Infilling of the banks of the watercourse for the movement of the fence at Crossings Shopping, City of Mbombela, Mpumalanga Province

Draft Basic Assessment Report

1 August 2022

CORE Environmental Services

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EXECUTIVE SUMMARY

Nelspruit Crossings Land Owners Association is proposing to stabilize the banks of the watercourse for the purpose of moving the fence of Crossings Shopping Centre to its actual boundary according to the Title Deed. The movement of the fence is proposed only for the area north of the access bridge to Crossings Shopping Centre, up to where Crossings Shopping Centre ends. Although the fencing by itself would not have triggered any listed activity in accordance with the National Environmental Management Act 107 of 1998, Environmental Authorisation is however required for the stabilization of the banks of the watercourse which has been eroded, to ensure the stability of the fence.

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 applicant is also applying in terms of Section 21 of the National Water Act 36 of 1998 (NWA 36, 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 phase of the project.

The movement of the fence and infilling 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 noise;*
- *Impact on soil (soil pollution and erosion);*
- *Impact on water resources (water pollution and sedimentation);*
- *Socio-economic impact.*

The table below summarises the impacts identified and assessed for the establishment of the project:

IMPACT	SIGNIFICANCE BEFORE MITIGATION MEASURES	SIGNIFICANCE AFTER MITIGATION MEASURES
Construction Phase Impacts		
Biodiversity Impact	Low	Very Low
Generation of noise	Low	Very Low
Erosion	Medium	Low
Soil Pollution	Low	Very Low
Water Pollution	Low	Very Low
Sedimentation	Medium	Low
Job opportunities	Low (+)	Medium (+)
Health and Safety	Low	Very Low
Operational Phase Impacts		
Impact on water resources / erosion	Medium (+)	Medium (+)

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**. Recommendations have however been made to address the impacts which could affect the biophysical and socio-economic environment. It is recommended that a maintenance plan for the erosion protection structures is implemented to ensure minimal erosion of the bank of the watercourse to which the fence has been moved. Recommendations for the mitigation of impact are included within Section 6 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

Nelspruit Crossings Land Owners Association is proposing to stabilize the banks of the watercourse for the purpose of moving the fence of Crossings Shopping Centre to its actual boundary according to the Title Deed. The movement of the fence is proposed only for the area north of the access bridge to Crossings Shopping Centre, up to where Crossings Shopping Centre ends. Although the fencing by itself would not have triggered any listed activity in accordance with the National Environmental Management Act 107 of 1998, Environmental Authorisation is however required for the stabilization of the banks of the watercourse which has been eroded, to ensure the stability of the fence.

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 applicant is also applying in terms of Section 21 of the National Water Act 36 of 1998 (NWA 36, 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 phase of the project.

1.2 Location

The proposed site is located portion 0 of the farm Besters Last 311-JT, city of Mbombela, Mpumalanga Province at the following point locations:

Start Coordinates:
25°28'22.29”S
30°58'8.80"E

End Coordinates:
25°28' 18.69"S
30°58'9.80"E

Please refer to the locality map below, Figure 1.

FIGURE 1: LOCALITY MAP – PROPOSED INFILLING FOR THE FENCING AT CROSSINGS SHOPPING CENTRE

LOCALITY MAP: CROSSINGS SHOPPING CENTRE ON PORTION 0 OF THE FARM BESTERS LAST 311-JT, MPUMALANGA PROVINCE

FIGURE 2: LOCALITY MAP (ZOOMED) OF PROPOSED FENCE AT CROSSINGS SHOPPING CENTRE

1.3 Details of the EAP

Ms. Anne-Mari White, 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. White 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	**Nelspruit Crossings Land Owners Association** 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 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 and aquatic 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.
National Water Act 36, 1998	As activities will be taking place within a watercourse, the Nelspruit Crossings Landowners Association is applying for a Water Use License in terms of Section 21 (c & i)

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 project and will require approval prior to commencement:

GNR 983, 2014 (as amended in 2017), 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 (i) a watercourse;

More than 10 cubic metres of sand/soil and/or silt will be moved filled or removed from a watercourse.

