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Cell: 072 752 3755 | Tel: 031 701 8115 | Fax: 086 517 5202 | Email: sthe-enviro@isit.co.za
Postal Address: P.O. Box 2974, Pietermaritzburg, 3200, KwaZulu Natal, South Africa

**PRELIMINARY ENVIRONMENTAL
ASSESSMENT
ISITHEBE WARDS 11, 16 & 17 HOUSING
PROJECT-MANDENI LOCAL MUNICIPALITY**



CHS Developments on behalf of Nkandla Municipality has appointed Thlaho Environmental Consultants as the Independent Environmental Assessment Practitioner (EAP) to compile Preliminary Environmental Report.

Table 1: Details of Environmental Practitioner that prepared the Preliminary Environmental Report

Name of Consultancy	Thlaho Environmental Consultants
Contact Person	Sthembile Ngcobo
Experience in the field	5 years
Qualifications	BA Environmental Management and Development Studies, Environmental Auditors ISO 14001 & OHSAS 18001 Certificate.
Postal Address	P.O.BOX 2828, Pinetown, 3600
Telephone Number	031 701 8115
Fax Number	086 517 5 202
Mobile Number	072 752 3755
Email	sthe-enviro@isit.co.za

Expertise of Environmental Practitioner that prepared the Preliminary Environmental Assessment Report

- **Ms Sthembile Ngcobo** has 5.5 years working experience, 5 years in environmental consulting; holds a BA Environmental Management and Development Studies from University of KwaZulu Natal and Environmental Auditors ISO 14001 and OHSAS 18001 Certificate. The majority of her professional career has been spent in environmental consulting, specifically environmental impact assessment. She has extensive experience in EIA's and Basic Assessments, Environmental Auditing, Environmental Management Programme, Public involvement and public meeting facilitation both English, isiZulu and isiXhosa, client liaison, proposal and budget control, research and report writing and has been involved in a wide range of projects, which includes waste management, cemetery, bridge developments, housing developments, proposed causeways, roads upgrades, storm water roads rehabilitation, radar development, shopping centre developments and so on and on. Sthembile Ngcobo is currently the Environmental Consultant / Managing Member of Thlaho Environmental. She is also a Member of the International Association for Impact Assessments South Africa (IAIASa)

- **Ms Xoli Mgxathi** has 1 year experience in the environmental consulting field, she hold a BA Environmental Management. She is also a Member of the International Association for Impact Assessments South Africa (IAIASa)

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1. INTRODUCTION

This report provides a preliminary environmental assessment of the preferred site for the proposed housing development within Wards 11, 16 & 17, Mandeni Local Municipality. The proposed housing covers an area of approximately 2035 ha. Mandeni is strategically located midway between Durban and Richards Bay, and lies on the development corridor on the North Coast between these two major port cities in KwaZulu-Natal. It is located on the major railway and road transportation routes which link these two economic hubs in KwaZulu-Natal. This strategic location is also acknowledged in the Provincial Spatial Framework which has identified Mandeni as the growth node in the north coast corridor.

The aim of this report is to identify potential impacts a proposed development is likely to have on the environment and to highlight if there are any fatal flaws associated with the project and to facilitate accurate planning of the Environmental Impact Assessment (EIA) Phase to follow.

2. THE PROPOSED DEVELOPMENT

2.1. Land Description

The proposed development involves the establishment of approximately 1000 low income housing units within Ward 11, 16 and 17 of the Mandeni Municipality. The proposed development site is typical of rural housing development, each of the proposed 40m² house will be erected within the existing informal rural housing.

2.2. Services

The development will require conformation of service provision from the relevant service providers: Details on services are provided below:

- **Waste Water**

It is proposed that VIPs will be installed for each house as part of this development.

- **Solid Waste**

Currently there is no formal solid waste removal for the area and waste is currently being disposed of via burning and burying. This is not a suitable practice. It is proposed that the disposal of solid waste should be addressed in the EMPr.

- **Roads, Electricity and Water**

The upgrading or establishing of roads, electricity and water does not form part of this project and thus had not been included in this Report.

