HARDING TOWNSHIP ESTABLISHMENT

FINAL SCOPING REPORT

DC21/0013/2021

JUNE 2021

PROJECT APPLICANT:

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DETAILS OF THE INDEPENDENT ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)

THE REPORT WAS COMPILED BY:

Environmental Assessment Practitioner:

Ms Prisantha Govender

Qualifications:

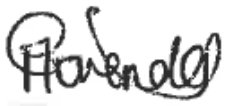
- BSc Honours (Environmental Management) – University of South Africa
- BSc (Environmental Science) – University of KwaZulu Natal
- Short Course in Environmental Impact Assessment Law
- Short Course in Environmental Law

Work Experience:

- October 2019 - Present: Environmental Assessment Practitioner at K2M Environmental
- October 2017- September 2018 - Intern at the Built Environment Training Academy (BETA)

Independence:

I, Prisantha Govender declare that this report has been prepared independently of any influence or prejudice as may be specified by the KwaZulu- Natal Department of Economic Development, Tourism and Environmental Affairs. I hereby confirm that all comments received from I&APs will be included into the Comments and Response Report. I also undertake that the Plan of Study for the Environmental Impact Report will be implemented, and the findings will be presented in the Environmental Impact Report.



June 2021

Ms Prisantha Govender
K2M Environmental (Pty) Ltd
Environmental Assessment
Practitioner

Date

THE REPORT WAS REVIEWED BY:

Environmental Assessment Practitioner:

Mr Gert Watson

Qualifications:

- B.Art. et. Scient. (Planning) - University of Potchefstroom
- Advance Project Management (Project Management Body of Knowledge Methodology)
- IEMA Approved Environmental Impact Assessment Course: The National Environmental Management Act Regulations – A Practical Approach
- IEMA Approved Environmental Auditors Course

Work Experience:

- 2002 – 2005: Environmental Consultant for K2M Technologies (Rustenburg Office)
- 2006 – 2009: Senior Environmental Consultant for K2M Technologies (Durban Office)
- 2009 – Present: Director for K2M Environmental (Durban Office)

Expertise to undertake Environmental Impact Assessments:

K2M Environmental is an established environmental consultancy since 2008. The consultancy has been involved with more than 100 Environmental Impact Assessments and other environmental related projects in KwaZulu-Natal, Mpumalanga, Gauteng and the North-West Province over the last 11 years.

Independence:

I, Gert Watson declare that this report has been prepared independently of any influence or prejudice as may be specified by the Department of Economic Development, Tourism and Environmental Affairs. I hereby confirm that all comments received from I&APs will be included into the Comments and Response Report. I also undertake that the Plan of Study for the Environmental Impact Report will be implemented and the findings will be presented in the Environmental Impact Report

Mr. Gert Watson
K2M Environmental (Pty) Ltd
Director

June 2021
Date

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GLOSSARY

AMAFA	Heritage KZN
BID	Background Information Document
CA	Competent Authority
CBA	Critical Biodiversity Area
DEDTEA	Department of Economic Development, Tourism an Environmental Affairs
DMR	National Department of Mineral Resources
DOT	Department of Transport
IDP	Integrated Development Plan
dSR	Draft Scoping Report
NEMA	National Environmental Management Act (Act 107 of 1998)
NFEPA	National Freshwater Ecosystems Protected Areas
NWA	National Water Act (Act No. 36 of 1998)
S&EIR	Scoping and Environmental Impact Reporting
SAHRA	South African Heritage Resources Agency
WULA	Water Use License Application
WWTW	Waste Water Treatment Works

LIST OF APPENDIXES

1 BACKGROUND INFORMATION

1.1 INTRODUCTION AND BACKGROUND

The Umuziwabantu Local Municipality has, through its IDP process, and extensive consultation with respective beneficiary communities residing within the Umuziwabantu Municipality, identified the need to provide housing in its area of jurisdiction. This process was initiated as a means to address the municipality's housing need and in doing so improve the living conditions and quality of life of its communities.

The Harding Township Establishment forms part of the Umuziwabantu Municipality's strategic objective of regeneration of the town of Harding and bring in new housing opportunities in the area for affordable and middle-income housing. The project area was previously subdivided into 82 residential erven with an average site size of 1000m². However, this layout does not support the municipality's densification framework. The proposed development thus entails the consolidation and redevelopment of the existing erven in line with the municipality's densification framework. More specifically, the proposed development entails the establishment of a Township together with supporting infrastructure, and includes construction of the following:

- **Approximately 343 residential erven** (These erven will comprise of FLISP Housing and Serviced Sites).

  FLISP stands for Finance Linked Individual Subsidy Programme. The FLISP Housing Subsidy programme was developed by the Department of Human Settlement to enable first time home ownership opportunities to South African citizens. The subsidy is targeted at households whose monthly income range from a minimum of R13 500 to a maximum of R 22 000 and are South African citizens.

  Serviced Sites are vacant plot of land that contain the necessary infrastructure for services such as water, sewage and electricity. These sites are ready for construction of a top structure upon purchase by the beneficiary.

- **4 storey residential blocks with approximately 210 social housing units**
  Social housing is essentially rental housing which is intended to assist individuals who earn between R1 500 – R7 500.

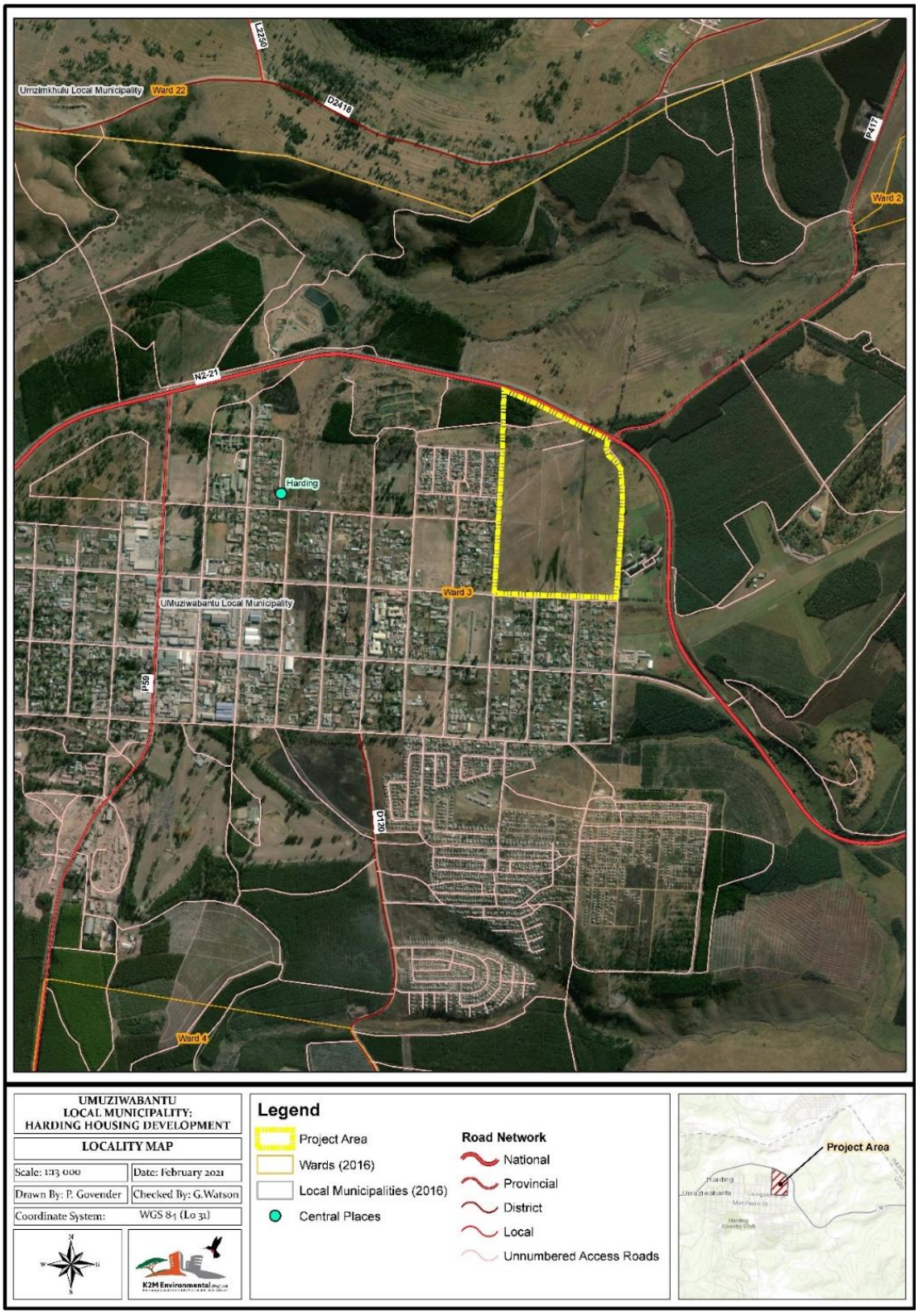
- **Pipelines for the transportation of water supply and waterborne sewage** (dimensions of the pipelines will be confirmed during the EIA Process)

- **Internal roads and stormwater infrastructure** (design and specifications of infrastructure will be confirmed during the EIA Process)

- It should be noted that erven will be set aside for commercial, conservation, active and public open space as well as a hospital facility.

The total extent of the project area is approximately 34.65 hectares and is situated within Ward 3 of the Umuziwabantu Municipality. The site is currently vacant, with a non-perennial stream traversing from north to south of the central section of the site. There are no Critical Biodiversity Areas (CBAs) or protected areas that have been identified within the project area. An illustration of the project area in relation to the municipal wards is depicted in Map 1.1 below and is attached **Appendix A**.

Map 1.1: Project Area



1.2 ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS

The 2014 Environmental Impact Assessment Regulations (as amended) promulgated in terms of Section 24(5) of the National Environmental Management Act, (Act No. 107 of 1998) as amended, requires Environmental Authorization from the competent authority which is the KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs (DEDTEA) for activities listed in Government Notices R327, R325 and R324. Table 1.1 below identifies the activity triggered.

Table 1.1: Triggered Listed Activity

Activity	Activity Description (in terms of relevant notice)	Description of listed activity as per project description
Activity 9 of GN.R 327	The development of infrastructure exceeding 1000 metres in length for the bulk transportation of water and stormwater – (i) with an internal diameter of 0.36 metres or more; or (ii) with a peak throughput of 120 litres per second or more; excluding where – (a) such infrastructure is for bulk transportation of water or storm water or storm water drainage inside a road reserve or railway line reserve; or (b) where such development will occur within an urban area.	The proposed development may entail the construction of pipes for the bulk transportation of water and stormwater.
Activity 10 of GN.R 327	The development and related operation of infrastructure exceeding 1000 metres in length for bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes – (i) with an internal diameter of 0.36 metres or more; or (ii) with a peak throughput of 120 litres per second or more; excluding where – (a) such infrastructure is for the bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes inside a road reserve or railway line reserve; or (b) where such development will occur within an urban area.	The proposed development may entail the construction of pipes for the bulk transportation of waste water and effluent.
Activity 12 of GN.R. 327	The development of –	The proposed development may entail the construction of

	(ii) infrastructure or structures with a physical footprint of 100 square metres or more; Where such development occurs – (a) within a watercourse (c) if no development setback exists, within 32 metres of a watercourse; - excluding – (aa) the development of infrastructure or structures within existing ports or harbours (bb) where such development activities are related to the development of a prot or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies; (cc) activities listed 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies; (dd) where such development occurs within an urban area; (ee) where such development occurs within existing roads, road reserves or railway line reserves; or (ff) the development of temporary infrastructure or structures where such infrastructure or structures will be removed within 6 weeks of the commencement of development and where indigenous vegetation will not be cleared.	infrastructure or structures with a physical footprint of 100 square metres or more within 32m of a watercourse.
Activity 19 of GN.R 327	The infilling or depositing of any material of more than 10 cubic metres into, or the dredging of, excavation, removal of soil, sand, shells, shell grit, pebbles or rocks of more than 10 cubic metres from a watercourse: but excluding where such infilling, depositing, dredging, excavation, removal or moving – (a) will occur behind a development setback; (b) is for maintenance purposes undertaken in accordance with a maintenance management plan; or (c) falls within the ambit of activity 21 in this Notice, in which case that activity applies. (d) occurs within existing ports or harbours that will not increase the development footprint of the port or habour; or	The proposed development will entail the infill of seepage areas within the site.

	(e) where such development is related to the development of a port or habour, in which case activity 26 in Listing Notice 2 of 2014 applies.	
Activity 28 of GN.R. 327	Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after the 01 April 1998 and where such development: (i) will occur inside an urban area, where the total land to be developed is bigger than 5 hectares; or (ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare; Excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes.	A portion of the proposed site was used for agricultural purposes during the early 2000s.
Activity 15 of GN.R 325	The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for – (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.	The proposed development may entail the removal of approximately 23.38 hectares of indigenous vegetation.
Activity 4 of GN.R 324	The development of a road wider than 4 metres with a reserves less than 13.5 metres. **(d) In Kwazulu-Natal:** x. Areas designated for conservation in Spatial Development Frameworks adopted by the competent authority or zoned for a conservation purposes; xiii. Inside urban areas: (aa) Areas zoned for use as public open space	The proposed development may entail the construction of roads wider than 4m with a reserve less than 13.5m within an area earmarked as passive open space.
Activity 12 of GN.R 324	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. **(d) In KwaZulu-Natal:**	The proposed development may entail the clearance of approximately 23.38 hectares of indigenous vegetation in an area classified as passive open space.

	vii. On land, where, at the times of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning; xi. Areas designated for conservation in Spatial Development Frameworks adopted by the competent authority or zoned for a conservation purpose;	
Activity 14 of GN.R 324	The development of – (ii) infrastructure or structures with a physical footprint of 10 square metres or more; where such development occurs – (a) within a watercourse; (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse; excluding the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour. **(d) In KwaZulu-Natal:** xi. Inside urban areas: (aa) Areas zoned for use as public open space (bb) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority, zoned for a conservation purpose;	The proposed development entails the construction of housing units within 32m of a watercourse within an area earmarked as passive open space.

1.3 TERMS OF REFERENCE

Regulation 15 (1) of the Environmental Impact Assessment Regulations of 2014 (as amended) states that it is the duty of the EAP to identify whether a Basic Assessment or Scoping and Environmental Impact Report is required. For this particular project a Scoping and Environmental Impact Report is required.

K2M Environmental (Pty) Ltd has been appointed as the independent Environmental Assessment Practitioner (EAP) by the applicant and will therefore be responsible for the Scoping and Environmental

Impact Report concerned with the proposed development as specified in Sections 21 to 23 of Government Notice R326.

The competent authority with regards to providing the required environmental authorisation is the KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs (DEDTEA). K2M Environmental has submitted the completed Application for Environmental Authorisation to DEDTEA **(Appendix B1).** DEDTEA has registered the project and allocated the Reference Number **DC21/0013/2021**, in their letter dated 23 April 2021 (**Appendix B2**). The Draft Scoping Report was submitted to DEDTEA on the 06 May 2021 for assessment. Upon assessing the dSR, DEDTEA required clarity on the following aspects highlighted in Table 1.2 below (See **Appendix B3** for DEDTEA's comments) to be addressed in the Final Scoping Report.

Table 1.2: Aspects to be addressed in the Final Scoping Report

Comments from DEDTEA	EAP's Response
Specification of all the proposed activities must be included in the project descriptions i.e. specifications of the Breaking New Ground (BNG),4 story residential blocks, pipelines dimensions, pumpstations, internal roads and stormwater infrastructure;	Specification of all the proposed activities will be addressed in the Engineering Report and will be included in the EIR Report.
Please ensure that the project description is clear and consistent throughout the report including the description of specialist studies;	Noted.
It is noted that the development triggers numerous listed activities, however please ensure that all triggered activities are quantified;	Noted. Activities triggered by the proposed development will be confirmed in the EIR Report wherein all triggered activities will be quantified.
The project description has not specified the proximity of the watercourses in relation to the proposed development;	The project area contains a unchanneled valley bottom wetland (HGM 1) as well as seepage areas. The proposed development is approximately 23.19m away from the Unchanneled valley bottom wetland (HGM 1) to the east and approximately 34.43m away from the west. Furthermore, as indicated on the preferred layout, the seepage

	areas will be infilled to accommodate the proposed development.
Please ensure that the evidence of the public participation process undertaken in terms of Regulation 41 of the Regulations is attached on the report;	Refer to Section 5: Public Participation of the Final Scoping Report where the Public Participation Process that was undertaken for the proposed development is discussed.
Please ensure that the Traffic Impact Assessment is conducted as stipulated on the pre-application meeting minutes;	Noted. A Traffic Impact Assessment will be undertaken for the proposed development. Findings from the Traffic Impact Assessment will be included in the EIR Report.
Please ensure that the EMF Status is included on the final report as stipulated on the pre-application minutes;	As indicated in Table 1.4 of the Final Scoping Report, the Ugu District Environmental Management Framework, 2018, identifies Harding within the Urban EMZ. As such the proposed development is aligned with the District's EMF.
Please ensure that the layout is inclusive of all the proposed activities and ensure that all the environmentally sensitive features that are on site are depicted i.e. layout must show all the pipeline"s route, roads, bulk service infrastructure etc;	The environmentally sensitive areas have been included on the preferred layout. The pipeline route, roads, bulk service infrastructure etc will be addressed in the Engineering Report and will be included in the EIR Report.
When issuing an instruction the word „must" is to be used. Words like, should, needs to, is to be, may, avoid, regularly, adequately, where possible etc. are ambiguous and cannot be audited	Noted.
Proof of submission to all interested and affected parties (including state departments) must be included in the Final Scoping Report.	Noted and included. Refer to Appendix F5 of the Final Scoping Report where the receipt of acknowledgment for the Draft Scoping Report has been included.
You are reminded that submission of the final Scoping Report is due to the Department by 07 June 2021.	Noted.

The Environmental Authorisation must be obtained prior to the commencement of any construction activities on site	Noted.
It is the developer's responsibility to continually ensure that environmental requirements are met, especially if there are changes in the project description.	Noted.
Please do not hesitate to contact the Department, should you have any queries regarding this correspondence	Noted.

This Scoping Report has been prepared in response to Section 21 (1) of Government Notice R326 and includes information as specified in Appendix 2 of the 2014 EIA Regulations. Appendix 2 of Government Notice R326 states that the objective of the Scoping Process is to:

a. Identify the relevant policies and legislation relevant to the activity;
b. Motivate the need and desirability of the proposed activity, including the need and desirability the activity in the context of the preferred location;
c. Identify and confirm the preferred activity and technology alternative through an identification of impacts and risks and ranking process of such impacts and risks;
d. Identify and confirm the preferred site, through a detailed site selection process, which includes an identification of impacts and risks inclusive of identification of cumulative impacts and a ranking process of all the identified alternatives focusing on the geographical, physical, biological, social, economic, and cultural aspects of the environment;
e. Identify the key issues to be addressed in the assessment phase;
f. Agree on the level of assessment to be undertaken, including the methodology to be applied, the expertise required as well as the extent of further consultation to be undertaken to determine the impacts and risks the activity will impose on the preferred site through the life of the activity, including the nature, significance, consequence, extent, duration and probability of the impacts to inform the location of the development footprint within the preferred site; and
g. Identify suitable measures to avoid, manage or mitigate identified impacts and to determine the extent of the residual risks that need to be managed and monitored.

