Proposed upgrading of existing road between Karino and Tekwane South, City of Mbombela, Mpumalanga Province

Draft Basic Assessment Report

February 2024

CORE Environmental Services
Anne-Mari Hitge **BSc Environmental Management** Professional Registration: SACNASP: 300067/15 EAPASA: 2020/602

EXECUTIVE SUMMARY

The City of Mbombela is proposing to upgrade a portion of the existing road D2266 Ka Nyamazane Road between Karino and Tekwane South for an approximate length of ±6km. The upgrade will consist of the re-construction and reconfiguration of two additional lanes on either side of the road (east bound and west bound), upgrading and construction of existing adjoining intersecting access roads as well as the culvert/stormwater infrastructure at 5 water/wetland crossings. The proposed scope of work will also include the following:

- Road markings and installation of road signages,
- Steel Guardrails installation,
- Construction of bus laybys and installation of Bus shelters,
- Landscaping,
- Reconfiguration of Karino estate and R538 intersection,
- Traffic Signalised intersections along the route and to Tekwane South entrance,
- Stormwater reticulation which includes, not limited to, inlets, manholes, headwalls, culverts and stormwater piping.
- Relocation of existing affected services,
- Installation of Streetlighting and 2m wide pedestrian walkway / sidewalk on both sides of the road.

Core Environmental Services was subsequently appointed as an independent Environmental Consultant, to apply for the Environmental Authorisation by means of conducting a Basic Environmental Authorisation Application process in accordance with GNR 982, 2014 (as amended in 2017). The application for Environmental Authorisation will be submitted to the Department of Agriculture, Rural Development, Land and Environmental Affairs (DARLDEA) for consideration. As activities will be taking place within a watercourse, a Water Use License will also be required in accordance with Section 21 of the National Water Act 36, of 1998 for impeding or diverting the flow of water in a watercourse and altering the bed, banks, course of characteristics of a watercourse during the construction as well as operational phase of the project.

The upgrading of the road is likely to result in environmental and socio-economic impacts. The identified impacts are listed below and discussed thereafter:

- *Impact on biodiversity;*
- *Generation of dust;*
- *Impact on soil;*
- *Impact on water resources;*
- *Impact on existing infrastructure*
- *Socio-economic impact.*

The table below summarises the impacts identified and assessed for the construction and operational aspects of the project:

IMPACT	SIGNIFICANCE BEFORE MITIGATION MEASURES	SIGNIFICANCE AFTER MITIGATION MEASURES
Construction Phase Impacts		
Biodiversity Impact	Low	Very Low
Generation of dust	Low	Very Low
Erosion	Very Low	Very Low
Soil Pollution	Low	Very Low
Impact on water resources (Sedimentation)	Medium	Low
Impact on water resources (Hydrology and Flow)	Low	Very Low

Impact on water resources (Water quality)	Medium	Low
Damage to existing infrastructure	Medium	Low
Job opportunities	Medium (+)	Medium (+)
Health and Safety	Low	Very Low
Operational Phase Impacts		
Impact on water resources	Medium (+)	Medium (+)
Socio-economic Impact	High (+)	High (+)

The assessment of the possible impacts associated with the construction and operational activities, concluded that the impact on the surrounding environment is of **low significance** and from an operational perspective, the upgrading of the road will have a positive impact on the livelihood of the surrounding community and residents travelling the road daily. It is however imperative that existing infrastructure along and underneath the road be protected during the construction process. Recommendations have however been made to address the impacts which could affect the biophysical and socio-economic environment. Recommendations for the mitigation of impacts are included within Section 7 and also the Draft Environmental Management Plan attached.

It is the opinion of the EAP that the EA for this project should be granted, and the proposed mitigation included as the conditions of the authorisation.

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ABBREVIATIONS

BAR	Basic Assessment Report
CBA	Critical Biodiversity Area
EA	Environmental Authorisation
GNR	General Notice Regulation
I&AP	Interested and Affected Party
LIA	Late Iron Age
MDARDLEA	Mpumalanga Department of Agriculture, Rural Development, Land and Administration
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NHRA	National Heritage Resources Agency
PPP	Public Participation Process
SACAA	South African Civil Aviation Authority

1. OVERVIEW OF THE PROJECT

1.1 Introduction

The City of Mbombela is proposing to upgrade a portion of the existing road D2266 Ka Nyamazane Road between Karino and Tekwane South for an approximate length of ±6km. The upgrade will consist of the re-construction and reconfiguration of two additional lanes on either side of the road (east bound and west bound), upgrading and construction of existing adjoining intersecting access roads as well as the culvert/stormwater infrastructure at 5 water/wetland crossings. The proposed scope of work will also include the following:

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The proposed project therefore requires two approvals prior to the commencement of the activity. These approvals include:

- Environmental Authorisation from DARLDEA;
- Water Use License from IUCMA;

1.2 Location

The road to be paved is located on portion 0 of the farms Tekwane 573-JU, Broederhoek 129-JU, as well as the farm Karino 931-JU. Start Coordinates: 25°28'8.95"S 31° 5'36.23"E, End Coordinates: 25°28'31.75"S 31° 9'1.51"E.

The water/wetland crossings are proposed at the following locations:

- Location 1: 25°28'3.66"S 31° 6'4.51"E
- Location 2: 25°28'12.32"S 31° 7'12.40"E
- Location 3: 25°28'20.17"S 31° 7'45.78"E
- Location 4: 25°28'19.94"S 31° 7'51.96"E
- Location 5: 25°28'22.48"S 31° 8'27.11"E

