APPLICATION FOR ENVIRONMENTAL AUTHORISATION FOR THE PROPOSED DEVELOPMENT OF A NEW MOLOTO COMMUNITY HALL ON PORTION 0 OF FARM HARTEBEESTSPRUIT 235JR WITHIN THEMBISILE HANI LOCAL MUNICIPALITY, MPUMALANGA PROVINCE

BASIC ASSESSMENT REPORT

AUGUST 2019

NKANGALA
DISTRICT MUNICIPALITY

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Executive Summary

Thikho Consulting and Projects (Pty) Ltd was appointed by ASEDA, on behalf of Nkangala District Municipality, to undertake a Basic Assessment (BA) process for the proposed development of a new Moloto Community Hall in Moloto area, within the jurisdiction of Thembisile Hani Local Municipality, Nkangala District Municipality in Mpumalanga province. The proposed Community Hall will have male and female changing rooms, board room, office, kitchen, guardhouse, male and female ablutions, store rooms and parking bays. The actual footprint of the proposed development is approximately 1102m^2.

The objectives of this Basic Assessment process are to identify, predict and evaluate the economic, environmental and social impact of the proposed development, to provide information on the environmental consequences for decision making and to promote environmentally sound and sustainable development through the identification of appropriate alternatives, public participation and mitigation measures. In addition to the undertaking of the Basic Assessment, an Environmental Management Programme has been developed that will provide in detail, precautionary measures that will ensure that environmental degradation is minimised and pollution is prevented, and where it cannot be prevented, it is reduced and mitigated.

The proponent for the proposed development is the Nkangala District Municipality whereas the Competent Authority (CA) is the Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs (MDARDLEA). The proposed project will be undertaken in terms of the National Environmental Management Act, 1998 (NEMA 107 of 1998) and the EIA Regulation of December 2014 (as amended in April 2017), other applicable Acts and Legislation will be equally considered. In terms of these Regulations, the proposed activity is identified as listed (GN R. 324 Activity 15(d)(i) and GN R. 324 Activity 12(f)(iii)), i.e. as activities which cannot commence without an Environmental Authorisation from the Competent Authority.

The proposed community hall will be located of portion 0 of Farm Hartebeestspruit 235 JR in Moloto, in Ward 7 of Thembisile Hani Local Municipality. Moloto is in the most western part of the Thembisile Hani Municipality and is the gateway into the Municipality from Gauteng. The town serves as a residential area with easy linkage to Gauteng Province. The town is divided into Moloto North and South with the R573 traversing the settlement. The settlement mostly consists of residential uses with a few scattered business uses. The largest economic centre in the area is the Big Tree Mall that located west of Moloto in Gauteng Province. The main economic activities are in the western section of the town at the intersection of the R567 and the R 573 towards Gauteng Province. Refer to Figure 1 and Figure 2 for locality maps.

The December 2014 EIA Regulations (as amended) require that during a Basic Assessment process, the organs of State together with Interested and Affected Parties (I&APs) and the general public be informed of the application for EA and also be afforded an opportunity to comment on the application. Public Participation Process (PPP) is any process that involves the public in problem solving and decision-making and it forms an integral part of the Basic Assessment process. The PPP provides people who may be interested in or affected by the proposed development, with an opportunity to provide comments and to raise issues or concern, or to make suggestions that may result in enhanced benefits for the project. The manner in which the PPP should be undertaken is stipulated in the EIA Regulations of December 2014 (as amended), regulation 39 to 44, which were followed for this Basic Assessment Process.

Potential impacts have been identified and a full impact assessment is included in the report. In addition, potential impacts associated with the project are referred to the Environmental Management Programme (EMPr, Appendix H) An overview is provided below.

Waste Management: The site falls within an area covered by municipal service provision. Municipal waste collection will be utilized. A service legal agreement still needs to be obtained for refuse collection services. It is important that education around the topic of waste collection and litter to be addressed when the community hall starts to operate. If

solid waste is to be temporarily stored prior to municipal collection, this storage area must be constructed and maintained to the satisfaction of relevant authority and as stipulated by the National Environmental Management: Waste Act of 2008.

Liquid effluent: No liquid effluent, other than normal sewerage, will be produced by the development. The development will require an internal waterborne sewer system that will connect to a conservancy tank that will be constructed on site. The Municipality will be responsible for the regular cleaning and de-sludging of the tank. However, there still needs to be a contract agreement between the Municipality and the service provider responsible for the waste removal.

Emission into the atmosphere: Very little in terms of emission will be generated by the proposed development. During construction phase, dust and exhaust emission are predicted from vehicles on the dirt road. If clearing of vegetation will take place during winter months when ground cover is reduced and the soils are dry, this may generate excessive dust. As such, it is important that this dust be controlled.

Clearing of vegetation should take place at a maximum of two months prior to building. Clearing of vegetation are high risk in terms of dust generation and erosion. If the Environmental Control Officer deems dust an issue during construction, surface wetting can be considered as a means of controlling dust emission. Building materials of fine particles must be suitably protected from wind dispersion.

Noise generation: Vehicles, construction machinery, and workers on site are likely to result in general disturbances and noise generation. It is an important impact to address and mitigate as the site is within the residential areas. During construction, building activities must be restricted to regular working hours during the week and is to be prohibited during weekends.

Water use: The proposed development will not involve abstraction or discharge into/ from any watercourse during construction and operational phases. Within a 500m radius of the site, there are no rivers or natural wetlands. All water to be used for the township

development will be from the municipal supply. A service legal agreement is still to be obtained.

Energy efficiency: Energy efficient technology options have been considered from the proposed development and will be incorporated into the design of the community hall. The options include the use of solar geysers as a standard installation, instead if using the conventional electric geyser.

Base on the findings of the specialist and the impact assessment conducted, construction of the proposed community hall would result in minor adverse environmental and social impact, provided the mitigation measures in the Basic Assessment Report and EMPr are adhered to. The socio-economic opportunities that this development can offer residents are noteworthy.

The Basic Assessment study was undertaken as dictated by the NEMA and the EIA Regulations of December 2014 (as amended in April 2017). Viable alternatives have been proposed and the most suitable recommended by the EAP based on the information provided by the applicant as well as EAP's knowledge. The impacts of the proposed development were identified, and mitigation measures proposed. It is therefore recommended that the proposed project be authorized provided that the mitigation measures recommended herein and in the EMPr are adhered to.

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List of Acronyms

AASHTO	American Association of State Highway and Transportation Officials
BAR	Basic Assessment Report
CA	Competent Authority
CARA	Conservation of Agricultural Resources Act (Act 43 of 1983)
CEO	Contractor Control Officer
CFP	Chance Find Procedure
CLO	Community Liaison Officer
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
HIA	Heritage Impact Assessment
IDP	Integrated Development Plan
NEMA	National Environmental Management Act (107 of 1998)
NEMAQA	National Environmental Management: Air Quality Act (36 of 2004)
NEMBA	National Environmental Biodiversity Act (Act 59 of 2004)
NEMWA	National Environmental Management: Waste Act (36 of 2008)
NHBRC	National Home Builders Registration Council
NHRA	National Heritage Resources Act (25 of 1999)
NWA	National Water Act (Act 36 of 1998)
OHS	Occupational Health and Safety Act (Act of 85 of 1993)
PPP	Public Participation Process
PSC	Project Steering Committee

SACNASP	South African Council of Natural Scientist Profession
SAHRA	South African Heritage Resources Agency
SAICE	South African Institute of Civil Engineering
SDF	Spatial Development Framework
Stats SA	Statistics South Africa
WMA	Water Management Area

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1. INTRODUCTION

Thikho Consulting and Projects (Pty) Ltd was appointed by ASEDA, on behalf of Nkangala District Municipality, to undertake a Basic Assessment (BA) process for the proposed development of a new Moloto Community Hall in Moloto area, within the jurisdiction of Thembisile Hani Local Municipality, Nkangala District Municipality in Mpumalanga province. The proposed Community Hall will have male and female changing rooms, board room, office, kitchen, guardhouse, male and female ablutions, store rooms and parking bays. The actual footprint of the proposed development is approximately 1102m^2.

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2. DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER

Company: Thikho Consulting and Projects (Pty) Ltd

Contact Person: Khuliso Mudau

Contact Details: thikhocp@gmail.com

Profession: Environmental Consultant

Role in Project: EAP

Experience: 9 years

Qualifications: BSc (Hon) Environmental and Water Science

Membership: SACNASP (Pr.Sc.Nat)

Summary of Project Related Experience:

- Environmental Impact Assessment process for the proposed development of the Vryheid Network Strengthening within the jurisdiction of Swellendam Local Municipality, Western Cape.
- Environmental Impact Assessment for the proposed Tubatse Strengthening Phase 1-Senakangwedi B Integration Substation and associated infrastructure.
- Environmental Management Plan and Eskom characterization for the upgrading of Eskom distribution lines in Gauteng.
- Environmental Management Programme for the proposed Eskom Juno-Gromis 400Kv power line in the Northern and Western Cape Provinces.
- Basic Assessment for the proposed decommissioning of the Eskom Verwoedburg Substation.
- Basic Assessment for the proposed deviation of the Westgate Randfontein 10km 132Kv servitude.
- Basic Assessment for the proposed Eskom 88Kv power line from the existing Tweedracht substation to the existing SAR Kameel–SAR Kleinfontein power line.
- Basic Assessment for the proposed Eskom Calcined Products substation and loop in loop out lines.

- Construction Environmental Management Plan for the construction of the Eskom Simmerpan MTS and refurbishment of the 275Kv power line.
- Construction Environmental Management Programmes for the proposed Transnet Orex Feeder substations (Aries, Garona, Helios, Juno) within the Northern and Western Cape provinces.
- Environmental Control Officer for the construction of the Eskom 400Kv transmission lines between Aries and Nieuwehoop Substations.

3. DESCRIPTION OF LOCALITY AND THE PROPERTY OF THE PROPOSED DEVELOPMENT

The proposed community hall will be located of portion 0 of Farm Hartebeestspruit 235 JR in Moloto, in Ward 7 of Thembisile Hani Local Municipality. Moloto is in the most western part of the Thembisile Hani Municipality and is the gateway into the Municipality from Gauteng. The town serves as a residential area with easy linkage to Gauteng Province. The town is divided into Moloto North and South with the R573 traversing the settlement. The settlement mostly consists of residential uses with a few scattered business uses. The largest economic centre in the area is the Big Tree Mall that located west of Moloto in Gauteng Province. The main economic activities are in the western section of the town at the intersection of the R567 and the R 573 towards Gauteng Province. Figure 1 below depicts Moloto Settlement in relation to the Gauteng and Mpumalanga Provinces, while Figure 2 depicts that locality and area of development in relation to the Moloto residential area

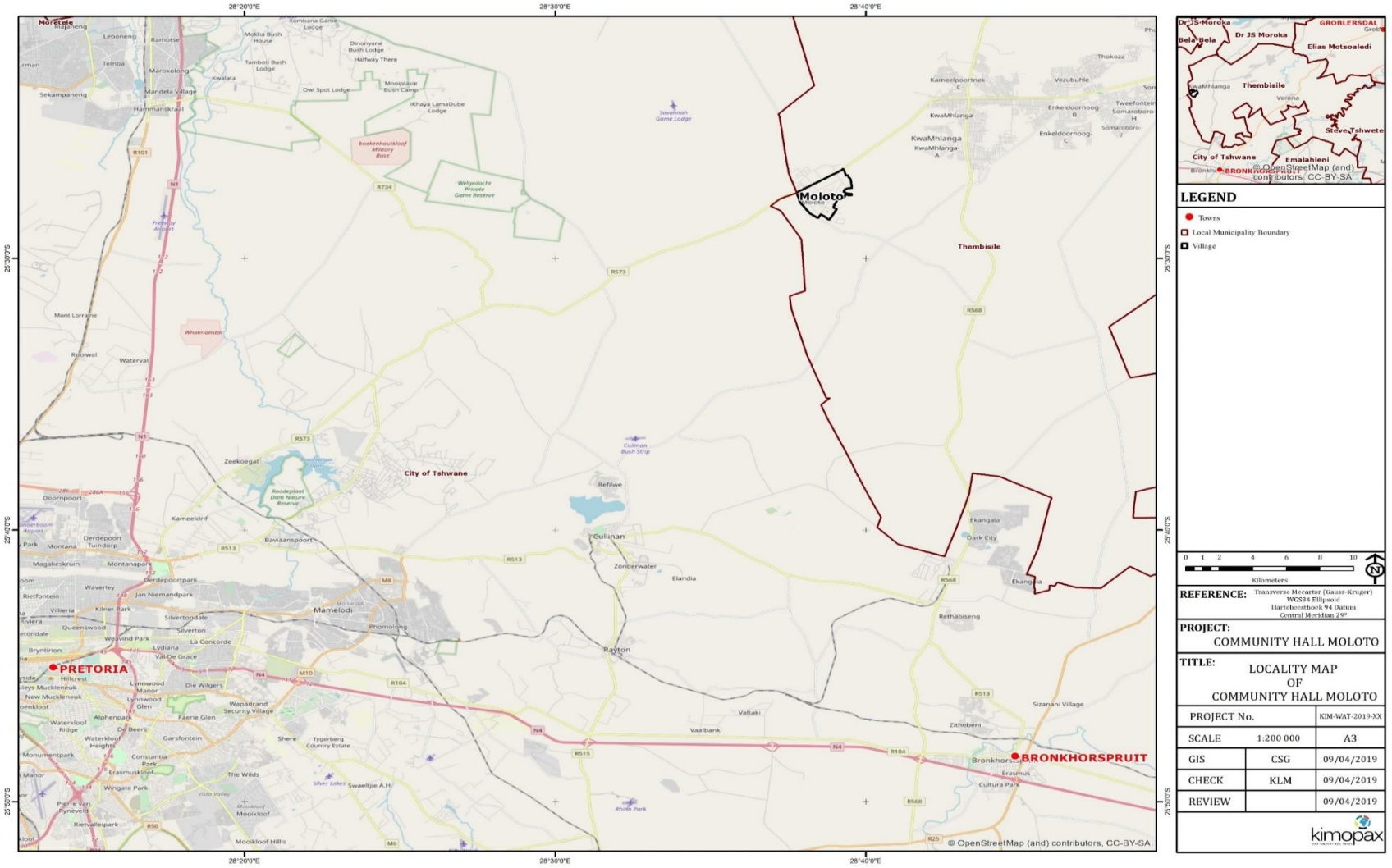

Figure 1: Locality of Moloto Settlement in relation to the Gauteng and Mpumalanga Provinces (Source: Kimopax, 2019).