In terms of the National Water Act 36, of 1998, the applicant is applying for the following activities in terms of Section 21 of the NWA 36, 1998:

Section 21(c) and (i) – Impending or diverting the flow of water in a watercourse, as well as altering the bed, banks, course or characteristics of a watercourse.

1.6 Description of the project

Nelspruit Crossings Land Owners Association is proposing to move their existing fence to their actual property boundary along the adjacent watercourse running along Madiba Drive. In order to establish this boundary, the banks of the watercourse will have to be filled and stabilized to ensure the stabilization of the fence. Erosion protection structures will therefore have to be installed.

The existing fence to be moved is situated to the north of the access bridge towards Crossings Shopping Centre, up to where the Crossings Shopping Centre ends. The Clearvu fence is proposing to move approximately 5m towards the watercourse and will be approximately 120m in length.

1.7 Need and Desirability

The Nelspruit Crossings Land Owners Association would like to fence the total extent of their property along the actual boundary of their property; however, the banks of the Tributary of the Crocodile River have been severely eroded throughout the years, which was caused by activities upstream within Mbombela.

The existing Clearvu Fence is proposed to be moved to the actual boundary according to the Title Deed, however, in order to do this, the banks of the watercourse will have to be filled and stabilised to prevent future erosion along this bank of the watercourse, and ensure the stability of the fence.

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 registered I&APs, proof of which is attached in **Annexure C.2**;
- Placement of media advert in a local newspaper (The Lowvelder) on 30 June 2022 (see **Annexure C.3**).
- Placing of a notice at the proposed site took place on 24 June 2022 (see **Annexure C.4**)

The draft Basic Assessment Report will be made available for public review from August – September 2022.

To date no comments have been received by I&AP's.

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.

3.1 Alternative Selection

3.1.1 Location alternatives

No other locality alternatives could be investigated as the application includes the moving of the existing Clearvu fence to the actual property boundary.

3.1.2 Layout alternatives

The following erosion protection measures are being proposed:

Gabion Retaining Wall:

Gabion boxes can be placed in a row or stacked on top of each other to build a gabion retaining wall. The barrier will stabilize the soil behind and minimize the entry of water. Over time, vegetation can fill the gaps between the rocks inside the mesh baskets and strengthen the structure.

FIGURE 3: EXAMPLE OF A GABION RETAINING WALL

Soil Erosion Mat

A soil erosion mat is a stabilisation fabric which reinforces the soil and support the bank of the watercourse until plant species are ready to take root. Erosion mats also aids in slowing down the velocity of water along the surface.

FIGURE 4: EXAMPLE OF A SOIL EROSION MAT

A gabion retaining wall is the method being used to protect the watercourse from erosion, upstream from the project site. This method seems to be the most effective for the watercourse and as vegetation can establish within the gaps between the rocks inside the mesh baskets, a gabion retaining wall is found to be the most feasible alternative.

3.1.3 No-Go alternative

The no-go alternative would be to not authorise the application for the movement of the fence and the stabilisation of the river bank. Should this alternative be favourable, the construction will not take place, and the current negative impact on the bank of the watercourse will remain.

The impacts associated with the proposed construction were not found to be so severe for the no-go alternative to be further investigated, in fact the associated stabilisation of the bank of the watercourse which is currently eroding, will have a positive environmental impact.

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 the Mbombela municipal area ranges from approximately from 2000 m -200m above mean seal level (amsl) in a west-eastern direction across the municipality. The Mbombela CBD lies at approximately 665 m amsl. The site is at an elevation of approximately 600 m amsl.

4.2 Climate

Mpumalanga is a province where the climate varies due to its topography. The project site is located within the Lowveld Region and has a tropical climate with warm sub-tropical temperatures and experiences high summer rainfalls. It is characterized by moderate climatic conditions with a mean maximum temperature of 28^{o}C during January and 22^{o}C during June.

The study site and the surrounding areas are characterised by a humid sub-tropical climate with mild winters and warm summers. The average daily temperature fluctuates from 6^{o}C in winter (June-July) to 29^{o}C in summer (January-February). Generally, Mean Annual Precipitation is approximately 800mm. The rainfall regime is typical of savanna regions, consisting of short, intense storm events during the rainy season. The highest rainfall figures are recorded in December and January.

