. Table 8-7 provides the rating methodology for likelihood.

The rating for likelihood is provided in fractions in order to provide an indication of percentage probability, although it is noted that mathematical connotation cannot be implied to numbers utilised for ratings.

**Table 8-7: Criteria for the rating of the likelihood of the impact occurring**

| Likelihood Descriptor | Definition  | Rating |
|-----------------------|---|--------|
| Improbable            | The possibility of the impact occurring is negligible and only under exceptional circumstances. | 0.1    |
| Very Unlikely         | The possibility of the impact occurring is low with a less than 30% chance of occurring.        | 0.2    |
| Unlikely              | The impact has a 30% to 50% chance of occurring.  | 0.5    |
| Likely                | The impact has a 51% to 90% chance of occurring.  | 0.75   |
| Definite              | The impact has a >90% chance of occurring regardless of preventative measures.                  | 1      |

#### 8.4.7 Cumulative Impacts

In order to assess any impact on the environment, cumulative impacts must be considered in order to determine an accurate significance. Impacts cannot be assessed in isolation. An integrated approach requires that cumulative impacts be included in the assessment of individual impacts.

The nature of the impact should be described in such a way as to detail the potential cumulative impact of the activity.

### 8.4.8 Significance Rating Scale

The significance assessment assigns numbers to rate impacts in order to provide a more quantitative description of impacts for purposes of decision making. Significance is an expression of the risk of damage to the environment, should the proposed activity be authorised.

To allow for impacts to be described in a quantitative manner in addition to the qualitative description given above, a rating scale of between 1 and 5 was used for each of the assessment criteria. Thus, the total value of the impact is described as the function of significance, which takes cognisance of extent, duration, potential intensity and likelihood.

**Impact Significance** = (extent + duration + potential intensity) x likelihood

Table 8-8 provides the resulting significance rating of the impact as defined by the equation as above.

**Table 8-8: Significance rating formulas**

| Score   | Implications for Decision-making   | Rating         |
|---------|--|----------------|
| < 3     | The risk/impact may result in minor alterations of the environment and can be easily avoided by implementing appropriate mitigation measures and will not have an influence on decision-making. Project can be authorised with low risk of environmental degradation   | Low            |
| 3 - 9   | The risk/impact will result in moderate alteration of the environment and can be reduced or avoided by implementing the appropriate mitigation measures and will only have an influence on the decision-making if not mitigated. Project can be authorised but with conditions and routine inspections. Mitigation measures must be implemented. | Moderate       |
| 10 - 20 | The risk/impact will result in major alteration to the environment even with the implementation on the appropriate mitigation measures and will have an influence on decision-making. Project can be authorised but with strict conditions and high levels of compliance and enforcement. Monitoring and mitigation are essential.               | High           |
| 21 - 26 | The risk/impact will result in very major alteration to the environment even with the implementation on the appropriate mitigation measures and will have an influence on decision-making. The project cannot be authorised unless major changes to the engineering design are carried out to reduce the significance rating.                    | Fatally Flawed |

### 8.4.9 Reversibility of the Impacts:

The reversibility of an impact refers to the extent to which the impacts/risks are reversible assuming that the project has reached the end of its life cycle (decommissioning phase). Reversibility descriptors are provided in Table 8-9.

**Table 8-9: Reversibility descriptors and definitions**

| Descriptor             | Definition  |
|------------------------|---|
| High reversibility     | Impact is highly reversible at end of project life. |
| Moderate reversibility | Moderate reversibility of impacts.                  |

|                            |   |
|----------------------------|---|
| Low reversibility          | Low reversibility of impacts.   |
| Impacts are non-reversible | The impact is permanent, i.e., this is the least favourable assessment for the environment. |

#### 8.4.10 Irreplaceability of Receiving Environment/Resource Loss caused by impacts/risks

Irreplaceability of an impact refers to the degree to which the impact causes irreplaceable loss of resources assuming that the project has reached the end of its life cycle (decommissioning phase). Irreplaceability descriptors are provided in Table 8-10.

**Table 8-10: Irreplaceability descriptors and definitions**

| Descriptor                | Definition  |
|---------------------------|---|
| High irreplaceability     | The project will destroy unique resources that cannot be replaced, i.e. this is the least favourable assessment for the environment |
| Moderate irreplaceability | Moderate irreplaceability of resources  |
| Low irreplaceability      | Low irreplaceability of resources.  |
| Resources are replaceable | The affected resource is easy to replace/rehabilitate, i.e. this is the most favourable assessment for the environment.             |

#### 8.4.11 Confidence

Confidence refers to the degree of confidence in predictions based on available information and specialist knowledge. Confidence descriptors are provided in Table 8-11.

**Table 8-11: Confidence descriptors and definitions**

| Descriptor | Definition   |
|------------|--|
| Low        | EAP / Specialist has low confidence in assessment due to significant limitations such as unavailability of data or information |
| Medium     | EAP / Specialist has medium confidence in assessment due to some limitations such as unavailability of data or information     |
| High       | EAP / Specialist has high confidence in assessment.  |

### 8.5 Environmental Impact Report

Once the Final Scoping Report and the Plan of Study for the EIR is accepted by the DFFE, Zitholele will commence with the EIR phase and the compilation of the Environmental Impact Report (EIR).