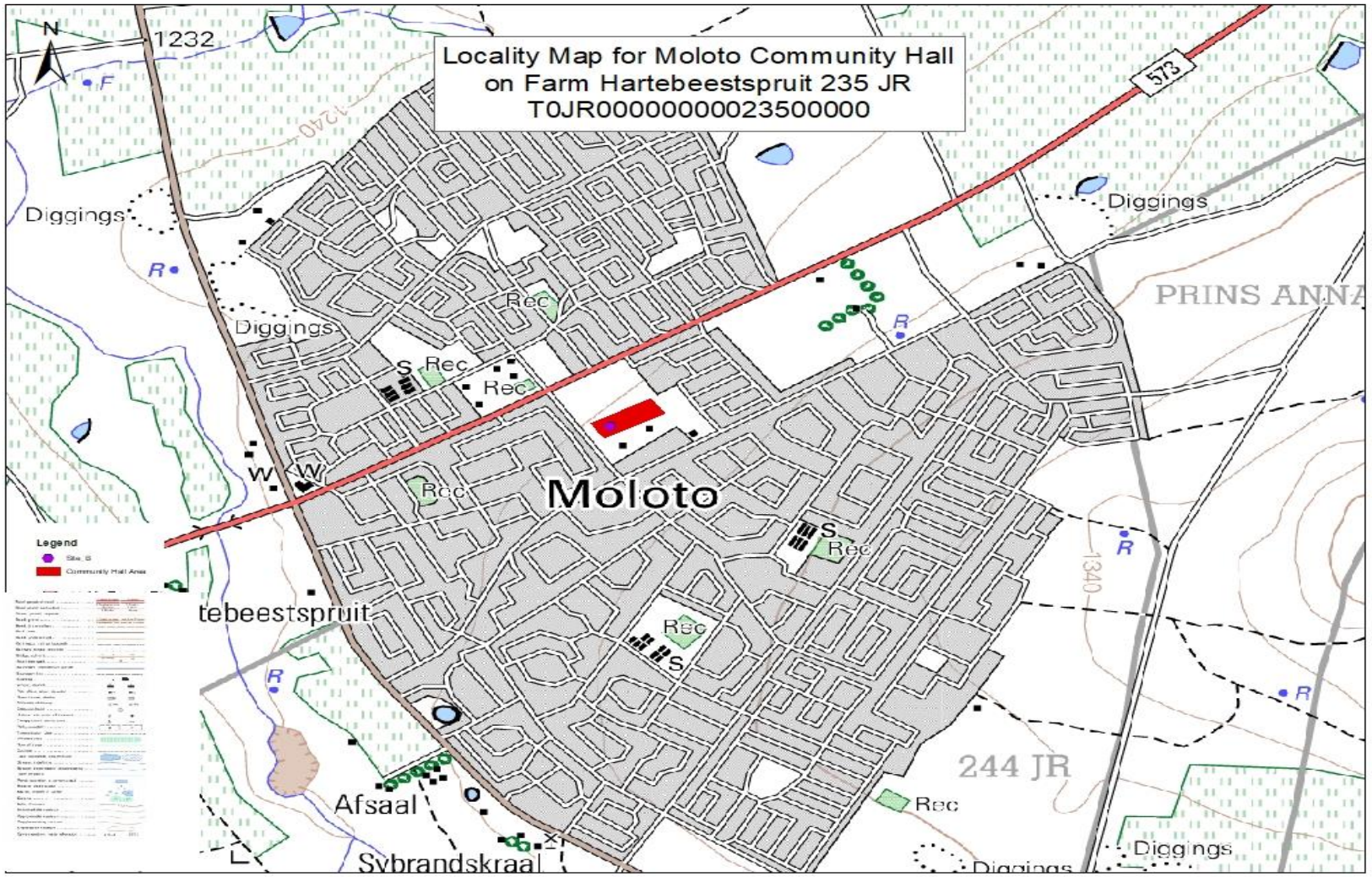

Figure 2: Locality map of the proposed Moloto Community Hall.

3.1 LOCALITY OF THE PROPOSED DEVELOPMENT

3.1.1 Provincial Description

Mpumalanga is in the north-eastern part of South African province. As shown in Figure 3 below, it borders onto African countries such as Mozambique and Swaziland and other South African provinces namely; Gauteng, Limpopo, KwaZulu-Natal and Free State Provinces. Mpumalanga is characterized by the high plateau grasslands of the Middleveld, which roll eastwards for hundreds of kilometres. In the north-east, it rises towards mountain peaks and terminates in an immense escarpment (www.municipalities.co.za). The province is divided into three District Municipalities namely: Gert Sibande, Ehlanzeni and Nkangala Districts. These three Districts are further subdivided into 17 local municipalities of which the project will be located within the Thembisile Hani Local Municipality within the Nkangala District. The province covers an area of 76 495km² which has population of approximately 4335 965 (Thembisile Hani IDP, 2017). The capital city of Mpumalanga is Mbombela while other major cities and towns include eMalahleni, Standerton, Malelane, Ermelo, Barberton and Sabie.

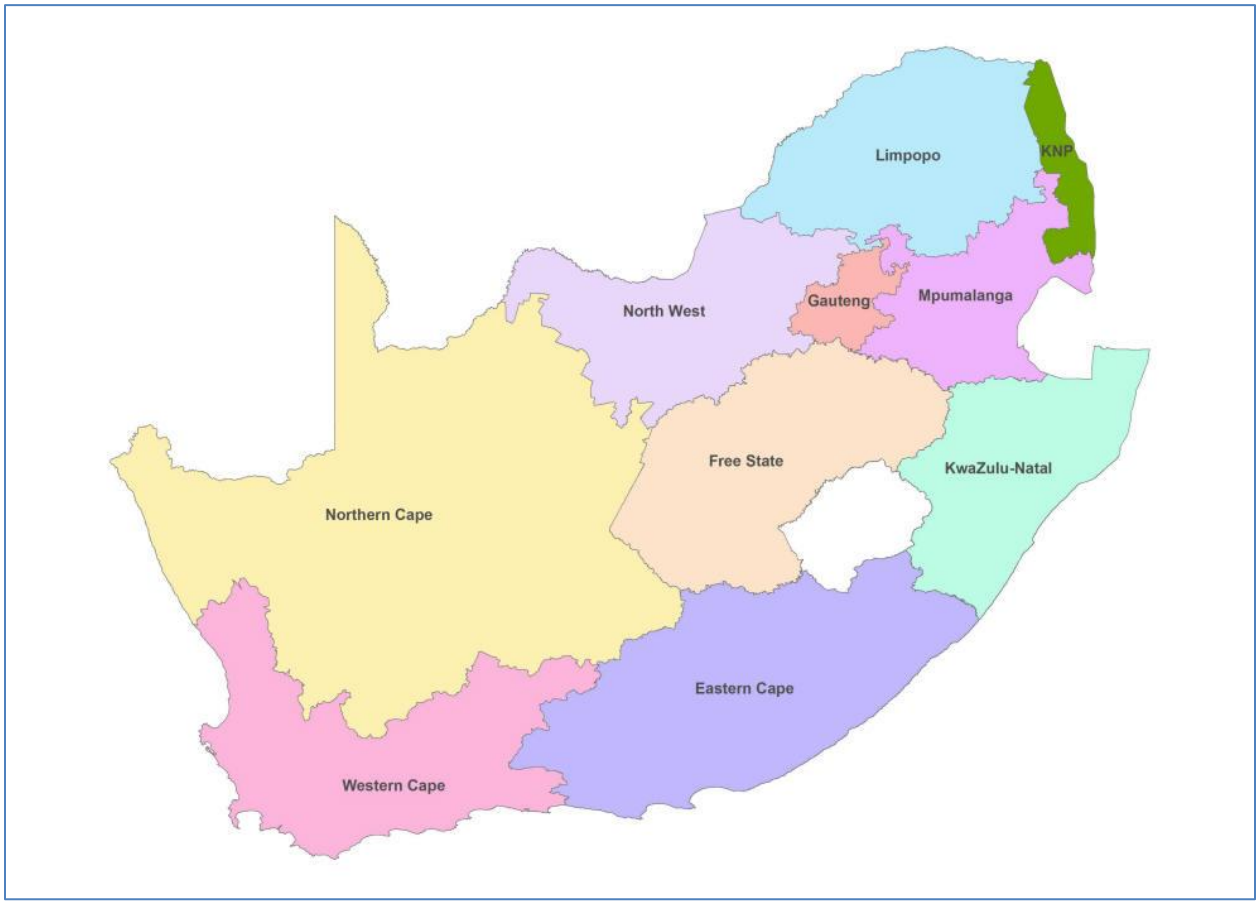

Figure 3: Map of South depicting the provinces (nda.agric.za)

3.1.2 District Municipality

The Nkangala District Municipality is a Category C municipality in the Mpumalanga Province. It is one of the three districts in the province, making up 22% of its geographical area. It is comprised of six local municipalities: Victor Khanye, Emalahleni, Steve Tshwete, Emakhazeni, Thembisile Hani, and Dr JS Moroka (Figure 4). The district's headquarters are in Middelburg. Nkangala is at the economic hub of Mpumalanga and is rich in minerals and natural resources. The district is host to the Maputo corridor which brings increased potential for economic growth and tourism development. Nkangala district is neighbour to Limpopo and Gauteng Provinces. The proximity to Gauteng opens opportunities to a larger market, which is of benefit to the district's agricultural and

manufacturing sectors. There is further potential in exporting goods that provides opportunities within the district (Nkangaladm.gov).

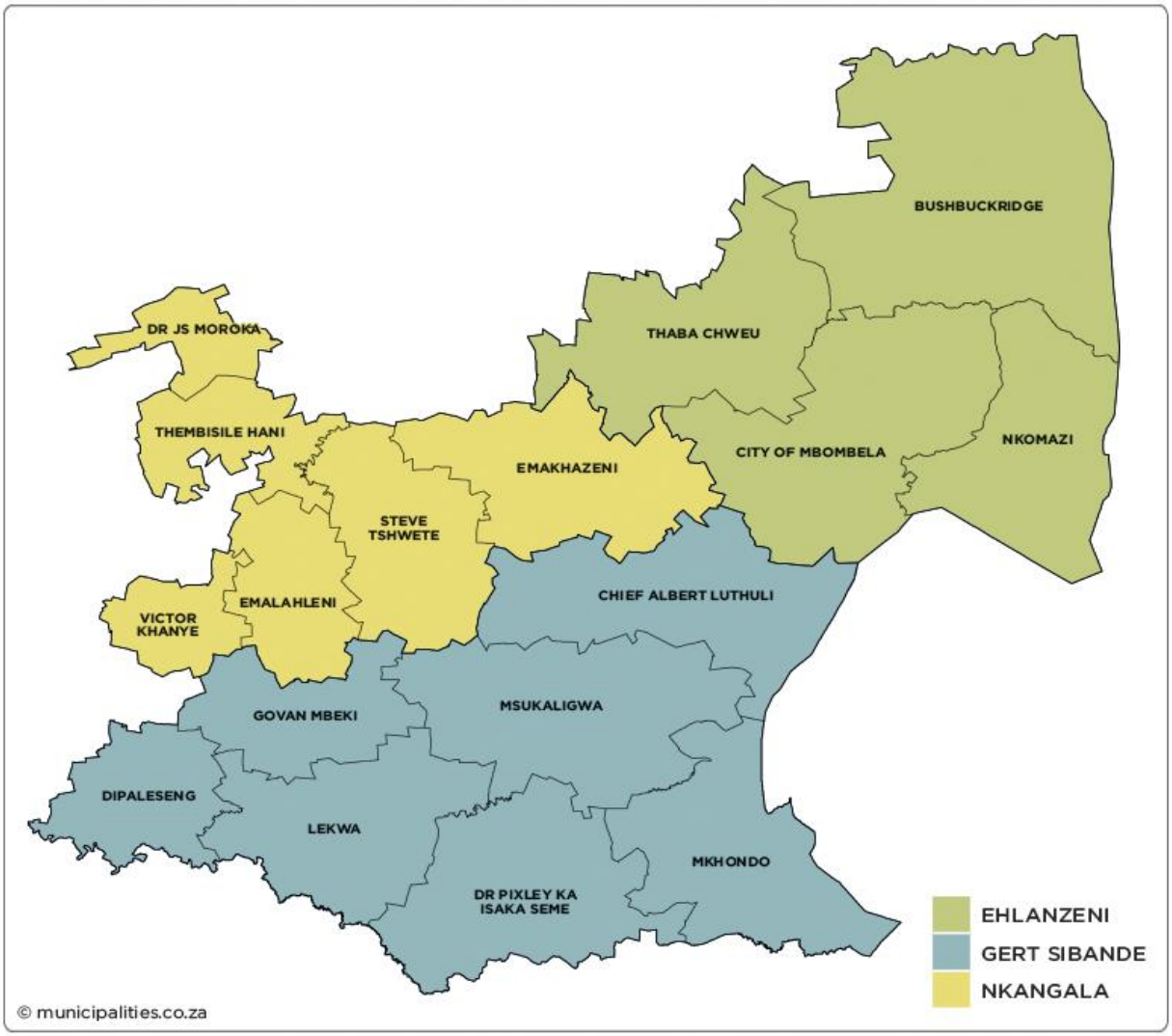

Figure 4: The Map of Mpumalanga showing its District Municipalities together with Local Municipality subdivisions (www.municipalities.co.za).

3.1.3 Local Municipality

Thembisile Hani Local Municipality is in the western region of the Nkangala District Municipality, in the vicinity of Siyabuswa, and covers a geographical area of

approximately 2,384 square kilometres. Townships and settlements within the municipal boundaries include: Boekenhouthoek, Bundu, Ekangala, Ekandustria, Enkeldoornoog, Goederede, KwaMhlanga, Kwaggafontein, Moloto Phola Park, Seringkop, Sybrandskraal, Tweefontein, Vlakfontein, Verena, and Witnek (IDP, 2017-2022). Most of the urban, peri-urban and agricultural settlements are situated along the R573 Provincial road also known as the Moloto Road. The road serves as a major transportation route in the municipality, linking it with Marble Hall and Groblersdal to the east and Gauteng to the south-west.

