



# HUNTLEY ROAD HOUSING DEVELOPMENT

DM/0004/2023 - DRAFT BASSIC ASSESSMENT REPORT  
- Proposed Social Housing Development on Erf 1359  
Queensburgh, 35-53 Huntley Road, within eThekwini  
Municipality, KwaZulu-Natal

## ABSTRACT

This is the Draft Basic Assessment report for the proposed development of social housing units on Erf 1359 Queensburgh, 35-53 Huntley Road, within eThekwini Municipality, KwaZulu-Natal. It includes a description of the proposed development, preferred alternatives, receiving environment, potential impacts and proposed mitigation measures. This report has been prepared in line with the EIA Regulations, 2014 as amended.

Prepared by: **Mondli Consulting Services**

**Yethusodwa (Pty) Ltd**

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**DRAFT BASIC ASSESSMENT REPPORT – PROPOSED SOCIAL HOUSING DEVELOPMENT ON ERF 1359 QUEENSBURGH**

Submitted in terms of the Environmental Impact Assessment Regulations, 2014, as amended, promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) to:

KwaZulu – Natal Department of Economic Development, Tourism and Environmental Affairs (EDTEA):

**Project Title**

Proposed Social Housing Development on Erf 1359 Queensburgh, 35-53 Huntley Road, within eThekweni Municipality, KwaZulu-Natal.

**A. DETAILS AND EXPERTISE OF THE EAP WHO PREPARED THE REPORT:**

Mondli Consulting Services was appointed by Yethusodwa (Pty) Ltd to conduct a Basic Assessment process for the proposed development of social housing units and associated infrastructure on Erf 1359 Queensburgh, 35-53 Huntley Road, within eThekweni Municipality, KwaZulu-Natal.

Details of the EAP:

Business Name of EAP	Mondli Consulting Services		
Physical Address	6 Joseph Avenue, New Era House, Suite 9, Durban North		
Postal Address	P O Box 22536, Glenashley		
Postal Code	4022		
Telephone	0826799841	Cell	0824187708
Email	<a href="mailto:bm@mmcs.co.za">bm@mmcs.co.za</a> <a href="mailto:mondlib@webmail.co.za">mondlib@webmail.co.za</a>	Fax	031 5725647

The expertise of the EAP (including curriculum vitae) IS ATTACHED as Appendix F(1)(a).

Name of representative of the EAP	Education qualifications	Professional affiliations	Experience at environmental assessments (yrs)
BM Mthembu	Diploma in Nature Conservation  Master's Degree (Environmental Studies Dissertation, Geography)  Bachelor of Laws (LLB)	EAPASA registered EAP: No. 2018/168 in accordance with the prescribed criteria of Regulation 15(1) of section 24 H Registration Authority Regulation  Society of South African Geographers (Membership No. 28/09), confirmed to	Has been involved in environmental and conservation field for over 20 yrs. Conducted EIAs for over 20 years including Strategic Env. Assessment.  Has been involved in the review and commenting on

		comply with the requirements set by South African Council for Natural Scientific Professions.	development projects impacting on the environment.
A Mhatu	Bachelor of Science Degree Ecology, Environment & Conservation and Geography	SACNASP Registered (Membership No. 125863).	Has over 9 years' experience in conducting EIAs and EIA related work.

**B. THE LOCATION OF THE ACTIVITY**

(i) The site for the proposed housing units is located on Erf 1359 Queensburgh, 35-53 Huntley Road, within eThekweni Municipality, KwaZulu-Natal. The 21-digit Surveyor General code of each cadastral land parcel is given in the table below.

N	0	F	T	0	2	6	8	0	0	0	0	1	3	5	9	0	0	0	0	0

(ii) The physical address and farm name

The site for the proposed development is located in the Malvern area which is under the town of Queensburgh in eThekweni Municipality.

The total area of the property (Erf 1359) is about 18 499 square metres, while the site allocated for the development is 6128 square metres.

(iii) The general coordinates for the property are given below.

Points	Latitude /Longitude	Degrees	Minutes	Seconds
Point 1	South	29 <sup>0</sup>	52'	28.30"
	East	30 <sup>0</sup>	55'	56.68"
Point 2	South	29 <sup>0</sup>	52'	27.71"
	East	30 <sup>0</sup>	55'	52.49"
Point 3	South	29 <sup>0</sup>	52'	23.44"
	East	30 <sup>0</sup>	55'	53.08"
Point 4	South	29 <sup>0</sup>	52'	22.71"
	East	30 <sup>0</sup>	55'	57.63"

**C. A PLAN WHICH LOCATES THE PROPOSED ACTIVITY OR ACTIVITIES APPLIED FOR AS WELL AS ASSOCIATED STRUCTURES AND INFRASTRUCTURE AT AN APPROPRIATE SCALE.**

A locality map has been attached under **Appendix A (i)** showing the locality of the property including surrounding towns. A layout map showing where the structures will be located on site and any related facility illustrations are attached under **(Appendix A (ii))**.

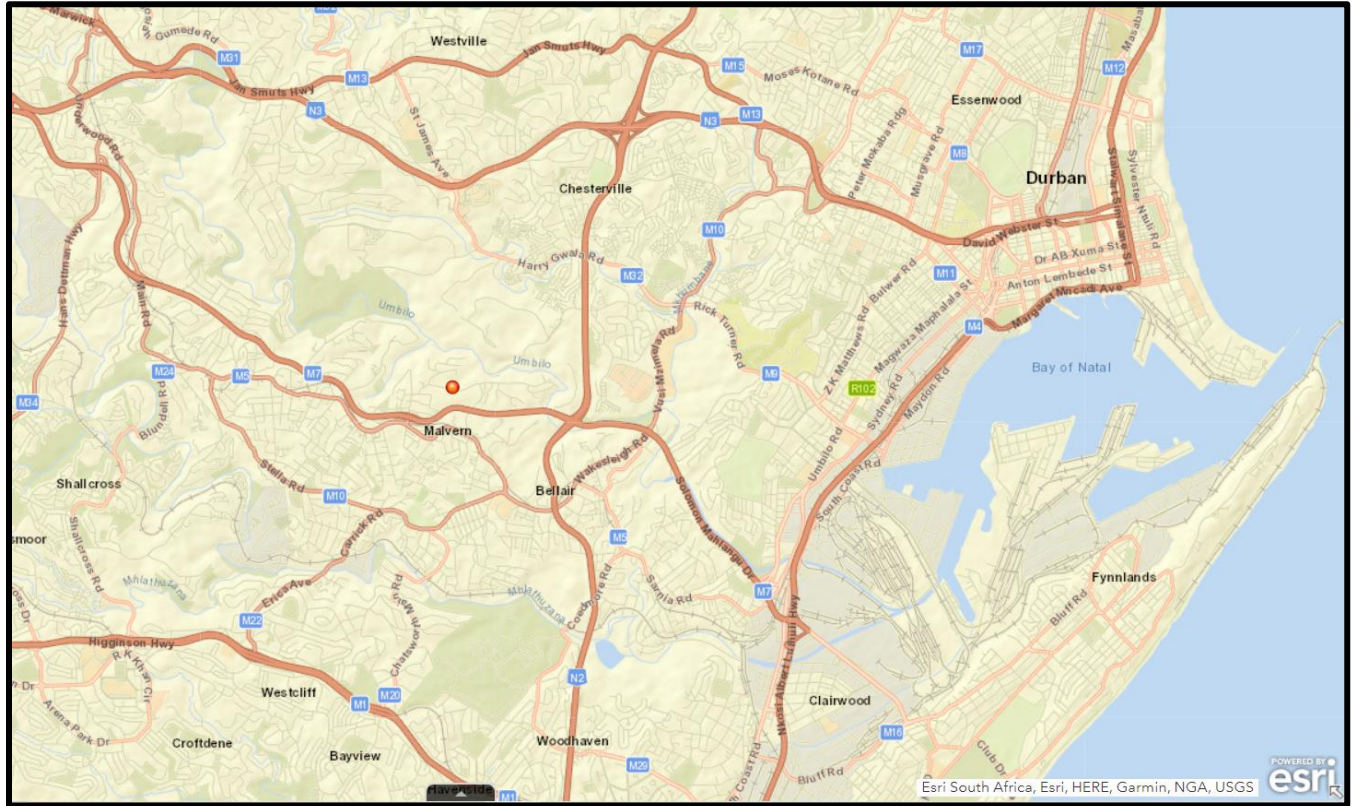


Figure 1: Map showing the locality of the site for the proposed development. ● indicates project site.

**D. DESCRIPTION OF THE SCOPE OF THE PROPOSED ACTIVITY, INCLUDING –**

**(i) All listed and specified activities triggered and being applied for**

Yethusodwa (Pty) Ltd is proposing the construction of 525 social housing units on Erf 1359 Queensburgh, 33 – 35 Huntley Road. This will include short internal roads, and provision of/connections for all required services. The total footprint of the proposed development is approximately 6128 square metres. The site where the development will take place is currently vacant and the vegetation on the site is predominantly degraded but consist of both indigenous plant species and alien invasive plant species (category 1b). A portion of the site is designated as part of the Durban Metro Open Space System (D'MOSS). The site overlaps with two vegetation types, predominantly Northern Coastal Forest and to a lesser extent KwaZulu-Natal Coastal Belt Grassland.

As there is currently an issue with the sewer system within eThekweni Municipality, especially following the flooding events that took place in April 2022, the existing Southern Waste Water Treatment Works which

services the area, will not be able to accommodate the wastewater/effluent from the proposed development. Therefore the proposed development will also include the development of a package plant wastewater treatment system as an option. The package plant will be designed to have a maximum capacity of 1132.03125 cubic metres per day based on the number of houses. The option to connect to the Municipal Sewer line will remain open, and will be explored in the future once the wastewater treatment works system has been upgraded.

The scope of the proposed development was considered against the status quo of the receiving environment, as briefly described above, and also against the Activities Listed in NEMA GNR 324, 325 and 327 (Listing Notice 1, 2 and 3) to identify whether the proposed development falls within the thresholds of any of the activities listed within these Listing Notices. The table below shows Listed Activities within the National Environmental Management Act, 1998 (NEMA), GNR 324, 325 and 327 that have been identified as being triggered by the proposed development based on the project description given and the receiving environment of the site.

**Table 1:** Table showing Listed activities triggered by the proposed development.

Indicate the number and the date of the relevant notice;	Activity No(s) (in terms of the relevant notice)	Describe each listed activity as per the project description (and not as per wording of the relevant Government Notice):
GNR. 324 of 2014 (Listing Notice 3) as amended on 7 April 2017.	Activity No. 12 The clearance of an area of 300 square metres or more of indigenous vegetation.  d. <b><u>KwaZulu – Natal</u></b> iv. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004;	The site overlaps with two vegetation types, predominantly Northern Coastal Forest and to a lesser extent KwaZulu-Natal Coastal Belt Grassland. The KwaZulu-Natal Coastal Belt Grassland has a conservation status of Endangered. In addition, there a portion of the site forms part of the D'MOSS. Considering that the total extent of the site for the proposed development is 6128 square metres and therefore it is most likely that vegetation clearance for construction will lead to removal of more than 300 square metres of indigenous vegetation.

Other Listed Activities were considered based on the activities that form part of the proposed development including development of internal roads and development of a package plant. However; based on the information provided to the EAP, the scope of these activities was found to be below/not fall within the thresholds for triggering the potential Listed Activities.



**(ii) A description of the activities to be undertaken including associated structures and infrastructure**

**Background of the proposed development**

The proposed project entails the construction of 525 housing units. The buildings are planned to be 7 storey high which will have lifts and stairs. There will also be some play areas and short access roads within the development area.

**Area/Footprint**

The property on which the proposed development is located has a total area of 18 499 square metres in extent, while the site allocated for the development is 6128 square metres (0.6128 Ha).

**Project Objectives**

The main objective of the proposed development is to provide affordable, adequate and safe rental housing within the project area and assist the Municipality in meeting strategic goals related to provision of safe housing and clearing of housing provision backlog. The proposed development also aims to provide employment opportunities which will mainly be available during the construction phase of the project as different sets of skills and experience will be required for different construction related tasks.

**Services on-site**

**Access/Roads**

There is a well-established road network around the site with the site accessible from different routes/directions with Huntley Road providing direct access to the site as the site is located adjacent to this road.

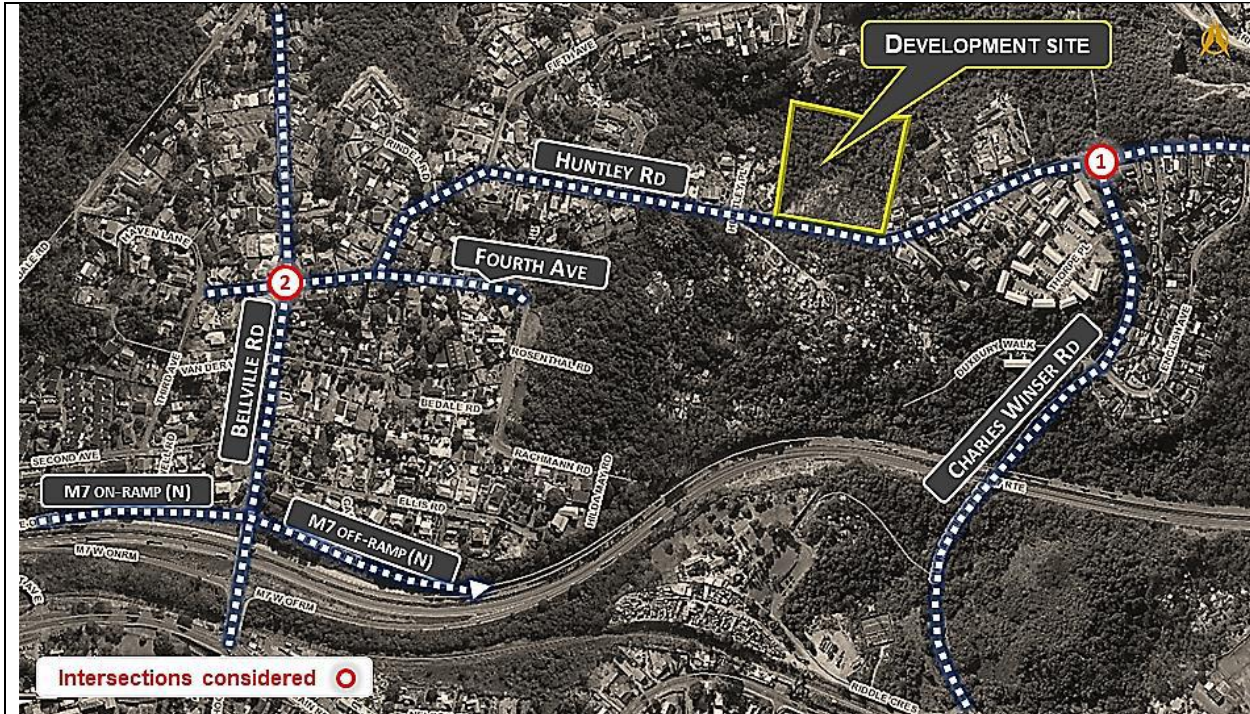


Figure 2: Image showing the road network around the site. (Taken from the Traffic Assessment Report).

### Electricity

There is an existing medium voltage supply within the area and there is a transformer located at the bottom of Huntley Road. Therefore, eThekweni Municipality will be engaged to confirm the capacity of the existing network and whether it can accommodate the proposed development and whether any upgrades will be required. During a meeting held with the eThekweni Municipality they indicated that based on the information provided thus far, they do not anticipate that there will be any challenges in terms of supply of electricity which will be confirmed once the application for connection is provided with all the necessary details for the required electric supply for the project.

### Water Supply

Water for the proposed development is expected to be supplied from eThekweni Municipality's Northdene Reservoir. The capacity required for the proposed development is 0.158ml/d while the reservoir has a capacity of 46.2ml/d. The impact of the water demand on the Northdene Reservoir system will be confirmed through a logging exercise. Should there be delays in undertaking the reservoir logging, on site options can be considered to cater for water storage. A storage tank of approximately 20kl is required for 4-hour storage.

### Sewer Supply

The Developer is proposing the establishment of a package plant system for Wastewater Treatment on the site. The proposed package plant will have a maximum total capacity of 1132.03125 cubic metres.

### Stormwater

The developer shall construct such facilities as are necessary for the control and disposal of stormwater to the satisfaction of the eThekweni Municipality. The developer intends for stormwater to be collected into

attenuation pond and thereafter discharged into the uMbilu River which is located in proximity of the site. A stormwater management plan has been compiled and is attached to this report under **Appendix D5**.

### **Waste Management During the Construction Phase**

All waste/rubble from the construction phase will be stored in wind and scavenger proof containers. Such waste will be regularly transported to and disposed of at the nearest waste disposal site. The closest landfill site to the project area is the Mariannhill Landfill Site which is located about 16km from the project site. Alternatively, Lovu Municipal landfill site can also be used. Moreover, the Contractor may use another disposal site or appoint a waste management contractor. It will be the duty of the Contractor to ensure that waste disposal is in line with Environmental Legislation and the approved EMP. The appropriate area and interval for waste disposal will be agreed to between Engineer, Contractor and Environmental Control Officer (ECO) to ensure that waste disposal does not culminate in any environmental degradation on or off-site. Burning and burying of waste will be strictly forbidden as provided in the EMP. The Contractor at the time may directly dispose of construction related waste or opt to appoint a waste management Contractor. Therefore this will be finalized and agreed to upon appointment of the Contractor prior to the commencement of construction works.

### **Waste Management During the Operational Phase**

Refuse will be stored on site, in designated waste bins and waste storage areas. eThekweni Municipality will be requested to collect solid waste once a week, alternatively a private service provider can be arranged for the collection of solid waste from the facility. Recycling must be encouraged and where possible, separate waste receptacles must be provided for different materials to allow for waste separation and therefore, recycling.

### **Construction Phase**

The construction phase of the development will include:

- Establishing site access;
- Fencing of the construction area including use of shade net;
- Positioning of site office and storage areas;
- Clearing of vegetation for site preparation;
- Set up of all facilities and services required for the construction phase;
- Excavation, infilling and levelling as required;
- Construction of the foundations and rest of the building structures including walls, windows and roofing;
- Cubing for electricity and piping for water supply;
- Painting and other finishing;
- Installation of required facilities such as lift.
- Establishment of the package plant and stormwater system.

## **E. A DESCRIPTION OF THE POLICY AND LEGISLATIVE CONTEXT WITHIN WHICH THE DEVELOPMENT IS PROPOSED INCLUDING –**

- (i) *An identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks, and instruments that are applicable to this activity and have been considered in the preparation of the report.*

**Table 2:** Table showing identified Legislation, policies, plans and Municipal Development planning frameworks applicable to the proposed development.

LEGISLATION	AUTHORITY	COMPLIANCE/APPLICABILITY
National Environmental Management Act (No. 107 of 1998).	Department of Environment, Forestry and Fisheries (National Authority) Department of Economic Development, Tourism and Environmental Affairs (Provincial Authority)	The Environmental Management: EIA Regulations promulgated according to this Act guided the Environmental Impact Assessment Process conducted for the proposed development.
EIA Regulations, 2014 as amended.	Department of Environment, Forestry and Fisheries (National Authority) Department of Economic Development, Tourism and Environmental Affairs (Provincial Authority)	EIA Regulations were adhered to during the Environmental Impact Assessment including determining the need for an Environmental Authorization, the Application/Assessment Process to be followed, conduction of the public participation and report formulation.
Guideline:5 Assessment of Alternatives and Impacts in support of EIA Regulations	Department of Environment, Forestry and Fisheries (National Authority) Department of Economic Development, Tourism and Environmental Affairs (Provincial Authority)	These guidelines were considered in terms of exploring alternatives linked to the proposed development.
Guideline on Need and Desirability, Department of Environmental Affairs	Department of Economic Development, Tourism and Environmental Affairs (Provincial Authority)	In terms of these guidelines the need and desirability of the project has to cover certain specifics like training, safety, service delivery, benefits to the local people and the alignment of planning related issues to the project.
National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)	Department of Environment, Forestry and Fisheries (National Authority) Department of Economic Development, Tourism and Environmental Affairs (Provincial Authority)	Mitigation measures for the minimization of impacts on plant and animal species within and around the site have been included in this report and in the EMP. Implementation of these measures will ensure that the proposed development has as little impact on biodiversity of the area as possible.