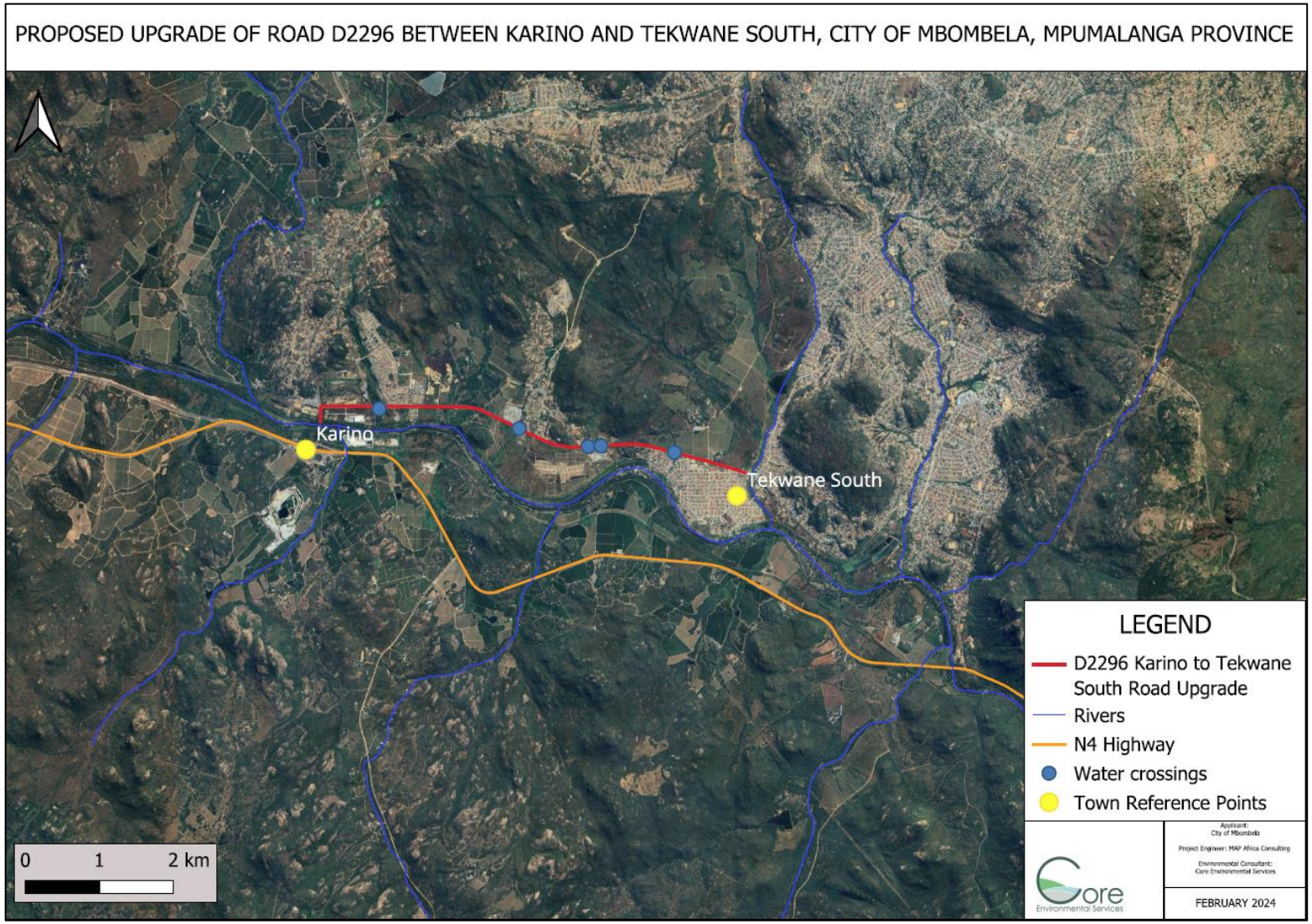

FIGURE 1: LOCALITY MAP OF ROAD D2296 BETWEEN KARINO AND TEKWANE SOUTH PROPOSED TO BE UPGRADED, CITY OF MBOMBELA, MPUMALANGA PROVINCE

1.3 Details of the EAP

Ms. Anne-Mari Hitge is an Environmental Specialist, who started her studies at the North-West University (NWU) and completed her Bachelor of Science: Environmental Management at the University of South Africa (UNISA) in 2007. Ms. Hitge is registered with the Environmental Assessment Practitioners Association of South Africa (EAPASA Reg No: 2020/602) as well as the South African Council for Natural Scientific Professionals as a Certificated Natural Scientist (Reg. No 300067/15). In addition to her qualification, she completed short courses in soil classification and wetland delineations (Terrasoil Science), Geographic Information Systems (University of KwaZulu-Natal), and Environmental Impact Assessments (NWU).

1.4 Policy, Legal and Administrative Framework

TABLE 1: LEGISLATION APPLICABLE TO THE PROJECT

Applicable legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments considered	Project application and type (permit / licence / authorisation / comment)
The Constitution of South Africa, Act No. 108 of 1996	**City of Mbombela** will be required to adhere to the Environmental Management Programme (EMPr) requirements to ensure that social and environmental management considerations are considered and implemented. As per Section 25 the Constitution, a public participation process (PPP) was and will continue to be undertaken, as this is considered to be an essential mechanism for informing stakeholders of their rights and obligations in terms of the project.
National Environmental Management Act, 1998 (Act No. 107 of 1998)	Environmental Authorisation will subsequently be applied for by means of conducting a Basic Environmental Authorisation process as regulated within GNR982 of 2014 (as amended in 2017).
National Water Act 36, 1998 (Act No. 36 of 1998)	This Act provides for fundamental reform of law relating to water resources and use. The preamble to the Act recognises that the ultimate aim of water resource management is to achieve sustainable use of water for the benefit of all users and that the protection of the quality of water resources is necessary to ensure sustainability of the nation's water resources in the interests of all water users. The project entails the construction of culverts and stormwater infrastructure within three water

	crossings and for this reason an application is submitted to the Inkomati-Usuthu Catchment Management Agency (IUCMA)
National Biodiversity Act, 2004 (Act No. 10 of 2004)	The act provides for the management and conservation of South Africa's biodiversity within the framework of the National Environmental Management Act, 1998; the protection of species and ecosystems that warrant national protection; the sustainable use of indigenous biological resources, the fair and equitable sharing of benefits arising from bioprospecting involving indigenous biological resource; the establishment and functions of a South African National Biodiversity Institute; and for matters connected therewith. The National Biodiversity Act, 2004, must therefore be considered prior to the clearance of vegetation to minimise the impact on the terrestrial biodiversity.
Occupational Health and Safety Act, 1998 (Act No. 85 of 1998)	The Act provides for the health and safety of people at work and for the health and safety of people using plant and machinery. During establishment, work must be conducted with strict adherence to the Occupational Health and Safety Act 85 of 1998.
National Heritage Resources Act, 1999 (Act No 25 of 1999)	This legislation aims to promote good management of the national estate, and to enable and encourage communities to nurture and conserve their legacy so that it may be bequeathed to future generations. Should any other items of significance be discovered during establishment, a Heritage Specialist must be contacted immediately, and work must cease until confirmation from the Specialist is received. For this reason, the applicant must adhere to the regulations stipulated within the National Heritage Resources Act, 1999.
Mpumalanga Provincial Roads Act, 2008 (Act No 1 of 2008)	The Act provides for the establishment, transformation, restructuring and control of the Mpumalanga Provincial road network; to develop and implement Provincial road policy, norms and standards; to provide for optimum road safety standards, efficient and cost-effective management of the Provincial road network, the maintenance of Provincial road asses and the provision and development of equitable road access to all communities within the Province; to provide for

	transparency in the development and implementation of Provincial road network policies and practices; and to provide for matters connected therewith.
City of Mbombela Integrated Development Plan (IDP) (2021 - 2022)	The primary objectives of the IDP are to foster economic growth that creates jobs and improve infrastructure within the province. Within the IDP's SWOT Analysis it was listed that one of the weaknesses are poor public road infrastructure, facilities, and pedestrian access to enable service delivery and economic development. This proposed project will aim to address this aspect. Job opportunities will be created by the proposed activities which supports economic growth within the area as well as contributing to improving infrastructure that contributes to the goals listed within the IDP.

1.5 National Environmental Management Act 107 of 1998

In accordance with the National Environmental Management Act 107, of 1998, the following listed activities will be triggered by the proposed development and will require approval prior to commencement:

As the upgrading of the road entails the widening of the road as well as the construction of culverts to ensure the free flow of water through drainage lines and watercourse, the following activities are applicable for the construction activities proposed to be undertaken:

TABLE 2: LISTED ACTIVITIES TRIGGERED IN TERMS OF THE NEMA, 107

Government Notice R983 (as amended) Activity No.	Describe the relevant Basic Assessment Activity in writing as per Listing Notice 1 (GN No. R983, as amended)	Describe the extent to which the activity applied for requires authorisation (specify the threshold where applicable)
19	*The infilling or depositing or 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 (i) a watercourse*	The activity is applicable as infilling and/or depositing of more than 10 cubic metres of sand within the watercourse/channel will be triggered by the construction of the culvert structures within a watercourse.
56	*The widening of a road by more than 6 metres, or the lengthening of a road by more than 1 kilometre, where –* *(i) where the existing reserve is wider than 13,5m; or* *(ii) where no reserve exists, where the existing road is wider than 8 metres.*	The existing road is currently approximately 13.5m in width. One lane will be added to each side of the road, thereby increasing the total width to 21m. The road will therefore be widened by 7.5m in total over a length of 6km.

1.6 Description of the project

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- Relocation of existing affected services,
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1.7 Need and Desirability

The road to be upgraded is currently used by most motorists travelling between Tekwane/Kanyamazane and Mbombela. With Mbombela being the capital of the area and providing numerous business opportunities, vehicular movement between these two centres are increasing rapidly, causing congestion during peak periods.