According to the IDP (2017-2022), many future residential and economic developments in the region are planned along the Moloto Corridor. Consequently, Thembisile Hani Local Municipal offices and settlements along the Moloto Corridor are strategically located in terms provide local population. The District and Local Spatial Development Framework (SDF) places strong emphasis on the Moloto Development Corridor, considering its strategic linkage to Tshwane and Sekhukhune/ Burgersfort. According to the District SDF, the majority of future residential and economic development in the region should be promoted along the Moloto Rail Corridor, seeing as there is already a conglomeration of settlements in the north-western extents of the District. The intention is that the Moloto Road and the proposed future Moloto railway line should serve as a Local activity spine promoting development in and around all the major townships and settlements in these areas.

3.1.4 Demographic Profile

According to Stats SA (2011 Census), Thembisile Hani recorded 310 458 people in 2011 which accounts for 23.7% of Nkangala's population. The population grew by 1.9% pa between 2001 and 2011. The population number is estimated to be in the area of 445 939 people by 2030 given the historic population growth rate per annum. Of the total population 52.4% are female and 47.6% are male and approximately 99.2% are Africans. Youth up to 34 years of age is estimated at 68.7% of the population and the number of households is 75 634 which amounts to 4.1 people per household and 21.2% of the total

households in Nkangala. Female headed households are estimated at 46.1% and child headed (10-17 years) households at 0.9 % in 2011.

3.1.5 Socio-Economic Development

According to the IDP (2017-2022), about 97 744 people are economically active (employed or unemployed but looking for work), and of these, 37% are unemployed. Of the 48 741 economically active youth (15-34 years) in the area, almost half (49, 4%) are unemployed. The unemployment rate in the municipality is currently standing at 37% with the female population accounting for most of the unemployment status. The loss of jobs and the decline in new job opportunities in neighbouring urban areas such as Witbank, Middelburg and Pretoria exacerbate the unemployment rate. The Socio-Economic Report and Outlook for Mpumalanga (2014) illustrated that the leading employment industries within the Municipality are community services at 30.2% and trade at 29.2%. Prevailing trends have also shown a decreasing role/share of manufacturing and trade and increasing role/share of community services & finance as the main employers.

3.1.6 Education Indicators

In the Municipality citizens that are 20 years of age and older with no schooling account for 18.0% (31 711) total population of the Municipality (34.4% of Nkangala's district), and this is one of the highest in the province (IDP, 2017-2022). The total population that are 20 years of age and older with matric & higher qualification account for the 31.6% of the total population and this has shown an improvement but is still however lower than both district and provincial averages (third lowest in the province). The functional literacy rate (15+ with grade 7+) is also improving but is still lower than the district and provincial averages. The Matric pass rate was sitting at 73.0 % in 2013 and the University/degree admission rate was only 18.0% in 2013. Thembisile Hani municipal area has 72 government funded Early Childhood Development centres in 2014/15 financial year.

3.2 RECEIVING ENVIRONMENT AND SURROUNDING LANDUSE

3.2.1 Land Use

The residential areas are typical semi-urban dwellings, water and electricity reticulation infrastructure and streets and roads. Figure 5 below indicates that the area earmarked for the proposed development falls within a residential area marked as Urban/Build up residential. As such, the proposed development is suitable for the land use presently available on site.

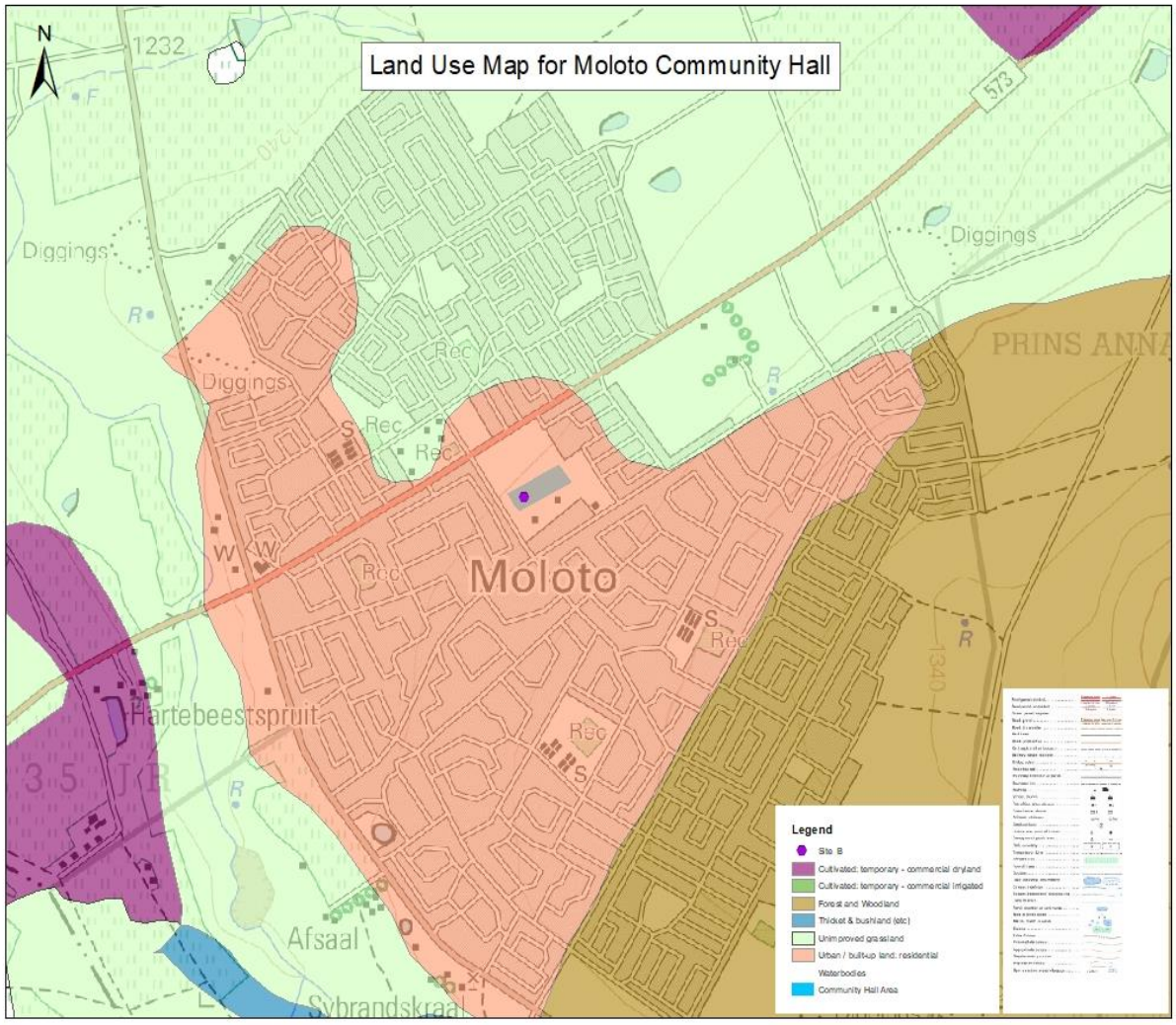

Figure 5: Land Cover Map with the Study Area.

3.2.2 Geology

The site is underlain by grey to pink coarse-grained granite and red medium-grained near top belonging to the Nebo Granite formation, Lebowa Granite Group within the Bushveld Complex. This granite, the predominant component of the Bushveld acid phase, is exposed in the vicinity of Moloto and is surrounded by the Stavoren Granophyre and rhyolite of the Rooiberg Group (Kimopax, 2019). Field observations (Hall, 1932; De Bruiyn, 1980) as well as geochronological determinations of the Nebo Granite and the associated rock units (Walraven, 1986a) clearly establish that the Nebo Granite is younger than, and therefore intrusive into, the other rock units of the Bushveld Complex as well as the sedimentary and volcanic rocks of the Transvaal Sequence into which it is emplaced (Kimopax, 2019). The Nebo Granite discordantly terminates the Stavoren Granophyre to both the northeast and the southwest and towards the southeast the contact extends into the upper member of the Selons River Formation of the Rooiberg Group, being separated from it by a thin zone of granophyre. The Nebo Granite is in places overlain by remnants or outliers of Karoo strata. An elongated zone of Ecca Group shale and shaly sandstone extends in a northeast-southwest direction across the granite just to the north of Moloto. The Moloto area is in a part of the Bushveld Complex where the basic rocks of the complex have been considered to be absent (Cousins, 1959). Figure 5 below shows the geology of the study site.

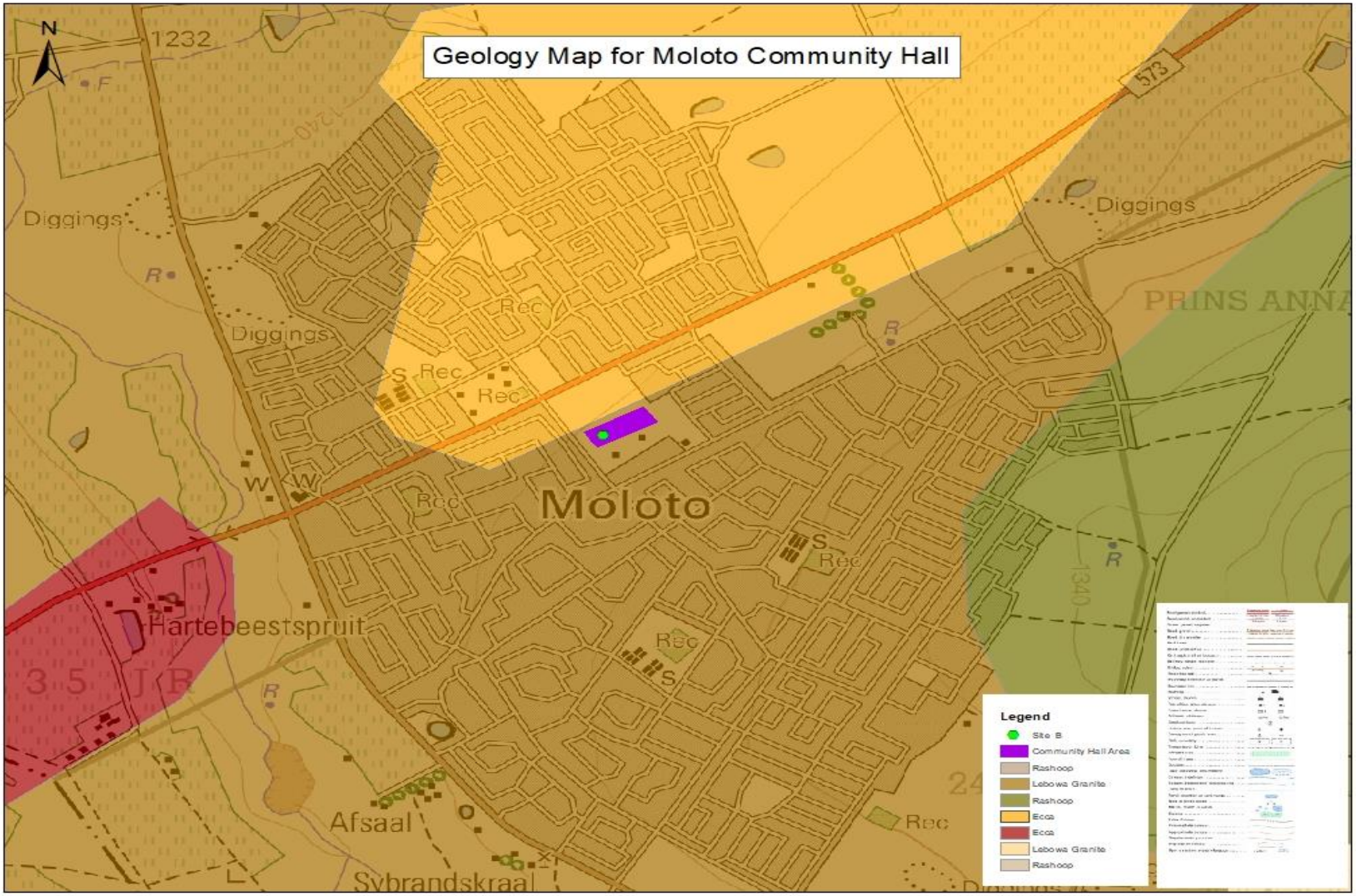

Figure 6: Geological Map of the Study Area.

3.2.3 Hydrogeology

The rocks found here belong to the Vryheid Formation, which forms part of the Karoo Supergroup. Based on the South African Aquifer Classification System (Parsons, 1995), the intergranular and fractured aquifer underlying the project area is classified as a Minor Aquifer System, with distinct zones that can be classified as Major Aquifer Systems towards the project boundary (Kimopax, 2019). A Minor Aquifer System can comprise aquifers of potentially fractured rocks, which do not have a high primary permeability, or other formations of variable permeability. Although these aquifers seldom produce large quantities of water, they are important both for local supplies and in supplying base flow to rivers (Savannah Environmental, 2017).

3.2.4 Surface Hydrology.

The project site is located within the B31B quaternary catchments of the upper drainage of the Olifants River Water Management Area (WMA) as revised in the 2016 WMA boundary descriptions (Savannah Environmental, 2017). Figure 7 below shows the hydrological setting of the study area. According to Digby Wells (2017), the B31B Catchment has an area of 385km², with mean annual precipitation of 640mm, mean annual runoff of 11.19 Mm3, and a mean annual evaporation of 800mm.

