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DRAFT BASIC ASSESSMENT REPORT (BAR) FOR THE PROPOSED MAVELA SPORTS FIELD WITHIN INKOSI LANGALIBALELE LOCAL MUNICIPALITY KWAZULU-NATAL.

A PROJECT FOR INKOSI LANGALIBALELE LOCAL MUNICIPALITY

July 2021

Prepared by:

64 Paige Place

2 Portsmouth Rd,

Pinetown,3610

Tel: +27 (0) 82 099 1538

Email: dladlam2010@gmail.com

Prepared for:

Inkosi Langalibalele Local Municipality

Civic Building, Victoria Street

ESCOURT, 3310

Tel: (036) 342 78000

Fax: (036) 352 5829

Client:

Inkosi Langalibalele Local Municipality

Proposal Name:

Draft Basic Assessment for the Proposed Mavela Sports Field within Inkosi Langalibalele Local Municipality KwaZulu-Natal.

EDTEA REF NO:

Compiled by:

Kuda M Zhandire

Date:

12 July 2021

Location:

Durban

Review:

Msawenkosi Dladla

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1. DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER

1.1. Details of Consultant

Kujenga Trading were appointed by Ilisu Consultants and Contractors on behalf of the Inkosi Langalibalele Local Municipality act as the independent Environmental Assessment Practitioner (EAP) for the environmental authorisation application for the proposed Mavela Sportsfield.

Table 1: DETAILS OF CONSULTANT

Business name of EAP:	Kujenga Trading		
Physical address:	64 Paige Place, 2 Portsmouth Road, Pinetown		
Postal address:	N/A		
Postal code:	3610	Fax:	086 439 6322
Telephone:	082 099 1538		
E-mail:	Dladlam2010@gmail.com		

1.1.1. Details & Expertise of Representatives of EAP

The team responsible for the EIA process on this project has been identified below:

Table 2: Details of The Project Team

NAME	ORGANISATION	QUALIFICATION	TELEPHONE	EMAIL
Mr Msawenkosi Dladla	Kujenga Trading	BA Environmental & Development Studies	082 099 1538	Dladlam2010@gmail.com
Ms. Kudakwashe M Zhandire	Kujenga Trading	BA Geography & Environmental Science	079 962 1987	kudamzhandire@gmail.com

2. PROJECT INFORMATION

2.1. Project Location

The proposed development is located in KwaDlamini Village, near Hlathikhulu within Inkosi Langalibalele Local Municipality, KwaZulu-Natal.

Table 3: PROJECT DETAILS

Physical Address/ Property Description	FARM NUMBER 9604 DRAKENSBERG LOCATION NO 1	
Geographical Coordinates of the Site	29º9'46.59" South	29º38'3.12" East
21 Digit SG Code	**N0FS00000000960400000**	
Nearest town	ESTCOURT	
Directions to the site	From Estcourt, drive towards Ntabamhlophe on Ntabamhlophe Road for 32km until you reach a left turn. Turn left towards KwaDlamini and travel 8km and the project site will be on the left in KwaDlamini Village, Emawuza.	

2.2. Description of Proposed Activity

Table 4:TRIGGERED EIA ACTIVITIES

Name and Date of Government Notice	Activity Number	Project Description
GN R.327 7 April 2017 Listing Notice 1	12(xii)	The Mavela Sportsfield will entail the construction of infrastructure within 32m of watercourses whose size may exceed 100 square metres

GN R.327 7 April 2017 Listing Notice 1	19	The Mavela Sportsfield will entail the construction of portal culverts over watercourses and may require removal or infilling of material exceeding 5m3
GN R.324 7 April 2017 Listing Notice 3	12	The Mavela Sportsfield will entail the clearance of some areas of indigenous vegetation in an area that is in an area that is within 10km radius of the protected area of Ukhahlamba Drakensberg World Heritage Site.
GN R.327 7 April 2017 Listing Notice 3	14(xii)	The Mavela Sportsfield will entail the development of infrastructure exceeding 10m2 in size in an area that is within 10km radius of the protected area of Ukhahlamba Drakensberg World Heritage Site.

3. NEED AND DESIRABILITY OF PROPOSED ACTIVITY

The Inkosi Langalibalele Local Municipality aims to achieve economic and social improvement through provision of the appropriate services and infrastructure. One of the striking features of Ntabamhlophe area is relative short supply of recreational facilities. There are two sport fields that exist in the vicinity – baring taverns and similar activities, the sports field are the main form of entertainment in the area. Thus, there is a need to broaden the choice of entertainment facilities within the Ntabamhlophe area. The youth of the area are very athletic, and the prospect of a sports field provides a facility and means of recreation. Currently, the community rely on the sports field of a school which is often limited in both access and amenities. Furthermore, due to high unemployment rates and the limited recreation opportunities, the youth of the area spend a lot of time partaking in alcohol and non-productive activities. The development of the Mavela sports field will also boost economic activity during the constructions phase and a few maintenance jobs when it becomes operational.

4. ACTIVITY CONTEXT AND LEGAL FRAMEWORK

Table 5: LEGAL FRAMEWORK

Legislation	Sections	Relates to
The Constitution (No 108 of 1996)	Chapter 2	Bill of Rights.
	Section 24	Environmental rights.
National Environmental Management Act (No 107 of 1998 [as amended])	Section 2	Defines the strategic environmental management goals and objectives of the government. Applies through-out the Republic to the actions of all organs of state that may significantly affect the environment.
	Section 24	Provides for the prohibition, restriction and control of activities which are likely to have a detrimental effect on the environment.
	Section 28	The developer has a general duty to care for the environment and to institute such measures as may be needed to demonstrate such care.
National Environmental Management: Waste Act (No 59 of 2008)		Provides for specific waste management measures and the remediation of contaminated land.
Environment Conservation Act (No 73 of 1989) and regulations	Sections 19 and 19A	Prevention of littering by employees and sub-contractors during construction and the maintenance phases of the proposed project.
National Heritage Resources Act (No 25 of 1999) and regulations	Section 34	No person may alter or demolish any structure or part of a structure which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.