The high volume of motorists during peak traffic periods also increases the risk of accidents as motorists are overtaking on sections where it is unsafe to do so, due to impatience of some motorists and not having sufficient lanes to accommodate the additional traffic flow during such periods.

The wetland/drainage line crossings will also require specific stormwater infrastructure (box culverts, and V-drains) to ensure that the flow of water does not affect the existing and upgraded road infrastructure. Should these structures not be installed, all road infrastructure will be damaged during flood events and water would be accumulating on the road surface, increasing the possibility of accidents occurring.

2. PUBLIC PARTICIPATION PROCESS

The purpose of this chapter is to provide an outline of the public participation process (PPP) to date and the way forward with respect to the Basic Assessment process.
Consultation with the public forms an integral component of the EA process. This process enables Interested and Affected Parties (I&APs) (e.g. directly affected landowners, national-, provincial- and local authorities, and local communities etc.) to raise their issues and concerns regarding the proposed activities, which they feel should be addressed in the BA process. The PPP has thus been structured such as to provide I&APs with an opportunity to gain more knowledge about the proposed project, to provide input through the review of documents/reports, and to voice any issues or concerns at various stages throughout the BA process.

I&APs were identified during the public participation phase of the project. All the parties identified as an I&AP (surrounding landowners, relevant departments, stakeholders, local and district authorities) have automatically been registered in the I&APs database for the project. The registered I&AP list is attached as **Annexure C.1.**

In effort to engage potential stakeholders, different communication methods were used to inform them about the project and how to get involved in the BA process. These methods include:

- Distributing English Background Information Documents (BIDs) to all Stakeholders and registered I&APs on 13 September 2023. Proof of distribution is attached in **Annexure C.2**;
- Placement of media advert in a local newspaper (The Mpumalanga News) on 13 September 2023 (see **Annexure C.3**).
- Placing of a notice at the proposed site took place on 9 September 2023 (see **Annexure C.4**)

The draft Basic Assessment Report will be made available for public review from February 2023 – March 2024.

To date, the following comments have been received:

TABLE 2: COMMENTS RECEIVED AND RESPONSES ISSUED

Interested and Affected Party / Organ of State	Comment	Response
Mr. Cobus Riekert **Adjacent farm owner** ***"Farm Broedershoek"***	<u>15 September 2023:</u> 1. "Please take into account the entrance to the farm" 2. There is a concrete/asbes pipeline going under the road to provide water for the farm. This is critical for our operation and needs to be communicated before work begins. We cannot stand more than 1 day without water. (This also applied for the approximately 50mm pipeline for Rockla that has a servitude with us)"	<u>Response from the EAP:</u> Thank you for your comment. We acknowledge receipt thereof. Your comment will be included within the report and mitigation measures will be incorporated to ensure that existing services are protected from damage.

3. CONSIDERATION OF ALTERNATIVES

The EIA process requires the developer to identify and investigate/assess feasible and reasonable alternatives. The project alternatives range from the location where the activity is proposed, type of activity to be undertaken, design the of activity, technology to be used in the activity to the option of not implementing the activity (No-Go Alternative).

The assessment of the alternatives is a complicated and multi-faceted issue, which is essential to the success of this application and ultimately to the proper, responsible and sustainable operation of the proposed project.

As the project entails the widening of an existing road and bridges, the assessment of alternatives is limited. This aspect is however discussed below.

3.1 Alternative Selection

3.1.1 Location alternatives

No other locality alternatives could be investigated as the application includes the upgrading of the existing road. Upgrading of the road is therefore mostly restricted to the current road reserve.

3.1.2 Design/Layout Alternatives

The design of the widening of the road is restricted within the road reserve and the existing road alignment. For this reason, design alternatives for the road are limited to the area available within the road reserve. No other designs for the road alignment could therefore be considered.

As for the water crossings, the widening of the bridges must consider the existing designs for the bridges and all water crossings are currently fitted with box culverts.

It is therefore proposed at box culverts will be added for the widening of the bridges at the five drainage crossings and this will ensure that water still flows freely underneath the road.

The design parameters are in accordance with the road design standard requirements of The Guidelines for Human Settlement, Planning and Design.

As the existing water crossings are fitted with box culverts, the addition of box culverts for the widening of the road/bridges, are therefore the preferred option.

3.1.3 No-Go alternative

The no-go alternative would be to not authorise the application for the upgrading of the existing Karino to Tekwane road and associated water crossings. Should this alternative be favourable, the construction will not take place, and the current negative impact will remain. The road will continue to

be congested during peak periods which means that the existing safety of motorist would still be jeopardized.

The impacts associated with the proposed upgrading of the road were not found to be so severe for the no-go alternative to be further investigated. For this reason, the no go alternative was not further investigated.

4. DESCRIPTION OF THE AFFECTED ENVIRONMENT

The description of the affected environment below draws on existing knowledge from published data, previous studies, specialist investigations, site visits to the area and is used to understand the possible effects of the proposed project on the environment.

4.1 Topography

The topography of project area and existing alignment of the road ranges between 505m and 548m above mean sea level. All water crossings along the route to be upgraded, is sloping slightly from north-south as the Crocodile River is located to the south of the Tekwane – Karino road to be upgraded.

4.2 Climate

The Study Area falls within the summer rainfall region of South Africa, which is warm and temperate, with cold dry winters and warm summers. The summer rainfall is sporadic, with frequent thunderstorms, associated with high intensity rainfall events. The KARINO Weather Station (0556178_W) is the closest station with reliable results, located 9 km away from the site under investigation. The weather station has a record duration of 39 years. The Mean Annual Precipitation (MAP) is reported as 745 mm per annum.

4.3 Ecology

Terrestrial Ecology: The study area is classified as Lowveld (A10), according to Acocks (1988). The project area falls within the Savannah Biome. The Savanna Biome is the largest Biome in southern Africa, occupying 46% of its area, and over one-third the area of South Africa. It is well developed over the lowveld and Kalahari region of South Africa. It is characterized by a grassy ground layer and a distinct upper layer of woody plants. The vegetation type is classified as the **Pretoriuskop Sour Bushveld**.

Pretoriuskop Sour Bushveld is found from around Hazyview and Pretoriuskop Camp in the southwestern part of the Kruger National Park to the Malekutu area. Also, in the Crocodile Estates area between Nelspruit and Crocodile Gorge. This vegetation type is regarded as *least threatened*. 40% of the vegetation type is conserved in the Kruger National Park. A very small area is also conserved in the private Mthethomusha Nature Reserve. About 16% of the vegetation type have been transformed by cultivation and by development of settlements.

According to the Mpumalanga Biodiversity Sector Plan, 2014, all water crossings fall within *"Other Natural Areas"*, while the larger portion of the road classified as either *"Moderately or Heavily Modified". Other Natural Areas* are areas outside the protected area network that are currently natural or semi-natural but have not been identified as Critical Biodiversity Areas (CBA's). *Other Natural Areas* are not required to meet biodiversity targets, support ecological functioning, or deliver ecosystem services (provided that protected areas, CBAs and ESAs remain intact). In accordance with the Technical Guidelines for CBA Maps, SANBI, 2017, "*Other Natural Areas*" allows for a range of other land uses which includes extensive land uses. The management objective for such areas is determined by other spatial planning tools such as Spatial Development Frameworks, etc.