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National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004)	Department of Environment, Forestry and Fisheries (National Authority) Department of Economic Development, Tourism and Environmental Affairs (Provincial Authority)	No permit or license is required in terms of this act. However; dust and emissions management during the construction phase will be implemented in order to reduce impacts on air quality within and around the site.
The National Water Act (No. 36 of 1998).	Department of Human Settlements, Water and Sanitation	There is watercourse (Umbilo River) located less than 500m from the site of the proposed development. A wetland/aquatic specialist has therefore been conducted to assess the ecological status of this river and investigate whether any wetlands occur in proximity of the site and no wetlands were found. A water use license/general authorization will be required for the proposed development as it includes a package plant for wastewater management. DWS has been identified as a stakeholder and will be given the draft BAR for commenting and recommendation with regards to impact mitigation measures and license requirements will be followed.
National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)	Department of Environment, Forestry and Fisheries (National Authority) Department of Economic Development, Tourism and Environmental Affairs (Provincial Authority)	All waste produced during construction and operational phase of the project will be handled and disposed of in compliance to this Act and associated regulations.
Alien and Invasive Species Regulations, 2014.	Department of Environment, Forestry and Fisheries (National Authority) Department of Economic Development, Tourism and Environmental Affairs (Provincial Authority)	All necessary precautions will be taken throughout the project life-cycle to ensure that no alien or invasive plant species are introduced as a result of the project. Only indigenous plant species will be used during for rehabilitation and landscaping.
National Forests Act (Act No. 84 of 1998)	Department of Environment, Forestry and Fisheries	The proposed development requires removal of vegetation for

		construction purposes. Vegetation removal will be limited to what is necessary. Should any indigenous plant species have to be removed/relocated, the necessary permit will be obtained from the relevant authority.
KwaZulu-Natal Amafa and Research Institute Act, 2018	KZN Amafa Research and Institute	Provides for the safeguarding of heritage resources within the project area. There are no known heritage or cultural features within or close to the site. However, Amafa will be engaged for commenting and possible recovery and procedure to be followed for archaeological resources will form part of the EMPr and BAR.
Noise Control Regulations (Regulations 154, 10 January 1992)	Department of Environment, Forestry and Fisheries (National Authority) Department of Economic Development, Tourism and Environmental Affairs (Provincial Authority)	Noise levels throughout the project cycle must be kept as low as possible to ensure that there is no nuisance or health impact on community and/or workers resulting from the proposed project.
National Development Plan	RSA Government Departments, Municipalities and Public Entities	Members of the communities in proximity project area will be employed during the construction and operational phases.
South African Constitution, 1996	Government of the Republic of South Africa	The Bill of Rights, as set out in the Constitution, requires that the environment be protected for the benefit of present and future generations. Measures will be put in place and implemented throughout the project lifecycle for the protection of the environment. Other constitutional rights will also be protected.
Promotion of Administrative Justice Act, 2000 (Act No. 3 of 2000)	Department of Justice and Correctional Services	Adverts and site notices published to inform the general public and stakeholders of the proposed development which will allow them access into the decision making process. Once the decision is made, it will be

		circulated to Registered I&APs and right to appeal the decision will be highlighted.
SANS 10400 amendments, in terms of the National Building Regulations and Building Standards Act, No. 103 of 1977	eThekwini Municipality	The Building Plans for the proposed development will be submitted to eThekwini Municipality to ensure that they are in line with National Building Regulations and Standards as well as the eThekwini Municipality Bylaws.
eThekwini Municipality Central Spatial Development Plan 2013-2014	eThekwini Municipality	The local area within which the project is located is predominantly residential in character with medium to high densities and caters for low to middle-income earners. The site is in a future densification area and is therefore the proposed development is not in conflict with the development plans for the area as the project is a residential development which will provide a high number of housing units within a limited space.
EThekwini Bylaws	eThekwini Municipality	There are various Municipal bylaws applicable for the project including but not limited to Air Quality Management, Fire Prevention and Flammable Liquids and Substances, Stormwater Management and Planning and Land Use Management. The proposed development will have to be in compliance with all applicable bylaws according to the activities and aspects of the project throughout its life cycle.
Spatial Planning Land Use Management Act (SPLUMA) 16 of 2013	eThekwini Municipality	The Act provides a framework for spatial planning and land use management in the Republic of South Africa.

**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**

The need and desirability of the project has to be informed by the principle of sustainability as provided for in the National Environmental Management Act; Guideline on Need and Desirability issued by the National Department of Environmental Affairs (2017), and ultimately the Constitution of South Africa. This serves as a way of ensuring that the proposed development is ecologically sustainable, and socially and economically justifiable. The cited guideline among other things state that it is important to review the issues of need and desirability against the listed activities that has given rise to the application in its entirety. The need and desirability have to consider the broader community needs and interests as reflected in the municipal Integrated Development Plan (IDP), Spatial Development Framework (SDF) and Environmental Management Framework (EMF) for the area where the project is located. Also to be considered are the overall impacts of the proposed development to consider sustainability of the project and whether the positive impacts/gains of the project outweigh its negative impacts.

The right to adequate housing is one of the basic human rights recognised in the Constitution of the Republic of South Africa and international human rights instruments. Housing provides shelter from weather elements, a place to eat, sleep, relax and raise a family. The right to adequate housing ensures that people enjoy physical and mental health and live in a safe place in peace and dignity. The right to housing is enshrined in Section 26 of the Constitution, which states that: “(1) *Everyone has a right to have access to adequate housing*” and “(2) *The state must take reasonable legislative and other measures within its available resources to achieve the progressive realisation of this right*”.

The provision of adequate shelter for its residents is therefore a priority for eThekweni Municipality. According to the Municipality’s IDP, the Municipality has to date delivered over 199 000 homes, 2 754 Community Residential Units have been delivered as part of the hostel upgrading project and approximately 23 000 rental units have been transferred to tenants. However, despite this, there is currently backlog for housing provision which stands at approximately 440 000 dwellings.

The proposed development will make a definite and meaningful contribution towards addressing the need for adequate housing as identified in the municipal IDP and Housing Sector Plan. The proposed development will assist in clearing the housing provision backlog in the region, provide for the need of affordable rental housing in the area and provide for the need for compaction and densification. There are some informal settlements south of the site with residents in there including government workers who are low and middle income earners. Such people require housing that is not too far from their place of work to limit travelling costs and housing that will not be too costly in terms of monthly payment to ensure that they are able to afford their other needs with their small income. Therefore, affordable rental housing is evidently needed in the area and the proposed development will provide for low and middle income earners.

The proposed development will also mitigate the spread of informal settlements onto the project site which could occur if it is left vacant and will also minimize urban sprawl. In addition, a number of challenges can be linked with informal settlements including the open flow of raw sewer. Another challenge that is common with informal settlements is that of waste management where waste from informal settlements is disposed of on open fields and on the street and can also lead to blockage of stormwater drains which contributes to flooding during rainy period. These are some of the challenges which can be avoided with construction of affordable housing as opposed to formation of informal settlements.



The proposed development will promote a higher density solution in order to address the housing demands and maximize opportunities related to land availability. The proposed development will also be a logical extension to the existing Queensburgh suburb and other development in the area.

In addition, different levels of employment opportunities will be created mainly during the construction but also during the operation phase of the development which will have a small scale but significant contribution to employment creation and poverty alleviation. With high unemployment rates and the reality of the struggles faced by those living in poverty, employment opportunities linked to such developments should not be undermined. In addition, those who obtain employment through the proposed development may gain skills and knowledge which can increase their chances of being able to obtain long term employment which will provide a more consistent source of income.

Looking at the guideline on need and desirability, and focusing more on planning tools like the IDP, SDF and EMF, these have been useful in the assessment. The said guideline provides a list of 14 aspects, which must be considered. Below the 14 aspects have been addressed for the proposed development.

**1. Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved Spatial Development Framework (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).**

According to the eThekweni's Central Spatial Development Plan (2009), the area where the proposed development will take place is in an area that is designated for Future Densification. The area is currently zoned as General Residential 2 with an application for rezoning to be lodged to zone the site as Public Housing 2 which will allow for the proposed buildings to have number of housing units of the proposed development as General Residential 2 only allows for 206 units.

Some of the issues/challenges for the eThekweni Municipality which are stated in the IDP include the following:

*"There is a need for the Municipality to provide some rental accommodation to cater for low income residents who cannot afford market-related rentals".*

*"Backlogs on provision of basic service delivery i.e. sewage, water, electricity, roads, housing etc".*

Some of the strategies and goals linked to the above include:

- Expand investment in public infrastructure viz. student accommodation, social housing and
- Integrate and prioritise the spatial investment programs of the key sectors of the economy, transport and housing.

The proposed development will provide social housing units which will be rented by tenants at more affordable prices which will cater for middle and low income earners. The proposed development is therefore in line with the projects and programmes identified as priorities in the IDP as provision of housing/social housing is one of the priorities as part of provision of basic services to residents within the jurisdiction of eThekweni Municipality.

**2. Should development, or if applicable, expansion of the town/area concerned in terms of this land use (associated with the activity being applied for) occur here at this point in time?**

The proposed development should occur on this site as the area is already zoned for residential/housing developments. In addition, eThekweni Municipality needs to encourage housing developments including social housing developments in order to clear the backlog in provision of adequate housing to its residents. The number of people who move from rural areas to urban areas such as Durban and surrounding areas is likely to increase as studies have shown that a lot of people move to urban areas in aim to obtain employment and other opportunities to improve their lives.

In addition, should the proposed development not be implemented on this site at this time, it is very likely that the site will be taken over by informal settlements as they have already developed on the property across the road from the site. Spread of informal settlements to this area would cause significant challenges for the municipality and the residents who own/reside on properties around the project site. The illegal invasion will result in the complete degradation of the D'MOSS area, that would otherwise be saved and conserved in terms of this project

Although the site has an area that is part of the D'MOSS, the vegetation on site is highly degraded and infested with alien plant species and the assessment conducted on the site did not reveal any flora or fauna species of conservation concern. The site for the proposed development has taken into consideration the findings of the terrestrial biodiversity assessment and observed the no-go area and required 25m buffer from the boundary of the site to the no-go area. Therefore, with the implementation of environmental impact mitigation measures, the proposed development is unlikely to have significant impacts on the biodiversity of the local area nor the region within which it is located.

However, due care will have to be taken to ensure that negative impacts are minimized as there is a river located within 400m of the site and the site has two vegetation units including the KwaZulu-Natal Coastal Belt Grassland which is endangered.

**3. Does the community/area need the activity and the associated land use concerned (is it a societal priority)? This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate).**

This development is a societal priority. It will provide for the basic need of shelter for those who will benefit from the development. The site is located about 16km from the Durban CBD and about 2km from Malvern and surrounding areas of Queensburgh. Therefore, the site is located close to areas of economic activity which makes it prone to developing informal settlements which are already developing to the south of the site for the proposed development. Towards the west and east directions of the site are High Density residential developments. The High-Density residential forms precedent to the proposed development which blends in well with the existing context.

**4. 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?**

All but one of the required services are available with adequate capacity. The lacking service is that of wastewater treatment as the wastewater treatment works servicing the area are said to have been operating beyond capacity and have also been damaged by the floods that took place in 2022 especially the floods that occurred in April 2022.

However, this is not a fatal issue for the proposed development as the Developer proposes to construct a package plant as a wastewater management solution for the site. This proposal has been supported by the Social Housing Department who are in talks with eThekweni to have the costs of construction of the package plant coming from the USDG with the package plant to then be owned by eThekweni Municipality with the project to be connected to the Municipal line once the system is upgraded. Our information from the Developer and the Project Engineer is that eThekweni Municipality has also supported this proposal, and their comments and support will be attached to the final BAR once they have commented on this draft BAR.

**5. 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)?**

The proposed development is located in a well serviced area with a good road network around the site. The site is therefore easily accessible. Infrastructure for all services is also available around the site.

eThekweni Municipality has however confirmed that the Southern Waste Water Treatment Works which services the area, does not have the capacity to accommodate the proposed development due to damage caused by the floods in April 2022 which left the system compromised. In light of this, the proposal is to develop a package plant system which will have a maximum total capacity of 1132.03125 cubic metres per day.

**6. Is this project part of a national programme to address an issue of national concern or importance?**

In a way, the project is addressing an issue of national concern. It is a constitutional right for South Africans to be provided with adequate safe housing. However, with the increase in the number of people moving to urban areas, provision of adequate housing for all is a national challenge.

Low income and middle income earners struggle to access affordable and safe rental housing units closer to their work place. This has been one of the contributing factors to the nationwide establishment and spread of informal settlements. Informal settlements are usually as they are often located on areas prone to be washed away during floods. In addition, informal settlements are built close together and in the event of a fire breakout, the fire spreads easily due to this and the type of material used in their construction which makes them unsafe.

Therefore provision of affordable rental housing units is not only a concern for eThekweni Municipality but the country at large.

**7. *Is the development the best practicable environmental option for this land/site?***

The site has portion that has is part of the D'MOSS. However, the vegetation assessment conducted revealed the assessment area has a Moderate sensitivity within a Combined Plant Species context. No Species of Conservation Concern (SCC) were observed and based on the present ecological condition of the assessment area, there is also a low likelihood of SCC occurring within the assessment area. It was also found that the vegetation within the property area is degraded and possesses low biodiversity value, with the exception of the northern portion which has since been excluded from the development area.

Therefore considering the above and the fact that the site is a vacant property between residential development, the proposed development is seen as the most suitable development type for the area. As the site has a portion which is D'MOSS, the only option better than the proposed development would be to rehabilitate the area and implement an alien plant eradication programme. However, as it stands, the proposed development is not expected to have significant impacts on local and regional biodiversity.

**8. *Would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF as agreed to by the relevant authorities?***

The approval of the application for the proposed development will not compromise the integrity of the existing approved and credible IDP and SDF of eThekweni Municipality. The proposed planning is in line with development/spatial planning intentions (future densification as per Spatial Plan for the region) of the Municipality as well as the IDP goal to clear housing provision backlog.

**9. *Would the approval of this application compromise the integrity of the existing environmental management priorities for the area (e.g. as defined in EMFs), and if so, can it be justified in terms of sustainability considerations?***

Although a large portion of the site is D'MOSS, an application for relaxation of the D'MOSS was submitted to eThekweni Municipality supported by a vegetation study undertaken by a biodiversity specialist. The relaxation was approved for a portion of the D'MOSS while some of it was designated as a no-go area with a required buffer of 25m from this area. The no-go area is regarded as natural, possess biodiversity value and forms a corridor for local fauna hence it has been deemed non-developable.

Therefore, provided that the Developer adheres to the provisions of the relaxation (i.e. sticks to developable area and maintains the 25m buffer to non-developable area), the proposed development should not result in compromise of the integrity of the existing environmental management priorities for the area. Implementation of applicable impact mitigation measures throughout both the construction and operation phase will further ensure that the environmental integrity of the surrounding area is preserved.

**10. 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).**

The location factors do favour the proposed development. The site is located within a residential area and the proposed project is also a residential development. There is a well-established road network around the site which means that the site can be easily accessed during both the construction and operation phase. The area is also well serviced with almost all services required being available with the exception of wastewater treatment which will be provided for through a package plant. In addition, the area within which the proposed development will be located is zoned for future densification and the proposed development is in line with this plan/strategy.

**11. How will the activity or the land use associated with the activity applied for, impact on sensitive natural and cultural areas (built and rural / natural environment)?**

The site was found to consist of two vegetation units from a desktop level which includes the KwaZulu-Natal Coastal Belt Grassland which is endangered. A portion of the site is demarcated as part of the D'MOSS. No other sensitivities as a wetland specialist found that there are no wetlands within or close to the site.

The proposed development will therefore include removal of vegetation from a D'MOSS area which is an area that is intended to protect the biodiversity and associated ecosystem services of Durban for present and future generations. However, a biodiversity assessment of the area was conducted by a suitably qualified specialist. The findings of the specialist were that the vegetation within the property area is degraded and possesses low biodiversity value, with the exception of the northern portion. It was therefore recommended that the northern portion be demarcated as non-developable with a 25 buffer between the development footprint and the non-developable area.

The developer has followed this recommendation and limited the development footprint to within the developable area with the recommended buffer of 25m observed in the designs/layouts of the proposed development.

During the site assessment conducted by the biodiversity specialist, it was also found that the site does not contain any flora or fauna species of conservation concern. Therefore the proposed development will have a low impact on the natural environment provided that the mitigation measures in this report and in the EMP are adhered to/implemented.

**12. How will the development impact on people's health and wellbeing (e.g. in terms of noise, odours, visual character and sense of place, etc. )?**

Noise and air quality impacts will occur during the construction phase. However; with the implementation of mitigation measures, these impacts can be reduced to low levels and are therefore unlikely to affect people's health and wellbeing.

Although there will be a package plant on the site, if it is developed in line with applicable standards and guidelines, it should not lead to any odour within the locality of the site.

There are other residential developments within the locality of the site with the area being a residential area. The site is a vacant plot surrounded by residential structures. Therefore, the development of the proposed social housing units will not negatively affect the visual character and sense of place of the area as it is in line with existing developments. The proposed development will have a positive impact as it will mitigate against development of informal housing structures and illegal waste dumping with informal settlements developed south of the site and waste dumping currently taking place within the site itself.

**13. Will the proposed activity or the land use associated with the activity applied for, result in unacceptable opportunity costs?**

There are no unacceptable opportunity costs expected to occur as a result of the project.

**14. Will the proposed land use result in unacceptable cumulative impacts?**

No unacceptable cumulative impacts are expected to result from the proposed development.

Cumulative impacts from the proposed development will mainly be on the Umbilo River which is located close to the site. An aquatic assessment conducted by Afzelia (**Appendix D2**), found that the water quality within Umbilo River downstream from the site is poor with E. coli levels from the sample point were in exceeding the Target Water Quality Range were noted. This is likely to be as a result the wastewater treatment works upstream of the sampling area not operating at an optimal level. The overall EcoStatus of the assessed unit within the Umbilo River was determined to be a Class D at the upstream site, and a Class D/E at the downstream site. The slightly more degraded downstream site is likely a result of the activities from the adjacent Quarry mine.

Therefore from the above, it is clear that any impact on Umbilo River resulting from the proposed development will have a cumulative effect with the ongoing impacts from the waste water treatment works, quarry and other activities around the site.

There are three (3) different phases that will form part of the proposed development. These are: -

**(i) Pre-construction and planning phase**

This phase includes the appointment of professionals across different fields of expertise for all required assessments, permits and designs that need to be undertaken as part of the planning to ensure successful implementation of the project and compliance to all relevant legislations, regulations and guidelines.

**(ii) Construction phase**

This phase includes appointment of Contractors, Sub-Contractors and labour to carry out construction of the different structural components of the project. This includes appointment of locals which are often appointed for labour but may also be appointed for other roles based on

skills required versus skills possessed. This phase also includes a strong involvement of engineers and for this application, an Environmental Control Officer will also be required.

**(iii) Operational phase**

This phase will include storage and handling of dangerous substances including petrol, diesel and gas. Other operational aspects will include activities associated with operation of a car wash, motel, retail store and entertainment area which will include sale of alcohol.

**G. A MOTIVATION FOR THE PREFERRED SITE, ACTIVITY AND TECHNOLOGY ALTERNATIVE**

As per GN. R 326, Appendix 1(2)(b), alternatives for the proposed development are to be identified and considered, and this is in line with the definition under Chapter 1 of the EIA Regulations, interpreting alternatives as “in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to the –

- a. Property on which or location where the activity is proposed to be undertaken;
- b. Type of activity to be undertaken;
- c. Design or layout of the activity
- d. Technology to be in the activity;
- e. Operational aspects of the activity

This includes the option of not implementing the activity. This approach compels the developers and assessors to consider other potential land uses and possible future land uses for the site under assessment.

In essence this section focusses on the motivation for the preferred site, looking at the topics covered below:

**a. Property on which the activity is undertaken**

The site for the proposed housing units is located on Erf 1359 Queensburgh, 35-53 Huntley Road, within eThekweni Municipality, KwaZulu-Natal. The site is currently zoned as General Residential 2 and an application will be lodged to rezone the site to Public Housing 2. This is because General Residential 2 only allows for a maximum of 206 housing units while the proposed development is 525 housing units.

There are no other properties considered for this development.

The property was identified as being ideal for the proposed development as it is within a residential area and therefore the proposed development will fit in with the characteristics of the developments around the site. The property is in a future densification area and therefore the proposed development is not in conflict with the development plans for the area as the project is a residential development which will provide a high number of housing units within a limited space.

There are informal settlements on a property to the south of the site across Huntley Road. The property for the proposed development is the only vacant property located close to the developed informal settlements and is surrounded by residential developments. The property has therefore also been chosen in order to avoid it being taken over by informal settlements. The development of informal settlement in proximity of the site shows that there is a need for housing developments such as the one being proposed which provide low cost rental housing in the area.

The area within which the property is located has a well-developed road network which will allow for easy access onto the site during the construction and operational phase. There is a public transport system near the site which will accommodate residents on the property who do not have their own vehicles.

***b. Type of activity undertaken***

The proposed development is aimed at providing social housing within the area which is something that is needed in the area. In addition, as previously mentioned, eThekweni Municipality currently has a backlog in housing provision and this project is one of the developments that can assist in clearing this backlog.

The area within which the development is located already has residential developments and therefore the type of activity to be undertaken is suitable for the area and fits in with the surroundings and characteristics of the area. Any other activity on this property would not be providing for the needs of the community as housing is required in this area as evident through the developing of informal settlements on a property close to the site for the proposed development.

The type of housing development to be developed will be rental units which will be priced at a rate that allows for low and middle income earners to be able to afford the rental units which they would have otherwise not been able to afford if they were to be rented of housing development.

The Developer also intends for the development to benefit the local communities as much as possible. Therefore, over and above the housing that will be provided, locals will be given preference during the construction phase provided that they have the required skills for the task that needs to be undertaken.

**Package Plant Wastewater Treatment System**

The proposed development includes the development of a package plant as an interim sanitation solution. As things stand, the development of a package plant, although usually discouraged, is the only feasible solution that can be implemented for the proposed development to go ahead due to the challenges faced by eThekweni Municipality when it comes to the Sewer Treatment Plant that is servicing the project area.

The proposed development is needed by the community and has received endorsement from the Department of Human Settlements and the KZN Rental Housing Provincial Steering Committee (PSC). It is currently under time constraints needing to be implemented as soon as possible to provide the much needed social housing to beneficiaries. Therefore, it would not be ideal to postpone implementation of this development to a future time period where Wastewater Treatment challenges in the area have been addressed especially with no indication of when these challenges may be solved. The package plant is therefore being proposed to allow for the project to continue with plans to decommission the package plant and tie in to the Municipal system once it has been upgraded.



According to the services engineer for this project, there is adequate area within our site to install this system which will cater for the amount of sewer generated from the site. The sewer will be adequately treated and decontaminated and the decontaminated water will be disposed of via a slotted pipe system onto adjacent undeveloped properties.

The proposed package plant has been designed in line with requirements, recommendations and guidelines of the eThekweni Municipality's sewer Department. This is the Draft Basic Assessment Report which is being sent to stakeholders for commenting including eThekweni Municipality and the Department of Water and Sanitation. Once all comments are received, recommendations made pertaining to the package plant system will be considered and changes will be made where necessary in order for the proposed package plant to meet all requirements and be as efficient as possible with minimal impacts on the surrounding environment.

**c. Design and layout of the activity**

The site layout is attached as **Appendix A (ii)**.

