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Department:
Environment & Nature Conservation
NORTHERN CAPE PROVINCE
REPUBLIC OF SOUTH AFRICA

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(For official use only)

File Reference Number:	
Application Number:	
Date Received:	

Basic Assessment Report in terms of the Environmental Impact Assessment Regulations, 2014, promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

Kindly note that:

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2014 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
2. This report format is current as of 07 April 2017. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority
3. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
4. Where applicable **tick** the boxes that are applicable in the report.
5. An incomplete report may be returned to the applicant for revision.
6. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
7. This report must be handed in at offices of the relevant competent authority as determined by each authority.
8. No faxed or e-mailed reports will be accepted.
9. The signature of the EAP on the report must be an original signature.
10. The report must be compiled by an independent environmental assessment practitioner.
11. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
12. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.
13. Should a specialist report or report on a specialised process be submitted at any stage for any part of this application, the terms of reference for such report must also be submitted.

SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section?	~~YES~~	NO

If YES, please complete the form entitled "Details of specialist and declaration of interest" for the specialist appointed and attach in Appendix I.

1. ACTIVITY DESCRIPTION

a) Describe the project associated with the listed activities applied for

1. Background of the project

Environmental Management Group (Pty) Ltd (hereafter EMG) has been appointed as an independent Environmental Assessment Practitioner (EAP) to conduct the Basic Assessment (BA) process with regard to the proposed upgrading of the DR3342.

1.1. Status Quo:

1.1.1. Road condition status

A comprehensive assessment of the driving conditions of the DR3342 between DR3463 near Gasese and N14 near Washington reflects that several road sections are in poor conditions. The proposed road section starts at N14 north of Washington town, extending northwest towards Tsineng, with paved intersections in town that turns west towards the road between Severn (north) and Hotazel (south) and finally turns south towards Hotazel for approximately 3 km, connecting to a paved road up to the interception with the R31.

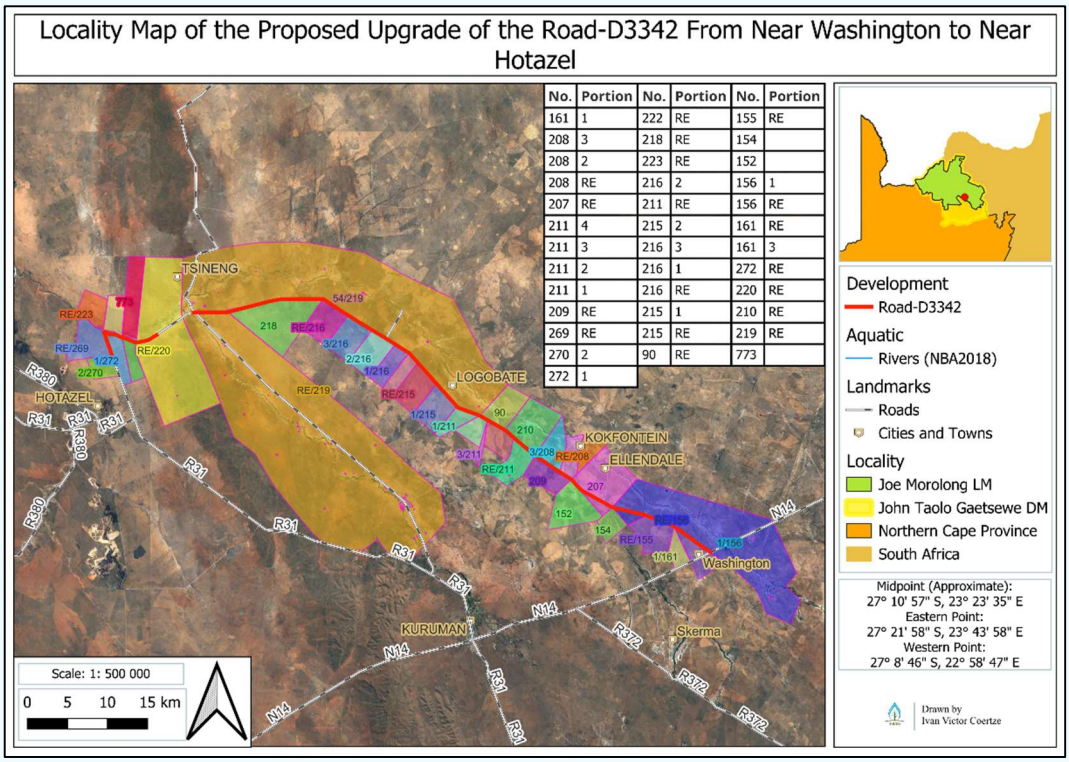


Figure 1: Locality map of the DR3342 between DR3463 near Gasese and N14 near Washington, Northern Cape Province.

This road is characterised by bumpy surfaces, rutting, coarse gravel with large stones, loose sandy sections with medium-sized stones, hard rocky terrain, and areas of exposed rock. During this evaluation, traffic was minimal, likely on account of the low density residential of the area and mode of transportation is most commonly by foot, bicycle or donkey carts. Local agricultural practises include the raising of livestock which

coupled with limited fencing entails the free roaming of and grazing of livestock (sheep, cattle, donkeys, horses, goats etc.)

1.1.2. Bridges and culverts

The first bridge along the route is located at KM 19.4, spanning 89 metres and with three sets of culverts. The second bridge is situated at KM 23.7. In the final 28 km section of the evaluated road, a total of 20 culverts and one bridge were recorded, with 10 of these culverts positioned at intervals of approximately 200 metres. A total of 31 existing culverts were recorded and grouped into box culverts (3) and pipe culverts (28). Partial blockage and sediment buildup are a notable issue of the existing culverts and addressing these issues will be essential in the preliminary design stage to ensure that all culverts are fully functional and capable of managing the expected water volumes effectively. Furthermore, the current culvert designs not allowing for sufficient flow capacity act as obstructions to water flow thus affecting watercourse hydrology during rainfall. Proper maintenance, which includes the installation of necessary headwalls and regular cleaning of obstructions, will be crucial to extend.

1.2. Proposed solution

The proposed development entails the upgrading of the existing gravel road to a surfaced road. This will span a length of approximately 100 km. This upgrade will improve the safety, accessibility, and durability of the road for the benefit of the local community and travellers. The proposed development will include assessing the existing road material, for possible utilization, and importing a new base, and possibly subbase, which will be surfaced with appropriate surfacing. This will be concluded with road markings, signage and an appropriate drainage system. The improved roads will provide a smoother and more reliable transportation route for motorists and enhance the overall infrastructure of the area.

Figure 2: A graphical illustration comparing the current road conditions (left) with an illustrated image of the upgraded road (right).

The scope of work for the construction phase includes the following:

- Clearing and grubbing of the road alignment.
- Earthworks include excavation, filling and compaction.
- Installation of drainage systems to manage surface water runoff.
- Construction of road base, and possibility subbase layers to support the new surface.
- Placement of surface layers to achieve a smooth and durable road surface.
- Installation of road signs, markings, and safety features.
- Conducting quality control and assurance throughout the construction process.

The existing road comprises of existing culverts, numerous of which some are in a degraded state which would require to be upgraded, enhanced or replaced to ensure that they meet safety and performance standards. These measures are essential for preserving the road's functionality and protection from future water-related damage.

1.2.1. Typical road cross section

Based on evaluations and calculations (from Annual Average Daily Equivalent Vehicle Units (AADEVU)) in terms of traffic counts and design speed, the proposed cross sections range between 150 and 400 AADEVU (Figure 2) for the first stretch of road between the starting point at the N14 (27° 21' 57" S, 23° 43' 58" E) and the Maphinki to Kuruman Intersection (27° 5' 40" S, 23° 15' 57" E) and between 300 and 1 000 (Figure 3) from the Maphiniki to Kuruman intersection to the ending point (27° 8' 46" S, 22° 58' 47" E) .

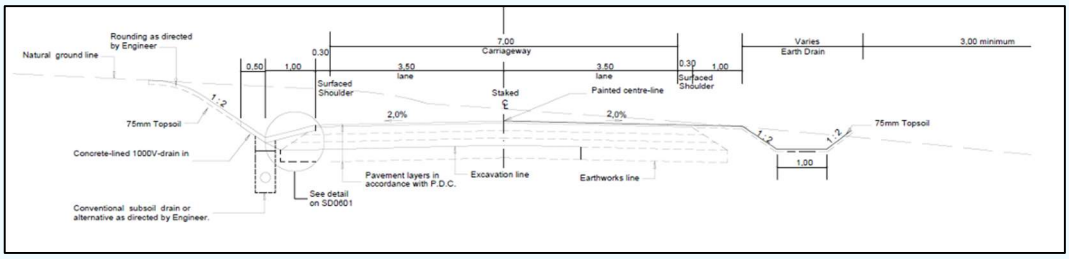


Figure 3: Typical Cross-Section Design for the DR3342 Road Upgrade.

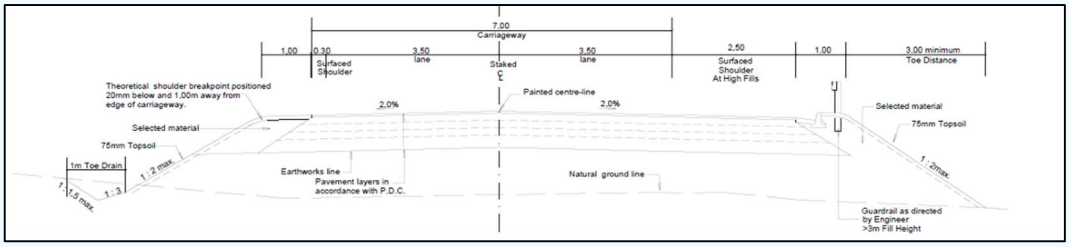


Figure 4: Typical Cross-Section Design for the DR3342 Road Upgrade.

1.2.2. Design Standards and Specifications

The design standard for the proposed development is proposed for 80-100km/hr design speed and the anticipated relevant design standards and perimeters are presented in the table below (Table 1).

Table 1 Road design standards

Design parameter	Design standard
Road reserve width	≈34m
Design speed	80-100km/hr
Minimum horizontal curve radius	350m
Minimum horizontal curve length	300m
Minimum curve radius after long	1000m
Maximum super-elevation	6%
Maximum grade: Flat terrain	3%
Maximum grade in cuttins	0.3%
Maximum grade at intersections	3%
Minimum sight distance at intersections	350m
Minimum vertical curve length	180m
Minimum crest k-value	60
Minimum sag k-value	36

1.3. Associated activities:

1.3.1. Borrow pit and quarry

A borrow pit and quarry investigation will confirm the necessity of the source of road material and appropriate applications for legislative requirements in terms of Mining Permits will be applied for in line with the Mineral and Petroleum Resources Development Act (Act no. 28 of 2002).

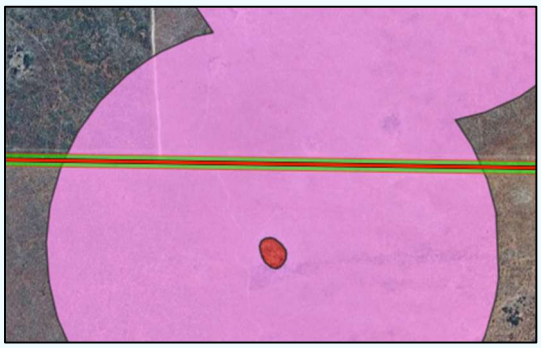
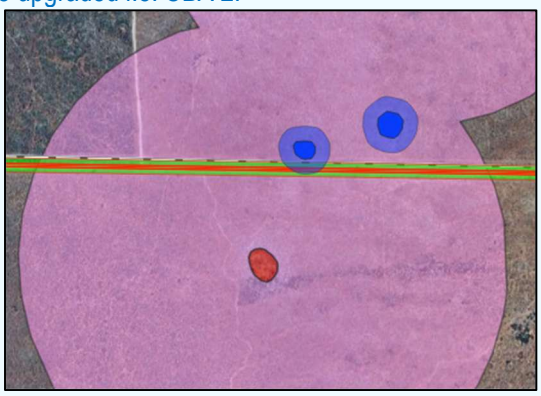
1.3.2. Water uses

On account of the numerous water course crossings as well as the need to abstract water for construction, sanitation and drinking purposes water use licences in line with section 21 C&I as well as section 21A in accordance with the National Water Act (Act no. 36 of 1998) will be applied for. The section21(A) WULAs has been proposed to be in phases.
Such an approach will allow for:

- not underestimating the timeframes for which licenses are required to be active by responding to potential construction delays in timing of the applications for each phase,
- the minimisation of active licenses,
- ease of monitoring of water use licenses.

b) Provide a detailed description of the listed activities associated with the project as applied for

Listed activity as described in GN 327, 325 and 324	Description of project activity
Example: ***GN 327 Item xx xx): The construction of a bridge where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.***	***A bridge measuring 5 m in height and 10m in length, no wider than 8 meters will be built over the Orange river***
GN R.327 Listing Notice 1 Activity 19 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.	Along the proposed road alignment, the development will traverse 17 non-perennial watercourses. The road design incorporates the installation of culverts at these crossings to maintain existing surface water flow regimes and ensure continuity of natural hydrological processes post-construction. The installation of culverts will, however, require excavation and deposition of material exceeding 10 m³ within the respective watercourses. In certain locations, culvert bridge structures may also be constructed, which will similarly involve excavation and deposition activities exceeding 10 m³ within the affected watercourses. Refer to Appendix 7 for an indication of the watercourses to be impacted, as well as an estimate of the volume of material to be excavated and deposited at each crossing.
GN R.324 Listing Notice 3 Activity 12 The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for	The road which is proposed to be upgraded also entails the reestablishment of a 30m servitude, which includes a region which traverses a CBA 2 area. This stretch is approximately 1km long and will entail the

maintenance purposes undertaken in accordance with a maintenance management plan. (g) Northern Cape (ii) Within critical biodiversity areas identified in bioregional plans;	clearance of approximately 20 000m^2 of vegetation for the establishment of a servitude including bypasses for construction vehicles and civilian motorists.  **Red oval:** CBA 1 **Pink:** CBA 2 **Green:** Servitude **Red line:** Road
GN R.324 Listing Notice 3 Activity 23 *The expansion of* *(ii) infrastructure or structures where the physical footprint is expanded by 10 square metres or more; where such expansion occurs* *(c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse,* *(g) Northern Cape* *(ee) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans.*	No watercourses were identified using the NFEPA, DWS or NBA databases which were within 32m of the road proposed to be upgraded and within a CBA (nearest being approximately 180m Southwards). However, per the findings of a wetland assessment, a pan was identified within 32m of the road proposed to be upgraded i.e. CBA 2.  **Pink:** CBA 2 **Dark blue solid:** Pan **Purple:** 32m buffer **Green line:** Road servitude **Red line:** Road proposed to be upgraded While it is anticipated that the upgraded road will likely be situated within the current gravel road layout (10m wide), it is anticipated that in areas where significant infilling is required that the road shoulders might be extended to 12m. This 2m difference between the current and proposed alignment would therefore maximally entail an expansion of 1970m^2 of infrastructure.

2. FEASIBLE AND REASONABLE ALTERNATIVES

"alternatives", in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—

(a) the property on which or location where it is proposed to undertake the activity;
(b) the type of activity to be undertaken;
(c) the design or layout of the activity;
(d) the technology to be used in the activity;
(e) the operational aspects of the activity; and
(f) the option of not implementing the activity.

Describe alternatives that are considered in this application as required by Appendix 1 (3)(h), Regulation 2014.Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity (NOT PROJECT) could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed.