The contents of the EIA report (as per Appendix 3 of GN R 982) will include the following information:

- Details and expertise of the EAP to undertake a S&EIR process;
- Detailed description of the proposed activity;
- Detailed description of the property on which the activity is to be undertaken and the location of the activity on the property;

- 
- A description of the environment that may be affected by the activity and the manner in which the physical, biological, social, economic and cultural aspects of the environment may be affected by the proposed activity;
  - Details of the PPP conducted during the detailed assessment phase of the S&EIR process;
  - A description of the need and desirability of the proposed activity;
  - A description of identified potential alternatives to the proposed activity, including advantages and disadvantages that the proposed activity or alternatives may have on the environment and the community that may be affected by the activity;
  - An indication of the methodology used in determining the significance of potential environmental impacts;
  - A description and comparative assessment of all alternatives identified during the environmental impact reporting phase;
  - A summary of the findings and recommendations of any specialist report or report on specialised process;
  - A description of all environmental issues that were identified during the environmental impact reporting phase, an assessment of the significance of each issue and an indication of the extent to which the issues could be addressed by the adoption of mitigation measures;
  - An assessment of each identified potentially significant impact in terms of cumulative impacts, the nature of the impact, the extent and duration of the impact, the probability of the impact occurring, the degree to which the impact can be reversed, the degree to which the impact may cause irreplaceable loss of resources and the degree to which the impact can be mitigated;
  - A description of any assumptions, uncertainties and gaps in knowledge;
  - A reasoned opinion as to whether the activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation;
  - An environmental impact statement which contains a summary of the key findings of the environmental impact assessment, a comparative assessment of the positive and negative implications of the proposed activity and identified alternatives;
  - A draft Environmental Management Programme report (EMPr);
  - Copies of any specialist reports and reports on specialised processes; and
  - Any specific information that may be required by the competent authority and any other matters required in terms of sections 24(4) (a) and (b) of NEMA.

## **8.6 Environmental Management Programme**

During the compilation of the EIR, a draft EMPr will be compiled in accordance with the EIA Regulations (2014). The draft EMPr will provide the actions for the management of identified environmental impacts emanating from the proposed project and a detailed outline of the implementation programme to minimise and/ or eliminate the anticipated negative environmental impacts. The draft EMPr will provide strategies to be used to address the roles and responsibilities of environmental management personnel on site, and a framework for environmental compliance

and monitoring. The draft EMPr will be included as part of the Draft EIR. The EMPr will include the following:

- Details and expertise of the person who prepared the EMPr;
- Information on any proposed management or mitigation measures that will be taken to address the environmental impacts that are identified in the EIR phase, including environmental impacts or objectives in respect of planning and design, pre-construction and construction activities, operation or undertaking of the activity, rehabilitation of the environment and closure where relevant;
- A detailed description of the aspects of the activity that are covered by the draft EMPr;
- An identification of the persons who will be responsible for the implementation of the mitigation measures;
- Timeframes for the implementation of the mitigation measures;
- Environmental design criteria;
- Site establishment;
- Construction camps, offices and associated activities;
- Construction and lay down areas;
- Civil works;
- Sourcing and management of construction materials;
- Concrete batching areas;
- Disruption of existing infrastructure and services;
- Site closure and rehabilitation measures;
- Proposed mechanisms for monitoring compliance with the EMPr and reporting thereon;
- Record of the Method Statements, Environmental Incident Log and Complaints Record Sheet;
- Proposed mechanisms for monitoring compliance with the EMPr and reporting thereof; and
- As far as reasonable practicable, measures to rehabilitate the environment affected by the undertaking of any listed activity or specified activity to its natural or predetermined state or to a land use which conforms to the generally accepted principle of sustainable development, including, where appropriate, concurrent or progressive rehabilitation measures.

## **8.7 Public Participation during the EIA Phase**

The purpose of public participation during the Impact Assessment Phase is to present the findings of the EIR phase and to avail the Draft EIR to the public for comments. I&APs will be afforded an opportunity to verify that their issues have been considered either by the EIR specialist studies, or elsewhere. Also, I&APs will comment on the findings of the Draft EIR, including the measures that have been proposed to enhance positive impacts and reduce or avoid negative ones. Once the review is completed, the authority may decide to request additional information on matters that may not be clear from the report, authorise the application with certain conditions to be



complied with by the applicant or reject the application. An EA reflecting the decision of the authority as well as any conditions that may apply will be issued to the applicant.

I&APs will be advised in good time of the availability of these reports, how to obtain them, and the dates and venues of public and other meetings where the contents of the reports will be presented for comment.

The public participation process for the EIAs will involve the following proposed steps:

- Announcement of the availability and public review of the Draft EIR;
- Announcement of the availability of the Final EIR; and
- Notification of the authorities' decision with regards to the potential issuance of the Environmental Authorisation (EA).