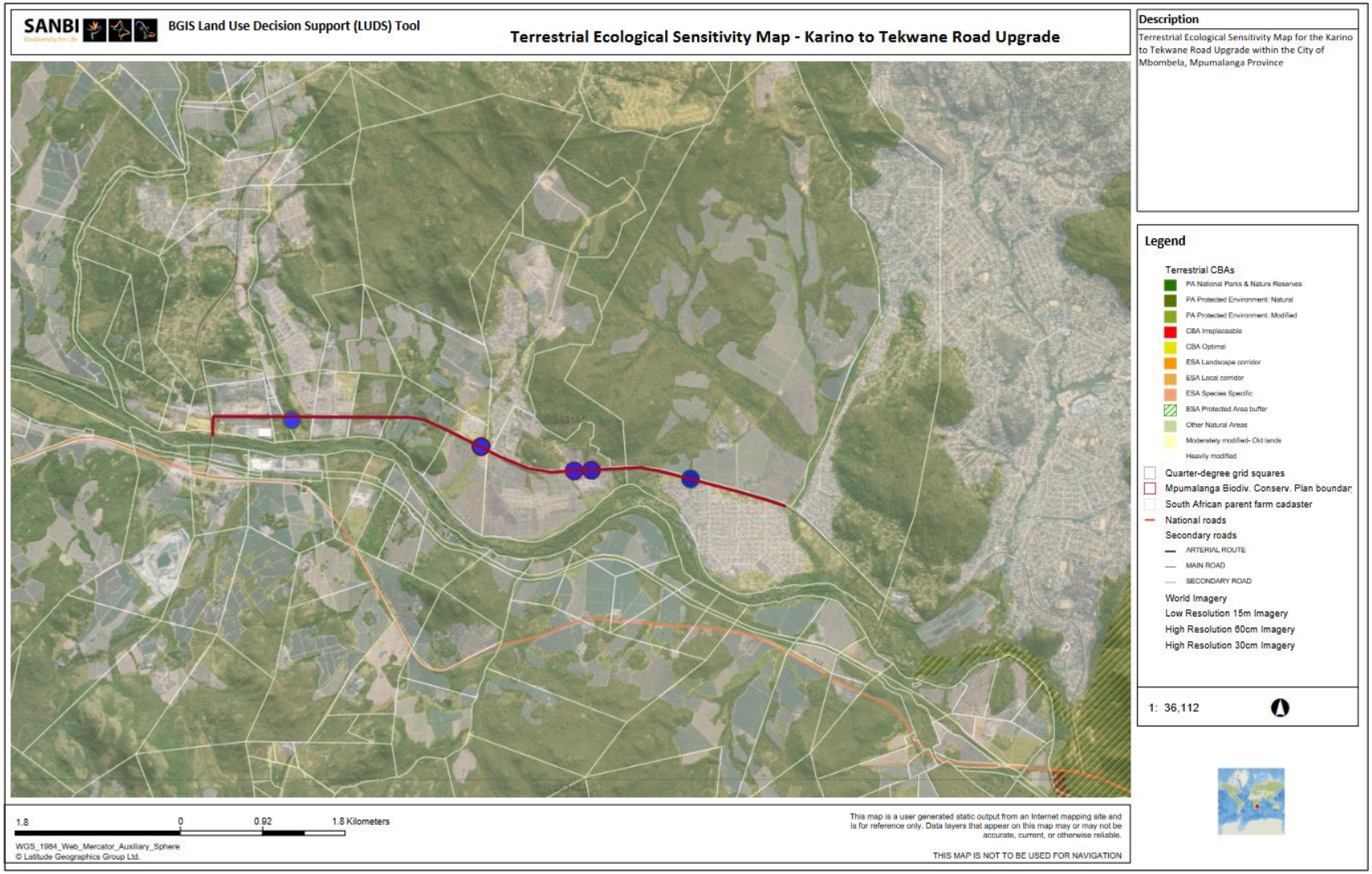

FIGURE 2: TERRESTRIAL BIODIVERSITY SENSITIVITY MAP FOR THE PROPOSED KARINO TO TEKWANE ROAD UPGRADE, CITY OF MBOMBELA, MPUMALANGA PROVINCE

In terms of the ecological sensitivity of the freshwater ecosystem, it is noted that the water crossings/drainage lines fall within an *"Ecological Support Area" (Important Sub catchment).* This sub-category includes National Freshwater Ecosystems Priority Areas (FEPA) sub-catchments and Fish Support Areas.

A river FEPA is the river reach that is required for meeting biodiversity targets for river ecosystems and threatened fish species. In managing the condition of a river FEPA, it is important to manage not only the river itself, but also the network of streams and wetlands as well as land-based activities in the sub-catchment that supports the river FEPA. A proportion of tributaries and wetlands need to remain healthy and functional in order for the river FEPA to be kept in a good ecological condition. This requires that management activities are focused on maintaining water quantity and quality and the integrity of natural habitat in the sub-catchment.

The primary objective of the freshwater ecosystem is to minimise habitat and species loss through judicious planning and maintain basic ecosystem functionality and ecological condition within the surrounding landscape (sub catchment). The other object is also to maintain these areas in a natural state with limited loss of ecosystems or functionality, but without lowering its Present Ecological State.

The extent of the remainder of the road is however classified as being *"Moderately to Heavily Modified"* in terms of the freshwater ecology. Moderately to heavily modified areas offer the most flexibility regarding potential land uses, but these should be managed in a biodiversity sensitive manner, aiming to maximize ecological functionality.

Vegetation of the seasonal and permanent zones is dominated by hygrophilous grasses. Aquatic vegetation within the stream channel includes *Typha capensis, Phragmites australis, Cyperus dives* and *Sium repandum*. No threatened bioata is present at any of the sites. Thickets of alien invasive vegetation are present in macro channel and include *Tecoma stans, Lantana camara* and *Tithonia spp*. Banana plants are also present.