The determination of whether site or activity (including different processes, etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the, competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees, minutes and seconds. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

a) Site alternatives

~~**Alternative 1 (preferred alternative)**~~		
~~Description:~~	~~Lat (DDMMSS)~~	~~Long (DDMMSS)~~
~~**Alternative 2**~~		
~~Description~~	~~Lat (DDMMSS)~~	~~Long (DDMMSS)~~
~~**Alternative 3**~~		
~~Description~~	~~Lat (DDMMSS)~~	~~Long (DDMMSS)~~

In the case of linear activities:

Alternative:	**Latitude (S):**	**Longitude (E):**
Alternative S1 (preferred)		
• Starting point of the activity	27° 21' 57"S	23° 43' 58"E
• Middle/Additional point of the activity	27° 8' 55"S	23° 21' 33"E
• End point of the activity	27° 8' 35"S	22° 58' 42"E
Alternative S2 (if any)		
• Starting point of the activity	The challenge which the proposed upgrading of the D3342 would address is the deficiency in accessibility	
• Middle/Additional point of the activity		

• End point of the activity	to the local villages (and travelling safety of local commuters). The reduced accessibility implicates greater travelling times for delivery vehicles, emergency vehicles, commuters etc. The site is thus determined by the inherent challenge being addressed by the proposed upgrading of the D3342 as relocating the development to another site would by implication not address the identified challenge.

Alternative S3 (if any)

~~• Starting point of the activity~~	
~~• Middle/Additional point of the activity~~	
~~• End point of the activity~~	

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment.

In the case of an area being under application, please provide the co-ordinates of the corners of the site as indicated on the lay-out map provided in Appendix A of this form.

b) Lay-out alternatives

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
The proposed road section starts at N14 north of Washington town, extending northwest towards Tsineng, with paved intersections in town that turns west towards the road between Severn (north) and Hotazel (south) and finally turns south towards Hotazel for approximately 3 km, connecting to a paved road up to the intersection with the R31.	Beginning: 27° 21' 57"S Mid-point: 27°8'55"S End:27°8'35"S	Beginning: 23°43'58"E Mid-point: 23°21'33"E End: 22°58'42"E
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative roads may conceivably be constructed following a different layout, however, this would constitute: • A much larger disturbance to the natural vegetation as new road servitudes would have to be established. • A much more expensive venture as it would not benefit from the established layout of the D3342 as it currently is, for transport of construction workers, construction materials etc. • Entail much greater uncertainties, as such a large span would be difficult to thoroughly assess in contrast to following the layout of the current D3342 which by virtue of it being a road provides ready access and visibility to the entire assessment area. • This would further entail that the entire D3342 would still continue in its current dilapidated state, which would also implicate the continued utilisation of the inadequate culverts as they currently are which are noted to (sans an upgrade) detrimentally impact the flow hydrology of the watercourses. On account of the increased: • Uncertainty • Risk	N/A	N/A

• Cost • Envisioned detrimental environmental consequences, an alternative layout is not further considered.		
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)

c) Technology alternatives

Alternative 1 (preferred alternative)
Upgrading the road to a surfaced road: While the upgrading of the road to a surface road will entail a number of initial environmental risks which trigger the need for a BAR, a surfaced road would ensure greater accessibility, safety and durability. In being more durable it is also envisioned to result in fewer associated long-term social and environmental impacts compared to an alternative such as continual grading of the road (see below). **The utilisation of box culverts where needed:** Greater accommodation can be made for the watercourses' natural hydrology and flow regimes by implementing box culverts, resulting in reduced constriction of flow, sedimentation and scouring of the outflow.
Alternative 2
Grading the existing gravel road: The existing road could be continually graded which would not result in a basic assessment report process. While this would confer immediate marginal benefits to the local community this would not be a sustainable solution from a safety, health, social, environmental impact, or cost perspective. **Safety:** This would not significantly improve the safety of the driving conditions of the road which would still be prone to frequent wash-boarding. Loose soil would continually compromise traction. The driving conditions would have the current impact of drastically decreasing the safe transport speed significantly reducing accessibility. **Health:** Commuters driving the gravel would still create dust clouds when using the roads, which may have detrimental impacts on the health of people living close by, pedestrians and donkey cart users (depending on the frequency of use of the road). **Social:** The ease of road-use would be only temporarily marginally improved. Accessibility would still be low as the safe speed which can be travelled on the road would still be low, placing constraints on services such as healthcare, police services, delivery vehicles etc. **Environmental impacts:** While the immediate impact might be potentially reduced compared to the preferred alternative (no creation of bypasses which would result in the temporary clearance of vegetation), the long-term impacts would have a greater detrimental effect. The road would be prone to erosion, resulting in constant soil loss, sedimentation in nearby watercourses, altered hydrology etc. Constant dust generation would have detrimental impact on the health of nearby livestock and vegetation. **Long-term cost perspective:** The reduced durability of the gravel surface would necessitate constant grading, which would become more expensive in the long-term placing greater financial strain on the local municipality. As this alternative is less pragmatic and favourable for the multiple reasons given, it will not be pursued further.
Alternative 3
N/A

d) Other alternatives (e.g. scheduling, demand, input, scale and design alternatives)

~~Alternative 1 (preferred alternative)~~		
~~Alternative 2~~		
~~Alternative 3~~		

e) No-go alternative

The No-Go alternative is the alternative against which the proposed upgrading of the D3342 is weighed to consider whether the proposed development should constitute an improvement compared to the status-quo. It assumes that the development does not move forth and that no construction takes place.

While it is acknowledged that there would be fewer immediate risks associated with the development not taking place there would also be immediate and long-term detrimental impacts associated with health, safety, social concerns, environmental concerns and cost implications.

- No immediate socio-economic benefits would be created by the employment of local personnel, and service provides, nor by the purchasing of locally produced products.
- No subsequent potential economic benefits associated with the continual maintenance of the road would take place either.
- No socio-economic benefits associated with the increased accessibility to the area would be conferred to the local communities. This would entail that the increased delivery times of goods and services as well as increased response times by emergency personnel such as police officers, firefighting vehicles, ambulances etc would continue.
- There would be detrimental environmental impacts in the form of dust creation both by regular commuters as well as during grading activities associated with road maintenance. This would result in the impaired health of livestock which roam in the road margins as well as to surrounding vegetation. The increased dust generation and erosion would also continue the current trajectory of sedimentation in the nearby watercourses.
- The current culverts which are inadequate to accommodate the flow regimes of the nearby watercourses would result in constriction, sedimentation, scouring of the outflow and impaired drainage of the headwaters. This detrimentally impacts the river health of the perennial and non-perennial watercourses which the D3342 currently crosses. These detrimental impacts would continue if not replaced by culverts with superior capacity to accommodate the watercourse throughput volumes.
- The D3342 is currently noted to be characterised by bumpy surfaces, rutting, coarse gravel with large stones, loose sandy sections with medium-sized stones, hard rocky terrain, and areas of exposed rock making for challenging and unsafe driving conditions. The benefits of a surfaced road to overcome the challenging features associated with the current gravel road and improve the traction and safety of the road users would thus not come to fruition.
- Lastly, the durability of the surfaced road which would make for less frequent maintenance would be lost, which would necessitate more frequent grading. This would become more expensive in the longterm.

Given the social, health, safety, environmental and economic considerations, the No-Go alternative is thus not the preferred alternative.

Paragraphs 3 – 13 below should be completed for each alternative.

3. PHYSICAL SIZE OF THE ACTIVITY

a) Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

Alternative:	**Size of the activity:**
Alternative A1[1] (preferred activity alternative)	~~m²~~
Alternative A2 (if any)	~~m²~~
Alternative A3 (if any)	~~m²~~

or, for linear activities:

Alternative:	**Length of the activity:**
Alternative A1 (preferred activity alternative)	**100 000m**
Alternative A2 (if any)	~~m~~
Alternative A3 (if any)	~~m~~

b) Indicate the size of the alternative sites or servitudes (within which the above footprints will occur):

Alternative:	**Size of the site/servitude:**
Alternative A1 (preferred activity alternative)	**3 000 000-34 000 000m²**
Alternative A2 (if any)	~~m²~~
Alternative A3 (if any)	~~m²~~

4. SITE ACCESS

Does ready access to the site exist?	**YES**	NO
If NO, what is the distance over which a new access road will be built		~~m~~

Describe the type of access road planned:

Access readily exists. No new access roads will be created.
Proper road and traffic maintenance will be implemented to facilitate the constant flow of traffic (noted in the area to be typically low).

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

[1] "Alternative A.." refer to activity, process, technology or other alternatives.

5. LOCALITY MAP

An A3 locality map must be attached to the back of this document, as Appendix A. The scale of the locality map must be relevant to the size of the development (at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map.). The map must indicate the following:

- an accurate indication of the project site position as well as the positions of the alternative sites, if any;
- indication of all the alternatives identified;
- closest town(s;)
- road access from all major roads in the area;
- road names or numbers of all major roads as well as the roads that provide access to the site(s);
- all roads within a 1km radius of the site or alternative sites; and
- a north arrow;
- a legend; and
- locality GPS co-ordinates (Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection).

6. LAYOUT/ROUTE PLAN

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix A to this document.

The site or route plans must indicate the following:

- the property boundaries and numbers of all the properties within 50 metres of the site;
- the current land use as well as the land use zoning of the site;
- the current land use as well as the land use zoning each of the properties adjoining the site or sites;
- the exact position of each listed activity applied for (including alternatives);
- servitude(s) indicating the purpose of the servitude;
- a legend; and
- a north arrow.

7. SENSITIVITY MAP

The layout/route plan as indicated above must be overlain with a sensitivity map that indicates all the sensitive areas associated with the site, including, but not limited to:

- watercourses;
- the 1:100 year flood line (where available or where it is required by DWS);
- ridges;
- cultural and historical features;
- areas with indigenous vegetation (even if it is degraded or infested with alien species); and
- critical biodiversity areas.

The sensitivity map must also cover areas within 100m of the site and must be attached in Appendix A.

8. SITE PHOTOGRAPHS

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under Appendix B to this report**.** It must be supplemented with additional photographs of relevant features on the site, if applicable.

9. FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of at least 1:200 as Appendix C for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity.

10. ACTIVITY MOTIVATION

Motivate and explain the need and desirability of the activity (including demand for the activity):

1. Is the activity permitted in terms of the property's existing land use rights?	**YES**	~~NO~~	Please explain
The project entails the upgrading of an already existing road. While the current road which is proposed to be upgraded does not have a registered servitude, permission from all identified landowners on which the current road already exists is being obtained. Furthermore, satellite imagery suggests that the land has already been used in the capacity proposed to be continued with, since at least 1985.			

2. Will the activity be in line with the following?			
(a) Provincial Spatial Development Framework (PSDF)	**YES**	~~NO~~	Please explain
The Northern Cape Provincial Spatial Development Framework (NC PSDF) identifies six spatial planning categories. The proposed development is of pertinence to three of the spatial development categories, namely: Category D: Urban and rural development: in which it is noted that the strategic design of transport interchanges is to encourage traffic through, rather than around, towns and in which roads and infrastructure must be take into consideration (and assess) the impacts on heritage, environmental and visual features. It is also noted that development must harmonise with the natural areas. The upgrading of an already existing road while keeping in line with an EMPr which includes mitigations to protect environmental, heritage and aesthetic features as identified during the basic assessment process, and which connects numerous villages thus aligns with the strategies noted under category D. Category E: Industrial Areas: in which the strategy to development industrial amenities with consideration of the available infrastructural capital is noted. Furthermore, locality considerations are noted as a criterion for consideration which entails situating industrial development in close proximity to major transport linkages. By upgrading existing transporting linkages will thus enhance the industrial capacity of the local areas (which lie in close proximity to established mines near Tsineng and Hotazel) while resulting in minimal environmental degradation by utilising already established routes. Category F: Surface Infrastructure and Buildings: The need for the effective conveyance of goods is noted to be challenged by the distance between the localities where goods are produced, and markets and points of export, exacerbating this is the lack of basic infrastructure in rural areas. Strategies to facilitate meeting the challenges noted include maintaining road infrastructure and improving the levels of infrastructure development in transport planning activities. Upgrading the D3342 to a surface road will facilitate in the improved conveyance of goods to major arteries such as the N14 (which the D3342 connects with at its Easter extreme) and the R31 (which the Western stretch extends towards along an unnamed road) thus utilising the strategies noted to facilitate in meeting the highlighted challenges.			
(b) Urban edge / Edge of Built environment for the area	**YES**	~~NO~~	Please explain
As the proposed activity entails the upgrading of an already existing road, the urban edge of the environment is not anticipated to be altered and therefor impacted.			

(c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).	**YES**	~~NO~~	Please explain
The provision of roads and stormwater infrastructure is one of the functions of basic service delivery and infrastructure development in the Joe Morolong Local Municipality Integrated Development Plan (JMLM IDP). Heavy rains were also noted to be responsible for the degradation of roads and stormwater infrastructure underscoring the need for adequate stormwater infrastructure including construction (and replacement of inadequate infrastructure with) culverts capable of absorbing fluctuations in watercourse flow regimes. The upgrade of the D3342 between Cardington and Maphiniki Junction was noted in the JM IDP to be prioritised as a DR&PW project for which funds have been allocated. Roads form a component of the spatial planning category of 'Surface Industrial Buildings' which aligns with the Spatial Planning and Land Use Management pillar of the 'built environment', in the John Taolo Gaetsewe District Municipality Spatial Development Framework (JTG DM SDF). Identified as a priority in the JTG DM SDF in the need to upgrade the roads which lead to Kuruman, as well as the connector roads, to maintain Kuruman as a regional anchor. The D3342 which connects with the N14 near Washington and which leads to the R31 near Hotazel, is such a strategic road, providing the connected villages with greater accessibility to Kuruman. This will connect the villages to what is intended to be a knowledge-based economic gateway and development corridor providing local communities with greater accessibility to resources, job opportunities and services, while opening a larger work force to facilitate in establishing Kuruman as a local economic hub. The IDP of the district municipality i.e. the John Taolo Gaetsewe District Municipality IDP 2025-2026 (JTG DM IDP), highlights the following: • The large percentage of roads being un-surfaced and concentrated in the Joe Morolong LM. • The lack of stormwater infrastructure leading to faster deterioration of the gravel roads. • The poor condition of gravel roads leading to inaccessibility of rural communities which thus experience insufficient access to important services. • The strategic benefit of both the N14 and the R31 as roads leading to prominent South African economic hubs. Upgrading the D3342 would thus contribute towards improving the quality of roads and stormwater infrastructure in the Joe Morolong LM (and by implication the greater JTG DM), reducing the rate of road deterioration, and connecting communities to improved basic services and local industries to strategic corridors to economic hubs in the country.			
(d) Approved Structure Plan of the Municipality	~~YES~~	**NO**	Please explain
There is no approved structure plan for the municipality, however, it does align with the Provincial Spatial Development Plan (NC PSDF), the District Municipality Spatial Development Plan (JTG DM SDF) and the Local Municipality Integrated Development Plan (JMLM IDP).			