The layout for the proposed development took into consideration, all the findings of the specialist studies conducted and the advice of the project team including architects and engineers. Once all comments have been received, the layout may be amended as per recommendations, if any.

**d. Technology to be used by the activity**

The buildings will have to comply with the National Building Standards and Regulations. The proponent will take into account the various technologies available such as water harvesting and energy efficiency mechanisms during construction. Consideration will be given to water and energy saving devices, where applicable. The applicant will also consider recycling during the operational phase of the project.

**e. Preferred site**

The Developer had initially intended to use as much of the property as possible. However, following the undertaking of the terrestrial biodiversity assessment of the site, it was discovered that the site overlaps with the D'MOSS and that although most of the D'MOSS area is degraded and infested with alien plant species, a portion of the D'MOSS is intact and plays an important role for biodiversity is the area as it plays the role of being a corridor for some animal life in the area. This area was therefore designated as a no-go area. There was also a recommended buffer area of 25m between the boundary of the project site and the no-go area. In addition to this, there is a power line with a 35m servitude that runs through part of the property. With all these factors considered, the options of the location of the site within the property could not be explored beyond observing the no-go area, 25m buffer and 35m servitude and making the most of the remaining small space. The preferred site is therefore the only option for location of the site within the property considering the mentioned constraints/limitations.

**f. No - go option**

In absence of the proposed development, the environment within and around the site will remain unchanged. Environmental impacts that can be associated with the proposed development such as vegetation and traffic impacts will not occur. However, it is likely that if the proposed development is not approved, the property will at some point be invaded by informal settlers. Should this happen, there will be significant impacts on the D'MOSS including the D'MOSS area that has been deemed as a no-go area. In addition, there will be other

challenges and impacts on surrounding environment that can be associated with development of informal settlements which would include but not be limited to issues around waste management and sewer where both raw sewer and waste would end up contaminating/polluting Umbilo River which is located less than 500m from the site.

The proposed development has some positive impacts associated with it especially in terms of socio-economic development. These opportunities will be lost should the proposed development not be considered favourably. Furthermore, the developer has already invested money into the project through acquiring necessary expertise for the planning phase including specialist studies conducted for the site. The money spent thus far will therefore be lost if the project is not able to come to fruition.

#### **H. A FULL DESCRIPTION OF THE PROCESS FOLLOWED TO REACH THE PROPOSED PREFERRED ALTERNATIVES WITHIN THE SITE, INCLUDING:**

##### ***i. Details of all the alternatives considered***

###### Property on which the activity is undertaken

The property for the proposed development is located in an area that is zoned for Future Intensification in the SDP of eThekweni Municipality. Therefore the proposed development fits this as it will provide a high number of housing units within a small space.

The property is located within eThekweni Municipality which currently has a backlog in housing provision especially in terms of low cost rental housing.

This property is the only property that is vacant on this street with the property across the road being taken up by informal settlements.

###### Location of the site within the property

The intention of the developer was to utilize the entire property or as much of the site as possible to maximize the number of housing units that could be provided through the proposed development. However, a large portion of the site falls within the D'MOSS and there is an eThekweni Municipality Power line running through a portion of the site. These are the two main factors which were considered when choosing the preferred location of the site within the property.

A terrestrial biodiversity assessment was undertaken on the site to investigate the fauna and flora species that can be found within the property considering that a large portion of the property falls within the D'MOSS.

The findings of the study led to a portion of the site not being developable as the area was identified as being important for maintaining biodiversity in the area. In addition to this, the recommendation which was approved by eThekweni Municipality, was to maintain a buffer of 25m between the site boundary and the no-go area. This had to be considered by the developer when locating the site within the property.

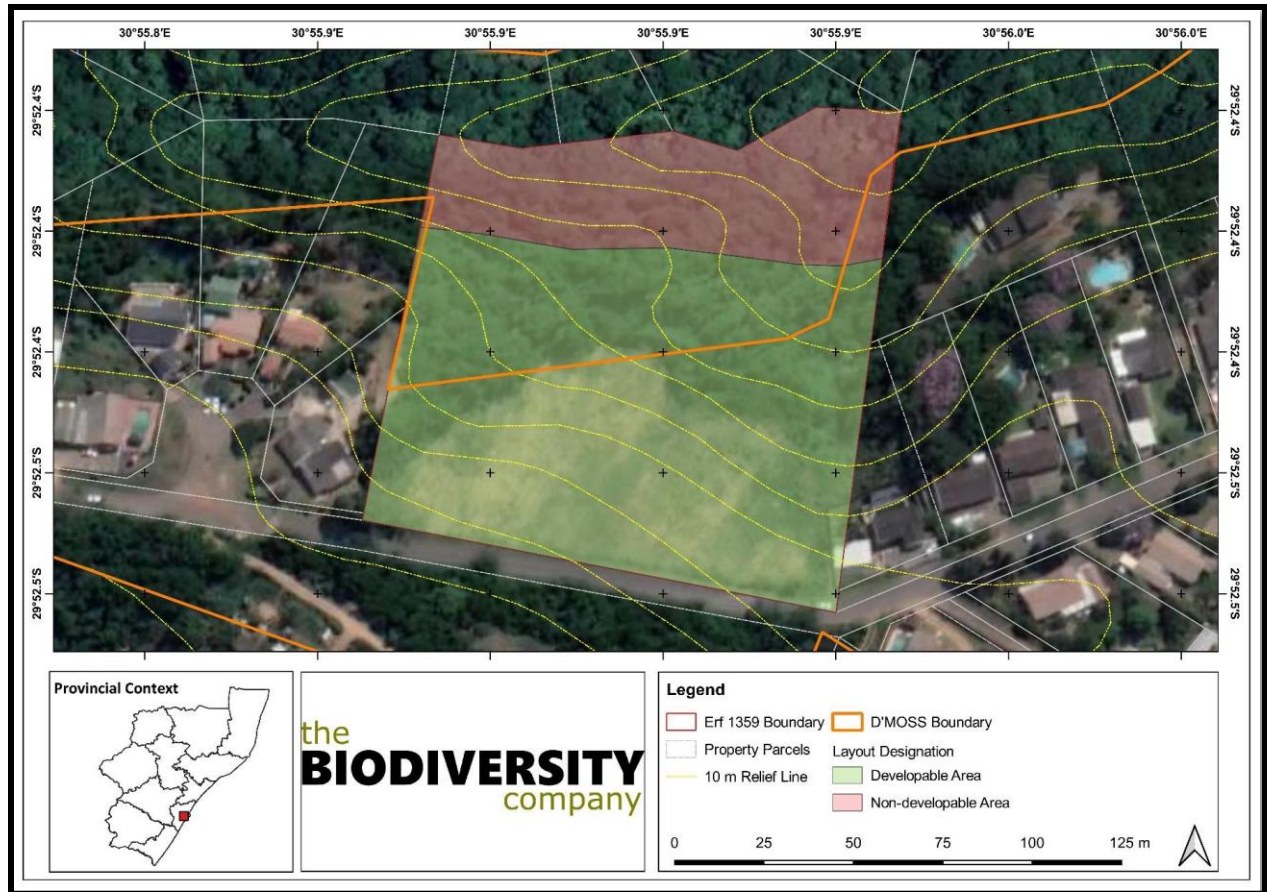
In addition, the power line located on the property requires a 35m servitude between the site boundary and the line. This further ruled out a portion of the property from being considered in terms of location of the site within the property.



**Figure 3:** Image showing a rough outline of the property within which the proposed development is located.

The image (Figure 5) below shows the 35m servitude for the power line that also had to be considered when deciding on the location of the site.

Having considered both factors, the D'MOSS undevelopable area and the power line servitude, there were no options to consider for location of the site within the property. The Developer was left with no option but to make the best of the remaining 6128 square metres.



**Figure 4:** Map taken from the biodiversity assessment report showing the non-developable area (red shade) of the property which had to be considered when deciding on the location of the site within the property.

### Type Of Activity Undertaken

The type of activity to be undertaken was chosen on the basis of providing what is needed in the area and eThekweni Municipality area at large. As stated in the needs and desirability section of this document:

- eThekweni Municipality currently has no rental housing available;
- There is a backlog in housing provision within the eThekweni Municipality;
- Some of the residence of the informal settlements located close to the site are low and middle income earners who cannot afford market rental prices while taking care of their families' needs hence they are residing at the informal settlements;
- The area is a residential area with the property surrounded by residential developments and
- Should the property not be developed, it will most likely be taken up by informal settlements which will see challenges of informal settlements being experienced in the area with significant impacts to be expected on Umbilo River.



Figure 5: Figure showing power line servitude on the property for the proposed development.

Therefore, no other type of activity is needed in this area. The proposed development is the only type of development which will serve the needs of the community and the Municipal area at large. Therefore, no other types of developments were considered for implementation on the site. The above are all the factors which were considered when opting to develop a social housing development on the site.

### **Wastewater Treatment System**

Different options were considered for the wastewater treatment system including:

#### **1. Municipal tie-in- as per communication with Municipality**

The site location drains into Southern Wastewater Treatment Works (WWTW), which currently has no available capacity to treat any additional wastewater. This system has been in a deteriorative state for an extended period of time with the final blow to the system being the floods that took place in 2022, mainly the floods in April 2022 which caused major damage to the system. Evidence of this was also picked up through the aquatic assessments with findings that indicated that the wastewater treatment plant is not functioning efficiently which is affecting Umbilo River located about 405m from the boundary of the project site.

Through email communication, eThekweni Municipality has stated that the Development on this site can only take place once the functional upgrades to the Southern WWTW have been completed and that these

upgrades are subject to the availability of funds in the budget and that the Municipality currently does not have this budget and at the time of the writing of this report, they were not able to indicate when the budget may be available.

Another challenge with this option is that the site is at a lower position than the tie in point to the Municipal sewer line. This means that adoption of this alternative would require a pump station to pump sewer from the proposed development to the tie in point which could be a problem considering the power outages/load shedding.

In addition to the confirmation of the above, the onus lies with the client to carry out a complete sewer assessment of the municipal tie in and all sewer infrastructure leading to the treatment plant to ensure that the pipe infrastructure can handle the sewer generated from the proposed development.

## **2. Conservancy Tanks**

This option is not feasible for a development of this size. The objective is to minimize the operational costs of the development as this is a social housing development.

## **3. Septic tank**

The septic tank can be made use of in 2 forms i.e. septic tank and municipal tie in or septic tanks and slotted pipe system. The Septic tank and municipal tie in will still however be based on the outcome of item no.1 The Septic tank and slotted pipe system is currently not permitted as the rear of the site consists of D'MOSS area.

## **4. Sewer Package Plant**

There are various service providers that offer the solution of an internal sewer package plant. The sewer is adequately treated and the decontaminated water is disposed of via a slotted pipe system which will benefit the adjacent undeveloped areas. There is adequate area within the site to install this system which will cater for the amount of sewer generated from the site.

## **Design And Layout Of The Activity**

Development cost, time, materials, labour, and equipment are impacted by how well a site is designed. The site needs to be carefully laid out through the site design process so that the locations of each component of a new development are value engineered. A well-engineered site leads to a successful and cost-effective development process.

The aim of the proposed development is to provide the highest number of houses within the limited space available on the property. This is one of the factors that was considered when choosing the preferred design for the proposed housing units. The space available is small hence the decision was made to have the buildings be 7 storeys high to provide the maximum number of units that can be accommodated on the extent of land available.

Other factors considered for both the design and layout of the proposed project are:

- Underlying soil conditions. It was important to take the geotechnical conditions of the site into consideration as these influence the design of the development including influence on the

foundational designs and whether the height of the buildings that is being proposed can be safely executed in terms of soil stability.

- Site access. Ease of access will be important especially during the operational phase as operation phase access will be long term (for the lifetime of the project).
- Building standards and regulations.
- eThekweni Municipality by laws.
- Environmental sensitivities around the site including the non-developable D'MOSS area.
- Eskom power line servitude which has restrictions of structures that cannot be constructed within the servitude. This therefore also had to be considered for the layout.

The above are some of the factors that influenced the presented preferred design and layout of the proposed development within the preferred site.

### **Technology to be used by the activity**

This alternative talks to when the same goal is achieved by using a different method or technology as part of the proposed activity. In the scenario, the most benefit possible is achieved with less or no impact to the environment.

The buildings will have to comply with the National Building Standards and Regulations. The proponent will take into account the various technologies available such as water harvesting and energy efficiency mechanisms for both the construction and operation phase of the proposed development. The applicant will also consider recycling during the operational phase of the project.

### **Power Supply**

There is an ongoing challenge of power supply in South Africa with the ongoing load shedding affecting both businesses and homes negatively. The impacts of load shedding are felt the most by those with the lowest income. With power cuts that last anything from 2 hours and more, it would be beneficial to the proposed development to consider alternative power supply. Where possible, this should be to keep all electrical appliances functional in the event of the power cuts. However, this may not be financially feasible for the Developer and in this case, the Developer should at least consider use of rechargeable light bulbs in the units to keep the lights on during load shedding. Informal settlements are usually associated with higher levels of crime and there are informal settlements close to the site. Having lights on during load shedding would likely reduce the chances of criminal activities including break ins. The generator and solar can be other alternatives that the project must consider.

### **No – Go Option**

The no-go option considers the option of not implementing the proposed development and its associated alternatives. This option means that the proposed development does not go ahead and the existing conditions; environmental and socio-economic, remain the same/persist without the influence/impacts that would have occurred as a result of the proposed development. The no-go option must take into consideration the outcomes / impacts of the proposed development considering both positive and negative impacts associated with construction and operation phase of the proposed development. In essence the no-go option provides the means to compare the impacts of project alternatives with the scenario of a project not going ahead.

In cases where the environmental impacts associated with the proposed development have high significance, the no-go option may be the only realistic alternative. It is on the basis of this scenario that the no-go option has to be considered in all projects including the proposed Social Housing Development on Erf 1359 Queensburgh. In the case of the proposed development, the no-go option is not seen as a favourable option considering a number of factors including:

- The environmental impacts associated with the proposed development have a rating of low significance with the implementation of mitigation measures.
- There are employment opportunities which will be created through the proposed development which is positive and significant impact considering high unemployment rates and poverty.
- The proposed development will provide social housing which as mentioned before; is clearly needed in the area.
- In the absence of the proposed development, the property where the proposed development is located will most likely be taken over by informal settlements which will result in environmental degradation with clearing to most likely occur even within the D'MOSS area deemed as non-developable. Further negative environmental impacts would occur if informal settlements are developed on the property including pollution of Umbilo River through dumping of waste and raw sewer and degradation of the environment with haphazard removal of vegetation and contamination from waste management and sewer.

Should the proposed development not be favourably considered, the employment opportunities associated with the development will be lost. In light of the high unemployment rate and poverty within the general project area, the loss of employment opportunities would be something significant considering the daily challenges that the impoverished and unemployed face on a daily basis. The loss of employment opportunities associated with the no-go option will mainly affect locals who are unskilled, as they stand a chance to be employed during the construction phase and would acquire certain skills during the project construction phase based on the tasks they take part in.

In the event that the proposed development is not considered favourably and informal settlements are developed on the property, this will create some challenges for the owners of the properties around the site. The presence of informal settlements in an area is often associated with an increase in the crime rate. The more the informal settlements spread, the higher the crime rate in the area. This would likely be the case for the project area if the proposed development is not implemented. In addition, the presence of informal settlements results in a drop in property value for properties that are located within the same area as the informal settlements. Should the proposed development not be implemented, the site developed with informal settlements, the value of the properties around the site would drastically decrease especially as they would be directly next to the informal settlements.

Therefore, the no-go option will have significant negative environmental and socio-economic impacts compared to the implementation of the proposed development hence it has not been considered favourably in this instance.



**ii. Details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs**

The project will follow the standard public participation process as contemplated under Regulation 41 of the 2014 EIA Regulations, as outlined below.

- The site of the project is located within Ward 63 of eThekweni Municipality. The Councillor has been contacted and will continue to be engaged throughout the process. Should the councillor advise that there is a need for a community meeting, the necessary arrangements will be made and the meeting will be conducted with minutes and register to be attached in the final BAR.
- Flyers giving brief background information of the project were deposited into the post boxes of the neighbouring properties to inform the neighbours of the proposed development and invite them to register as Interested and Affected Parties. This was done on the 4<sup>th</sup> of April 2023 and a printout of the flyer is attached under **Appendix B2**.
- An advert was published in the Mercury on 17 March 2023 and is attached under **Appendix B1**.
- Site notices were erected around the site to notify those passing by and community members of the proposed development and the ongoing environmental assessment process. The site notices were put up on the 4<sup>th</sup> of April 2023 and photos of the posted site notices are attached as **Appendix B3**.
- The draft Basic Assessment is being circulated to all stakeholders, Interested and Affected Parties (I&APs) and state departments for the 30-day commenting period as part of the Public Participation Process. All comments received will be attached to and incorporated in the Final BAR and EMPr.

**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 reasons for not including them**

This is the Draft BAR being circulated to I&APs, stakeholders, and state departments as per the table below giving them the opportunity to comment on the proposed development. The comments and responses to comments received will be recorded in the comments and response report which will be attached to the final BAR as **TABLE 8**. In addition, the EAP will amend both the BAR and EMPr to incorporate/address comments received by the date of submission of the final BAR.

**Table 3:** Table showing identified stakeholders, I&APs and State Departments were consulted and given the opportunity to comment on the proposed development.

Name of Organisation/Department	Contact Person	Contact Details
Department of Economic Development, Tourism & Environmental Affairs	Ndumiso Masuku/ Minenhle Bhengu	22 Dorothy Nyembe Street Marine Building Durban 4000 Email: <a href="mailto:Ndumiso.Masuku@kznedtea.gov.za">Ndumiso.Masuku@kznedtea.gov.za</a> / <a href="mailto:Minenhle.Bhengu@kznedtea.gov.za">Minenhle.Bhengu@kznedtea.gov.za</a>  Tel: 031 350 3015
Ezemvelo KZN Wildlife	IEM Co-ordinator	P.O. Box 13053 Cascades 3202

		Email: Dominic.Wieners@kznwildlife.com Tel: 033 845 1460
KwaZulu – Natal Amafa and Research Institute	Mr John Pakwe	195 Langalibalele Street, Pietermaritzburg, 3201 Tel: 033 3946543 Email: John.Pakwe@amafainstitute.org.za
Department of Human Settlements, Water & Sanitation	Ms R.J. Madibe/ Nompumelelo Mdlalose	P.O. Box 1018 Durban 4000 Email: mngoma-madibej@dws.gov.za Tel: 033 392 7733
eThekweni Municipality	Bathabile Msomi	P.O. Box 680 Durban 4000 Email: <a href="mailto:Batha.Msomi@Durban.gov.za">Batha.Msomi@Durban.gov.za</a> Tel: 031 322 4303
Department of Agriculture Forestry and Fisheries - Forestry Regulations & Support	Ms. Nandipha Sontangane	185 Langalibalele Str. Pietermaritzburg 3200 Email: <a href="mailto:NandiphaS@daff.gov.za">NandiphaS@daff.gov.za</a> Tel: 033 392 7733
KZN Department of Human Settlements	Sinenhlanhla Ndimande	Eagle Building 353 – 363 Dr Pixley kaSeme Street Durban 4001 Tel: 031 319 3690 Cell: 072 247 6960 Email: sinenhlanhla.ndimande@kzndhs.gov.za
Ward Councillor (Ward 63)	Chris Van Den Berg	Cell: 082 372 2403 Email: Ward63@ethekwini.org
Neighbours within 100m of the site		

**iv. The environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects**

**Geographical and Physical Attributes**

**Land Use Character**

The property for the proposed development is located in an area that is zoned for residential use (General Residential 2). The site is currently vacant and is surrounded by residential properties. There is also some mining activity taking place within 500m radius of the site which is occurring along Umbilo River which is located close to the site. To the south of the site, across Huntley Road, there are some informal settlements.



Figure 6: Google Earth Image showing some of the land uses around the site.

## Climate

The area of Durban generally has warm-hot summers and mild winters. The warmest month is February with an average maximum temperature of 28°C. Precipitation is mainly received during the summer season although some precipitation is also received during the winter months. January has the most precipitation while June has the lowest precipitation.