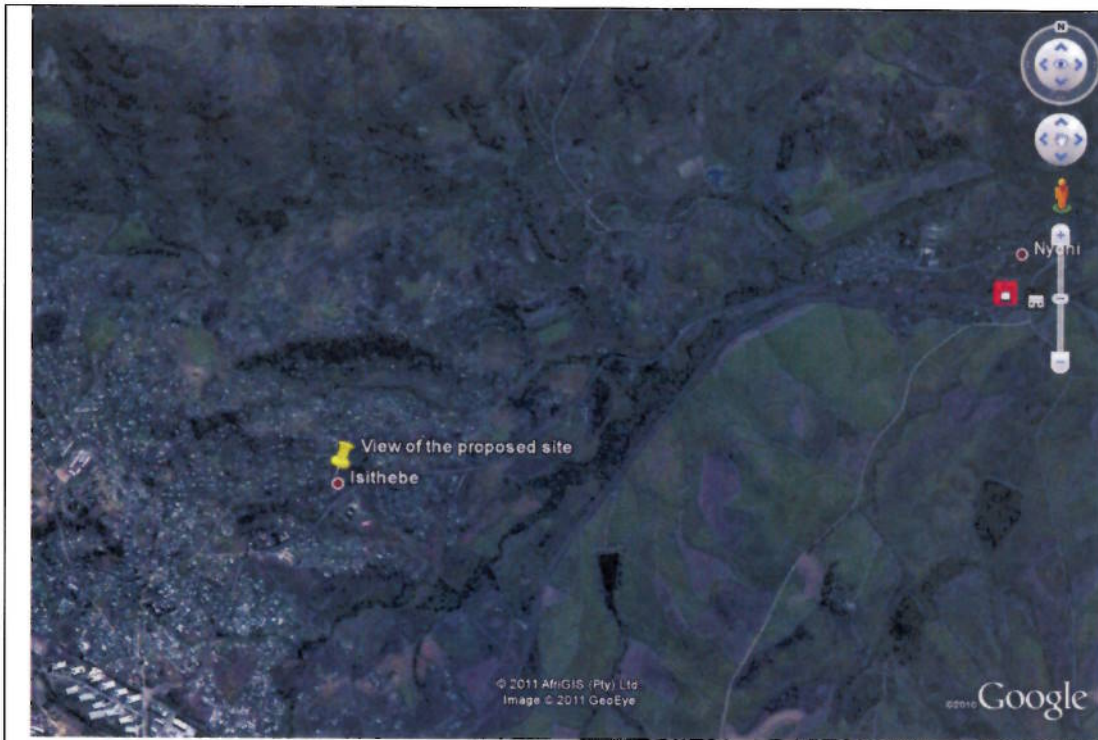


Figure 1: View of the proposed site



Figure 2: Typical rural settlement pattern with the proposed area.



Figure 3: View of the proposed site



Figure 4: Existing river within the site



Figure 5: Typical rural settlement pattern with the proposed area.

3. LEGISLATIVE FRAMEWORK

The National Environmental Management Act (NEMA, Act 107 of 1998) EIA Regulations (NEMA) came into effect in January 1999. NEMA is South Africa's overarching environmental legislation and its primary objective is to provide for co-operative governance by establishing principles for decision making on matters affecting the environment and institutions that will promote co-operative governance and procedures for co-ordinating environmental functions exercised by organs of state.

The Act provides for the equitable distribution of natural resources, sustainable development, environmental protection, and the "Duty of Care and Polluter Pays" principles of environmental management frameworks.

In terms of the EIA Regulations promulgated under Section 24 of the NEMA, certain Listed Activities are specified for which either a Basic Assessment (GNR 544, and 546) or a Scoping and Environmental Impact Assessment (GNR 545) is required.

The current EIA Regulations, the proposed development does not trigger the need for environmental authorisation, in terms of GNR 544, 545 and 546, provided the following Listed Activities are not triggered:

- *Activity 11: The construction of (xi) infrastructure or structures covering 50m2 or more
---where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.*

GNR 546

- *Activity 12: The construction of: (iii) buildings with a footprint exceeding 10m2 in size, or where such construction occurs or ... (hh) areas within 5km from any other protected area identified in terms of NEMPAA...*

In order to confirm that the development does not need a Basic Assessment process to be conducted, the Consulting Engineer is required to confirm that GNR 544 Activity 11 is not triggered. In terms of GNR 546 Activity 12, a wetland specialist is required to conduct a wetland assessment in order to confirm that development is not planned to take place within 32 metres of a watercourse.

4. ENVIRONMENTAL MANAGEMENT PROGRAMME

Under Section 28 of NEMA, the proposed development requires the compilation, approval and implementation of an Environmental Management Programme (EMPr). An EMPr contains guidelines to ensure that all activities associated with the proposed development are carried out in an environmentally responsible and acceptable manner.

An EMPr is a legally-binding document which contains guidelines with which Contractors must comply, and which must be strictly implemented and regularly monitored. If this is done, it is likely that the majority of the potentially adverse impacts associated with construction activities can be minimised or prevented. An Environmental Control Officer (ECO) is required to be appointed in order to ensure compliance with the EMPr during the

construction phase. Should non-compliance occur, this must be brought to the attention of the Department of Agriculture, Environmental Affairs and Rural Development (DAEARD), who will conduct the required prosecution procedure.