(e) An Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)	**YES**	~~NO~~	Please explain
While the last Environmental Management Framework which was written for Joe Morolong LM was written in 2011, and there not being a more recent standalone EMF, the preservation of environmental integrity through the safeguarding of natural resources, the minimisation of disturbing habitats, and protection of natural features (including the springs such as the Manyeding) are principles embedded in the Provincial Spatial Development Plan (NC PSDF), the District Municipality Spatial Development Plan (JTG DM SDF) and the Local Municipality Integrated Development Plan (JMLM IDP) with which the proposed development aligns. The 2011, John Taolo Gaetsewe EMF does, however, permit continued development in rural areas (defined as "characterised by low density rural settlements, extensive undeveloped and generally unproductive grazing or natural veld, poor access to basic infrastructure and few opportunities for economic development") provided that the natural areas are not degraded. By utilising existing roads rather than developing new roads ensures that minimal novel damage is done to the natural environment (provided the mitigations stipulated by the specialists in the EMPr (Appendix G) are followed).			
(f) Any other Plans (e.g. Guide Plan)	**YES**	~~NO~~	Please explain
The Department of Roads and Public Works Strategic Plan 2020-2025: The proposed upgrading of the D3342 will align with the DP&PW mandate, being the department responsible for the delivery of provincial infrastructure, construction and maintenance thereof and the creation of work opportunities. **Environmental Management Programme:** The proposed upgrading will align with an EMPr (Appendix G) which will posit mitigation strategies to reduce and where possible eliminate anticipated risks (Appendix F).			
3. Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?	**YES**	~~NO~~	Please explain
As noted, the proposed development does align with the objectives of the Provincial Spatial Development Plan (NC PSDF), the District Municipality Spatial Development Plan (JTG DM SDF) the Local Municipality's Integrated Development Plan (JMLM IDP) and the District Municipality's IDP (JTG DM IDP). The upgrade of the D3342 has, furthermore, been singled out as a priority in the JMLM IDP.			

4. Does the community/area need the activity and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate.)	**YES**	~~NO~~	Please explain
Thet status quo entails a gravel road which, being characterised by bumpy surfaces, rutting, coarse gravel with large stones, loose sandy sections with medium-sized stones, hard rocky terrain, and areas of exposed rock, makes for slow and unsafe travel significantly impacting on the local communities' accessibility to the provision of goods, services and employment opportunities. It furthermore endangers road users. The greater accessibility provided by improved infrastructure which would significantly safely reduce travel times of commuters facilitating greater accessibility to job markets and thus economic opportunities, as well as providing greater infrastructural support for the development of local industry.			
5. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development? (Confirmation by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)	**YES**	~~NO~~	Please explain
A geotechnical investigation is currently ongoing to ascertain the availability of construction material from potential borrow pits in the area, while a geohydrological investigation is currently underway to ascertain whether the volumes can be safely abstracted from local water sources (likely boreholes). The findings of these reports are still outstanding, however, in the incidence that the required materials cannot be sourced locally, they will be supplemented from neighbouring regions. Thus, a lack of required resources it is not envisioned to be a concern.			
6. Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (Comment by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)	**YES**	~~NO~~	Please explain
While the entirety of the development layout has not been included as a distinct project in the IDP, the upgrading of the D3342 is in line with the integrated development plan which identified the upgrading of the D3342 between Cardington and Tsineng as a priority project for which funding has already been made available. Furthermore, the road from Washington to Tsineng was noted to require refurbishment.			
7. Is this project part of a national programme to address an issue of national concern or importance?	~~YES~~	**NO**	Please explain
While the project is not part of a pertinent national programme to address an issue off national concern, it does align with the National Development Plan (NDP).			

8. Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)	**YES**	~~NO~~	Please explain
As the proposed development entails the upgrading of an already existing road the location factors favour this land-use as evidenced by the 30 years of prior use in such a capacity. Furthermore, the proposed activity, given the presence of mines in the local area (especially concentrated around Hotazel and Tsineneg) would provide alternative routes to access the N14 and R31. This could serve to alleviate strain on other roads currently being utilised, for the transport of material from the mines. Thus, given the demand by local residents, the potential of servicing local industry and the potential of contributing partially to accommodating the burden placed on the roads by mining vehicles, the proposed development finds itself justified by the location factors.			
9. Is the development the best practicable environmental option for this land/site?	**YES**	~~NO~~	Please explain
Given the demand by local communities for accessibility to the transport of goods, the access to emergency services and greater access to the job market, it is imperative to provide the local communities with the necessary infrastructure to support these identified needs. The proposed area for the required development encompasses an already existing gravel road. The current gravel road is inlaid with pipe culverts at several watercourse crossings. These culverts were noted in the Wetland Assessment (Appendix D) to be inadequate in accommodating the flow regimes of the watercourses. The proposed development would entail upgrading the culverts (in some locations replacing them with box culverts) to better accommodate the natural flow regimes of the watercourses. Thus, the best alternative to accommodate the community needs, minimise the development footprint, minimise the anticipated impacts and even potentially improve on the status quo would be to upgrade the existing gravel road. Thus, the proposed development is indeed the best practicable environmental option.			

10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?	**YES**	~~NO~~	Please explain
The benefits anticipated to be associated with the proposed development will entail an improvement on the benefits currently offered by the current gravel road while better mitigating the detrimental impacts associated with the gravel road. This includes improved accessibility to goods, emergency services and job opportunities. It would also implicate reduced travelling times and increased safety of commuters. The improvement to the culverts will also improve accommodation of the natural flow regimes of the watercourses traversed by the current (and proposed) road. The upgrade to a surfaced road would implicate greater traction and thus increased safety for commuters. The negative impacts are anticipated to be primarily associated with the construction phase rather than the development phase. While the development footprint is anticipated to be marginally increased in some areas resulting in permanent vegetation clearance the majority of vegetation anticipated to be cleared associated with the development will be as result of the creation of bypasses. These bypasses would be temporary, and their rehabilitation would be co-ordinated with the construction activities to ensure that revegetation of cleared areas takes place as soon as possible. Minor noise and dust creation associated with the construction activities will also be readily mitigated my measures expounded on in the EMPr (Appendix G). Thus, the likely detrimental impacts of the proposed development are anticipated to be predominantly temporary in nature and readily mitigatable, whereas the benefits are anticipated to be permanent. The benefits thus outweigh the detrimental impacts.			
11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?	~~YES~~	**NO**	Please explain
While the perception of improvement of infrastructure might encourage pressure of local communities on local governance structures to upgrade other gravel roads, the primary incentive remains the societal benefits of enhanced infrastructure, namely improved accessibility to goods, services, and opportunities. Thus, it is not envisioned that the proposed development would necessarily be responsible for setting a precedent for similar activities in the area.			
12. Will any person's rights be negatively affected by the proposed activity/ies?	~~YES~~	**NO**	Please explain
While it is anticipated that there will be minor nuisances as is typically associated with construction activities, it is not anticipated that there should be any long-term detrimental impacts to any person's rights. The anticipated inconveniences associated with the proposed development includes the rerouting of traffic through bypasses, noise and dust creation. However, traffic regulations are not anticipated to have a large detrimental impact given that the current gravel road is noted to currently support a low traffic volume. Furthermore, mitigations will be put in place through the implementation of the EMPr (Appendix G) which will reduce the impacts of noise and dust as far as possible. No person's rights are anticipated to be detrimentally impacted during the operational phase of the proposed development.			

13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?	~~YES~~	**NO**	Please explain
The proposed development entails the upgrading of an already existing road. While there is no associated officially registered servitude, the road does have a demonstratable historical use spanning at least 30 years. Thus, given that the development will be situated in the footprint of already established infrastructure the road will not compromise the 'urban edge'.			
14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?	~~YES~~	**NO**	Please explain
The proposed activities will not contribute to any of the 17 Strategic Integrated Projects (SIPS), however it will align to numerous key points identified in the National Development Plan.			
15. What will the benefits be to society in general and to the local communities?			Please explain
The benefits to society and the local communities will entail: - Increased capacity to support industry by means of provision of infrastructural support. - Increase access to goods, services and job opportunities. - Increase safety on the roads. - Reduced travelling times. - Improved natural functioning of natural resources by upgrading the stormwater management to accommodate natural flow regimes.			
16. Any other need and desirability considerations related to the proposed activity?			Please explain
While considering the positive impacts against the negative impacts is necessary to understand the implications of proceeding with the proposed development. To better understand the desirability considerations, it is necessary to measure the proposed development against the no-go option, i.e. of not pursuing the proposed development and maintaining the status quo. This is further expounded in Section D Impact Statement of the BAR, however, this would implicate continued use of a road with reduced traction posing greater dangers to commuters, increased travel times reducing the accessibility to goods, services and job opportunities, the continued use of inadequate stormwater infrastructure resulting in the continued alteration to watercourses and thus impaired natural functioning of natural resources. Continued degraded usefulness of the current road could also lead to new side roads being created which would result in greater vegetation clearance and environmental destruction.			

17. How does the project fit into the National Development Plan for 2030?	Please explain

This project to upgrade the D3342, aligns with several aspects of South Africa's National Development Plan (NDP), particularly in terms of transforming human settlements, infrastructure development, economic growth and environmental sustainability and resilience.

Transforming Human Settlements: It is noted in the NDP that the large distances between where South Africans work and live makes it difficult to sustain services, access the benefits of society and participate in the economy. The proposed upgrading of the D3342 while not reducing the distances between where people work and live, will facilitate the decreasing the travelling times of commuters thus providing greater accessibility to goods, services and work opportunities.

Infrastructure Development: The project addresses the need for improved infrastructure, as outlined in the NDP. Upgrading the D3342 will enhance connectivity between the communities in close proximity to the D3342. The increased connectivity to the N14 and the R31 which the upgrading of the D3342 offers will also contribute to increasing access to the local economic hub of Kuruman.

Economic Growth: The paved road will simulate economic development by facilitating the movement of goods and services and creating job opportunities during the construction and maintenance phases. Additionally, improved transportation infrastructure can lead to increased economic activity in the region.

Environmental Sustainability and Resilience: The project demonstrates a commitment to environmental sustainability by incorporating measures to manage stormwater runoff effectively while upgrading existing culverts which were noted in the Wetland Assessment (Appendix D) to be currently deficient in their accommodation of the traversed watercourses' flow regimes. In doing so the upgrade of the culverts aims to better accommodate the watercourses' natural hydrology preventing damming and erosion.

18. Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account.

The following was considered according to Section 23 of NEMA, 1998:

- EIA process for listed activities being followed.
- An application for environmental authorisation is to be submitted to the Department of Agriculture, Environmental Affairs, Rural Development and Land Reform (DAERL) with this Basic Assessment Report.
- Baseline and specialist assessment were undertaken
- A Draft BAR has been compiled which includes the potential impacts identified during the assessments.
- The draft reports will be submitted to the competent authorities for inspection and approval or amendments.
- The subsequent final BAR will be made available to the respective competent authorities.
- The EMPr containing management measures to be implemented to limit environmental impacts is attached as Appendix G to this Basic Assessment Report.
- All possible interested and / or affected parties have been notified of the proposed project by means of letters, advertisements and site notices.
- I&APs will be given the opportunity to register and comment on the Draft BAR which will be circulated to all I&AP's once the acknowledgement of receipt is obtained from the relevant environmental authority.
- The subsequent final BAR will also be made available to registered I&APs.

Trained and competent Environmental Assessment Practitioners and independent specialists have thoroughly evaluated the proposed development, addressing all potential impacts on the receiving environment to ensure compliance with the NEMA 2014 EIA regulations. The environmental impact assessment findings have been precisely summarised to adequately facilitate decision-making by the relevant authority. Moreover, a thorough Public Participation Process was conducted, allowing Interested and Affected Parties (I&APs) sufficient time to review and provide feedback on all relevant documents and reports.

19. Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.

The principles of environmental management, as set out in Section 2 of NEMA, which serve to:

- provide a general framework within which environmental management and implementation plans must be formulated,
- guide the actions of conciliators and organs of state who are legislated to function under NEMA,
- guide the interpretation, administration and implementation of all environmental legislation (including NEMA itself),

have been taken into account through the following means:

- The needs of the local community have been placed as not only the starting point for the proposed development but also formed the baseline against which all potential impacts were measured, while taking care that the proposed development should be not only socially but also environmentally and economically sustainable.
- The proposed development is put into the national, provincial and local context through the consideration of Integrated Development plans, Spatial Development Frameworks as well as other plans potentially pertinent to the proposed development.
- National databases were utilized to identify which themes were particularly sensitive to disturbance. Specialists were consulted along these themes which included:
  - aquatic specialist
  - heritage specialist
  - terrestrial ecologist

The input of these specialists was used to quantify the risks associated with the relevant identified themes, make adjustments to the proposed design, and implement mitigation measures through the EMPr where necessary. In doing:

- the disturbance of ecosystems and loss of biological diversity is avoided and minimised (where it could not be avoided).
- the disturbance of landscapes and sites that constitute the nation's cultural heritage is avoided, or where it cannot be altogether avoided, is minimised and remedied.
- a risk averse method, sensitive to the potential implications, and flexible enough to compensate for limitations in current knowledge is implemented to reduce the negative impacts of the proposed development as far as possible.
- the interrelationship of the identified themes and the community is incorporated into risk averse decision making, which ensured that risks were not disproportionately concentrated on some, and that risks where concentrated were mitigated to the best extent possible.

This further ensured that highly sensitive ecosystems were identified and were given special attention and consideration, and that other relevant oversight processes were initiated where necessary (See proof of WULA in Appendix J).

- A public participation process is being undertaken wherein persons who register themselves as I&APs will be allowed 30-days to comment on the Draft BAR. This allowed for:
  - the participation of interested and affected parties in environmental governance,
  - the sharing of knowledge, and between developers and interested and affected parties, in which there is transparency as to the project, scope, associated risks and development in the application process. Furthermore, this allows for disclosure of potential overlooked risks that require avoidance or mitigation.

11. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations, if applicable:

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
National Environmental Management Act (Act no. 107 of 1998).	NEMA (Act no. 107 of 1998) provides the overarching guidelines, and principles according to which all other environmental legislation must abide. It also establishes the framework according to which all developments which entail an environmental implication (as determined by the Environmental Impact Assessment Regulations- GN R983 and 985 of 2014) must adhere.	Department of Forestry, Fisheries and the Environment (DFFE)/ Department of Agriculture, Environmental Affairs, Rural Development and Land Reform (DAERL).	1998
Environmental Impact Assessment Regulations Listing Notices 1 and 3 of 2014 (GN R 983 and 985) (Amended June 2021).	As discussed, in section A.b- Activity Information, several activities are triggered by the proposed development and as such this basic assessment report is necessitated.	Department of Forestry, Fisheries and the Environment (DFFE)/ Department of Agriculture, Environmental Affairs, Rural Development and Land Reform (DAERL).	2014 (amended 2021)
National Water Act (Act no. 36 of 1998)	It is anticipated that due to: • the numerous watercourse crossings • the potential that water will be abstracted from local boreholes (this may require either increasing the licensed volumes of existing BHs or digging new ones), Water use licenses will need to be applied for, for Section 21 (C&I) and section 21 (A) water uses.	Department of Water and Sanitation	1998
National Heritage Resources Act (Act no. 25 of 1999)	On account of the proposed development constituting the construction of a road, South African Heritage Resources	South African Heritage Resources Agency (SAHRA)	1999

	Agency (SAHRA) exceeding 300m in length, section 38(1) of the National Heritage Resources Act is triggered, which necessitates that Heritage Impact Assessment be conducted.		
The Constitution of South Africa (Act no. 108 of 1996).	Being the overarching legislation that protects the rights of all South Africa's citizens, all subsequent legislation must be aligned with, and all activities comply with, the constitution of South Africa. The particular section most applicable to the proposed development by which all proposed activities must abide is section 24 which governs the right to an environment that is not harmful to their health or wellbeing; protected, for the benefit of present and future generations, through reasonable legislative and other measures.	Minister for Justice and Constitutional Development	1996
White Paper on Integrated Pollution and Waste Management for South Africa (GG no. 20978).	The proponent must ensure that the proposed development's construction and operation align with the guidelines stipulated in the white paper on integrated pollution and waste management. The proponent should comply with the White Paper by minimizing no pollution and ecological degradation that occurs due to the proposed development and by conducting environmentally sustainable developmental practices.	The Ministries and Departments of Environmental Affairs and Tourism and Water Affairs and Forestry	2000
National Building Regulations and Building Standards Act (Act no. 103 of 1977)	The act, outlines building regulations as well as constraints on noise which the proposed development will abide by.	The Minister of Human Settlements.	1977

12. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?	**YES**	NO
If YES, what estimated quantity will be produced per month?	**15m^3**	

How will the construction solid waste be disposed of (describe)?