4.3 Geology and Soils

A large portion of the area is underlain by the Granite Group, which covers most of the Central, Northern and Eastern areas. It has highly permeable and erodible, colluvial sands and residual soil overlying granitic bedrock (Potassic Gneiss and Migmatite), estimated to be between 2.99-3.10 billion years old. The area north of Mbombela is underlain by dolomite of the Chuniespoort of the Transvaal foundation (approx. age 2.55-2.20 Ga). The western part has a more complex geology with rock types such as Shale, Dolomite, Quartzite, Andesite, Ultramafic rocks and Gneiss. The aforesaid Dolomitic rocks give rise to karst features, with the most notable one being the 1.8 km Sudwala Caves (IDP, 2016-2017).

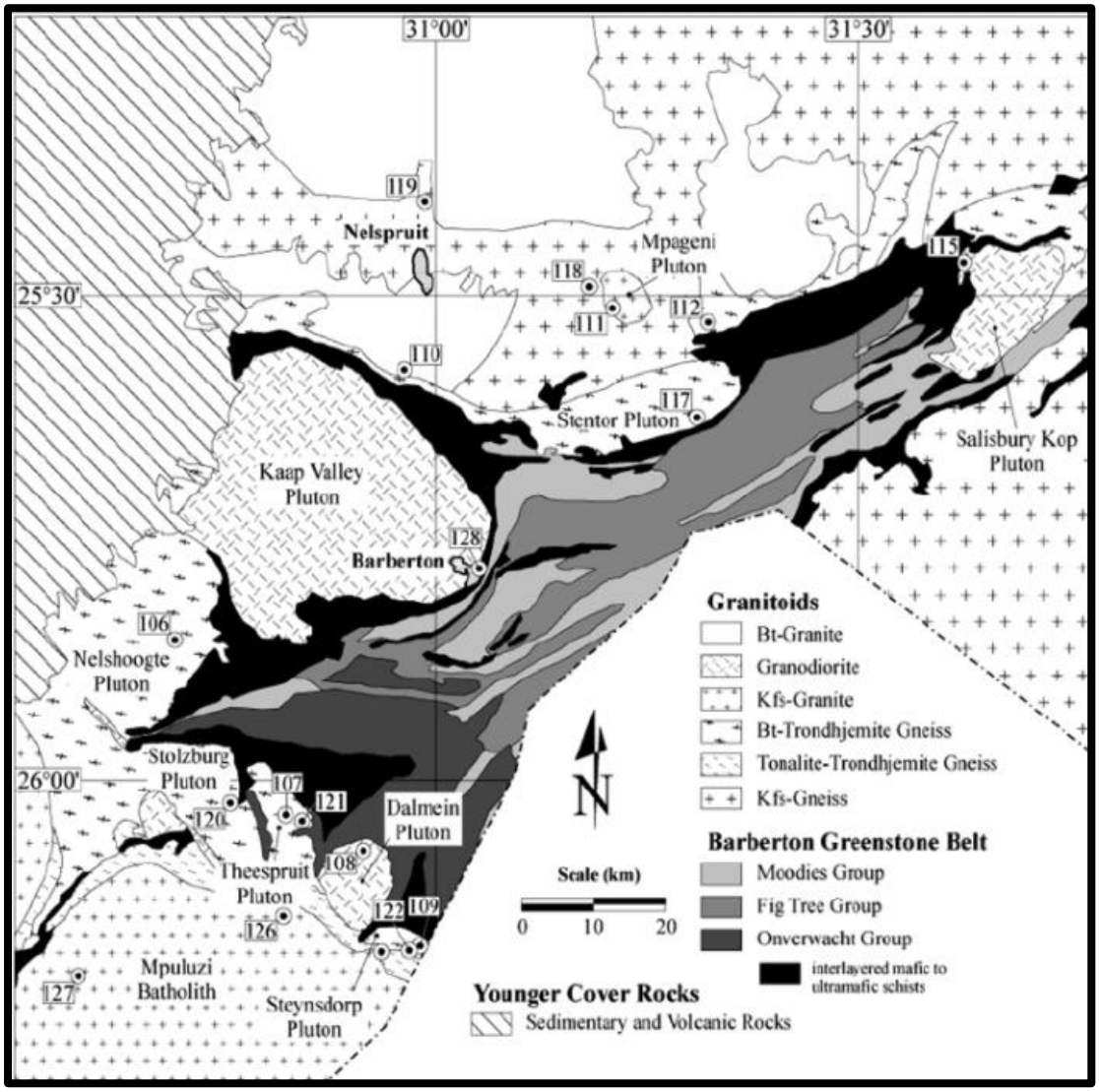

FIGURE 5: GEOLOGY OF THE AREA

4.4 Ecology

Terrestrial Ecology: According to the Mpumalanga Biodiversity Sector Plan of 2014, the site falls within the class namely, *Moderately to Heavily Modified* as seen below in Figure 2*. Moderately / Heavily modified:* MTPA objectives for these areas are quoted as follows: Such areas offer the most flexibility regarding potential land-uses, but these should be managed in a biodiversity-sensitive manner, aiming to maximize ecological functionality and authorization is still required for high impact land uses.

Overall, the site is located 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 project area is however located within the already disturbed and urbanized Mbombela and the site is invested with alien invasive species.