Legislation	Sections	Relates to
	Section 35	No person may, without a permit issued by the responsible heritage resources authority destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or paleontological site.
	Section 36	No person may, without a permit issued by the South African Heritage Resource Agency (SAHRA) or a provincial heritage resources authority destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority. "Grave" is widely defined in the Act to include the contents, headstone or other marker of such a place, and any other structure on or associated with such place.
	Section 38	This section provides for Heritage Impact Assessments (HIAs), which are not already covered under the ECA. Where they are covered under the ECA the provincial heritage resources authorities must be notified of a proposed project and must be consulted during the HIA process. The Heritage Impact Assessment (HIA) will be approved by the authorising body of the provincial directorate of environmental affairs, which is required to take the provincial heritage resources authorities' comments into account prior to making a decision on the HIA.
National Environmental Management: Air	Section 32	Control of dust.
	Section 34	Control of noise.
	Section 35	Control of offensive odours.

Legislation	Sections	Relates to
Quality Act (No 39 of 2004)		
Occupational Health and Safety Act (No 85 of 1993)	Section 8	General duties of employers to their employees.
	Section 9	General duties of employers and self-employed persons to persons other than their employees.
National Water Act (No 36 of 1998) and regulations	Section 19	Prevention and remedying the effects of pollution.
	Section 20	Control of emergency incidents.
	Section 21 (a)	Abstraction of water.
Minerals and Petroleum Resources Development Act (No 28 of 2002)	Section 22	Application for a mining right.
	Section 39	Environmental management programme and environmental management plan.
National Environmental Management Biodiversity Act (Act No. 10 of 2004)		Provide for the protection of species and ecosystems that warrant national protection and the sustainable use of indigenous biological resources.
National Forests Act (No 84 of 1998) and Regulations	Section 7	No person may cut, disturb, damage or destroy any indigenous, living tree in a natural forest, except in terms of a licence issued under section 7(4) or section 23; or an exemption from the provisions of this subsection published by the Minister in the Gazette.
	Sections 12-16	These sections deal with protected trees, with the Minister having the power to declare a particular tree, a group of trees, a particular woodland, or trees belonging to a certain species, to be a protected tree, group of trees, woodland or species. In terms of section 15, no

Legislation	Sections	Relates to
		person may cut, disturb, damage, destroy or remove any protected tree; or collect, remove, transport, export, purchase, sell, donate or in any other manner acquire of dispose of any protected tree, except under a licence granted by the Minister.
Hazardous Substances Act (No 15 of 1973) and regulations		Provides for the definition, classification, use, operation, modification, disposal or dumping of hazardous substances.
National Road Traffic Act (No 93 of 1996)		Road safety.
SANS 10103 (Noise Regulations)		The measurement and rating of environmental noise with respect to annoyance and to speech communication.
KZN Nature Conservation Ordinance (15 of 1974)		Sensitive species are protected under this Ordinance and must be considered.

The Proposed activity complies with the National Environmental Management Act as environmental authorisation has been sought prior to the commencement of the activity. The Environmental Management Programme addresses the management of solid waste and conservation of soil, flora and fauna on site and thereby complies with the National Environmental Management: Waste Act, and Biodiversity Act. The EMPr also provides for the safety, health and protection for all workers on the site thereby complying with the Constitution and the Occupational Health and Safety Act. The site has been thoroughly examined and it has been established that there is no evidence of past or present artefacts that are of cultural or heritage significance, and this complies and responds to the National Heritage Resources Act.

Environmental Authorisation is required for the construction period of the project. Upon conclusion of the activity, there will be remediation of the environment as detailed in the EMPr which will be monitored by the Environmental Control Officer.

5. FEASIBLE AND REASONABLE ALTERNATIVES

5.1.1. Consideration of developing the sports field against other alternatives

The following alternatives have been assessed in terms of practicality, feasibility and viability.

Status quo– the construction activities have already commenced on site, although unlawfully. Leaving the infrastructure that has already been put into place on site will be a waste of money as compared to rehabilitating the existing damage and making this a legal development through obtaining all the relevant authorisations.

No Go Alternative- The no-go alternative of not constructing the sports facility will lead to the primary goal of improving accessibility of recreational facilities to the rural people not being met. The No Go alternative will also trump the community's need for recreational facilities that provides a safer and more productive means of recreation. The significance of this is that local community members will be forced to continue using the facilities of the nearby school which has restricted access and limited facilities.

Choices within the sports field option. Within the option to develop the sports field, there are a few options that have been considered.

No-go option – this option would mean that the status quo is maintained and the local communities would continue living in an area that is undeveloped and has limited recreational service infrastructure.

Location alternatives – the site has been identified based on the position of the existing vacant land, proximity to other facilities such as the schools, traditional court of KwaDlamini Traditional Authority, and consultation with local residents and municipal authorities to identify suitable position for the sports field. The site has been identified and the construction

of the proposed sports field is already in its construction stages, suspended pending environmental authorisation.

Demand alternatives – many local residents faced with the difficulty of unemployment and lack of recreational facilities have expressed interest in the development of the sports facility, revealing that the current situation is dire and requires intervention.