## Natural Environment

Awareness of the foundational importance of the natural environment in reducing risk, enhancing resilience and ensuring sustainable communities in urban areas has been increasing on a global scale. The city of Durban is richly endowed in terms of natural capital given its location at the centre of the Maputaland-Pondoland-Albany Region. This area is described by Conservation International as a “Biodiversity Hotspot”, one of only 36 in the world. The eThekweni Municipal Area (EMA) contains 98 km of coastline, 18 major river catchments and 16 estuaries, 4000 km of river, and 94 834 hectares of land identified as part of the Durban Metropolitan Open Space System (D'MOSS). Part of the site for the proposed development is identified as part of the D'MOSS. Durban's natural environments have however been impacted by landscape change (habitat destruction, degradation and fragmentation), invasive alien species, over exploitation (e.g. illegal sand mining practices) and pollution. Under conditions of global environmental change, the protection of

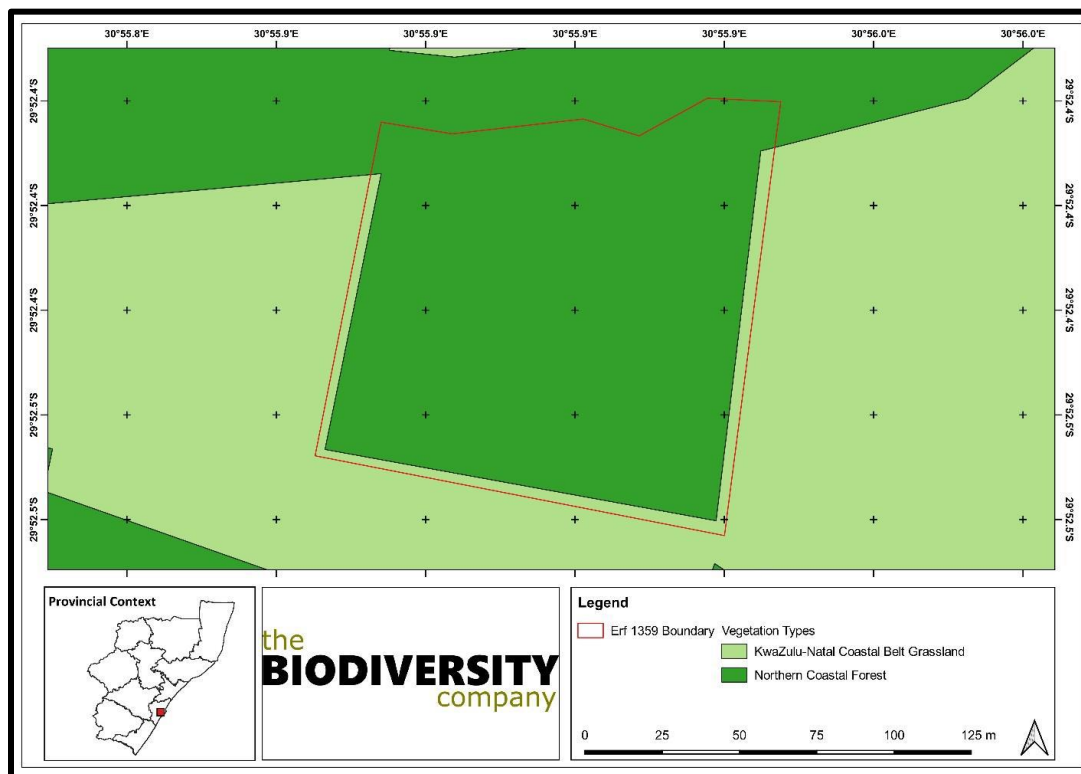
viable ecosystems is becoming increasingly important in meeting the health, social, cultural and economic needs of communities.

## Description of ecological baseline

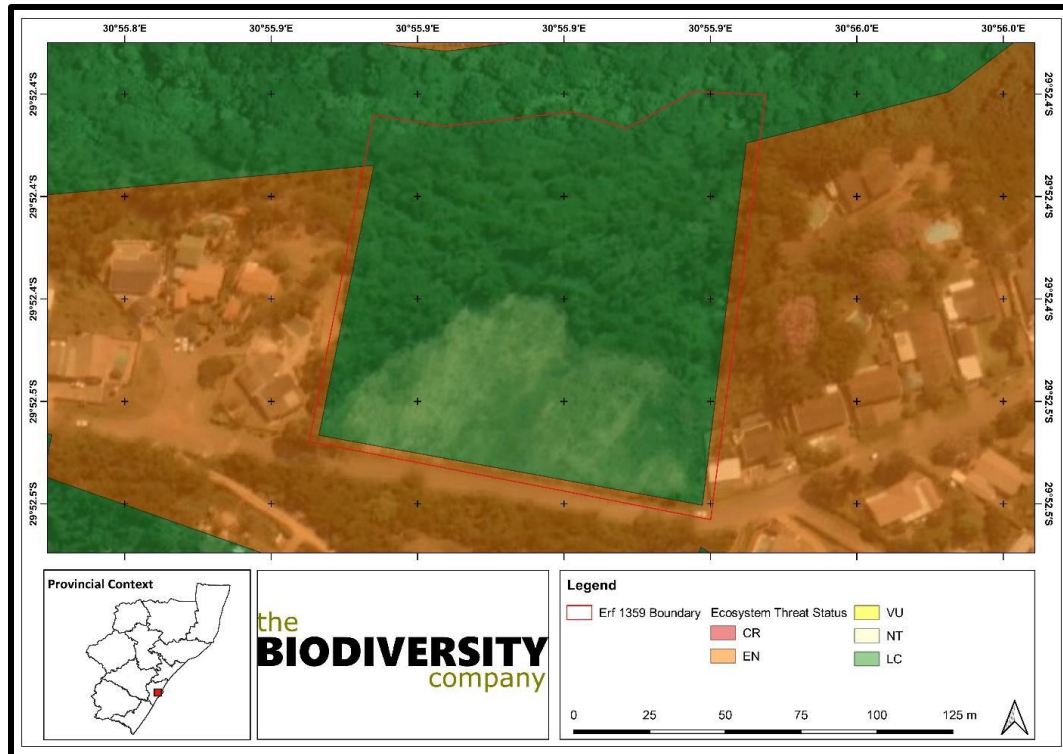
### Vegetation

According to the assessment undertaken by The Biodiversity Company, the project area is situated within the Indian Ocean Coastal Belt (IOCB) which occurs as an almost 800 km long coastal strip between the South African border with Mozambique as far south as the mouth of the Great Kei River (near East London). On a fine-scale vegetation type, the assessment area overlaps with two vegetation types, predominantly Northern Coastal Forest and to a lesser extent KwaZulu-Natal Coastal Belt Grassland (Figure 7). In terms of Ecosystem Threat Status, majority of the assessment area overlaps with a LC ecosystem and partially overlaps with an EN ecosystem (Figure 8).

Vegetation within the southern portion of the property area, south of the D'MOSS boundary, can be regarded as possessing low sensitivity as it is dominated by invasive species due to clearing, and the site is no longer representative or partially representative of the associated vegetation types and possesses very limited biodiversity value. Fifteen species representing 12 families of indigenous flora were recorded within the property boundary during the field survey.



**Figure 7:** Map illustrating the vegetation types associated with the development area and surrounding landscape based on the Vegetation Map of South Africa, Lesotho & Swaziland (The Biodiversity Company, May 2021).



**Figure 8:** Map illustrating the ecosystem threat status associated with the assessment area (The Biodiversity Company, May 2021).

The forest habitat adjacent to the D'MOSS boundary line in a North trajectory, could be regarded as secondary growth as the canopy layer was dominated by the invasive *Melia azedarach*, with indigenous species comprising of typically pioneer species, such as *Senecio deltoideus*, *Dalbergia obovata*, *Trema orientalis*, *Hippobromus pauciflorus* and *Volkameria glabra*. Nevertheless, the forest condition improves away from the forest edge with certain forest indicator species, such as *Dovyalis rhamnoides* and *Vepris lanceolata* present.

Based on the observations at the site, the terrestrial biodiversity specialist identified the proposed developable and non-developable areas. The non-developable area is a more natural area within the

landscape that possess biodiversity value and forms a corridor for local fauna while the developable area is more degraded and was identified to be of low biodiversity value.

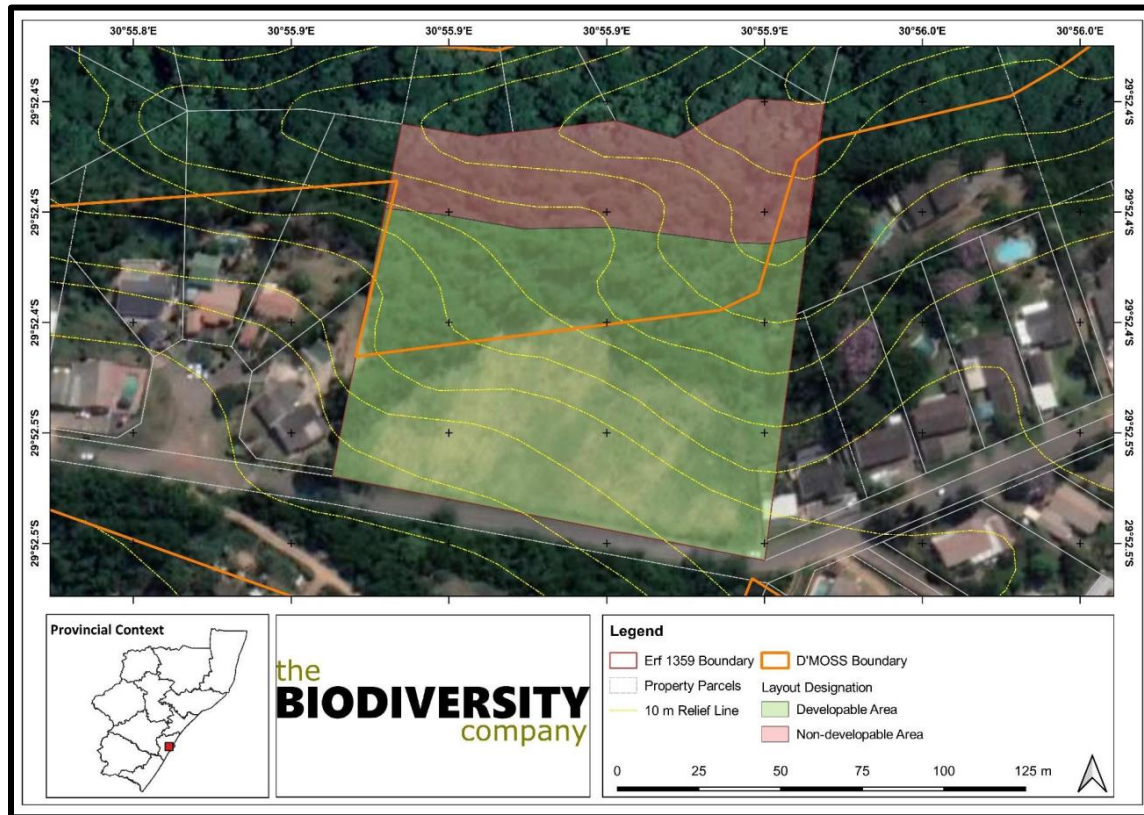


Figure 9: Map illustrating the developable and non-developable areas for property Erf 1359, eThekweni Municipality (The Biodiversity Company, May 2021).

## Fauna

During the terrestrial biodiversity assessment conducted, some avifauna or evidence of avifauna was observed within the more natural area which has been categorised as non-developable. The forest avifauna species observed include *Cossypha natalensis* (Red-capped Robin Chat), *Laniarius ferrugineus* (Southern Boubou), *Campethera abingoni* (Golden-tailed Woodpecker) as well as a pair of *Accipiter tachiro* (African Goshawk). In addition, *Atilax paludinosus* (Marsh Mongoose) utilises the area as a corridor between suitable habitat, as evidenced by its scat.

## Soil and Geology

According to the geotechnical assessment conducted, the site is underlain by residual soils which are underlain by weathered tillite of the Dwyka Group.

### ***Residual Soils***

The upper residual soil profile comprises dark greyish brown mottled yellowish brown, subangular to angular, highly weathered, medium to coarse tillite Gravel in a dense intact matrix of sandy clay. This horizon extends to depths ranging from 0.2 m (TP2 and TP3) to 0.45 m (TP11). The thickness of this horizon increases towards the lower portions of the site.

### ***Bedrock***

Rockhead comprises highly weathered, light brown becoming greyish brown with depth, closely jointed very soft to soft material, with increasing hardness with depth. Hard, bluish grey Tillite boulders up to 1.2 m in diameter were noted on the surface in the upper portion of the site.

### **Groundwater and Hydrology**

A wetland and aquatic investigation of the site was undertaken by Afzelia. Although the desktop assessment showed a potential wetland on the site, the site verification confirmed no presence of wetlands within the development footprint. One perennial river system, the Umbilo River was identified within the 500m radius which is located about 405m from the boundary of the development footprint. There was also a drainage line identified which is located about 100m from the development footprint. No flowing water was observed at this drainage line and the presence of stormwater infrastructure along this line suggests that it is likely in use as a stormwater outflow. This system will be at risk of impact from the proposed development.



**Figure 10:** Upstream view of a portion of Umbilo River.

Two sampling points within Umbilo River were chosen as per the image below (Figure 10) for the aquatic assessment. Some results such as that of the above average electrical conductivity, Escherichia coli (E. coli) levels exceeding the TWQR and odour noted indicate that the waste water treatment works located upstream is not functioning efficiently. The assessment/tests conducted indicated that the habitat associated with the downstream of Umbilo River (unit UM-US), the instream and riparian habitat is in a moderately modified condition (Class C) with primary impacts on the habitat being poor water quality and prevalence of alien vegetation. Evidence of water quality degradation was evident with the presence of algae growth and filamentous algae instream.

Habitat associated with the downstream site of the Umbilo River, the instream and riparian habitat is in a largely modified (Class D) condition. The primary impacts affecting the instream and riparian habitat are associated with bed and channel modification, bank erosion and exotic vegetation encroachment. There were also signs of sedimentation within the channel which is highly likely a result of the mining activities taking place alongside the river. Stockpiles were also observed along the banks of the site.

Although disturbances were observed at both sampling sites, the upstream site was observed to be in a slightly less impacted condition (PES D), when compared to the downstream site (PES D/E). The upstream site recorded more invertebrate species and greater biotope varieties. Water quality degradation was obvious along with riparian bank erosion. In comparison, the downstream site recorded a reduced invertebrate



species richness, excessive channel sedimentation, and bank erosion. Although available biotopes were fair, invasive plant species and the adjacent mining activity, coupled with catchment water quality issues resulted in an overall reduced river health.

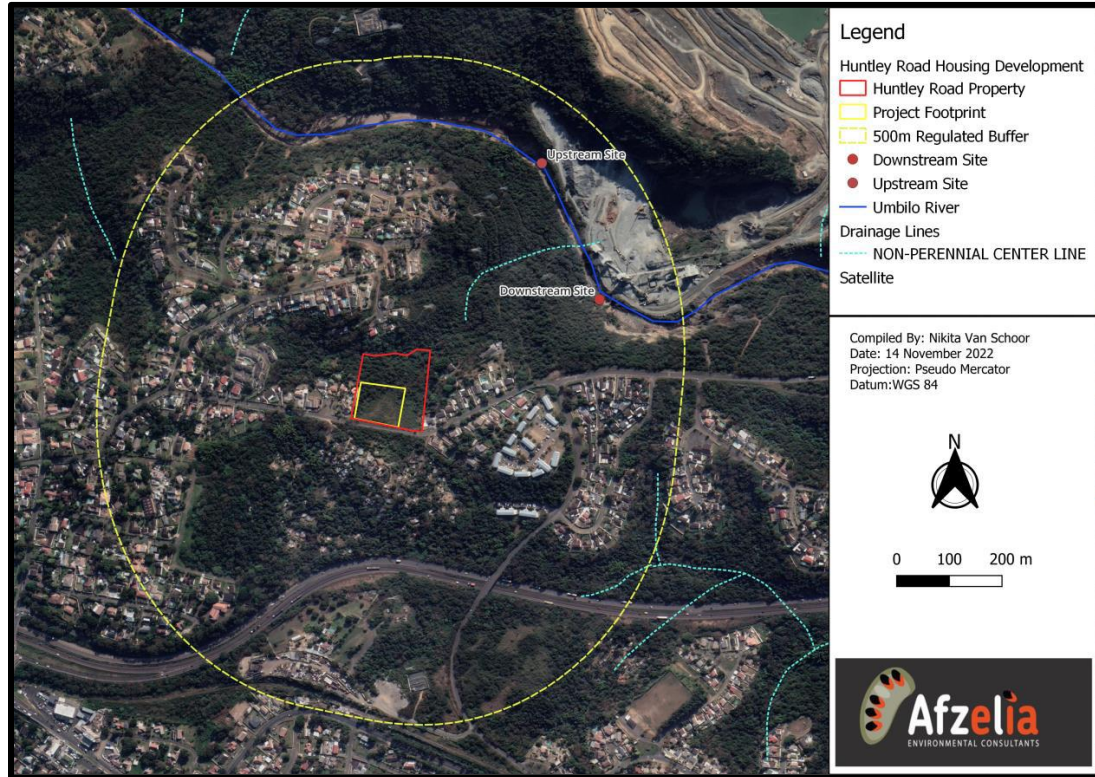


Figure 11: Location of the sampling points in relation to the drainage line and proposed development.

For more information on the results of the aquatic assessment, kindly refer to **Appendix D2**.

### Social attributes

eThekweni Municipality is the only Metro within the province of KwaZulu-Natal. It is a key urban and industrial centre with a diverse economy which supports robust manufacturing and transport sectors. The population of eThekweni in 2019 was 3 987 648 with the greatest population concentrations occurring in the central and northern regions of the Municipal Area. According to the 2016 Community Survey there were 1 125 765 households in eThekweni of which 42.1% were headed women.

eThekweni is South Africa's third largest metropolitan area, and second largest industrial centre. The Metro's economy is underpinned by housing Africa's largest port and complimented by a well-developed road network

to transport goods to much of South Africa and the Northern neighbouring countries. Between 2009 and 2018, the main employment sectors in the metro were community services, finance, trade and manufacturing.

However, the Municipality faces challenges that are generally faced nationwide including unemployment/poverty, crime and service delivery. The estimated backlog for the provision of housing as of the end of April 2021 is 468 000.

### ***Education Profile of eThekweni Municipality***

26% of the eThekweni Municipal population has some secondary education, 25 % of the population has some primary education, 7% has no schooling. Only 5% of the population have tertiary level education.

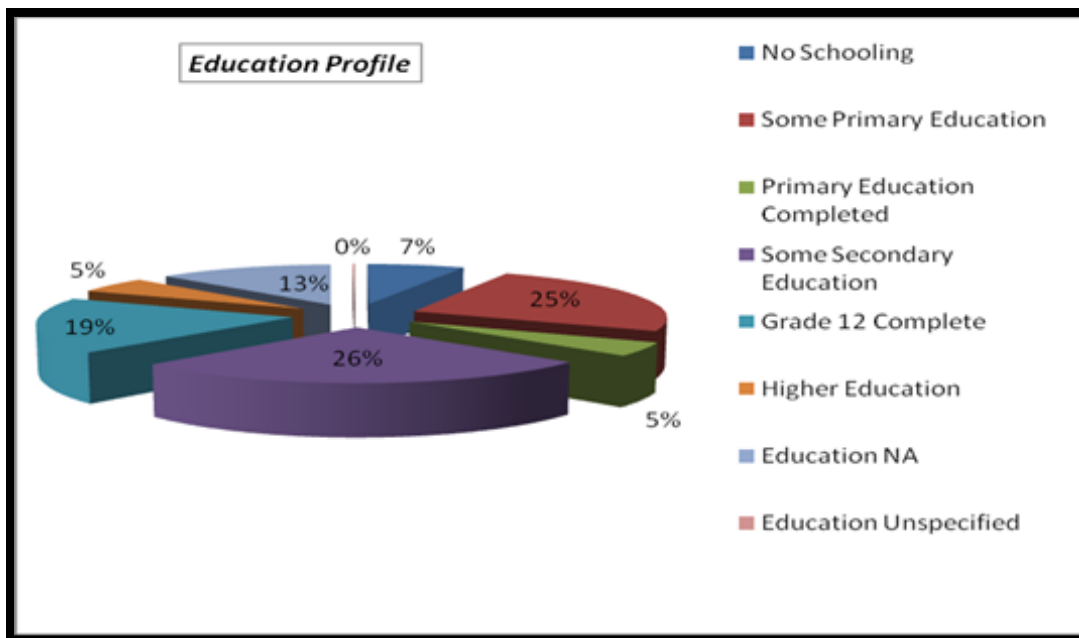


Figure 12: Pie chart showing education profile of the eThekweni Municipality.

### ***Employment Status***

An extremely high percentage of the population is not economically active. This also means high dependency ratios on household heads with low income levels. Despite the diversified nature of the local economy, unemployment in the municipal area is of concern as only 992560 of the total labour force are employed. The unemployment rate is currently estimated at 430319 of the population while 873583 of the total labour force are not economically active.

### **Heritage, historical features, and cultural aspects**

There were no heritage. However, the KwaZulu-Natal Amafa and Research Institute has been identified as one of the stakeholders/I&APs for the proposed development and will therefore be given the opportunity to comment on this draft BAR prior to the submission of the final BAR and their recommendations with regards to heritage and historical features will be followed. In addition, while the draft BAR is being circulated, the public participation process will be conducted which will include engaging the local community around the project site and any information which may be uncovered during this process with regards to heritage and historical features will be included in the final BAR.

**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 –**

*(aa) can be reversed*

The impacts associated with the proposed development cannot be reversed unless the project is decommissioned. However, the impacts can be reduced and compensated for as indicated in the impact statement/assessment table below. For example: the removal of vegetation may include removal of indigenous plant species but such plant species can be transplanted prior to the commencement of construction activities.

*(bb) may cause irreplaceable loss of resources*

There is no irreplaceable loss of resources expected to occur as a result of the proposed development. Mitigation measures will provide for the avoidance, reduction and remediation of impacts to ensure that the overall integrity of the surrounding environment is preserved to allow for continued ecosystem functionality.

*(cc) can be avoided, managed or mitigated*

Some impacts can be avoided such as avoiding removal of identified indigenous vegetation with most impacts to be managed and mitigated with implementation of measures to ensure that such impacts are minimal and or compensated for.

**i. Details of the impact rating tools**

The table below shows the table of the impact significance rating scale that was used for assessing the impacts associated with the proposed development. The guidelines for the impact assessment process applied in compiling this document are outlined within Appendix 1 of the EIA regulations 2014, under which the requirements and objectives for a satisfactory manner to conduct an impact assessment process are outlined.

**Table 4:** Table showing significance rating scale.

SIGNIFICANCE VALUE	SIGNIFICANCE WEIGHTING	DESCRIPTION
<10	<b>Negligible</b>	The impact is very small to absent
10 - 20	<b>Low</b>	Where this impact would not have a direct influence on the decision to develop in the area.
20 - 50	<b>Medium</b>	Where the impact could influence the decision to develop in the area unless it is effectively mitigated.
50 - 70	<b>High</b>	Where the impact must have an influence on the decision process to develop in the area.
>70	<b>Very High</b>	Where the impact may constitute a fatal flaw for the project.

The significance ratings given in the table above took into consideration different factors such as extent of impact, nature of impact and duration of impact.

These are explained in the table below.