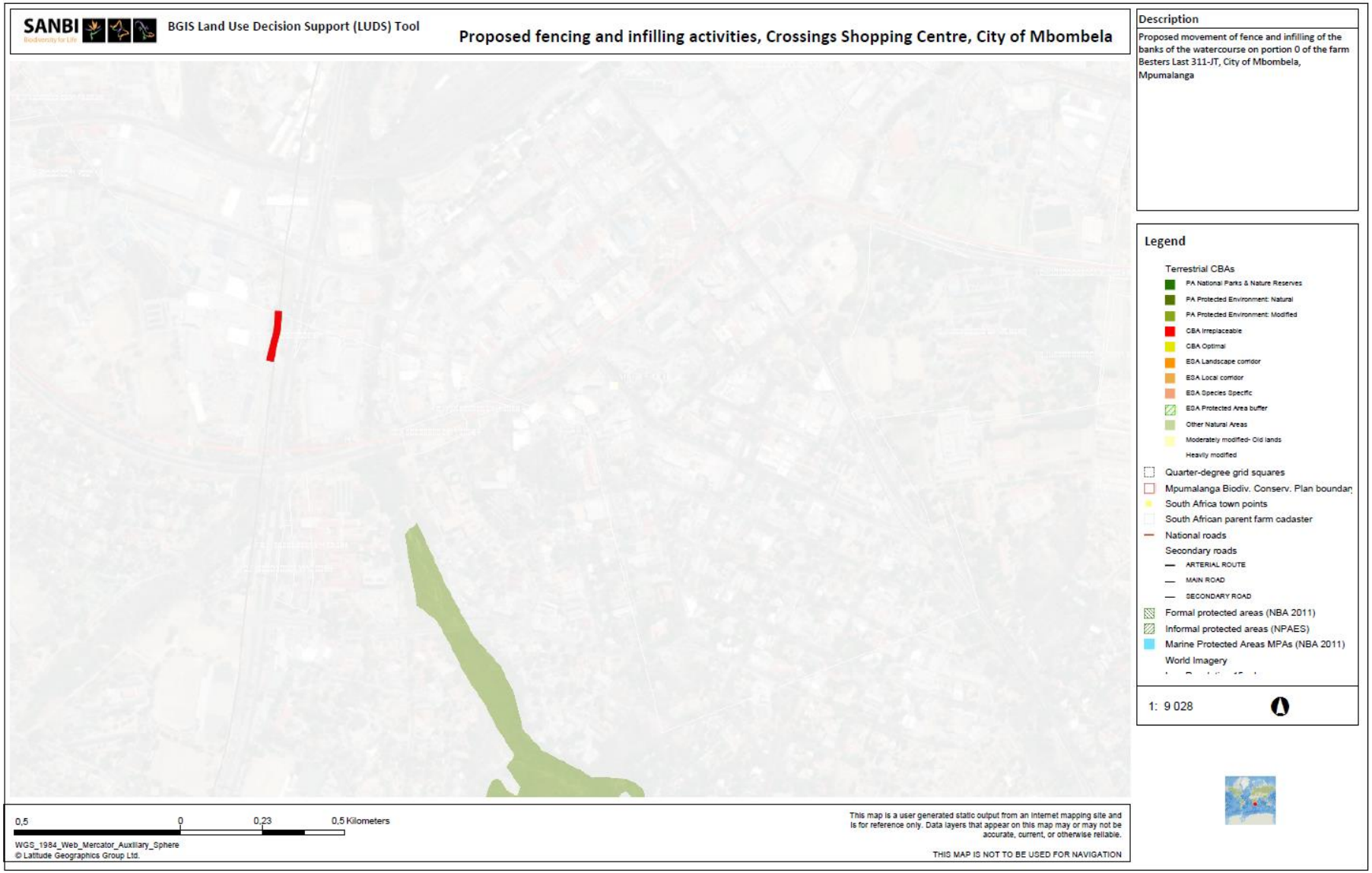

FIGURE 6: TERRESTRIAL ECOLOGY ACCORDING TO THE MPUMALANGA BIODIVERSITY SECTOR PLAN, 2014

Freshwater Ecology: The area is characterized as heavily modified. Although these areas are not needed to meet biodiversity pattern targets and not identified as necessary for supporting the functioning of freshwater CBAs or ESA, they still provide a range of ecosystem services and may be particularly important.