Infrastructure alternatives *– the identification of alternatives for;*

- *infrastructure corridors to link with existing roads and service infrastructure*

6. IMPACT ASSESSMENT CRITERIA

The criteria used for the assessment of the potential impacts of the proposed Mavela Sports Field Site are described in the table below. Cumulative impacts will be included as part of the impact assessment process.

Table 6:IMPACT ASSESSMENT CRITERIA

Criteria	Description
Nature	Includes a description of what causes the effect, what will be affected and how it will be affected.
Extent	The physical and spatial scale of the impact.
Duration	The lifetime of the impact is measured in relation to the lifetime of the proposed development.
Intensity	Examining whether the impact is destructive or benign, whether it destroys the impacted environment, alters its functioning, or slightly alters the environment itself.
Probability	This describes the likelihood of the impacts actually occurring. The impact may occur for any length of time during the lifecycle of the activity, and not at any given time.
Status	Description of the impact as positive, negative or neutral.

Significance	A synthesis of the characteristics described above and assessed as low, medium or high. A distinction will be made for the significance rating without the implementation of mitigation measures and with the implementation of mitigation measures.
Confidence	This is the level of knowledge/information that the environmental impact practitioner or a specialist had in his/her judgement.

6.1.1. Nature and Status

The nature of the impact is the consideration of what the impact will be and how it will be affected. This description is qualitative and gives an overview of what is specifically being considered. That is, the nature considers 'what is the cause, what is affected, and how is it affected?' The status is thus given as being positive, negative or neutral, and is deemed to be either direct or indirect in impact.

6.1.2. Extent

The physical and spatial scale of the impact is classified in the table below.

Table 7:EXTENT OF IMPACT

Description	Explanation	Scoring
Footprint	The impacted area extends only as far as the activity, such as footprint occurring within the total site area.	1
Site	The impact could affect the whole, or a significant portion of the site.	2
Local	Impact could affect the adjacent landowners.	3
Regional	Impact could affect the wider area around the site, that is, from a few kilometres, up to the wider Council region	4
National	Impact could have an effect that expands throughout a significant portion of South Africa – that is, as a minimum has an impact across Provincial borders.	5

6.1.3. Duration

The lifetime of the impact is measured in relation to the lifetime of the proposed project, as per table below.

Table 8: DURATION OF IMPACT

Description	Explanation	Scoring
Short Term	The impact will either disappear with mitigation or will be mitigated through a natural process in a period shorter than any of the development phases (i.e. less than 2 years).	1
Short to medium	The impact will be relevant through to the end of the construction phase (i.e. less than 5 years).	2
Medium Term	Impact will last up to the end of the development phases, where after it will be entirely negated (i.e. related to each phase development thus less than 10 years).	3
Long term	The impact will continue or last for the entire operational lifetime of the development, but will be mitigated by direct human action or by natural processes thereafter (i.e. during decommissioning) (i.e. more than 10 years, or a maximum of 60 years).	4
Permanent	This is the only class of impact that will be non-transitory. Mitigation either by man or natural process will not occur in such a way or in such a time span that the impact can be considered transient (i.e. will remain once the site is closed).	5

6.1.4. Intensity

This will be a relative evaluation within the context of all the activities and the other impacts within the framework of the project, as per the table below.

Table 9:INTENSITY OF IMPACTS

Description	Explanation	Scoring
Low	The impact alters the affected environment in such a way that the natural processes or functions are not affected.	2
Low- Medium	The impact alters the affected environment in such a way that the natural processes or functions are slightly affected.	4
Medium	The affected environment is altered, but functions and processes continue, albeit in a modified way.	6
Medium-High	The affected environment is altered, and the functions and processes are modified immensely.	8
High	Function or process of the affected environment is disturbed to the extent where the function or process temporarily or permanently ceases.	10

6.1.5. Probability

This describes the likelihood of the impacts actually occurring. The impact may occur for any length of time during the lifecycle of the activity, and not at any given time. The probability classes are rated in the table below.

Table 10: PROBABILITY OF OCCURENCE

Description	Explanation	Scoring
Improbable	The possibility of the impact occurring is none, due either to the circumstances, design or experience (less than 40% chance of occurring).	1
Probable	The possibility of the impact occurring is very low, either due to the circumstances, design or experience (40-70%).	2
Highly probable	There is a possibility that the impact will occur to the extent that provisions must therefore be made (70 – 90%).	3

Definite	It is most likely that the impacts will occur at some stage of the Development. Plans must be drawn up before carrying out the activity (> 90%).	4

6.1.6. Confidence

The level of knowledge the EAP or a specialist had in their judgement and is rated in the table below.

Table 11: CONFIDENCE OF EAP IN IMPACT ASSESSMENT

Description	Explanation
Low	The judgement is based on intuition and not on knowledge or information.
Medium	The judgement is based on common sense and general knowledge.
High	The judgement is based on scientific and/or proven information.

6.1.7. Significance

The level of significance is expressed as the sum of the area exposed to the risk (extent), the length of time that exposure may occur over in total (duration), the severity of the exposure (intensity) and the likelihood of the event occurring (probability). This leads to a range of significance values running from 'no impact' to 'extreme'.

The significance of the impacts have been determined as the consequence of the impact occurring (reflection of chance of occurring, what will be affected (extent), how long will it be affected, and how intense is the impact) as affected by the probability of it occurring, this translates to the following formula: Significance value = (Extent + Duration + Intensity) x Probability.

Each impact is considered in turn and assigned a rating calculated using the results of this formula, and presented as a final rating classification. A distinction will be made for the significance rating of (a) without the implementation of mitigation measures, and, (b) with the implementation of mitigation measures.