**Table 5:** Table of Evaluation criteria ranking

Component	Definition	
<b>Magnitude</b>	<b>The intensity or size of the impact:</b>	
	Small: No visual effects.	0
	Minor: Impact on processes.	2
	Low: Minimal effect on ecological processes	4
	Medium/Moderate: The environment is altered but is able to perform ecological processes in a modified state, despite being negatively affected.	6
	High: The ecological processes are altered such that they cease due to drastic changes to the structure and function of systems.	8
	Very high: The ecological processes severely altered and complete destruction of patterns and permanent cessation of processes.	10
<b>Duration</b>	<b>The temporal scale / predicted lifetime of the impact:</b>	
	Very short term: 0 - 1 years.	1
	Short term: 2 - 5 years.	2
	Medium term: 5 -15 years.	3
	Long term: > 15 years.	4
	Permanent: Will persist indefinitely unless mitigated.	5
<b>Extent</b>	<b>Spatial scale of the impact</b>	
	Specific to site of impact.	1
	Local scale: Immediate surroundings.	2
	Regional scale: Province related scale.	3
	National: Specific to country.	4
	International: World wide/global.	5
<b>Probability</b>	<b>Likelihood of the impact occurring</b>	
	Very improbable: Possibility that will likely never occur.	1
	Improbable: Some low possibility of occurrence.	2
	Probable: Distinct possibility.	3
	Highly probable: Most likely to occur.	4
	Definite: Impact will occur regardless of any prevention measures.	5

**Impact Significance = (Magnitude + Duration + Extent) x Probability**

### **Nature**

Herewith impacts are classified as either direct, indirect or cumulative.

- **Direct impacts:** impacts usually caused from activities carried out on site that can only be monitored to be carried out within certain confines but cannot at all be avoided, i.e. clearing of vegetation for site establishment in an area populated with vegetation.
  - **Indirect impacts:** secondary impacts resulting from direct impacts, i.e. erosion resulting from destabilised soils due to clearing of vegetation.
  - **Cumulative impacts:** impacts which could result during the life cycle of the project as a result of one or two impacts that are usually unnoticed as single elements of such.
- 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***

The factors and ranking scales indicated above were used for the assessment of potential impacts considering the scope of works and environment within and around the preferred site as this is the only site being considered thus far for this application.

- 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***

#### *Positive impacts of the activity*

There are mainly two (3) positive impacts that will come from the proposed development being:-

- Provision of Social Housing  
As stated previously, eThekweni Municipality currently has a backlog in provision of housing and there is lack of rental housing within the Municipal area. The proposed development will assist to provide the much needed housing.
- Creation of Employment  
A significant number of employment opportunities will be created during the construction phase which will also benefit non-skilled workers and local companies able to supply material and skills needed during the construction phase. This will help alleviate poverty to some degree and provide much needed income especially for unskilled workers.
- Environmental Protection  
With the implementation of the proposed development, the site would be developed in an orderly manner with implementation of environmental impact mitigation measures including the observation of the non-developable D'MOSS area and associated 25m buffer. This in comparison to the haphazard development of informal settlements which is likely to occur should the site remain vacant.

*Negative impacts of the activity*

The proposed development will include clearance of indigenous vegetation which includes clearance of vegetation on a portion of land that forms part of the D'MOSS. However, this impact although negative, can be rated as of low significance as this portion of land was identified as being degraded and of low biodiversity significance through the terrestrial impact assessment study conducted.

A package plant sewer system will be developed as part of the proposed development. This will include collection of wastewater from the site into the attenuation pond where it will be treated. The treated water will then be released into the surrounding environment. This could lead to environmental issues including contamination of surrounding environment including the Umbilo River located about 405m from the site and the non-developable D'MOSS area and its associated buffer; should the package plant malfunction or not operate efficiently.

The site is considerably steep. This increases the risk of erosion during construction when the vegetation has been removed exposing the soil to erosion. Erosion around the site could also result from the flow of water from the hardened surfaces on the site onto surrounding areas.

**Climate Change**

Climate change results in changes climate factors including increased temperatures, extreme weather events (e.g. flooding and drought), sea level rise and climate variability. Climate change has already caused a number of challenges for the eThekweni Municipality and this will continue to be the case. The most recent challenge posed by climate change within eThekweni Municipality is that of the floods which were experienced in 2022 including the floods that occurred in April 2022 which led to a number of fatalities, displacement of people and destruction of infrastructure. Although there are also other factors that contributed to the floods having the impact they had, it goes without saying that one of the major contributions/causes was climate change.

Annual rainfall changes are projected to include an increase in aggregated rainfall by 2065 with an increase of up to 500 mm by 2100. Temperatures in Durban are projected to increase by 1.5°C and 2.5°C by 2065 and by 3.0°C and 5.0°C by 2100. Sea level rise along the Municipality's coastline is already occurring at 2.7 cm per decade and may accelerate in the future.

The proposed development is at risk of being affected by floods in the event that they occur. This is due to the steepness of the site. This could cause a collapse of structures within the proposed development including the proposed housing buildings which would endanger the lives of people residing in them. However, the presence of other housing structures around the site on similar slope, shows that, if constructed correctly, buildings established in this area can withstand heavy floods.

The proposed development includes construction of a package plant sewer system and should floods occur, this system can be compromised in a way that can lead to untreated sewer leaking/flowing onto the surrounding environment including Umbilo River.

The proposed development can also, in itself, contribute to flooding in the area through the removal of vegetation and increase of hardened surfaces which both contribute to increase in velocity of runoff. However,

the proposed development will include a stormwater management system which will control the flow of water through the site. Stormwater will include collection of water from the hardened surfaces on the site into the attenuation pond and slow release of that water into the surrounding environment. If the stormwater is constructed accordingly and functions efficiently throughout the project life cycle, this will mitigate the contribution of the proposed development to local flooding to low levels. In addition, during the rehabilitation phase, all areas that are not engineered will be revegetated once the construction phase has been completed.

In addition, both indigenous trees and forests play an important role in helping us both mitigate and adapt to the impacts of climate change. As carbon sinks, trees and the planet's forests help cool the earth by removing carbon dioxide from the air and storing it within their roots, stems, and leaves. Therefore the proposed development will have a cumulative climate change impacts associated with the clearance of indigenous vegetation. The added impacts associated with removal of vegetation include that other indigenous plants within the project area may suffer heat stress and struggle to survive in this area with increased temperatures and change in microclimate. This impact is expected to low-insignificant. This is due to the fact that most of the vegetation within the site consists of invasive alien plant species which infested the area which are not good for local biodiversity and indigenous vegetation in the area. In addition, as part of post-construction rehabilitation and landscaping, indigenous plant species will be used to re-vegetate non-developed areas. An ECO will also conduct a site visit prior to the removal of vegetation to identify indigenous plant species within the project footprint that will be removed and recommend appropriate measures which may include requirement for transplanting or compensating for the removed indigenous plants.

#### **ii. Impacts identified for the preferred site**

The proposed development will include undertaking of a different steps/actions in order to achieve the construction of the proposed development. These and aspects of the operation phase may pose risks to the environment and result in impacts on the environment within and around the site. These include but are not limited to:

- Vegetation Clearance.
- Stripping of topsoil and sub-soil/Earthworks.
- Movement of plant and vehicles onto, around and off the site.
- Storage and handling of hazardous substances during construction phase.
- Use of Plant/Machinery and Working at Height.
- Waste Management.
- Conduction of construction activities.
- Socio-Economic related aspects.
- Decommissioning of the construction site camp and laydown area.
- Operation and maintenance of the package plant wastewater system.

The impacts associated with these activities have been tabulated below.

The EIA Regulations, 2014 as amended stipulates requirements that need to be adhered to and objectives to be reached when undertaking environmental impact assessment. Key to a successful EIA is the accurate identification of environmental and social impacts and the subsequent assessment of the likely significance

of each impact. This will assist in facilitating the prioritization of impacts, the identification of fatal flaws and the identification of mitigation measures.

- viii. *An assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures*

**Table 6:** Table showing some of the potential impacts that can be associated with the proposed development as well as proposed mitigation measures.

Activity	Resulting Impact	Proposed Mitigation
<b>Pre-Construction Phase</b>		
<p>Insufficient consideration of all aspects that could influence the project</p>	<ul style="list-style-type: none"> <li>• If the findings of specialist studies such as the geotechnical investigation are not sufficiently considered in the design and construction of the proposed development, the stability of the proposed structures will be compromised.</li> <li>• Extreme weather has become an issue of concern resulting from climate change. Failure to consider impacts of extreme weather conditions, mainly heavy rain and associated flooding may compromise the stability and safety of the proposed housing units.</li> </ul>	<ul style="list-style-type: none"> <li>• All findings of the environmental assessment including specialist studies and recommendations from specialists and stakeholders must be factored into the design and layout of the proposed development.</li> <li>• As stated in the pre-application for the proposed development, the design of the stormwater system, sewer system and housing structures must consider flood events in light of floods that occurred in 2022 and the damage caused and lives list.</li> </ul>
<p>Failure to comply with environmental legislation/requirements of the EA</p>	<ul style="list-style-type: none"> <li>• Environmental legislation and if issued, conditions of the EA are meant for safeguarding the environment on and around the project site. Failure to comply with these would lead to more significant impacts on the environment.</li> <li>• Penalties/fines could be incurred by the Developer if they fail to adhere to conditions of the EA or legislation applicable to the project.</li> <li>• The proposed construction activities would have to be ceased and remedial action implemented which would have financial implications for the Developer.</li> <li>• Removal of vegetation without engaging the ECO or any other qualified person may lead to loss of</li> </ul>	<ul style="list-style-type: none"> <li>• An Environmental Control Officer must be appointed at least 2 months prior to the intended date of the commencement of the proposed development.</li> <li>• Once appointed, the ECO must familiarize themselves with the EA, EMPr and any other accompanying documents and advise the Developer, Contractor and other members of the project team accordingly.</li> <li>• No form of on-site activity including site clearance may take place prior to notifying EDTEA of the commencement of the development.</li> <li>• A site walk through must be conducted with a suitably qualified expert in order to conduct and onsite inspection of vegetation to identify indigenous plant species that may occur within the development footprint and advise on best</li> </ul>



	<p>species of conservation concern and other indigenous vegetation.</p> <ul style="list-style-type: none"> <li>• Failure to implement impact mitigation measures</li> </ul>	<p>action concerning on the identified plant species based on their conservation status.</p> <ul style="list-style-type: none"> <li>• Implementation of mitigation measures must be considered prior to the commencement of the construction in order to ensure that sufficient resources are timeously allocated and acquired for the implementation of mitigation measures.</li> </ul>
Construction Phase		
Activity	Resulting Impact	Proposed Mitigation
Removal of Vegetation	<ul style="list-style-type: none"> <li>• Loss of D'MOSS area.</li> <li>• Vegetation clearance will result in direct habitat destruction and displacement of species.</li> <li>• Invasion of Alien Invasive Plant Species. Areas exposed due to vegetation clearance will become susceptible to invasion by invasive alien plant species especially as there are many invasive plant species within the site.</li> <li>• Reduction in species diversity.</li> </ul>	<ul style="list-style-type: none"> <li>• D'MOSS area designated as non-developable must not under any circumstances be disturbed during any stage of the proposed development. This non-developable area must be assigned an appropriate zoning to ensure its protection for the lifetime of the proposed development.</li> <li>• A 25m buffer from the edge of the boundary of the proposed development to the non-developable area must be maintained. This buffer area must not be hardened and can only be used for soft recreation areas and indigenous gardens.</li> <li>• All services, including stormwater, internal sewer and water reticulation must therefore consider the conditions for the 25m buffer and must be located outside this buffer.</li> <li>• The compiled Invasive Alien Plant Species Management Plan, once approved, must be implemented throughout the duration of the proposed development including operation phase to eradicate invasive alien plant species within the site.</li> <li>• No site clearance may take place prior to a site walkthrough being conducted by the appointed ECO.</li> <li>• Indigenous trees are ecologically important from a Climate Change Mitigation point of view, regardless of their conservation status. Therefore; any indigenous trees to be removed from the developable footprint must be identified and accounted for, both within and/or outside the project area.</li> <li>• All areas cleared of vegetation which are not engineered, must be revegetated with indigenous plant species. This must include use of trees of the same indigenous tree species as those removed during site clearing.</li> <li>• All areas which are not part of the project footprint and work area must be treated as no-go areas and demarcated as such.</li> <li>• Movement onto and off the site must only take place through designate access routes and</li> </ul>

		<p>there must be no haphazard movement of vehicles around the site.</p>
<p>Stripping of topsoil and sub-soil for the construction of the different structures</p>	<ul style="list-style-type: none"> <li>• Decreased topsoil quality resulting in lowered plant growth rate.</li> <li>• Increased soil erosion.</li> <li>• Sedimentation of stormwater and stormwater channels.</li> </ul>	<ul style="list-style-type: none"> <li>• Topsoil must be sequentially removed in accordance with the requirements on site.</li> <li>• All topsoil must be adequately stored:             <ul style="list-style-type: none"> <li>○ On a Flat surface;</li> <li>○ Below two metres;</li> <li>○ Suitably covered if stored for prolonged periods of time.</li> <li>○ Separate from sub-soil and other stockpiles.</li> </ul> </li> <li>• All temporary embankments that are considered sensitive to erosion must be adequately retained and supported (sandbags, fascine work, retaining blocks etc.).</li> <li>• Where applicable/necessary measures to prevent silt from being washed offsite onto surrounding environment, must be implemented.</li> </ul>
<p>Use and storing of potentially hazardous substances</p>	<p>If not properly handled or stored, hazardous substances may spill and result in:</p> <ul style="list-style-type: none"> <li>• Contamination of soil within and around the site;</li> <li>• Contamination of ground and surface water with seeping of contaminants into soil and pollution of runoff;</li> <li>• Contamination of Umbilo River located close to the site.</li> <li>• Contamination of vegetation around the site.</li> <li>• Potential health and safety risks with possibility of fire and other occurrences that can affect staff and surrounding community.</li> </ul>	<ul style="list-style-type: none"> <li>• All hazardous substances must be stored on impermeable surfaces throughout the project life cycle.</li> <li>• Storage areas where flammable substances are kept must be equipped with serviced fire extinguisher.</li> <li>• Storage areas must not have direct sunlight.</li> <li>• Depending on the amount of fuel and other hazardous substances that are to be kept on site, the Contractor must establish a bunded area that has the capacity to contain the contents of the containers to be kept within the bunded area.</li> <li>• No smoking must be allowed within or close to storage areas where flammable substances are kept.</li> <li>• Material Safety Data Sheets must be kept for all potentially hazardous substances.</li> <li>• All workers who will handle potentially hazardous substances must undergo applicable training and be provided with relevant safety clothing.</li> <li>• Emergency procedures must be known to all workers and must be made part of site induction/training.</li> <li>• A spill kit must be provided on the site to clean up any minor spills on the site with all hazardous waste to be disposed of at a</li> </ul>

		<p>landfill/disposal site that is authorized to handle and dispose of such waste.</p> <ul style="list-style-type: none"> <li>• Significant spills must be reported to EDTEA and DWS.</li> </ul>
<p>Movement of plant and vehicles onto, off and around the site.</p>	<ul style="list-style-type: none"> <li>• Reduced photosynthesis of nearby vegetation due to dust settling on leaves;</li> <li>• Trampling of vegetation outside of the development footprint due to vehicle movements;</li> <li>• Compaction of fertile soils leading to reduced plant growth and soil quality;</li> <li>• Build-up of traffic due to influx of vehicles moving to and from the site especially with regards to movement of heavy vehicles which move slower and take up more space on the road thereby having a more significant impact on traffic.</li> <li>• Threat to human life due to accident.</li> </ul>	<ul style="list-style-type: none"> <li>• Traffic signs must be erected throughout the site, demarcating the following: <ul style="list-style-type: none"> <li>○ Speed limits;</li> <li>○ Sensitive areas; and</li> <li>○ No-go areas</li> </ul> </li> <li>• Dust suppression must be implemented on all access roads. This practice must be carefully monitored by the ECO and all water usage must be recorded throughout the project lifespan.</li> <li>• All temporary roads must receive rehabilitation prior to the closure of the site (deep-rip, backfilling of topsoil).</li> <li>• Vehicles may only traverse designated areas and access roads.</li> <li>• Heavy duty machinery must be stored in allocated areas and not left out in open spaces.</li> <li>• All vehicles observed to have leaks must be serviced immediately. Where some time lapses between detection of the spill and servicing of the vehicle/machinery, such vehicle must be parked on hardened surface or have a drip tray placed under the vehicle.</li> <li>• Animal fatalities due to construction works must be recorded and reported accordingly. Where animal species are observed within the site, such animals must as far as possible be removed from the site.</li> <li>• Movement of construction vehicles around the site must be controlled with temporary traffic signage to be displayed accordingly. Delivery of materials through heavy vehicles must preferably be scheduled to take place outside peak traffic periods to reduce the impact of traffic build up.</li> </ul>
<p>Use of Plant/Machinery and Working at Height</p>	<ul style="list-style-type: none"> <li>• Safety risks associated with use of plant or machinery which would include: <ul style="list-style-type: none"> <li>○ Injury to workers</li> <li>○ Injury to locals</li> </ul> </li> <li>• Injury risks where workers could fall from high levels</li> </ul>	<ul style="list-style-type: none"> <li>• A health and safety officer must be appointed for the proposed development to ensure that all safety standards are met from the onset.</li> <li>• A safety rep must always be present on site for day to day monitoring of compliance and implementation of necessary measures to ensure safety of workers.</li> <li>• The workers' training must include training on emergency procedures that should be followed in case of an emergency.</li> <li>• A safety harness and helmet must be used when working at a height.</li> </ul>

		<ul style="list-style-type: none"> <li>• Scaffolding must be erected and inspected by a suitably qualified person.</li> <li>• All workers on the site must have medical certification which shows they are medically fit for the tasks that their job description entails.</li> </ul>
Waste Management	<ul style="list-style-type: none"> <li>• Failure to store and dispose of waste accordingly will result in pollution of the surrounding environment.</li> <li>• Burning or burning of waste on site would result in air emissions and groundwater contamination.</li> <li>• Littering of waste around the site would have visual impacts on the area and negatively affect the appearance of the affected area.</li> <li>• Dumping of waste within and around the site would also affect any animals that may occur within or close to the site.</li> <li>• Failure to dispose of waste regularly may lead to odour and flies on and around the site.</li> </ul>	<ul style="list-style-type: none"> <li>• Wind and scavenger proof containers must be provided and used for on-site waste storage.</li> <li>• Waste must not be left to accumulate onsite and should be regularly disposed of at the nearest waste disposal site.</li> <li>• The waste disposal method for both general and hazardous waste must be confirmed with the appointed ECO.</li> <li>• Waste disposal certificates/waybills must be kept on file as proof of safe waste disposal.</li> <li>• Workers must be trained to exercise environmentally friendly practices including proper disposal of waste and not setting traps for animals on the site.</li> <li>• Littering on or around the site must be strictly forbidden.</li> <li>• Burning and burying of waste is strictly forbidden.</li> </ul>
Conduction of Construction Activities	<ul style="list-style-type: none"> <li>• There will be noise from construction vehicles, workers and construction works.</li> <li>• Dust result from earthworks on the site and the movement of vehicles within and around the site.</li> </ul>	<ul style="list-style-type: none"> <li>• Neighbours located in proximity of the site must be informed of the intended commencement of construction at least a week before it takes place. This can be done through the ward councillor for the area.</li> <li>• Construction works must be limited to working hours between 07:00am and 04:30pm during weekdays and preferably no works during the operation phase.</li> <li>• Workers may not make any excessive/unnecessary noise within the site.</li> <li>• There may be no playing of loud music from the construction vehicles.</li> <li>• Construction vehicles must be kept in good condition to avoid excessive exhaust emissions and noise.</li> </ul>
Socio-Economic	<ul style="list-style-type: none"> <li>• Employment opportunities will be created for locals during the construction phase of the proposed development.</li> <li>• Having the proposed development on this property, will have a positive impact on neighbouring properties as opposed to the site being taken over by informal settlements.</li> </ul>	<ul style="list-style-type: none"> <li>• Terms of employment must be clearly explained to all workers prior to finalization of their employment.</li> <li>• The Contractor and developer must avoid making promises to the community especially those that will be hard to keep.</li> <li>• The Contractor and Developer must consider giving some form of certification to workers for the skills they displayed during their employment period.</li> </ul>

	<ul style="list-style-type: none"> <li>The inflow of people and regular movement of people around the site for the purpose of the proposed development may result in increased crime in the general project area.</li> </ul>	<ul style="list-style-type: none"> <li>A community liaison officer must be appointed prior to the commencement of construction works to be the communication bridge between the Contractor and community.</li> <li>Local suppliers must be allowed to quote for required material and services and must preferably be given preference where their services or material meet the requirements for use in construction of proposed structures.</li> <li>No persons may be allowed to stay on the site except for security personnel.</li> </ul>
<p><b>Riverine Unit Impacts: Site located close to Umbilo River and therefore activities on site may have impacts on this watercourse.</b></p>		
<p>Direct habitat disturbance due to riparian, instream and bank modifications from the placement of new stormwater infrastructure and discharge points.</p>	<ul style="list-style-type: none"> <li>Clearing and destruction of riparian vegetation can take place both intentionally, for servitude clearing purposes, or unintentionally due to negligence of the active staff onsite.</li> <li>Vegetation clearing for the development, maintenance of the electric line servitudes, and internal roads will have a minimum impact on the aquatic resources largely because of the distance between the development site and the river.</li> </ul>	<ul style="list-style-type: none"> <li>A buffer of 32m is recommended from the edge of delineated riparian habitat and should be enforced for the duration of the project. These buffers should be clearly demarcated when/ or if work is to be undertaken nearby to ensure no unnecessary incursions by vehicles or clearing takes place within these sensitive areas.</li> <li>Stormwater attenuation structures should not be placed within the riparian zones or associated 15m buffer. Stormwater outlet protection may be placed within these sensitive areas in order to negate, or at least minimise, potential erosion from the stormwater outlets.</li> <li>The use of existing tracks and roads to gain access to the work area must be prioritised as far as practically possible.</li> </ul>
<p>Soil erosion and downstream sedimentation as a result of in-effective stormwater management during the construction and operation phase of the development.</p>	<ul style="list-style-type: none"> <li>Construction activities (i.e. excavations, vegetation clearing and depositing fill material) expose soil to environmental factors including rainfall and wind which can lead to the removal of topsoil resulting in soil erosion. Sedimentation caused by this loose soil can impact riverine systems through diminishing water quality by increasing turbidity which may affect local floral and faunal assemblages.</li> <li>Compaction of soil will occur in the working areas due to heavy vehicle traffic during construction which will promote surface run-off and reduce infiltration which, in turn, will increase the volume and velocity of surface water entering the river</li> </ul>	<ul style="list-style-type: none"> <li>Do not allow surface water or storm water to be concentrated, or to flow down cut or fill slopes without erosion protection measures being in place.</li> <li>Install sediment barriers across the downslope extent of the construction area to prevent potential sedimentation of the riparian zones.</li> <li>Any necessary temporary access roads must be aligned along the natural contour of the slopes and sufficient stormwater controls must be in place in order to avoid the road acting as a preferential flow path for water runoff.</li> <li>Stormwater and any runoff must flow into energy dissipation structures prior to being discharged back into the natural watercourses (such as retention ponds or areas with rock riprap / grassed with indigenous vegetation to encourage the trapping of silt and attenuation of flows). Stormwater attenuation must take place outside the recommended buffer zones.</li> </ul>