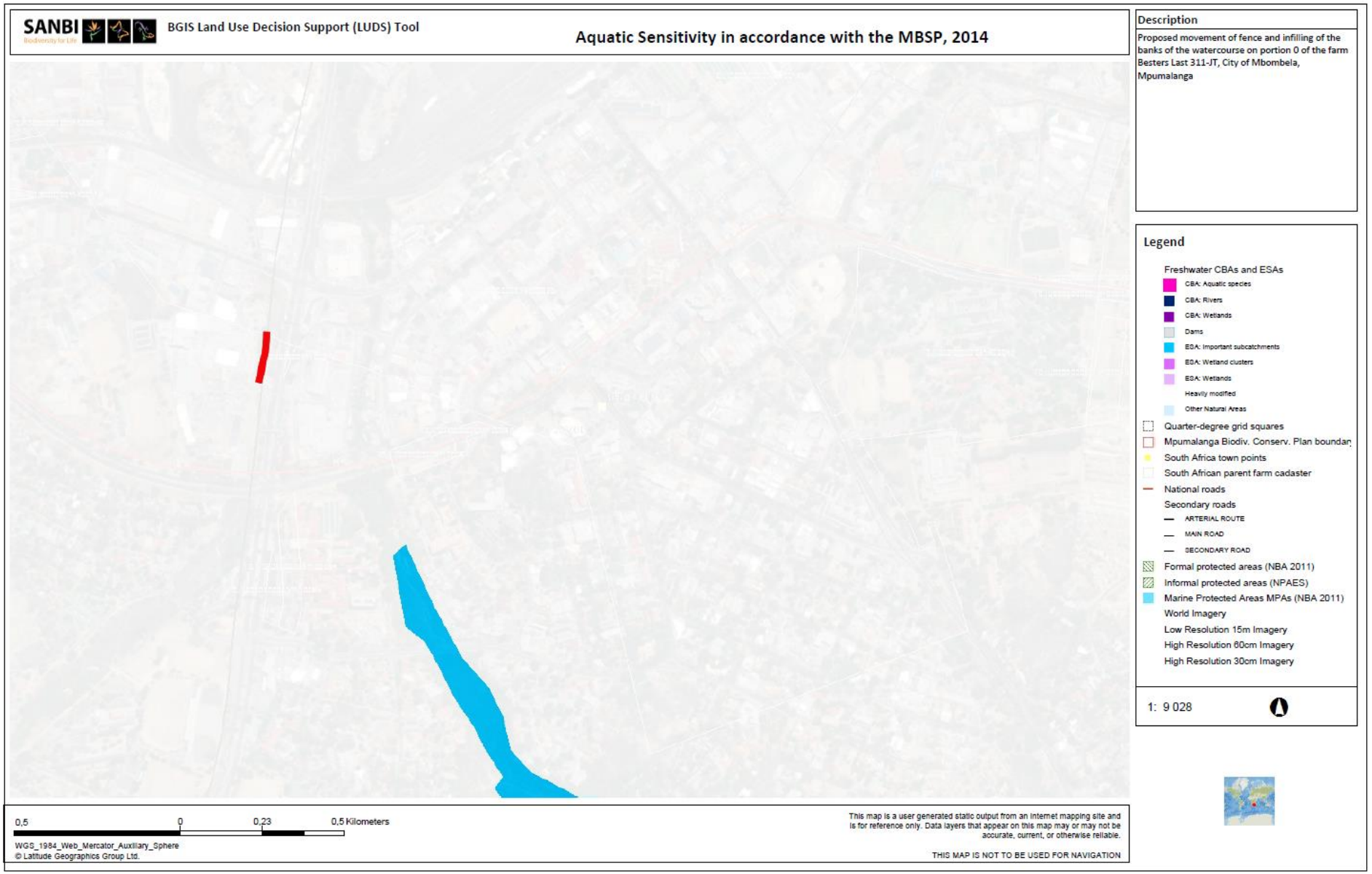

FIGURE 7: FRESHWATER ECOLOGY ACCORDING TO THE MPUMALANGA BIODIVERSITY SECTOR PLAN, 2014

4.5 Surface and Groundwater

The fencing and infilling activities are proposed on the banks of the Tributary of the Crocodile River. This requires that activities are focused on maintaining water quality and the integrity of natural habitat.

Currently, the banks of the watercourse are heavily eroded due to upstream activities taking place within the urban area and the watercourse is polluted with litter. The current quality of the water is unknown; however, it is assumed to also be very polluted as various activities are taking place within the watercourse, upstream from where the fencing activities are proposed. Sedimentation within the watercourse would hopefully be minimized by stabilizing the bank of the watercourse where the fencing activities are to take place.

4.6 Land use

The project site falls within an urban/commercial area. The surrounding area is being used for commercial purposes.

In accordance with the Department of Forestry, Fisheries and Environment (DFFE), the project site lies within a Strategic Gas Pipeline Corridor (Phase 8), Rompco Corridor. The entire Mbombela however lies within this corridor and it is unlikely that this proposed project site will be affected by the proposed gas pipeline.

4.7 Socio-Economic Environment

Mbombela Local Municipality has a GGP value of R 73 billion, which makes up 12.2% of the total GGP of Mpumalanga. The main sectors are finance and business sector (22%) manufacturing (17%), general government services (17%) as well as trade and