Table 12: LEVEL OF SIGNIFICANCE OF IMPACTS

Description	Explanation	Scoring
No Impact	No impacts	0-9
Low Impact	The impacts are less important, but some mitigation is required to reduce the negative impacts.	10-24
Medium	The impacts are important and require attention; mitigation is required to reduce the negative impacts.	25-49
Medium to High	The impacts are of medium to high importance; mitigation is necessary to reduce negative impacts.	50-74
High	The impacts are of high importance and mitigation is essential to reduce the negative impacts	75-89
Extreme	The impacts present a fatal flaw, and alternatives must be considered.	90-100

6.1.8. Identification of Mitigation Measures

The purpose of mitigation measures is to reduce the significance level of the anticipated impact. Therefore, the reduction in the significance level after mitigation is directly related to the scores used in the impact assessment criteria. The effect of potential mitigation measures to reduce the overall significance level is also to be considered in each issues table (i.e. values with or without mitigation are presented).

6.1.9. Cumulative Impacts

A cumulative impact, in relation to an activity, is the impact of an activity that may not be significant but may become significant when added to the existing and potential impacts arising from similar or other activities in the area. The possible cumulative impacts of this project were considered. Cumulative impacts are those which have incremental impacts of the activity as a whole, and, others that past, present and future activities will have an impact on a common resource.

7. ASSESSMENT OF IMPACT

7.1.1. Overview

The aim of the draft Basic Assessment was to identify, record and describe the issues that have been identified and/or raised by stakeholders, I&APs and specialists with regard to the proposed sports field. This enabled the specialist studies to be clearly focused on aspects of significant concern. It also provided a framework for the assessment of the impacts that the proposed sports field will have on the environment, and of the impacts the environment will have on the proposed structure.

The description of all environmental issues that were identified, an assessment of the significance of each issue and an indication of the extent to which the issue could be addressed by the adoption of mitigation measures have been considered in this section of the document and the associated draft Site Specific EMPr attached as Appendix 5.
The cumulative impacts anticipated for the proposed development are considered at the end of this section.

The following environmental impacts were identified. Mitigation measures proposed have been included in the assessment and draft EMPr.

Table 13: IDENTIFIED POTENTIAL IMPACTS

Identified Potential Impacts	
Socio-economic Impacts	Social impacts
	Impact on traffic
	Impact on heritage resources
	Impact on visual integrity
	Impact on waste management
Bio-physical Impacts	Impact on biodiversity
	Impact on water resources
	Impact on soils

	Impact on air quality

The specialist information was considered in terms of a formal quantification of the impact as per facets of the specific field highlighted by the specialist. In each case the specialist's recommendations were converted into potential mitigation measures and linked in the EMPr (Appendix5). The mitigation measures are summarised in the impact tables.

7.1.2. Environmental Risks considered

7.1.3. Socio- Economic

HERITAGE

Table 14: HERITAGE IMPACT ASSESSMENT

Theme	Heritage	
Impact Focal Point	**Loss of Heritage resources**	
Phase	**Preferred alternative**	**No Go**
Nature and Status	Loss of / damage to artefacts due to initial infrastructure development and associated activities; Negative	No change in present status.
Extent	Footprint (1)	None
Duration	Permanent (1)	
Intensity	Medium – High (2)	
Probability	Possible (1)	
Confidence	High	High
Calculation	(1+1+2) * 4= 4	0
Level of Significance	None	None
Mitigation Measures	The ground survey did not locate any heritage sites (including archaeological, historical, graves, and living heritage sites) on the footprint. Graves occur in the area and are associated with local homesteads. However, none occur on the area demarcated for development. The footprint is not part of any known cultural landscape	If the site is not developed, there will be no impact on any heritage resources that may exist on the site.

	The site does not fall within or near any area of cultural or heritage significance. However, should artefacts of heritage importance be found, construction activities will stop immediately at the site of discovery. The area will be fenced off around the unearthed item, demarcated as a no-go area and access will be prohibited. Under no circumstances shall any artefacts be removed, destroyed or interfered with by anyone on site. The Contractor and workers, during construction, shall be advised of the penalties associated with the unlawful removal of cultural, historical, archaeological or paleontological artefacts, as set out in the NHRA. If archaeological sites or graves are exposed during construction work, it should immediately be reported to a heritage practitioner so that an investigation and evaluation of the finding can be made.	

VISUAL

Table 15: VISUAL IMPACT ASSESSMENT

Theme	Visual	
Impact Focal Point	**Reducing the visual quality of the landscape**	
Phase	**Preferred alternative**	**No Go**
Nature and Status	Change in visual landscape due to development of sports field and associated activities	Maintenance of the status quo

Extent	(Local) 3	None
Duration	(Permanent) 5	
Intensity	(Low) 2	
Probability	(Definite) 4	
Confidence	High	High
Calculation	(3+5+2)*4 =40	0
Level of Significance	Medium	No Impact
Mitigation Measures	Disturbed areas that are no longer in use will be rehabilitated. Rehabilitation will be conducted in a progressive manner (i.e. once phased activity in an area has been completed the area will be rehabilitated). The rehabilitation of the area with indigenous vegetation must coincide with the rainfall events and all alien vegetation shall be removed. After construction, the site needs to be inspected by the ECO to ensure that the rehabilitation activities have been successful and to monitor alien vegetation re-growth. The ECO will report the condition of rehabilitation to the Applicant. All aspects of the sports field will be maintained in order to ensure its smooth and efficient operation and to prevent undue deterioration of any item.	If the sports field is not developed, there will be no impact on any the present state of visual landscape.