1.4 APPROACH AND METHODOLOGY

The overall approach to the scoping process includes the following activities:

- A description of the development and an overview of the environmental features applicable to the study area. It includes an overview of the key aspects relating to both the biophysical and socio-economic characteristics of the study area.
- The identification of possible environmental impacts and evaluation of their significance.
- A description of the public participation process undertaken as part of the scoping phase.

The sources of information that were utilized for the purpose of this study included a combination of different desktop data sources, including reports and relevant databases, findings of site visits to the project area, and inputs from studies conducted by other members of the professional team.

1.5 REPORT STRUCTURE

The report is structured as follows:

- **Section 2** consists of a summary **description of the proposed activity**.
- **Section 3** provides **a description of the environment that may be affected** by the activity.
- **Section 4** consists of a summary of the potential **impacts of the proposed activity** on the environment.
- **Section 5** provides describes the **public participation** process conducted during the scoping phase.
- **Section 6** summarizes the **plan of study for environmental impact assessment** phase of the project

Appendix 2 of Government Notice R326 requires specific content to be addressed in the Scoping Report. Table 1.2 has been included to assist the reader to find the relevant section in the report.

Table 1.3: NEMA Requirements for Scoping Report

Section in Appendix 2	Requirement for Scoping Report	Sections in Report
2(a)	Details of:	
(i)	The EAP who prepared the report; and	Just after cover page and Section 1.9
(ii)	The expertise of the EAP, including a curriculum vitae;	Just after cover page and **Appendix G** and **H**
2(b)	The location of the activity:	Section 2.2 and Figure 2.1

(i)	The 21 digit Surveyor General code of each cadastral land parcel;	Table 2.2
(ii)	Where available, the physical address and farm name;	Section 2.2
(iii)	Where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties;	Table 2.1
2(c)	A plan which locates the proposed activity or activities applied for at an appropriate scale, or, if it is:	Section 2.2 and Figure 2.1
(i)	A linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken; or	N/A
(ii)	On land where the property has not been defined, the coordinates within which the activity is to be undertaken;	N/A
2(d)	A description of the scope of the proposed activity, including:	
(i)	All listed and specified activities triggered;	Table 1.1
(ii)	A description of the activities to be undertaken, including associated structures and infrastructure;	Section 2.3
2(e)	A description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process;	Table 1.3
2(f)	A motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location;	Section 2.7
2(h)	A full description of the process followed to reach the proposed preferred activity, site an location within the site, including:	
(i)	Details of all the alternatives considered;	Section 2.4
(ii)	Details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs;	Section 5
(iii)	A summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them;	**Appendix F6** for Comments and Response Report
(iv)	The environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;	Section 3
(v)	The impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts- (a) can be reversed; (b) may cause irreplaceable loss of resources; and (c) can be avoided, managed or mitigated;	Section 4
(vi)	The methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives;	Section 4.2
(vii)	positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;	Section 3.6

(viii)	The possible mitigation measures that could be applied and level of residual risk;	Section 3.7
(ix)	The outcome of the site selection matrix;	Section 2.4.2
(x)	If no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such and	Section 2.4.2
(xi)	A concluding statement indicating the preferred alternatives, including preferred location of the activity;	Section 2.4.2
2(i)	A plan of study for undertaking the environmental impact assessment process to be undertaken, including:	
(i)	A description of the alternatives to be considered and assessed within the preferred site, including the option of not proceeding with the activity;	Section 2.4.6 and 2.4.7
(ii)	A description of the aspects to be assessed as part of the environmental impact assessment process;	Section 6.2
(iii)	Aspects to be assessed by specialists;	Section 6.2
(iv)	A description of the proposed method of assessing the environmental aspects, including a description of the proposed method of assessing the environmental aspects including aspects to be assessed by specialists;	Section 6.3.1
(v)	A description of the proposed method of assessing duration and significance;	Section 6.3.2
(vi)	An indication of the stages at which the competent authority will be consulted;	Section 6.1 and 6.5
(vii)	Particulars of the public participation process that will be conducted during the environmental impact assessment process;	Section 6.4
(viii)	A description of the tasks that will be undertaken as part of the environmental impact assessment process;	Section 6.2
(ix)	Identify suitable measures to avoid, reverse, mitigate or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored.	Section 4.4.2
2(j)	An undertaking under oath or affirmation by the EAP in relation to:	
(i)	The correctness of the information provided in the report;	Just after cover page
(ii)	The inclusion of comments and inputs from stakeholders and interested and affected parties;	**Appendix F6** for Comments and Response Report
(iii)	Any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested or affected parties;	**Appendix F6** for Comments and Response Report
2(k)	An undertaking under oath or affirmation by the EAP in relation to the level of agreement between the EAP and interested and affected parties on the plan of study for undertaking the environmental impact assessment;	Just after cover page
2(l)	Where applicable, any specific information required by the competent authority;	N/A
2(m)	Any other matter required in terms of section 24(4)(a) and (b) of the Act.	N/A

1.6 ASSUMPTIONS AND LIMITATIONS

1.6.1 Project Stage

The Scoping Report has been compiled during the conceptual design and planning stages of the development.

1.6.2 Baseline Information

Sufficient baseline information for the scoping phase of the study was available from a variety of desktop data sources, reports and relevant data bases. This was supplemented by site visits to the project area and inputs from other professionals involved in the project.

1.6.3 Time Constraints

There were no time constraints associated with the scoping phase and sufficient time was available for the scoping process.

1.7 APPLICABLE LEGISLATION, POLICIES AND GUIDELINES

In addition to the Environmental Impact Assessment Regulations of 2014, the following legislation and guidelines identified in Table 1.3 have been considered in the preparation of this Scoping Report.

Table 1.4: Applicable Legislation and Policies

Legislation	Relevance to the development
National Water Act (No. 36 of 1998)	A Water Use License Application will be required for the proposed development, as watercourses have been identified within the proposed project area.
National Environmental Management Act (No. 107 of 1998)	This development requires a full Scoping and Environmental Impact Report to be conducted as per the 2014 EIA Regulations (as amended), in terms of Chapter 5, Section 24(5), 24M and Section 44 of the National Environmental Management Act.

KwaZulu-Natal Heritage Act (No. 4 of 1998)	Documentation will be submitted to AMAFA, as the proposed development is larger than 10 000 m². According to the KwaZulu-Natal Heritage Act, Amafa Akwazulu Natali (Heritage KwaZulu-Natal) has to comment on the need for an archaeological assessment for proposed development, if the development area is larger than 10 000 m².
National Environmental Management: Biodiversity Act (No. 10 of 2004)	A Biodiversity Assessment was undertaken to identify sensitive areas within the project area and mitigation measures were recommended by the Specialist.
Occupational Health and Safety Act (No. 85 of 1993)	The contractor needs to manage his/her staff and crew in strict accordance with the Occupational Health and Safety Act in order to prevent injuries to staff.
Provincial Growth and Development Plan	The proposed development is aligned with the PGDP as it addresses the first goal of the PGDP which is that of job creation, which will take place during the construction phase and operational phase.
Constitution of the Republic of South Africa (Act No. 108 of 1006)	The proposed development will assist in providing basic housing and services to the beneficiaries that will occupy the houses.
Agricultural Land Act (Act 70 of 1970)	The land for the proposed development belongs to the Umuziwabantu Local Municipality; therefore, Act 70 of 1970 does not apply to this project.
Polluters Pay Principal	The Polluters Pay Principal has been included into the preparation the EMPr.
Umuziwabantu Local Municipality Spatial Development Framework (2017-2022)	The Umuziwabantu Local Municipality's Draft SDF has identified areas within the township of Harding for densification in order to allow for a greater variety housing options.
Umuziwabantu Integrated Development Plan (2019/2020)	The Harding Housing Development has been identified in the IDP to assist in reducing the housing backlog within the municipality.
Ugu District Environmental Management Framework, 2018	Harding has been identified within the Urban EMZ which is aligned to the proposed development.

1.8 THE APPLICANT

The details of the applicant are as follows:

Applicant name : Umuziwabantu Local Municipality
Contact Person : Mr W T Gumede (Municipal Manager)
Tel : 039 – 433 3500
Email : mm@umuziwabantu.gov.za
Address : Murchison Street, Harding, 4680

1.9 THE INDEPENDENT ENVIRONMENTAL ASSESSMENT PRACTITIONER

K2M Environmental (Pty) Ltd was appointed as the Independent EAP responsible for the following tasks:

- Processes, information, plans and reports produced in complying with the Regulations
- Ensuring that the relevant authority has access to all information
- Public participation process

The contact details of the independent Environmental Assessment Practitioner are as follows:

Name : K2M Environmental (Pty) Ltd
Contact Person : Mr Gert Watson
Telephone : 031 – 764 6743
Fax : 031 – 764 2354
E-mail : gert@k2m.co.za
Postal Address : PostNet Suite #509, Private Bag X4, Kloof, 3640

2 DESCRIPTION OF PROPOSED ACTIVITY

2.1 ACTIVITY INTRODUCTION

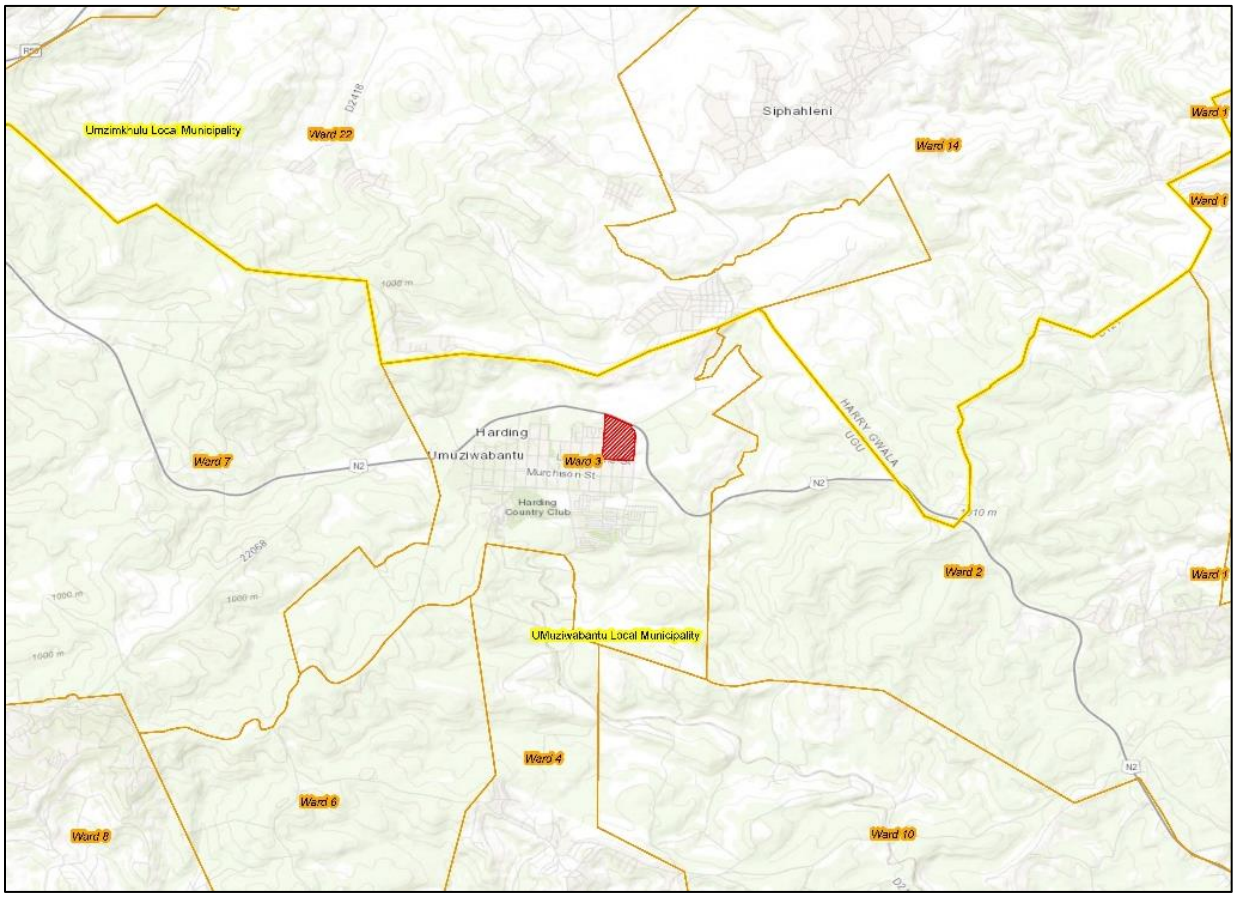
As outlined in Section 1, the primary purpose of the EIA process is to provide adequate and appropriate information about the potential positive and negative impacts of the proposed development and associated management actions to enable DEDTEA to reach an informed decision in terms of NEMA for the proposed construction of the Harding Township Establishment.

2.2 PROJECT LOCATION

The proposed Harding Township Establishment is centrally located within Ward 3 of the Umuziwabantu Local Municipality and falls just outside of the Harding town to the north east. As stated in the Umuziwabantu Municipal IDP (2019/20 Review), Harding is the primary town (and only proclaimed town); and is also the primary service node within the Municipality. The project area is located at 80km west of Port Shepstone and 60km east of Kokstad. The site is well located in relation to road infrastructure, as the east west N2 link between Port Shepstone and Kokstad is adjacent to the northern boundary of the site.

Figure 2.1 below provides topographically depicts the project area in relation to the municipal and ward boundaries.

Figure 2.1: Location of Project Area



2.2.1 Geographical co-ordinates

The geographical co-ordinates for the proposed development are illustrated in Table 2.1 below.

Table 2.1: Geographical co-ordinates

Latitude /Longitude	Degrees/Minutes/Seconds
South	30° 34' 19.02"
East	29° 53' 50.17"

2.2.2 Surveyor- General

The 21-digit surveyor general reference number for the properties making up the project area proposed are indicated in Table 2.2 below.

Table 2.2: 21 Digit Surveyor General Reference Number

Erf Number	Township	21 Digit Code
Erf 10 000	Harding	NoES01300001000000000
Erf 452	Harding	NoES01300000045200000
Erf 474	Harding	NoES01300000047400000
Erf 814	Harding Extension 2	NoES01300000081400000

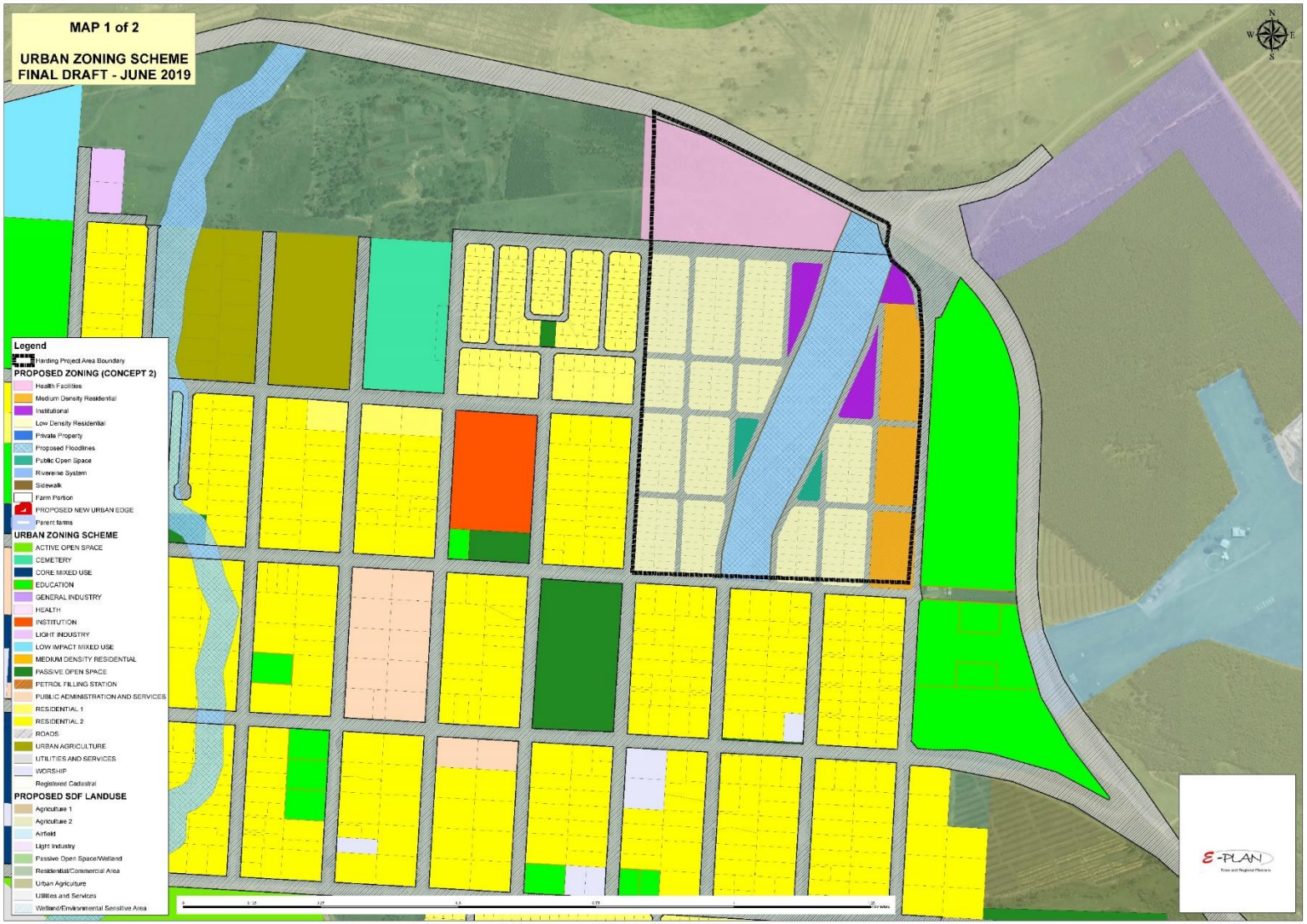
2.2.3 Zoning of Property

The zoning of the properties that make up the project area, as per the Umuziwabantu Municipal Urban Zoning Scheme (Final Draft), 2019, is tabulated in Table 2.3 below and is graphically depicted in Map 2.1 below.