accommodation (13%) (IDP, 2016-2017). Mbombela Local Municipality has experienced a decreased growth rate since 2007. The municipality's growth rate is approximated at 2%, which in turn means that the municipality has not recovered from the recession as of 2011. Mbombela has an unemployment rate of 28.14%. Unemployment is generally high amongst youth, women and people with disabilities (IDP, 2016-2017).

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 movement of the fence and infilling activities will have no additional visual impact on the surrounding area as the fence is already established at an area further from the edge of the watercourse. For this reason, no visual impact assessment was conducted.

- Heritage and Paleontological Impact Assessment

The project area has already been impacted by urban activities. According to the Heritage Resources Act 25, of 1999, a Heritage Impact Assessment is required when more than 5 000m^2 is impacted or a linear activity is more than 300m in length. As the proposed project will not be more than 5000m^2 or more than 300m in length, no Heritage or Paleontological Assessment would be required.

- Terrestrial Biodiversity Assessment / Plant and Animal Species Assessment

The proposed project site falls within an area which has been characterised as "*Moderately/Heavily Modified"* in accordance with the MBSP, 2014. Such 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 watercourse is heavily modified and invaded with alien invasive plant species and all construction activities are restricted to areas previously disturbed. For this reason, no Biodiversity Assessment was conducted.