SOCIO ECONOMIC

Table 16: IMPACT OF SOCIO-ECONOMIC ENVIRONMENT

Theme	**Socio-Economic**	
Impact Focal Point	**Impact on Local community**	
Phase	**Preferred alternative**	**No Go**
Nature and Status	Impacts of the development on the local residents	
Extent	(Local) 3	None
Duration	(Long term) 4	
Intensity	(medium to high) 8	
Probability	(Definite) 4	

Confidence	High	High
Calculation	(3+4+8)*4=60	0
Level of Significance	Medium to high (positive)	None
Mitigation Measures	The biggest socio - economic benefit by far will be access, such as access to sports facility for children, employment places, health facilities, potential public transport facilities and emergency services for all community members. Due to the large number of machinery and activities in the construction site there is potential for construction workers to be at risk from physical injury. The health and safety of workers must be protected and ensure that construction work is conducted in a manner that will not put any worker in a risk. Personal Protective Equipment must be used at all times. Local communities will be positively impacted through opportunity - income derived benefits associated with better access to local infrastructures and places of employment. The local community members will be able to commute safely and thus have the opportunity to better their lives. The community members must ensure the infrastructure is accessible and in a good condition that is in an acceptable standard. The community members must report any damage that they may see to the municipality to be fixed soon and not wait for it to be damaged completely.	None

7.1.4. Biophysical Impacts

ECOLOGY (FLORA & FAUNA)

The Ecological Study was conducted by Umongo Environmental Services. See full report attached as Appendix D2.

Method

The assessment was informed by fieldwork that was conducted on site investigations. Emphasis is placed on the characterization of the vegetation and identifying the alien invaders versus the valuable indigenous vegetation. Any fauna or flora which has a protected or otherwise significant status would be identified. The topography, aspect and basic geology are assessed in order to give background knowledge of the site. The possible 'impact of the proposed development on resident vegetation' as well as the inverse, 'impact of vegetation on proposed development,' are addressed.

Findings

Flora

• At a broad spatial scale, the proposed project was determined as located within the Drakensberg Foothill Moist Grassland vegetation unit.

• The vegetation within the project area was found to be largely transformed by human disturbances relating to the utilisation of the project area as school premises. The disturbances have had knock-on-effects on sensitive ecological habitats.

• No Red Data plant species were recorded within the project area.

Mammal

- There were no mammal fauna species observed within the project area. The project area consists of areas that are currently operational schools with a significant level of disturbance for faunal species.
- No endangered mammals were recorded within the project area associated with the project area, the likelihood of any threatened mammal species being encountered within the area is considerably low.

Birds

- No Important Bird Areas were determined to be within proximity to the project area.
- 7 bird species were recorded within the development footprint during the site investigation.
- No threatened bird species (Red Data species) were recorded within the project area during the survey.

Reptiles and Amphibians

- Low reptile diversity was expected due to the degraded nature of the site and lack of suitable habitats. This was confirmed with only one reptilian species observed. The indiscriminate killing of reptile species, which is common in human settlements, will have further negative impacts on the reptile population.
- Low amphibian diversity was recorded within the proposed project area due to extremely limited habitat diversity and degradation of suitable habitats.
- No Red Data species are predicted to be present within the proposed project area due to high levels of disturbance and habitat transformation already present.

Recommendations & Mitigation Measures

The impacts anticipated from the proposed construction and operational phase relate to loss of habitat, direct faunal impacts, disturbance and reduced landscape connectivity. These impacts are expected to be of low significance as the current project area is utilised for established schools. Furthermore, the proposed project is for the renovation an addition to existing infrastructure within an already transformed habitat.

All recommended mitigation measures must be included in the EMPr in order to effectively mitigate negative impacts associated with the project.

Table 17: ECOLOGICAL IMPACT ASSESSMENT

Theme	Ecology (Flora & Fauna)	
Impact Focal Point	**Impact on ecosystem(s) – site establishment, infrastructure and sports field construction removal of vegetation, reduction in ecosystem connectivity**	
Phase	**Preferred alternative**	**No Go**
Nature and Status	Clearing of land for construction of sports field and associated infrastructure - Negligible	No Change in status
Extent	(Site) 2	
Duration	(Short -term) 1	

Intensity	(Low-Medium) 4	
Probability	(Definite) 3	
Confidence	High	High
Calculation	(2+1+4)*3= 21	0
Level of Significance	Low	None
Mitigation Measures	The site for the proposed sportsfield has previously been highly impacted on by human activity and very little of the original vegetation, remains on the site. The effects of the development on vegetation will be minimal to insignificant as the footprint of the proposed sports field is already established and cleared, so the impact is already minimised. However, the only way to ensure this stays so is if environmentally conscientious building practises are employed and strictly enforced by an EMPr. No red data species were observed at all three and due to the degree of disturbance sensitive species are not expected. No wetlands were identified on the proposed development site, therefore no wetland related sensitivities were identified.	None

GEOHYDROLOGICAL STUDY

The Geohydrological Report is attached as Appendix D4.

Findings

The purpose of this investigation was to assess the current geohydrological conditions in the project area and in the quaternary catchment V70C in support of specialist studies conducted in order for the intended project to be legally compliant. Both surface and groundwater quality data was analysed for the whole quaternary catchment. Groundwater level data as collected from the only station in the quaternary catchment was assessed. The current exploitation of the groundwater resource was assessed for the whole Thukela WMA.

The current exploitation of the groundwater resource available in the WMA is at a very low level in terms of its potential. In terms of the prevailing hydrogeological conditions in the WMA, this potential can be most usefully and effectively exploited in the relatively sparsely inhabited portions of the area for the provision of domestic water supply (DWAF, 2004).