3.2.5 Climate

The project site falls within the Highveld climatic zone which is dominated by calm, stable, and dry conditions in the winter months, which are conducive to the formation of temperature inversions (i.e. increases in temperature with height). Rainfall for the Moloto area is relatively moderate (676mm) and peaks mainly during early to midsummer months with very dry winters. January is the wettest month, averaging approximately 123mm, and July is the driest, with an average of only 6mm

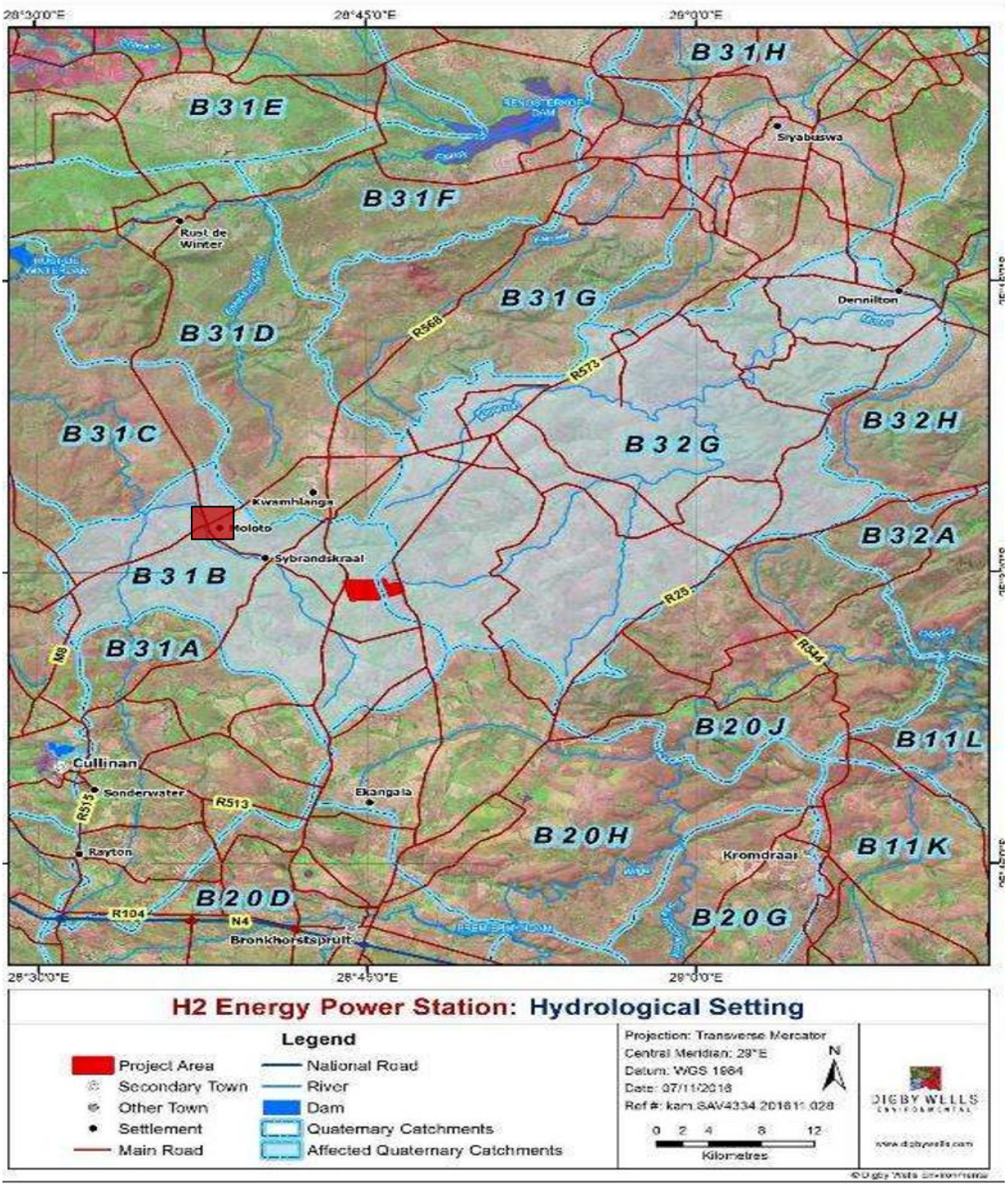

Figure 7: Hydrological Map of the Study Area (Source: Digby Wells, 2017).

3.2.6 Biodiversity and Sensitivity

The study area is situated in the Savanna biome and Central Bushveld Bioregion, and historically comprised two vegetation types, namely Loskop Mountain Bushveld, and Central Sandy Bushveld. Figure 8 below depicts the biodiversity within the study area and indicates that the study area for the proposed community hall does not fall within an area of biodiversity importance. The sensitivity map (Figure 9) depicts that the study area is heavily or moderately modified. As such, it is not anticipated that any biodiversity worth conserving would be found in the study area. In addition, the proposed development area has been fairly extensively disturbed in the past due to various activities including being used as an informal football pitch by members of the local community (Figure 10). There is also some evidence of open pit mining or barrowing possibly by the surrounding local community (Figure 11).

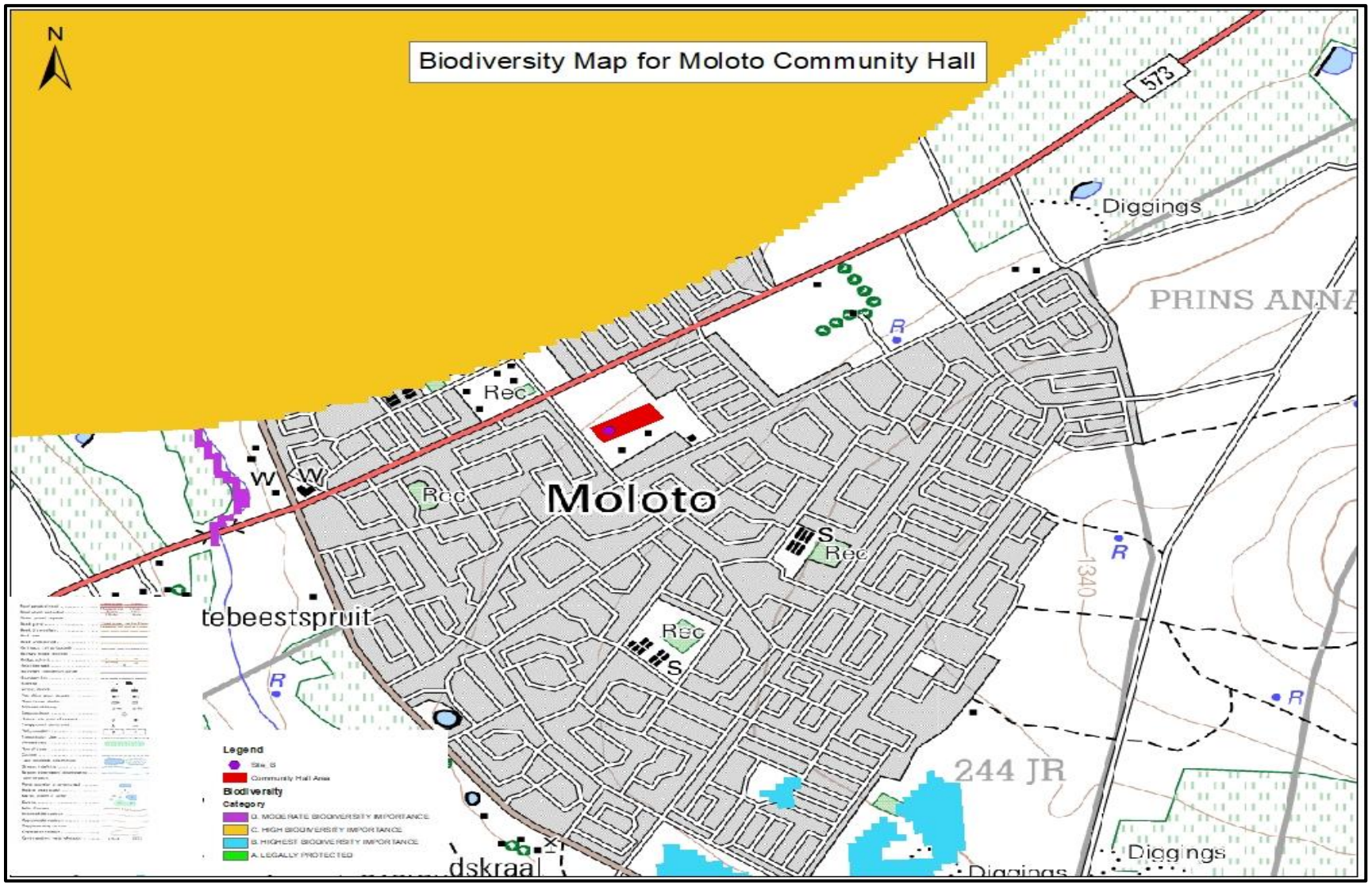

Figure 8: Biodiversity Map

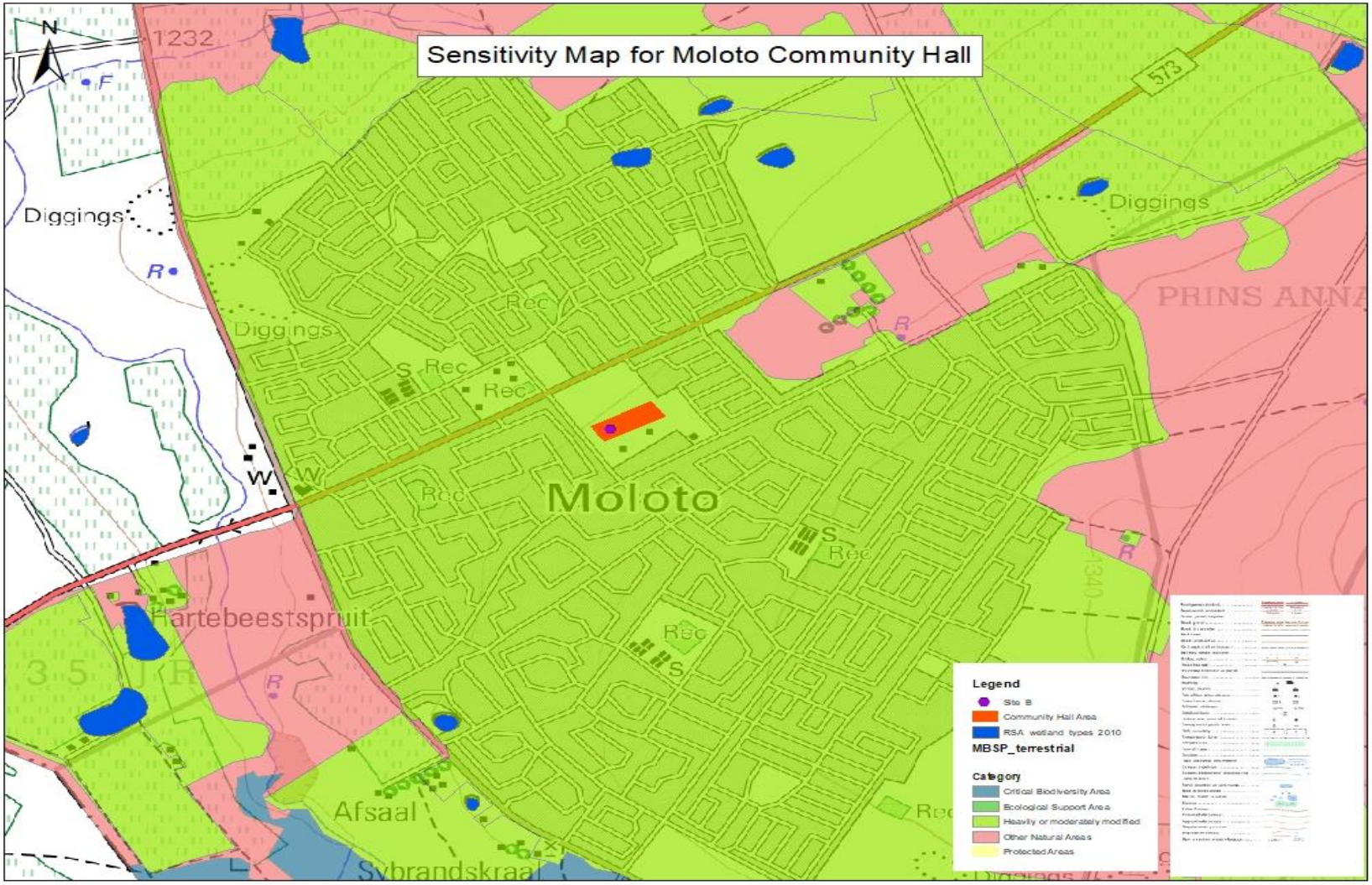

Figure 9: Sensitivity Map of the Study Area.

Figure 10: An informal Football Pitch in the Proposed Development Area.

Figure 11: Evidence of Burrowing on Site

3.2.7 Heritage

According to the Heritage Impact Assessment by Tsimba Archaeological Footprints (2019), the survey for the proposed project area did not result in the identification of any heritage or archaeological resources. The study area is dominated by a featureless flat landscape which lies in between residential stands and places of worship (churches). The residential areas are typical semi-urban dwellings, water and electricity reticulation infrastructure and streets and roads. The area has been fairly extensively disturbed in the past due to various activities including being used as an informal football pitch by members of the local community (Figure 8). There is also some evidence of open pit mining or barrowing possibly by the surrounding local community (Figure 9). As a result, any significant archaeological and/or historical sites or features that might have existed here in the past would have been extensively disturbed or destroyed.

3.3 ACTIVTIES ASSOCOAITED WITH THE PROJECT

3.3.1 Site Visit

The purpose of the site visit is to ensure that sensitive areas are identified, avoided where need be, and buffers are created for conservation purposes.

3.3.2 Access Roads

Access is readily available to the proposed site. The primary access will be through the Moloto Road, while the streets with the residential area will be used to directly access the site. As such, there will not be a need to construct new access road, except to maintain the existing ones.

3.3.3 Vegetation clearance

It is recommended that only vegetation within the immediate footprint of the development area be cleared for construction activities. The Environmental Management Programme

(EMPr) must be used as reference for mitigation measures. Further, the ECO must be consult (and approve) prior to any vegetation clearance on site.

3.3.4 Excavations and Foundations

The civil works will include the establishment of foundations for the proposed community hall.

3.3.5 Construction Works

Construction works for the proposed community hall include bricklaying, roofing and all necessary civil, electrical, mechanical work required for the completion of the hall.

4. ACTIVITIES APPLIED FOR IN TERMS OF NEMA, EIA REGULATIONS

The proposed development triggers listed activities in terms of EIA Regulation of 07 April 2017. The listed activity applicable to proposed project is listed in Table 1 below:

Table 1: Listed Activity triggering EIA applicable to the proposed project

Listed activities	Activity description
GN R. 324 Activity 12(f)(iii): *The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.* *In Mpumalanga*	The proposed development will require a clearance of more than 300 square metres for the construction of the Moloto Community Hall and this area was zoned open space.

Listed activities	Activity description
On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning.	
GN R. 324 Activity 15(d)(i): The transformation of land bigger than 1000 square metres in size, to residential, retail, commercial, industrial or institutional use, where, such land was zoned open space, conservation or had an equivalent zoning, on or after 02 August 2010. In Mpumalanga **i. Inside urban areas**	The proposed development will transform land bigger than 1000 square metres in size for the construction of the Moloto Community Hall and this area was zoned open space after 02 August 2010.

5. APPLICABLE LEGISLATION, POLICIES AND GUIDELINES

The EIA Regulations of December 2014 (as amended in April 2017) requires description of applicable legislations in the BAR. Therefore, this section list and describe the acts and legislations applicable to the proposed construction of the community hall. A list of the current South African environmental legislation, which is considered to be pertinent to the proposed development are described in Table 2 below.