- Aquatic and Hydrological Assessment:

According to the Mpumalanga Biodiversity Sector Plan 2014, the project area is heavily modified in terms of Freshwater Ecosystems and in addition to this, no activity will be undertaken within the bed of the watercourse, causing any change in the flow of the watercourse and for this reason, no Aquatic Assessment was undertaken for the proposed project.

- 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 have a positive impact on the local community.

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 2**. 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 2: 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 3.

TABLE 3: 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 4** and **Table 5.** 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 6.**

TABLE 4: 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 5: 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 6: 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 establishment and operational phases of the proposed project. 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 noise;*
- *Impact on soil;*
- *Impact on water resources;*
- *Socio-economic impact.*

7.1.1. Impact on biodiversity

Description of the potential impact
The area to be disturbed during the construction process has already been disturbed. A few tress are located within the project area, however, these trees will not be removed for the purposes of this project. Machinery will be used during these activities. Currently, the project area is covered with landscaped grass and the watercourse is invested with alien invasive species.

Significance of the impact
The proposed project is limited to the 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. Such areas offer the most flexibility regarding potential land-uses, but these should be managed in a biodiversity-sensitive manner, aiming to maximize ecological functionality.

Due to the current ecological state of the project area, and the project being restricted to areas which has already been disturbed, it is not anticipated that the activity will compromise biodiversity or ecological functions and therefore the impact is of low significance.

TABLE 7: SIGNIFICANCE OF BIODIVERSITY IMPACT

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Significance	Probability	Confidence	Reversibility	Impact Rating	Impact Rating
Impact on biodiversity [NEGATIVE]	**Low**	**Definite**	**Sure**	**Reversible**	**Low**	**Very Low**

Mitigation measures

- The footprint of activities associated with construction activities must be restricted to the already disturbed footprint.
- 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, however, as the activity is restricted to the surfacing of the road and the construction of the culverts, the area affected is very restricted.
- Stipulations of the Environmental Management Program (EMPr) should be adhered to during the construction phases of the project.

7.1.2. Generation of noise

Description of the potential impact

The project area is surrounded by other businesses, located within approximately 50m from the project site. Noise could be generated during the construction phase of the project and could have an impact on surrounding businesses.

Significance of the impact

The project site is located between Crossings Shopping Centre and Madiba Drive. The project area is relatively noisy due to other business activities and associated traffic. It is therefore unlikely that noise would be generated to such an extent that it would be disturbing to surrounding businesses. The impact is therefore rated to be of low significance.

TABLE 8: DUST GENERATION

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Significance	Probability	Confidence	Reversibility	Impact Rating	Impact Rating
Dust generation [NEGATIVE]	**Low**	**Unlikely**	**Sure**	**Reversible**	**Low**	**Very Low**

Mitigation measures

- Machinery used must be in a good working condition;
- Construction workers must keep noise to a minimum;
- No loud music is allowed on site.

7.1.3 Impact on soil

Description of the potential impact

The construction process will disturb the soil surface and increase the possibility of soil erosion. As construction activities will be taking place on the bank of the watercourse, water will flow from the bank of the watercourse towards the bed and subsequently cause erosion on unvegetated areas. The significance of erosion during the construction phase is therefore of medium significance.

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.

Significance of the impact

During establishment, soil could be impacted by the following:

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

This impact of soil pollution is of medium magnitude, site specific and short duration and for this reason the impact is of also of low significance prior to the implementation of mitigation measures.

As construction activities are taking place within a close proximity to the watercourse and also on the bank of the watercourse, the significance of erosion during the construction phase is of medium significance.

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TABLE 9: IMPACT ON SOIL

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Significance	Probability	Confidence	Reversibility	Impact Rating	Impact Rating
Soil pollution [NEGATIVE]	**Low**	**Likely**	**Sure**	**Reversible**	**Low**	**Very Low**
Erosion [NEGATIVE]	**High**	**Likely**	**Sure**	**Reversible**	**Medium**	**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 construction 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 on and along the one bank of the watercourse. This requires that activities are focused on maintaining water quality and the integrity of natural habitat.