The Thukela WMA's groundwater resources are for the most part to be found at a relatively deep level (50-100 m is quite typical) (DWAF, 2004). The shallow groundwater resource in the quaternary catchment V70C makes its development to be feasible and cost-effective.

Groundwater quality in the Thukela WMA is generally good, with the best quality groundwater found in the higher rainfall areas. The project is situated in the higher rainfall (800- 999mm/a) area. The quality of groundwater resources in the quaternary catchment V70C makes the water suitable for both domestic and irrigation use.

Recommendations & Mitigation Measures

The intended project may trigger many water uses other than the already identified section 21 (a) water use of the National Water Act (NWA), (Act 36 of 1998). As such, an authorisation should be sought from the Department of Water and Sanitation (DWS) in order for the intended project to be legal in terms the NWA.

Groundwater resources in the project area should be explored for their potential to supply sustainable water for different needs.

WETLAND ASSESSMENT

The Wetland Impact Assessment was conducted by Umongo Environmental Services and the detailed Wetland Delineation Report is attached as Appendix D1.

Method

3.1. Wetland Field Delineation

For the purpose of this assessment, wetlands are considered as those ecosystems defined by the National Water Act as:

"Land which is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is periodically covered with shallow water, and which land in normal circumstances supports or would support vegetation typically adapted to life in saturated soil."

The wetland delineations were conducted as per the procedures described in 'A Practical Field Procedure for Identification and Delineation of Wetland and Riparian Areas – Edition 1' (Department of Water Affairs, 2005). This document requires the delineator to give consideration to four indicators in order to find the outer edge of the wetland zone:

- The Terrain Unit Indicator helps to identify those parts of the landscape where wetlands are more likely to occur.
- The Soil Form Indicator identifies the soil forms, as defined by the Soil Classification Working Group (1991) update in 2018, which are associated with prolonged and frequent saturation.
- The Soil Wetness Indicator identifies the morphological "signatures" developed in the soil profile as a result of prolonged and frequent saturation. Signs of wetness are characterised by a variety of aspects. These include marked variations in the colours of various soil components, known as mottling; a gleyed soil matrix or the presence of Fe/Mn concretions. It should be noted that the presence of signs of wetness within a soil profile is sufficient to classify an area as a wetland area despite the lack of other indicators.
- The Vegetation Indicator identifies hydrophilic vegetation associated with frequently saturated soils.

According to the National Water Act, 1998 (Act No 36 of 1998) defines the watercourses as follows:

A **watercourse** means:

(a) a river or spring;

(b) a natural channel in which water flows regularly or intermittently;

(c) a wetland, lake or dam into which, or from which, water flows; and

(d) any collection of water which the Minister may, by notice in the Gazette, declare to be a watercourse.

A reference to a watercourse includes where relevant, its bed and banks.

In assessing whether an area is a wetland, the boundary of a wetland or a non- wetland area should be considered to be the point where the above indicators are no longer present. An understanding of the hydrological processes active within the area is also considered important when undertaking a wetland assessment. Indicators should be 'combined' to determine whether an area is a wetland, to delineate the boundary of that wetland and to assess its level of functionality and health.

3.2. Sensitive Areas Mapping

All wetland areas associated with the project area were delineated with the use of a Global Positioning System (GPS). Geographic Information System (GIS) was used to identify the features onto digital satellite imagery and topographic maps. The sensitivity map presented in Section 7 should guide the design and layout of the development.

Findings

Following the wetland identification, delineation and classification assessment process, one wetland system comprised of numerous hydrogeomorphic (HGM) units of three (3) HGM types were identified within both project area and investigation area. Both historical and current land uses have impacted all the identified wetlands to some degree. The construction of roads infrastructure that traverse some of the wetlands with the specific mention of the channelled valley bottom (CVB) wetland. The wetland identified within the project area have been significantly impacted by the unauthorised activity that have occurred within its boundaries.

The unauthorised activity has altered the wetland vegetation, geomorphological and hydrological characteristics. These disturbances may high likely provide opportunity of manifestation of ruderal species and alien invasive species, specifically on those areas which have be disturbed during the unauthorised construction. The impacted wetland was classified as the Seep wetland.

Based on the current condition, the unauthorised activity have significantly impacted the Seep wetland. The impacted areas within the Seep wetland will need to be rehabilitated as soon as possible so as to minimise the further degradation of the wetland integrity and ecological status of this wetland. The rehabilitation of the impacted areas is the main mitigation measure so as to minimise and contain current existing impacts associated with already occurred construction activity without being legally authorised by the relevant authorities.

It is the opinion of the wetland specialist that the unauthorised activity has directly impacted the Seep wetland with no mitigation measures in place. If the current impacts are to be left with no implementation of rehabilitation intervention, it likely that the wetland ecological status will be degraded. The rehabilitation is considered the primary mitigation tool to assist in improving the diversity and complexity of the natural system and creating an acceptably functional landscape and functional movement of water of reasonable quality through the landscape.

All impacts (including) residual impacts must be managed in line with the mitigation hierarchy as advocated by the DEA *et al*. (2013) and all disturbed areas must be rehabilitated and progress of the rehabilitation must be overseen and signed off by a suitably qualified specialist.

Recommendations and Mitigation Measures

Despite the absence of permanent, temporary or seasonal wetlands, the most significant ecological feature of the site, or more accurately in the proximity of the site, is stream and seep wetland.