*Below information is provided about each step.*

### **8.7.1 Announcing the availability of the Draft EIR and the EMPr**

The DEIR and the EMPr report will be distributed to public places and will be available on the Zitholele Website for public review to the registered I&APs. The registered I&APs will be informed of the availability of the report for public review and comment via email or communication preferred by them.

### **8.7.2 Public review of Draft EIR and EMPr**

The EIA Guidelines specify that stakeholders must have the opportunity to verify that their issues have been captured and assessed before the EIR will be approved. The findings of the specialist assessment will be integrated into the Draft EIR. The report will be written in a way accessible to stakeholders in terms of language level and general coherence. The Draft EIR will have a comprehensive project description, motivation and also the findings of the assessment and recommended mitigation measures. It will further include the Issues and Responses Report, which will list every issue raised with an indication of where the issue was dealt with in the EIR. The findings of the assessment and recommended mitigation measures will also be incorporated into the EIR.

## **8.8 Submission of Final EIR and Decision Making**

Using the comments generated during public review of the Draft EIR, the report will be updated and finalised. All comments received will be added to the CRR and attached to the Final EIR as an Appendix.

The Final EIR will be submitted to the DFFE for review towards decision making.

### 8.8.1 Environmental Authorisation

On receipt of the Department's decision (positive or negative), the registered I&APs will be informed of the decision on the Environmental Authorisation (EA) and will be given 20 days upon receipt of the decision, in which to lodge a Notice of Intent to appeal the decision with the Minister, MEC, or delegated organ of state. The dates for lodgement of the full appeal will be communicated to the I&APs once the EA is issued.

### 8.9 Overall EIA Project Schedule

The proposed programme for the S&EIR process suggests the following timeframes with respect to the most important activities to be undertaken:

**Table 8-12: Primary milestones of the Project**

| Milestones   | Date   |
|--|--|
| Draft Scoping Report and PoS for EIR for public review | 6 May 2025                                     |
| Final Scoping Report and PoS for EIR to DFFE           | 11 June 2025                                   |
| Undertake Specialist Studies                           | 12 July 2025 – 4 Aug 2025                      |
| Draft EIR and EMPr for public review                   | 11 Sept 2025 – 13 Oct 2025                     |
| Finalise EIR and Draft EMPr to DFFE                    | 27 Oct 2025                                    |
| Environmental Authorisation                            | 4 March 2026                                   |
| Appeal Period  | To be confirmed in the Impact Assessment Phase |
| Construction (including EMPr Auditing)                 | To be confirmed in the Impact Assessment Phase |

The S&EIR process is iterative by nature, and it should therefore be noted that the above dates are provided as guidance only and are subject to change.

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## 9 CONCLUSION AND WAY FORWARD

SANRAL appointed Zitholele Consulting to undertake the S&EIR, WULA and mining authorisations for the proposed N14 road upgrade between Coligny and Ventersdorp and the associated proposed borrow pits.

As a result of the activities described above, a Scoping and Environmental Impact Reporting (S&EIR) process will be conducted for this project, based on triggered listed activities within the National Environmental Management Act, 1998 (Act No. 107 of 1998) as amended 2014, (NEMA), and the Environmental Impact Assessment (EIA) Regulations of 2014 as amended (2017).

This Scoping Report, thus represents the Scoping phase of the process, and therefore one of its primary intentions is aimed at defining the scope of the detailed assessment phase, as well as recording the documentation of the tasks that have been undertaken as part of S&EIR process thus far which include the following:

- Identification of stakeholders and/ or Interested and Affected Parties (I&APs);
- Notification of I&APs by means of newspaper advertisements, notification letters and site notice placement; and
- On-going consultation and engagement.

This Draft Scoping Report was released for public review and comment for a period of 30 calendar days (6 May 2025 to 5 June 2025). Concerns raised by I&APs and key stakeholders during the public participation process will be captured in the Comments and Response Report which will be included in this Final Scoping Report, that will be submitted to the DFFE for review.

### ZITHOLELE CONSULTING (PTY) LTD

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Ms. Natasha Lalie  
**Project Manager**

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Ms. Londolani Sitsula  
**Project Associate**

**Appendix 1: Locality Map of Proposed N14-Section12 road upgrade**

**Appendix 2: Locality Map of Proposed Borrow Pits**

### **Appendix 3: CV of EAPs**

**Appendix 4: Application for Environmental Authorisation Form**

**Appendix 5: Minutes of Pre-Application Meeting with the DFFE**



**Appendix 5.1: Email from IQ at DFFE confirming a S&EIR process and distribution of Minutes of Pre-Application Meeting with the DFFE**

## **Appendix 6.1: I&AP Database**

## **Appendix 6.2: Newspaper Advertisement Texts**

**Appendix 6.3: Notification Letters**

**Appendix 6.4: Site Notice Texts**

**Appendix 7: Site Sensitivity Verification Report**

**Appendix 8: DFFE Screening Tool Reports for the Proposed Road Upgrade and Borrow Pits**