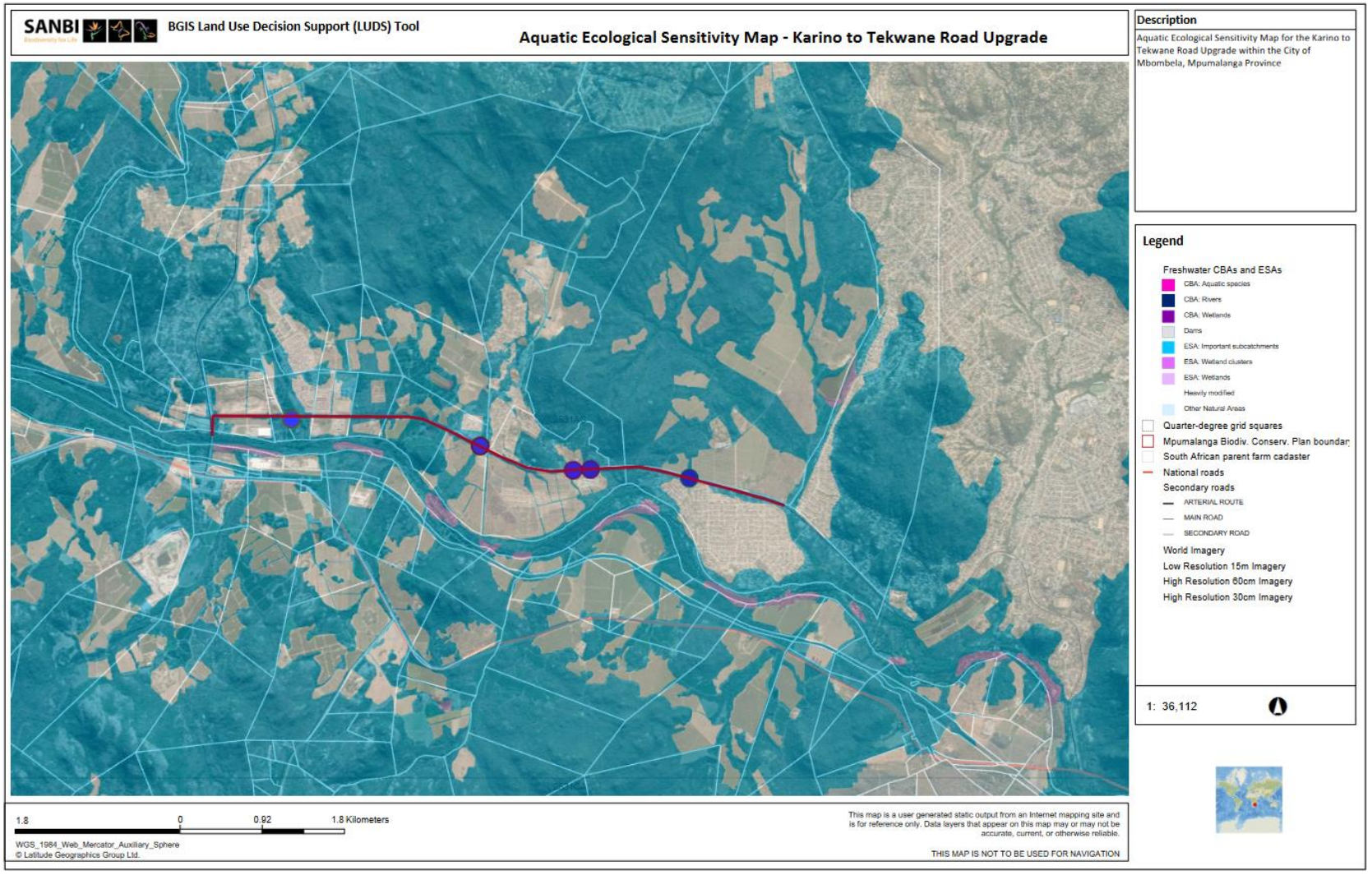

FIGURE 3: AQUATIC BIODIVERSITY SENSITIVITY OF THE PROPOSED KARINO TO TEKWANE ROAD UPGRADE, CITY OF MBOMBELA, MPUMALANGA PROVINC

4.4 Surface and Groundwater

Five watercourse crossing sites are situated on the route of the road upgrade. All these watercourses are classified as *channeled valley bottom wetlands with associated hillslope seepage wetlands*. The sites where the proposed watercourse crossings will be upgraded are situated on the existing road crossing sites.

Flow is from north to south and tribute to the Crocodile River. The active stream channels of the wetlands vary from 1-5m wide, depending on flow. The seepage and seasonal zones are located lateral to the stream channel and flow is seemingly perennial with flow being augmented by surface flow from rainfall and seepage which will also increase during and after the wet season.

The Department of Water and Sanitation Desktop PES-EIS Assessment (DWS, 2014), provides the current status of sub-quaternary river reaches (SQRs) for South Africa. A summary of the PES, Ecological Sensitivity (ES) and Ecological Importance (EI) for this Sub Quaternary reach of the catchment as assessed by the DWS PES-EIS model (DWS, 2014). The results are presented in Table 1.3 below

TABLE 3: DWS PES-EIS SUMMARY FOR THE SQ

Site reference	PES	EI	ES	PES
Upstream: X22K-00981	Moderately modified	High	High	C
Downstream: X22K-00958	Moderately modified	High	Very High	C

The WET-Health (Macfarlane et al. 2009) methodology was used to evaluate the integrity and the present ecological state of the wetland as it evaluates the general and readily-observable perceived impacts on a specific watercourse segment in the field. The overall PES for these wetland units are calculated as a *Category D = Moderately / Largely Modified*. The state of the wetland components is related in Table 4 and the result are presented in Table 5.

TABLE 4: PES COMPONENTS

Wetland components / drivers
Hydrology and flow
Flow is from north to south and tribute to the Crocodile. The seepage and seasonal zones is located lateral to the stream channel and flow is seemingly perennial with flow being augmented by surface flow from rainfall and seepage will also increase during and after the wet season. However, peak flows will be significantly higher as result of runoff from roads and hardened surfaces. There are no dams or other permanent structures present that impedes flow. *The hydrology and flow of the wetlands is* ***Moderately Modified.***
Geomorphology & land use
The seepage zones are present lateral to the stream channel and the macro channel is approximately 13m wide with the actual active stream being 1-5m wide, depending on the volume of flow. The stream banks are largely stable, but erosion is present where footpaths cut through the banks. The channel is not eroded. The soil of the seasonal zone and temporary zones is characterized by a grey matrix with many low chroma mottles present. The permanent zone (stream channel) and seepage zones (lateral to stream channel) are characterized by a prominent grey matrix with few to no high chroma mottles and has high clay content. The soil adjacent to the temporary and seepage zones is hard and impenetrable by hand auger but vegetation assemblage indicates that sections lateral to the stream banks will be temporary wet. Residential dwellings and cultivated gardens encroach into the temporary and seasonal zones of the wetland resulting in a loss of surface area. *The geomorphology of the wetlands is* ***Moderately Modified.***
Water quality
Under natural circumstances the water quality will be good as the subsurface water will be purified by the wetland soils and vegetation. Presently water quality will be modified by leaking sewers, solid waste disposal and washing within the stream. During peak flows higher sediment loads will be probable as result of surface runoff from the gravel roads. *The water quality of the wetlands is* ***Largely Modified.***
Vegetation & Biota
The vegetation assemblage of the terrestrial and temporary / seasonal zones can be assumed to have changed considerably from reference conditions as consequence to the changes in land use and of the surrounding area and associated impacts. Natural vegetation of the seasonal and temporary zones is has been lost and thickets of alien invasive vegetation are dominant. Aquatic vegetation within the stream channel is largely natural and includes *Typha capensis, Phragmites australis, Cyperus dives* and *Sium repandum*. No Red Data listed taxa were recorded. *The vegetation component of the wetlands is* ***Largely Modified.***
In a natural environment (combined with other wetland units downstream) this wetland system would have provided habitat to a wide range of fauna. However, this wetland is relatively small and is not expected to be essential for wetland specific fauna at present. The wetland does not provide a corridor for ecological connectivity with other wetlands in the larger area.
Overall PES: Category C/D: Moderately / Largely Modified

TABLE 5: WET-HEALTH RESULTS

Components	Selected method	PES% scores	Default weighting	Overall PES%	Overall PES Category	Impact Category
Hydrology PES%	WET-Health Hydro Module	65	0.43	60%	C/D	Moderate / Large
Geomorphology PES%	WET-Health Geomorphology Module	68	0.29			
Water quality PES%	Land use-WQ Model	69	0.00			
Vegetation PES%	WET-Health Veg Module	46	0.29			

The main function of this type of wetland is erosion control and stream flow augmentation. These wetland units are relatively small and have been subject to negative impacts, especially with regard to surrounding land use, encroaching development and loss of vegetation. The wetland does not maintain or support sensitive or important biota and does not provide a corridor between different wetland units or any other natural habitats. For these reasons EIS of the wetland is considered to be *Low*.

4.5 Land use

The project area is currently utilsed for transportation seeing that the project entails the upgrading of an existing road. Most of the surrounding areas have been transformed quite significantly by agricultural development, as well as business and residential dwellings. Unfortunately, solid waste is also being disposed into these wetland areas.

4.6 Geology and Soils

The Granite Lowveld is found from north to south the Swazian Gudplaats Gneiss, Mukhutswi Gneiss, Nelspruit Suite and Mpuluzi Granites form the main geological features. The granites and gneiss weathered into sandy soils in the higher areas with clay soils high in sodium in the lower areas (Mucina and Rutherford, 2006).

The soil within the project area is classified as undifferentiated shallow soils. Soils with minimal development, usually shallow, on hard or weathering rock, with or without intermittent diverse soils. Soil may receive water runoff from associated rock, water intake areas. Lime generally present in part or most of the landscape.

As for the wetland channels, soil of the seasonal zone and temporary zones is characterized by a grey matrix with many low chroma mottles present. The permanent zone (stream channel) and seepage zones (lateral to stream channel) are characterized by a prominent grey matrix with few to no high chroma mottles and has a high clay content.

4.8 Heritage

A Phase 1 Heritage Impact Assessment was undertaken for the proposed road upgrading activity. The Specialist worked extensively in the Tekwane/Kanyamazane area and desktop evidence was also investigated.