Municipal policies, plans and by-laws as well as world best practices were also considered during the undertaking of this basic assessment process. The list of legislations that are applicable to the project is not an exhaustive analysis; however, it provides a guideline to the relevant aspects of each act.

Table 2: Legislation pertaining to the proposed project

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
National Environmental Management Act, 1998 (Act 107 of 1998)	NEMA principles and Objectives have been taken into consideration in respect of: the identification of environmental impacts, the assessment of their significance and need to mitigate; public consultation processes followed as part of the Basic Assessment.	Department of Environmental Affairs	1998

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
2014 EIA Regulations (As amended in April 2017)	The proposed development comprises listed development activities under Listing notices 1 and 3 of the EIA Regulations.	Department of Environmental Affairs	2014 (2017)
National Water Act, 1998 (Act 36 of 1998)	The Act ensures protection of water resources. No wetland on the site of the development	Department of Water Affairs	1998
Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983)	To provide for control over the utilization of the natural agricultural resources in order to promote the conservation of the soil, the water sources and the vegetation and the combating of weeds and invader plants; and for matters connected therewith.	Department of Agriculture	1983
National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004)	The purpose of the Biodiversity Act is to provide for the management and conservation of South Africa's biodiversity within the framework of the NEMA and the protection of species and ecosystems that warrant national protection.	Department of Environmental Affairs	2004

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
National Heritage Resources Act, 1999 (Act 25 of 1999)	The objective of the Act is to protect heritage resources in South Africa. Provincial Heritage Resources Agency will be consulted with.	South African Heritage Resources Agency	1999
National Environmental Management: Air Quality Act, Act 39 of 2004	The objective of the Act is to protect the environment by providing reasonable measures for the protection and enhancement of the quality of air and to prevent pollution of air and ecological degradation. The Act makes provision for measures to control dust, noise and offensive odours.	Department of Environmental Affairs	2004
National Dust Control Regulation, 2013	It provides for the management and control of dust.	Department of Environmental Affairs	2013
National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008), amended in 2014.	Provides for the management of waste. The proposed development will generate waste during the construction phase as well as the operational phase.	Department of Environmental Affairs	2008 (2014)

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
The Constitution of South Africa, 1996 (Act No. 108 of 1996)	The Constitution provides for an environmental right, Section 24 of the Bill of Rights. "Everyone has the right – a) To an environment that is not harmful to their health or well-being; and b) To have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that – •Prevent pollution and ecological degradation; •Promote conservation; and •Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development."	National Government	1996

6. DESCRIPTION OF THE NEED AND DESIRABILITY OF THE PROJECT

The vision of Nkangala District Municipality is *improved quality of life for all*. The vision is achieved through technical services department of the municipality, planning and building district-wide bulk services and community infrastructure. Some of the responsibilities include building recreational, sporting, waste and libraries etc. within the District Municipality. As part of this mandate, the district municipality has proposed to develop the Moloto Community Hall within Moloto Village is to assist in social and recreational activities within the area. The Construction of new Moloto Community Hall would potentially have a positive impact on the local residents. The investment value of the proposed project is approximately R15 Million, which will be used in the different phases of the project, thereby significantly improving the socio-economic status of the area.

Investment for the proposed development have been done during the planning phase. This is evident through the formation of the Project Steering Committee (PSC) to coordinate the project. Mpisana Black Titanium JV was appointed to undertake a Social Facilitation Study for the project and indicated in their report (Attached in Appendix D4) resolutions which the PSC has reached which included:

- Councilors and Community Liaison Officer (CLO) will engage with the community on employment criteria to employ laborers.
- Project steering committee will facilitate the employment.
- Community Liaison Officer will be appointed after the contractor is appointed.
- Transparency and Engagement will be conducted as the Social Facilitator will be liaising with the PSC and CLO.
- The local employment database will be created from the Skills Audit that will be conducted through the distribution of the already designed Skills Audit Form per project. The form will be distributed through the Ward Councilors to the community members and given a deadline for submission. Data capturing of the information will be done and made available to ASEDA and Ward Councilors once completed.

The above resolutions indicate that the proposed project will indeed benefit the local residents and improve the quality of life, as indicated in the Nkangala Municipality IDP.

The hall will be used for multi-purpose activities that the community require and plan to undertake. In addition to the multi-purpose activities, the hall will be a source of employment for the local communities during the construction as well as operation phase. Several short-term jobs will be created during the construction phase. The construction phase will be labour intensive, resulting in generation in revenue and income. They will also learn construction skills that can be applied to future employment opportunities.

During operation the Hall will have male and female changing rooms, board room, office, kitchen, Guardhouse, male and female ablutions, store rooms and parking bays therefore securities and cleaners will be required This will create employment opportunities for people living in the area. Other permanent jobs will be created during the operation phase of the project in the form of administrators, managers, maintenance etc. Construction of the Moloto Community Hall will uplift the residents of Moloto and will eventually result in an improved socio and economic status.

7. ALTERNATIVES CONSIDERED

Consideration of alternatives is an important element in the EIA process. “Alternatives” are defined in the NEMA EIA regulations, 2014 (GN 982 of 2014) as:

“In relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to the: (a) property on which or location where the activity is proposed to be undertaken; (b) type of activity to be undertaken; (c) design or layout of the activity; (d) technology to be used in the activity; or I operational aspects of the activity; and includes the option of not implementing the activity.”

The role of the EAP is thereof to provide a framework for sound decision-making based on the principles of sustainable development. Potential alternatives that were considered for the proposed Moloto Community Hall are detailed below.

7.1 PROPERTY/LOCATION ALTERNATIVES

No property alternatives were considered for the proposed township. A key principle adopted by Nkangala District Municipality for implementing its Integrated Development Plan is to provide much needed services in close proximity to areas of opportunity as well as in proximity to residents. The proposed hall will be situated in an area that is currently open space with no development or tangible benefits to the community. By developing the proposed area in this location, the location is central to the intended community and thus creates positive benefits and promotes accessibility. As the proposed site is municipal-owned, is within close proximity to the residents and existing services infrastructure, it was deemed the most feasible location for the proposed development.

In addition, the land has little ecological or agricultural value in its current state. The site is therefore considered ideal in terms of minimising and mitigating potential negative environmental impacts, whilst maximising the positive socio-economic impacts it aims to achieve.

7.2 ACTIVITY ALTERNATIVES

The proposed activity is required to meet the need for a multi-purpose community hall in the area. As such, this particular property was earmarked for the development of the community hall by the municipality and no activity alternative was considered.

7.3 DESIGN OR LAYOUT ALTERNATIVES

At this stage, no alternative layouts have been drafted. The property is very uniform in term of topography, and there are no significant features on the property. Therefore, there has been no need to consider alternative layouts. The actual footprint of the proposed

development is approximately 1102m^2 (Figure 12) The proposed Community Hall will have the following infrastructure:

- Main Hall area,
- Male and female changing rooms,
- Classroom and Board room,
- Office,
- Kitchen,
- Guardhouse,
- Male and female ablutions,
- Store rooms, and
- Parking bays.

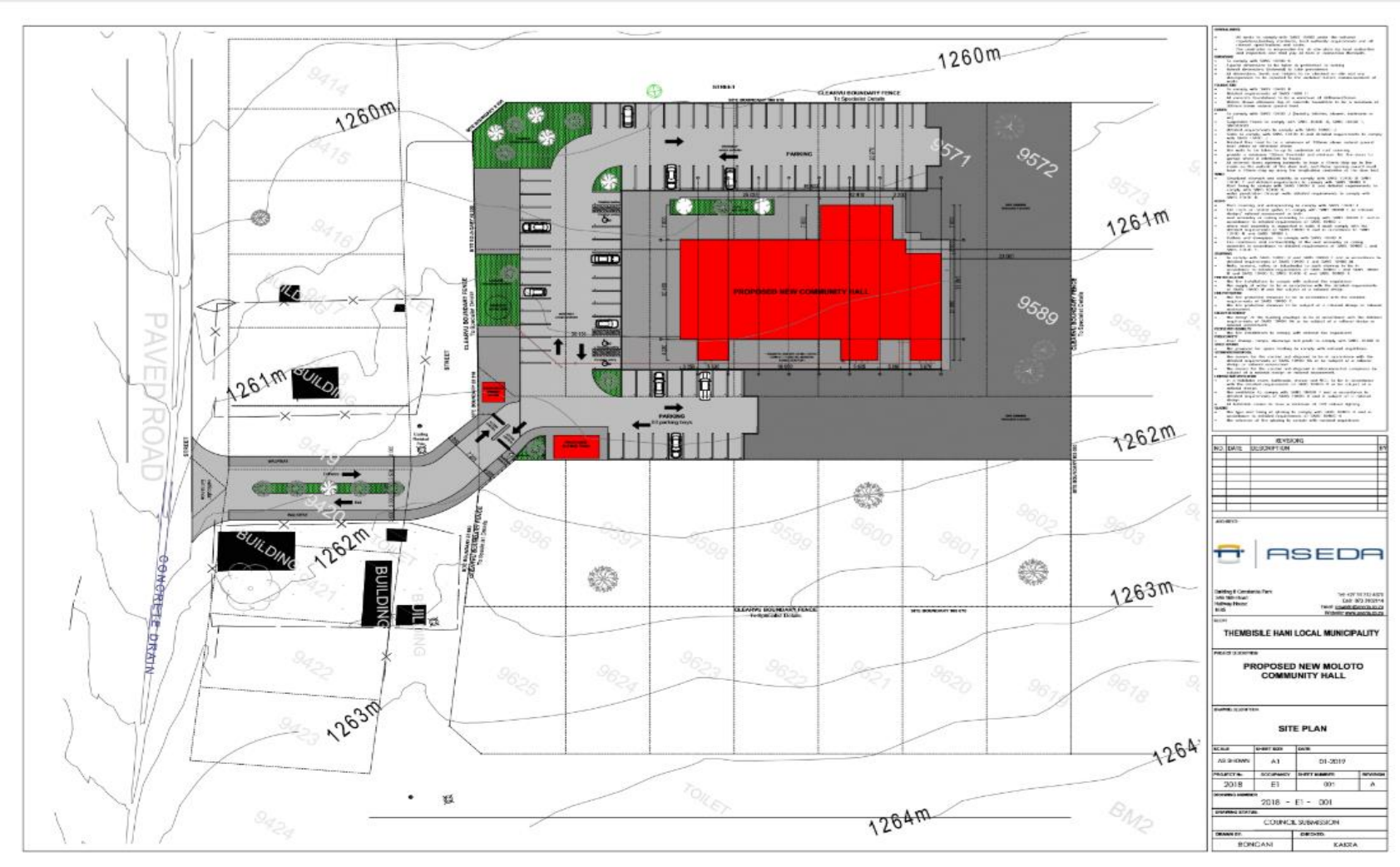

Figure 12: Layout (Site) Plan of the Moloto Community Hall (Source: ASEDA, 2019)

Figure 13: Layout Plan of the Moloto Community Hall (Source: Kimopax, 2019)

7.4 TECHNOLOGY ALTERNATIVES

7.4.1 Solar geyser vs electric geyser

Solar geyser installations and traditional electric geysers were alternatives considered in terms of water heating technology. The preferred option is the use of solar geyser technology, as this is in line with sustainable development and will ensure lower energy costs for the municipality.

7.4.2 Conservancy Tank vs Septic Tank

Conservancy Tank	Septic Tank
Development of a conservancy tank to temporality store waste: The conservancy tank will have capacity 310 kilolitres. A smaller tank can be installed but then will need to be pumped out more regularly. A larger tank will reduce the risk of the tank overflowing. Regular scheduled removal of waste from site by a registered disposal company or by the municipality will take place to ensure the tank does not become over full. There is however always the risk of interruptions in the honey cart service leading to overflow of the conservancy tank, but these will be managed in conjunction with the EMPr requirements as well as the manufacturer's user manual.	**The development of a septic tank will require construction of French drains and evapotranspiration areas:** The evapotranspiration areas function to dissipate water that has been clarified and treated in the septic tank and then further filtered by the French drain before entering the evapotranspiration area. Due to the nature and size of the development, the septic tank and evapotranspiration areas will be too costly for this development. In addition, the evaporation areas need adequate space that is situated away from humans and daily use of the hall, as such this option is not viable. The septic tank system needs to be properly maintained which will require periodic de-sludging of the septic tank; ensuring that no antiseptics, petrol or other

The conservancy tank will need to be placed to allow ease of access for waste removal. There will be costs associated with the removal of the waste from site, however, due to the size of the hall, the conservancy tank will not need extreme regular emptying, the tank size will be able to contain the waste for a longer period. Operation of the honey cart will occur during working hours and so will have less impact on neighbours.	chemicals are allowed to enter the system as these can kill the bacteria which operate to break down the waste; excess food, fat and waste should not be allowed to enter via kitchen drains – this can be ameliorated by placing a fat trap on these drains before they enter the septic tank. This can be cleaned regularly to prevent build up; other materials such as newspaper and cloth must be kept out of the system and soakpits for stormwater must not be located near the septic tank soak pits.

Considering the two option of conservancy tank and a septic tank, the conservancy tank was seen to be a more viable alternative due to the ease of construction, does not require a lot of space and it is also cheaper to maintain. While a septic tank system will require more space (which there is no adequate space on the property), maintenance of the septic tank and also the significant cost to construct the system, which results to this option being not preferred, also considering the side of the development.

7.5 NO –GO ALERNATIVES

The no-go Alternative is the option of not undertaking the proposed community hall development. The no-go option would result in failure for the municipality to meet the growing need for improved quality of life in the area. This would have long-term negatively repercussions on the socio-economic structure of the population of Moloto Village. Of course, the no-go option would result in the site remaining undeveloped. Currently the land is not being used for agricultural purposes and it serves very little ecological service due to its degraded state.