Minimal construction waste is anticipated to be used during the road upgrade.
General construction waste will be produced.
Construction waste will be gathered during construction activities into the site yard, where it will be stored until an allocated date for construction waste disposal at which point it will be loaded into a truck and disposed of at a licenced landfill facility.
This will take place on a regular basis.
In the incidence that hazardous material is produced during construction activities, this will be demarcated and securely stored in the closed off construction yard, after which it will be disposed of at the appropriate licensed landfill facility on a regular basis.

Where will the construction solid waste be disposed of (describe)?

The construction waste which cannot be recycled into the project will be disposed of at the nearest licenced landfill facility.

Will the activity produce solid waste during its operational phase?	~~YES~~	**NO**
If YES, what estimated quantity will be produced per month?	~~m^3~~	

How will the solid waste be disposed of (describe)?

N/A

If the solid waste will be disposed of into a municipal waste stream, indicate which registered landfill site will be used.

N/A

Where will the solid waste be disposed of if it does not feed into a municipal waste stream (describe)?

N/A

If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Can any part of the solid waste be classified as hazardous in terms of the NEM:WA?	~~YES~~	**NO**

If YES, inform the competent authority and request a change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

Is the activity that is being applied for a solid waste handling or treatment facility?	~~YES~~	**NO**

If YES, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?	~~YES~~	**NO**
If YES, what estimated quantity will be produced per month?		~~m³~~
Will the activity produce any effluent that will be treated and/or disposed of on site?	~~YES~~	**NO**

If YES, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Will the activity produce effluent that will be treated and/or disposed of at another facility?	~~YES~~	**NO**

If YES, provide the particulars of the facility:

Facility name:	N/A		
Contact person:	N/A		
Postal address:	N/A		
Postal code:	N/A		
Telephone:	N/A	**Cell:**	N/A
E-mail:	N/A	**Fax:**	N/A

Describe the measures that will be taken to ensure the optimal reuse or recycling of wastewater, if any:

Minimal wastewater is anticipated to be produced during the construction of the development. The only wastewater that is anticipated to be potentially produced during the construction of the development is in the cleaning of equipment used in the mixing of cement. This wastewater can be collected and subsequently utilised in mixing cement in preparing concrete. This leaves only the final last volume of water at the final cleaning of the equipment used for mixing cement. This volume of water can be collected and stored for a day. This will allow for the cement to settle to the bottom allowing to decant the clear water from the cementitious sludge. The water should then be able to be safely disposed of in a municipal system while the remaining cementitious sludge can be allowed to dry out before being disposed of as solid waste. It is not anticipated that there should be much preparation of concrete as it is envisioned that prefabricated culverts will be utilised.

c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere other that exhaust emissions and dust associated with construction phase activities?	~~YES~~	**NO**
If YES, is it controlled by any legislation of any sphere of government?	~~YES~~	**NO**

If YES, the applicant must consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.
If NO, describe the emissions in terms of type and concentration:

The proposed development entailing the upgrading of gravel roads to paved roads will entail the movement and utilisation of construction vehicles during its construction phase and the movement of civilian vehicles during its operational phase.
The movement of construction (and civilian vehicles) will entail the emission of exhaust fumes containing Nitrogen Oxides, Carbon Monoxide and particulate matter. Furthermore, the physical disturbance of the gravel roads will entail an increase in particulate matter suspended in the air associated with dust. This is, however, anticipated to be reduced during the operational phase of the development, particularly considering that the proposed development will replace gravel roads with paved roads being less prone to creating dust clouds when driven on than their gravel counterparts. While it is difficult to estimate accurately the concentration of exhaust fumes that will be released by the construction vehicles, a condition for the regular maintenance of all construction vehicles has been implemented into the EMPr (Appendix G) in order to ensure that their emissions do not exceed the amount permitted according to SANS 1929 of 2011. i.e.
NO: 200µg/m3 per hour
CO: 10mg/m3 per 8 hours
PM10: 120µg/m3 per day
PM2.5: 25-65 µg/m3 per day
It is, furthermore, implemented that should dust generation associated with construction activities become excessive, that dust suppression methods, such as watering bare surfaces should be employed.

d) Waste permit

Will any aspect of the activity produce waste that will require a waste permit in terms of the NEM:WA?	~~YES~~	**NO**

If YES, please submit evidence that an application for a waste permit has been submitted to the competent authority

e) Generation of noise

Will the activity generate noise?	**YES**	~~NO~~
If YES, is it controlled by any legislation of any sphere of government?	**YES**	~~NO~~

Describe the noise in terms of type and level:

The noise associated with the construction of the proposed development will entail noise generated by construction vehicles as well as construction workers. The noise is not expected to be excessive and will be mitigated by limiting construction hours to between 07:00 and 17:00 as stated in the EMPr, which takes not only legislative construction hours demands into consideration but also the local context.
The standards that will be applicable to the generation of noise is the Application of the National Building Regulations (SANS 0400), which is outlined in the National Building Regulation and Building Standards Act (Act no. 103 of 1977), which states in section F6 (2)(a) that: No person shall during the course of any building, demolition or excavation work use any machine, machinery, engine, apparatus, tool or contrivance, which in the opinion of the local authority may unreasonably disturb or interfere with the amenity of the neighbourhood:
(i) on a public holiday or Sunday
(ii) before 06:00 or after 17:00 on any Saturday; and before 06:00 or after 18:00 on any day other than those days contemplated in subparagraphs (i) and (ii).

13. WATER USE

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es):

~~Municipal~~	~~Water board~~	**Groundwater**	~~River, stream, dam or lake~~	~~Other~~	~~The activity will not use water~~

If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:	**54 000 000** litres	
Does the activity require a water use authorisation (general authorisation or water use license) from the Department of Water Affairs?	**YES**	~~NO~~
If YES, please provide proof that the application has been submitted to the Department of Water Affairs.		

14. ENERGY EFFICIENCY

Describe the design measures, if any, which have been taken to ensure that the activity is energy efficient:

The proposed development does not entail activities which are anticipated to utilise a great amount of electricity; however, diesel will be required for the operation of the machinery in the construction of the road.
It has been incorporated into the EMPr that: "Environmental training must include as a minimum […]; energy conservation practises- such as minimising diesel consumption by turning off construction vehicles when not in use."

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

It is not anticipated that the proposed development will entail the utilisation of energy during its operational phase.

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

1. For linear activities (pipelines, etc) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section B and indicate the area, which is covered by each copy No. on the Site Plan.

Section B Copy No. (e.g. A): **A**

2. Paragraphs 1 - 6 below must be completed for each alternative.

3. Has a specialist been consulted to assist with the completion of this section? **YES** ~~NO~~

If YES, please complete the form entitled "Details of specialist and declaration of interest" for each specialist thus appointed and attach it in Appendix I. All specialist reports must be contained in Appendix D.

Property description/physical address:

Province	Northern Cape
District Municipality	John Taolo Gaetsewe
Local Municipality	Joe Morolong
Ward Number(s)	Ward 4 Ward 5 Ward 6 Ward 7 Ward 14
Farm name and number	Please see Appendix J-Additional Information for the complete list.
Portion number	Please see Appendix J-Additional Information for the complete list.
SG Code	Please see Appendix J-Additional Information for the complete list.

Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application including the same information as indicated above.

Current land-use zoning as per local municipality IDP/records:

Farms

In instances where there is more than one current land-use zoning, please attach a list of current land use zonings that also indicate which portions each use pertains to, to this application.

Is a change of land-use or a consent use application required? ~~YES~~ **NO**

1. GRADIENT OF THE SITE

Indicate the general gradient of the site. (Please See Appendix A: Contour Map)

Alternative S1:

Flat	1:50 – 1:20	1:20 – 1:15	~~1:15 – 1:10~~	~~1:10 – 1:7,5~~	~~1:7,5 – 1:5~~	~~Steeper than 1:5~~

Alternative S2 (if any):

~~Flat~~	~~1:50 – 1:20~~	~~1:20 – 1:15~~	~~1:15 – 1:10~~	~~1:10 – 1:7,5~~	~~1:7,5 – 1:5~~	~~Steeper than 1:5~~

Alternative S3 (if any):

~~Flat~~	~~1:50 – 1:20~~	~~1:20 – 1:15~~	~~1:15 – 1:10~~	~~1:10 – 1:7,5~~	~~1:7,5 – 1:5~~	~~Steeper than 1:5~~

2. LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site:

~~2.1 Ridgeline~~		~~2.4 Closed valley~~		**2.7 Undulating plain / low hills**	**X**
~~2.2 Plateau~~		~~2.5 Open valley~~		~~2.8 Dune~~	
~~2.3 Side slope of hill/mountain~~		**2.6 Plain**	**X**	~~2.9 Seafront~~	
~~2.10 At sea~~					

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Is the site(s) located on any of the following?

	Alternative S1:		**Alternative S2 (if any):**		**Alternative S3 (if any):**	
Shallow water table (less than 1.5m deep)	**YES**	~~NO~~	~~YES~~	~~NO~~	~~YES~~	~~NO~~
Dolomite, sinkhole or doline areas	~~YES~~	**NO**	~~YES~~	~~NO~~	~~YES~~	~~NO~~
Seasonally wet soils (often close to water bodies)	**YES**	~~NO~~	~~YES~~	~~NO~~	~~YES~~	~~NO~~
Unstable rocky slopes or steep slopes with loose soil	~~YES~~	**NO**	~~YES~~	~~NO~~	~~YES~~	~~NO~~
Dispersive soils (soils that dissolve in water)	**YES**	~~NO~~	~~YES~~	~~NO~~	~~YES~~	~~NO~~
Soils with high clay content (clay fraction more than 40%)	~~YES~~	**NO**	~~YES~~	~~NO~~	~~YES~~	~~NO~~
Any other unstable soil or geological feature	~~YES~~	**NO**	~~YES~~	~~NO~~	~~YES~~	~~NO~~
An area sensitive to erosion	**YES**	~~NO~~	~~YES~~	~~NO~~	~~YES~~	~~NO~~

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted.

4. GROUNDCOVER

Indicate the types of groundcover present on the site. The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Natural veld - good condition[E]	Natural veld with scattered aliens[E]	~~Natural veld with heavy alien infestation[E]~~	~~Veld dominated by alien species[E]~~	~~Gardens~~
~~Sport field~~	~~Cultivated land~~	Paved surface	~~Building or other structure~~	Bare soil

If any of the boxes marked with an "[E] "is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn't have the necessary expertise.

5. SURFACE WATER

Indicate the surface water present on and or adjacent to the site and alternative sites?

Perennial River	~~YES~~	**NO**	~~UNSURE~~
Non-Perennial River	**YES**	~~NO~~	~~UNSURE~~
Permanent Wetland	**YES**	~~NO~~	~~UNSURE~~
Seasonal Wetland	**YES**	~~NO~~	~~UNSURE~~
Artificial Wetland	~~YES~~	**NO**	~~UNSURE~~
Estuarine / Lagoonal wetland	~~YES~~	**NO**	~~UNSURE~~

If any of the boxes marked YES or UNSURE is ticked, please provide a description of the relevant watercourse.

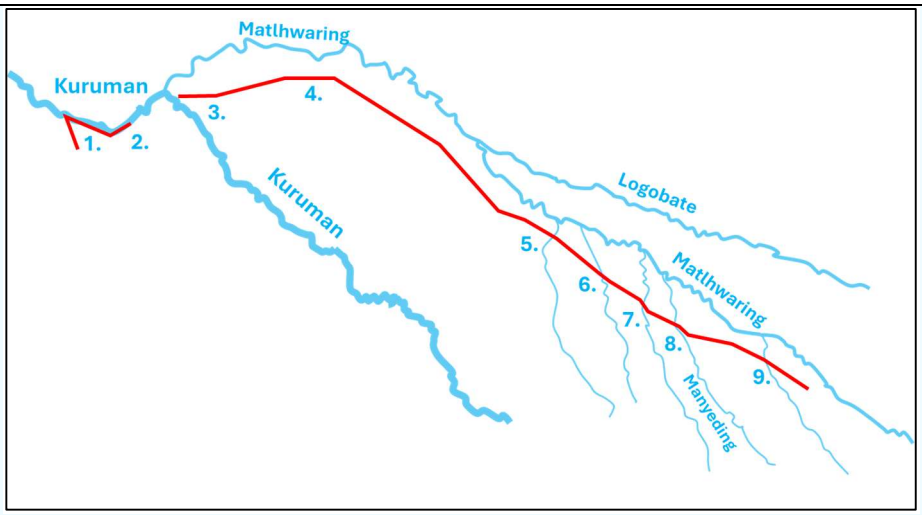
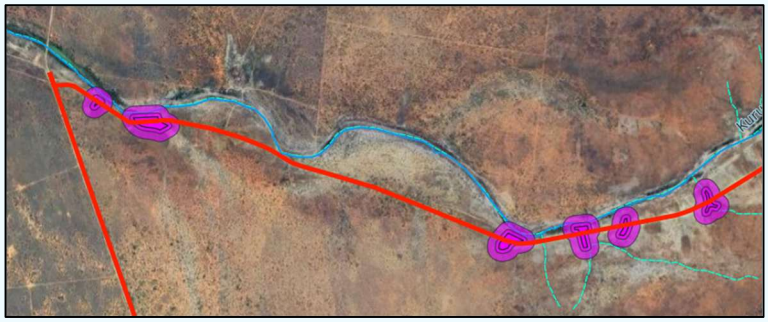


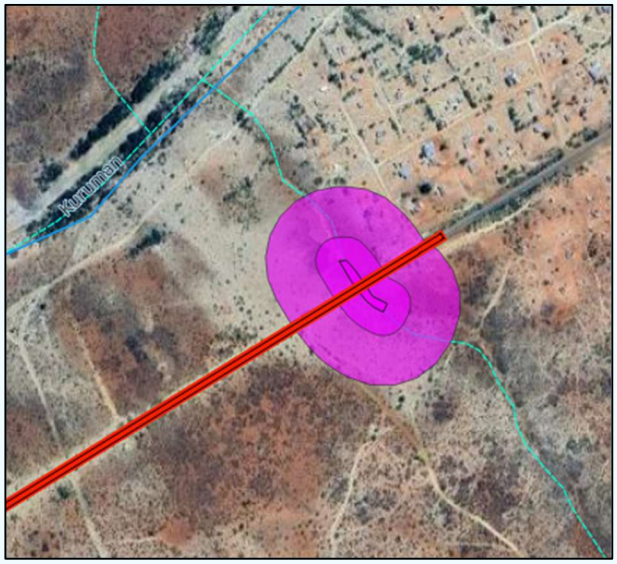
Figure 4: A diagram of the layout of the watercourses pertinent to the proposed development (blue) transected by the proposed development (red) (see below associated descriptions).

Please see appendix A Maps

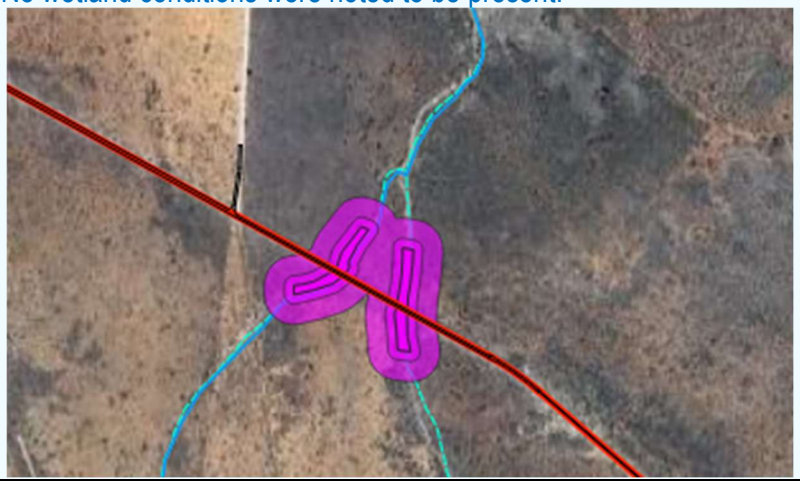
Non-Perennial River: The proposed development will cross several non-perennial watercourses including:



1. A series of small drainage lines: these drain directly into the Kuruman River. These are crossed by the proposed development (and current road). With the associated slope being moderate deposition is a greater concern than erosion. These are strictly episodic watercourses where continuous flow will only take place during large rainfall events. No wetland conditions were noted to be present at these watercourses.

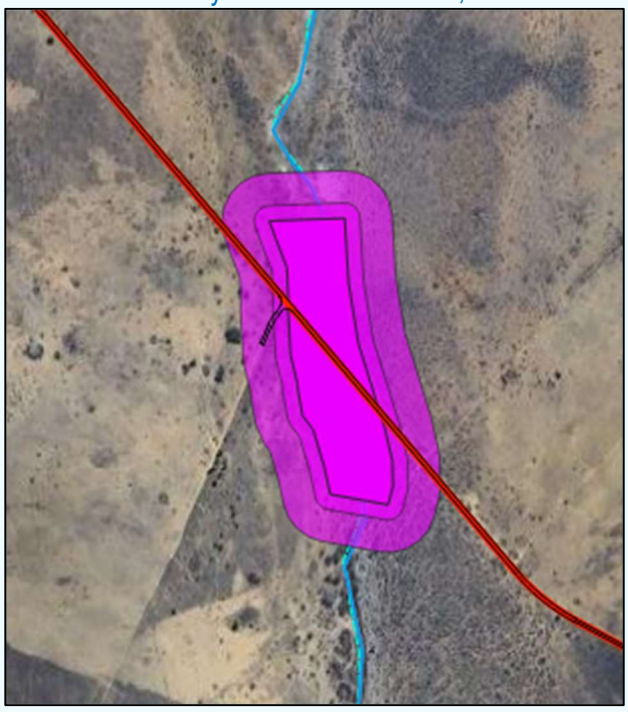


2. Similar in character to the drainage lines noted at '1.' The drainage line at location 2 also drains directly into the Kuruman River and is crossed by the proposed development (and current road). The slope is noted to be moderate with erosion relevant to the planning of the proposed road upgrading. No wetland conditions were noted to be present.



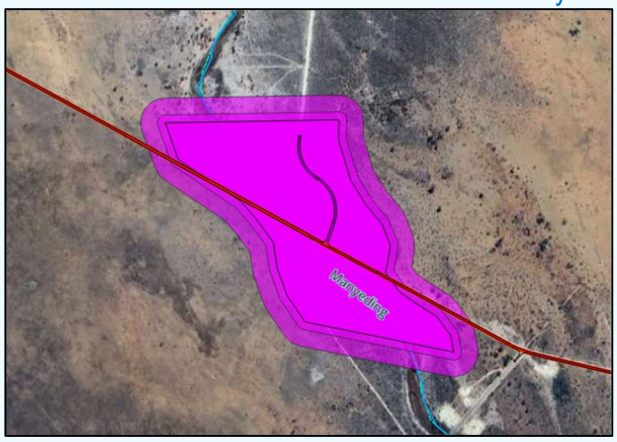
5. Two small ephemeral streams crossed by the proposed development (and current road): Two ephemeral streams drain directly into the Matlhwaring River, tributary of the Kuruman River. The streams are noted to drain from a large area to the south dominated by fairly flat plains. Flow is therefore anticipated to be slow. Accordingly, erosion is not anticipated to be particularly problematic with sedimentation posing a greater risk. These streams are also noted to be episodic or ephemeral with continuous flow only taking place during rainy months. No wetland conditions were noted to be present.

6. A small but prominent stream which drains directly into the Matlhwaring River which is crossed by the proposed development (and the current road). The stream is noted to drain from a large area to the south dominated by fairly flat plains. Flow is therefore anticipated to be slow. Accordingly, erosion is not anticipated to be particularly problematic with sedimentation posing a greater risk. Drainage is only anticipated to take place during large rainfall events. Some wetland conditions do, however occur in the main channel. These conditions are noted to occur only in the main channel, however.

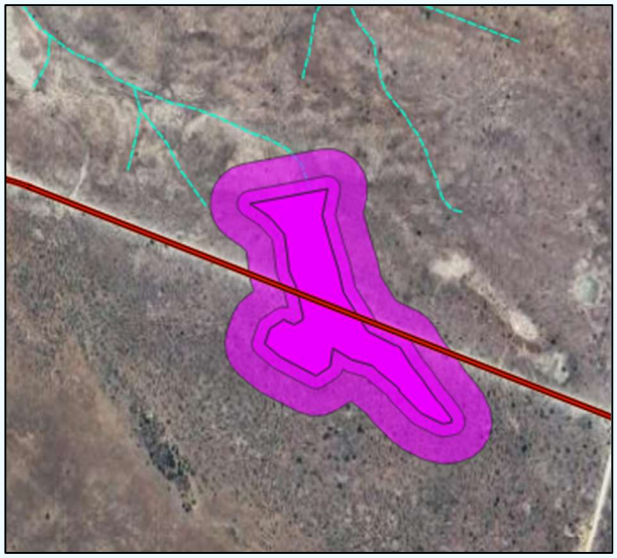


7. One fairly large albeit ephemeral stream is crossed by the proposed development (and existing road). This stream is fed by an artesian fountain which thus significantly increases

the hydrology of the stream. However, given the distance from the artesian fountain the stream is not a sustained water source with continuous flow only during large rainfall events.

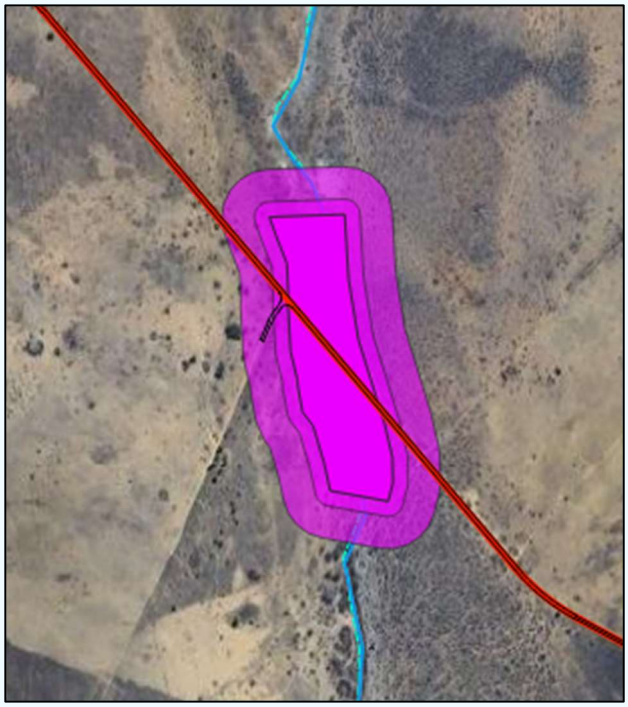


8. A large system, the Manyeding River is noted to be able to be considered a lowland river which is crossed by the proposed development (and current road). While flow is noted to be sustained throughout the majority of the year, on account of the Manyeding River being fed by an artesian fountain the Manyeding Eye, it is still likely that flow will cease for periods during Winter and is therefore, considered to be seasonal, however would contain a perennial zone of wetness.



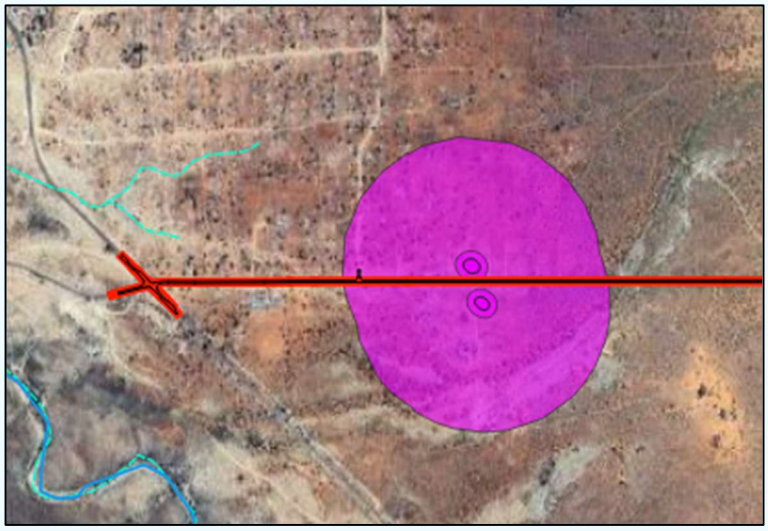
9. A small and not very clearly defined drainage line which will be crossed by the proposed development (and the existing road). This crossing is very close to the origin of the drainage line and as such is not well defined. It is strictly episodic whereby continuous flow will only take place during large rainfall events. No wetland conditions were noted to be present.

Permanent Wetland:

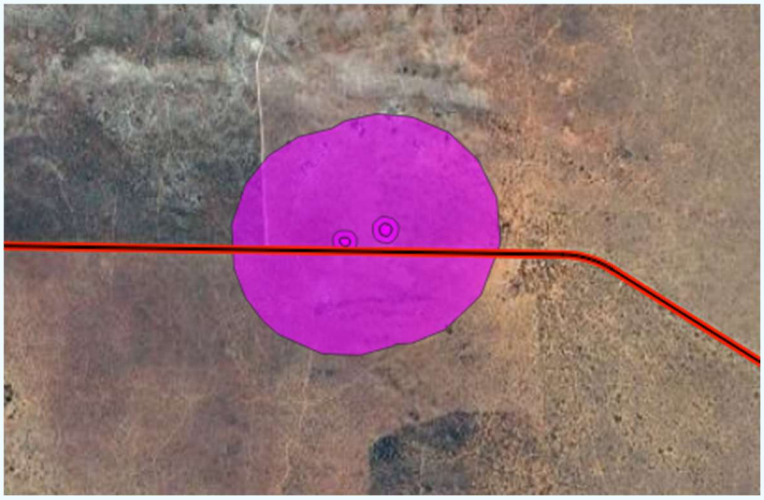


7. As noted above, the fairly large, albeit ephemeral stream, noted at point 7 crossed by the proposed development (and existing road) is not sustained and is ephemeral in spite of it being partially fed by an artesian fountain. However, in spite of the flow being ephemeral, the larger size of the stream and the artesian fountain contributing to its hydrology the main channel does contain extensive wetland conditions (albeit limited to the main channel).
8. As noted above, the large system which can be considered a lowland river, noted at point 8 crossed by the proposed development (and existing road) is being fed by the Manyeding Eye, providing flow almost throughout the year. However, it is still anticipated that the flow will cease for periods during the winter season and is therefore considered a seasonal system rather than perennial. The diffuse flow, rather than flooding, which characterises the system saturates the main channel throughout the year (as confirmed by soil samples), creating a perennial zone of wetness (albeit limited to the main channel).

Seasonal Wetland:



3. Two small depressions or pans to East of the Kuruman River in the settlement of Gasese. They too were noted to contain surface water only infrequently and not be not directly affected by the proposed road. They are noted to likely remain unaffected provided associated activities avoid these small pans. These pans while noted to not have any present wetland conditions were noted to contain surface water albeit infrequently and during years of exceptional rainfall.



4. Two small depressions or pans were noted to the North of the proposed road. They too were noted to contain surface water only infrequently and were not directly affected by the proposed road. They are noted to likely remain unaffected provided associated activities avoid these small pans. These pans, while noted to not have any present wetland conditions were noted to contain surface water albeit infrequently and during years of exceptional rainfall.

6. A small but prominent stream which drains directly into the Matlhwaring River as noted above which does display some wetland conditions in the main channel. This is crossed by the proposed development (and current road).

6. LAND USE CHARACTER OF SURROUNDING AREA

Indicate land uses and/or prominent features that currently occur within a 500m radius of the site and give description of how this influences the application or may be impacted upon by the application:

Natural area	Dam or reservoir	~~Polo fields~~
~~Low density residential~~	~~Hospital/medical centre~~	~~Filling station~~ [H]
Medium density residential	School	~~Landfill or waste treatment site~~
~~High density residential~~	~~Tertiary education facility~~	~~Plantation~~
~~Informal residential~~	~~Church~~	Agriculture
Retail commercial & warehousing	~~Old age home~~	River, stream or wetland
~~Light industrial~~	~~Sewage treatment plant~~[A]	~~Nature conservation area~~
~~Medium industrial~~ [AN]	~~Train 6.station or shunting yard~~ [N]	~~Mountain, Koppie or ridge~~
~~Heavy industrial~~ [AN]	~~Railway line~~ [N]	~~Museum~~
~~Power station~~	~~Major road (4 lanes or more)~~ [N]	~~Historical building~~
~~Office/consulting room~~	~~Airport~~ [N]	~~Protected Area~~
~~Military or police base/station/compound~~	~~Harbour~~	Graveyard
~~Spoil heap or slimes dam~~[A]	~~Sport facilities~~	~~Archaeological site~~
Quarry, sand or borrow pit	~~Golf course~~	~~Other land uses (describe)~~

If any of the boxes marked with an "[N] "are ticked, how this impact will / be impacted upon by the proposed activity? Specify and explain:

N/A

If any of the boxes marked with an "[An]" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A

If any of the boxes marked with an "H" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A

Does the proposed site (including any alternative sites) fall within any of the following:

Critical Biodiversity Area (as per provincial conservation plan)	**YES**	~~NO~~
Core area of a protected area?	~~YES~~	**NO**
Buffer area of a protected area?	~~YES~~	**NO**
Planned expansion area of an existing protected area?	~~YES~~	**NO**
Existing offset area associated with a previous Environmental Authorisation?	~~YES~~	**NO**
Buffer area of the SKA?	~~YES~~	**NO**

If the answer to any of these questions was YES, a map indicating the affected area must be included in Appendix A.

7. CULTURAL/HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including Archaeological or paleontological sites, on or close (within 20m) to the site? If YES, explain:	~~YES~~	**NO**
	Uncertain	
N/A		

If uncertain, conduct a specialist investigation by a recognised specialist in the field (archaeology or palaeontology) to establish whether there is such a feature(s) present on or close to the site. Briefly explain the findings of the specialist:

As specialist has been to site.

- It was the finding of the specialist that "no indications of in situ Stone Age archaeological material, capped or distributed as surface scatters on the landscape. There are also no indications of rock art (engravings), stone-walled structures, graves or historically significant buildings older than 60 years within the boundaries of the footprint corridor".
- Furthermore, it was noted that "Potential negative palaeontological impact on Ghaap Group carbonate rocks, surface calcretes and geologically recent windblown sandy overburden is considered low and will require no mitigation".

Thus, the area was ascribed a rating of Generally Protected C and that the proposed development may proceed provided that all activities are restricted to the boundaries of the demarcated road corridor.

Will any building or structure older than 60 years be affected in any way?	~~YES~~	**NO**
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?	~~YES~~	**NO**

If YES, please provide proof that this permit application has been submitted to SAHRA or the relevant provincial authority.