No archaeological or historical features of significance were however observed during the survey.

4.9 Socio-Economic Environment

The project area is located within the City of Mbombela. The larger portion of the 695 913 individuals within the Mbombela Local Municipality, lives in peri-urban and rural areas. Approximately 75% of the people live within communal areas on the eastern axis of the city which is also the area where the multipurpose centre is proposed.

The City of Mbombela currently has an unemployment rate of 28% with 50% of the people living below the poverty line. The levels of skill and qualifications of the population is also fairly low which is problematic for future economic development. The socio-economic context of the surrounding environment can therefore be described as a community with a low percentage of education and high unemployment rate.

5. SPECIALIST ASSESSMENT REQUIREMENTS AS IDENTIFIED IN THE SCREENING REPORT

The following specialist assessments were identified within the Department of Environmental Affairs Screening Report to be conducted as part of the Basic Environmental Impact Assessment:

- Visual Impact Assessment

The upgrading of the existing roads will have no additional visual impact on the surrounding area. For this reason, no visual impact assessment was conducted.

- Heritage and Paleontological Impact Assessment

As the length of the road exceeds 300m, a Heritage Impact Assessment was undertaken, however, the assessment concluded that nothing of cultural or historical significance was found along the proposed alignment. The Heritage Impact Assessment is found attached as Appendix D.

- Terrestrial and Aquatic Biodiversity Assessment / Plant and Animal Species Assessment

The proposed project site falls within an area which has already been modified and cleared of vegetation along the road reserve and areas where upgrading is proposed. The respective drainage lines and wetland areas are however classified as Ecological Support Areas (ESA's) and for this reason, an Aquatic Assessment was undertaken to assess the significance of the impact on the areas to be affected. The findings of the assessment are noted in Section 4.4 above and the assessment is attached as Appendix D.

- Hydrology Impact Assessment

In view of the degraded state of the wetland areas/drainage line and the fact that the flow of water within the respective drainage lines during most of the year is perennial, it is the opinion of the EAP that no Hydrological impact assessment is required. The opening sizes underneath the bridges/water crossings, are not proposed to change and therefore these structures will still have sufficient capacity to accommodate the flow of water within these drainage lines.

- Socio-economic Assessment

The proposed project will not have any negative impact on the socio-economic environment. Contrary to this, some additional job opportunities will be created during the construction phase of the project, which will impact the surrounding community positively. Improved infrastructure will also have positive impact on the socio-economic environment.

As no negative socio-economic impact is expected with the proposed project, it is the opinion of the EAP that no Socio-Economic Impact Assessment is required.

6. METHODOLOGY OF ASSESSING THE SIGNIFICANCE OF IMPACTS

This section outlines the method used for assessing the significance of the potential environmental impacts during the construction/establishment, operational and decommissioning phases.

For each impact, the EXTENT (spatial scale), MAGNITUDE and DURATION (time scale) would be described, as shown in Table 6. These criteria are then used to determine the SIGNIFICANCE of the impact, firstly in the case of no mitigation and then with the most effective mitigation measure(s) in place. The mitigation described in the Report represents the full range of plausible and pragmatic measures but does not necessarily imply that they would be implemented.

The following tables show the scale used to assess these variables and defines each of the rating categories.

TABLE 6: ASSESSMENT CRITERIA FOR THE EVALUATION OF IMPACTS

Criteria	Category	Description
Extent or spatial influence of impact	**Regional**	Beyond a 30km radius of the candidate site.
	Local	Within a 30km radius of the candidate site.
	Site-specific	On site or within 100 m of the candidate site.
Magnitude of impact (at the indicated spatial scale)	**High**	Natural and/ or social functions and/ or processes are *severely* altered
	Medium	Natural and/ or social functions and/ or processes are *notably* altered
	Low	Natural and/ or social functions and/ or processes are *slightly* altered
	Very low	Natural and/ or social functions and/ or processes are *negligibly* altered
	Zero	Natural and/ or social functions and/ or processes remain *unaltered*
Duration of impact	**Long-term**	More than 10 years after construction
	Medium-term	Up to 5 years after construction
	Construction-term	Up to 3 years

The SIGNIFICANCE of an impact is derived by taking into account magnitude, duration and extent of each impact. The criteria employed in arriving at the different significance ratings is shown in Table 7.

TABLE 7: DEFINITION OF SIGNIFICANCE RATINGS

Significance ratings	Level of criteria required
High	• High magnitude with a regional extent and long-term duration • High magnitude with either a regional extent and medium-term duration or a local extent and long-term duration • Medium magnitude with a regional extent and long-term duration
Medium	• High magnitude with a local extent and medium-term duration • High magnitude with a regional extent and construction period or a site-specific extent and long-term duration • High magnitude with either a local extent and construction period duration or a site-specific extent and medium-term duration • Medium magnitude with any combination of extent and duration except site specific and construction period or regional and long term • Low magnitude with a regional extent and long-term duration
Low	• High magnitude with a site-specific extent and construction period duration • Medium magnitude with a site-specific extent and construction period duration • Low magnitude with any combination of extent and duration except site specific and construction period or regional and long term • Very low magnitude with a regional extent and long-term duration
Very low	• Low magnitude with a site-specific extent and construction period duration • Very low magnitude with any combination of extent and duration except regional and long term
Neutral	• Zero magnitude with any combination of extent and duration

Once the significance of an impact has been determined, the **PROBABILITY** and **CONFIDENCE** of this impact are determined using the rating systems outlined in Table 8 and Table 9. The significance of an impact should always be considered in concert with the probability of that impact occurring. Lastly, the **REVERSIBILITY** of the impact is estimated using the rating system outlined in Table 10.

TABLE 8: DEFINITION OF PROBABILITY RATINGS

Probability ratings	Criteria
Definite	Estimated greater than 95 % chance of the impact occurring.
Probable	Estimated 5 to 95 % chance of the impact occurring.
Unlikely	Estimated less than 5 % chance of the impact occurring.

TABLE 9: DEFINITION OF CONFIDENCE RATINGS

Confidence ratings	Criteria
Certain	Wealth of information on and sound understanding of the environmental factors potentially influencing the impact.
Sure	Reasonable amount of useful information on and relatively sound understanding of the environmental factors potentially influencing the impact.
Unsure	Limited useful information on and understanding of the environmental factors potentially influencing this impact.

TABLE 10: DEFINITION OF REVERSIBILITY RATINGS

Reversibility ratings	Criteria
Irreversible	The activity will lead to an impact that is in all practical terms permanent.
Reversible	The impact is reversible within 2 years after the cause of the impact is removed.

7. ENVIRONMENTAL IMPACT ASSESSMENT

The biophysical and social environment will be impacted during the construction and operational phases of the proposed project activities. For this reason, the impacts below are assessed for both phases.

7.1 Impacts during the construction process

The construction activities are likely to result in environmental and socio-economic impacts. The identified impacts are listed below and discussed thereafter:

- *Impact on biodiversity;*
- *Generation of dust;*
- *Impact on soil;*
- *Impact on water resources;*
- *Impact on existing infrastructure; and*
- *Socio-economic impact.*

7.1.1. Impact on biodiversity

Description of the potential impact
During the construction process, machinery will be used to upgrade the existing road by means of adding one additional lane to each side of the road. The areas to be disturbed will however be mostly restricted to areas which have already been disturbed and cleared as a result of the existing road reserve. At present, the drainage lines are invested with alien invasive species.

Significance of the impact
The proposed road and water crossings are limited to the existing gravel road and already disturbed footprint. As mentioned, the proposed project site falls within an area which has been characterised as "*Moderately/Heavily Modified*" in accordance with the MBSP, 2014, although it is located within an Ecological Support Area (ESA) Buffer. The project areas as well as surrounding areas have already been completely transformed.