	<p>system, thereby creating an erosion risk.</p>	
<p>Pollution of the water resource during the construction phase from construction vehicles, concrete or bitumen.</p>	<p>Mismanagement of solid waste and pollutants during construction including hydrocarbons, cement, bitumen, oils and grease as well as other hazardous chemicals will result in these substances entering and polluting sensitive riverine environments either directly through surface runoff during rainfall events or subsurface water movement. The linked nature of watercourses will result in the pollutants being carried downstream from the working site. An increase in pollutants will lead to a decline in the water quality of the riverine unit leading to overall habitat degradation and potential localised floral or faunal extinctions.</p>	<ul style="list-style-type: none"> <li>• Do not allow surface water or storm water to be concentrated, or to flow down cut or fill slopes without erosion protection measures being in place.</li> <li>• Install sediment barriers across the downslope extent of the construction area to prevent potential sedimentation of the riparian zones.</li> <li>• Any necessary temporary access roads must be aligned along the natural contour of the slopes and sufficient stormwater controls must be in place in order to avoid the road acting as a preferential flow path for water runoff.</li> <li>• Stormwater and any runoff must flow into energy dissipation structures prior to being discharged back into the natural watercourses (such as retention ponds or areas with rock riprap / grassed with indigenous vegetation to encourage the trapping of silt and attenuation of flows). Stormwater attenuation must take place outside the recommended buffer zones.</li> </ul>
<b>Post-construction</b>		
<p>Decommissioning of the construction site camp and laydown area.</p>	<ul style="list-style-type: none"> <li>• Spillages of oils fuels and chemicals causing the contamination of soils, surface and ground water;</li> <li>• Hardened/ compacted soils reduce the vegetation growth;</li> <li>• Reinstatement of sub-standard topsoil reduces the growth and success of indigenous vegetation;</li> <li>• Proliferation of IAPS on site and into surrounding plant communities;</li> <li>• Introduction of exotic species through uninformed re-vegetation efforts;</li> <li>• Exposed, unsupported soil being eroded and causing erosion gullies;</li> <li>• Poor stormwater runoff, leading to erosion on site.</li> </ul>	<ul style="list-style-type: none"> <li>• Rehabilitation must be conducted on site, by adequately backfilling topsoil and reinstating indigenous vegetation.</li> <li>• All access roads must be deep-ripped and adequately rehabilitated.</li> <li>• Rehabilitation of the site must be monitored by an ECO.</li> <li>• Natural berms and contours must be reinstated by the Contractor prior to the closure of the site.</li> <li>• Spill kits must be available on site at all times and must be suitably equipped to deal with spills.</li> <li>• Stockpiles must be cleared of IAPS and this must be checked before backfilling.</li> <li>• No stockpiles must be left behind after the construction phase, but rather must backfill and/or removed from site.</li> </ul>

		<ul style="list-style-type: none"> <li>Approved stormwater management plan must be implemented and maintained.</li> </ul>
<b>Operational Phase</b>		
<b>Activity</b>	<b>Resulting Impact</b>	<b>Proposed Mitigation</b>
Operation of the Package Plant System	<ul style="list-style-type: none"> <li>Disposal of grey water from the proposed development to Umbilo River will have cumulative impacts on the river as it is already being impacted on by the existing Southern Wastewater Treatment Works and mining activities near the river.</li> <li>In the case of the package malfunctioning, this would result in odour within the locality of the project site.</li> <li>Although nutrients such as nitrogen and phosphorus are beneficial for plants, high concentrations can result in adverse effects.</li> <li>In the event of flooding or breakdown of the package plant, raw sewerage can be released into the environment which will have negative impacts on surrounding area and potentially the Umbilo River.</li> </ul>	<ul style="list-style-type: none"> <li>SANS 52566-3:2010; Small wastewater treatment systems for up to 50 PT- Part 3: Packaged and/or site assembled domestic wastewater treatment plants. Specifies to wastewater drainage systems which operate under gravity and is applicable to drainage systems inside dwellings and commercial, institutional and industrial buildings.</li> <li>Time and effort must be invested in the proper maintenance of the package plant.</li> <li>Disinfection is the final step in the treatment process and it is essential that the water is adequately treated prior to this step in order to ensure that the disinfection step is effective.</li> <li>The Developer must ensure that there is a monitoring system for the package plant which must include monitoring of the quality of the water being discharged from the package plant and investigation of potential leaks.</li> <li>It is important that the location and design of the package plant tank takes into consideration potential flooding and breakdown and how in these events, the release of raw sewerage can be avoided or quickly stopped and remedied.</li> </ul>
Fragmentation and ecological disturbance impacts	<ul style="list-style-type: none"> <li>Although the site for the proposed development has low sensitivity and biodiversity impact, the non-development area within the property has high sensitivity and is of high biodiversity value as a corridor for local fauna. Light and noise from the proposed development may affect fauna in this area and force it to migrate to other areas which will reduce the biodiversity value of the area.</li> </ul>	<ul style="list-style-type: none"> <li>Controlling both the direct and indirect impacts of the proposed development will be key in ensuring the sustainability of this development.</li> <li>Mitigating noise and light impacts will be difficult to enforce during the operation of the site, however lighting design to avoid casting light onto areas beyond the site may be implemented. Edge impacts and alien plant infestation impacts can be quite easily controlled through maintenance activities.</li> <li>Edge effects whilst unavoidable should be carefully controlled by applying mitigation techniques early, and loss of ecosystem function should be controlled by careful monitoring and avoidance of any activities from taking place outside of the proposed development footprint.</li> </ul>
Stormwater Management	<ul style="list-style-type: none"> <li>Soil erosion and downstream sedimentation of Umbilo River as a result of in-effective stormwater</li> </ul>	<ul style="list-style-type: none"> <li>Do not allow surface water or storm water to be concentrated, or to flow down cut or fill slopes without erosion protection measures being in place.</li> </ul>

	<p>management during the operation phase of the development.</p> <ul style="list-style-type: none"> <li>• During the operation phase of the proposed development, any maintenance relating to the stormwater infrastructure in proximity to the riparian zone, will likely result in instream and riparian habitat as well as bank disturbance due to potential incursions within these sensitive environments.</li> <li>• During the operation phase of the proposed development areas previously vegetated will be hardened which will alter the natural hydrology of the catchment and potentially increase velocity of stormwater reaching the nearby riverine unit. Additionally, poor placement or design of stormwater infrastructure on the edge of the riparian zone unit could potentially cause increased erosion and sedimentation downstream over time.</li> </ul>	<ul style="list-style-type: none"> <li>• Stormwater and any runoff must flow into energy dissipation structures prior to being discharged back into the natural watercourses (such as retention ponds or areas with rock riprap / grassed with indigenous vegetation to encourage the trapping).</li> <li>• Do not allow surface water or storm water to be concentrated, or to flow down cut or fill slopes without erosion protection measures being in place.</li> <li>• It is imperative that the design of the stormwater system is such that it is able to cope with the significant run off that a development of this nature can generate.</li> <li>• An environmental contingency plan is recommended for the proposed development to ensure that potential environmental incidents or emergencies, such as malfunctioning sewerage infrastructure, can be quickly and effectively resolved.</li> </ul>
<p>Waste Management</p>	<ul style="list-style-type: none"> <li>• As this is a housing development, a significant amount of waste will be generated from the operation phase. If not well managed, such waste will end up being released or disposed of into surrounding environment.</li> <li>• Waste accumulation on the site during the operation phase can lead to pests and would affect the health of the residents on the property.</li> </ul>	<ul style="list-style-type: none"> <li>• Large waste receptacles must be provided in a designated waste storage area.</li> <li>• A waste management plan must be compiled and implemented for the operation phase prior to moving in of tenants. This plan must include a time and date on which the waste receptacles must be taken to the waste collection truck's route.</li> <li>• The Developer must ensure that the interval at which waste is taken of site is sufficient to discourage waste accumulation. Should the collection of waste once a week by the Municipality not be sufficient, the Developer must make appropriate arrangements and ensure that all waste from the site is not disposed of in any natural environment near the site or on any other location.</li> </ul>
<p>Health and Safety Impacts</p>	<ul style="list-style-type: none"> <li>• Electrical faults or other incident such as where tenants leave candles burning while the sleep will pose a fire risk which may have fatal implications.</li> <li>• Should any flooding occur, this could threaten the safety and health of tenants.</li> </ul>	<ul style="list-style-type: none"> <li>• The electrical installations on the buildings must be done, inspected and approved by a qualified person.</li> <li>• The National Building Regulations and Building Standards Act 103 of 1977 must be complied with.</li> <li>• Procedures to be followed in the event of any emergency must be communicated with all</li> </ul>



	<ul style="list-style-type: none"> <li>• Poor maintenance of the properties can expose tenants to conditions that compromise their health and safety.</li> <li>• The fact that the site is located close to an area where informal settlements have developed may be a security concern for the operation phase including crime concerns.</li> </ul>	<p>tenants including the emergency evacuation procedure and location of assembly point.</p> <ul style="list-style-type: none"> <li>• The proposed buildings must be equipped with serviced fire extinguishers.</li> <li>• The buildings must be well maintained to avoid health and safety risks that can be associated with things like forming of mould, faulty lifts and broken windows, to mention a few.</li> <li>• All necessary security measures must be implemented including controlled access and appropriate fencing.</li> </ul>
<p>Socio-Economic Impacts</p>	<ul style="list-style-type: none"> <li>• A few employment opportunities will be created during the operation phase including security personnel for access control and care taker.</li> <li>• People will benefit in having access to safe, secure and affordable rental housing.</li> <li>• Surrounding neighbours will benefit through the proposed development discouraging the Development of informal settlements on the property which is likely to occur if the property is left vacant and would affect the value of their properties.</li> </ul>	<ul style="list-style-type: none"> <li>• The Labour Relations Act 66 of 1995 must be adhered for all those who employed.</li> <li>• A fair process must be followed for selection of people who will benefit from the proposed development.</li> <li>• Although the Developer will not be residing on the property, he or his representative/property manager, must maintain a good relationship with neighbours and have an open channel of communication for neighbours to communicate their complaints/concerns should they have any.</li> </ul>

**ix. The possible mitigation measures that could be applied and level of residual risk**

In the assessment process the potential to mitigate the negative impacts is determined and rated for each identified impact. The significance of environmental impacts has therefore been assessed considering any proposed mitigation measures.

In the table below are the potential impacts and some of the recommended mitigation measures. Detailed mitigation measures are contained in the EMPr which once approved will form an integral part of the EA and will be a binding legal document which must be complied with during all phases of the proposed development.

**Table 7: Impact Assessment for Potential Impacts**

Impact and Risk	Duration	Extent	Probability	Magnitude	Significance	Mitigation	
<b>Pre-Construction Phase</b>							
Insufficient consideration of all aspects that could influence the project	Without Mitigation	4 Long Term	2 Local Scale	4 Highly Probable	10 Very High	64 High	<ul style="list-style-type: none"> <li>SANS 52566-3:2010; Small wastewater treatment systems for up to 50 PT- Part 3: Packaged and/or site assembled domestic wastewater treatment plants. Specifies to wastewater drainage systems which operate under gravity and is applicable to drainage systems inside dwellings and commercial, institutional and industrial buildings.</li> <li>Time and effort must be invested in the proper maintenance of the package plant.</li> <li>Disinfection is the final step in the treatment process and it is essential that the water is adequately treated prior to this step in order to ensure that the disinfection step is effective.</li> <li>The Developer must ensure that there is a monitoring system for the package plant which must include monitoring of the quality of the water being discharged from the package plant and investigation of potential leaks.</li> <li>It is important that the location and design of the package plant tank takes into consideration potential flooding and breakdown and how in these events, the release of raw sewerage can be avoided or quickly stopped and remedied.</li> </ul>
	With Mitigation	1 Very Short Term	1 Site Specific	2 Improbable	4 Low	12 Low	
Failure to comply with environmental legislation/requirements of the EA	Without Mitigation	5 Permanent	2 Local Scale	2 Improbable	8 High	30 Medium	<ul style="list-style-type: none"> <li>SANS 52566-3:2010; Small wastewater treatment systems for up to 50 PT- Part 3: Packaged and/or site assembled domestic wastewater treatment plants. Specifies to wastewater drainage systems which operate under gravity and is applicable to drainage systems inside dwellings and commercial, institutional and industrial buildings.</li> <li>Time and effort must be invested in the proper maintenance of the package plant.</li> <li>Disinfection is the final step in the treatment process and it is essential that the water is adequately treated prior to this step in order to ensure that the disinfection step is effective.</li> </ul>
	With Mitigation	1 Very Short Term	1 Site Specific	2 Improbable	2 Minor	8 Negligible	

							<ul style="list-style-type: none"> <li>The Developer must ensure that there is a monitoring system for the package plant which must include monitoring of the quality of the water being discharged from the package plant and investigation of potential leaks.</li> <li>It is important that the location and design of the package plant tank takes into consideration potential flooding and breakdown and how in these events, the release of raw sewerage can be avoided or quickly stopped and remedied.</li> </ul>
Construction Phase							
Impact and Risk		Duration	Extent	Probability	Magnitude	Significance	Mitigation
Removal of Vegetation	Without Mitigation	5 Short Term	2 Local Scale	5 Definite	6 Medium	65 High	<ul style="list-style-type: none"> <li>The non-developable area may not under any circumstances be disturbed. This area must also be assigned an appropriate zoning to prevent its disturbance for the lifetime of the project.</li> <li>The 25 buffer must also be observed. This area may not be hardened and all services must be located outside of this area.</li> <li>An ECO must be appointed prior to the commencement of any site clearing and must be given the opportunity to identify any indigenous vegetation within the site and recommend appropriate measures with regards to those species either for their relocation or compensation by use of same species in revegetation or for the gardens within the development.</li> <li>All non-engineered areas must be revegetated promptly using indigenous plant species.</li> <li>The approved Invasive Alien Plant Species Management Plant in all stages of the proposed development.</li> </ul>
	With Mitigation	1 Very Short Term	2 Local Scale	3 Probable	2 Minor	15 Low	
Stripping of topsoil, sub-soil	Without Mitigation	3 Medium Term	2 Local Scale	5 Highly Probable	6 Moderate	55 High	<ul style="list-style-type: none"> <li>Topsoil monitoring (depth and soil testing) must take place prior to soil stripping and backfilling. The Engineer and ECO must determine if the quality of soil is satisfactory, prior to backfilling.</li> <li>Topsoil must be sequentially removed in accordance with the requirements on site.</li> <li>All topsoil must be adequately stored:                             <ul style="list-style-type: none"> <li>On a Flat surface;</li> </ul> </li> </ul>
	With Mitigation	1 Very Short Term	1 Minor Scale	2 Improbable	4 Low	12 Low	

							<ul style="list-style-type: none"> <li>○ Below two metres;</li> <li>○ Suitably covered if stored for prolonged periods of time.</li> <li>○ Separate from sub-soil and other stockpiles.</li> </ul> <ul style="list-style-type: none"> <li>● All temporary embankments that are considered sensitive to erosion must be adequately retained and supported (sandbags, fascine work, retaining blocks etc.).</li> <li>● Where applicable/necessary measures to prevent silt from being washed offsite onto surrounding environment, must be implemented.</li> </ul>
Construction Phase							
Impact and Risk		Duration	Extent	Probability	Magnitude	Significance	Mitigation
Use and storing of potentially hazardous substances.	Without Mitigation	2 Short Term	2 Local Scale	4 Highly Probable	6 Medium	40 Medium	<ul style="list-style-type: none"> <li>● All hazardous substances must be stored on impermeable surfaces throughout the project life cycle.</li> <li>● Storage areas where flammable substances are kept must be equipped with serviced fire extinguisher.</li> <li>● Storage areas must not have direct sunlight.</li> <li>● Depending on the amount of fuel and other hazardous substances that are to be kept on site, the Contractor must establish a bunded area that has the capacity to contain the contents of the containers to be kept within the bunded area.</li> <li>● No smoking must be allowed within or close to storage areas where flammable substances are kept.</li> <li>● Material Safety Data Sheets must be kept for all potentially hazardous substances.</li> </ul>
	With Mitigation	1 Very Short Term	1 Minor Scale	2 Improbable	2 Minor	8 Negligible	
Movement of plant and vehicles onto, off and around the site.	Without Mitigation	5 Permanent	2 Local Scale	4 Highly Probable	8 Medium	60 High	<ul style="list-style-type: none"> <li>● Traffic signs must be erected throughout the site, demarcating the following:                             <ul style="list-style-type: none"> <li>○ Speed limits;</li> <li>○ Sensitive areas; and</li> <li>○ No-go areas</li> </ul> </li> <li>● Dust suppression must be implemented on all access roads. This practice must be carefully monitored by the ECO and all water usage must be recorded throughout the project lifespan.</li> <li>● All temporary roads must receive rehabilitation prior to the closure of the site (deep-rip, backfilling of topsoil).</li> </ul>
	With Mitigation	1 Very Short Term	2 Local Scale	2 Improbable	2 Minor	10 Negligible	

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							<ul style="list-style-type: none"> <li>Vehicles may only traverse designated areas and access roads.</li> </ul>
Use of Plant/Machinery and Working at Height	Without Mitigation	2 Short Term	2 Local Scale	4 Highly Probable	8 High	48 Medium	<ul style="list-style-type: none"> <li>A health and safety officer must be appointed for the proposed development to ensure that all safety standards are met from the onset.</li> <li>A safety rep must always be present on site for day to day monitoring of compliance and implementation of necessary measures to ensure safety of workers.</li> <li>The workers' training must include training on emergency procedures that should be followed in case of an emergency.</li> </ul>
	With Mitigation	1 Very Short Term	1 Site Specific	2 Improbable	4 Low	12 Low	
<b>Impact and Risk</b>		<b>Duration</b>	<b>Extent</b>	<b>Likelihood</b>	<b>Magnitude</b>	<b>Significance</b>	<b>Mitigation</b>
Waste Management	Without Mitigation	2 Short Term	2 Local Scale	4 Highly Probable	6 Medium	40 Medium	<ul style="list-style-type: none"> <li>Wind and scavenger proof containers must be provided and used for on-site waste storage.</li> <li>Waste must not be left to accumulate onsite and should be regularly disposed of at the nearest waste disposal site.</li> <li>The waste disposal method for both general and hazardous waste must be confirmed with the appointed ECO.</li> <li>Waste disposal certificates/waybills must be kept on file as proof of safe waste disposal.</li> <li>Workers must be trained to exercise environmentally friendly practices including proper disposal of waste.</li> <li>Littering on or around the site must be strictly forbidden.</li> <li>Burning and burying of waste is strictly forbidden.</li> </ul>
	With Mitigation	1 Very Short Term	1 Site Specific	2 Improbable	2 Minor	8 Low	
Conduction of Construction Activities	Without Mitigation	2 Short Term	2 Local Scale	4 Highly Probable	4 Low	32 Medium	<ul style="list-style-type: none"> <li>Neighbours located in proximity of the site must be informed of the intended commencement of construction at least a week before it takes place. This can be done through the ward councillor for the area.</li> <li>Construction works must be limited to working hours between 07:00am and 04:30pm during weekdays and preferably no works during the operation phase.</li> <li>Workers may not make any excessive/unnecessary noise within the site.</li> <li>There may be no playing of loud music from the construction vehicles.</li> </ul>
	With Mitigation	1 Very Short Term	1 Site Specific	3 Probable	2 Minor	12 Low	