The EMPr included specific management objectives and mitigation measures for the entire duration of the development, including the following stages:

- An environmental policy and Code of Conduct;
- Roles and responsibilities of the various responsible parties involved with the various phases of the project;
- Environmental specifications for design;
- Environmental specifications for construction;
- Environmental specifications for operation;
- Rehabilitation of the environment;
- Any additional requirements listed as part of the Environmental Authorisation and
- Closure, where relevant.

The EMPr will be based on the principles of the NEMA, and will identify roles and responsibilities of management personnel on site. The EMPr will be used as a framework for environmental compliance monitoring and reporting.

5. REQUIREMENTS

The **Constitution of South Africa (Act No. 108 of 1996)** provides many matters relating to the environment and it is these matters that brought about legislation regarding the environment.

The two fundamental environmental rights, captured in the **Bill of Rights** (section 24 of the Constitution) impose a positive duty on State to protect the environment.

Two components in the Bill of Rights relates to the environment namely:

- Everyone has the right to an environment that is not harmful to their health and well being.
- Everyone has the right to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures.

The enforcement of environmental rights is captured in the Bill of Rights (Section 38 of the Constitution).

This screening process is relating to Isithebe Rural Housing Project within Mandeni Local Municipality. The legislation that is mostly going to affect the project is mentioned and described below.

5.1. National Environmental Management Act (Act Nr. 107 of 1998) - NEMA

The principles in NEMA are intended to apply to the States responsibility to protect, promote and fulfil the economic and social rights preserved in the Constitution. The Act provides that environmental management must take place to ensure that all development in South Africa is socially, economically and environmentally sustainable. Section 28 of NEMA gives the developer the general duty and care for the environment and the developer must institute the necessary measures that are needed to demonstrate such care.

5.2. National Water Act (Act No 36 of 1998) – NWA

A water use licence and water use application falls under the National Water Act and if any of the proposed sites of the project need to apply for a water use licence then the Act will be applicable. There is no accurate way to identify if a water use licence is needed for the proposed sites at this stage of the project life cycle for example if a site falls within a wetland zone.

5.3. Air Pollution Prevention Act (Act No 45 of 1965)

If activity or development is going to generate emissions into the atmosphere – particularly during the construction phase – the activity requires a permit application from the Chief Air Pollution Control Officer (CAPCO).

5.4. NEMA Air Quality Act (AQA) 2004, (Act 39 of 2004)

The aim of this law is to regulate air quality and protect environment in South Africa through reasonable measures to prevent pollution and ecological degradation, while securing sustainable development. The Act also provides national norms and standards for air quality management, monitoring and control.

5.5. Environment Conservation Act (Act No 73 of 1989)

The Act makes provision for the prevention of littering by employees and subcontractors during construction and the maintenance phases of the proposed project. During the construction of the proposed development the Environmental Conservation Act (Act No 73 of 1989) is going to apply.

5.6. Conservation of Agricultural Resources Act (Act No. 43 of 1983)

The Conservation of Agricultural Resources Act aims to provide for control over the utilisation of natural agricultural resources in order to promote the conservation of the soil, water resources and vegetation and to combat weeds and invader plants. Section 6 of the Act makes provision for control measures to be applied in order to achieve the objectives of the Act, these measures relate to inter alia:

- Cultivation of virgin soil;
- Utilization/protection of wetlands, marshes, water sponges, water course/sources;
- The regulating of the flow pattern of run-off water;
- The utilization and protection of the vegetation;
- The grazing capacity of veld and the number and type of animals;
- The control of weeds and invader plants; and
- The restoration or reclamation of eroded land or land which is disturbed or denuded.

All these provisions have implications for any development and these aspects are implemented via Regulations to the Act.

5.7. National Heritage Resource Act (Act No 25 of 1999) - NHRA

The protection and management of South Africa's heritage resources are controlled by the National Heritage Resources Act. The South African National Heritage Resources Agency (SAHRA) is the responsible authority for implementing the National Heritage Resources Act (NHRA) 1999, (Act 25 of 1999). Section 38(1) of the NHRA lists development activities that would require authorisation by the responsible heritage resources authority. Activities considered applicable to the proposed project include the following:

- (c) Any development or other activity which will change the character of a site:*
(i) exceeding 5 000 m² in extent; and
(ii) the rezoning of a site exceeding 10 000 m² in extent.