8. PUBLIC PARTICIPATION

The December 2014 EIA Regulations (as amended) require that during a Basic Assessment process, the organs of State together with Interested and Affected Parties (I&APs) and the general public be informed of the application for EA and also be afforded an opportunity to comment on the application. Public Participation Process (PPP) is any process that involves the public in problem solving and decision-making and it forms an integral part of the Basic Assessment process. The PPP provides people who may be interested in or affected by the proposed development, with an opportunity to provide comments and to raise issues or concern, or to make suggestions that may result in enhanced benefits for the project. The manner in which the PPP should be undertaken is stipulated in the EIA Regulations of December 2014 (as amended), regulation 39 to 44. These requirements include but not limited to:

(a) Fixing a notice board at or on the fence of-

(i) The site where the activity to which the application relates is or is to be undertaken; and

(ii) A place conspicuous to the public at the boundary of the site

(b) Giving written notice to-

(i) The occupiers of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;

(ii) The owners or persons in control of that land occupiers of land adjacent to the site where the activity is or is to be undertaken and to any alternative site where the activity is to be undertaken;

(iii) The municipal councillor of the ward in which the site and alternative site is situated and any organisation of rate payers that represent the community in the area;

(iv) The municipality which has jurisdiction in the area;

(v) Any organ of state having jurisdiction in respect of any aspect of the activity; and

(vi) Any other party as required by the competent authority;

(c) Placing an advertisement in-

(i) One of the local Newspaper within or around the proposed site

8.1 IDENTIFICATION AND NOTIFICATION OF INTERESTED AND AFFECTED PARTIES

Interested and Affected Parties identified include government departments, landowners and the general public. Notification and request for comments were submitted to the following key stakeholders listed below. The notifications were sent by registered mail, refer to Appendix E3.

- Mpumalanga Department of Transport and Public Works;
- Mpumalanga Department of Water and Sanitation;
- South African Heritage Resource Agency;
- Thembisile Hani Local Municipality;
- Wards 1, and 3 Councillors;
- Tribal Authorities

8.2 PUBLIC PARTICIPATION DATABASE

Regulation 42 of GN R. 982 of the 2014 EIA Regulations requires that a register of I&APs be kept by the public participation practitioner. In fulfilment of this requirement, such a register is compiled and details of the I&APs including their comments will be updated throughout the project cycle. The database is attached as Appendix E4**.**

8.3 SITE NOTICES

Three site notices (A2 size) were fixed at different conspicuous locations within and around the proposed project study area on 17th June 2019. Photographic evidence of the site notices is attached as Appendix E1. Site notices were placed at the following geographic locations and description:

Locality Description	Longitude	Latitude
Main entrance of the site along Moloto road	S”25° 27’04.8	E”28° 38,35.1
2nd entrance of the site	S”25° 27’24.0	E”28° 38’ 22.9

Salon along the site	S"25° 27'02.6	E"28°38' 50.8
Church next to the site	S"25° 27'23.2	E28° 38'24.4
Small restaurant along the 2nd entrance of the site	S"25° 27'24.0	E"28° 38' 22.9
Entrance of the clinic along road	S"25° 27'29.3	E"28° 38' 25.3

8.4 DISTRIBUTION OF NOTICES TO SURROUNDING LAND OWNERS / OCCUPIERS

A5 site notices were hand delivered to the surrounding communities on the 17th June 2019. These notifications were informing stakeholders and the public of the project as well as affording them an opportunity to register as I&APs and also to comment or raise any issues pertaining to the proposed project. Notification letters were posted via registered mail to stakeholders on the 26th June 2019; refer to Appendix E3 for proof of postage.

8.5 PLACEMENT OF ADVERTISEMENT IN THE LOCAL NEWSPAPER

An advertisement was placed on the Thembisile Newspaper on the 28th June 2019. The advertisement was aimed at further informing the I&APs of the proposed activity. Proof of newspaper advertisement is attached as Appendix E2**.**

8.6 PLACEMENT OF DRAFT BASIC ASSESSMENT REPORT FOR COMMENTS

I&APs and general public will be notified of the availability of the draft BAR for review and comment through newspaper advert, registered mail, emails and other necessary mode of communication. Copies of the draft BAR will be placed at various accessible locations around the project site (e.g. local library, school etc.). Copies of the draft BAR will be submitted to organs of state with jurisdiction with the proposed development and also key stakeholders for review and comment.

8.7 PUBLIC MEETINGS

No public meetings have been held yet. However, should it be necessary, public meetings will be scheduled and it will be communicated with the I&APs.

8.8 SUMMARY OF ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES (COMMENTS AND RESPONSE REPORT)

Comments, issues and concerns raised together with the responses provided by the EAP are presented under Appendix E5.

8.9 I&AP DATABASE

Organisation	Contact Person	Telephone	Email	Postal Address
Organs of State				
Thembisile Hani Local Municipality	Ms Amina Aphane	0835324051 /0139869100	aphanea@thembisilehaniLm.gov.za	Office no 39 Stand 24, Kwaggafontein Mpumalanga 0458
Ward 3 Councillor	Phineas Makatu	0820967689	doctormakatu@yahoo.com	Stand No.2585 Block6 Moloto South Kwamhlanga 1022
Ward 1 Councillor	Amos Mahlangu	0829639449	Amosmahlangu21@gmail.com	Stand No.1849 Block 15 Moloto South Kwamhlanga 1022

Ward 2 councillor	Dipolelo Mampuru	0793555829	madipolelo4@gmail.com	10693 Moloto North KwaMhlanga 1022
Department of Roads and Transport (Mpumalanga)		0766818309	chimusoroN@mpg.gov.za	Department of Roads and Transport Director:Road construction Chimusoro N NO 16 Hope Street Nelspruit 1200
Mpumalanga Heritage Resources Agency	Mr Benjamin Moduka	013 766 5196	bmoduka@mpg.gov.za	Mpumalanga Heritage Resources Agency 1st and 2nd Floor, Building 5-Government Complex 7 Government Boulevard Riverside Park, Nelspruit 1200

Mpumalanga Department of Public Works, Roads and Transport	Mr Nishi Naidoo	012 426 6200	NNaidoo@mpg.gov.za	Mpumalanga Department of Public Works, Roads and Transport 7 Government Boulevard Riverside Park Nelspruit 1200
Tribal Authority	Mr MJ Shoba	0722043229	mkhozileshoba@gmail.com	Stand No. 1964 Moloto South Block 11 Kwamhlanga 1022
Department of Water and Sanitation (Mpumalanga)	Mrs Gloria Moloto	0139322061/ 0663014571	molotom@dws.gov.za	Mrs Gloria Moloto 22 Rooth Street Bronkhorstspruit 1020
Registered I&APs				
Resident next to the site	Shanel Thubana	0712223337	N/A	Stand NO 5116 Block 7

				Moloto
Resident	Sesh Chauke	0828498862	N/A	Stand no. 5002 Block 7 Moloto
Resident	Tebogo Moeti	0715590094	Manunumanunu405@gmail.com	Stand no. 5130 Block 7 Moloto
Resident	Rechel kubyane	0823535886	N/A	Stand no.5100 Block 7 Moloto
Resident	Semi Letswai	0766134008	N/A	Stand no 5060 Block 7 Moloto
Resident	Duma Nkwana	0646882509	N/A	Stand 5058 Block 7 Moloto
Resident	Deneo mabena	0663265086	N/A	Stand no 5085 Block 7 Moloto

Resident	Letlogonolo Thubana	0735641654	N/A	Stand no 8205 Block 5 Moloto
Resident	John masango	0799627312	N/A	Stand no 5065 Block 7 Moloto
Resident	Maggy mokwana	0764055132	N/A	Stand no 5004 Block 7 Moloto
Resident	Amanda Tima	0764471787	N/A	Stand no. 3923 Block 7 Moloto
Resident	Tembi Mahlangu	0723797551	N/A	Stand no.4123 Block 7 Moloto
Resident	VJ Nkosi	0727530763	N/A	Stand no. 3002 Block 7 Moloto
Vezubuhle funeral services	PJ Ramonyai	0837277344	vezubuhlefunerals@gmail.com	Stand no. 9410 Block 7 Moloto

Resident	M Mofamadi	0649736697	Mofamadi93@gmail.com	Stand no. 244 Block 14 Moloto
Resident	NM Majadibodu	0713884756	mnmajadibodu@gmail.com	Stand no.473 Block 13 Moloto
Resident	JN Mahlangu	0764393873	N/A	Stand no.2873 Block 2 Moloto
Ali shop	Ali Mohammad	0744496674	N/A	Block 14 Moloto

9. POTENTIAL ENVIRONMENTAL IMPACTS IDENTIFIED

WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

These will be referred to the Environmental Management Programme (EMPr, Appendix H) An overview is provided below. The Impact Assessment of impacts that have a potential to cause harm on the environment is also done (Refer to the section below).

9.1 SOLID WASTE MANAGEMENT

The site falls within an area covered by municipal service provision. Municipal waste collection will be utilized. A service legal agreement still needs to be obtained for refuse collection services. It is important that education around the topic of waste collection and litter to be addressed when the community hall starts to operate. If solid waste is to be temporarily stored prior to municipal collection, this storage area must be constructed and maintained to the satisfaction of relevant authority and as stipulated by the National Environmental Management: Waste Act of 2008.

9.2 LIQUID EFFLUENT

No liquid effluent, other than normal sewerage, will be produced by the development. The development will require an internal waterborne sewer system that will connect to a conservancy tank that will be constructed on site. The Municipality will be responsible for the regular cleaning and de-sludging of the tank. However, there still needs to be a contract agreement between the Municipality and the service provider responsible for the waste removal.

9.3 EMISSION INTO THE ATMOSPHERE

Very little in terms of emission will be generated by the proposed development. During construction phase, dust and exhaust emission are predicted from vehicles on the dirt road. If clearing of vegetation will take place during winter months when ground cover is

reduced and the soils are dry, this may generate excessive dust. As such, it is important that this dust be controlled.

Clearing of vegetation should take place at a maximum of two months prior to building. Clearing of vegetation are high risk in terms of dust generation and erosion. If the Environmental Control Officer deems dust an issue during construction, surface wetting can be considered as a means of controlling dust emission. Building materials of fine particles must be suitably protected from wind dispersion.

9.4 GENERATION OF NOISE

Vehicles, construction machinery, and workers on site are likely to result in general disturbances and noise generation. It is an important impact to address and mitigate as the site is within the residential areas. During construction, building activities must be restricted to regular working hours during the week and is to be prohibited during weekends.

9.5 WATER USE

The proposed development will not involve abstraction or discharge into/ from any watercourse during construction and operational phases. Within a 500m radius of the site, there are no rivers or natural wetlands. All water to be used for the township development will be from the municipal supply. A service legal agreement is still to be obtained.

9.6 ENERGY EFFICIENCY

Energy efficient technology options have been considered from the proposed development and will be incorporated into the design of the community hall. The options include the use of solar geysers as a standard installation, instead if using the conventional electric geyser.

10. IMPACT ASSESSMENT

The assessment of impacts undertaken adheres to the minimum requirements in the EIA Regulations, 2014 and takes applicable official guidelines into account. The issues raised by interested and affected parties are also addressed in the assessment of impacts, however, no issues have been raised to date.

10.1 METHODOLOGY FOR ASSESSING SIGNIFICANCE OF POTENTIAL IMPACTS

The assessment of impacts is largely based on the Department of Environmental Affairs and Tourism's (1998) Guideline Document: Environmental Impact Assessment Regulations. The assessment will consider impacts arising from the proposed activities of the project both before and after the implementation of appropriate mitigation measures.

The impacts are assessed according to the criteria outlined in this section. Each issue is ranked according to extent, duration, magnitude (intensity) and probability. From these criteria, a significance rating is obtained, the method and formula is described below. Where possible, mitigation recommendations have been made and are presented in tabular form.

The criteria given in the tables below will be used to conduct the evaluation. The nature of each impact will be assessed and described in relation to the extent, duration, intensity, significance and probability of occurrence attached to it.

Table 3: Methodology used in determining the significance of potential environmental impacts:

Status of Impact
The impacts are assessed as either having a: negative effect (i.e. at a `cost' to the environment), positive effect (i.e. a `benefit' to the environment), or

Neutral effect on the environment.

Extent of the Impact

(**1**) Site (site only),

(**2**) Local (site boundary and immediate surrounds),

(**3**) Regional (within the City of Johannesburg),

(**4**) National, or

(**5**) International.

Duration of the Impact

The length that the impact will last for is described as either:

(**1**) immediate (<1 year)

(**2**) short term (1-5 years),

(**3**) medium term (5-15 years),

(**4**) long term (ceases after the operational life span of the project),

(**5**) Permanent.

Magnitude of the Impact

The intensity or severity of the impacts is indicated as either:

(**0**) none,

(**2**) Minor,

(**4**) Low,

(**6**) Moderate (environmental functions altered but continue),

(**8**) High (environmental functions temporarily cease), or

(**10**) Very high / Unsure (environmental functions permanently cease).

Probability of Occurrence

The likelihood of the impact actually occurring is indicated as either:

(**0**) None (the impact will not occur),

(**1**) improbable (probability very low due to design or experience)

(**2**) low probability (unlikely to occur),

(**3**) medium probability (distinct probability that the impact will occur),

(**4**) high probability (most likely to occur), or

(5) Definite.

Significance of the Impact

Based on the information contained in the points above, the potential impacts are assigned a significance rating (**S**). This rating is formulated by adding the sum of the numbers assigned to extent (**E**), duration (**D**) and magnitude (**M**) and multiplying this sum by the probability (**P**) of the impact.

S=(E+D+M)P

The significance ratings are given below

(**<30**) low (i.e. where this impact would not have a direct influence on the decision to develop in the area),

(**30-60**) medium (i.e. where the impact could influence the decision to develop in the area unless it is effectively mitigated),

(**>60**) high (i.e. where the impact must have an influence on the decision process to develop in the area).

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

This section provides details of the impacts that may result from and anticipated significance of the potential direct, indirect and cumulative impacts that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed. Refer to the EMPr for the detailed mitigation measures. The nature of the impacts is expected to be negative, however, there are positive impacts in nature, and these are specifically stated herein.

10.2.1 Planning and Design Phase

Where E = Extent, D = Duration, I = Intensity (Magnitude) and P = Probability of occurrence.

Table 4: Impact Assessment - Design and Planning Phase

Potential Impact and/or Aspect	E	D	I	P	Significance (Before Mitigation)	Proposed Mitigation Measures	E	D	I	P	Significance (After Mitigation)
Employment (Positive) create employment for professionals to plan and design the proposed project.					**Medium**	This is a positive impact and no mitigation is required.					**Medium**

Potential Impact and/or Aspect	E	D	I	P	Significance (Before Mitigation)	Proposed Mitigation Measures	E	D	I	P	Significance (After Mitigation)
Socio-cultural (Positive) The proposed project may create positive impact on the residents who are for the project. The public can look for investment opportunities during this phase of the project.	**2**	**4**	**8**	**5**	**High (70)**	• This is a positive impact and no mitigation is required.	**2**	**4**	**8**	**5**	**High (70)**

Potential Impact and/or Aspect	E	D	I	P	Significance (Before Mitigation)	Proposed Mitigation Measures	E	D	I	P	Significance (After Mitigation)
Socio-cultural (Negative) Similarly, the proposed project may create conflict within communities adjacent to the proposed site if they do not understand the impacts the proposed project may create.	**2**	**1**	**6**	**4**	**Medium (36)**	A public participation process must be undertaken to deal with the concerns and queries of the interested and affected parties. This will in turn clear any misunderstanding at ease conflict.	2	1	4	3	**Low (21)**

10.2.2 Construction Phase

Table 5: Impact Assessment - Construction Phase

Potential Impact and/or Aspect	E	D	I	P	Significance (Before Mitigation)	Proposed Mitigation Measures	E	D	I	P	Significance (After Mitigation)
Soil and Water Pollution • The construction phase might result in increased infiltration of contaminants into the ground. • Spillages of oil, lubricants and fuel from construction vehicles, plant and machinery has the potential to contaminate the soil and groundwater. Flora in these areas	**2**	**4**	**6**	**4**	**Medium (48)**	• Waste bins (with secure lids) for hazardous waste and general waste must be provided at the site camp. • Vehicles and machinery must be in good working order and must be regularly inspected for any leaks. • If a vehicle or machinery is leaking pollutants it must be removed from site and taken to an appropriate location for repairs. • Repairs to vehicles/ machinery should not take place in outside of the designated areas allocated for such activities, except in emergencies.	1	4	4	3	**Low (27)**

where contamination occurs will die. • Cement mixing and the storage of fuel can lead to contamination of the soil and water resources.						• Drip trays must be utilized for vehicle/ machinery maintenance on site, where there is a risk of fuel/ oil/ lubricant spillage. • Drip trays must be placed under generators (if used on site) water pumps and any other machinery on site that utilizes fuel/ lubricant. • A spill kit to neutralize/treat spills of fuel/ oil/ lubricants must be available on site. • Soil contaminated by spilled oil/ fuel/ lubricant must be excavated and disposed of in the hazardous waste bin. • Refuelling of vehicles/ machinery should not take place outside of the designated areas unless strictly necessary. Where refuelling must occur, drip trays should be utilized. • Chemical toilets should be kept at the site camp. Toilets must be regularly serviced					

						and emptied, and the waste disposed of at a licensed waste water treatment site. • Cement batching (if required) must take place on an impermeable surface sufficiently large to catch all cement slurry/ run-off. Cement waste must be disposed of in the appropriate waste bin. • No release of any substance i.e. cements, oil, that could be toxic. • Spillages of fuels, oils and other potentially harmful chemicals must be cleaned up immediately and contaminants properly drained and disposed of using correct solid / hazardous waste facilities (not to be disposed of within the natural environment). Any contaminated soil must be removed, and the affected area rehabilitated immediately. • Domestic waste must be removed through the services of a waste contractor and a					

						municipal waste site must be used for disposal.						
Soil Compaction and erosion • Soil compaction due to movement of vehicles and machinery. • The clearing of the site will result in exposed soil surfaces which may be prone to erosion, creation of dust and sedimentation of streams. • Storm water run-off has the potential to erode the topsoil and result in	**1**	**2**	**4**	**4**	**Low (28)**	• Vehicles and machinery must be kept in the site camp when not in use. • Place the construction camp or any depot for any substance which causes or is likely to cause pollution outside of sensitive areas including the steep slopes. • Erosion control measures must be implemented in areas sensitive to erosion such as edges of slopes, exposed soil etc. These measures include but are not limited to - the use of sand bags, hessian sheets, silt fences, retention or replacement of vegetation • Do not allow surface water or stormwater to be concentrated, or to flow down slopes without erosion protection measures being in place.	1	1	2	3	Low (12)

sedimentation on streams if not controlled.						• All disturbed areas must be rehabilitated as soon as construction in an area is complete • An indigenous landscaping plan is recommended for garden areas within the development.					
Destruction of flora & fauna • Construction activities will disturb the fauna that might be present on the site. • Potential loss of indigenous flora and habitat due to land/vegetation clearance. • Risk to animals falling into the open	**1**	**1**	**8**	**4**	**Medium (40)**	• Vegetation clearance will be limited to the development plan. • Care must be taken that unnecessary clearance of vegetation does not take place. Where possible, natural vegetation must be retained or pruned. • Establishment of extensive alien species will be monitored. • No hunting, harming or capturing of any of the animals on the site must be allowed. This must be enforced during construction as well as the operational phase. • Speed limit will be enforced on the construction vehicles and these vehicles will only make use of designated roads.	**1**	**1**	**6**	**3**	**Low (24)**

trenches during construction. • The noises and vibrations resulting from machinery could impact on faunal species outside the site. • Increase in vermin populations.						• Cleared indigenous vegetation can be stockpiled for possible reuse in later rehabilitation or landscaping. • Stockpiles of vegetation are only to be located in areas approved by the ECO. Methods of stacking must take cognisance of the possible creation of a fire hazard. • Construction time must be kept to a minimum followed by speedy rehabilitation to restore habitat and biodiversity integrity where required. • No uncontrolled collection of firewood may be allowed on the property and surroundings. • No open fires are allowed outside designated cooking areas. • No smoking will be allowed in the vicinity of fuel dispensing areas (smoking is only to be allowed in designated “safe” areas);					

						• Adequate fire-fighting equipment must be available onsite at all times and at least one person present on the site must be trained in the use thereof. • The cleared vegetation should not be burned but taken to the nearest available municipal disposal site or made available for use in a controlled manner. • No poison should be used to control any animals without the input of an ecologist/zoologist. • The removal and clearing of vegetation will not be allowed until an approval is obtained from the ECO.					
Spread of alien vegetation Due to the disturbance of the site, alien plants will be able to establish	2	2	6	3	Medium (30)	• Vegetation clearance will be limited to the development plan. • Care must be taken that unnecessary clearance of vegetation does not take	1	1	4	2	Low (12)

and could become a problem by infesting neighbouring land.						place. Where possible, natural vegetation must be retained or pruned. • Establishment of extensive alien species will be monitored. • Care must be taken to avoid the introduction of alien plant species to the site and surrounding areas. • Alien vegetation re-growth must be controlled throughout the entire site during the construction period. • Construction time must be kept to a minimum followed by speedy rehabilitation to restore habitat and biodiversity integrity where required. • The cleared vegetation should not be burned but taken to the nearest available municipal disposal site or made available for use in a controlled manner.					

						• The removal and clearing of vegetation will not be allowed until an approval is obtained from the ECO.						
Traffic Impact • Increased traffic is expected in the area due to an increase in construction vehicle and truck traffic for the duration of the construction phase while materials are being transported to the site. • The construction phase may result in increased pressure on the condition of the road.	**2**	**1**	**6**	**3**	**Low (27)**	• Surrounding communities will be notified prior to disruptive activities during construction. The contractor must take into consideration the potential movements of surrounding stakeholders and ensure that vehicles do not block accesses or cause an obstruction on the roads. • Point's men must be in attendance to direct traffic when heavy vehicles are accessing or leaving the site to ensure that there are no accidents. • Proper traffic calming/ speed control should be implemented in attempt to manage the influx of vehicles and prevent accidents from occurring. • The hiring of flagman in conjunction with designated travelling routes would assist in	**2**	**1**	**4**	**2**	**Low (14)**

						directing vehicular traffic in a suitable manner. • Regular maintenance of the access road should be implemented to ensure road stays in good condition.					
Air Pollution Construction activities such as vegetation clearing, site preparation, earthworks, blasting and uncovered topsoil stockpiles may lead to increased dust and smoke emissions.	**2**	**1**	**6**	**4**	**Medium (36)**	• Speed limits of 30km/h must be enforced in all areas, including public roads and private property to limit the levels of dust pollution. • Dust must be suppressed on access roads and construction sites by the regular application of water or a biodegradable soil stabilisation agent. Water used for this purpose must be used in quantities that will not result in the generation of excessive run off. • All vehicles transporting sand/soil need to have tarpaulins covering their loads which will assist in any windblown sand occurring off the trucks.	**1**	**1**	**4**	**2**	**Low (12)**

						• All construction activities should be restricted to normal construction working hours. • All vehicles exhausts systems should be in working order to limit air pollution.					
Noise Pollution There will be an increase in noise during the construction phase due to working of machinery, equipment and vehicles as well as hammering.	**2**	**1**	**8**	**4**	**Medium (44)**	• The project team must endeavour to keep noise generating activities associated with construction to a minimum and within working hours. • No unnecessary disturbances should be allowed to emanate from the construction site. • Due to the location of the proposed development site to residents, noise levels must be kept to a minimum at all times. If excessive noise is expected, nearby residents must be informed in advance of when the high noise levels will occur and for how long they will occur.	**2**	**1**	**6**	**3**	**Low (27)**

						• It may be required to fit silencers on machinery if noise levels at the boundary are excessively high. • All employees must be given the necessary ear protection gear. • Any complaints pertaining to noise must be recorded and reported to the ECO and addressed accordingly.					
Safety and security • Construction site can be a dangerous place and thus could result in harm to people and property. • Possibility of an increase in crime in the area due to more people living and working in the area.	**2**	**1**	**8**	**3**	**Medium (33)**	• The provisions of the OHS Act should be implemented at all times. • Security must be appointed during the construction (and also operation) phase to help prevent crime/theft from the proposed construction site and surrounding properties. • Signs should be erected on all entrance gates indicating that no temporary jobs are available, thereby limiting opportunistic labourers and crime.	**2**	**1**	**6**	**2**	**Low (18)**

						• All structures that are vulnerable to high winds must be secured (including scaffolds and chemical toilets). • All manhole openings are to be covered and clearly demarcated with barricades and danger tapes. • The contractor is to ensure traffic safety at all times and shall implement road safety precautions for this purpose when works are undertaken on or near public roads. • Necessary Personal Protective Equipment (PPE) and safety gear appropriate to the task being undertaken is to be provided to all site personnel (e.g. Hard hats, safety boots, masks etc.). • All vehicles and equipment used on site must be operated by appropriately trained and / or licensed persons. • An environmental awareness training programme for all staff members shall be				

						put in place by the contractor before commencing with any work, all staff members shall be appropriately briefed about the EMPr and relevant occupational health and safety issues. • All construction workers shall be issued with ID badges and clearly identifiable uniforms. • Emergency procedures must be produced and communicated to all the employees on site. This will ensure that accidents are responded to appropriately and the impacts thereof are minimized. • Adequate emergency facilities must be provided for the treatment of any emergency on the site. • Emergency contact numbers must be displayed conspicuously at prominent locations around the construction site and the construction crew camps at all times.				

						• The contractor must have a basic spill control kit available at the construction site and offices.						
Visual Impact • Littering and illegal dumping on the site may result in an alteration of the visual character of the site. • The development will result in the removal of vegetation; the erection of construction camps; construction of buildings as well as the presence of construction vehicles	**2**	**1**	**8**	**4**	**Medium (44)**	• Plan construction times in such a manner to have the least impact on surrounding properties. • Keep disturbed areas to a minimum. • No clearing of land to take place outside the demarcated footprints. • Minimise waste generation on the construction site and recycle waste where possible. • Reduce and control dust through the use of approved dust suspension techniques as and when required. • Rehabilitate all disturbed areas in accordance with the Method Statement. • Maintain access roads to prevent scouring and erosion, especially after rains.	**1**	**1**	**6**	**3**	**Low (24)**

etc. which may all be visually intrusive. • Lights from the contractor's camp and the construction site may be visually intrusive.						• Storage facilities and other temporary structures on site must be located such that they have as little visual impact on local residents as possible. • Soil excavated must not be stockpiled above 2m. • All temporary structures erected on site for the purposes of the project's construction phase will be removed from site upon completion of the project. • Lighting will be sufficient to ensure security but will not constitute 'light pollution' to the surrounding areas. • The site must be clean and tidy at all times. • A visual impact reduction net should be erected around the construction site to reduce visual impact.					
Heritage	**1**	**4**	**4**	**3**	**Low (27)**	• Due to the lack of any heritage resources within the proposed development footprint, no further mitigation is required prior to	**1**	**4**	**2**	**1**	**Low (7)**

						construction; however, a Chance Find Procedure (CFP) should be implemented for the project should any sites be identified during the construction process. • Should any archaeological material be unearthed accidentally during the course of construction, SAHRA should be alerted immediately and construction activities be stopped within a radius of at least 10m of such indicator. The area should then be demarcated by a danger tape. Accordingly, a professional archaeologist or SAHRA officer should be contacted immediately. In the meantime, it is the responsibility of the Environmental officer and the contractor to protect the site from publicity (i.e., media) until a mutual agreement is reached. • It is mandatory to report any incident of human remains encountered to the South African Police Services, SAHRA staff member and professional archaeologist.					