8. SOCIO-ECONOMIC CHARACTER

a) Local Municipality

Please provide details on the socio-economic character of the local municipality in which the proposed site(s) are situated.

Level of unemployment:

The percentage of unemployed individuals in the Joe Morolong LM was 5.5% (3.8% less than the provincial average and 2.8% less than the district municipality average).
The percentage of employed individuals in the Joe Morolong LM was 8.7% (15% less than the provincial average and 10.75% less than the district average).

Employed	Unemployed	Discouraged work seeker	Other not economically active	N/A	Total
282791	106723	39913	306291	410143	1145861
43825	18518	10967	64361	87127	224799
7828	4912	6200	29569	41022	89530

(From StatsSA 2011 in the JTG DM IDP 2025/2026).

Economic profile of local municipality:

Main economic sectors in Joe Morolong constitute agriculture, mining, and community services. Other sectors identified as significant with great investment potential includes, construction, agro-processing, manufacturing and tourism also contribute significantly to the economic make-up of the Joe Morolong LM.
The most recent breakdown of jobs created per industry is as follows:

Employment: Industry

Sector	Number of jobs created
Agriculture related work	720
Manufacturing	144
Mining, Quarrying	471
Electricity, gas, water	116
Construction	283
Wholesale, Retail	432
Transport	122
Business services	100
Community services	1 693
Undetermined	87 171

(Source: Municipal Demarcations Board)

From the Joe Morolong IDP 22022/2023.

Level of education:

22.5% of the population of Joe Morolong have not received any form of schooling, 22.55% have completed high school at grade 12 level while 1.52% of the population has completed any form of tertiary education.

Highest Level of Education	Joe Morolong
No schooling	18 569
Grade 0	4 455
Grade 1/Sub A/Class 1	3 880
Grade 2/Sub B/Class 2	2 769
Grade 3/Standard 1/ABET 1	5 057
Grade 4/Standard 2	4 988
Grade 5/Standard 3/ABET 2	4 546
Grade 6/Standard 4	4 571
Grade 7/Standard 5/ABET 3	4 542
Grade 8/Standard 6/Form 1	5 055
Grade 9/Standard 7/Form 2/ABET 4/Occupational certificate NQF Level 1	5 067
Grade 10/Standard 8/Form 3/Occupational certificate NQF Level 2	5 501
Grade 11/Standard 9/Form 4/NCV Level 3/ Occupational certificate NQF Level 3	4 909
Grade 12/Standard 10/Form 5/Matric/NCV Level 4/ Occupational certificate NQF Level 3	6 802
NTC I/N1	12
NTCII/N2	98
NTCIII/N3	124
N4/NTC 4/Occupational certificate NQF Level 5	130
N5/NTC 5/Occupational certificate NQF Level 5	82
N6/NTC 6/Occupational certificate NQF Level 5	263
Certificate with less than Grade 12/Std 10	-
Diploma with less than Grade 12/Std 10	20
Higher/National/Advanced Certificate with Grade 12/Occupational certificate NQF	207
Diploma with Grade 12/Std 10/Occupational certificate NQF Level 6	262
Higher Diploma/Occupational certificate NQF Level 7	272
Post-Higher Diploma (Master's)	129
Bachelor's degree/Occupational certificate NQF Level 7	215
Honours degree/Post-graduate diploma/Occupational certificate NQF Level 8	96
Master's/Professional Master's at NQF Level 9 degree	80
PHD (Doctoral degree/Professional doctoral degree at NQF Level 10)	10
Other	147
Do not know	1 149
Unspecified	193

Source: StatsSA 2016

(From the Joe Morolong IDP 2023-2024).

b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	R 1 200 000 000.00	
What is the expected yearly income that will be generated by or as a result of the activity?	R 400 000 000.00 (if taking place over three years)	
Will the activity contribute to service infrastructure?	YES	~~NO~~
Is the activity a public amenity?	YES	~~NO~~
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	40	
What is the expected value of the employment opportunities during the development and construction phase?	>R 67 000 000,00	
What percentage of this will accrue to previously disadvantaged individuals?	90%	
How many permanent new employment opportunities will be created during the operational phase of the activity?	N/A	
What is the expected current value of the employment opportunities during the first 10 years?	N/A	
What percentage of this will accrue to previously disadvantaged individuals?	N/A	

9. BIODIVERSITY

Please note: The Department may request specialist input/studies depending on the nature of the biodiversity occurring on the site and potential impact(s) of the proposed activity/ies. To assist with the identification of the biodiversity occurring on site and the ecosystem status consult http://bgis.sanbi.org or BGIShelp@sanbi.org. Information is also available on compact disc (cd) from the Biodiversity-GIS Unit, Ph (021) 799 8698. This information may be updated from time to time and it is the applicant/ EAP's responsibility to ensure that the latest version is used. A map of the relevant biodiversity information (including an indication of the habitat conditions as per (b) below) and must be provided as an overlay map to the property/site plan as Appendix D to this report.

a) Indicate the applicable biodiversity planning categories of all areas on site and indicate the reason(s) provided in the biodiversity plan for the selection of the specific area as part of the specific category)

Systematic Biodiversity Planning Category				If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan
Critical Biodiversity Area (CBA)	**Ecological Support Area (ESA)**	**Other Natural Area (ONA)**	~~No Natural Area Remaining (NNR)~~	CBA: The CBA 2 which the development is proposed to traverse consists of a 500m buffer zone situated around areas declared as NFEPA wetlands (thus being attributed the conservation category of CBA 1s).
				ESA: The ESA areas which the proposed development traverses consists of a 500m buffer around NFEPA rivers as well as a region surrounding the CBA 2 mentioned above.

b) Indicate and describe the habitat condition on site

Habitat Condition	Percentage of habitat condition class (adding up to 100%)	Description and additional Comments and Observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing, harvesting regimes etc).
A terrestrial ecological compliance assessment was conducted by a qualified specialist (see appendices D and I) which informed the following summary.		
Natural	**>50%**	It was noted that in spite of some disturbances and alterations to the expected vegetation units, that the majority of the area assessed was still in natural condition.
Near Natural (includes areas with low to moderate level of alien invasive plants)	**≈25%**	Disturbances were noted to be predominantly in the form of: • illegal dumping of asbestos products, building rubble, litter etc. • overgrazing by various livestock, • active vegetation clearing and removal, • compaction associated with gravel roads.

Degraded (includes areas heavily invaded by alien plants)	**N/A**	N/A
Transformed (includes cultivation, dams, urban, plantation, roads, etc)	**25%**	The study area assessed by the botanist during the terrestrial ecological assessment also comprised of the already existing gravel road which constitutes transformed land.

c) Complete the table to indicate:

(i) the type of vegetation, including its ecosystem status, present on the site; and

(ii) whether an aquatic ecosystem is present on site.

Terrestrial Ecosystems		**Aquatic Ecosystems**						
Ecosystem threat status as per the National Environmental Management: Biodiversity Act (Act No. 10 of 2004)	~~Critical~~ ~~Endangered~~ ~~Vulnerable~~ **Least Threatened**	Wetland (including rivers, depressions, channelled and unchanneled wetlands, flats, seeps pans, and artificial wetlands)			~~Estuary~~		~~Coastline~~	
		YES	~~NO~~	~~UNSURE~~	~~YES~~	**NO**	~~YES~~	**NO**

d) Please provide a description of the vegetation type and/or aquatic ecosystem present on site, including any important biodiversity features/information identified on site (e.g. threatened species and special habitats)

Terrestrial:

The terrestrial ecological assessment was divided into 4 sections or vegetation units as identified by the specialist:

VU A:

Tree layer: well-developed containing protected species such as *Vachellia erioloba* and *V. Haematoxylon*

Tall shrub layer: well-developed and dense.

Sub shrub layer: poorly developed.

Herbaceous layer: fairly developed.

Grass layer: poorly developed.

VU B:

Tree layer: poorly developed but contains members of the protected tree species *Boscia albitrunca*.

Tall shrub layer: Fairly developed.

Sub shrub layer: Fairly developed.

Grass layer: moderately developed.

Forb layer: Poorly developed.

VU C:

Tree layer: Moderately developed and open with the protected species *V. erioloba* dominating. Few individuals of the protected species *V. haeomatoxylon*, and *B. albitruna* were also noted to be present.

Tall Shrub layer: Well-developed

Sub shrub layer: Poorly developed

Herbaceous layer: Moderately developed

Four species of aloes were also observed in this area (*Kleinia longiflora*, *Aloe greatheadii*, *Aloe hereroensis*) of which one is a category 1b listed alien and invasive species (NEM:BA Act No. 10 of 2004) (*Trichocereus spachianus*).

VU D:

Tree layer: Fairly developed, open and sparce with members of the protected species *V. erioloba*.

Shrub layer: Well-developed and open.

Herbaceous layer: Well-developed.

Grass layer: Well-developed and relatively dense in most areas.

A species of succulents (*Euphorbia inaequilatera*) and four geophytic species of which two have protection status (*Boophone disticha and Drimia sanguinea*).

NO SCCs were identified throughout the entire study area, however, indicators in some stretches do suggest that SCCs could be supported. This will, as per the requirements of the specialist in the Terrestrial Ecological Assessment (Appendix D) included in the EMPr (Appendix G), be confirmed in a site walkthrough, and active measures for their conservation will per the EMPr (Appendix G) be put in place.

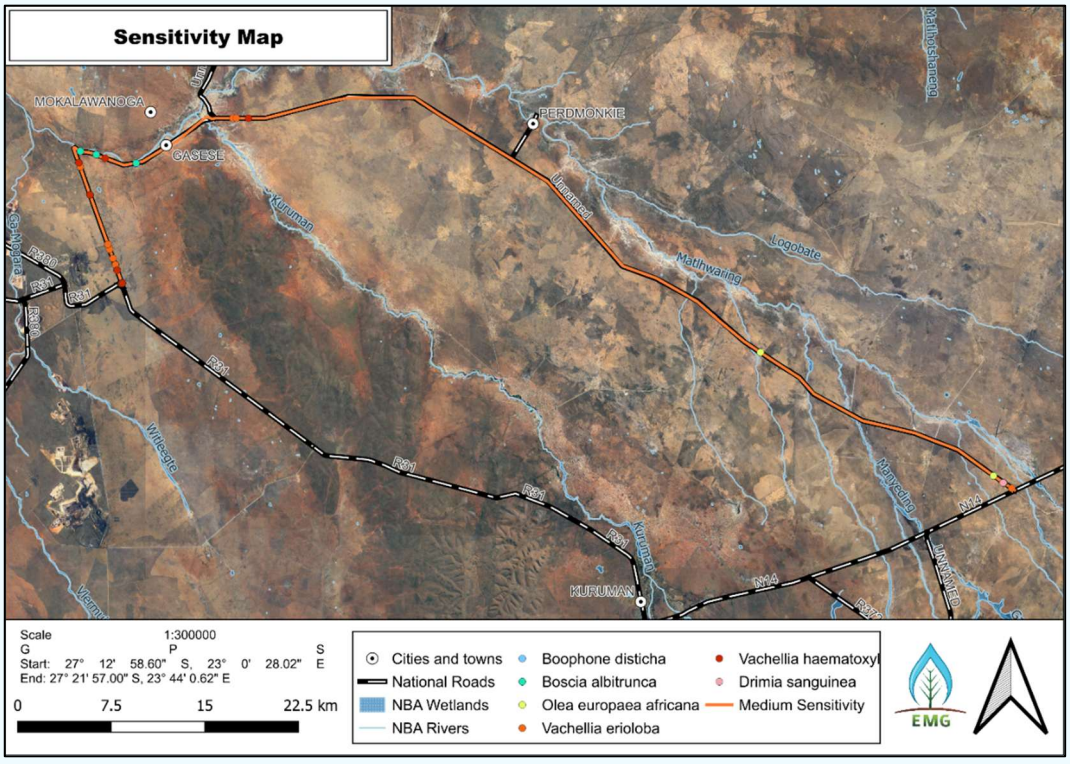


Figure 5: Sensitivity map from the Terrestrial Ecological Assessment showing protected identified species in the assessment area.

Per the EMPr, a thorough site visit by a qualified botanist will be performed to identify all SCCs/nationally/provincially protected species of flora. All relevant permits necessitated by the findings of the walkthrough, will be applied for before the commencement of the construction.

Aquatic

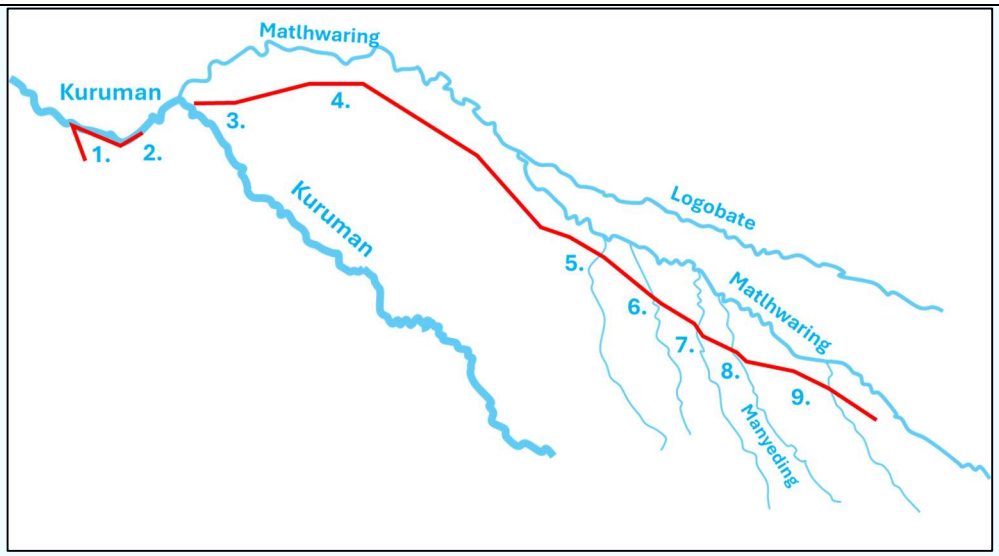


Figure 4: A diagram of the layout of the watercourses pertinent to the proposed development (blue) transected by the proposed development (red) (see below associated descriptions).

As shown in section 5, the aquatic features on site can be spilt into three categories: namely non-perennial rivers, permanent wetlands and seasonal wetlands.

Non-perennial rivers:

1. High levels of overgrazing by domestic livestock has contributed to erosion and sedimentation of watercourses. Vegetation along the drainage lines is dominated by terrestrial species, with only some riparian grasses, trees and dwarf shrubs. Significant infestation of *Prosopis glandulosa* was observed.

2. Indicators of overgrazing by livestock, with signs of erosion and refuse dumping. Vegetation along the drainage lines is dominated by terrestrial species, with only some riparian grasses, trees and dwarf shrubs. Significant infestation of *P. glandulosa* was observed.

5. Overgrazing by livestock noted to contribute towards sedimentation of the watercourse. Vegetation along the drainage lines is dominated by terrestrial species, with only some riparian grasses, trees and dwarf shrubs.

6. Relatively natural in spite of being modified by livestock. Vegetation along the banks is dominated by terrestrial species with only some riparian grasses, trees and dwarf shrubs being present, however wetland sedges were also noted to be present as well as two protected plant species: *Ruschia calcarea*, *Anacampseros filamentosa subsp. filamentosa*.

7. Overgrazing by livestock noted to contribute towards sedimentation of the watercourse. Extensive wetland conditions were noted (hence also included in permanent wetlands), however with regards to flow, this is still an ephemeral watercourse. Vegetation along the banks is dominated by terrestrial species with only some riparian grasses, trees and dwarf shrubs being present. Protected species were noted in the study area associated with conditions created by the exposed calcrete, namely: *Vachellia erioloba*, *Prepodesma orpenii*.

8. Overgrazing by livestock noted to contribute towards sedimentation of the watercourse. Vegetation along the banks is dominated by terrestrial species with only some riparian grasses, trees and dwarf shrubs being present. The protected species *V.erioloba* is noted to be present.

9. Overgrazing by livestock noted to contribute towards sedimentation of the watercourse. Vegetation along the banks is dominated by terrestrial species with only some riparian grasses, trees and dwarf shrubs being present. The prominent exposed calcrete is noted to create unique conditions supporting and abundance of protected plant species. The plant species noted comprise of *R. calcarea, Pr. orpenii, E. caterviflora*.

Permanent Wetlands:

7. While remaining ephemeral in terms of flow, extensive wetland conditions were noted to be fed by an artesian fountain. Vegetation along the banks is dominated by terrestrial species with only some riparian

grasses, trees and dwarf shrubs being present. Protected species were noted in the study area associated with conditions created by the exposed calcrete, namely: *V. erioloba*, *Prepodesma orpenii*.

8. While remaining ephemeral in terms of flow, extensive wetland conditions and a permanent region of wetness were present associated with the consistent flow provided by the Manyeding Eye, an artesian fountain. Vegetation along the banks is dominated by terrestrial species with only some riparian grasses, trees and dwarf shrubs being present. The protected species *V. erioloba* was noted in the study area.

Seasonal Wetlands:

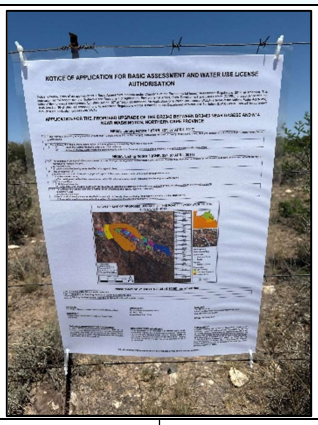
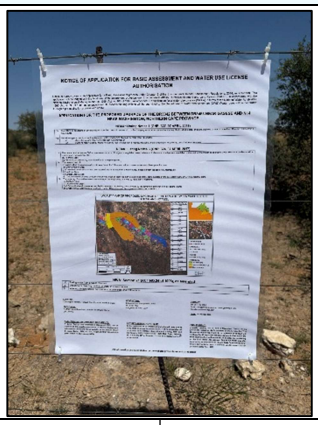
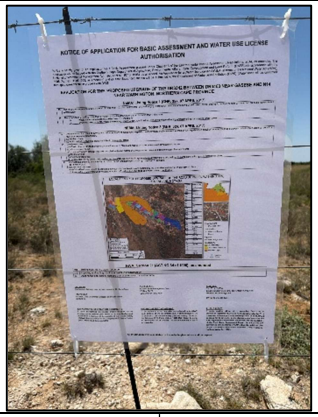
3. The vegetation in the seasonal pans noted in close proximity to the road was dominated by terrestrial species with only some riparian grasses, trees, and dwarf shrubs. Significant infestation by the alien and invasive species *P. glandulosa*.

4. The vegetation in the seasonal pans noted in close proximity to the road was dominated by terrestrial species with only some riparian grasses, trees, and dwarf shrubs.

6. Relatively natural in spite of being modified by livestock. Vegetation along the banks is dominated by terrestrial species with only some riparian grasses, trees and dwarf shrubs being present, however wetland sedges were also noted to be present as well as two protected plant species: *Ruschia calcarea*, *Anacampseros filamentosa subsp. filamentosa*.

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT AND NOTICE

Publication name	Gemsbok Newspaper			
Date published	20 March 2026			
Site notice position				
	Latitude	**Longitude**	**Latitude**	**Longitude**
	27° 21' 58" S	23° 43' 57" E	27° 19' 28" S	23° 39' 5" E
Date placed	15th of October 2025		15th of October 2025	
Site notice position				
	Latitude	**Longitude**	**Latitude**	**Longitude**
	27° 17' 34" S	23° 33' 57" E	27° 14' 32" S	23° 29' 30" E
Date placed	15th of October 2025		15th of October 2025	
Site notice position				
	Latitude	**Longitude**	**Latitude**	**Longitude**
	27° 12' 5" S	23° 24' 42" E	27° 5' 47" S	23° 16' 0" E
Date placed	15th of October 2025		15th of October 2025	

Site notice position				
	Latitude	**Longitude**	**Latitude**	**Longitude**
	27° 5' 32" S	23° 8' 43" E	27° 5' 51" S	23° 5' 2" E
Date placed	15th of October 2025		15th of October 2025	
Site notice position				
	Latitude	**Longitude**	**Latitude**	**Longitude**
	27° 7' 7" S	22° 58' 8" E	27° 12' 54" S	23° 0' 29" E
Date placed	15th of October 2025		15th of October 2025	
Site notice position				
	Latitude	**Longitude**	**Latitude**	**Longitude**
	27° 21' 58" S	23° 43' 57" E	27° 17' 28.07" S	23 ° 33' 51.38" E
Date placed	2nd of December 2025		2nd of December 2025	

Site notice position				
	Latitude	**Longitude**	**Latitude**	**Longitude**
	27° 8' 34.32" S	23° 21' 11.60" E	27° 7' 7.29" S	22° 58' 8.26" E
Date placed	2nd of December 2025		2nd of December 2025	

Include proof of the placement of the relevant advertisements and notices in Appendix E1.

2. DETERMINATION OF APPROPRIATE MEASURES

Provide details of the measures taken to include all potential I&APs as required by Regulation 41(2)(e) and 41(6) of GN 733.

Key stakeholders (other than organs of state) identified in terms of Regulation 41(2)(b) of GN 733

Title, Name and Surname	Affiliation/ key stakeholder status	Contact details (tel number or e-mail address)
[redacted]		

Include proof that the key stakeholder received written notification of the proposed activities as Appendix E2. This proof may include any of the following:

- e-mail delivery reports;
- registered mail receipts;
- courier waybills;
- signed acknowledgements of receipt; and/or
- or any other proof as agreed upon by the competent authority.

3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summary of main issues raised by I&APs	Summary of response from EAP
As this is the Draft BAR no issues have as of yet been raised. All queries will be addressed and incorporated into the FBAR.	

4. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments received from I&APs and respond to each comment before the Draft BAR is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations and be attached to the Final BAR as Appendix E3.

5. AUTHORITY PARTICIPATION

Authorities and organs of state identified as key stakeholders:

Authority/Organ of State	Contact person (Title, Name and Surname)	Tel No	Fax No	e-mail	Postal address
John Taolo Gaetsewe District Municipality					
Joe Morolong Local Municipality					
Department of Agriculture, Environmental Affairs, Rural Development and Land Reform					
Northern Cape Provincial Government					
Department of Cooperative Governance, Human Settlements and Traditional Affairs					
Department of Agriculture, Environmental Affairs, Rural Development and Land Reform (DAERL)					
Department of Roads and Public Works (DR&PW)					
SANRAL-South African National Road Agency (Western Region)					

SACAA Infrastructure	
Eskom	
Department of Water and Sanitation	
Northern Cape Heritage authority	

Include proof that the Authorities and Organs of State received written notification of the proposed activities as appendix E4.

In the case of renewable energy projects, Eskom and the SKA Project Office must be included in the list of Organs of State.

6. CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for any activities (linear or other) where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the requirements of that sub-regulation to the extent and in the manner as may be agreed to by the competent authority.

Proof of any such agreement must be provided, where applicable. Application for any deviation from the regulations relating to the public participation process must be submitted prior to the commencement of the public participation process.

A list of registered I&APs must be included as appendix E5.

Copies of any correspondence and minutes of any meetings held must be included in Appendix E6.

SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2014 and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

1. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES

Provide a summary and anticipated significance of the potential direct, indirect and cumulative impacts that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed. This impact assessment must be applied to all the identified alternatives to the activities identified in Section A(2) of this report.

Activity	Impact summary	Significance	Proposed mitigation
Alternative 1 (preferred alternative)			
Ecological impacts	***Direct impacts:*** • Physical clearance of vegetation • Habitat fragmentation leading to edge effects	Pre-mitigated: **Low-medium** Post-mitigated: **Low**	• Removal of indigenous flora should be kept at a minimum. • No collection of plants other than for holding for use in rehabilitation is allowed. • Disturbance-related activities may only occur in the authorised area. • Vehicle movement should strictly be kept on designated dirt/gravel roads and/or bypasses. • Soil erosion mitigation measures need to be implemented. • Post-development open/barren areas should be revegetated and kept free of exotic plant species. • Vehicles may only move within the demarcated space of the development area. • Construction should be limited to the existing road reserve and should not encroach into the adjacent natural areas. • Construction within any of the watercourses should preferably be undertaken during the winter months (June to September) when flooding will be unlikely.
	Indirect impacts: • Trampling • Accidental events such as fire • Loss of protected species	Pre-mitigated: **Low-medium** Post-mitigated: **Low**	
	Cumulative impacts: Loss of local biodiversity. Incremental development leading to the eventual destabilisation of the ecosystem through the gradual loss of environmental units. Eventual ecological breakdown.	Pre-mitigated: **Low-medium** Post-mitigated: **Low**	
Loss of CBAs and ESAs	***Direct impacts:*** • Physical clearance of vegetation • Habitat fragmentation	Pre-mitigated: **Low-medium** Post-mitigated: **Low**	• Limit the removal of vegetation in these CBA/ESA areas. • Low impact transplanting techniques must be utilised. • Vegetation and topsoil must be kept for use in rehabilitation. • Holding areas for plants must be demarcated and utilised. • Topsoil storage must be prevented from contamination
	Indirect impacts: • Accidental events such as fire • Loss of protected species	Pre-mitigated: **Low-medium** Post-mitigated: **Low**	
	Cumulative impacts:	Pre-mitigated: **Low-medium**	

Activity	Impact summary	Significance	Proposed mitigation
	The deterioration of ESAs leading to the subsequent deterioration of CBAs. The loss of ecosystem services offered by either CBAs or ESAs. Deteriorated resilience of the ESAs and CBAs. Subsequent alteration of surrounding ecosystems and habitats. Loss of biodiversity.	Post-mitigated: **Low**	and invasion by alien and invasive species. • General works should, where possible, take place from the edge of the existing road to the side opposite a watercourse. In cases where the watercourses intersect the road, care must be taken to limit the distance across affected by construction activities. • No heavy machinery or material storage should occur on the side closest to a water course or within 100m of a watercourse. • A comprehensive fire management plan needs to be drafted prior to construction. • Removal of indigenous flora should be kept at a minimum. • Disturbance related activities may only occur in the authorised area. • No unnecessary clearance of vegetation or topsoil may take place outside of the development area. • No other activity than that authorised may be taken within the authorised area. • Where possible, indigenous vegetation removed from the development area must be transplanted in other neighbouring areas to try and improve or re-establish ecological functioning. • Post-development open areas should be revegetated and kept free of exotic plant species. • Vehicles may only move within the demarcated space of the development area. • Soil erosion mitigation measures need to be implemented. • Construction within any of the watercourses should preferably be undertaken during the winter months (June to September) when flooding will be unlikely.
Loss of indigenous floral and faunal diversity	***Direct impacts:*** • Physical clearance of vegetation • Habitat fragmentation • Accidental events such as fire, oil spills etc. • Trampling	Pre-mitigated: **Low** Post-mitigated: **Low**	• Development may only occur within the clearly demarked area. • Monitoring for the emergence of exotic species should be conducted. • An alien invasive species management plan must be drafted in the incidence of exotic species. • Vehicle movement should remain within the authorised boundaries. • A comprehensive rehabilitation plan must be adhered to.
	Indirect impacts: • Loss of protected species • Trampling • Road mortalities	Pre-mitigated: **Low** Post-mitigated: **Low**	
	Cumulative impacts:	Pre-mitigated: **Low** Post-mitigated:	

Activity	Impact summary	Significance	Proposed mitigation
	Disturbance of established ecosystems. Deterioration of ecosystem functioning. Loss of biodiversity.	**Low**	• No unnecessary destruction or removal of vegetation is allowed. • Wildlife elements such as nests and burrows should be carefully inspected, and animals responsibly removed by a relevant specialist. • Post-development open areas should be revegetated and kept free of exotic plant species. • Any other relevant recommendations listed in this report should be implemented. • An alien and invasive management plan (AIMP) should be developed to avoid the possibility of invasions and supply eradication techniques should they arise in the development area. • Ensure all construction residue has been removed at the end of the construction phase. • Ensure the sloping towards the road is smooth/to an acceptable angle. • Quarterly alien and invasive species monitoring should take place according to the AIMP.
Loss of floral and faunal species of conservation concern	***Direct impacts:*** • Clearance of vegetation • Loss of protected species • Habitat fragmentation • Poaching, unlawful hunting and gathering of plants and animals • Trampling	Pre-mitigated: **Low-medium** Post-mitigated: **Low**	• A thorough walk-through of the study area by a qualified botanist should occur to locate any potential SCC/protected species. • All staff should be trained on SCC/protected species, observations of SCC/protected species and the reporting procedure. • In the case of SCC observations, a GPS co-ordinate and photo must be recorded by the onsite environmental officer and supplied to the associated qualified botanist. • On-site environmental and health and safety officers must report any observations of CC/protected species to a qualified botanist and apply the recommended buffer area for that SCC/protected species. • Protected plant species should be located and demarcated. • Removal or relocation of the SCC are prohibited without the appropriate permits. • DAERL should be consulted with regard to the feasibility of transplanting or removing provincially protected species. • Removal or transplant permits from DAERL must be obtained for all provincially protected flora. • If DAERL indicates transplant or relocation of some of the
	Indirect impacts: • Accidental road mortalities • Accidental events such as fire etc.	Pre-mitigated: **Low** Post-mitigated: **Low**	
	Cumulative impacts: The loss of rare and vulnerable species. Loss of biodiversity. Secondary deterioration of biodiversity through the loss of species engaging in species specific interactions with species of conservation concern.	Pre-mitigated: **Low** Post-mitigated: **Low**	

Activity	Impact summary	Significance	Proposed mitigation
			provincially protected flora, a formal relocation management plan should be drafted and implemented. • Vehicle movement should strictly be contained on designated roads. No off-roading must be allowed. • No harvesting of plant material allowed. • The presence of alien and invasive species needs to be monitored and eradicated quarterly. • The relocation plan should be strictly supervised by a qualified botanist. • All construction staff should be informed on SCCs and protected species or species of special conservation concern. • A relevant specialist should be notified when any of the mentioned SCC and protected flora are observed during construction. • All disturbance-related activities must be restricted to the authorised development boundary. • No illegal harvesting of plant material is allowed. • All damage-causing activities should strictly be restricted to the authorised development area. • The presence of alien and invasive species needs to be monitored and eradicated quarterly.
Archaeological and Palaeontological Heritage Resources	***Direct impacts:*** • Grubbing • Trenching	Pre-mitigated: **Low-medium** Post-mitigated: **Negligible**	• Implement traffic control to ensure that commuters remain in bypasses in the development area and do not create bypasses adjacent to the development area. • Implement the chance finds protocol included in the HIA. • Train all construction personnel (and new personnel) on the contents of the chance finds protocol during toolbox talks.
	Indirect impacts: • Trampling	Pre-mitigated: **Low- medium** Post-mitigated: **Negligible**	
	Cumulative impacts: The gradual loss of artefacts, cryptic graves, (and structures) of value to both local and national heritage. The loss of artefacts of palaeontological significance. Loss of artefacts which contribute to a sense of national identity.	Pre-mitigated: **Low-medium** Post-mitigated: **Negligible**	
Ground and Surface Water Quality	***Direct impacts:*** • Direct pollution of watercourses.	Pre-mitigated: **Medium** Post-mitigated: **Low**	• No littering may be allowed. All litter must be removed from the site. • The timeframe for construction through the watercourses should be kept to a minimum. • Construction should be limited to the existing road reserve.
	Indirect impacts: • Construction activities leading to runoff of pollutants into watercourses.	Pre-mitigated: **Medium** Post-mitigated: **Low**	