Table 18: WETLAND IMPACT ASSESSMENT

Theme	**Water**	
Impact Focal Point	**Impact of construction activities on watercourses/ wetlands– sports field construction**	
Phase	**Preferred alternative**	**No Go**

Nature and Status	Construction of sports field and associated infrastructure on water bodies on and/or near development footprint- Negligible	No Change in status
Extent	(Local) 3	
Duration	(Long term) 4	
Intensity	(medium to high) 8	
Probability	(Definite) 4	
Confidence	High	High
Calculation	(3+4+8)*4=60	0
Level of Significance	Medium to high	None
Mitigation Measures	The watercourse near which the sports field will be constructed is classified as a wetland, however, the presence of machinery on site during the construction phase could result in hydrocarbon spills that may end up finding their way to and contaminating the watercourse. It is therefore imperative that during construction there be caution exercised by segregating, tightly covering and monitoring hazardous substances to prevent spills and possible site contamination, particularly where the stream is located closest to the development. The sports field must be carefully aligned to avoid erosion and the obstruction of the water flow in the watercourse. The areas compacted by the heavy machinery must be rehabilitated. Clearly demarcate the wetland area as no-go area to prevent any further impacts on these areas; At no point may vehicle or construction equipment move within the delineated wetland; All topsoil stockpile present on site must be flatten in manner that the wetland topographical setting is maintain to allow the natural flow of the surface runoff within and throughout the Seep wetland; All tranches present within the project area as the result of the unauthorised activity must be backfilled	None

	accordingly and in manner that will allow natural surface flow on the surface; The duration of impacts within the wetland area must be minimised as far as possible by ensuring that duration of time in which soils are exposed is minimised, therefore the construction should be kept as short as possible. The rehabilitation of the impacted areas must be an ongoing event so as to minimise the impacts on the receiving environment. Re- establishment of vegetation cover on impact areas within the wetland with the use of indigenous vegetation growth to protect soils and reduce the percentage of impermeable surfaces. All invasive and alien vegetation located within the project area must be removed and be monitored; If necessary and where it is considered necessary, the construction of appropriately sized contour terraces across the Seep wetland so as to control soil erosion while the vegetation is still establishing; Application of these mitigation and rehabilitation measures is considered critical particularly on areas where vegetation have been cleared and left uncovered; The Seep wetland must be revegetated with indigenous wetland vegetation and terrestrial vegetation within its buffer zones in order to prevent soil erosion of the disturbed areas; Planting of vegetation must start as soon as possible in order possible soil erosion and degradation of the wetland integrity and its ecological services. This will assist in promoting the ecological habitats to be utilised by local faunal species. All the disturbed areas will form part of the rehabilitation including those areas where alien and invasive plant species have been removed must also be re-instated with indigenous vegetation;	

	Should the contractor not have the relevant expertise on planting of specimens, they should appoint a suitably qualified botanist or landscape architect to assist with the re-vegetation; The following criteria is recommended to be used to inform the selection of the wetland plant species for the disturbed wetland area. Plants must be hardy, ideally able to withstand: Plants must be ideally be local/indigenous amd no plant that are considered alien and invasive must be planted during the rehabilitation; Plants must be readily available; Periods of low and/or no oxygen present with the soil medium, depending on zonation, and periodic inundation (it is assumed that inundation is likely to occur during rainy season); Occasional high sediment inflows; Periodically high hydrocarbon (i.e. oil); and Elevated nutrients. Only indigenous vegetation growth must be promoted within the project area in order to protect soils with the wetland area and to reduce the percentage of impermeable surface. All invasive and alien vegetation located within the footprint area must be removed and monitored throughout rehabilitation and post rehabilitation (i.e.to a point where the rehabilitated area is declared and fully rehabilitated and considered as self-sustaining system). The list below was compiled through the use of the field guide titled “Easy identification of some South African Wetland Plants (grasses, restios, sedges, rushes, bulrushes, eriocaulons and yellow-eyed grasses)” (van Ginkel et.al. 2011). It must be noted vegetation species such as Typha capensis and	

	Phragmitis australis must be established naturally rather than planted.	

Air Quality

Table 19: AIR QUALITY IMPACT ASSESSMENT

Theme	Air Quality	
Impact Focal Point	**Impact on air quality of study area**	
Phase	**Preferred alternative**	**No Go**
Nature and Status	Construction of sports field and associated infrastructure (dust); Negative	
Extent	(Local) 3	None
Duration	(Short term) 1	
Intensity	(Low-medium) 4	
Probability	(Definite) 4	
Confidence	High	High
Calculation	(3+1+4)*4=32	0
Level of Significance	Medium	None
Mitigation Measures	All dust-generating surfaces to be routinely sprayed with water, a dust suppressing agent or similar substance to prevent dust generation. Portable and contaminated water will not be used as a dust- suppressing agent and only recycled and/or rain water is to be used, when available. The construction activity will impact on the air quality of the area and the will be a lot of dust particles in the air also emissions from construction vehicles and mobile plant/machinery on site. All vehicles must be properly serviced to reduce the gaseous emissions to the atmosphere. A water carter must be used on all bare areas on site as a dust suppression system. No burning of waste allowed on site.	None

8. ENVIRONMENTAL IMPACT STATEMENT

8.1.1. Summary of Impacts

The consideration of the impacts and their change pre- and post-mitigation is summarised below.