						Any measure to cover up the suspected archaeological material or to collect any resources is illegal and punishable by law.						
Socio-economic impact (Positive) • The construction phase of this development is expected to generate a number of temporary jobs mostly to previously disadvantaged individuals. • During operational phase, permanent jobs will be created to maintain and manage the property.	**2**	**4**	**8**	**5**	**High (70)**	• This is a positive impact and no mitigation required, however preference should be given to historically disadvantaged individuals from the local, surrounding community, when appointing employees for construction work. • Employment of local labour will be a positive impact of the project and must be encouraged. • During the construction phase, jobs must be created for unemployed local people and skills must be transferred to them. Where viable, the work must be executed in a labour intensive manner to create as many jobs as possible.	**2**	**4**	**8**	**5**	**High (70)**

Most of these jobs will be directed to the locals and previously disadvantaged individuals.						• It is the employer's responsibility to adhere to the municipality's guidelines, principles and policies regarding employment.						
Waste generation & disposal Possibility of litter spreading by wind to adjacent areas. Especially if household refuse bags are put out for delivery before the day scheduled for pickup. Stray dogs will most likely rip the bags leading to litter being blown into surrounding areas.	**2**	**1**	**8**	**4**	**Medium (44)**	• The site falls within an area covered by municipal service provision. Municipal waste collection will be utilized. • A service legal agreement must be obtained for refuse collection services. • Environmental education around the topic of waste collection and litter must be addressed during construction as well as operation phase. • If solid waste is to be temporarily stored prior to municipal collection, this storage area must be constructed and maintained to the satisfaction of relevant authority and as stipulated by the National Environmental Management: Waste Act of 2008.	**1**	**1**	**6**	**3**	**Low (24)**

Storm water Increase storm water due to increased paved area. Storm water run-off has the potential to erode the topsoil and result in sedimentation of downstream water resources.	**2**	**1**	**6**	**3**	**Low (27)**	• Do not allow surface water or stormwater to be concentrated or to flow down slopes. • The surface drainage system must be regularly inspected, and damage reported and repaired, especially after heavy rains.	**1**	**1**	**4**	**2**	**Low (12)**
Indirect Impacts Unsustainable sourcing of raw materials such as gravel, sand, water etc. which could result in the promotion of illegal mining operations which can cause significant damage to the environment.	**2**	**1**	**8**	**3**	**Medium (33)**	• The implementation of the EMPr will manage these issues. Contractors must provide proof of sustainable sourcing of materials i.e. permits for quarries and sand winning operations from which stone and sand have been obtained. Illegal quarries and sand winning operations must not be supported.	**2**	**1**	**4**	**2**	**Low (14)**

Cumulative Impacts General increase of waste to landfill	**2**	**1**	**8**	**3**	**Medium (33)**	• Waste generated during the construction will consist of building rubble and construction materials and general litter and will only be temporarily generated during the construction period. • Volume of waste disposed of must be recorded and all waste must be disposed of at a permitted landfill. • Where possible, waste should be recycled.	**2**	**1**	**4**	**2**	**Low (14)**

10.2.3 Operational Phase

Table 6: Impact Assessment - Operational Phase

Potential Impact					Significance	Mitigation Measures					

Employment (Positive) During operation, the community hall will need to be maintained and kept functional, which will require permanent staff to be employed for such.	**3**	**4**	**8**	**5**	**High (75)**	• This is a positive impact and no mitigation required, however preference should be given to historically disadvantaged individuals from the local, surrounding community, when appointing employees for construction work. • Employment of local labour will be a positive impact of the project and must be encouraged. • During the construction phase, jobs must be created for unemployed local people and skills must be transferred to them. • It is the employer's responsibility to adhere to the municipality's guidelines, principles and policies regarding employment	**3**	**4**	**8**	**5**	**High (75)**

Socio-cultural (Positive) • The proposed project will create positive impact on the residents who are for the project. The public can look for investment opportunities during this phase of the project. •	**2**	**4**	**8**	**5**	**High (70)**	• This is a positive impact and no mitigation is required.	**2**	**4**	**8**	**5**	**High (70)**

Socio-cultural (Negative) The proposed project may create conflict during the operation phase within community if it is not used for the intended purposes and/or managed properly.	**2**	**1**	**6**	**4**	**Medium (36)**	• The public participation process undertaken during the basic assessment must be adequate to deal with potential impacts from interested and affected parties around the communities. • The developer must appoint a responsible body who will make sure that the administration of the community hall is fair and just. • The appointed body must ensure that the intentions and purpose of the community hall are met.	**2**	**1**	**4**	**3**	**Low (21)**
Safety and Security There is potential for theft and vandalism of the community hall during operation due to valuables that may be used and/or kept there.	**2**	**1**	**8**	**3**	**Medium (33)**	• Security must be appointed during the operation phase to help prevent crime/theft. • All workers shall be issued with ID badges and clearly identifiable uniforms during the operational phase. • Emergency procedures must be developed and communicated to all the employees on site. This will ensure that accidents are	**1**	**4**	**2**	**2**	**Low (14)**

						responded to appropriately and the impacts thereof are minimized. • Emergency contact numbers must be displayed conspicuously at prominent locations around the site at all times.					
Waste generation & disposal Residents littering	**2**	**4**	**6**	**3**	**Medium (36)**	• The site falls within an area covered by municipal service provision. Municipal waste collection will be utilized. • A service legal agreement must be obtained for refuse collection services. • Environmental education around the topic of waste collection and litter must be addressed during the operation phase. • If solid waste is to be temporarily stored prior to municipal collection, this storage area must be constructed and maintained to the satisfaction of relevant authority and as stipulated by the National Environmental Management: Waste Act of 2008.	**1**	**4**	**4**	**2**	**Low (18)**

Noise Pollution Noise pollution due to the presence of residents	**2**	**4**	**4**	**3**	**Medium (30)**	• Residents must be sensitized to noise pollution within the property. • Signage such as “no hooting” should be placed and adhered to at all times.	**1**	**4**	**2**	**2**	**Low (14)**
Traffic Increased traffic on the roads	2	4	4	3	**Medium (30)**	• Speed limit signage must be place in the residence and must be adhered to. • Proper traffic calming/ speed control should be implemented in attempt to manage the influx of vehicles and prevent accidents from occurring. • “No hooting” signage should be place in the residence and must be adhered to. • Regular maintenance of the access road should be implemented to ensure road stays in good condition	**2**	**4**	**2**	**2**	**Low (16)**
Storm water	**1**	**4**	**4**	**2**	**Low (18)**	• Do not allow surface water or stormwater to be concentrated or to flow down slopes. • The surface drainage system must be regularly inspected, and damage reported and repaired, especially after heavy rains.	**1**	**4**	**2**	**2**	**Low (14)**

Soil and groundwater Pollution • Spillages of cement, oil, lubricants and fuel from delivery vehicles, has the potential to contaminate soil and water resources. • The developer proposes to use a septic tank to contain wastewater generated from the site. This has potential to contaminate groundwater and soil through leaks or during maintenance.	**2**	**4**	**8**	**4**	**Medium (56)**	• Ensure septic tanks is operated and emptied as per manufacturer's specification and in line with municipal permitting requirements. • Produce a location plan/sketch of the locations of the septic tanks and waste pipe on the supply and provide this to any contractors, builders, etc. undertaking works, to prevent accidental damage of tanks or waste pipes. • Identify any waste water discharges within 50 metres of the source and ensure these are diverted/ channeled away from the source or the supply is appropriately treated. • Repair or replace the septic tanks, damaged waste pipes or soak ways to ensure the structure is in satisfactory condition (which complies with Building	**2**	**3**	**4**	**3**	**Low (27)**

						Regulations) and the manufacturer's specification. • Soil contaminated by spilled wastewater/ oil/ fuel/ lubricant must be excavated and disposed of in the hazardous waste bin. • Spillages of fuels, oils and other potentially harmful chemicals must be cleaned up immediately and contaminants properly drained and disposed of using correct solid / hazardous waste facilities (not to be disposed of within the natural environment). •					
Indirect impacts: • Loss of open space and impact on sense of place for nearby residents.	**2**	**4**	**6**	**3**	**Medium (36)**	• The development of the site will result in the loss of open space; however, the development will still leave some space on the site as undeveloped, which will still retain the open space and vegetated feel of the site. The development will be in keeping line with surrounding developments.	2	4	4	2	**Low (20)**

Cumulative impacts • Cumulative impact on downstream environment and water flow.	2	4	4	3	**Medium (30)**	• As the site is in an open space, impacts on the site do have potential to add to cumulative impacts on flow of water and particularly generation of stormwater.	2	4	2	2	**Low (16)**

Decommission Phase

Table 7: Impact Assessment - Decommissioning Phase

Potential Impact and/or Aspect	E	D	I	P	Significance (Before Mitigation)	Proposed Mitigation Measures	E	D	I	P	Significance (After Mitigation)
The decommissioning impacts would be similar with the construction impacts discussed in the previous section.	**2**	**1**	**8**	**3**	**Medium (33)**	Mitigation measures would be similar to those during the construction phase; however, a decommissioning plan will be developed with detailed mitigation measures.	**2**	**1**	**6**	**3**	**Low (27)**

Potential Impact and/or Aspect	E	D	I	P	Significance (Before Mitigation)	Proposed Mitigation Measures	E	D	I	P	Significance (After Mitigation)
Disposal of rubble generated during decommissioning.	2	1	8	4	Medium (44)	Mitigation measures would be similar to those during the construction phase; however, a decommissioning plan will be developed with detailed mitigation measures.	2	1	6	3	Low (27)
Generation of noise and dust during demolition.	2	1	8	4	Medium (44)	Mitigation measures would be similar to those during the construction phase; however, a decommissioning plan will be developed with detailed mitigation measures.	2	1	6	3	Low (27)

11. SUMMARY OF RECOMMENDATIONS BY SPECIALISTS

Table 4 below presents the specialist studies undertaken for the proposed Moloto Community Hall

Table 8: Specialist Studies undertaken for the proposed Moloto Community Hall

Specialist Name	Specialist Area of Expertise	Specialist Company	Appendix
Mr. R Muroyi (Archaeologist)	Heritage Impact	Tsimba Archaeological Footprints (Pty) Ltd	D1
Mr. FL Makhuvha, (Engineering Geologist) Mr. J Mahlangu (Material Specialist)	Geotechnical Investigation	Bakhethwa Civil Lab Eng	D2
R Musie (Junior Hydrogeologist) K. Lenkoe-Magagula (Group Technical Manager) C. Gulubela (GIS Specialist)	Geohydrology (Groundwater Resource Development)	Kimopax (Pty) Ltd	D3
Jerry Rakgalakane	Social Facilitation	Mpisana Black Titanium JV	D4

11.1 HERITAGE IMPACT ASSESSMENT

From a heritage perspective, the proposed project is acceptable. Due to the lack of any heritage resources in the study area the impact of the proposed project on heritage resources is considered low and it is recommended that the proposed project can commence subject to a Chance Finds Procedure (CFP) being implemented.

- Although unlikely, sub-surface remains of heritage sites could still be encountered during the construction activities associated with the project, such sites would offer no surface indication of their presence due to heavy plant cover in other areas. The following indicators of unnamed sub-surface sites could be encountered:
    - Bone concentrations, either animal or human.
    - Ceramic fragments such as pottery shards either historic or pre-contact.
    - Stone concentrations of any formal nature.
- Although no sites of heritage significance were identified within the proposed study area, the following recommendations are given should any sub-surface remains of heritage sites be identified as indicated above:
    - All operators of excavation equipment should be made aware of the possibility of the occurrence of sub-surface heritage features and the following procedures should they be encountered.
    - All construction in the immediate vicinity (50m radius of the site should cease)
    - The heritage practitioner should be informed as soon as possible.
    - Archaeological watching brief at regular intervals should also be carried out to ensure that no possible archaeological resources are lost during the construction phase.

11.2 GEOTECHNICAL INVESTIGATION

Based on the results of the fieldwork undertaken during investigation, it is considered that the site is generally stable and suitable for the proposed development. The comments and recommendations contained within the report are based on a number of test pits. Material in Zone A is designated as class C1, according to the residential site class designations (SAICE, 1995). Type of foundation to be considered will be soil raft foundations. According to the National Home Builders Registration Council and GFSH02 classification system, the proposed site soil designation is Class C1 with soil raft foundation and compaction of onsite soils. The foundation should be designated to accommodate approximately 5mm to 10mm total settlement below the underside of the

footing as per the NHBRC site classes with differential movements of 75% depth. The foundation excavation should be inspected by a competent professional geotechnical engineer to confirm ground conditions prior to founding.

The recommended earthworks for the development of access roads and parking lot layer works when founding should be as follows:

- Grub and clear topsoil (200mm) and part of hillwash (400mm) to a depth of 600mm.
- Use a roller compactor to compact the base of the excavation to at least 95% of modified AASHTO maximum dry density.
- Suitable compactor equipment is to be utilized.
- Construct the engineered fill, using G7 or better-quality material in 150mm thick layers (maximum) and compacted to 95% of Modified AASHTO maximum dry density.
- Suitable compaction equipment is to be utilised. G7 or better materials to be utilised as engineered fill/bedding.
- The residual granite and soft to medium hard rock granite are considered to be only semi permeable to impermeable. Shallow perched water tables are likely to occur after periods of heavy, continuous rainfall and drainage of any water is likely to be very slow if it takes place. Surface and sub-drainage should be considered during design to negate the effects that surface and or ground water fluctuations may have on consolidation settlement in the area of construction. Surface and sub-drainage should be considered during design to negate the effects that surface and /or ground water fluctuations may have on consolidation settlement in the area of construction.

11.3 GEOHYDROLOGY - GROUNDWATER RESOURCE DEVELOPMENT

- The borehole should be equipped and be used as a water supply for the community hall.
- Water level and abstraction should be monitored and recorded on the monthly basis, water quality monitoring is required every month for water supply boreholes and should include the bacteriological analyses.

- Critical water level as indicated in the borehole management must not be exceeded once this levels area reached daily abstraction rate must be reduced.

12. PROPOSED MONITORING AND AUDITING

12.1 CONSTRUCTION PHASE

During construction phase monitoring should be done by an appointed independent Environmental Control Officer through monthly construction monitoring and audits for ensuring compliance with the EMPr, conditions of the Environmental Authorisation and recommendations made by specialist and authorities.

12.2 OPERATION PHASE

Post construction monitoring /audits should be undertaken quarterly for the first two years of operation to ensure the EMPr requirements have been met.

12.3 DECOMMISSIONING PHASE

Decommission is not anticipated at this time. However, should the proposed project warrant decommissioning, monitoring /audits should be undertaken monthly during decommissioning phase to ensure the EMPr requirements for decommissioning are being adhered to. In addition, a decommissioning plan should be developed at least six months prior to decommission.

13. ENVIRONMENTAL IMPACT STATEMENT

It is the opinion of the EAP that the proposed construction of the community hall should be constructed. This construction would result in minor adverse environmental and social impact, provided the mitigation measures in the Basic Assessment Report and EMPr are adhered to. The socio-economic opportunities that this development can offer residents are noteworthy. This opinion is based on information in this report and the specialist reports.

14. CONCLUSION AND RECOMMENDATIONS

The Basic Assessment study was undertaken as dictated by the NEMA and the EIA Regulations of December 2014 (as amended in April 2017). Viable alternatives have been proposed and the most suitable recommended by the EAP based on the information provided by the applicant as well as EAP's knowledge. The impacts of the proposed development were identified, and mitigation measures proposed. It is therefore recommended that the proposed project be authorized provided that the mitigation measures recommended herein and in the EMPr are adhered to. The following key recommendations should form part of the Environmental Authorisation:

- It is recommended that the clearing of vegetation in the plots should be in a step-wise manner shortly before they are developed.
- No land should be cleared of vegetation more than two months before development of land that land is scheduled to start. This ensure ground cover is maintained for as long as possible to prevent erosion, reduce dust dispersion (air pollution).
- It is also recommended that the Environmental Control Officer must be appointed to ensure that the recommendations stipulated in the EMPr as well as the conditions of the Environmental Authorisation are adhered to. In addition, the Environmental Control Officer must audit the project during the construction and operation phase and submit reports to the Competent Authority.

15. REFERENCES

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