Table 2.3: Zoning of properties

Property Description	Zoning
Erf 10 000, Harding	Health facilities, medium density residential, institutional, low density residential, proposed floodline, public open space
Erf 452, Harding	Low density residential
Erf 474, Harding	Public open space, proposed floodline
Erf 814, Harding Extension 2	Low density residential

Map 2.1: Zoning Map



Source: Umuziwabantu Municipal Urban Zoning Scheme (Final Draft), 2019

2.3 ACTIVITY DESCRIPTION

2.3.1 Extent of development

The properties making up the project area has a total extent of approximately 34.65 hectares with a development footprint of approximately 21.54 hectares. The preferred draft layout was prepared by K2M Technologies in December 2020 and is attached as **Appendix C** and depicted in Figure 2.2 below. The area of each of the proposed land uses are tabulated in Table 2.4 below.

Table 2.4: Proposed Land Uses

Land Use	Erven	Units	Area (Ha)	Percentage (%)
Active Open Space	2	N/A	0.34	0.98%
Commercial	1	N/A	0.20	0.59%
Conservation	3	N/A	12.67	36.57%
Hospital	1	N/A	0.81	2.33%
Internal Road Network	1	N/A	5.39	15.57%
Public Open Space	3	N/A	0.09	0.27%
Residential Erven (Serviced Sites and FLISP Housing)	342	342	12.51	36.11%
Residential – Social Housing	7	210	2.63	7.59%
Total	**352**	**552**	**34.65**	**100.00%**

2.3.2 Description of the proposed activity

The Harding Township Establishment forms part of the Umuziwabantu Municipality's strategic objective of regeneration of the town of Harding and bring in new housing opportunities in the area for affordable and middle-income housing. The project area was previously subdivided into 82 residential erven with an average site size of 1000m². However, this layout does not support the municipality's densification framework. The proposed development thus entails the consolidation and redevelopment of the existing erven in line with the municipality's densification framework. More

specifically, the proposed development entails the establishment of a Township together with supporting infrastructure, and includes construction of the following:

- **Approximately 343 residential erven** (These erven will comprise of FLISP Housing and Serviced Sites).
  FLISP stands for Finance Linked Individual Subsidy Programme. The FLISP Housing Subsidy programme was developed by the Department of Human Settlement to enable first time home ownership opportunities to South African citizens. The subsidy is targeted at households whose monthly income range from a minimum of R13 500 to a maximum of R 22 000 and are South African citizens.

  Serviced Sites are vacant plot of land that contain the necessary infrastructure for services such as water, sewage and electricity. These sites are ready for construction of a top structure upon purchase by the beneficiary.

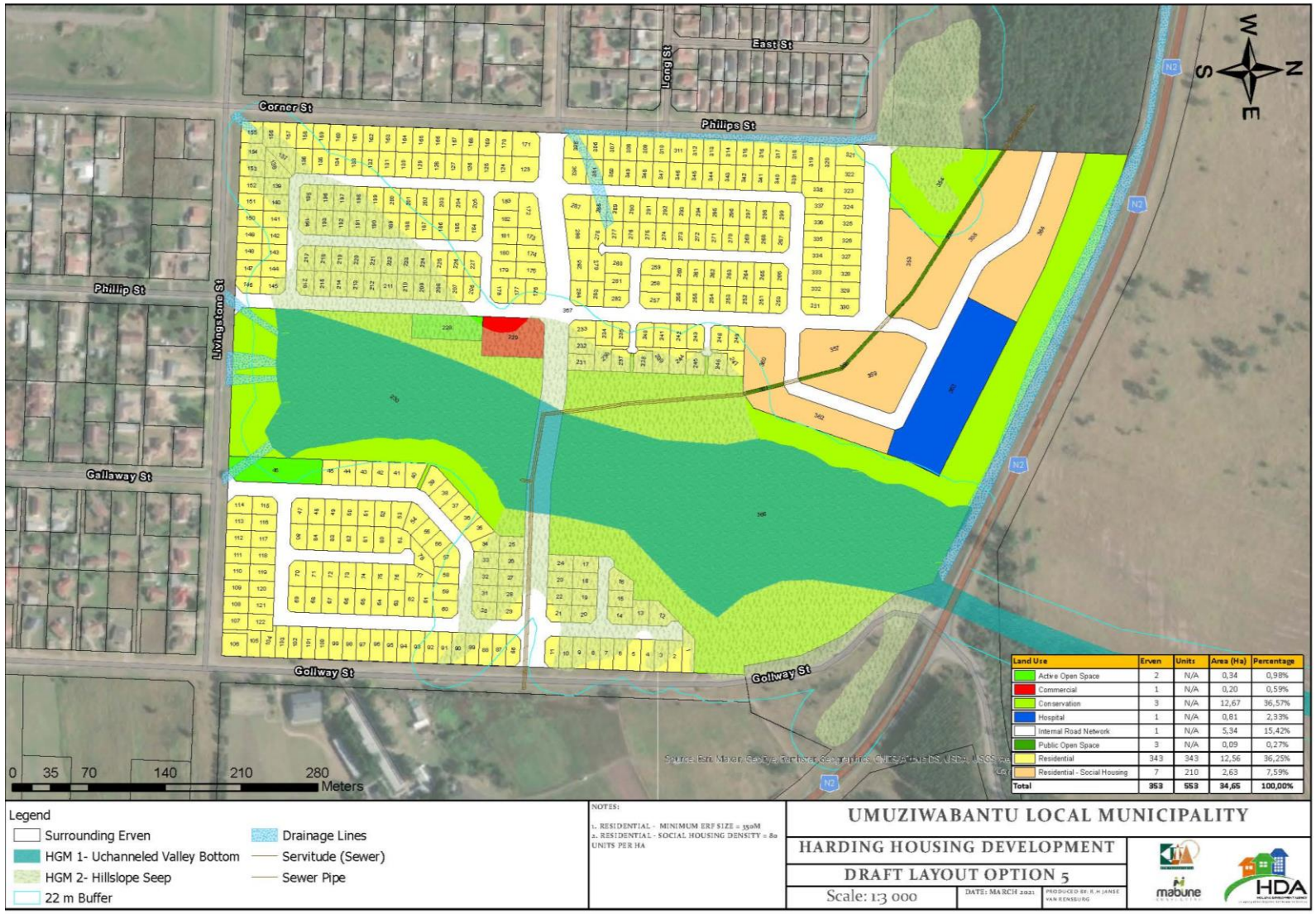
- **4 storey residential blocks with approximately 210 social housing units**
  Social housing is essentially rental housing which is intended to assist individuals who earn between R1 500 – R7 500.

- **Pipelines for the transportation of water supply and waterborne sewage** (dimensions of the pipelines will be confirmed during the EIA Process)

- **Internal roads and stormwater infrastructure** (design and specifications of infrastructure will be confirmed during the EIA Process)

- It should be noted that erven will be set aside for commercial, conservation, active and public open space as well as a hospital facility.

Figure 2.2: Preferred Draft Development Layout



2.3.3 Access to the proposed development

Head south on the N2 Highway towards Port Shepstone. Travel for approximately 109km and take exit 45 for N2/R102 towards Marburg/Kokstad/Port Shepstone. After approximately 550m turn right onto N2, travel for a further 73km and turn left onto Murchison Street. After approximately 1km turn right onto Conner Street, travel for approximately 400m and the site will be on the right.

2.3.4 Existing/Current Situation

As depicted in Figure 2.2 below, majority of the site is currently vacant and small north western portion contains tree plantations. There are wetlands located through the central portion of the site as indicated in the photos below.

Figure 2.3: Existing Situation and Surrounding Land Uses

Source: Google Earth, 2021

Photo 2.1: Overview of project area

Photo 2.2: Unchanneled valley bottom wetland

Photo 2.3: Rubbish dumping on a portion of the site

Photo 2.4: Degraded grassland within the project area

2.3.5 Project phasing and construction program

The construction of the project is scheduled to commence as soon as all the processes to comply with applicable legislation are completed.

2.4 CONSIDERATION OF ALTERNATIVES

The identification and consideration of alternatives is recognised as required practice in environmental assessment procedures globally. The 2014 EIA Regulations (as amended) requires that alternatives be considered during the EIA process. The Scoping phase therefore screens alternatives to derive a list of reasonable and feasible alternatives that needs to be assessed in further detail during the EIA phase.

Alternatives are seen as different means of meeting the general purpose and need of a proposed activity. Alternatives could include, amongst others, the following:

- Activity Alternatives: This requires a change in the nature of the proposed activity. This alternative is most appropriate at a strategic decision-making level.
- Location Alternatives: Alternative locations for the entire project proposal, or for components of the project proposal.
- Layout Alternatives: This alternative allows different spatial configurations of an activity on a specific site.
- Scheduling Alternatives: Also refer to alternative phasing options for the development. This alternative considers different phasing options during the implementation of the development.
- Infrastructure/ Input Alternatives: Also referred to as technological or equipment alternatives. This option considers various alternatives that will result in the same end result.

Layout and Infrastructure (technology) alternatives are the most pertinent to this EIA process, however all the above-mentioned alternatives are briefly explored in the subsections below as well as the alternative of maintaining the status quo, commonly known as the “no-go” option.

2.4.1 Activity alternatives

Activity alternatives refer to the consideration of alternatives requiring a change in the nature of the proposed activity to be undertaken.

Due to the high demand for formal housing within the Umuziwabantu Local Municipality, the preferred activity is to construct housing units, together with supporting facilities and infrastructure (such as water and sewerage pipelines). Should the preferred activity not be granted, the housing demand will remain high within the municipality. One alternative is to leave the site vacant, however this would not be feasible as it will leave the site vulnerable to illegal occupancy, land invasions and dumping.

2.4.2 Location alternatives

The location for the proposed Harding Township Establishment has been identified by the Umuziwabantu Local Municipality (Applicant) as it is a municipal project which is funded by the Department of Human Settlements. Furthermore, the site was identified prior to the commencement of the EIA Process and forms part of the extension of the Harding Township.

2.4.3 Layout Alternatives

The preferred draft development layout was prepared by K2M Technologies in December 2020 and is attached as **Appendix c**. Four alternative layouts (Alternative Layout 1 to 4) were considered in the this far in the EIA Process. The advantages and disadvantages of the preferred and alternative layouts are tabulated in Table 2.5 below.

Table 2.5: Advantages and Disadvantages of Preferred and Alternative Layouts

Layout	Advantages	Disadvantages
Preferred Layout (**Appendix C**)	Erven is set aside for commercial land uses.	The proposed layout entails infill of seepage areas.
	343 residential units are being proposed (FLISP and Serviced Sites).	

	The existing sewer pipeline and servitude is depicted on layout.	
	Residential (FLISP and Serviced Sites) and social housing units are proposed.	
	The area of each of the proposed land uses is included in the layout.	
	12.51 ha set aside for conservation.	
	Internal road network is better planned in terms of providing access to each erf.	
Alternative Layout 1 (**Appendix D1**)		Only one housing typology is included.
		Layout entails infill of seepage areas.
Alternative Layout 2 (**Appendix D2**)	16.19 ha is set aside for conservation land uses.	Only 493 residential units are included.
		Layout entails infill of seepage areas.
Alternative Layout 3 (**Appendix D3**)	15.64 ha set aside for conservation land uses.	Only 481 residential units are included.
		Pedestrian walkway is proposed over wetland.
		Internal road network is poorly planned in terms of providing access to each erf.
		Layout entails infill of seepage areas.
Alternative Layout 4 (**Appendix D5**)	15.68 ha set aside for conservation land uses.	Only 473 residential units are included.
		Pedestrian walkway is proposed over wetland.

		Layout entails infill of seepage areas.

2.4.4 Scheduling alternatives

The detailed time frame for implementation and completion of the proposed residential development is not currently available. However, given the housing backlog within the Umuziwabantu Local Municipality, it is anticipated that construction will commence as soon as approval of necessary statutory processes and authorizations (including environmental authorization) is obtained. No scheduling alternatives were therefore considered.

2.4.5 Input alternatives

Various types of materials can potentially be utilized during the construction phase of the project for both infrastructure and top structure purposes. This may include different material types (e.g. brick types, roof types and furnishings). Details regarding material and appearance of individual housing structures are thus not currently available during the planning phase.

2.4.6 Infrastructure alternatives

Infrastructure related alternatives will be considered during the EIR phase of the project. The subsections below summarises the various options to be considered in terms of sanitation.

2.4.6.1 Sanitation

For the purposes of this project two potential sanitation levels of services will be considered, such as:

- Onsite septic tanks, or
- Waterborne sewage system

A brief description has been provided.

Onsite Septic Tanks (Alternative Option)

The option of an onsite septic tank to treat sewage on site was considered as an option. However, the disadvantage of a septic system is that it poses the risk of ground water contamination especially at the density proposed on the draft conceptual layout plan. Furthermore, once the tank has reached the end of its life cycle the sludge needs to be pumped out or a new system needs to be constructed.

Waterborne Sewage System (Preferred Option)

Just as 'the in-home connection is viewed as the ultimate goal for water supply planners, utilities and households, the private sewer connection represents the highest level of service for household sanitation. Waste moves from the household toilet into sewers laid underground, then is discharged into a treatment facility and thereafter to the environment and classified as stream save.

The preferred option in terms of sanitation will be that of waterborne sewerage connected to a Waste Water Treatment Works.

2.4.6.2 Housing Structure

Three (3) housing typologies are considered in the proposed development as indicated in the preferred layout (**Appendix C**), that is, FLISP Housing, Serviced Sites and social housing units.

2.4.7 "No-go" alternative

The "no-go" alternative should in all instances be considered as part of the EIA process. It assumes that the activity does not proceed, implying a continuation of the current situation of status quo. Should this development not go through, the following will apply:

- The housing demand will remain the same within the municipality.
- The vacant piece of land will be left vulnerable to illegal occupation and dumping.
- Indigenous vegetation will not be removed.
- Infill of wetland seepage areas will not occur.
- No soil erosion of pollution.

2.5 MUNICIPAL SERVICES

A range of municipal services will be provided for the proposed development. These services have been briefly discussed below and will be discussed in detail during the EIR Phase. It should be noted that, services agreements will also be prepared by the engineers and entered into, between the developer and the local municipality as well as the developer and the district municipality.

2.5.1 Water Supply Infrastructure

The Ugu Local Municipality is the Water Services Authority (WSA) for the proposed development area, as well as for the Umuziwabantu Local Municipality as a whole, and is therefore responsible for providing the required water services in the area. The proposed development will be connected to the municipal sewer. As per the Umuziwabantu Municipal IDP (2019/20 Review), the Municipality is serviced by the Harding/Weza supply zone of the Ugu District Municipality and is Harding as well as other rural areas within the municipality.

2.5.2 Sanitation Infrastructure

Waterborne Sanitation Solutions

Just as 'the in-home connection is viewed as the ultimate goal for water supply planners, utilities and households, the private sewer connection represents the highest level of service for household sanitation. Waste moves from the household toilet into sewers laid underground, then is discharged into a treatment facility and thereafter to the environment and classified as stream save. Convenient, private, with a high degree of user satisfaction, conventional household sewer connections are also costly and require substantial volumes of water for proper use (approximately 6 - 15 litres per flush).

2.5.3 Roads and Stormwater

2.5.3.1 Roads

The Umuziwabantu Local Municipality is responsible for the planning, upgrading, operating and maintenance of all local roads within Harding.

2.5.3.2 Stormwater

Only once the road surface type has been confirmed a full stormwater analysis will be undertaken in order to determine the type of stormwater management systems to be used. The use of street surface drainage will be accommodated as far as possible. Once the maximum allowable street surface drainage capacity is reached, the stormwater will be diverted by means channels and/or below ground stormwater pipes which will be routed to the nearest wetland area or stream / river. It should be noted that all stormwater will be attenuated before entering the wetland, river or stream.

Even though stormwater management and control systems have a huge budgetary impact on developments, it is nevertheless very important to dispose of stormwater as effectively and efficiently as possible, as uncontrolled runoff can cause damage to property and may erode and destabilize cut and fill banks. The objectives of the stormwater management system should be as follows:

- To adequately dispose of runoff from developed areas without causing soil saturation or erosion. This is particularly important on any sites underlain by erodible soils and on steep slopes;
- To provide overland flow routes through the development in order to cater for major storms and thereby minimizing any risk of damage to property and other immovable assets;
- Stormwater systems should be designed to function adequately with low maintenance in the long term, and should cater for silting, etc.

A Stormwater Management Plan will be undertaken and included as part of the EIR.

2.5.4 Electricity

The provision of any future electricity supply, area lighting and metered reticulation to the proposed housing development will rest with Eskom and the Ugu District Municipality who are the Services Authorities responsible for the planning, supply and network distribution for the area.

2.5.5 Solid Waste Removal

The Umuziwabantu Local Municipality is the services authority responsible for the planning and operationalization of a functional solid waste removal and disposal system/service within Harding.

Depending on circumstances at the time when the services will be required, the Local Authority may consider sub-contracting the collection and removal of solid waste out to a private Contractor.

2.6 PROJECT PHASING AND CONSTRUCTION PROGRAM

The construction of the project is scheduled to commence as soon as all the processes to comply with applicable legislation are completed and will be undertaken in one phase.

2.7 NEED AND DESIRABILTY

The implementation of the housing development will assist in reducing the housing backlog within the municipality as well mitigate the establishment of potential informal settlements. Table 2.4 below was adapted from the 2014 BAR Template of the Department of Environmental Affairs. This table was inserted to motivate for the need and desirability of the proposed development.

Table 2.6: Needs and Desirability

1. Is the activity permitted in terms of the property's existing land use rights?	YES	
The proposed development is permitted in terms of the existing land use rights as majority of the properties making up the project area are zoned as residential.		
2. Will the activity be in line with the following?		
(a) Provincial Spatial Development Framework (PSDF)	YES	
The proposed development addresses two spatial principles, namely the Principal of Sustainable Communities and the Principal of Spatial Concentration. The proposed development will provide FLISP, Serviced sites and social housing units which will include municipal services such as water and sanitation.		
(b) Urban edge / Edge of Built environment for the area	YES	
The proposed development will take place adjacent to the existing Harding Township. One of the aims of the housing development is to expand and regenerate the Harding Township.		
(c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).	YES	
Addressing the existing housing backlog by the provision of low-income housing is identified as a key objective of the Municipal IDP. The Municipal SDF has identified areas within the township of Harding for densification in order to allow for a greater variety housing options.		

(d) Approved Structure Plan of the Municipality	To be determined	
(e) An Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)		NO
As per the Ugu District EMF, 2018, Harding has been identified within the Urban EMZ which is aligned to the proposed development. Furthermore, specialist studies such as the Biodiversity Assessment, Wetland Assessment have been undertaken and is included in the Scoping Report. The findings from these reports have been considered in the preferred layout.		
(f) Any other Plans (e.g. Guide Plan)		NO
3. Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?	YES	
Please see above (2c).		
4. Does the community/area need the activity and the associated land use concerned (is it a societal priority)?	YES	
The implementation of the housing development will assist in reducing the establishment of informal settlements and housing backlog within the municipality. The proposed development will also include the construction of water networks and proper sanitation infrastructure.		
5. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development?		NO
The site is currently vacant and will need to be provided with adequate services. This will be assessed as part of the Engineering Services Report and will be addressed in the EIR.		
6. Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)?	YES	
The proposed development has been identified in the Municipal IDP.		
7. Is this project part of a national programme to address an issue of national concern or importance?	YES	
Throughout the country, there are many people who lack proper housing structures and access to basic services. The aim of this development is therefore to reduce the establishments of informal settlements and construct houses that can be utilised by low and middle income earners.		
8. Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)	YES	
Majority of the land for the proposed development is vacant. All environmentally sensitive areas are demarcated and included into the layout. Furthermore, the proposed development will be adjacent to existing Harding Township.		