6. METHODOLOGY OF SCREENING

6.1. Site visit

The EAP conducted a detailed site inspection on the 06 October 2011. During the site visit the EAP assessed the following:

- Surface / groundwater (presence of sensitive hydrological features e.g. wetlands)
- Socio-economic impacts (effect on neighbouring landowners e.g. traffic, employment);
- Potential impacts on biophysical environment;
- Heritage (the presence of graves)

6.2. Reporting

The EAP has compiled this Preliminary Report which provides:

- A summary of findings from the site investigation;
- A summary of activities which will be required in order to obtain environmental compliance;
- A statement as to whether the development is acceptable and sustainable in terms of ecological impacts.

7. POTENTIAL IMPACTS ON THE SOCIAL AND ECONOMIC ENVIRONMENTS

7.1. Local Economy

IMPLICATIONS:

The purposed development will have a positive impact on the local economy, as local service provides will be used during the construction phase. For example, building materials will be purchased from local suppliers and construction staff will be employed from the local community.

7.2. Need and Desirability

IMPLICATIONS:

Every family in South Africa has a constitutional right to a decent house. The development will provide 1000 families with formal "serviced" housing. This will also reduce the cost of maintenance of their current informal buildings.

The development will result in training and job creation for local community members during the construction phase of the development. This training will increase the employability of those employed during the construction phase. The development is necessary to upgrade the living standards of the people currently living in informal housing. The development can be deemed desirable as it provides benefits for the community (skills development and temporary job creation during construction) and will provide better living conditions.

7.3. Surrounding Landuse and Aesthetics

As the proposed development is an in-situ upgrade, the proposed development will not have an impact on surrounding land uses. The establishment of formal housing will have a positive impact on the aesthetics of the area for the local residents.

7.4. Heritage

IMPLICATIONS:

The EAP has noticed cultural / graves significant elements during a site visit. In order to avoid graves being unearthed, it is proposed that the families are requested to indicate the exact locations of any graves on their properties before construction commence. Heritage Impact Assessment must also be conducted before the construction phase.

7.5. Traffic, Roads and Access

IMPLICATIONS:

The construction phase will result in additional large, slow-moving construction vehicles travelling on the access roads. This may cause traffic delays or accidents. It is recommended that traffic signage and calming measures are implemented in order to reduce the chance of accidents occurring.

7.6. Construction Activities, Noise, Dust and Security

IMPLICATIONS:

Construction activities will involve earthworks, heavy machinery and construction vehicles in the local area. These operations will generate noise and dust. Furthermore, there will be an increase in the number of people in the area due to the presence of construction labourers, as well as other potential job seekers. Potential exists for job seekers and construction labourers to trespass onto neighbouring properties during the construction phase.

It is proposed that all equipment be regularly serviced in order to keep noise to a minimum. If dust becomes problematic on the access roads, these roads must be dampened. The construction foremen and supervisors must be vigilant and must ensure that construction staff do not trespass onto neighbouring properties. It is recommended that construction staff are given bibs in order to identify them on site.

8. POTENTIAL IMPACTS ON BIOPHYSICAL ENVIRONMENT

8.1. Climate

IMPLICATIONS:

Topsoil which is stockpiled during the construction phase has the potential to be windblown, causing dust. Potential exists for high intensity rainstorm events to cause severe erosion at the construction sites. Wind in this area may also aid in the spread of fires, especially during the dry winter season. If topsoil is to be stockpiled for longer than three weeks, the stockpile should be vegetated. If windblown dust becomes problematic, these areas should be periodically dampened.

8.2. Air Quality and Surface Wind

IMPLICATIONS:

Potential exists for dust to be created on the site during the construction phase. The impact of wind-blown dust from the construction site during the construction phase also has the potential to impact negatively on surrounding landowners. It is recommended that areas are dampened should wind-blown dust become problematic.

8.3. Ground and Surface Water

IMPLICATIONS:

Water resources are valuable ecosystems as they provide many social and ecological functions. Thus it is of key importance that these resources are protected. In order to ensure that water resources are not impacted upon this development and that a Basic Assessment process is not required, a Wetland Assessment must be conducted.

During the construction phase, hazardous substances (such as paints and varnishes) are likely to occur. The subsequent production of hazardous waste is thus likely to occur. Hazardous waste could contaminate this water resource and could have serious implications for aquatic fauna and flora downstream users.

8.4. Geology and Soils

IMPLICATIONS:

Construction in areas of instability, irresponsible design and construction methods and use of inappropriate materials could result in the cracking and collapse of buildings with serious financial consequences. It is proposed that the findings of the geotechnical assessment be adhered to with regards to founding requirements.