Sedimentation could be problematic when vegetation is removed and the banks of the watercourse is disturbed. Loose soil and sand could potentially silt up the already disturbed watercourse.

Any possible oil or hazardous spillages could also have an impact on the water quality when construction activities are taking place within a close proximity of the watercourse.

Significance of the impact

Sedimentation during the construction phase could be problematic if not managed appropriately and therefore the impact on sedimentation is of medium significance during the construction phase. Mitigation measures must be adhered to reduce this impact on the water resource.

Any spillages within the watercourse will also have an impact on the water quality of the watercourse and therefore special care must be taken when works are conducted within these watercourses. The impact is however of low significance with the implementation of mitigation measures.

TABLE 10: IMPACT ON WATER RESOURCES

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Significance	Probability	Confidence	Reversibility	Impact Rating	Impact Rating
Sedimentation [NEGATIVE]	**High**	**Likely**	**Sure**	**Reversible**	**Medium**	**Low**
Water pollution [NEGATIVE]	**Medium**	**Unlikely**	**Sure**	**Reversible**	**Low**	**Very 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.
- All measures must be taken to present erosion and sedimentation of the watercourse. Use of temporary sand bags are encouraged;
- No washing of equipment or any vehicles are not allowed within or near any watercourse.

7.1.5 Socio-economic Impact

Description of the potential impact

During the construction activities, various temporary job opportunities will be created. 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 5**, 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 11: SOCIO-ECONOMIC IMPACT

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Significance	Probability	Confidence	Reversibility	Impact Rating	Impact Rating
Job opportunities **[POSITIVE]**	**Medium**	**Definite**	**Sure**	**Reversible**	**Low**	**Medium (+)**
Health and Safety **[NEGATIVE]**	**Medium**	**Probable**	**Sure**	**Reversible**	**Low**	**Very Low**

Mitigation measures

The applicant and/or project manager 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;*

7.2.1. Impact on water resources

Description of the potential impact

At present, the banks of the watercourse are very eroded and continued upstream activities adds to the sedimentation, erosion and water quality of the water course. The movement of the fence, infilling and stabilisation of the bank of the watercourse will however be positive as erosion protection measures will be established to prevent future erosion of that particular section of the watercourse.

Significance of the impact

The applicant will be in a position to establish erosion protection structures along the section for which the fence is being moved. Unfortunately, the remainder of the watercourse is the responsibility of the City of Mbombela. Although only a section of the watercourse will be affected positively, the impact on the watercourse during the operational phase remains positive and of medium significance,

TABLE 13: IMPACT ON WATER RESOURCES

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Significance	Probability	Confidence	Reversibility	Impact Rating	Impact Rating
Impact on water resources, erosion **[POSITIVE]**	**Medium**	**Definite**	**Sure**	**Reversible**	**Medium (+)**	**Medium (+)**

Mitigation measures

- Prepare a maintenance plan for the erosion protection structures to be established.

7.3 Environmental Impact Statement

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

TABLE 14: ENVIRONMENTAL IMPACT STATEMENT

IMPACT	SIGNIFICANCE BEFORE MITIGATION MEASURES	SIGNIFICANCE AFTER MITIGATION MEASURES
Construction Phase Impacts		
Biodiversity Impact	Low	Very Low
Generation of noise	Low	Very Low
Erosion	Medium	Low
Soil Pollution	Low	Very Low
Water Pollution	Low	Very Low
Sedimentation	Medium	Low
Job opportunities	Low (+)	Medium (+)
Health and Safety	Low	Very Low
Operational Phase Impacts		
Impact on water resources / erosion	Medium (+)	Medium (+)

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 proponent 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 establishment and operation of the agricultural area.
- 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 movement of the fence will actually entail the stabilisation of the eroding bank of the watercourse, the project will actually have a positive impact on the erosion and sedimentation of the watercourse if mitigation measures are adhered to. 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 6 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 6**.

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

8.2 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

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

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