Modified areas offer the most flexibility regarding potential land-uses, but these should be managed in a biodiversity-sensitive manner, aiming to maximize ecological functionality.

The drainage lines are invested with alien invasive species. It is not anticipated that the activity will compromise biodiversity or ecological functions and therefore the impact is of low significance.

The activity will not have a significant impact on terrestrial habitat as it is aligned across historically transformed land and the footprint will be relatively small and access roads exist. No other sensitive habitats are present nearby. It is also not anticipated that fauna will be significantly affected.

TABLE 11: SIGNIFICANCE OF BIODIVERSITY IMPACT

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Impact on biodiversity [NEGATIVE]	**Low**	**Site Specific**	**Long-term**	**Probable**	**Low**	**Very Low**

Mitigation measures

- The footprint of activities associated with construction activities must be restricted to proposed development area.
- The construction crew must be closely supervised when active in this area and any unnecessary damage to the natural environment (including vegetation and surface clearing) must be prevented.
- It must be ensured that the materials used during construction activities are located far away from any other watercourse or drainage lines.
- All disturbed areas must be rehabilitated.
- Destruction and damage to large indigenous trees must be avoided where possible.
- Stipulations of the Environmental Management Program (EMPr) should be adhered to during the construction phases of the project.

7.1.2. Generation of dust

Description of the potential impact

Soil will be disturbed during the construction phase of the proposed project. Heavy moving vehicles will also be used during the construction process, and this could generate dust affecting adjacent owners and road users.

Significance of the impact

The road to be upgraded is located mostly within built-up areas. There are many residents and businesses residing and operating along the route to be upgraded and therefore the potential dust to be generated could affect such residents and businesses. The impacts associated with the generation of dust is however of short duration and is therefore rated to be of medium significance prior to the implementation of mitigation measures.

Mitigation measures must however be implemented to minimise the generation of dust.

TABLE 12: DUST GENERATION

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Dust generation [NEGATIVE]	**Medium**	**Site Specific**	**Short term**	**Probable**	**Low**	**Very Low**

Mitigation measures

- Areas may not be disturbed and left for unattended for long periods of time;
- Heavy moving vehicles and other vehicles must adhere to a speed limit of 40km/h;
- Construction site must be sprayed with water to limit the generation of dust of the surfaces.

7.1.3 Impact on soil

Description of the potential impact

During establishment, soil could be impacted by means of the following:

- Erosion; and
- Contamination with the use and possible spillage of hazardous substances.

Significance of the impact

The construction process will entail the removal of vegetation and disturbance of the soil surface which could increase the possibility of soil erosion occurring. The project area is however relatively flat and therefore the magnitude and possibility of the impact occurring is minimised. The impact has therefore been rated to be of very low significance prior to the implementation of mitigation measures.

Other activities which could have an impact on soil, include any spillage of hazardous substances. Hazardous substances such as oil, diesel etc., could be spilled while refuelling or using machinery, leading to the pollution of soil which can alter microbial processes and be toxic to soil organisms. The magnitude of this impact is medium. However, the site-specific extent of the impact and short-term duration, reduces the impact to be of low significance prior to the implementation of mitigation measures.

TABLE 13: IMPACT ON SOIL

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Soil pollution [NEGATIVE]	**Medium**	**Site Specific**	**Short-term**	**Probable**	**Low**	**Very Low**

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Erosion [NEGATIVE]	Low	Site Specific	Short term	Probable	Very Low	Very Low

Mitigation measures

- To minimise the possibility of erosion, it is recommended that no disturbed areas be left unattended. Disturbance and removal must be restricted to the proposed footprint.
- Measures to reduce the velocity of water, must be taken on areas prone to erosion.
- Should there be any spillage of hazardous substances during the desilting activities, soil must be removed up to a depth of 300mm and be disposed of at a registered hazardous waste disposal facility. Proof of such disposal must be kept on file.

7.1.4 Impact on water resources

Description of the potential impact

The area where activities are to take place falls within a watercourse/drainage line. This requires that activities are focused on maintaining water quality and the integrity of natural habitat.

It is noted that the flow of water within these drainage lines are mainly perennial. It was also noted within the Aquatic Assessment that the affected drainage lines have been heavily disturbed by previous anthropogenic activities and the disposal of waste.

The major impacts that were identified that affect the existing integrity of the sub-catchment and the wetlands are:

- Removal of natural vegetation for the establishment of agriculture lands and informal settlements;
- Invasion of the natural riparian vegetation by alien vegetation;
- Pollution potential originating from untreated sewage effluent and solid waste disposal.
- Destabilization of the banks as result of settlements and footpaths.

The proposed construction activities will include founding in the beds and banks of the respective watercourses. These activities will potentially cause erosion and cutting of the watercourse banks.

Significance of the impact

Sedimentation:

The magnitude of the impact when undertaking construction activities within a watercourse is regarded as high. The impact is of local extent as any pollution or sedimentation would affect the downstream reaches of the watercourse. Due to the short-term duration of the impact associated with the construction phase, the impact is rated to be of medium significance prior to the implementation of mitigation measures.

Hydrology and flow:

The construction of the crossings will cause temporary impeding and diversion of flow during construction which will have negative consequences on several components of the watercourse. This will be very short term and if no-flow is present, flow will not have to be impeded in order to achieve the end product. The high magnitude, site-specific extent and short-term duration resulted to the impact being rated to be of medium significance prior to the implementation of mitigation measures.

Water Quality:

Disturbance to the bed and banks may cause erosion and siltation of the watercourse during construction. In addition to this, spillages may occur and poor waste management will potentially affect water quality during construction. The impact is regarded to be of high magnitude, local extent and short-term duration. For this reason, the impact is regarded to be of medium significance prior to the implementation of mitigation measures.

TABLE 14: IMPACT ON WATER RESOURCES

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Sedimentation [NEGATIVE]	**High**	**Local**	**Short-term**	**Probable**	**Medium**	**Low**
Hydrology (diversion of the watercourse) [NEGATIVE]	**High**	**Site-Specific**	**Short-term**	**Unlikely**	**Low**	**Very Low**
Deterioration of water quality [NEGATIVE]	**High**	**Local**	**Short-term**	**Probable**	**Medium**	**Low**

Mitigation measures

- No material or stockpiles may be stored within 50m from the edge of a watercourse.
- It must be ensured that all machinery working within the watercourse must be in a good working condition to ensure that there are no oil leaks.
- Care must be taken to prevent spillages of chemicals and fuels into the watercourse during construction. Such items must be stored and prepared at least 20m outside of the wetland zone.
- Proper waste management and sanitation must be provided for construction personnel
- Modification to the stream bed is not recommended. Excavations and founding must be done carefully with as little disturbance or engineering of the natural environment.
- Plan activities within the respective drainage lines to be undertaken during the no- to low flow periods.

- The excavation and construction activities required to install pedestals in the banks must be reduced to a minimum, so as to reduce additional sediment loads in the watercourses as result of surface water flow after rain.
- Provide energy dissipating structures and toes at stormwater discharge points.
- Should vehicles be washed, it must take place on a designated area, located far from these watercourses. Washing of equipment or any vehicles are not allowed within or near any watercourse.

7.1.5 Impact on existing infrastructure

Description of the potential impact

It is noted that some infrastructure such as water pipelines, are located underneath the road to be upgraded. Excavations and widening of the road might damage such infrastructure, resulting to businesses, residents and farmers, experiencing an interruption in the supply of water.

Significance of the impact

As damage to such infrastructure could cause interruption of services to residents within the surrounding area, the impact is regarded to be of high magnitude, local extent and short duration. For this reason the impact is regarded to be of medium significance prior to the implementation of mitigation measures.