Table 20: Summary of Impacts

Phase	Preferred alternative	No Go Alternative
Biodiversity		
Impact on ecosystem(s) – site establishment, infrastructure and sports field construction removal of vegetation, reduction in ecosystem connectivity		
Level of significance without mitigation	Low	None
Level of significance with mitigation	Low	None
Visual		
Reducing the visual quality of the landscape		
Level of significance without mitigation	Medium	None
Level of significance with mitigation	Low	None
Heritage		
Loss of Heritage resources		
Level of significance without mitigation	None	None
Level of significance with mitigation	None	None
Traffic		
Increased traffic in greater area		
Level of significance without mitigation	Medium	None
Level of significance with mitigation	Low	
Air Quality		
Impact on air quality of study area		
Level of significance without mitigation	Medium	None
Level of significance with mitigation	Low	None

Soils		
Impact on Soils		
Level of significance without mitigation	Low	None
Level of significance with mitigation	Low	None
Water		
Impact on Water Bodies		
Level of significance without mitigation	Low	None
Level of significance with mitigation	None	None
Social		
General Noise Nuisance – site and surrounding areas		
Level of significance without mitigation	Medium	None
Level of significance with mitigation	None	None
Employment Opportunities and Skills Inequities – Site, surrounding areas and region		
Level of significance without mitigation	Medium	None
Level of significance with mitigation	Medium- High (Positive)	None
Infrastructure and Services – Study, surrounding areas and municipal area		
Level of significance without mitigation	Medium	None
Level of significance with mitigation	Medium- High (positive)	None

8.1.2. Summary of Findings

The proposed development of the Mavela Sports Field has been found to have low to negligible negative impacts, which are far outweighed by the positive impacts, should the preferred layout alternatives and recommendations be implemented. The development will have positive impact on a social and economic status of the area. The negative impact on ecology will be addressed by implementing the recommended mitigation measures to reduce negative impacts to minimal levels and enhance positive impacts. The proposed sports field construction is much needed by the affected communities. The EAP believes that the

proposed sports field will be sustainable in the long term, as service delivery and management of sports facility is improved and maintained into the future. It is the opinion of the EAP that the activity should be authorised based on the mitigation measures conditions provided.

8.1.3. Preconstruction & Construction Phase:

- Ecological Control Officer (ECO) to provide supervision and oversight of vegetation clearing activities within sensitive areas, facilitate the environmental induction of all construction staff, remove all fauna threatened by construction activities, ensure appropriate storage (and potential clean-up) of construction, general and hazardous waste etc.
- Minimise the footprint of the development within the sensitive areas. The sections of the proposed construction where there is a steep slope should be stabilised and monitored in order to prevent erosion and siltation of the watercourse.
- Topsoil should be set aside and replaced after construction to encourage natural regeneration of the local indigenous species.

8.1.4. Operational Phase

- Regular monitoring and rectification of erosion problems should be carried out on a regular basis.

9. ASSUMPTIONS, UNCERTAINTIES & GAPS IN KNOWLEDGE

The following assumptions, uncertainties and gaps in knowledge were identified for this process:

9.1.1. EIA Process

The EIA process is multi-disciplinary, which was informed by the EAP project team and the specialists engaged in the process. It is thus necessary to presume that the information as provided to the project team to date by external sources is accurate, appropriate and correct.

Data shown in the maps was supplied by various sources and was used after it was reviewed and verified where considered necessary. Verification was, however, restricted to available sources of information only.

9.1.2. Public Participation Process

Every effort was made to contact all stakeholders and adjacent landowners within the study area. Written notification was provided to the landowner, traditional authorities, occupiers of the land, adjacent landowners, the ward councillors and the Municipal Manager. Information presented by the stakeholders is presumed to be accurate and presented timeously with respect to the process at hand.

9.1.3. Biodiversity Assessment

The faunal assessment was undertaken on an already disturbed footprint. During the field assessment, the presence of any faunal species observed directly (visual observation) or indirectly was noted. However, the site for the proposed sports field is highly impacted on by intensive vehicle and other activities and of the original vegetation, very little remains on the site.

9.1.4. Heritage

Most of the study area has been subjected to traffic activities, which would have destroyed potential sites, features or objects that might have occurred there previously.

9.1.5. Traffic

The traffic survey by default considers the most critical periods for traffic generation across a limited period of time, i.e. the peak of traffic during the construction period which is only a fraction of the total lifetime of the proposed development.

9.1.6. Visual

The assessment does not consider the supplementary project infrastructure and components such as the construction camp site. The assessment is based on assumed data. A detailed study was not done to determine accurate data on potential viewers of the project components. The location and extent of the construction camp site, which due to the

infrastructure required at inception and construction of the sports field is likely to be small, as well as material lay-down areas will only be determined during the design and construction phases. These, however, have a relatively temporary nature and can effectively be controlled through the draft Site-Specific EMPr Attached as Appendix F.

10. ENVIRONMENTAL AUTHORISATION

Given the minimal impacts envisaged for the proposed development, it is the opinion of the EAP that environmental authorisation should be granted for the proposed project. This subject to the assessment of the site and a comprehensive report submitted regularly concerning activities on site for the entire duration of the construction period by the ECO.

11. AFFIRMATION OF INFORMATION IN REPORTS

The information contained in this report has been compiled meticulously and is supported by information collected during site visits, consultation with relevant stakeholders privy to the proposed development. As much input and recommendations as could be obtained from the relevant parties, including but not limited to community members, municipal authorities and specialists has been included as part of this report to aid with decision making. The project is therefore an acceptable development as the identified impacts will be negligible after the mitigation measures have been implemented at appropriate stages of the development.

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Appendix B – Site Photographs

Appendix C - Facility Illustration

Appendix D - Specialist Reports

Appendix D1 - Wetland Delineation Report

Appendix D2 - Ecological Assessment

Appendix D3 – Heritage Impact & Phase 1 Palaeontology Report

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Appendix E – Public Participation Details

Appendix E1 - Background Information Document

Appendix E2 - Advertisement

Appendix E3 - Site Noticeboards

Appendix E4 - List of Registered I&APs

Appendix E5 - Minutes & Attendance Registers of Meetings

Appendix F - Environmental Management Programme (EMPr)

Appendix G - Curriculum Vitae of EAP