Activity	Impact summary	Significance	Proposed mitigation
	• Disturbance of bed and banks of watercourses promoting sedimentation. • Erosion and runoff from stockpiling of construction materials, waste and topsoil leading to ground and surface water contamination.		• The construction site must be inspected for erosion (erosion preventative and corrective measures must be implemented where appropriate). • The soil surface should be re-instated to the virgin soil level and not depressed or elevated as this will promote erosion and cause flow barriers. After rehabilitation any excess soil or material should be removed and disposed of at a registered disposal facility. • The watercourse bed and bank morphology should also be re-instated as far as possible, which will also speed up the stabilisation of the bed and banks. • Where concrete is utilised the detrimental impacts of uncured cement on watercourses must be taken into consideration. • Construction within any of the watercourses should preferably be undertaken during the winter months (June to September) when flooding will be unlikely. • Compliance monitoring should be implemented. • After construction of the road section, the area must be rehabilitated. This includes removal of all construction material. Excavated rock may not be left in heaps and must be removed and disposed of at a registered facility. Compacted areas must be ripped. Construction roads not being utilised must afterwards be rehabilitated.
	Cumulative impacts: The deterioration of water quality by introduction of pollutants associated with construction and sedimentation associated with alteration of bed and banks of watercourses will lead to the decline of aquatic organisms as well as organisms which depend on them (food sources, pollination etc.). Impaired aquatic community structures will reduce the watercourses capacity to buffer disturbances and provide ecosystem functions.	Pre-mitigated: **Medium** Post-mitigated: **Low**	
Aquatic and Riparian Ecosystems	***Direct impacts:*** • Grubbing • Clearing • Movement of construction workers and vehicles.	Pre-mitigated: **Medium** Post-mitigated: **Low**	• Adequate monitoring of weed establishment and its continued eradication must be maintained. • Problematic weeds must be eradicated where these establish on the proposed road section. • The timeframe for construction through the watercourses should be kept to a minimum. • Any disturbance and removal of vegetation within these watercourses should be kept to a minimum. • Construction should be limited to the existing road reserve. • Weed eradication should be initiated at the construction site prior to construction and be continued until rehabilitation of the road reserve has been completed.
	Indirect impacts: • Pollution and runoff resulting in the deterioration of the aquatic and riparian ecosystems.	Pre-mitigated: **Medium** Post-mitigated: **Low**	
	Cumulative impacts: Grubbing and clearing in the riparian and immediate terrestrial habitats will result in the loss of aquatic biodiversity. The disturbance of soils may result in the proliferation of alien and invasive vegetation. The loss of biodiversity through active clearing as well as the indirect loss of biodiversity by introducing greater competition for resources in the form of alien and invasive vegetation, will result in impaired ecosystem function. This	Pre-mitigated: **Medium** Post-mitigated: **Low**	

Activity	Impact summary	Significance	Proposed mitigation
	will make the aquatic ecosystems less capable of absorbing disturbances and less capable of supporting ecosystem functions.		• When excavating through any of the watercourses, the upper 30 cm, or topsoil, should be removed together with the vegetation and stored as sods on the site. These should then be replaced when rehabilitating the construction area. • Subsoil should be used as backfilling and not as top dressing. Only removed sods and topsoil should be utilised to rehabilitate the soil surface. • Compliance monitoring should be implemented.
Aesthetic degradation associated with construction activities.	***Direct impacts:*** • Grubbing and clearing. • Trenching. • Stockpiling. • Movement of construction vehicles. • Road surface preparation.	Pre-mitigated: **Low-medium** Post-mitigated: **Low**	• Limit construction activities to the development footprint. • Implement house-keeping practices in which attention is given to neat storage of materials. • Do not grub or clear beyond the operational area. • Implement rehabilitation methods where possible during construction activities. • Implement good house-keeping practises • Institute a maintenance plan for the upkeep of the road to prevent commuters from creating by-passes, thus increasing the surface area the gravel road.
	Indirect impacts: All impacts associated with aesthetic degradation are anticipated to be direct.	**N/A**	
	Cumulative impacts: The aesthetic quality of the area would be reduced leading to a decrease in quality of living for the local residents and commuters.	Pre-mitigated: **Low-medium** Post-mitigated: **Low**	
Generation of exhaust fumes and particulate matter.	***Direct impacts:*** • Dust generation associated with construction activities. • Exhaust fume generation associated with construction vehicle activity.	Pre-mitigated: **Low-medium** Post-mitigated: **Low**	• Dust suppression methods such as watering down of bare surfaces. • Regular maintenance of construction vehicles to ensure minimal exhaust emissions. • Minimising the clearance of vegetation to the active construction area. • Implement a curfew of only operating between the hours of 7:00 and 17:00. • Active revegetation of cleared areas immediately after construction.
	Indirect impacts: • Increase in commuters utilising the road leading to an increase in exhaust fumes being generated in the proposed development.	Pre-mitigated: **Low-medium** Post-mitigated: **Low**	
	Cumulative impacts: The reduction in air quality could lead to respiratory ailments of people and fauna, as well as a decline in vegetation (in the incidence of excessive particulate matter).	Pre-mitigated: **Low-medium** Post-mitigated: **Low**	
Noise and Vibrations.	***Direct impacts:*** • Noise associated with construction vehicles, workers and activities. • Noise associated with commuters.	Pre-mitigated: **Low-medium** Post-mitigated: **Low**	• Implement a curfew of only operating between the hours of 7:00 and 17:00. • Ensure regular maintenance of construction vehicles and equipment to limit noise produced. • Implement signage and speed bumps to control the acceleration and speed of commuters which will reduce noise associated with the utilisation of the road by commuters.
	Indirect impacts: • Increase in the number of commuters leading to an increase in sounds generated by traffic	Pre-mitigated: **Low-medium** Post-mitigated: **Low**	
	Cumulative impacts: The degradation of standard of living associated experienced by local residents on account of excessive noise.	Pre-mitigated: **Low-medium** Post-mitigated: **Low**	
	Direct impacts:	Pre-mitigated: **Low-medium**	Ensure fair recruitment practices in which where locals workers and

Activity	Impact summary	Significance	Proposed mitigation
Job creation and the influx of job seekers	• Public concerns about the procurement and recruitment practices.	Post-mitigated: **Low**	service providers are utilised wherever possible.
	Indirect impacts: • No indirect impacts are anticipated.	**N/A**	
	Cumulative impacts: Deterioration in trust and communication between community members, local service providers, and the local municipality, which may lead to retardation of future community developments and programmes compromising prompt service delivery.	Pre-mitigated: **Low-medium** Post-mitigated: **Low**	
General Solid and Liquid Waste	***Direct impacts:*** • Litter generated by construction workers strewn in the area, which gets dispersed further by wind and stormwater resulting in the degradation of the aesthetic quality of the area.	Pre-mitigated: **Medium-high** Post-mitigated: **Low**	• Receptacles should be made available for the construction workers to dispose of litter into the receptacles. • Waste should be disposed of at a licenced landfill on at least a monthly basis. • Secure waste receptacle bins with lids to prevent wind-blown litter. • Any hazardous waste must be stored separately out of direct sunlight and out of rain in the incidence of precipitation. • Any liquid waste generated must be stored in watertight containers. • Any construction material with leachable material must be covered and secured with impermeable tarp in the incidence of rain. • Any leftover construction material after the construction phase has terminated must be disposed of at a licenced landfill facility.
	Indirect impacts: • Osmotically active chemicals in construction materials leaching into soil and watercourses leading to the deterioration of soil and river health	Pre-mitigated: **Medium-high** Post-mitigated: **Low**	
	Cumulative impacts: The accumulation of solid waste, as well as the chemicals that leach into the soil and water courses from construction material will result in the aesthetic degradation of the area, death and deformation of vegetation and fauna who ingest the toxins either directly (water borne) or indirectly (bioaccumulation) leading to loss of biodiversity and degeneration of ecosystems.	Pre-mitigated: **Medium-high** Post-mitigated: **Low**	
~~**Alternative 2**~~			
	~~***Direct impacts:***~~		
	~~***Indirect impacts:***~~		
	~~***Cumulative impacts:***~~		
	~~***Direct impacts:***~~		
	~~***Indirect impacts:***~~		
	~~***Cumulative impacts:***~~		
~~**Alternative 3**~~			
	~~***Direct impacts:***~~		
	~~***Indirect impacts:***~~		

Activity	Impact summary	Significance	Proposed mitigation
	~~***Cumulative impacts:***~~		
	~~***Direct impacts:***~~		
	~~***Indirect impacts:***~~		
	~~***Cumulative impacts:***~~		
No-go option			
Not proceeding with the proposed development.	***Direct impacts:*** Socio-economic benefits directly associated with the construction and maintenance of the proposed development: • job creation, • skills development, • local economic growth will be lost.	Pre-mitigated: **Medium-high** Post-mitigated: **Low**	**Proceeding with the proposed development.**
	Indirect impacts: Erosion associated with the lack of stormwater infrastructure and gravel roads would continue. The area of compacted soils and trampled vegetation would be increased given the tendency of commuters to expand the road surface area. The status-quo culverts currently incapable of adequately absorbing the ephemeral flow of the numerous watercourses traversed by the current road would not be upgraded to better accommodate the ephemeral watercourses. They would thus continue their pattern of acting as obstructions to flow regimes and resulting in scouring and sedimentation. The area of compacted soils and trampled vegetation would be increased given the tendency of commuters to expand the road surface area. The greater accessibility to resources and services offered to the communities by the road development (increased ease of access by courier, health and police services) would be lost. There would be an expensive financial implication to the local municipality on account of the gravel road requiring more frequent maintenance.	Pre-mitigated: **Medium-high** Post-mitigated: **Low**	

Activity	Impact summary	Significance	Proposed mitigation
	There would be a greater net amount of dust deposition in the surrounding areas as well as in the numerous watercourses traversed by the proposed development.		
	Cumulative impacts: Continued unintentional exclusion of numerous communities from rapid service delivery. Deteriorated trust and relationships between communities and governmental service providers. Continued alteration of flow regimes associated with inadequate stormwater infrastructure.	Pre-mitigated: **Medium-high** Post-mitigated: **Low**	

A complete impact assessment in terms of Regulation 19(3) of GN 733 must be included as Appendix F.

2. ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

Alternative A (preferred alternative)

The preferred impact is anticipated to be minimal.
Several points of information inform this:
1). The proposed development entailing the upgrade (and in some places expansion) of an already existing road, implicates that a relatively small footprint of undisturbed habitat is affected by the new development.
2). Mitigation measures in place ensure that prompt rehabilitation of road reserves takes place, to ensure minimal, reversible detrimental impacts to the environment, particularly vegetation.
3). Continuous utilisation of the current road and anthropogenic influences renders the presence of sensitive fauna highly improbable rendering the impact that the proposed development will have negligible.

The impact on water bodies can potentially be positive (provided that the mitigation measures are strictly followed), as current stormwater infrastructure (culverts) were noted to be inadequate in absorbing the volumes of water during rainfall events, leading to altered hydrology of watercourses. If the proposed stormwater infrastructure is implemented and replaces the old stormwater infrastructure, the natural hydrological patterns might be re-established.

Thus, while there are some inevitable permanent impacts in the expansion of the road in certain places, impacts associated with the expansion of the road reserve will be largely temporary and reversible (as these areas will be reclaimed by vegetation). The proposed development attempts to as far as possible utilise the current road layout and ensure that active rehabilitation of the road reserves takes place concurrently with development.

The proposed development, furthermore, abides by the mitigation hierarchy (avoid, minimise, rehabilitate, offset) i.e. the demand of the development is so great that avoidance is not feasible, without counteractively resulting in communities seeking and implementing alternative measures that may be more environmentally detrimental compared to the proposed development. Measures to minimise the impact is thus implemented in its strategic location of utilising the already disturbed footprint. Measures to restore are mandated by the demands for active rehabilitation as espoused in the EMPr. The proposed development could further have

certain positive environmental (not to mention social) impacts in the upgrading of currently inadequate stormwater infrastructure which is busy affecting the hydrology of watercourses in the area.

Alternative B

The alternative to utilising to upgrading the current D3342, would be to attempt to develop an entirely new road. The road layout would also need to be fairly similar to the current D3342 to provide adequately access to the already established villages which the D3342 provides.
As this option would entail the novel habitat destruction, additional river crossings i.e. points at which the watercourses may be impacted (additional as the current layout would not necessarily be decommissioned) this potential would have more detrimental environmental impacts, while offering no conceivable benefits over and above the preferred option.

~~Alternative C~~

N/A

No-go alternative (compulsory)

The no-go alternative assumes that the proposed project will not go ahead i.e. it is the option of not constructing the proposed development. This alternative would result in no environmental impacts on the site or surrounding local area. It provides the baseline against which other alternatives were compared. The following implications will occur if the "no-go" alternative is implemented:

- Socio-economic benefits directly associated with the construction and maintenance of the proposed development:
  - job creation,
  - skills development,
  - local economic growth will be lost.
- The greater accessibility to resources and services offered to the communities by the road development (increased ease of access by courier, health and police services) would be lost.
- There would be an expensive financial implication to the local municipality on account of the gravel road requiring more frequent maintenance.
- There would be a greater net amount of dust deposition in the surrounding areas as well as in the numerous watercourses traversed by the proposed development.
- The area of compacted soils and trampled vegetation would be increased given the tendency of commuters to expand the road surface area.
- Erosion associated with the lack of stormwater infrastructure and gravel roads would continue.
- The status-quo culverts currently incapable of adequately absorbing the ephemeral flow of the numerous watercourses traversed by the current road would not be upgraded to better accommodate the ephemeral watercourses. They would thus continue their pattern of acting as obstructions to flow regimes and resulting in scouring and sedimentation.

SECTION E. RECOMMENDATION OF PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?	**YES**	~~NO~~

If "NO", indicate the aspects that should be assessed further as part of a Scoping and EIA process before a decision can be made (list the aspects that require further assessment).

N/A

If "YES", please list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application.

All mitigations within the EMPR must be adhered to.

- No trees may be cleared in which active nesting is taking place without the necessary DFFE permits.
- All mitigation measures in the DFFE permit must be abided by.
- No construction may take place in any watercourses or buffer zones (Appendix A) without the appropriate water use licences being obtained.
- Environmental Induction must include the Chance Finds Protocol as outlined in Appendix 4 of the EMPr.
- The establishment of the site yard must be outside of all CBAs and ESAs, and regulated watercourses as confirmed by a competent environmental compliance officer.
- The site yard may not have an area in excess of 1Ha.

Is an EMPr attached?	**YES**	~~NO~~

The EMPr must be attached as Appendix G.

The details of the EAP who compiled the BAR and the expertise of the EAP to perform the Basic Assessment process must be included as Appendix H.

If any specialist reports were used during the compilation of this BAR, please attach the declaration of interest for each specialist in Appendix I.

Any other information relevant to this application and not previously included must be attached in Appendix J.

_____

NAME OF EAP

_____ _____

SIGNATURE OF EAP DATE

SECTION F: APPENDIXES

The following appendixes must be attached:

Appendix A: Maps

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports (including terms of reference)

Appendix E: Public Participation

Appendix F: Impact Assessment

Appendix G: Environmental Management Programme (EMPr)

Appendix H: Details of EAP and expertise

Appendix I: Specialist's declaration of interest

Appendix J: Additional Information