TABLE 15: IMPACT ON EXISTING INFRASTRUCTURE

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Damage to existing infrastructure [NEGATIVE]	**High**	**Local**	**Short-term**	**Probable**	**Medium**	**Low**

Mitigation Measures

The contractor must ensure that all service infrastructure is marked prior to commencement with construction and it must be ensured that no infrastructure is damaged during the construction process.

7.1.5 Socio-economic Impact

Description of the potential impact

During the construction activities, various temporary job opportunities will be created for the upgrading of the road. In terms of safety and security, there is always risk associated when working with machinery and therefore it is essential that all workers comply with the Health and Safety Act 85 of 1993.

Significance of the impacts

Based on the methodology detailed in **Section 6**, the following ratings have been assigned to the 'employment opportunities' and impact associated with health and safety of employees, respectively.

The job opportunities during the construction phase are short-lived and therefore the impact is only of medium (+) significance. In terms of the health and safety aspects of workforce, the significance of the impact has been rated to be of low significance due to the short construction timeframe. Mitigation measures must however be adhered to.

TABLE 16: SOCIO-ECONOMIC IMPACT

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Job opportunities **[POSITIVE]**	**Medium**	**Local**	**Short-term**	**Define**	**Medium (+)**	**Medium (+)**
Health and Safety **[NEGATIVE]**	**Medium**	**Site Specific**	**Short-term**	**Probable**	**Low**	**Very Low**

Mitigation measures

The applicant and/or project manager/contactor must ensure that local residents receive preference for job opportunities where local labour might be required.

It is imperative that all personnel adhere to the Occupational Health and Safety Act 85 of 1998 and that no personnel enter any other surrounding properties.

7.2 Operational Phase Impacts

During operation the activities are likely to result in the following environmental and socio-economic impacts:

- *Impact on water resources;*
- *Socio-economic impact.*

7.2.1 Impact on water resources

Description of the potential impact

The existing road have limited storm water infrastructure along the road verges as well as the areas leading up to the water crossings. The improvement of the road infrastructure will also entail that stormwater infrastructure is constructed along the verges of the road, which would result to less sediment being transported to the watercourses/drainage lines along the route to be upgraded. It is however imperative that the stormwater structures reduce the velocity of stormwater prior to entering the watercourse in order to minimise erosion at areas where water is entering the drainage line.

Significance of the impact

The stormwater structures proposed would have a positive impact on the watercourse as less sedimentation would be transported to the watercourse. However, if the velocity of stormwater is not reduced, the significance of the positive impact could be minimised as increased stormwater velocity could result to increased erosion and sedimentation.

The impact however remains positive; however the positive significance of the impact could be further improved by the installation of energy dissipating structures at the stormwater discharge points.

The impact on the water resource during the operational phase is therefore of medium (positive) magnitude, long term duration and local extent. For this reason, the impact is of medium (positive) significance.

TABLE 17: IMPACT ON WATER RESOURCES

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Impact on water resources **[POSITIVE]**	**Medium**	**Local**	**Long-term**	**Probable**	**Medium (+)**	**Medium (+)**

Mitigation measures

- Ensure that the area is to be kept in a good ecological condition.
- Ensure that energy dissipating structures are constructed at the stormwater discharge points.
- Ensure that the constructed culverts are maintained and kept clear of debris to prevent any blockages, causing flooding and affecting downstream habitats.

7.2.3. Socio-economic Impact

Description of the potential impact

The improved road infrastructure will relieve traffic congestion during peak periods which would also improve the safety of the road. The improvement of the road will result to the reduction of travelling time between Karino and Tekwane.

Considering the above, it is noted that the improvement of road infrastructure will result to an improvement of the livelihood of the surrounding communities, thereby having a positive socio-economic impact on the community members travelling this road daily.

Significance of the impact

Based on the methodology detailed in **Section 6**, the following ratings have been assigned to the 'Socio-economic' impact before and after mitigation.

TABLE 18: SOCIO-ECONOMIC IMPACT

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Socio-economic **[POSITIVE]**	**High**	**Local**	**Long-term**	**Definite**	**High (+)**	**High (+)**

The improved infrastructure will have a positive impact on the local community. No mitigation measures would be required to further enhance this impact.

7.3 Environmental Impact Statement

The table below summarises the impacts identified and assessed for the construction and operational activities proposed for the project:

TABLE 19: ENVIRONMENTAL IMPACT STATEMENT

IMPACT	SIGNIFICANCE BEFORE MITIGATION MEASURES	SIGNIFICANCE AFTER MITIGATION MEASURES
Construction Phase Impacts		
Biodiversity Impact	Low	Very Low
Generation of dust	Low	Very Low
Erosion	Very Low	Very Low
Soil Pollution	Low	Very Low
Impact on water resources (Sedimentation)	Medium	Low
Impact on water resources (Hydrology and Flow)	Low	Very Low
Impact on water resources (Water quality)	Medium	Low
Damage to existing infrastructure	Medium	Low
Job opportunities	Medium (+)	Medium (+)
Health and Safety	Low	Very Low
Operational Phase Impacts		
Impact on water resources	Medium (+)	Medium (+)
Socio-economic Impact	High (+)	High (+)

8. CONCLUSION AND WAY FORWARD

8.1 Assumptions and Limitations

In undertaking this investigation and compiling the Draft Basic Assessment Report, the following has been assumed:

- The information provided by the applicant and engineering firm is accurate and unbiased, and no information that could change the outcome of the Environmental Authorisation process has been withheld.
- The scope of this investigation is limited to assessing the environmental impacts associated with the proposed upgrading of the road.
- The conclusion and recommendations proposed are based solely on the information, scope of works as agreed with the proponent.

8.2 Conclusion

The essence of all environmental assessment processes is aimed at ensuring informed decision-making and environmental accountability. Furthermore, it assists in achieving environmentally sound and sustainable development. The impact assessment for this project has been undertaken in line with the requirements prescribed in the NEMA regulations.

The assessment of the possible impacts associated with the construction and operational activities, concluded that the impact on the surrounding environment is of **low significance** and as the road is currently existing and will only be improved. It is however imperative that existing infrastructure along and underneath the road be protected during the construction process.

Recommendations have however been made to address the impacts which could affect the biophysical and socio-economic environment during the construction phase. Recommendations for the mitigation of impacts are included within Section 7 and also the Draft Environmental Management Plan attached.

The significance of the potential environmental (biophysical and social) impacts associated with the proposed project are discussed in detail under **Section 7**.

It is the opinion of the EAP that the EA for this project should be granted, and the proposed mitigation included as the conditions of the authorisation.

8.3 Way Forward

The next steps for the Basic Assessment process will be to distribute the Draft Basic Assessment Report and make it available to the public (including the registered I&APs) and Organs of State for a period of 30 days, during which the Competent Authority (DARDLEA) will also be given the opportunity to provide comments on the report. After the 30-day comment period, all comments will be addressed by the EAP and incorporated within the Final Basic Assessment Report to be submitted to the DARDLEA for decision making. All registered I&APs will be notified of the decision and will be given an opportunity to appeal as per the NEMA requirements.

9. REFERENCES

City of Mbombela Spatial Development Framework, 2018

National Environmental Management Act 107 of 1998 (NEMA 107, 1998)

General Notice Regulation 982, 983, 984 and 985 of 2014 (as amended in 2017)

Mpumalanga Biodiversity Conservation Plan, 2014

South African Heritage Resources Act 1999 (Act No 25 of 1999)

National Water Act 1998 (Act No 36 of 1998)

National Biodiversity Act, 2004 (Act No. 10 of 2004)

Occupational Health and Safety Act, 1998 (Act No. 85 of 1998)

Mpumalanga Provincial Roads Act, 2008 (Act No 1 of 2008)

City of Mbombela Integrated Development Plan (IDP) (2021 - 2022)

Mucina, L. and Rutherford, M.C. (eds.) 2006. The vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19. South African Biodiversity Institute, Pretoria.