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							<ul style="list-style-type: none"> <li>Construction vehicles must be kept in good condition to avoid excessive exhaust emissions and noise.</li> </ul>
Socio-Economic	Without Mitigation	2 Short Term	2 Local Scale	5 Definite	6 Medium	50 Medium	<ul style="list-style-type: none"> <li>Terms of employment must be clearly explained to all workers during the different phases of the proposed development.</li> <li>The Contractor and developer must avoid making promises to the community especially those that will be hard to keep.</li> <li>The Contractor and Developer must consider giving some form of certification to workers for the skills they displayed during their employment period.</li> <li>At any stage appropriate, the developer may contribute to a community project such as refurbishment of a school.</li> </ul>
	With Mitigation	2 Short Term	2 Local Scale	5 Definite	8 High	60 High	
<b>Riverine Unit Impacts: Site located close to Umbilo River and therefore activities on site may have impacts on this watercourse.</b>							
Direct Habitat Disturbance	Without Mitigation	1 Very Short Term	1 Site Specific	2 Improbable	2 Minor	8 Negligible	<ul style="list-style-type: none"> <li>A buffer of 32m is recommended from the edge of delineated riparian habitat and should be enforced for the duration of the project. These buffers should be clearly demarcated when/ or if work is to be undertaken nearby to ensure no unnecessary incursions by vehicles or clearing takes place within these sensitive areas.</li> <li>Stormwater attenuation structures should not be placed within the riparian zones or associated 15m buffer. Stormwater outlet protection may be placed within these sensitive areas in order to negate, or at least minimise, potential erosion from the stormwater outlets.</li> <li>The use of existing tracks and roads to gain access to the work area must be prioritised as far as practically possible.</li> <li>There shall be no mining of soil, sand or rock required for construction purposes from the banks of riverine areas. Soil must be brought in, as/if needed, for construction purposes. The rock and soils stockpiles must be located at least 50m away from the riverine units.</li> </ul>
	With Mitigation	1 Very Short Term	1 Site Specific	1 Very Improbable	0 None	2 Negligible	
Soil Erosion and Sedimentation	Without Mitigation	2 Short Term	2 Local Scale	3 Probable	4	24 Low	<ul style="list-style-type: none"> <li>Soft or 'green' engineering practices should be employed, where viable, to allow for reduced run-off from the hardened surfaces associated with development.</li> </ul>
	With Mitigation	1	1	2 Improbable	2 Minor	8 Negligible	

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		Very Short Term	Site Specific				<ul style="list-style-type: none"> <li>Do not allow surface water or storm water to be concentrated, or to flow down cut or fill slopes without erosion protection measures being in place.</li> <li>Install sediment barriers across the downslope extent of the construction area to prevent potential sedimentation of the riparian zones.</li> <li>Any necessary temporary access roads must be aligned along the natural contour of the slopes and sufficient stormwater controls must be in place in order to avoid the road acting as a preferential flow path for water runoff.</li> </ul>
Pollution of Water Resources and Soil	Without Mitigation	2 Short Term	2 Local Scale	3 Probable	6 Medium	30 Medium	<ul style="list-style-type: none"> <li>All waste must be disposed of at an appropriate licensed facility and proper management and disposal of construction waste must occur throughout the construction phase.</li> <li>All solid waste generated during construction is to be disposed of as per the EMP.</li> <li>Waste bins must be provided at the site camp for solid waste purposes. Note that refuse generated by workers and construction related waste should not be mixed.</li> <li>No washing of paint brushes, containers, wheelbarrows, spades, picks or any other equipment adjacent to, or within, riparian or instream areas is permitted. Washing of implements should take place within a bunded area at least 50m away from the delineated boundary of the riverine</li> </ul>
	With Mitigation	1 Very Short Term	1 Site Specific	2 Improbable	4 Low	12 Low	
<b>Post Construction Phase</b>							
Impact and Risk		Duration	Extent	Likelihood	Magnitude	Significance	Mitigation
Decommissioning of the construction site camp and laydown area.	Without Mitigation	2 Short Term	2 Local Scale	3 Probable	4 Low	24 Medium	<ul style="list-style-type: none"> <li>Rehabilitation must be conducted on site, by adequately backfilling topsoil and reinstating indigenous vegetation.</li> <li>All access roads must be deep-ripped and adequately rehabilitated.</li> <li>Rehabilitation of the site must be monitored by an ECO.</li> <li>Natural berms and contours must be reinstated by the Contractor prior to the closure of site.</li> <li>Fire-fighting equipment must be available on site at all times.</li> <li>Spill kits must be available on site at all times and must be suitably equipped to deal with spills.</li> </ul>
	With Mitigation	1 Very Short Term	2 Local Scale	3 Probable	2 Minimal	15 Low	

							<ul style="list-style-type: none"> <li>Stockpiles must be cleared of IAPS and this must be checked before infill.</li> </ul> <p>No stockpiles must be left behind after the construction phase, but rather must backfill and/or removed from site.</p>
Operational Phase							
Impact and Risk		Duration	Extent	Likelihood	Magnitude	Significance	Mitigation
Operation of the Package Plant System	Without Mitigation	5 Permanent	2 Local	4 Highly Probable	8 High	60 High	<ul style="list-style-type: none"> <li>Applicable standards and guidelines such as SANS 52566-3:2010 must be adhered to.</li> <li>The Developer must ensure that there is a monitoring system for the package plant which must include monitoring of the quality of the water being discharged from the package plant and investigation of potential leaks.</li> <li>It is important that the location and design of the package plant tank takes into consideration potential flooding and breakdown and how in these events, the release of raw sewerage can be avoided or quickly stopped and remedied</li> </ul>
	With Mitigation	1 Very Short Term	1 Site Specific	2 Improbable	4 Low	12 Low	
Fragmentation and ecological disturbance impacts	Without Mitigation	5 Permanent	2 Local Scale	4 Highly Probable	8 High	60 High	<ul style="list-style-type: none"> <li>Controlling both the direct and indirect impacts of the proposed development will be key in ensuring the sustainability of this development.</li> <li>Mitigating noise and light impacts will be difficult to enforce during the operation of the site, however lighting design to avoid casting light onto areas beyond the site may be implemented. Edge impacts and alien plant infestation impacts can be quite easily controlled through maintenance activities.</li> <li>Edge effects whilst unavoidable should be carefully controlled by applying mitigation techniques early, and loss of ecosystem function should be controlled by careful monitoring and avoidance of any activities from taking place outside of the proposed development footprint.</li> </ul>
	With Mitigation	2 Short Term	1 Site Specific	2 Improbable	4 Low	14 Low	



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Stormwater Management	Without Mitigation	2	3	3	4	27 Medium	<ul style="list-style-type: none"> <li>Do not allow surface water or storm water to be concentrated, or to flow down cut or fill slopes without erosion protection measures being in place.</li> <li>Stormwater and any runoff must flow into energy dissipation structures prior to being discharged back into the natural watercourses (such as retention ponds or areas with rock riprap / grassed with indigenous vegetation to encourage the trapping).</li> <li>Do not allow surface water or storm water to be concentrated, or to flow down cut or fill slopes without erosion protection measures being in place.</li> </ul>
	With Mitigation	1	2	2	2	10 Low	
Waste Management	Without Mitigation	2 Short Term	2 Local Scale	3 Probable	4 Low	24 Medium	<ul style="list-style-type: none"> <li>Large waste receptacles must be provided in a designated waste storage area.</li> <li>A waste management plan must be compiled and implemented for the operation phase prior to moving in of tenants. This plan must include a time and date on which the waste receptacles must be taken to the waste collection truck's route.</li> <li>The Developer must ensure that the interval at which waste is taken of site is sufficient to discourage waste accumulation. Should the collection of waste once a week by the Municipality not be sufficient, the Developer must make appropriate arrangements and ensure that all waste from the site is not disposed of in any natural environment near the site or on any other location.</li> </ul>
	With Mitigation	1 Very Short Term	1 Site Specific	1 Very Improbable	0 None	2 Negligible	
Health and Safety Impacts	Without Mitigation	2 Short Term	1 Site Specific	3 Probable	8 High	33 Medium	<ul style="list-style-type: none"> <li>Large waste receptacles must be provided in a designated waste storage area.</li> <li>A waste management plan must be compiled and implemented for the operation phase prior to moving in of tenants. This plan must include a time and date on which the waste receptacles must be taken to the waste collection truck's route.</li> <li>The Developer must ensure that the interval at which waste is taken of site is sufficient to discourage waste accumulation. Should the collection of waste once a week by the Municipality not be sufficient, the Developer must make appropriate arrangements and ensure that all waste from the site is not</li> </ul>
	With Mitigation	1 Very Short Term	1 Site Specific	2 Improbable	0 None	4 Negligible	

							disposed of in any natural environment near the site or on any other location.
Socio-Economic Impacts	Without Mitigation	5 Permanent	2 Local Scale	4 Highly Probable	6 Medium	52 High	<ul style="list-style-type: none"> <li>The Labour Relations Act 66 of 1995 must be adhered for all those who employed.</li> <li>A fair process must be followed for selection of people who will benefit from the proposed development.</li> <li>Although the Developer will not be residing on the property, he or his representative/property manager, must maintain a good relationship with neighbours and have an open channel of communication for neighbours to communicate their complaints/concerns should they have any.</li> </ul>
	With Mitigation	5 Permanent	2 Local Scale	5 Definite	8 High	75 High	

**iii. Impact Significance**

Considering the table above, the average significance of potential negative impacts of the proposed development without mitigation is **Medium** and the average significance when considering implementation of mitigation measures is **Negligible**. It is therefore important that the implementation of the proposed development is closely monitored to assess and monitor compliance levels on the site and take necessary measures if compliance is not at satisfactory levels to successfully mitigate against potential impacts.

Average Impact Significance Without Mitigation	34.17 Medium
Average Impact Significance with Mitigation	9.25 Negligible

**I. WHERE APPLICABLE, A SUMMARY OF THE FINDINGS AND IMPACT MANAGEMENT MEASURES IDENTIFIED IN ANY SPECIALISTS REPORT COMPLYING WITH APPENDIX 6 TO THESE REGULATIONS AND AN INDICATION AS TO HOW THESE FINDINGS AND RECOMMENDATION WERE INCLUDED IN THE FINAL REPORT; -**

The following are the specialist studies that were recommended through the screening tool. Where applicable, reasons have been given for not undertaking certain specialist studies which had been recommended as per the pre-application screening tool and summary of findings for those undertaken are included.

**Landscape/Visual Impact Assessment**

The area where the proposed development is located is currently zoned as General Housing 2 and will be rezoned for the purpose of the proposed development to Public Housing 2. The area is characterized by residential developments with residential properties all around the site with the site for the proposed development being the only vacant property on this portion of land. Therefore, the proposed development will fit in with surrounding land uses and visual appearance of the area. It is in this regard that there has thus far been no landscape/visual assessment conducted.

**Archaeological and Cultural Heritage Impact Assessment and Paleontology Impact Assessment**

All onsite assessments conducted thus far have not indicated any heritage/cultural features within the site. A heritage impact assessment has therefore not been conducted thus far, but the draft Basic Assessment Report will be submitted to the KwaZulu – Natal Amafa and Research Institute as the competent authority for Archaeological and Cultural features for commenting. Should they recommend that a heritage impact assessment must be conducted for the site, their recommendation will be followed.

**Terrestrial Biodiversity Impact Assessment – (APPENDIX D1)**

A terrestrial biodiversity assessment was undertaken for the site by The Biodiversity Company. The proposed project area is situated within the Indian Ocean Coastal Belt (IOCB). On a fine-scale vegetation type, the assessment area overlaps with two vegetation types, predominantly Northern Coastal Forest and to a lesser extent KwaZulu-Natal Coastal Belt Grassland. According to the spatial dataset, majority of the assessment area overlaps with a LC ecosystem and partially overlaps with an EN ecosystem.

The field survey verified that the vegetation within the southern portion of the property area, south of the D'MOSS boundary, can be regarded as possessing low sensitivity as it is dominated by invasive species due to clearing, and the site is no longer representative or partially representative of the associated vegetation types and possesses very limited biodiversity value. Fifteen species representing 12 families of indigenous flora were recorded within the property boundary during the field survey.

The forest habitat adjacent to the D'MOSS boundary line in a North trajectory, could be regarded as secondary growth as the canopy layer was dominated by the invasive *Melia azedarach*, with indigenous species comprising of typically pioneer species, such as *Senecio deltoideus*, *Dalbergia obovata*, *Trema orientalis*, *Hippobromus pauciflorus* and *Volkameria glabra*. Nevertheless, the forest condition improves away from the forest edge with certain forest indicator species, such as *Dovyalis rhamnoides* and *Vepris lanceolata* present. Moreover, the area was occupied by forest avifauna species such as *Cossypha natalensis* (Red-capped Robin Chat), *Laniarius ferrugineus* (Southern Boubou), *Campethera abingoni* (Golden-tailed Woodpecker) as well as a pair of *Accipiter tachiro* (African Goshawk). In addition, *Atilax paludinosus* (Marsh Mongoose) utilises the area as a corridor between suitable habitat, as evidenced by its scat. No SCC were observed and based on the present ecological condition of the assessment area, there is also a low likelihood of SCC occurring within the assessment area.

### **Recommendations**

- According to the findings, a portion of the property was regarded as non-developable which is in a more natural state with a higher biodiversity value including being a corridor for local, while another portion was regarded as developable as it is dominated by alien invasive species and has low sensitivity and biodiversity value (Figure 9).

Recommended mitigation measures for potential environmental impacts of the proposed development include:

- The areas to be developed must be specifically demarcated to prevent movement of workers into surrounding areas.
- A site plan of the area must be made available onsite for all contractors and personnel indicating parking & storage areas, site offices and placement of ablution facilities.
- The Contractor should inform all site staff to the use of supplied ablution facilities and under no circumstances shall indiscriminate excretion and urinating be allowed other than in supplied facilities. The recommended number of ablution facilities according to the Environmental Health and Safety Act should be implemented.
- The Contractor should supply sealable and properly marked domestic waste collection bins and all solid waste collected shall be disposed of at a licensed disposal facility.
- Where a registered disposal facility is not available close to the site, the Contractor shall provide a method statement with regard to waste management. Under no circumstances may domestic waste be burned on site or discarded into adjacent properties.
- Stockpiles must be protected from erosion, stored on flat areas where run-off will be minimised.
- Construction activities and vehicles could cause spillages of lubricants, fuels and waste material potentially negatively affecting the functioning of the surrounding ecosystem. All vehicles and equipment must be routinely maintained.
- Have action plans on site, and training for contractors and employees in the event of sewage spills, leaks and hazardous chemical spills 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 Hazardous Chemical Spill Contingency Plan should be compiled.

- All landscaping must use only indigenous plant species and the corridor on the northern portion of the property maintained. This non-developable area can be revegetated within indigenous plant species. Recommended species have been provided in Appendix C of this report.
- An Invasive Alien Plant (IAP) management programme must be developed and implemented for the property.

**Aquatic Biodiversity Impact Assessment (APPENDIX D2)**

An aquatic ecological assessment was conducted for the proposed project by Afzelia.

One perennial river system, the Umbilo River, was identified as a likely receiver of impacts from the proposed Queensburgh Housing Development. The Umbilo River was assessed at a locality immediately upstream (UM-US) and downstream (UM-DS) of the site. A drainage line was also observed which discharged into the Umbilo River between the upstream and downstream sites. No flowing water was observed at this drainage line and the presence of stormwater infrastructure along this line suggests that it is likely in use as a stormwater outflow.

Although disturbances were observed at both sampling sites, the upstream site was observed to be in a slightly less impacted condition (PES D), when compared to the downstream site (PES D/E). The upstream site recorded more invertebrate species and greater biotope varieties. Water quality degradation was obvious along with riparian bank erosion. In comparison, the downstream site recorded a reduced invertebrate species richness, excessive channel sedimentation, and bank erosion. Although available biotopes were fair, invasive plant species and the adjacent mining activity, coupled with catchment water quality issues resulted in an overall reduced river health.

Although the development occurs within 500m of the Umbilo River and drainage line, these systems are still at least 405m and 100m away from the proposed development respectively. The impacts associated with the proposed development will therefore be medium to low without mitigation; however, most of these impacts can be reduced to low/negligible. The steep terrain of the surrounding area does increase the risks of pollution runoff, particularly if sewage is to be treated on site. These risks are depicted in the pollution impacts table, but again can be reduced significantly if mitigation measures are followed. Furthermore, the downstream site of the Umbilo River, which would receive runoff from the proposed development via the drainage line, is already highly impacted on by the adjacent quarry mine. These impacts are of a greater magnitude than potential impacts from the development, solely because the quarry is in such close proximity to the river.

Below is a table with the summary of impacts associated with the proposed development.

Impact	Phase of Activity	Without Mitigation	With Mitigation
Direct habitat disturbance	Construction	Low	Negligible
	Operation	Low	Negligible
Soil erosion and sedimentation	Construction	Medium	Low
	Operation	Medium	Low
Pollution of water resources and soil	Construction	Medium	Low
	Operation	High	Low

No risk assessment was undertaken given that the location of the proposed development activities is more than 300m upslope from the Umbilo River, whilst the drainage line is also located further than 100m away.

There are impact mitigation measures recommended in the specialist's report which have been included in this BAR and in the EMP. Over and above these, the specialist further makes the recommendations below:

- Considerations and management of the drainage line within and immediately downslope of the development area must be undertaken by the client. This area will be a likely location of stormwater attenuation structures.
- During the construction phase it is recommended that aquatic biomonitoring is undertaken on a quarterly basis, with one assessment post-construction.
- A stormwater management plan must be compiled for the proposed development which must include site specific mitigation measures.
- A contingency plan must be compiled to deal with any unforeseen emergency situations onsite including sewer or stormwater-related malfunctions.

### **Socio-Economic Assessment**

No feasibility study/report was available at the time of submission of this report. However, the proposed development was presented and discussed at a KZN Rental Housing Project Steering Committee meeting and was found to be feasible and therefore received the PSC Endorsement which is attached under Appendix G2.

### **Traffic Impact Assessment (Appendix D3)**

A traffic impact assessment was conducted for the proposed development by Surocon Engineers and the following findings were made:

- There are 4 roads identified directly around the site:
  - Huntley Road
  - Charles Winser Road,
  - Bellville Road and
  - Fourth Avenue

These are all CI 5 roads under the ownership of eThekweni Municipality.

- In consultation with the ETA, the proposed development was categorised as having a very low car ownership having a Vehicle Ownership Reduction Factor of 0.7. Calculations made showed that the proposed social housing development would generate 88 additional trips during the Weekday morning and afternoon peak hours on the adjacent road network.

Although Huntley Road is classified as a Class 5 road, it was considered as a Class 4b road with the following motivation:

- Site observations revealed that the roadway along Huntley Road between Charles Winser Road and Bellville Road operates as a Class 4b road due to the volume of traffic observed along it during the

peak periods. The volume of traffic observed along Huntley Road is attributed to the rat-running that occurs along this road from the neighbouring environs.

- Although not a designated public transport route, public transport operators using minibus taxis were observed along this roadway providing a public transport service during the Weekday AM and PM peak periods.
- The road reserve of Huntley Road predominantly has a minimum road reserve of 16m which is characteristic of a Class 4 road.

In terms of pedestrian provisions, sidewalks provided along the southern edge of Huntley Road approximately 1.2metres wide enhances pedestrian movement along it.

Huntley Road is not a designated public transport route, however, site observations have revealed that public transport operators using mini bus taxis provide a kerb-side service along Huntley Road in the vicinity of the application site. This is also confirmed by the traffic count data undertaken along Huntley Road.

In terms of access, ingress and egress to the application site will be taken from two points off Huntley Road with access points to have a minimum width of 5.5metres wide to facilitate a two-way circulation movement into and out of the application site. The Access will be designed in accordance with the eThekweni Transport Authority's standards and specifications and will therefore be finalized once this Department with eThekweni Municipality has been engaged and has approved the access design and other aspects around traffic control concerning the proposed development.

With regards to parking, 525 residential units would require 788 parking bays. However, the proposed number of parking bays for this development is 263 parking bays which took into consideration the fact that the proposed development is targeted to benefit low income earners with monthly income compared to that of students and therefore the number of parking bays was calculated using ETA guidelines for student accommodation.

The proposed development was supported from a traffic and transportation perspective.

#### **Geotechnical Assessment (Appendix D4)**

A Geotechnical Assessment for the site of the proposed development was undertaken by GeoZone GeoServices and according to their assessment; site is underlain by residual soils which are underlain by weathered tillite of the Dwyka Group with Colluvium in the usual sense being absent from the site except in a broad sense. The upper residual soil profile comprises dark greyish brown mottled yellowish brown, subangular to angular, highly weathered, medium to coarse tillite Gravel in a dense intact matrix of sandy clay. This horizon extends to depths ranging from 0.2m to 0.45m. The thickness of this horizon increases towards the lower portions of the site.

In terms of bedrock, the rockhead comprises highly weathered, light brown becoming greyish brown with depth, closely jointed very soft to soft material, with increasing hardness with depth. Hard, bluish grey Tillite boulders up to 1.2 m in diameter were noted on the surface in the upper portion of the site.

The site is considered stable and suitable for development provided that the recommendations contained in the geotechnical assessment report are adhered to.

## **Recommendations**

### **Excavatability**

Soft excavation in terms of SABS 1200 is generally anticipated to depths of approximately 1.0 m below existing ground level, below which heavy ripping and possible blasting is expected.

### **Site Clearance and Earthworks**

- The site should be grubbed down and all the remaining vegetation removed from the site. There is almost no colluvium on the site and as such there will not be a need to stockpile this material for site rehabilitation. However, the gravelly upper residual tillite material may prove to be a useful source of subgrade and fill material and it is recommended that this upper 200 to 400 mm thick horizon is stripped and stockpiled for later use.
- During the compaction process the material should be placed in layers not exceeding 200 mm loose thickness, and compacted to a minimum of 93% Modified AASHTO maximum dry density in the areas of cut platforms, parking areas and roads. Where structures are to be built this specification should be raised to a density of 95% Modified AASHTO to prepare the area for the surface beds.
- Any boulders, tree stumps or material larger than two-thirds of the layer thickness must not be included in the fill material. In addition, it is imperative that the emplaced fill material should be worked within 2 percent of the optimum moisture content to ensure that the correct degree of compaction is attained.
- In that the integrity and quality of the bulk earthworks programme will affect the entire development it is important that a quality assurance plan be put in place to ensure that the correct compactions are achieved and that the earthworks contractor has done his job correctly.

### **Drainage**

Collection and removal of both surface and groundwater is important for promotion of site stability especially as the site for the proposed development is steep. It will therefore be important that the design of the stormwater management system for the proposed development allows for efficient collection and removal of accumulated surface water.

During and after construction, the various platforms should be well graded to permit water to readily drain from the site, and to prevent ponding of water anywhere on the surfaces.