9. Will the benefits of the proposed land use/development outweigh the negative impacts of it?	YES	
The purpose of this development is to address the municipality's housing backlog and need for more houses due to the expanding population and urbanisation.		
10. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?	YES	
There are many other proposed housing developments in the municipality.		
11. Will any person's rights be negatively affected by the proposed activity/ies?		NO
This development will not infringe on any person's rights, as the proposed development will entail the construction of FLISP, serviced sites and social residential units.		
12. What will the benefits be to society in general and to the local communities?		
• Access to municipal services such as water and sanitation. • Provision of formal housings to suitable beneficiaries. • Optimal development of the site. • Provision of health care facilities (hospital). • Job creation during the construction phase • Prevent illegal occupation of the land which will affect the surrounding communities • Prevention of illegal dumping		

3 SITUATION ASSESSMENT OF PROJECT AREA AND AFFECTED ENVIRONMENT

3.1 SURROUNDING LAND USE

As depicted in Figure 3.2 below, majority of the site is currently vacant and small north western portion contains tree plantations. In terms of surrounding land uses, formal residential units are located to the west and south of the site; the N2 Highway borders the site to the north and to the east of the project area, two schools are located, namely Harding Special School and Sehole High School.

Figure 3.1: Surrounding Land Use

Source: Google, 2021

3.1.1 Road Network

Map 3.2 below, provides an illustration of the existing road network within the project area.

3.1.1.1 National Roads

There are no National Roads that have been proclaimed through the project area however, the National Road N2-21 forms the northern boundary of the project area.

3.1.1.2 Provincial Roads

There are no Provincial Roads that have been proclaimed through the project area.

3.1.1.3 District Roads

There are no District Roads that have been proclaimed through the project area.

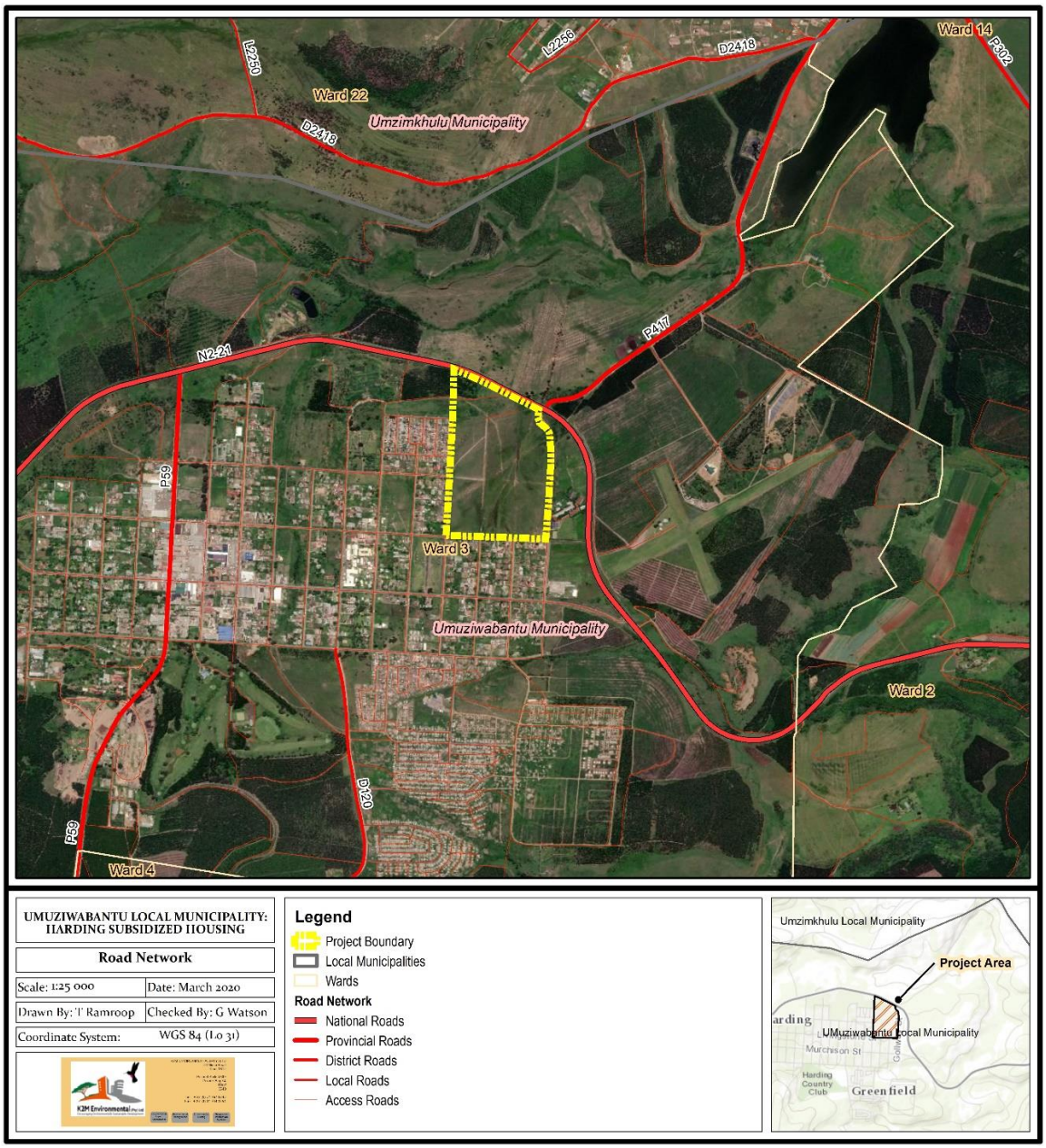
3.1.1.4 Numbered Local Access Roads

There are no numbered local access roads that have been proclaimed through the project area.

3.1.1.5 Unnumbered Local Access Roads

There is two unnumbered access road that has been proclaimed through the project area.

Map 3.1: Road Network



Source: Department of Transport

3.2 BIOPHYSICAL ENVIRONMENT

3.2.1 Wetland Assessment

A Wetland Assessment was undertaken in April 2020 by the Biodiversity Company and is attached as **Appendix E**.

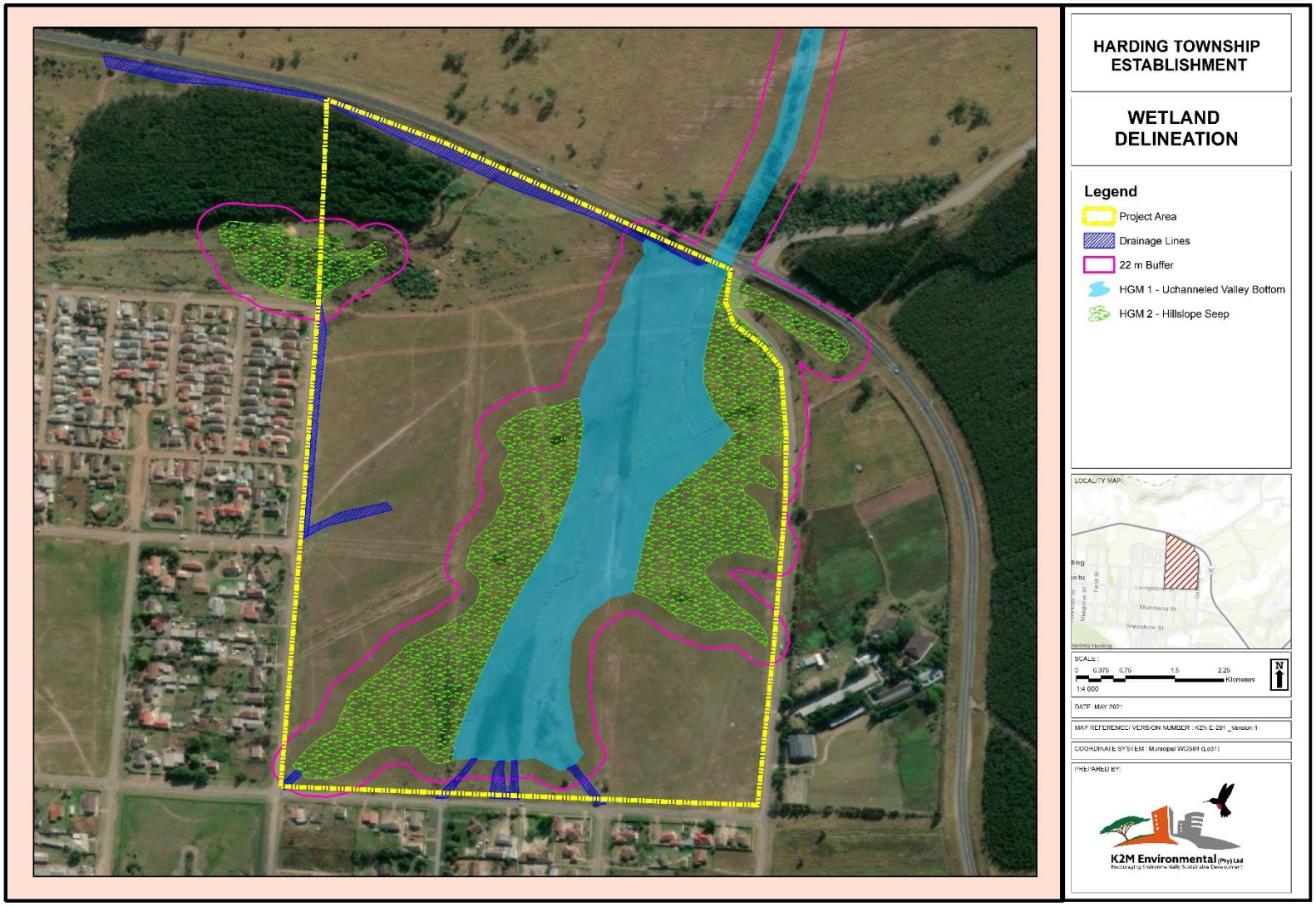
3.2.1.1 Wetland Delineation and Description

The wetland areas were delineated in accordance with the DWAF (2005) guidelines. Two wetland types were identified within the 500 m regulated area, namely:

- an unchanneled valley bottom (HGM 1) and
- a hillslope seep (HGM 2)

In addition to these systems, various artificial drainage lines have been identified throughout the project area. These drainage lines feed the majority of these wetlands, which emphasises the anthropogenic component of the delineated wetlands. HGM 1 is predominantly fed by stormwater inputs south of the project area. This system flows north, crosses underneath the N2 road and is then channelled into a narrow artificially straightened system. HGM 1 also is fed by hillslope seep (HGM 2), which in turn is predominantly also fed by stormwater inputs. Map 3.2 illustrates the location and extent of these wetlands.

Map 3.2: Wetland Delineation



3.2.1.2 Ecological Function Assessment

The ecosystem services provided by the wetland units identified on site were assessed and rated using the WET-EcoServices method (Kotze et al., 2008). The summarised results for the delineated wetlands are illustrated in Table 3.1. Both HGM units have been scored "Intermediate" average ecosystem service scores.

"High" and "Very High" scores are attributed to indirect benefits concerning the assimilation of contaminants. The surrounding community contributes to pollutants nitrates, phosphates and many other toxicants) entering the streets, which in turn is channelled into the delineated wetlands by means of stormwater systems. These wetlands therefore play an integral role in cleaning stormwater before contaminants enter.

Table 3.1: The ecosystem services being provided by the HGM type

Wetland Unit					HGM 1	HGM 2
Ecosystem Services Supplied by Wetlands	Indirect Benefits	Regulating and supporting benefits	Flood attenuation		2.0	2.0
			Streamflow regulation		2.3	2.0
			Water Quality enhancement benefits	Sediment trapping	2.7	2.3
				Phosphate assimilation	2.8	3.0
				Nitrate assimilation	3.1	3.2
				Toxicant assimilation	2.9	2.9
				Erosion control	1.9	2.2
			Carbon storage		1.3	1.7
	Direct Benefits	**Biodiversity maintenance**			0.9	1.1
		Provisioning benefits	Provisioning of water for human use		0.9	0.7
			Provisioning of harvestable resources		0.0	0.0
			Provisioning of cultivated foods		0.0	0.0
		Cultural benefits	Cultural heritage		0.0	0.0
			Tourism and recreation		0.4	0.4
			Education and research		1.8	1.3
Average Eco Services Score					1.5	1.5

Source: Wetland Assessment Report, 2020

3.2.1.3 The Ecological Health Assessment

The Hydrology of HGM 1 and 2 have been scored "Critically Modified" and "Seriously Modified", predominantly due to the increase in flows from stormwater inputs. It is expected that approximately 80-90% of HGM 1 and 60-70% of HGM 2 is fed by stormwater inputs. Difficulties do exist in distinguishing between naturally fed and artificially fed hillslope seeps, due to the fact that these systems are fed by means of sub-surface flows (which could originate from stormwater inputs).

The Geomorphology of HGM 1 and 2 have been determined to be "Moderately Modified" and "Natural" respectively. HGM 2's geomorphology has not been affected by any components that have not already been taken into consideration during the hydrology modification scores. As for HGM 1, various drains/gullies that are artificial have been identified during the site assessment, with evidence of extensive erosion throughout.

The Vegetation aspect of the delineated wetlands have been affected by erosion and grazing, which effects fragile indigenous species within delineated wetlands.

The overall wetland health for HGM 1 and 2 have been scored "Seriously Modified" and "Moderately Modified" respectively. This indicates a much higher level of disturbances for HGM 1 due to the magnitude of artificial/stormwater inputs. The PES for the assessed HGM types is provided in Table 3.2 below.

Table 3.2: Summary of the scores for the wetland PES

Wetland	Hydrology		Geomorphology		Vegetation		Overall PES	
	Rating	Score	Rating	Score	Rating	Score	Rating	Score
HGM 1	Critically Modified	10	Moderately Modified	2.7	Largely Modified	4.3	Seriously Modified	6.4
HGM 2	Seriously Modified	6.5	Unmodified/Natural	0.9	Moderately Modified	2.5	Moderately Modified	3.7

Source: Wetland Assessment Report, 2020

3.2.1.4 The Ecological Importance and Sensitivity Assessment

The wetland EIS assessment was applied to the HGM units described in the previous section in order to assess the levels of sensitivity and ecological importance of the wetland. The results of the assessment are shown in Table 3.3.

Table 3.3: The EIS results for the delineated HGM type

Metric	HGM 1	HGM 2
Ecological importance and sensitivity	1.8	1.2
Hydrological/functional importance	2.4	2.4
Direct human benefits	0.5	0.4

Source: Wetland Assessment Report, 2020

The Ecological Importance and Sensitivity has been scored "Moderate" for both HGM units predominantly due to the fact that the vegetation type (Dry Coastal Hinterland) has a conservation status of "Vulnerable". The Hydrological/Functional Importance refers to the ability of a wetland to indirectly provide the surrounding environment of services and the importance of such functions. The hydrological/functional importance for both HGM units has been scored "High". The following ecosystem services contribute to the level of hydrological/functional importance for the respective HGM units;

- Streamflow regulation;
- Sediment trapping;
- Phosphate assimilation;
- Nitrate assimilation;
- Toxicant assimilation; and
- Erosion control.

The Direct Human Benefits have been scored "Low" for both HGM units. This level of score illustrates the lack of provisioning to the surrounding community.

3.2.1.5 Buffer Requirements

The "Preliminary Guideline for the Determination of Buffer Zones for Rivers, Wetlands and Estuaries" (Macfarlane et al., 2014) was used to determine the appropriate buffer zone for the proposed activity. A pre-mitigation buffer zone of 33 m is recommended for the identified wetland, which can be decreased to 22 m with the addition of all prescribed mitigation measures.

3.2.1.6 Potential Impacts Anticipated

In the event that adherence to the buffer zones is not feasible in regard to the economics of the residential development, it is recommended that the third and fourth step of the mitigation hierarchy be combined to carry out wetland offsets in the form of on-site rehabilitation. This should include rectifying the stormwater inputs and redirecting these inputs by means of a stormwater plan. This phenomenon will decrease the extent of the wetlands and improve the integrity of the wetlands significantly. In the event that the extent of wetlands decreases, another wetland assessment could be carried out 2 years after the construction of the stormwater management system. The proposed development may be expanded depending the relevant wetland assessment's conclusions if delineated wetlands are found to be significantly smaller.

3.2.1.7 Mitigation Measures

- The contractors used for the construction should have spill kits available prior to construction to ensure that any fuel, oil or hazardous substance spills are cleaned-up and discarded correctly;
- It is deemed important that the all wetland areas be demarcated as sensitive areas, and no construction activity, laydown yards, camps or dumping of construction material are to be permitted within the sensitive zones (where possible);
- During construction activities, all rubble generated must be removed from the site;
- The first 300 mm of soil must be stockpiled separate from the soil excavated deeper than 300 mm;
- Construction vehicles and machinery must make use of existing access routes as much as possible, before adjacent areas are considered for access;
- All chemicals and toxicants to be used for the construction must be stored outside the channel system and in a bunded area;
- All machinery and equipment should be inspected regularly for faults and possible leaks, these should be serviced off-site;
- All contractors and employees should undergo induction which is to include a component of environmental awareness. The induction is to include aspects such as the need to avoid littering, the reporting and cleaning of spills and leaks and general good "housekeeping";
- Adequate sanitary facilities and ablutions on the servitude must be provided for all personnel throughout the project area. Use of these facilities must be enforced (these facilities must be kept clean so that they are a desired alternative to the surrounding vegetation);

- All removed soil and material must not be stockpiled within the system. All stockpiles must be protected from erosion, stored on flat areas where run-off will be minimised, and be surrounded by bunds;
- Any exposed earth should be rehabilitated promptly by planting suitable vegetation (vigorous indigenous grasses) to protect the exposed soil;
- No dumping of construction material on site may take place;
- All waste generated on site during construction must be adequately managed. Separation and recycling of different waste materials should be supported;
- The boundary of the wetland buffer that encroach into the proposed development footprint must be made visible to those individuals making use of the proposed development. This can be done by erecting signs along the wetland buffer bordering against the proposed footprint area to ensure that unwanted activities do not take place within this area. The signs will indicate the extent of the no-go area while allowing humans and animals to still make use of the wetland; and
- Signs erected along the indicated buffer zone must warn individuals against unwanted anthropogenic activities, including dumping, construction and laydown yards during the operational phase. Recreational activities can still be permitted within this area (i.e. walks, having picnics etc.). Key activities that should be disallowed within this zone includes swimming, harvesting plants and consuming water from the wetland.
- In the event that the buffer zones cannot be adhered to, a wetland offset strategy must be compiled focussing on on-site rehabilitation by means of diverting stormwater with a stormwater management plan.

3.2.2 Biodiversity Assessment

A Biodiversity Assessment was undertaken in was undertaken in April 2020 by the Biodiversity Company and is attached as **Appendix E**.

3.2.2.1 Ecosystem Threat Status

The Ecosystem Threat Status is an indicator of an ecosystem's wellbeing, based on the level of change in structure, function or composition. According to the spatial dataset the proposed development is located within a Vulnerable (VU) ecosystem.

3.2.2.2 Ecosystem Project Level

Indicator of the extent to which ecosystems are adequately protected or under-protected. The proposed development is located within a Not Protected (NP) ecosystem.

3.2.2.3 Protected Areas

A "protected area" means a protected area referred to in section 9 of the National Environmental Management: Protected Areas Act (a) where the management of such area was assigned to the Province in terms of section 38 of the National Environmental management: Protected Areas Act; or (b) declared by the MEC as a nature reserve or protected environment in terms of this Act or in terms of section 23 of the National Environmental Management: Protected Areas Act.

According to the protected area spatial datasets from EKZNW, the proposed development does not occur within any protected area and is approximately 30 km from the nearest formally protected area, the Oribi Gorge Nature Reserve.

3.2.2.4 Critical Biodiversity Areas

Critical Biodiversity Areas (CBAs) are natural or near-natural features, habitats or landscapes that include terrestrial, aquatic and marine areas that are considered critical for:

- meeting national and provincial biodiversity targets and thresholds;
- safeguarding areas required to ensure the persistence and functioning of species and ecosystems, including the delivery of ecosystem services; and/or
- conserving important locations for biodiversity features or rare species.

Conservation of these areas is crucial, in that if these areas are not maintained in a natural or near-natural state, biodiversity conservation targets cannot be met. The proposed development is not located within a CBA, albeit there are CBAs within 1.5 km of the proposed development area.

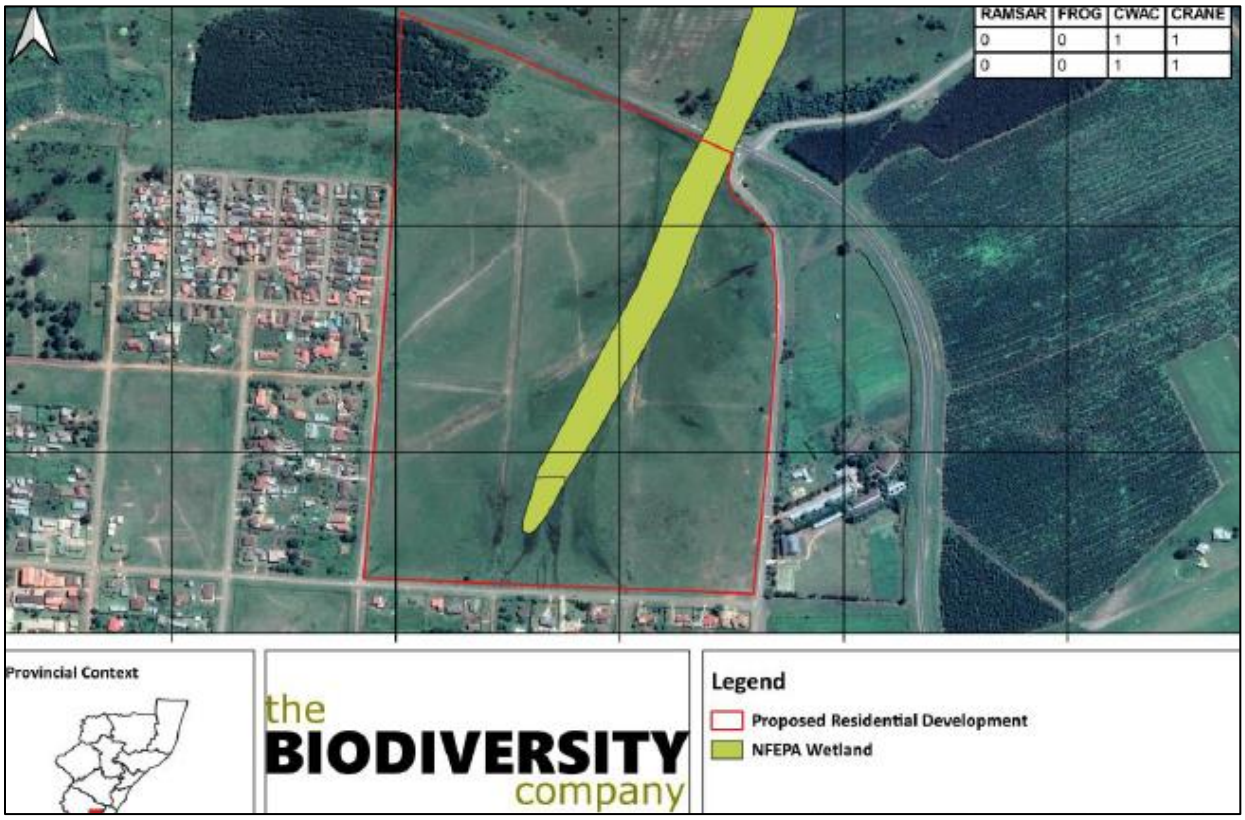
3.2.2.5 Important Birds and Biodiversity Areas

Important Bird and Biodiversity Area (IBAs) are places of international significance for the conservation of birds and other biodiversity. The proposed development is not located within an IBA and is located approximately 6 km from the nearest IBA, KwaZulu-Natal Midlands Mistbelt Grassland.

3.2.2.6 National Freshwater Ecosystem Priority Areas (NEPAs)

The National Freshwater Ecosystem Priority Areas (NFEPAs) provides strategic spatial priorities for conserving the country's freshwater ecosystems and associated biodiversity as well as supporting sustainable use of water resources. The proposed development overlaps with NFEPA wetlands (Figure 3.2).

Figure 3.2: National Freshwater Ecosystem Priority Area wetlands



Source: Biodiversity Assessment Report, 2020

3.2.2.7 Vegetation Type

The project area is situated within the grassland biome. Major macroclimatic traits that characterise the grassland biome include seasonal precipitation and the minimum temperatures in winter. The topography is mainly flat and rolling but includes the escarpment itself. Specifically, the project area is situated across two vegetation types; Dry Coast Hinterland Grassland and the azonal Highveld Alluvial Vegetation.

3.2.2.8 Indigenous Flora

The indigenous flora species richness was relatively low within the assessment area, with only 29 species of indigenous flora recorded. None of the species recorded were threatened, albeit a single species, *Kniphofia uvaria*, is protected under the KwaZulu-Natal Nature Conservation Ordinance (Ordinance 15 of 1974).

3.2.2.9 Invasive Alien Plants (IAPs)

Twelve (12) species of Invasive Alien Plants were recorded within the assessment area with seven (7) categorised as Category 1b, and must therefore be removed and controlled by implementing an alien invasive plant management programme in compliance with section 75 of the National Environmental Management: Biodiversity Act (NEMBA).

3.2.2.10 Faunal Assessment

3.2.2.10.1 Herpetofauna (Reptiles and Amphibians)

Overall, herpetofauna diversity in the project area was considered depauperate, with only a single species being recorded during the survey based on either direct observation or the presence of visual tracks and signs.

3.2.2.10.2 Avifauna

Avifauna diversity within the assessment was regarded as extremely low as only two (2) species were recorded in the assessment area during the field survey.

3.2.2.10.3 Mammals

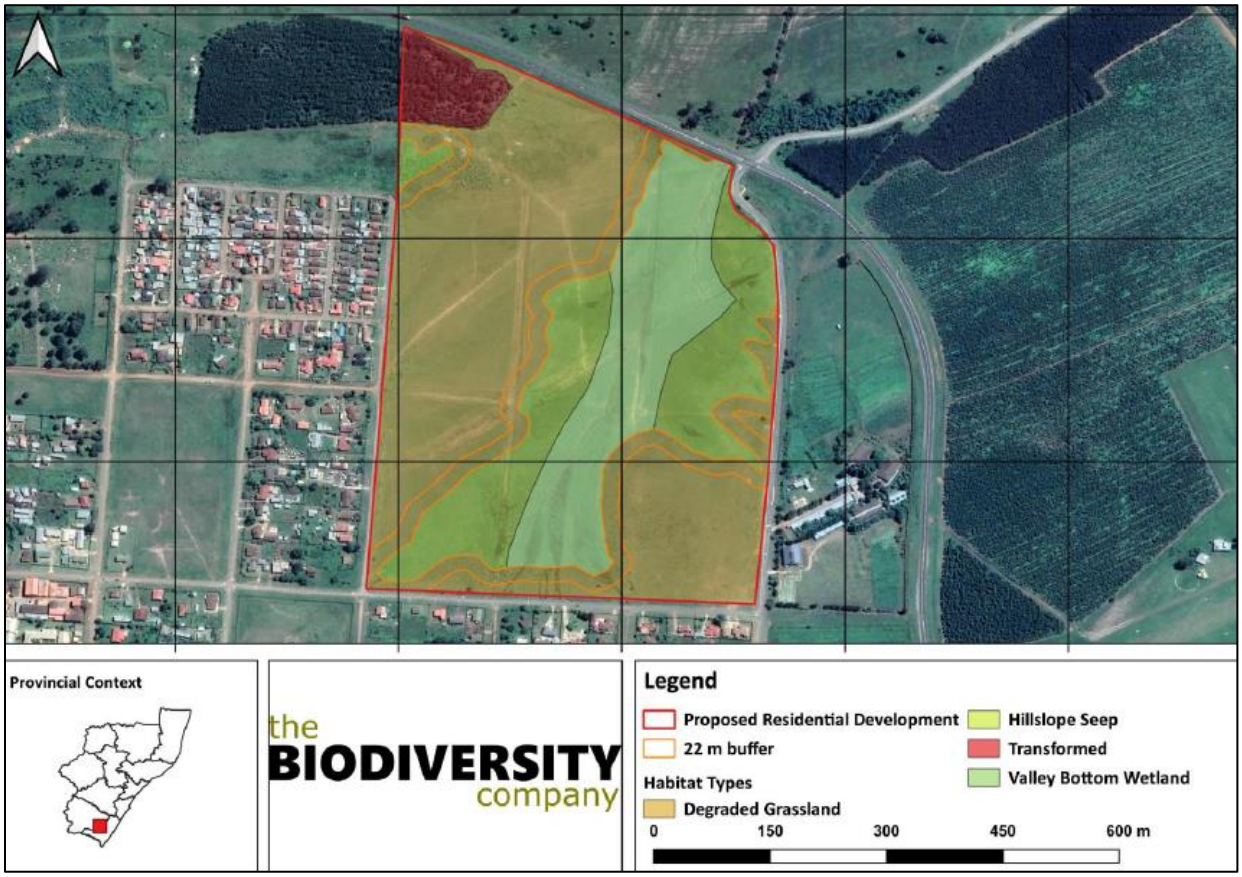
Overall, mammal diversity in the project area was considered depauperate, with no mammal species being recorded during the survey based on either direct observation or the presence of visual tracks and signs.

3.2.2.11 Habitat Types and Sensitivity

The different habitat types within the assessment area were delineated and a sensitivity rating was applied to each habitat type. Areas that were classified as having low sensitivities are those areas which were deemed by the specialists to have been most impacted upon and/or were substantially modified from their original condition due to factors such as human activity and/or presence of alien invasive species. Habitats with a high sensitivity are those, that if altered, would have a considerable negative influence on local biodiversity.

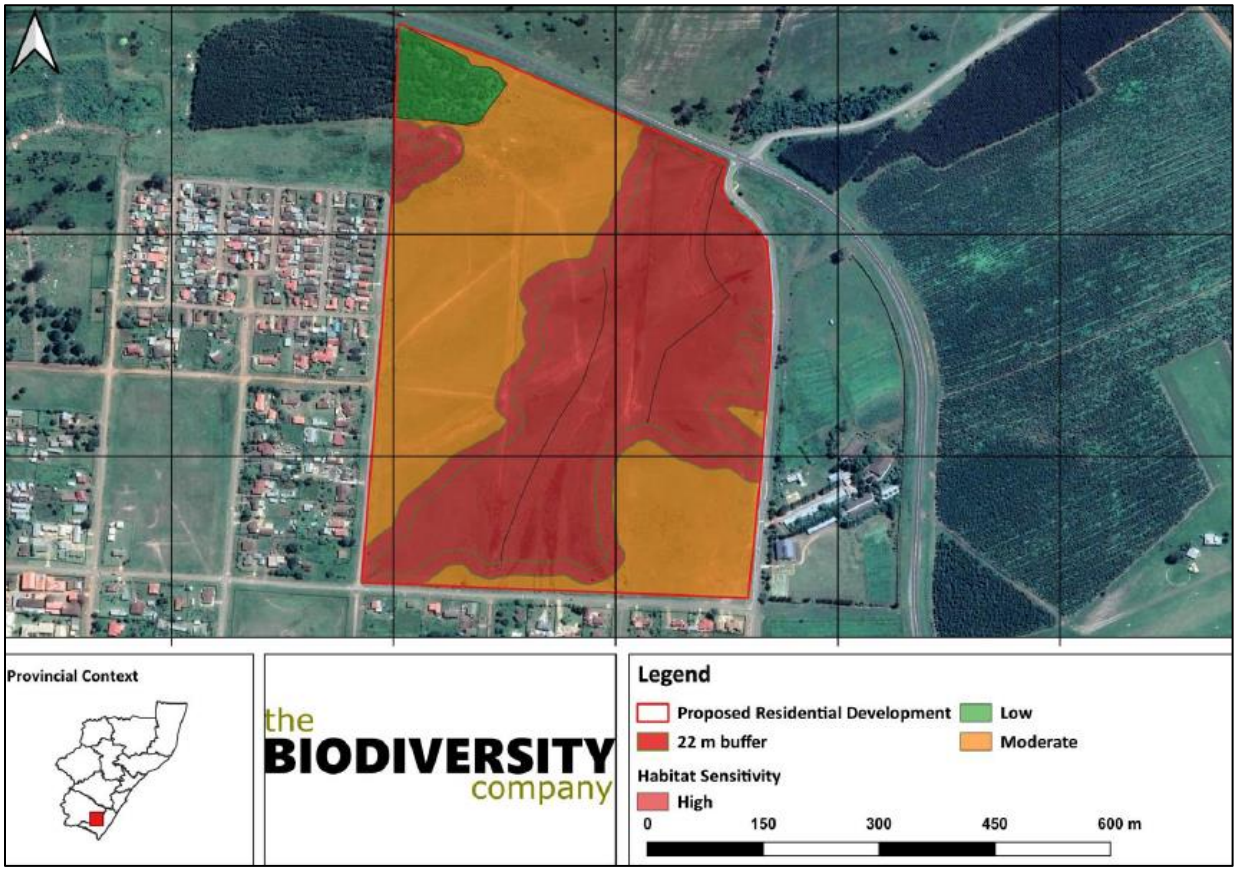
Four (4) different habitat types were delineated within the assessment area, and comprised of hillslope seep, unchannelled valley bottom wetland, degraded grassland and transformed. The unchanneled valley bottom wetland was unique within the assessment and consisted of flora species disparate to the other habitat types. The dominant flora species within this habitat type included *Juncus effusus, Setaria sphacelata, Commelina benghalensis* and *Persicaria serrulata*. It is important to note that, *Kniphofia uvaria*, was limited to this habitat and this local population is currently threatened by the invasive *Sesbania punicea*. Additional invasive species within this habitat include *Centella asiatica* and *Oenotheria rosea*. This habitat type was regarded as possessing high sensitivity, due to the ecosystem services that wetlands provide as well as the presence of protected hydrophytes.

Figure 3.3: Habitat types within the project area



Source: Biodiversity Assessment Report, 2020

Figure 3.4: Sensitivity of delineated habitats



Source: Biodiversity Assessment Report, 2020

The hillslope sleeps and degraded grassland were similar in their floral species composition. *Trinervitermes sp. (Isoptera)* mounds were important ecological features within the grassland habitat. The hillslope seeps were regarded as possessing 'high' sensitivity due to the hydrological links to the valley bottom wetland, whereas the degraded grassland habitat was regarded as possessing 'moderate' sensitivity, due to its degraded nature. It was not regarded as possessing 'low' sensitivity due to the presence of Trinervitermes sp., as they are important for maintaining soil processes and provide a valuable food source for higher trophic organisms. In addition, their mounds provide important micro-habitats for an array of herpetofauna. However, the grassland that is located within the assigned 22 m wetland buffer zone, was regarded as possessing a high level of sensitivity because any anthropogenic activity within the buffer will have considerable negative impacts to the associated wetlands. The transformed habitat comprised of a stand of the invasive *Acacia mearnsii*, and therefore was considered as possessing 'low' sensitivity.

As aforementioned, the biodiversity survey included actively searching for Formicidae within the assessment in order to inform on the ecological state of the habitats, as they are reliable indicators of vegetation or habitat condition. Only two species of Formicidae were recorded within the assessment area. Both of these species are widespread and tolerant of habitat degradation via anthropogenic influences. The relatively low species richness and the dominance of the community by tolerant species, denotes that the vegetation within the assessment area is in a degraded state.

3.2.2.12 Mitigation Measures

- It is recommended that areas to be developed be specifically demarcated so that during the construction phase and operational phase, only the demarcated areas be impacted upon. All work areas, offices, and access roads must be clearly demarcated from surrounding sensitive areas All areas outside of the demarcated areas should be declared a 'no-go' area during the construction phase and all efforts must be made to prevent access to this area from construction workers and machinery.
- These must be designated as 'open-spaces' during the operational phase but it is imperative to inform the residents on the importance of these no-go areas and the valid uses and restrictions of them.
- All dumping of waste material, especially bricks and contaminated materials or soils, into the environment must be prevented. Solid waste is to be disposed legally off-site in the relevant waste disposal manner.
- Dust-reducing mitigation measures must be put in place and must be strictly adhered to. This includes wetting of exposed soft soil surfaces and not conducting activities on windy days which will increase the likelihood of dust being generated.
- Any topsoil that is removed during construction must be appropriately removed and stored. This includes on-going maintenance of such topsoil piles so that they can be utilised for re-vegetation purposes when necessary.
- Implementation of an alien vegetation management plan for the site is required. This is especially in areas that are cleared of vegetation and left exposed. Upon completion of construction any exposed areas must be re-vegetated with local indigenous plants to prevent IAP encroachment.
- Construction activities and vehicles could cause spillages of lubricants, fuels and waste material potentially negatively affecting the functioning of the ecosystem. All vehicles and equipment must be maintained, and all re-fuelling and servicing of equipment is to take place in demarcated areas outside of the project area.

- Any possible contamination of topsoil by hydrocarbons, concrete or concrete water must be avoided and an emergency spill kit must always be available on site.
- Materials must be stored in leak-proof, sealable containers or packaging.
- No storage of vehicles or equipment will be allowed outside of the designated area.
- Drip trays or any form of oil absorbent material must be placed underneath vehicles/machinery and equipment when not in use.
- No servicing of equipment on site unless absolutely necessary.
- Leaking equipment shall be repaired immediately or be removed from site to facilitate repair.
- Have action plans on site, and training for contactors and employees in the event of sewage spills, leaks and other impacts to the surrounding environment.
- A specialist Contractor shall be used for the bio-remediation of contaminated soil where the required remediation material and expertise is not available on site.
- A qualified environmental control officer must be on site when construction begins to identify species that will be directly disturbed and to relocate fauna that is found during construction.
- If any faunal species are recorded during construction, activities should temporarily cease, and an appropriate specialist should be consulted to identify the correct course of action. This is applicable to all species, especially smaller species such as rodents, reptiles and amphibians.
- Staff should be educated about the sensitivity of faunal species and measures should be put in place to deal with any species that are encountered during the construction process. The intentional killing of any animals including snakes, lizards, birds or other animals should be strictly prohibited.
- Any open trenches that are left open for more than two hours, should have at least one end that is sloped/tapered, in order to allow animals that fall in, to escape. If this is not possible, then branches should be placed inside the trenches to allow small animals to climb out of the trenches.
- It is imperative that suitable solid waste disposal facilities be available for the housing development during the operational phase as the lack of such facilities will lead to rubbish dumping, thereby leading to an increase in pest species and associated health hazards.
- Bird flaps/markers must be installed on any telephone or electric cables to prevent any bird collisions. This is particularly pertinent to movement to and from the valley-bottom wetland.

3.2.3 Geology and Subsoil conditions

A Preliminary Geotechnical Report will be undertaken for the proposed Harding Township Establishment. A copy of the report will be included as part of the Environmental Impact Report.

3.2.4 Mineral Deposits

No known mineral deposits were identified within the project area.

3.2.5 Agricultural Potential

According to the Agricultural Land Potential Categories External Report, agricultural potential refers to, the potential of the land to produce sustainably over a long period without degradation to the natural resources base. This includes land under production for cultivation purposes (arable land) and for grazing purposes.

As indicated in Table 3.2 and Map 5.6, 93.14% of the project area is categorised as "Category B: High Agricultural Potential Land". Land within Category B has the potential to be used sustainably, with few limitations to agricultural production (Collett and Mitchell, 2013). Land use will be restricted to those in support of primary agricultural production. Examples include agricultural infrastructure such as storage sheds, silos, hay barns, water reservoirs, collection and storage of agricultural waste and on-farm composting facilities (Collett and Mitchell, 2013).

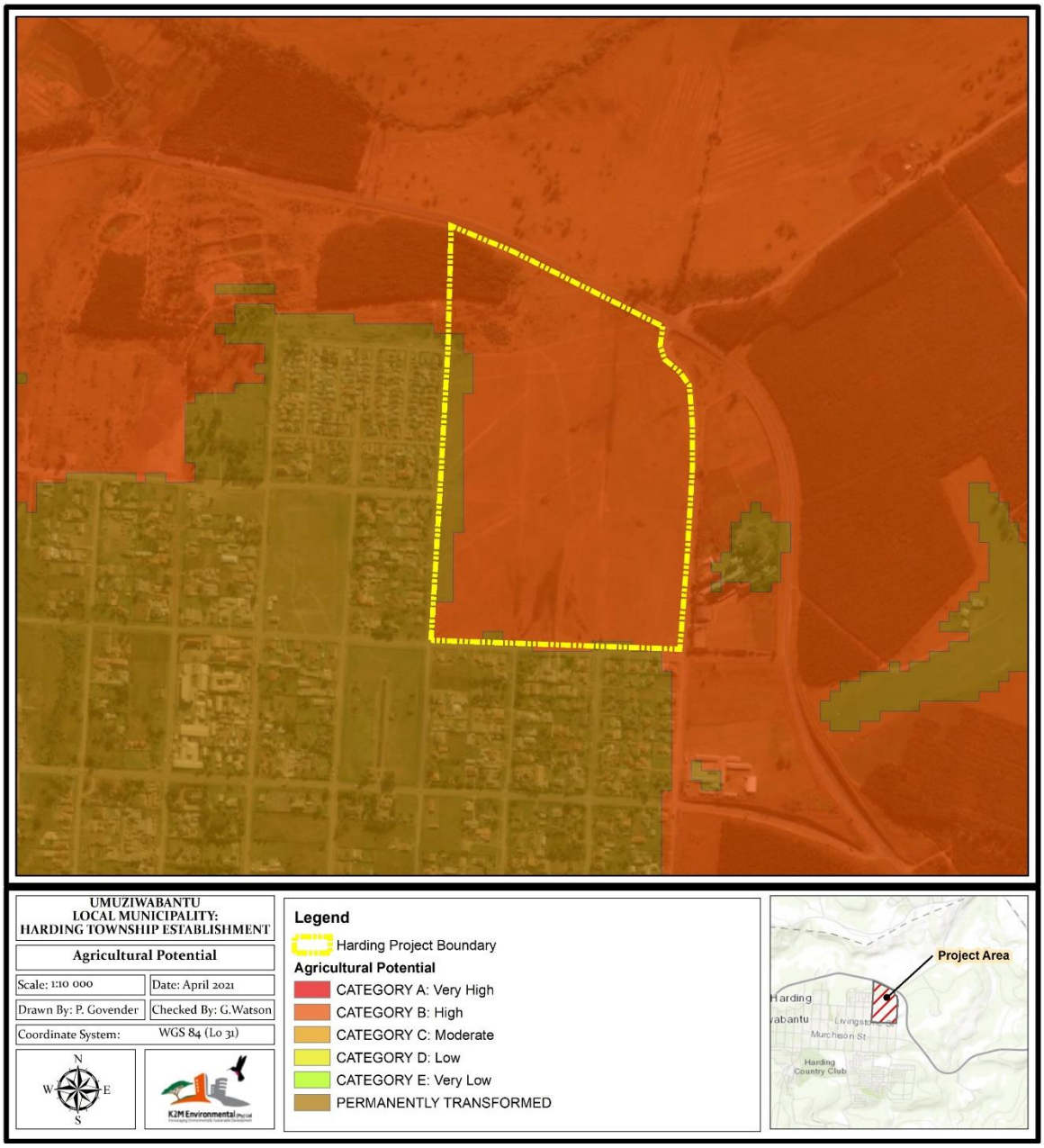
Approximately 6.86% of the project area is demarcated as "Permanently Transformed". Areas that are demarcated as "Permanently Transformed", applies to land that has been converted irreversibly to non-agricultural land uses. This includes urban/built up areas, roads, mines and quarries and which can therefore no longer be utilized for agricultural production purposes. This Category will also require regular updates due to on-going non-agricultural development. This may also include previously mined areas which are polluted and/or degraded to the point that safe utilization of the land for food production is not possible (Collett and Mitchell, 2013).

Table 3.4 Agricultural Potential

Agricultural Potential	Area (Ha)	Percentage of Total Area
Category B: High	33.67	93.14%
Permanently Transformed	2.48	6.86%
Total Area	**36.15**	**100.00%**

Source: Department of Agriculture and Rural Development

Map 3.3: Agricultural Potential



3.2.6 Archaeological Interest

No detailed information is currently available on existing archaeological, historical or cultural sites within the boundaries of the study area. The KwaZulu-Natal Heritage Act requires that Amafa aKwaZulu-Natali (Heritage KwaZulu-Natal) is to comment on the need for an archaeological assessment for proposed development if:

- Development area is larger than 10 000 m²
- Development is longer than 300m
- The development area contains known archaeological sites.

A copy of the Scoping Report will be submitted to AMAFA for their comment. The comments received from AMAFA will be included as part of the Environmental Impact Report together with the Heritage Impact Assessment Report.

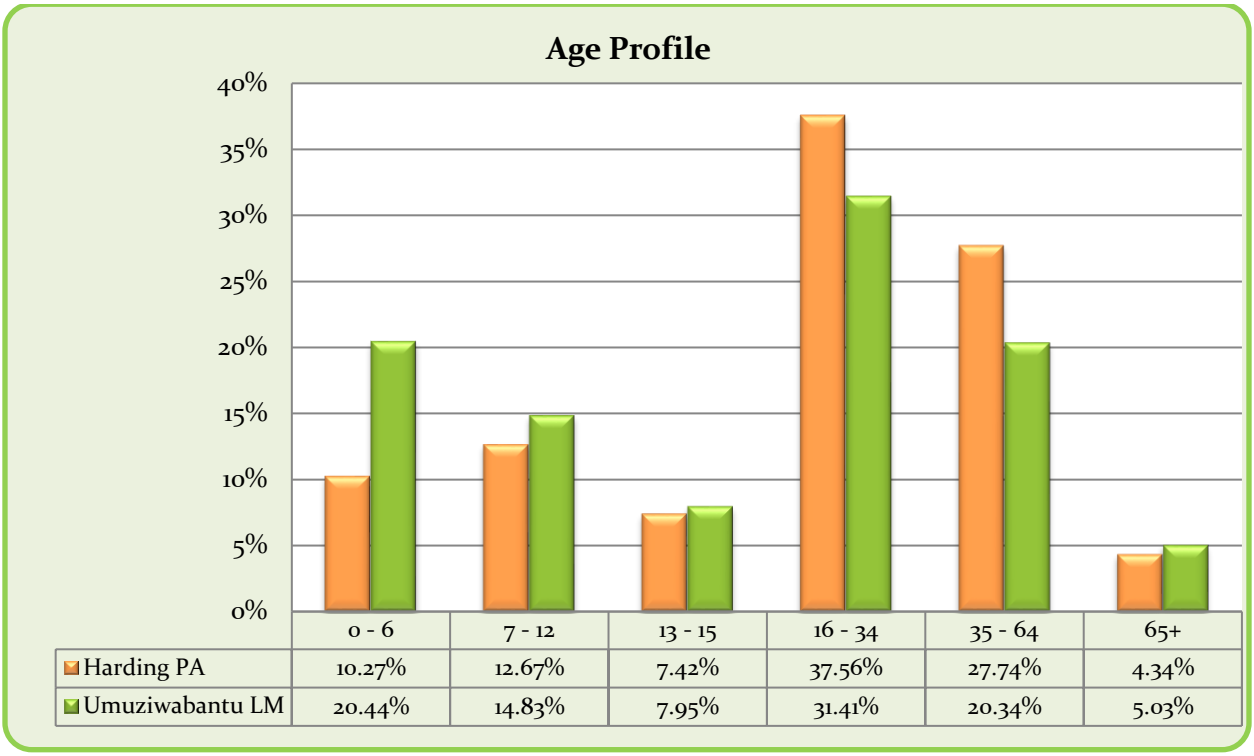
3.3 SOCIO ECONOMIC ENVIRONMENT

Socio-economic figures illustrated below were prepared from the Census 2011 data and present a socio-economic overview of the surrounding communities of the study area. Given that this project is a Greenfield Development and is situated in the town of Harding, the small area layers (SALs) for Harding were utilised to present a socio-economic overview of the area, as the project will benefit from the similar services.

3.3.1 Age Profile

The age profile of the project area and of the Umuziwabantu Municipality (LM) is depicted in Figure 3.3 below. It is evident from the graph that majority of the population within the study area are between the ages of 16 – 34 years of age. A total of approximately 30.36% are younger than 15 year of age while 27.74% fall within the age category of 35 – 64 years of age. The figures for the overall municipality indicate that majority of the population within the municipality are younger than the age of 15 years. Approximately 31.41% are between the age of 16 – 34 years and 20.34% are between the age of 35 – 64 years of age. The age distribution figures illustrate that the population within the study area and the overall municipality consists mostly of the youth who are within the economically active group.

Figure 3.5: Age Profile



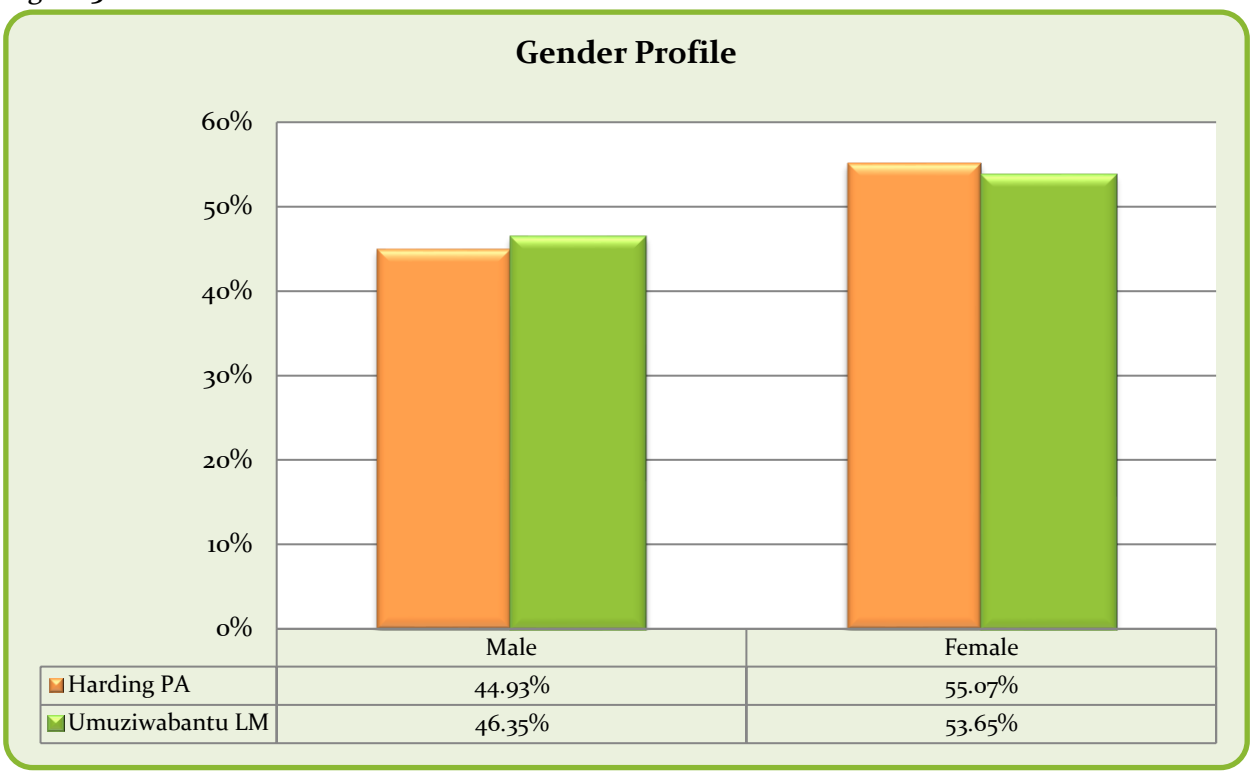
	0 - 6	7 - 12	13 - 15	16 - 34	35 - 64	65+
Harding PA	10.27%	12.67%	7.42%	37.56%	27.74%	4.34%
Umuziwabantu LM	20.44%	14.83%	7.95%	31.41%	20.34%	5.03%

Source: Statistics SA, Census 2011.

3.3.2 Gender Profile

According to the 2011 Census information in Figure 3.3 below, as much as 55.07% of the total population of the study area is female and 44.93% are male.

Figure 3.6: Gender Profile

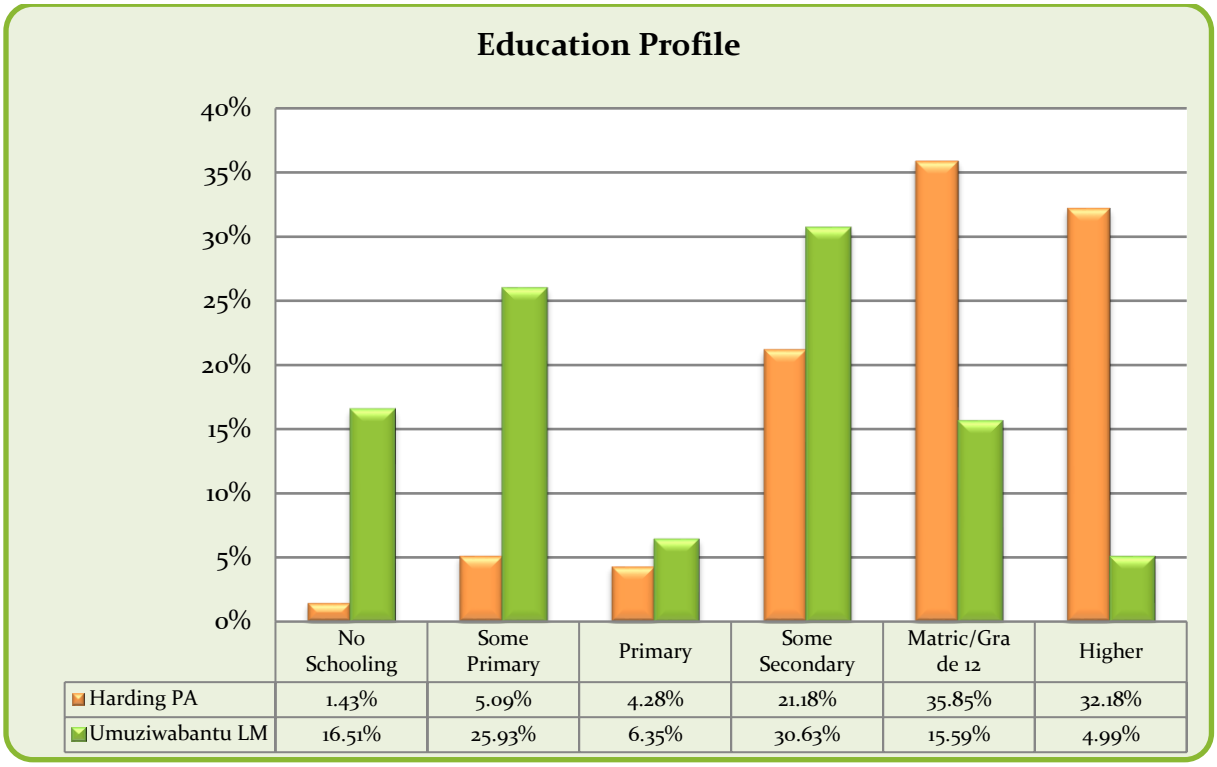


Source: Statistics SA, Census 2011.

3.3.3 Education Profile

The 2011 education profile of the study area and the Umuziwabantu Municipality is illustrated in Figure 3.5 below. These figures illustrate the education levels of persons over the age of 20 years and therefore falling into the economically active categories of the population. The statistics indicate that majority (35.85%) of the population within the project area have completed their matric/ Grade 12 and 32.18% had the opportunity of furthering their education to tertiary level. Within the overall Umuziwabantu Municipality, as much as 16.51% had no form of schooling, 25.93% had some primary education and 30.63% had some secondary education. Only 4.99% within the municipality had the opportunity had a tertiary qualification.

Figure 3.7: Levels of Education



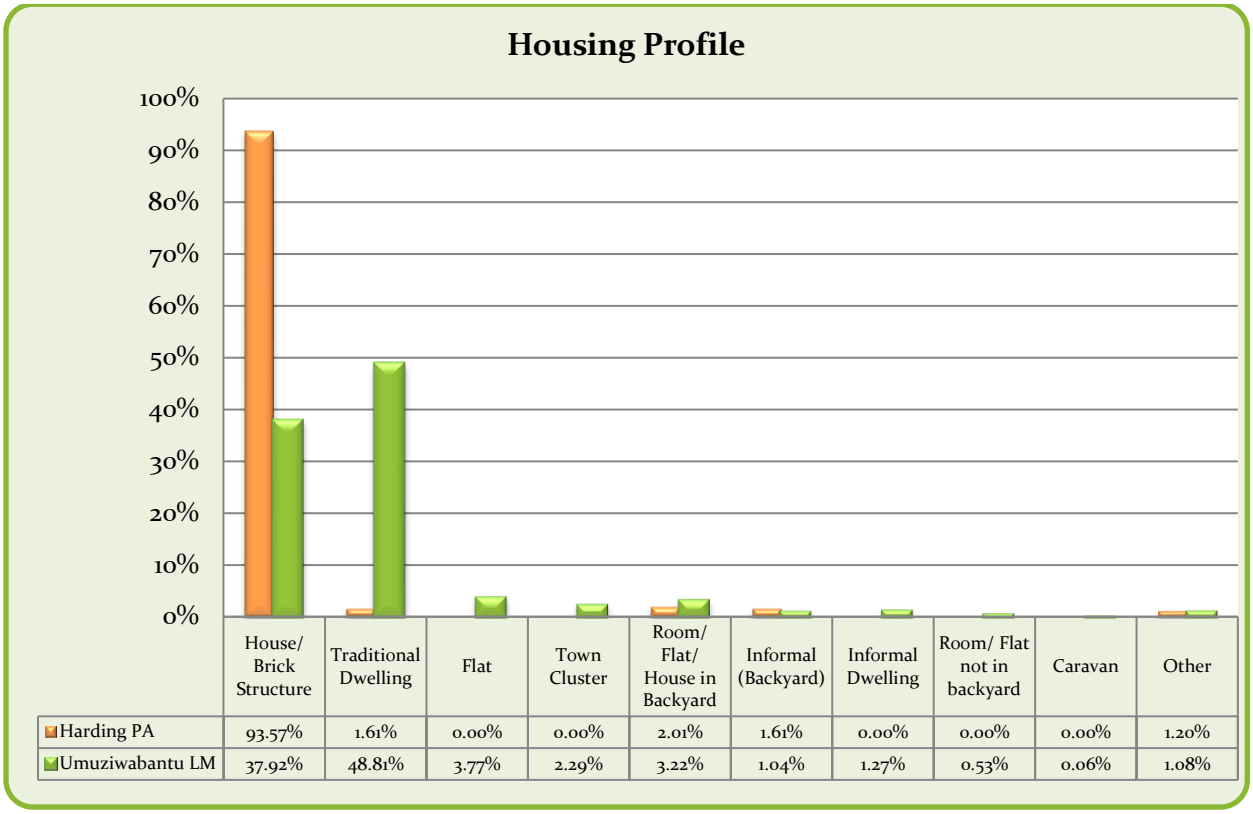
	No Schooling	Some Primary	Primary	Some Secondary	Matric/Grade 12	Higher
Harding PA	1.43%	5.09%	4.28%	21.18%	35.85%	32.18%
Umuziwabantu LM	16.51%	25.93%	6.35%	30.63%	15.59%	4.99%

Source: Statistics SA, Census 2011.

3.3.4 Housing Profile

As can be seen from Figure 3.6, the most predominant housing type in the surrounding areas is the "House/Brick Structure" with 93.57% of houses falling into this category. The also figures illustrate that within the overall Umuziwabantu Municipality, approximately 37.92% of houses fall in the "House/Brick Structure" category while 48.81% fall under the "Traditional Dwelling" housing category.

Figure 3.8: Housing Profile



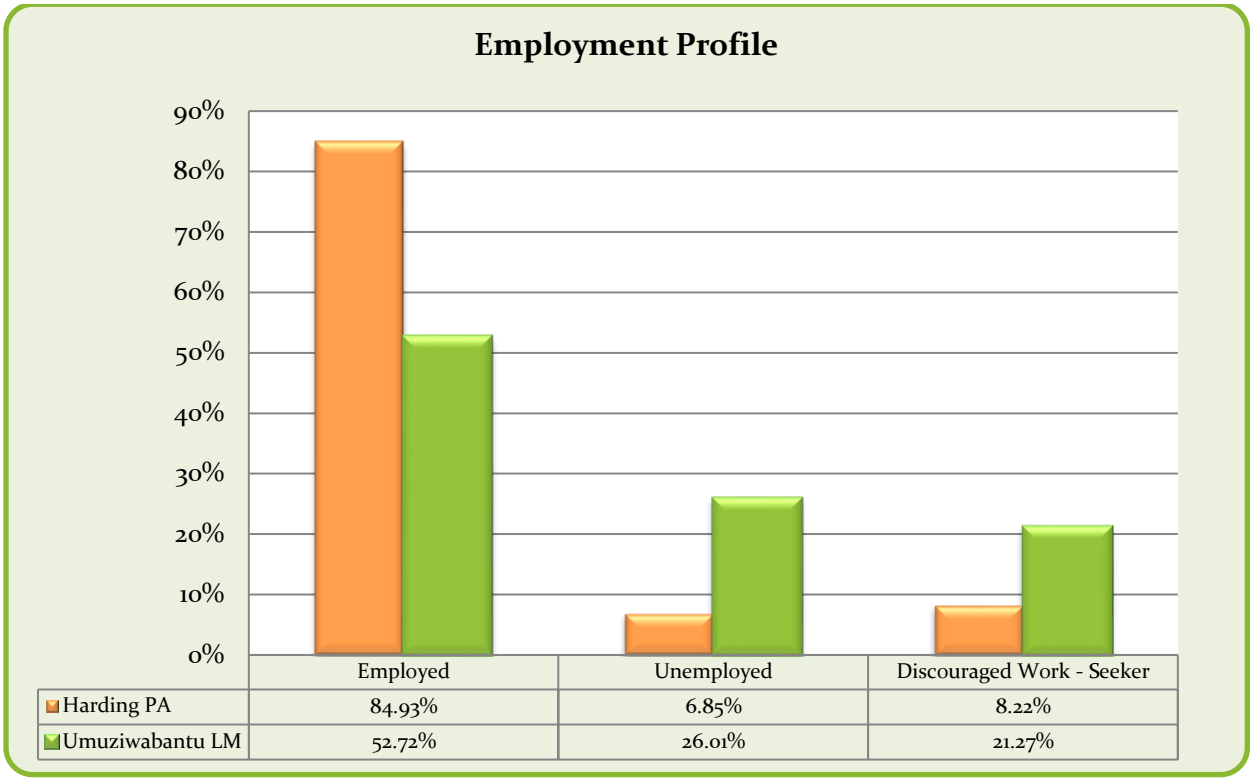
	House/ Brick Structure	Traditional Dwelling	Flat	Town Cluster	Room/ Flat/ House in Backyard	Informal (Backyard)	Informal Dwelling	Room/ Flat not in backyard	Caravan	Other
Harding PA	93.57%	1.61%	0.00%	0.00%	2.01%	1.61%	0.00%	0.00%	0.00%	1.20%
Umuziwabantu LM	37.92%	48.81%	3.77%	2.29%	3.22%	1.04%	1.27%	0.53%	0.06%	1.08%

Source: Statistics SA, Census 2011.

3.3.5 Employment

Figure 3.7 below illustrates the employment profile of the surrounding areas and the overall municipal profile. These figures illustrate the employment profiles of persons over the age of 15 years and therefore falling into the economically active categories of the population. As much as 84.93% of the economically active population indicated to be employed whilst 6.85% of the economically active population within the surrounding areas indicated that they were unemployed. The overall employment profile of the Umuziwabantu Municipality indicated that 52.72% of the population was employed and as much as 26.01% was unemployed.

Figure 3.9: Percentage of Economically Active population unemployed

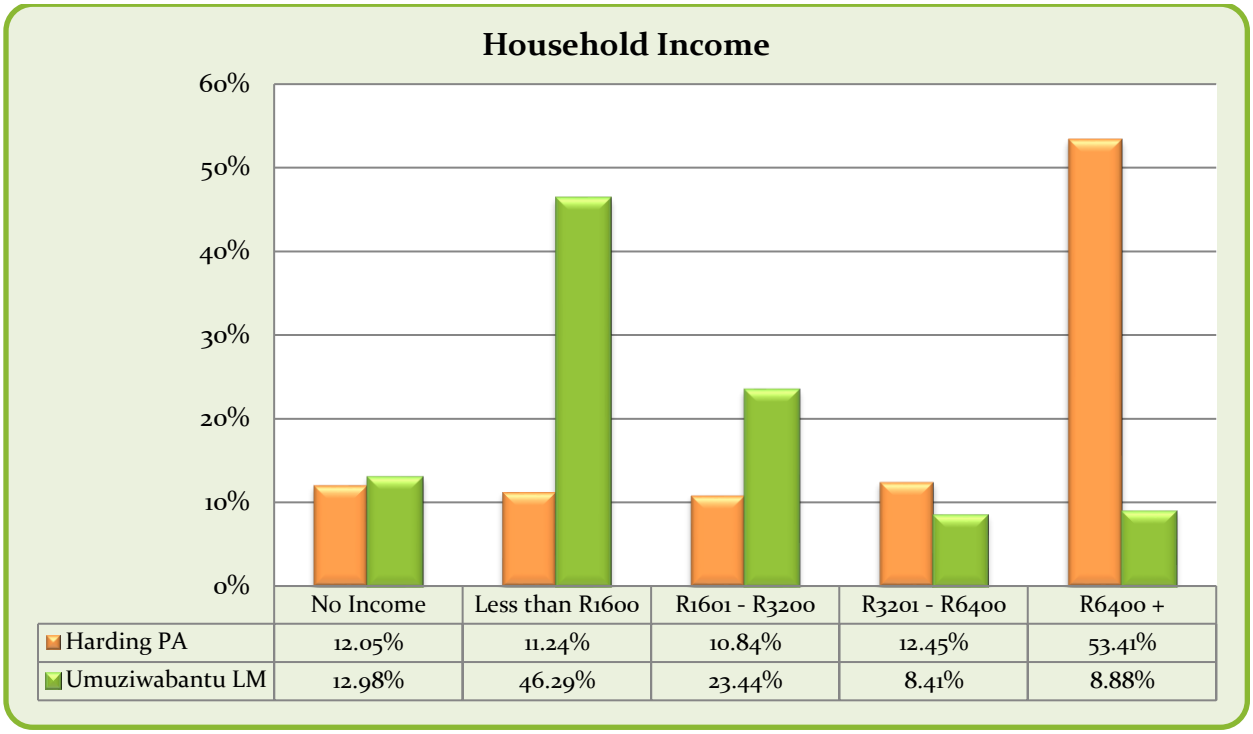


Source: Statistics SA, Census 2011

3.3.6 Household Income

Figure 3.8 below illustrates the household income profile of the Harding Housing project area. Majority of the households surrounding the project area indicated to earn a collective monthly household income of more than R 6400 while 12.05% of households indicated not to have an income. The statistics also indicate that within the Umuziwabantu Municipality, majority (46.29%) of households earn a collective monthly household income of less than R 1600.

Figure 3.10: Monthly household income



	No Income	Less than R1600	R1601 - R3200	R3201 - R6400	R6400 +
Harding PA	12.05%	11.24%	10.84%	12.45%	53.41%
Umuziwabantu LM	12.98%	46.29%	23.44%	8.41%	8.88%

Source: Statistics SA, Census 2011.

3.4 IMPACT OF THE PROPOSED ACTIVITY ON THE ENVIRONMENT

3.4.1 Geographical and Physical

The development will contribute positively to the area as it provides a means to address the housing backlog of municipality as well as prevent illegal occupation of the land and prevent the establishment of informal settlements as well as prevent illegal dumping.

3.4.2 Biophysical

The Biodiversity Assessment and Wetland Assessment that was undertaken for the proposed development provide mitigation measures as well as identified sensitive areas that have been demarcated in the preferred layout.

3.4.3 Socio-economic

The proposed activity will have a positive impact in terms of the socio-economic environment. The activity itself will ideally reduce the establishment of informal housing in Umuziwabantu Municipality and in turn improve the living conditions of those living in informal settlements. It will also contribute to job creation during the construction phase of the development.

3.5 MITIGATION MEASURES

A list of mitigation measures is briefly listed below. Mitigation measures will be addressed in detail in the draft EMP which will accompany the Environmental Impact Report. Specific mitigation measures will be addressed and included into the EIR, once the specialist studies have been undertaken.

3.5.1 Cultural and Heritage Aspects

- Before construction starts, all staff must be informed of what possible archaeological, historical or paleontological objects (e.g. tools, human remains, fossils, etc.) of value look like, and must notify the engineer or contractors should such an item be uncovered
- All work should cease immediately if any archaeological, historical or paleontological remains are discovered during development and AMAFA should be notified.

3.5.2 Stormwater

- Plan and install appropriate stormwater control measures.
- Increase in storm water run-off resulting from construction activities must be estimated and the drainage system assessed accordingly.
- If vegetation is to be removed, it must be done in phases to ensure that a minimum area of soil is exposed to potential erosion at any one time.
- Temporary cut off drains, grassed or rock-pitched diversion ditches and berms may be required to capture storm-water and promote infiltration or to divert run-off away from exposed soil or construction areas.
- Contractors must not in any way modify nor damage the banks or beds of streams or rivers, wetlands, other open water bodies and drainage lines adjacent to or within the designated area.
- Earth, stone and rubble is to be properly disposed of to prevent obstruction of natural water pathways over the site. These materials must not be placed in storm-water channels, drainage lines or rivers.
- Storm-water outfalls should be designed to reduce flow velocity and avoid stream bank and soil erosion

3.5.3 Ecological Aspects

- No vegetation may be cleared without prior permission from the engineer, ECO, or ecological specialists if required.
- No trees are to be cleared unless they are exotic invaders which must be verified by the ECO.
- All dumping of waste material, especially bricks and contaminated materials or soils, into the environment must be prevented. Solid waste is to be disposed legally off-site in the relevant waste disposal manner.
- Staff should be educated about the sensitivity of faunal species and measures should be put in place to deal with any species that are encountered during the construction process. The intentional killing of any animals including snakes, lizards, birds or other animals should be strictly prohibited.
- Any open trenches that are left open for more than two hours, should have at least one end that is sloped/tapered, in order to allow animals that fall in, to escape. If this is not possible, then branches should be placed inside the trenches to allow small animals to climb out of the trenches.
-

3.5.4 Wetlands

- The contractors used for the construction should have spill kits available prior to construction to ensure that any fuel, oil or hazardous substance spills are cleaned-up and discarded correctly.
- It is deemed important that the all wetland areas be demarcated as sensitive areas, and no construction activity, laydown yards, camps or dumping of construction material are to be permitted within the sensitive zones (where possible).
- All chemicals and toxicants to be used for the construction must be stored outside the channel system and in a bunded area.
- All machinery and equipment should be inspected regularly for faults and possible leaks, these should be serviced off-site.
- Signs erected along the indicated buffer zone must warn individuals against unwanted anthropogenic activities, including dumping, construction and laydown yards during the operational phase. Recreational activities can still be permitted within this area (i.e. walks, having picnics etc.). Key activities that should be disallowed within this zone includes swimming, harvesting plants and consuming water from the wetland.

4 IMPACT ASSESSMENT

4.1 INTRODUCTION

The impact assessment aims at identifying potential environmental impacts (both positive and negative impacts) and evaluating these impacts in terms of its significance. This assessment is provided in the form of a systematic analysis framework to evaluate the nature, extent, duration, intensity, probability and significance of the various impacts. The significance of the impacts is considered both without and with mitigation and management measures. The mitigation and management measures relating to the potential impacts identified as potentially significant will be addressed in detail in the Environmental Impact Assessment report and draft Environmental Management Plan.

4.2 IMPACT ASSESSMENT CRITERIA

The assessment of the potential impacts of the envisaged development is undertaken in accordance with the broad criteria required by the integrated environmental management procedure and includes the following:

- Nature of Impact
- Extent/Scale
- Duration
- Intensity
- Probability

4.2.1.1 Nature of impact

A brief description of the type of impact the proposed development will have on the affected environment.

4.2.1.2 Extent/Scale

The physical extent of the impact.

i. Footprint
The impacted area extends only as far as the actual footprint of the activity.

ii. Site
The impact will affect the entire or substantial portion of the site/property.

iii. Local
The impact could affect the area including neighbouring properties and transport routes.

iv. Regional
Impact could be widespread with regional implication.

v. National
Impact could have a widespread national level implication.

4.2.1.3 Duration

The duration of the impact.

i. Short term
The impact is quickly reversible within a period of one year, or limited to the construction phase.

ii. Medium term
The impact will have a medium term lifespan (project lifespan 1 – 10 years).

iii. Long term
The impact will have a long term lifespan (project lifespan > 10 years).

iv. Permanent
The impact will be permanent beyond the lifespan of the development.

4.2.1.4 Intensity

This criteria evaluates intensity of the impact and are rated as follows:

i. Minor
The activity will only have a minor impact on the affected environment in such a way that the natural processes or functions are not affected.

ii. Low
The activity will have a low impact on the affected environment.

iii. Medium
The activity will have a medium impact on the affected environment, but function and process continue, albeit in a modified way.

iv. High
The activity will have a high impact on the affected environment which may be disturbed to the extent where it temporarily or permanently ceases.

v. Very high
The activity will have a very high impact on the affected environment which may be disturbed to the extent where it temporarily or permanently ceases.

4.2.1.5 Probability

This describes the likelihood of the impacts actually occurring.

i. Improbable
The possibility of the impact occurring is highly improbable (less than 5% of impact occurring).

ii. Low
The possibility of the impact occurring is very low, due either to the circumstances, design or experience (between 5% to 20% of impact occurring).

iii. Medium
There is a possibility that the impact will occur to the extent that provision must be made therefore (between 20% to 80% of impact occurring).

iv. High
There is a high possibility that the impact will occur to the extent that provision must be made therefore (between 80% to 95% of impact occurring).

v. Definite
The impact will definitely take place regardless of any prevention plans, and there can only be relied on mitigatory actions or contingency plans to contain the effect (between 95% to 100% of impact occurring).

4.2.1.6 Determination of significance

Significance is determined through a synthesis of the various impact characteristics and represents the combined effect of the extent, duration, intensity and probability of the impacts.

i. No significance
The impact is not substantial and does not require any mitigatory action.

ii. Low
The impact is of little importance, but may require limited mitigation.

iii. Medium
The impact is of importance and therefore considered to have a negative impact. Mitigation is required to reduce the negative impacts to acceptable levels.

iv. High
The impact is of great importance. Failure to mitigate, with the objective of reducing the impact to acceptable levels, could render the entire development option or entire project proposal unacceptable. Mitigation and management is essential

4.2.2 Assessment of Potential Impacts

4.2.2.1 Physical and landscape characteristics

Nature	Phase	Type	Extent	Duration	Intensity	Probability	Significance	
							(WOM*)	(WM*)
1. Impact of development on natural drainage patterns, caused by surface clearance and associated decrease of vegetation cover, leading to increased surface runoff and erosion.	C/O	Negative	Local	Short	Medium	Medium	Medium	Low
2. Alteration of unique landscape characteristics	C/O	Negative	Site	Permanent	Low	High	Medium	Low

* WOM: Without Mitigation

* WM: With Mitigation

4.2.2.2 Ecological characteristics

Nature	Phase	Type	Extent	Duration	Intensity	Probability	Significance	
							(WOM)	(WM)
1. Degradation, destruction and fragmentation of highly sensitive habitats, if construction work or waste materials is allowed to penetrate theses habitats	C	Negative	Site	Long	Very High	Definite	High	Low
2. Spread of Invasive Alien Plants into disturbed areas	C/O	Negative	Local	Long	High	High	Moderately high	Low
3. Continued encroachment into disturbed areas	O	Negative	Local	Permanent	Very high	Definite	High	Low
4. Loss of natural vegetation within the wetland buffer due to rubbish dumping and erosion	O	Negative	Site	Long	Very high	Definite	High	Low
5. Introduction of pest species as a result of the increase in waste and new habitats that are created in the area	O	Negative	Local	Long	High	Definite	Medium	Low
6. Impact on surrounding vegetation during construction (e.g. collection of firewood, veld fires, etc.)	C	Negative	Local	Short	Medium	Low	Medium	Low

4.2.2.3 Current and potential land uses of development area

Nature	Phase	Type	Extent	Duration	Intensity	Probability	Significance	
							(WOM)	(WM)
1. Impact on surrounding property values	O	Negative/ Positive	Local	Long	Low	Low	Low	Low

4.2.2.4 Soil characteristics and geology

Nature	Phase	Type	Extent	Duration	Intensity	Probability	Significance	
							(WOM)	(WM)
1. Soil erosion and subsequent sedimentation of wetland (due to storm water runoff) if no erosion control measures are implemented	C/O	Negative	Site	Long	Medium	Definite	Moderately high	Low
2. Spilling of hazardous chemicals into the soil and penetrating sensitive habitats	C	Negative	Site	Long	Very high	High	Moderately high	Low
3. Impact on building structures and/or building cost due to soil/geotechnical characteristics, including collapsible soil, swelling clays, poorly drained soil, and shallow soils.	C/O	Negative	Footprint	Permanent	Medium	Medium	Medium	Low

4.2.2.5 Fauna

Nature	Phase	Type	Extent	Duration	Intensity	Probability	Significance	
							(WOM)	(WM)
1. Displacement of faunal community due to habitat loss and disturbance (noise, dust and vibrations)	C	Negative	Local	Short	Medium	High	High	Low
2. Installation of electrical transmission lines resulting in bird strikes and electrocutions	O	Negative	Site	Long	High	High	Moderate	Low

4.2.2.6 Climate

Nature	Phase	Type	Extent	Duration	Intensity	Probability	Significance	
							(WOM)	(WM)
1. Soil erosion due to heavy rainfall during thunderstorms in summer, especially during construction phase.	C	Negative	Site	Short	Medium	Medium	Medium	Low

4.2.2.7 Ground and surface water

Nature	Phase	Type	Extent	Duration	Intensity	Probability	Significance	
							(WOM)	(WM)
1. Loss of sensitive wetland habitats if appropriate buffers are not maintained	O	Negative	Site	Permanent	Very high	Definite	High	Low
2. Spilling of sewage into surrounding habitats and sensitive areas	O	Negative	Site	Long	Very high	High	Moderately high	Low
3. Pollution of groundwater/ surface water during construction phase with typical construction related pollutants such as oil and diesel, and enterobecteria/viruses and plant nutrients if sanitation for construction workers is not properly managed.	C	Negative	Local	Short	Medium	Medium	Low	Low

4.2.2.8 Archaeological, historical and cultural significance

Nature	Phase	Type	Extent	Duration	Intensity	Probability	Significance	
							(WOM)	(WM)
1. Impact on sites with valuable archaeological, history and cultural significance	C	Negative	Site	Permanent	Minor	Improbable	Low	No significance

4.2.2.9 Socio-economic impacts

Nature	Phase	Type	Extent	Duration	Intensity	Probability	Significance	
							(WOM)	(WM)
1. Direct employment creation, including construction workers, architects, draughtsmen, land surveyors, plumbers, electricians etc.	C	Positive	Regional	Short	Medium	High	Medium	Medium (Positive)

2. Indirect job creation (e.g. building suppliers) and induced job creation (broader local economy).	C/O	Positive	Regional	Short	Medium	Medium	Medium	Medium (positive)
3. Job creation during operation phase (domestic workers, maintenance, etc.).	O	Positive	Local	Long	Medium	Medium	Medium	Medium (positive)
4. Security (reduced sense of security accompanied by the presence of construction workers)	C	Negative	Local	Short	Medium	Medium	Low	Low

4.2.2.10 Engineering Services

Nature	Phase	Type	Extent	Duration	Intensity	Probability	Significance	
							WOM	WM
1. Capacity of road network to handle additional traffic generated from the proposed development.	C/O	Negative	Local	Permanent	High	Definite	High	Medium
2. Possibility of increased number of road accidents due to increased traffic volumes. Accident risk may be highest at the point where the site is accessed from.	C/O	Negative	Local	Long	Medium	Low	Medium	Low
3. The area will be covered with impermeable surfaces, leading to an increase in stormwater volume and intensification of stormwater peak flow.	C/O	Negative	Local	Permanent	Medium	Medium	Medium	Low
4. Increased soil erosion due to increased quantity and flood peak intensity of stormwater flow, most significantly at stormwater outlets.	C/O	Negative	Site	Long	Medium	Medium	Medium	Low
5. Adequacy and capacity of bulk water supply infrastructure to supply potable water.	C/O	Negative	Regional	Permanent	Medium	Medium	Medium	Low
6. Capacity of existing municipal sewage system to deal with increased load.	O	Negative	Regional	Long	Medium	High	High	Low
7. Capacity of power grid to supply electricity to the proposed development.	O	Negative	Regional	Long	Medium	Medium	Medium	Low
8. Capacity of existing landfill sites to accommodate additional waste generated by the proposed development (note that this is a cumulative impact caused by all waste generating activities throughout the region).	C/O	Negative	Regional	Long	Medium	Medium	Medium	Low
9. Impact of waste generated and risk of illegal dumping and littering on water resources.	C/O	Negative	Local	Long	Low	Low	Low	Low
10. Impact of access road on surrounding properties.	C/O	Negative	Local	Long	Low	Low	Low	Low

4.2.2.11 Potential Environmental Pollution

Nature	Phase	Type	Extent	Duration	Intensity	Probability	Significance	
							(WOM)	(WM)
1. Increase in air pollution (dust) during construction (e.g. construction vehicles, excavation, earthworks, burning of waste products etc.).	C	Negative	Local	Short	Medium	High	Medium	Low
2. Increase in ambient noise level affecting surrounding properties.	C/O	Negative	Local	Long	Low	Low	Low	Low
3. Visual impact of development on landscape ("sense of place").	O	Negative	Local	Long	Medium	Medium	Medium	Low
4. Some phases of construction may cause odors that are detective over some distance (e.g. burning of plastic containers and bags).	C	Negative	Local	Short	Low	Medium	Low	Low
5. Impact on the ambient air quality due to vehicle tailpipe emissions from increased traffic volumes.	C/O	Negative	Local	Long	Low	High	Low	Low
6. Impact of lighting on surrounding properties, including light trespass and over-illumination. Apart from being a visual impact, over-illumination is also a waste of energy.	C/O	Negative	Local	Long	Medium	Low	Low	Low

5 PUBLIC PARTICIPATION

5.1 INTRODUCTION

The aim of the Scoping Study is to collect the issues, concerns and queries of interested and affected parties (I&APs) and determine the scope of the following phase of the EIA. The main objective of the Scoping Study is to:

- Inform the stakeholders about the proposed project and the environmental assessment process to be followed;
- Provide ample opportunity to all parties to exchange information and express their views and concerns;
- Obtain contributions from stakeholders (including the client, consultants, relevant authorities and the public) and ensure that all issues, concerns and queries raised are fully documented;
- Evaluate the issues raised and identify the significant issues; and
- Provide comment on how these issues are to be assessed as part of the Environmental Impact Assessment Process.

The public scoping processes undertaken are in accordance with the required EIA procedures prescribed within national legislation.

5.2 REQUIREMENTS OF THE 2014 ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS

According to Section 41 of the Environmental Impact Assessment Regulations, the following is required for the public participation process:

(a) Fixing a notice board at a place conspicuous to the public at the boundary or on the fence of
  (i) the site where the activity to which the application relates is or is to be undertaken; and
  (ii) any alternative site;

(b) Giving written notice in any of the manners provided for in section 47D of the Act, to-
  (i) the occupiers of the site and, if the proponent or applicant is not the owner or person in control of the site on which the activity is to be undertaken, the owner or person in

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

(iii) the municipal councilor of the ward in which the site or alternative site is situated and any organization of ratepayers 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 local newspaper; or

(ii) any official Gazette that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;

(d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or local municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official Gazette referred to in paragraph (c)(ii); and

(e) using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desiring of but unable to participate in the process due to-

(i) illiteracy;

(ii) disability; or

(iii) any other disadvantage.

5.2.1 Submission of EIA application forms

The appropriate EIA application forms were completed and submitted to DEDTEA as required by the EIA regulations. Reference Number **DC21/0013/2021** was allocated to the proposed development.

5.2.2 Newspaper Advertisements and Site Notices

The EIA regulations require that the proposed project be advertised. The EIA process was advertised in South Coast Herald in English (see **Appendix F1** for the English Advert) and in the Ugu Eyethu in isiZulu (see **Appendix F2** for isiZulu Advert). Notice boards were also placed at various locations along the site to ensure that the site notices were visible and accessible to the surrounding residents (see **Appendix F3** for a copy of the site notice). The purpose of the advertisements and site notice's is to notify I&APs of the EIA process for the proposed development and to invite them to register as I&APs.

Photo 5.1: Notice boards placed Harding Special Needs School (adjacent to eastern site boundary)

Photo 5.2: Notice boards placed at Livingstone Street (adjacent to southern site boundary)

Photo 5.3: Notice boards placed at Corner Street (adjacent to western site boundary)

In addition to the site notices and newspaper adverts, background information documents **(Appendix F4)** were distributed to the surrounding residents.

5.2.3 Register of interested and affected parties

According to the Environmental Impact Assessment Regulations of 2014 (as amended), a register of interested and affected parties must be kept during the scoping process. A copy of the register is included as **Appendix F7**.

5.2.4 Information sharing meeting

A public meeting will be held should there be a number of concerns from Registered Interested and Affected Parties. The purpose of the meeting will be to address any issues and queries. Copies of the meetings and minutes will be included as part of the Environmental Impact Report, if any.

5.2.5 Compilation of a Scoping Report and its availability for comment

This Scoping Report includes a Plan of Study for the Environmental Impact Report, which sets out the proposed approach to the environmental impact assessment process of the application. All government departments, NGO's and I&AP's receiving copies of the Scoping Report or who have been notified of the availability of the Scoping Report for comment, must either forward comment or a letter stating that they do not wish to make comment, to K2M Environmental within 30 days of being notified of the availability of this report for comment. Those stakeholders who are unable to make comment within the designated timeframes for whatever reason are to notify the MEC, detailing the reasons for not being able to meet the timeframes for comment and are to copy K2M Environmental with this correspondence.

The following governmental and non-governmental authorities were provided with a copy of the Draft Scoping report for comment:

- Department of Economic Development, Tourism and Environmental Affairs
- Department of Transport
- Department of Agriculture and Rural Development
- Department of Water and Sanitation
- Department of Forestry, Fisheries and Farming
- Department of Health
- Umuziwabantu Local Municipality

- Ugu District Municipality (Environmental Department)
- Ezemvelo KZN Wildlife
- KZN AMAFA and Research Institute
- Ward 3 Councillor
- Eskom
- SANRAL

The receipt of acknowledgment for the Draft Scoping Report has been attached as **Appendix F5.**

5.2.6 Comments and Response Report

All comments received in response to the Draft Scoping Report have been included in the form of a Comments and Response Report (see **Appendix F6** for the Comments and Response Report).

6 PLAN OF STUDY FOR ENVIRONMENTAL IMPACT ASSESSMENT

6.1 EVALUATION OF SCOPING REPORT BY DEDTEA

According to Section 22 of the Environmental Impact Assessment Regulations of 4th December 2014 the competent authority must, within 43 days of receipt of a scoping report-

a) accept the scoping report, with or without conditions, and advise the applicant to proceed or continue with the tasks contemplated in the plan of study for environmental impact assessment; or

b) refuse environmental authorisation if-

(i) the proposed activity is in conflict with a prohibition contained in legislation; or

(ii) if the scoping report does not substantially comply with Appendix 2 to these Regulations and the applicant is unwilling or unable to ensure compliance with these requirements within the prescribed timeframe.

6.2 DESCRIPTION OF TASKS TO BE UNDERTAKEN IN THE ENVIRONMENTAL IMPACT ASSESSMENT PHASE

If the Scoping Report is approved by DEDTEA, the following activities will be undertaken as part of the Environmental Impact Report Phase:

- Assessment of Infrastructure alternatives.
- Assessment of Layout alternatives.

Aspects to be addressed by specialists and included in the Environmental Impact Report are listed below:

- Stormwater Management Plan
- Municipal Services
- Preliminary Engineering Report
- Preliminary Geotechnical Report
- Heritage Impact Assessment
- Agricultural Potential Assessment
- Traffic Impact Assessment

The methodology that will be applied in assessing the environmental impacts and alternatives is described in Section 6.3. The mitigation and management measures to ensure the "significant of impacts with mitigation" identified in Section 4 will be described in the draft EMP.

The findings of the impact assessment referred to above will be utilized to inform the preparation of a draft environmental management plan. The following information will be included:

- Potential environmental impacts of the proposed development.
- Details of mitigation measures and management actions.
- Parties responsible for implementing mitigation measures and management recommendations.
- Frequency for monitoring and auditing of compliance.

6.3 PROPOSED APPROACH FOR EVALUATING ENVIRONMENTAL ISSUES AND ALTERNATIVES

The impact assessment aims at identifying potential environmental impacts (both positive and negative impacts) and evaluating these impacts in terms of its significance. This assessment will be undertaken in the form of a systematic analysis framework to evaluate the nature, extent, duration, intensity, probability and significance of the various impacts as outlined below.

6.3.1 Impact Assessment Criteria

The assessment of the potential impacts of the envisaged development with or without mitigation will be undertaken in accordance with the following criteria:

- **Nature of impact**
  A brief description of the type of impact (positive of negative) the proposed development will have on the affected environment.

- **Extent/Scale of impact**
  The physical extent of the impact.
  - Footprint
    The impacted area extends only as far as the actual footprint of the activity.

- Site

  The impact will affect the entire or substantial portion of the site/property.

- Local

  The impact could affect the area including the neighbouring farms, properties and transport routes.

- Regional

  Impact could be widespread with regional implication.

- National

  Impact could have a widespread national level implication.

- **Duration**
  - Short term

    The impact is quickly reversible within a period of one year, or limited to the construction phase.

  - Medium term

    The impact will have a medium term lifespan (project lifespan 1 – 10 years).

  - Long term

    The impact will have a long term lifespan (project lifespan > 10 years).

  - Permanent

    The impact will be permanent beyond the lifespan of the development.

- **Intensity**

  This criteria evaluates intensity of the impact and are rated as follows:
  - Minor

    The activity will only have a minor impact on the affected environment in such a way that the natural processes or functions are not affected.

  - Low

    The activity will have a low impact on the affected environment

- Medium

  The activity will have a medium impact on the affected environment, but function and process continue, albeit in a modified way.

- High

  The activity will have a high impact on the affected environment which may be disturbed to the extent where it temporarily or permanently ceases.

- Very high

  The activity will have a very high impact on the affected environment which may be disturbed to the extent where it temporarily or permanently ceases.

- **Probability**

  This describes the likelihood of the impacts actually occurring.

  - Improbable

    The possibility of the impact occurring is highly improbable

  - Low

    The possibility of the impact occurring is very low, due either to the circumstances, design or experience.

  - Medium

    There is a possibility that the impact will occur to the extent that provision must be made therefore.

  - High

    There is a high possibility that the impact will occur to the extent that provision must be made therefore.

  - Definite

    The impact will definitely take place regardless of any prevention plans, and there can only be relied on mitigatory actions or contingency plans to contain the effect.

6.3.2 Significance Rating

Significance is determined through a synthesis of the various impact characteristics and represents the combined effect of the extent, duration, intensity and probability of the impacts.

- No significance

  The impact is not substantial and does not require any mitigatory action.
- Low

  The impact is of little importance, but may require limited mitigation.

- Medium

  The impact is of importance and therefore considered to have a negative impact. Mitigation is required to reduce the negative impacts to acceptable levels.

- High

  The impact is of great importance. Failure to mitigate, with the objective of reducing the impact to acceptable levels, could render the entire development option or entire project proposal unacceptable. Mitigation and management is essential

The following assessment scale will be used to determine the significance of the impact on the environment

Significance = (probability + duration + extent) x intensity

Probability: 1 – 5

Extent: 1 – 5

Duration: 1 – 4

Intensity: 1 – 10

Significance rating criteria

>75	High environmental significance
50 – 75	Medium environmental significance
<50	Low environmental significance

6.4 PUBLIC PARTICIPATION PROCESS DURING ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

All who had responded in any way during the scoping process will be notified in writing (e-mail or letter) or telephonically (if no postal or e-mail address was provided) of the availability of the EIR for review and comment. The following governmental and non-government authorities will be provided with a copy of the Environmental Impact Assessment Report for comment:

- Department of Economic Development, Tourism and Environmental Affairs
- Department of Transport
- Department of Agriculture and Rural Development
- Department of Water and Sanitation
- Department of Forestry, Fisheries and Farming
- Department of Health
- Umuziwabantu Local Municipality
- Ugu District Municipality (Environmental Department)
- Ezemvelo KZN Wildlife
- KZN AMAFA and Research Institute
- Ward 3 Councillor
- Eskom
- SANRAL

All I&APs will be informed of the availability of the EIR and will be requested to provide comment within 30 days of receiving the EIR, or notification of it.

6.5 CONSULTATION WITH DEDTEA

The independent environmental practitioner will request a site visit with the designated official from DEDTEA after evaluation of the Scoping Report and prior to the finalisation of the Environmental Impact Assessment report and draft EMPr. The purpose of this site visit and meeting will be to provide first hand and site specific information to the designated project official and to discuss any specific issues that need to be addressed in the environmental impact assessment phase.