8.5. Bio diversity

IMPLICATIONS:

To assess the biodiversity value of the proposed development area, Biodiversity assessment should be conducted and Biodiversity specialist must review the EKZN Wildlife C-Plan and SEA databases in order to prevent impacts on biodiversity in the surrounding landscape.

Step that should be taken in order to prevent impacts in the Biodiversity area as follows:

- Monitoring and training of construction workers to prevent poaching or removal of any organisms;

- All waste from construction activities must be appropriately stored while on site and removed to an registered landfill site;
- Steps to minimize erosion during construction must be implemented.
- Invasive alien plants, if left unattended, are likely to spread and displace any indigenous vegetation in the area. Thus an Alien Plant Removal Programme should be implemented.

9. SUMMARY OF OBSERVATIONS MADE DURING THE SITE VISIT

During the site visit the following observations were made:

9.1. Floodlines and Wetlands

There are drainage lines in the area. Thorough 1:100 year floodline and Wetland Assessment must be conducted and no development must take place below 1:100 year floodline or within the buffer of a wetland system. If properties are located below the 1:100 year floodline or within a wetland, it is recommended that these families are offered an alternative location above the 1:100 year flood line and/ or outside of the wetland and buffer areas.

9.2. Local Labour

There is high unemployment in the area, thus it is recommended that members of the local community are used as much as possible during construction. This will provide training for the community, which will in turn make them more employable in the future. In addition, the techniques used during construction should be labour intensive.

9.3. Community liaison officers

The EAP is of the opinion that the key to the successful implementation of this project is through community liaison.

10. CONCLUSION

The following activities are required in order to the successful implementation of this project is through community liaison.

Environmental Management Programme

Compilation of an Environmental Management Programme (EMPr). This EMPr must include the following stages:

The EMPr will be based on the outcomes of the EIA and will include the following:

- An environmental policy and Code of Conduct;
- Roles and responsibilities of the various responsible parties involved with the various phases of the project;
- Environmental specifications for design;
- Environmental specifications for construction;
- Environmental specifications for operation;

- Rehabilitation of the environment;
- Any additional requirements listed as part of the Environmental Authorisation and
- Closure, where relevant.

And must address the following:

- Solid waste removal;
- Stormwater Management;
- Action in the event that heritage items are disturbed;
- Noise, dust and security;
- Safety of the workforce, community (including traffic on access road);
- Protection of water resources and biodiversity in the area;
- Alien plant control programme; and
- Soil erosion.

The compilation of the EMPr is predicted to take two weeks.

Approval

The EMPr is required to be submitted to the compliance department of the DAEARD for approval. This is predicted to take approximately three weeks for approval.

Implementation

An Independent Environmental Control Officer (ECO) must audit the construction activities on a monthly basis throughout the construction phase and more often should significant environmental non-compliance be observed. The DAEARD are required to be given two weeks notice before construction commences.

Awareness Programmes

Construction Staff

The construction workforce must undergo environmental awareness training before construction commences. The training programme must be repeated if and when new construction staffs are recruited.

Community

The Community who are receiving the new units with VIPs must be educated on the correct usage and maintenance of VIP Toilets.

Confirmation that the development does not require Environmental Authorisation in terms of GNR 544 and 546.

Before construction commences the following must be obtained:

- Confirmation from the Consulting Engineer that GNR 544 Activity 11 is not triggered;
- Confirmation from a Wetland Specialist that GNR 546 Activity 16 is not triggered;
- A Wetland Assessment for the area proposed to be upgraded;
- A Heritage Impact Assessment;
- A Biodiversity Assessment for the area proposed to be upgraded; and
- A 1:100 year Flood line Assessment.

The EAP is of the opinion that the positive environmental impacts far outweigh the potential negative impacts associated with the proposed development and that all negative environmental impacts can be mitigated. The proposed development complies with the Constitution of South Africa which states that everyone has a constitutional right to a decent house. Provided that (i) the EMPr is correctly compiled and implemented; ii) the awareness programmes are conducted; and iii) accurate confirmation is obtained to ensure

that GNR 544 and 546 are not triggered, the EAP is of the opinion that the development will be sustainable, In terms of socio-economic impacts, it must be ensured that correct liaison takes place between the implementing agents and the community. It is recommended that members from the local community are employed before contractors look further-a field for labours. In addition, it is recommended that labour intensive construction methods take preference over medical techniques. The timeframes for the compilation and approval for the EMPr (approximately five weeks in total) must be acknowledged, and it must also be noted that the DAEARD must be notified two weeks in advance of any construction taking place.

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