### **Surface Drainage**

- Surface water collected on the platforms, hardened areas and access roads should be collected in open, lined drains and directed off site and into the valley invert.
- Run-off from roofs should be piped from gutters through downpipes and similarly discharged into the stormwater system. It is imperative that the design of the stormwater system is such that it is able to cope with the significant run off that a development of this nature can generate.



- Due to the considerable quantities of surface run-off which is anticipated from the hardened areas and roofs, consideration needs to be given to reducing the energy of the flows and possibly attenuating the hydrographic curves during periods of intense rainfall.
- It is also important to ensure that stormwater is prevented from entering fill wedges and backfill behind retaining structures, in particular dry stack walls. Concrete aprons and dish drains along the crest of retaining structures should be installed to assist in this regard.

### **Sub-Surface Drainage**

Subsurface soil drainage is not expected to be required on the site due to the lack of groundwater seepage that was encountered in the test pits. However, should groundwater be encountered, it is recommended that subsoil drains be installed, designed according to the filter criteria of the in-situ soils to prevent piping. Geofabric separation layers may also be used to keep clay from entering gravel drainage zones.

### **Evaluation of Founding Conditions and Foundation Recommendations**

The foundation pressures for buildings of this size of the proposed development are not insignificant and caution will need to be exercised in terms of deciding on the best foundation solution, and ensuring that foundation pressures are transferred down to a suitable bearing horizon.

Foundation pressures should not exceed 750 kPa to mitigate the threat of settlement and global instability.

It is recommended that some additional laboratory testing be carried out during construction to confirm the findings of the geotechnical report.

### **Stormwater Management – APPENDIX D5**

The stormwater management for the proposed development will include drainage of stormwater from the rood and hardened surfaces and will be collected into an attenuation tank for storage and dissipation and will slowly be released into surrounding area. The proposal is to construct the attenuation tank in the basement of one of the buildings located on the lower part of the site. The proposed attenuation tank will have a capacity of 140m<sup>3</sup>.

### **Plant Species Assessment**

Covered within the terrestrial biodiversity assessment.

### **Animal Species Assessment**

Covered within the terrestrial biodiversity assessment.

***All identified impacts and impact mitigation measures from specialist report have been incorporated into the relevant sections as well as the EMPr.***

All outcomes from the specialist assessments that have been conducted were incorporated into draft BAR and draft EMPr. Outcomes of the assessments were used to:-

- Enrich the description of the receiving environment, biophysical attributes of the site;
- Have influenced the layout and design presented with the BAR,
- Recommendations of the specialists form part of draft BAR and EMPr including recommended mitigation measures and identified potential impacts and

## J. AN ENVIRONMENTAL STATEMENT WHICH CONTAINS-

### **(i) A summary of the key findings of the environmental impact assessment;**

Although the developable area is infested with alien plant species, there are also some indigenous plant species within the area. Therefore, an Environmental Control Officer (ECO) must be appointed prior to the commencement of construction in order to conduct a site walkthrough to identify the indigenous plant species within the site and procedures that should be followed including any potential plant removal permits.

The proposed development will lead to loss of a portion of D'MOSS area, however, this impact has been rated as being of low significance as this area is highly degraded and infested with alien plant species and therefore has little biodiversity value and low sensitivity. In this aspect, the recommendation has been to only develop this area, keep the more sensitive D'MOSS area undeveloped as it is of higher biodiversity value, sensitivity and is a corridor for local fauna.

In terms of environmental impacts from the proposed development, the most significant impact would be the impact on the Umbilo River which is located about 405m from the site. This is due to the fact that this watercourse has already been impacted by the Wastewater System in the locality of the site and mining activities taking place along the river. The proposed development will include establishment of a package plant wastewater system. This will pose a threat of contamination/pollution of the surrounding environment if the system is not functioning efficiently as the treated water from the package plant tank will be released into the surrounding environment. However, the likelihood of this happening is low as measures will be put in place to ensure that the proposed package plant functions efficiently and that any faults are picked up quickly before any significant impacts on surrounding environment occur.

Stormwater management for the site will be very important as the site is steep. This will especially be the case as the eThekweni area has recently been hit by floods in which case if the stormwater management system is not functioning efficiently, there will be a high risk of damage occurring on the property which could have fatal implications.

On the positive end of the spectrum are the positive socio-economic benefits of the proposed development. The proposed development will provide a number of employment opportunities during the construction phase including sourcing of material and skills from local companies for construction related activities. This will have a significant impact regardless of the number of employment opportunities created due to the level of unemployment and poverty within the general project area. The most important positive of the proposed development is the provision of rental housing which will accommodate low and middle income earners which is needed in the area evident from the development of informal settlements on a property

adjacent to the site across from the site. There is also a great need for provision of rental housing within the eThekweni area with the municipality having backlog in housing provision.

(ii) A map at an appropriate scale which superimposes the proposed activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffer

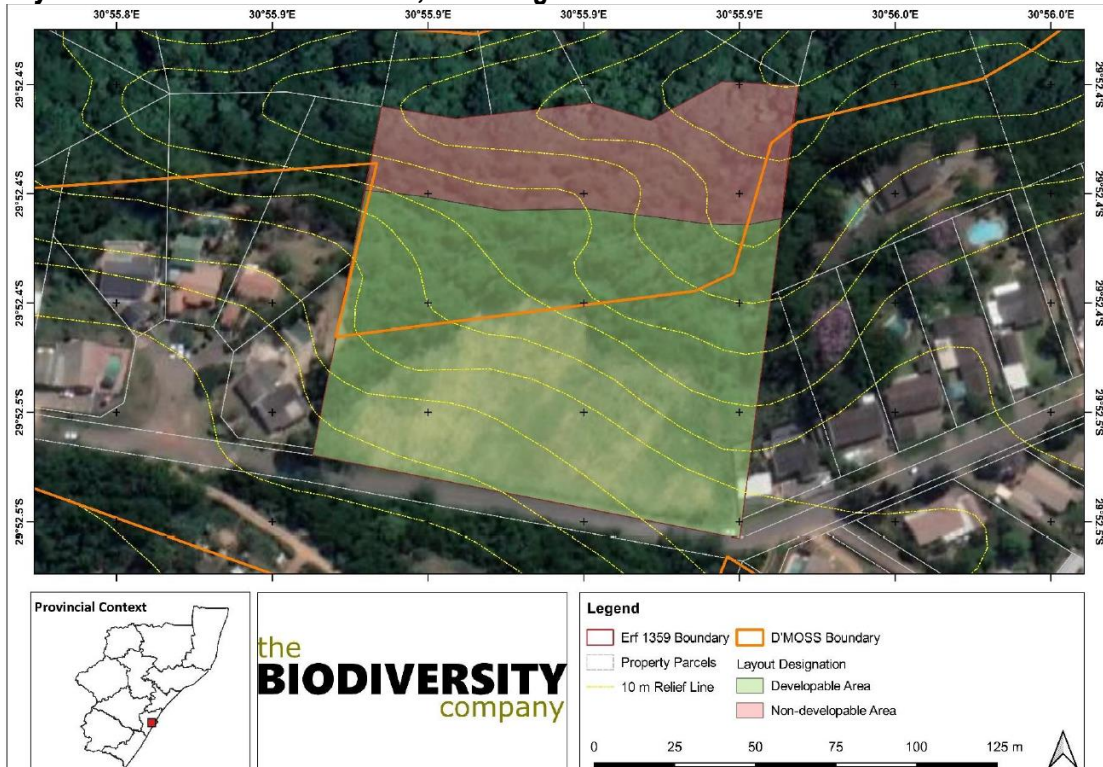


Figure 13: Map showing the sensitivity of the site based on onsite observation. Red-High Sensitivity Green-Low Sensitivity.

Based on the onsite assessment conducted by the biodiversity specialist, a portion of the property has high ecological importance and high sensitivity. This area is a forest area that consist of more intact vegetation that has indigenous plant species and plays the role of being a corridor for local fauna. This area is indicated in red in Figure 13 above. The larger portion of this property is highly degraded and infested with alien plant species and has been regarded as having low ecological importance and therefore regarded as developable. The eThekweni Municipality has further recommended that a 25m buffer area be maintained between the boundary of the proposed development and the high ecological importance non-developable area.

**K. BASED ON THE ASSESSMENT, AND WHERE APPLICABLE, IMPACT MANAGEMENT MEASURES FROM SPECIALISTS REPORTS, THE RECORDING OF THE PROPOSED IMPACT MANAGEMENT OUTCOMES FOR THE DEVELOPMENT FOR INCLUSION IN THE EMPr**

The impact management measures in this section have taken from the reports of the different specialist studies undertaken for the proposed development. In this part of the report we have specifically focused on the recommendations made which are aimed at management of impacts that may be associated with the proposed development.

### **Direct Habitat Disturbance**

- The construction and operational footprint of the development must not extend past the footprint demonstrated within the proposed development plan. All construction laydown areas should be placed within existing disturbed areas and not within any sensitive habitat located nearby.
- A buffer of 32m is recommended from the edge of delineated riparian habitat and should be enforced for the duration of the project. These buffers should be clearly demarcated when/ or if work is to be undertaken nearby to ensure no unnecessary incursions by vehicles or clearing takes place within these sensitive areas.
- Stormwater attenuation structures should not be placed within the riparian zones or associated 15m buffer. Stormwater outlet protection may be placed within these sensitive areas in order to negate, or at least minimise, potential erosion from the stormwater outlets.
- The use of existing tracks and roads to gain access to the work area must be prioritised as far as practically possible.
- There shall be no mining of soil, sand or rock required for construction purposes from the banks of riverine areas. Soil must be brought in, as/if needed, for construction purposes. The rock and soils stockpiles must be located at least 50m away from the riverine units.
- Additional soil stockpiling related mitigation includes the following;
  - The soil stockpiles should be stored at a maximum height of 2m to avoid compaction and loss of micro-organisms.
  - Soil stockpiles should also be kept free of weeds and potential alien plant invasion.
- In the case that soil is excavated for the sewer pipeline trench, the topsoil and subsoil must be separated. The pipeline should be buried at least 0.5m below the surface, where possible, as an insufficient burial depth may lead to unnecessary erosion.
- During the replacement of soil within the trenches, replacement of subsoil must precede the topsoil replacement, and all material must be well compacted.
- An Environmental Control Officer (ECO) must be appointed to monitor compliance with mitigation onsite.
- A copy of the Environmental Management Programme (EMPr) should be available at the site camps or offices during the construction phase of the proposed development.

### **Soil Erosion and Sedimentation**

- Erosion control measures must be implemented in areas sensitive to erosion such as near water supply points, edges of slopes, near valley low points, drainage features and at the base of embankments and/or platforms. These measures include but are not limited to - the use of sand bags, geotextiles such as soil cells which are used in the protection of slopes, hessian sheets, silt fences and retention or replacement of vegetation. These erosion control measures must also be used during progressive rehabilitation of the site, where necessary, during and after construction activities.
- Do not allow surface water or storm water to be concentrated, or to flow down cut or fill slopes without erosion protection measures being in place.
- Install sediment barriers across the downslope extent of the construction area to prevent potential sedimentation of the riparian zones.

- Any necessary temporary access roads must be aligned along the natural contour of the slopes and sufficient stormwater controls must be in place in order to avoid the road acting as a preferential flow path for water runoff.
- Stormwater and any runoff must flow into energy dissipation structures prior to being discharged back into the natural watercourses (such as retention ponds or areas with rock riprap / grassed with indigenous vegetation to encourage the trapping of silt and attenuation of flows). Stormwater attenuation must take place outside the recommended buffer zones.
- Permeable surfaces should be used, where possible, throughout the development in order to assist with rainwater infiltration which will reduce the intensity of and volume of stormwater runoff.
- Soft or 'green' engineering practices should be employed, where viable, to allow for reduced run-off from the hardened surfaces associated with development. Recommended soft engineering practices include the reshaping and revegetation (i.e. landscaping) of disturbed areas as well as the construction of vegetated swales and infiltration trenches as opposed to concrete v-drains.
- During the construction and operation phase it is recommended that potentially disturbed riparian / instream habitats and rehabilitated areas are monitored for potential erosion. This should initially take place monthly during construction, immediately after the cessation of construction and thereafter quarterly for two years.
- A stormwater management plan must be compiled for the proposed development which must include site specific mitigation measures in addition to the mitigation presented above.

#### **Pollution of Water Resources and Soil**

- All waste must be disposed of at an appropriate licensed facility and proper management and disposal of construction waste must occur throughout the construction phase.
- All solid waste generated during construction is to be disposed of as per the EMPr.
- Waste bins must be provided at the site camp for solid waste purposes. Note that refuse generated by workers and construction related waste should not be mixed.
- No washing of paint brushes, containers, wheelbarrows, spades, picks or any other equipment adjacent to, or within, riparian or instream areas is permitted. Washing of implements should take place within a bunded area at least 50m away from the delineated boundary of the riverine unit.
- No disposal of any substance, such as cement, oil or bitumen, within the nearby watercourses is permitted.
- Spillages of fuels, oils and other potentially harmful chemicals must be cleaned up immediately and contaminants properly drained and disposed of using suitable licensed solid/hazardous waste facilities (not to be disposed of within the natural environment). Any contaminated soil must be removed, and the affected area rehabilitated immediately. A spill response plan must be drafted and communicated to all onsite staff in this regard.
- The site camp, fuel depots and equipment lay-down areas are not to be located within delineated riparian or wetland areas. These areas should ideally be located at least 50m from the edge of the riparian zone on a relatively flat area, if possible. The proposed location of the site camp, fuel depots, equipment lay-down areas will need to be approved by the ECO before commencing with construction.
- Bunded areas should be created and suitably maintained onsite. All refuelling and storage of harmful chemicals, if necessary, should take place within these areas to ensure that no harmful run-off reaches the watercourses. It is also important for heavy machinery operating onsite to be routinely checked for fuel leaks or malfunctions to minimise the risk of a pollutant spill.
- Portable toilets must be placed on impervious level surfaces that are bunded to prevent potential leakages. The portable toilets must be located at least 50 m away from the edge of the riparian zones.

- The portable toilets must be serviced weekly by the contractor. The service records should be available for the ECO in this regard.
- Education of workers is necessary to employ sound pollution prevention practices. Training programs must be provided and contain information on the handling of hazardous materials, spill prevention and emergency spill response.
- Any abstraction from the riverine units for construction purposes must be approved by the Department of Water and Sanitation (DWS).
- During the construction phase it is recommended that aquatic biomonitoring is undertaken on a quarterly basis, with one assessment post-construction.
- The contractor must utilise industry best-practice measures when implementing and maintaining the sewerage infrastructure onsite.
- An environmental contingency plan is recommended for the proposed development to ensure that potential environmental incidents or emergencies, such as malfunctioning sewerage infrastructure, can be quickly and effectively resolved.
- The applicant must ensure that the sewage treatment works receiving the additional sewage from the proposed housing development has sufficient capacity before allowing occupancy at the housing development.

An invasive alien plant management programme must be compiled for the proposed development to control alien invasive plant species within the site during both the construction and operation phase of the proposed development.

The portions to be excluded from development will also require a suitable zoning that will ensure protection of the area in perpetuity.

**L. ANY ASPECTS WHICH WERE CONDITIONAL TO THE FINDINGS OF THE ASSESSMENT EITHER BY THE EAP OR SPECIALIST WHICH ARE TO BE INCLUDED AS CONDITIONS OF AUTHORISATION**

- The non-developable area and associated 25m buffer must be observed on the site.
- All services, including stormwater, internal sewer and water reticulation must therefore consider the conditions for the 25m buffer and must be located outside this buffer. The 25m buffer cannot be hardened but can be used for indigenous gardens and soft recreation areas.
- The non-developable area must be suitably zoned in order to ensure protection of the area in perpetuity.
- The stormwater and wastewater management systems must be approved by eThekweni Municipality prior to the commencement of the construction phase.
- During the construction phase it is recommended that aquatic biomonitoring is undertaken on a quarterly basis, with one assessment post-construction.
- Site clearance may not occur prior to the appointment of the ECO. Such ECO must be given the opportunity to walk the site to identify indigenous vegetation within the project footprint prior to its removal so as to recommend appropriate measures that must be implemented in this regard.
- The appointed Contractor responsible for completing the development must be legally responsible for complying with the approved EMP and EA.
- The Contractor must include environmental topics within the toolbox talks at least once a month to ensure that environmental awareness is instilled in all workers including subcontractors.

- An Invasive Alien Plant Management Plan must be compiled to assist both the Contractor and Developer in control of alien invasive plant species within the site of the proposed development throughout the project lifecycle.
- All natural habitat found outside the development footprint must remain untouched, and regarded as a no-go area, unless for management and maintenance purposes (e.g. IAP control).
- No construction activities should take place in the evening.
- The Applicant should carefully manage herbicide usage for Alien Plant Species control. The Contractor appointed for this process must take into consideration wind direction and speeds to avoid impact areas outside of the development footprint.

**M. A DESCRIPTION OF ANY ASSUMPTIONS, UNCERTAINTIES, AND GAPS IN KNOWLEDGE WHICH RELATE TO THE ASSESSMENT AND MITIGATION MEASURES PROPOSED**

The impact assessment has been conducted with the consideration of the project scope as per description given by the Developer. If the project is altered in any way, impacts that actually do occur on or around the site may be of higher significance.

The specialist studies were conducted over a limited space of time and therefore there may be some changes in site conditions at the time a site assessment is conducted by the different Departments or at the commencement of construction.

The EAP's view that the proposed developments socio-economic impacts outweigh negative potential environmental impacts is based on the assumption that mitigation measures in the EMP and EA (if granted) will be adhered to which will reduce potential negative impacts to low significance levels.

**N. A REASONED OPINION AS TO WHETHER THE PROPOSED ACTIVITY SHOULD OR SHOULD NOT BE AUTHORISED, AND IF THE OPINION IS THAT IT SHOULD BE AUTHORISED, ANY CONDITIONS THAT SHOULD BE MADE IN RESPECT OF THAT AUTHORISATION;**

***Concluding Remarks including Preferred Project Location***

The area for the proposed development is located in a residential area and therefore the proposed development fits in with the existing land use. The site is also easily accessible which is essential for both the construction and operation phase of the development. Although the site has a portion that is designated as D'MOSS, relaxation has been granted by eThekweni Municipality's Environmental Planning and Climate Protection Department with recommended non-developable area and associated buffer considered in the layout for the proposed development.

Therefore with the implementation of the recommended mitigation measures, the significance of the biodiversity impacts of the proposed development can be reduced to low levels. The site is also located in proximity of Umbilo River which has already been affected by surrounding land uses. However, this river is located about 405m from the boundary of the project footprint and is unlikely to be significantly

affected by the proposed development especially with implementation of mitigation measures against potential impacts.

The one matter that may be of concern with the proposed development is that of the proposed package plant which will be used for sewer treatment on the site. As things stand, the proposed development will not be able to connect to the Municipal sewer system in the area due to its current condition. In addition, the eThekweni Municipality has not indicated a time frame as to when they may have funds to upgrade this Wastewater System. Therefore, although the Contractor is willing to consider financially assisting with the upgrade required in order to accommodate the proposed development, this cannot be done if the Municipality does not have funds. Therefore the package plant is the only option which can be implemented for the time being to allow the proposed development to be implemented. The design of the package plant system will take into consideration all requirements and comments from stakeholders such as EDTEA, DWS and eThekweni Municipality. Therefore, it is not anticipated that the adoption of the package plant will have negative impacts on the surrounding environment.

There is also great concern that if the site is not developed, the informal settlements on the other side of Huntley Road will spread to this vacant property which will have significant impacts on the environment and neighboring properties compared to the low significance impacts of the proposed development.

Therefore, although the site does pose some challenges and implementation on this project will have some negative environmental impacts on surrounding area, more significant impacts will occur if it is not implemented hence the proposal to develop the proposed social housing development on the site. The EAP therefore supports the preferred site provided that all relevant precaution is taken to ensure stability of proposed structures and to ensure minimal environmental impacts.

***Opinion as to Whether the Proposed Activity Should Be Authorized***

It is quite evident that the proposed development will supply housing which is much needed specifically within the project area and within the eThekweni Municipality region at large. In addition, in light of the economic state in South Africa and eThekweni Municipality, the benefit of the employment opportunities associated with the proposed development should not be underestimated.

In light of the above, overall the environmental impacts associated with the proposed development can be reduced to low significance with implementation of impact mitigation measures, it is the view of the EAP that the proposed development should be Authorized with stringent conditions to address areas of concern.

**O. WHERE APPLICABLE, DETAILS OF ANY FINANCIAL PROVISIONS FOR THE REHABILITATION, CLOSURE, AND ONGOING POST DECOMMISSIONING MANAGEMENT OF NEGATIVE ENVIRONMENTAL IMPACTS**

The Applicant must make provision for rehabilitation in the form of revegetation and landscaping on project completion. There is also a need for alien species eradication programme, to address the issue of invader



species as the site is highly infested with alien plant species in terms of National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) and related Regulations dated 2014. The implementation of Alien Invasive Management plan, Plant Rescue & Protection plan and Indigenous Landscape plan will require adequate planning and budget.

**P. ANY SPECIFIC INFORMATION THAT MAY BE REQUIRED BY THE COMPETENT AUTHORITY**

None identified at this point.

**Q. ANY OTHER MATTERS REQUIRED IN TERMS OF SECTION 24 (4) (a) AND (b) OF THE ACT**

None identified at this point.

**THE ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT** is attached as **Appendix E**

**AN UNDERTAKING UNDER OATH OR AFFIRMATION BY THE EAP IN RELATION TO;**

- (i) The correctness of the information provided in the reports at the time of compilation;
- (ii) The inclusion of comments and inputs from stakeholders and I&APs;
- (iii) The inclusion of inputs and recommendations from the specialist reports where relevant; and
- (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 and affected parties.

I,

confirm that the information provided in the report is correct;

The inclusion of comments and inputs from stakeholders and I&APs is correct;

The inclusion of inputs and recommendations from the specialist reports is correct;

Any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties.

Commissioner of oaths:

Commissioner:

Place:

Date: