



DRAFT BASIC ASSESSMENT REPORT

KINGSBURGH WEST EXTENSION HOUSING PROJECT

EIA REF: TBC

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Compiled for: eThekweni Municipality:
Human Settlements/Motheo
Construction Group (implementing
agents).

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Front page image	Google Earth image of the site

Executive Summary

The eThekweni Municipality Department of Human Settlements has proposed to establish 281 residential units and associated infrastructure on the property known as Sub 16 of the Farm Illovo No. 16409 near Kingsburgh. The site is the natural extension of an existing housing project that received a positive Record of Decision in 2008. Preliminary planning had been done for the proposed site, however prior to this application; the layout plan was updated and informed by a wetland delineation report. Due to the need for housing, the fact that the site is a natural township extension, and detailed planning have been done for the site, no alternative site or alternative layout has been proposed.

The basic assessment process involved a public participation process that included the circulation of BIDs to registered interested and affected parties, publication of an advert (in English and Zulu) and the erection of a site notice (in English and Zulu). The only response received was from the eThekweni Municipality.

A number of potential direct, indirect and cumulative impacts have been identified for the construction and operational phases of the proposed development. Mitigation and management options exist for the majority of the identified impacts and in most situations, the significance of the impact can be reduced to an acceptable level.

Although confirmation is required on certain issues such as the Water Use License Application requirements and the need for a heritage impact assessment, there is nothing at this stage to suggest the proposed development should not be approved in due course.

Details of EAP

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1. Description of the proposed activity

1.1. Location

The affected property is known as Sub 16 of the Farm Illovo No. 16409. The property is situated west of Kingsburgh off the R 103. A location plan is attached in Appendix A.

Surveyor General 21 Digit Code:

N	0	F	U	0	0	0	0	0	0	0	0	1	6	4	0	9	0	0	0	1	6
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1.2. Description of site

The site lies adjacent to previous phases of the Kingsburgh West Extension 12 housing project and is urban in nature. It is undeveloped, and is abandoned agricultural land. The onsite vegetation consists of secondary grasses and exotic weeds. The site falls within the Kwazulu-Natal Coastal Belt (CB 3) vegetation type (Mucina and Rutherford 2006). The property is currently used for subsistence agriculture and grazing of cattle and goats. The site falls within an area designated as CBA 3 in terms of the KZN Systematic Conservation Plan.

1.3. Detailed Description of proposal

The proposed development entails the construction of 281 units on 281 residential sites along with a commercial site and a community facility site on 10.7 Ha site area. The proposed development footprint is approximately 6.5 Ha. Associated infrastructure such as internal roads, bulk waterborne sewer (eThekweni Municipal sewerage), water reticulation and electricity will be provided. The proposed layout plan is provided in Appendix A. The plan makes allowance for a substantial 30 m wetland buffer. This is the only layout alternative proposed.

2. Policy and Legislative Context

2.1 NEMA Listed activities

The following listed activities published under sections 24(2), 24(5), 24D and 44, read with section 47A (1) (b) of the National Environmental Management Act (107 of 1998) are triggered:

Listing Notice 1:

Activity 27: The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except where such clearance of vegetation is required for –

(i) the undertaking of a linear activity

(ii) maintenance purposes undertaken in accordance with a maintenance management plan.

Rationale: The property is 10.7 Ha in size with the proposed development footprint (excluding wetlands, wetland buffers and open space areas) is 6.69 Ha.

Activity 28: Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture or afforestation on or after 01 April 1998 and where such development:

(i) will occur inside an urban area, where the total land to be developed is bigger than 5 hectares; or

(ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare;

excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes.

Rationale: Although former agricultural land (pre 1 April 1998) the on-site vegetation consists of a mixture of indigenous secondary grasses and exotic shrubs. In order to develop the site, more than 1 Ha of indigenous vegetation will be cleared (max 7 Ha).

Listing Notice 3:

Activity 12: The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.

(b) In KwaZulu-Natal: Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;

Rationale: Over the entire site more than 300 m of indigenous vegetation will be cleared. The property falls within a CBA 3 area.

2.1. Other Legislation

National Water Act (36 of 1998)

A water use license application will be required in terms of Section 21 of the National Water Act (36 of 1998)

21 (c): *impeding or diverting the flow of water in a watercourse*

21 (i): *altering the bed, banks, course or characteristics of a watercourse*

Although the activity will not actually impede or divert, or alter the bed, banks, course or characteristics of a watercourse, the activity will take place within 500 m of a wetland.

National Heritage Resources Act (25 of 1999)

In terms of the National Heritage Resources Act No 25 of 1999. Section 38(1) of the Act requires such an assessment in case of:

- The construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;
- The construction of a bridge or similar structure exceeding 50 m in length;
- Any development or other activity which will change the character of a site—
 - exceeding 5 000 m² in extent; or
 - involving three or more existing erven or subdivisions thereof; or
 - involving three or more erven or divisions thereof which have been consolidated within the past five years; or
 - the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;
- The re-zoning of a site exceeding 10 000 m² in extent; or
- Any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority.

National Forest Act (84 of 1998)

The National Forest Act (84 of 1998) ensures protection and management of forestry resources, including natural forests, commercial forestry and protected or flagship trees.

National Biodiversity Act (10 of 2004)

The primary purpose of the National Environmental Management: Biodiversity Act (10 of 2004) is to provide for the management and conservation of South Africa's biodiversity within a legislated framework. The application of the act extends to: the protection of species and ecosystems that warrant national protection; the sustainable use of indigenous biological resources; the fair and equitable sharing of benefits arising from bioprospecting involving indigenous biological resources; the establishment and functions of a South African National Biodiversity Institute; and related matters.

National Environmental Management: Waste Act (59 of 2008)

The National Environmental Management: Water Act (59 of 2008) was promulgated to provide specific attention to waste management and waste handling activities. The act provides for the evaluation of proposed waste related activities and allows for the formation of a governmental framework to manage such activities. The intention of the act is to protect the environment through the regulation of waste related activities.

3. Need and Desirability

The proposed housing project comes in the wake of an extensive housing project in the Kingsburgh West area authorised in 2008. The eThekweni Municipality has identified a need for additional housing in the area and had done preliminary planning for the proposed extension some time ago. Since their initial planning, the need for affordable/low cost housing has increased, making the proposed extension a priority. Recent disputes regarding housing have been prevalent in the area.

4. Motivation for preferred site and alternatives

The proposed site is a natural extension of the existing Kingsburgh West Housing project. Essentially the process taken to identify the site was a simple one. The site belongs to eThekweni Municipality and although not part of the existing authorisation issued in 2008, was identified then as a possible extension, with a preliminary layout plan being drawn up for the site. Because of this no alternative site exists.

5. Impact identification process

Public participation

A public participation process that involved the following was undertaken:

- 1) The erection of a site notice in isiZulu and English;
- 2) Publishing a notice in the South Coast Sun in isiZulu and English;

- 3) Circulation of a Background Information Document (BID) in isiZulu and English to identified interested and affected parties including the ward councillor;
- 4) Circulation of the draft Basic Assessment report to registered interested and affected parties, including respondent noted during the process.

Feedback from the three notification methods has been incorporated into this report and is discussed below in Section 6. All details pertaining to the public participation process are included in Appendix B.

Technical evaluation of the site

During the initial impact evaluation, a site visit was undertaken. Project related documents and data were also reviewed including aerial photography, the past authorisation and the proposed layout plan. The following issues were identified for further evaluation/impact identification and evaluation:

- 1) Ecological issues – impacts related to vegetation and wetlands. The vegetation on site is secondary, and of low diversity. A central watercourse and wetland system is present. The extent and functionality of the system must be determined.
- 2) Hydrological issues – impacts relating to the control of stormwater in particular. The site is relatively steep and drains into a natural watercourse. Stormwater management is essential to ensure that excess stormwater does not impact on the wetlands and watercourses found on site. Siltation and in-stream erosion are two specific impacts that need to be avoided/mitigated.
- 3) Heritage issues – heritage related issues, particularly the occurrence of any sites or artefacts that could be of significance. The site was previously under sugar cane and is generally degraded. As such, the probability of such heritage resources being present is considered low. Due process must however be followed and Amafa-a-Kwazulu-Natali will be informed. A heritage impact assessment will be undertaken upon the recommendation of Amafa a Kwazulu-Natali.
- 4) Geological issues – concerns relating specifically to bank stability, as some areas of the site of moderately to very steep. This has ramifications for both the environment and the feasibility of the project. Cut and fill operations, particularly for low cost housing projects can prove too costly, while running the risk of destabilising slopes and promoting soil erosion.

Method of assessment of impact significance

In addition to professional discretion by the EAP, the following qualitative assessment of impacts was undertaken:

Impact significance was analyzed using the following formula:

$$\text{Overall Score} = (N \times M \times S) \times (E + D \times P)$$

Where:

- N = Nature;
- E = Extent
- M = Magnitude
- D = Duration
- P = Probability

S = Significance

The definitions of the six parameters are provided below:

Nature (Status)

The impact of the project on the environment could be:

- Negative (-)
- Neutral (0)
- Positive (+)

Extent

- Local - extend to the site and its immediate surroundings (1)
- Regional - impact on the region but within the province (2)
- National - impact on an interprovincial scale (3)
- International - impact outside of South Africa (4)

Magnitude or degree to which impact may cause irreplaceable loss of resources:

- Low - natural and social functions and processes are not affected or minimally affected (1)
- Medium - affected environment is notably altered; natural and social functions and processes continue albeit in a modified way (2)
- High - natural or social functions or processes could be substantially affected or altered to the extent that they could temporarily or permanently cease (3)

Duration

- Short term - 0-5 years (1)
- Medium term - 5-11 years (2)
- Long term - impact ceases after the operational life cycle of the activity either because of natural processes or by human intervention (3)
- Permanent - mitigation either by natural process or by human intervention will not occur in such a way or in such a time span that the impact can be considered transient (4)

Probability

- Rare/Remote - the event may occur only in exceptional circumstances (0.1)
- Unlikely - the event could occur at some time (0.2)
- Moderate - the event should occur at some time (0.4)
- Likely - the event will probably occur in most circumstances (0.8)
- Almost certain - the event is expected to occur in most circumstances (1)

Significance

- Provides an overall impression of an impact's importance, and the degree to which it can be mitigated. The range for significance ratings is as follows-
- Impact will not affect the environment. No mitigation necessary (0)
- No impact after mitigation (1)
- Residual impact after mitigation / some loss of populations and habitats of non-threatened species (2)
- Impact cannot be mitigated / exceeds legal or regulatory standard / increases level of risk to public health / extinction of biological species, loss of genetic diversity, rare or endangered species, critical habitat (3)

The overall rating was then assessed according to the following impact classes:

Impact Rating	Low/Acceptable impact	Medium	High
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Score (-ve)	0-18	19-36	37-56
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6. Findings of specialist reports and public participation process

Only two specialist studies were deemed necessary for the initial phase of the Basic Assessment Process. These are discussed below. Both reports are attached in Appendix C.

6.1. Wetland delineation report

The wetland delineation report carried out by SDP Ecological Services identified two significant watercourses within the property. One was associated with the central valley and another with a lesser valley in the western portion of the site. Both wetland and riparian habitats were associated with the watercourses, as depicted in the wetland delineation layout (See Appendix C). Permanent seasonal and temporary wetland zones were noted. Reference was made to soil, vegetation and topographical indicators.

The delineation report further identified the need for a mandatory 32 m buffer to be applied to the project area. The original plan did not cater for such a buffer. The preferred layout plan incorporates the buffer, meeting the recommendations of the delineation report.

Since all wetlands and riparian areas have been excluded from the layout, a wetland functionality assessment was deemed unnecessary for the Basic Assessment Process. Further investigation into the functionality and PES of the wetlands/watercourses may be required by the Department of Water and Sanitation if a section 21 (c) and (i) water use license application (WULA) is required. This matter will be taken further upon receipt of comments from the DWS.

6.2. Geotechnical report

Drennan Maude (Pty) Ltd undertook an onsite geotechnical investigation. Test pit results confirmed the presence of Dwyka Tillite as the dominant geological form on site. Geotechnical considerations discussed included the following:

- Stability

Slope stability was not deemed to be concern, however the feasibility of developing areas steeper than 1 in 3 was mentioned in light of the existence of such areas on the site. Figure 2 of the report identifies these areas.

- Active soils

Active soils are a concern on site particularly on deeply weathered hillsides, valley bottoms/slopes and valley heads, where heaving clays of deeper than 3 m were identified. The remainder of the site was of no concern due to the presence of shallow soils with limited heave potential. Again, figure 2 of the report identifies the problem area.

- Excavatability

The excavatability of the soil varied over the site. Soft excavation conditions were limited to 1 to 2 m where shallow soils were present, while soft excavation conditions extended to 3 to 5

m in areas where deeper weathered soils were present (See figure 2 of the report). Deeper excavations conditions in these areas would then be considered intermediate to hard.

- Material suitability

Only the “completely to highly weathered tillite” and “highly weathered tillite” soil horizon were considered to be suitable for use in layer works and fill platforms (G6 to G8 type material).

Recommendations were made pertaining to earthworks, site drainage and founding. These have been included under the EAP recommendation (Section 12). In conclusion the report highlights the potential high cost of establishment in the areas identified as: seepage zones and drainage valley lines, steep slopes and deep clayey active profiles.

7.3. Public participation

The only response received was a consolidated response from eThekweni Municipality. The following internal departments provided comment:

- Fire and Emergency Services Unit: The following are to be provided during the planning phase – fire hydrants, a minimum road width of 8 m with ability to accommodate 16 T, fire appliances and that the buildings must comply with SANS 10400-T:2011
- City Health: No objection subject to the following being addressed – the type of sanitation services proposed, dust control and sanitary facilities for the construction phase work force.
- Parks Leisure and Cemeteries Department: District 5: Acknowledged that sufficient conservation/open space has been set aside for play parks and is consistent with the neighbouring Rainbow Park. A small area along the 50 year floodline is being informally developed by Cyenza into a community park.
- Environmental Planning and Climate Protection Department: EIA activities require confirmation specifically activities in Listing notice 3 because the site falls within a CBA 3 area.
- Geotechnical Engineering: No objection. Await results of the geotechnical assessment.
- Disaster Management: No concerns.
- Durban Solid Waste: Consideration must be made for refuse compactors travelling on the internal roads.
- eThekweni Water and Sanitation: Pollution Branch: No objections.
- eThekweni Electricity (MV/LV Operations): No objection. Further comment must be obtained from the HV operations department.
- eThekweni Electricity (HV Planning): No objections. Approval must be obtained from the LV/MV department.
- Strategic Spatial Planning Branch: No objections, however may comment further at a later stage.

This draft BAR document contains the relevant information to inform the queries listed above.

7. Impact evaluation

Direct impacts

Construction Phase

1) Clearance of vegetation

With the exception of the buffer zones, the remaining vegetation will be removed during the construction phase. The majority of the vegetation on site consists of secondary indigenous species (pioneer species) and exotic vegetation. The site was under sugar cane and thus any primary vegetation was removed upon commencement of agriculture many years ago. The vegetation on site is thus of limited ecological importance. The loss of vegetation cannot directly be mitigated, but the maintenance of the buffer zones and any relative improvement in the nature of the vegetation within these areas can be seen as an offset for the loss of other vegetation onsite.

Table 1: Impact assessment – clearance of vegetation

	N	M	S	E	D	P	Total	Class
No Mitigation	-1	2	2	1	4	1	-20	Medium
Mitigation	-1	2	1	1	3	1	-12	Acceptable

2) Site camp – services and ablutions

During construction temporary services will be needed for the staff both on site and at the site camp. It is expected that the site camp will be positioned in an area that has access to municipal service infrastructure. In this instance the potential of direct site specific impacts occurring is very low, however if no connections are available, other methods of sanitation will be necessary, increasing risk. Chemical toilets are an accepted alternative, however these need to be serviced regularly and maintained to avoid spillage/leaks. Providing insufficient sanitation promotes the use of the surrounding area for such purposes, potentially contaminating the water resources on site.

Table 2: Impact assessment – site camp services and ablutions

	N	M	S	E	D	P	Total	Class
No Mitigation	-1	1	1	1	1	1	-2	Acceptable
Mitigation	-1	1	1	1	1	0.1	-0.2	Acceptable

3) Construction Waste

Waste is a direct by-product of construction activities and takes the form of plastic, paper, wood, concrete, other rubble and chemical based waste (paint, solvents etc.). Improper disposal of these wastes can cause visual and contamination issues. The site could look unsightly, potentially upsetting other residents or may contaminate the soil or water resources on site, particularly in the case of chemical based wastes. Poor waste management can have a significant impact on the receiving environment.

Table 3: Impact assessment – construction waste

	N	M	S	E	D	P	Total	Class
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No Mitigation	-1	2	1	1	1	1	-4	Acceptable
Mitigation	-1	1	0	1	1	0.2	0	Acceptable

4) Stormwater and erosion

The site in question is relatively steep in places. The removal of vegetation during the construction phase will increase the vulnerability of the slopes to erosion due to hydraulic forces, particularly as a result of concentrated stormwater. Although wind erosion is a concern it is not significant given the firm clayey nature of the soil.

The source of increased runoff during the construction phase stems from a loss of vegetation cover and an increase in hard surfaces. Hard surfaces includes areas compacted by vehicles and any surface that has been altered in such a way that the potential for runoff is increased.

In addition to the direct impact of poor storm water management and erosion, a number of indirect and cumulative impacts may arise as a result thereof.

Table 4: Impact assessment – stormwater and erosion

	N	M	S	E	D	P	Total	Class
No Mitigation	-1	2	2	1	1	1	-8	Acceptable
Mitigation	-1	2	2	1	1	0.4	-1.6	Acceptable

5) Dust

Dust is a concern during the initial bulk earthworks stage where large areas of unvegetated soils will be exposed to the prevailing winds. Fine dust particles are likely to cause a nuisance to neighbouring residents. The window of opportunity is short and the impact of dust temporary. Upon completion of the bulk earthworks and the re-vegetation of exposed slopes dust related impacts should cease.

Table 5: Impact assessment – dust

	N	M	S	E	D	P	Total	Class
No Mitigation	-1	1	1	1	1	1	-2	Acceptable
Mitigation	-1	1	1	1	1	0.8	-1.6	Acceptable

6) Noise

Construction activities produce noise of various frequencies and intensity. The most common noises to be encountered are: loud voices, vehicular movement and banging of equipment. These sounds although a nuisance are of limited concern. No unusual machinery activity or blasting is expected, thus noises outside the usual spectrum of construction noise is not expected.

Table 5: Impact assessment – noise

	N	M	S	E	D	P	Total	Class
No Mitigation	-1	1	3	1	1	1	-6	Acceptable
Mitigation	-1	1	3	1	1	0.8	-4.8	Acceptable

7) Exotic Weeds

Many of the established exotic weeds are pioneer species and respond strongly to soil disturbances, out competing indigenous plant species. Exotic weeds are a major problem towards the latter phases of construction when disturbed soils are allowed to settle. These weeds will often invade grassed banks and landscaped areas and can be costly to remove if not controlled from first appearance. The presence of exotic species on site suggests a seed bank is present, guaranteeing the propagation of new seeds during and after earthwork activities. The proliferation of exotic weeds has indirect and cumulative impacts on the surrounding area.

Table 7: Impact assessment – exotic weeds (construction phase)

	N	M	S	E	D	P	Total	Class
No Mitigation	-1	3	2	1	4	1	-30	Medium
Mitigation	-1	3	1	1	2	1	-9	Acceptable

Operational Phase

1) Stormwater management

Once complete and occupied, the development will include a variety of permanent hard surfaces, that will result in increased runoff during storm events. A formal stormwater management system will be in place, however the system must be able to handle the volumes of stormwater expected. If not the potential for indirect and cumulative off site impacts increases significantly.

Table 8: Impact assessment – stormwater management

	N	M	S	E	D	P	Total	Class
No Mitigation	-1	2	2	1	4	1	-20	Medium
Mitigation	-1	1	2	1	4	1	-10	Acceptable

2) Influence of residents

The influence of the residents is often overlooked, however this is generally the source of the majority of problems during the operational phase. This is because residents become responsible for a number of activities at a house hold level such as waste management and household maintenance. If people choose to dump their rubbish into the wetland areas, or abuse services resulting in perpetual sewage leaks, there is very little any authority can do to control such actions. This is cause for concern and will have a greater impact on the receiving environment than any of the other identified impacts. There is little opportunity for mitigation and the task falls squarely with the local authority to implement bylaws and react quickly to any reported issue such as illegal dumping or a blocked sewer man hole.

Table 9: Impact assessment – influence of residents

	N	M	S	E	D	P	Total	Class
No Mitigation	-1	3	2	1	4	1	-30	Medium
Mitigation	-1	2	2	1	4	0.8	-16	Acceptable

3) Problematic services

Following on from the above impact, problematic services such perpetually blocked sewer man holes, leaking water pipes and insufficient solid waste services are likely to cause significant problems on site and off site, with numerous indirect and cumulative impacts resulting. This is particularly concerning due to the generally poor level of services provided to outlying and poorer communities.

Table 10: Impact assessment – problematic services

	N	M	S	E	D	P	Total	Class
No Mitigation	-1	2	2	1	4	0.8	-16	Acceptable
Mitigation	-1	2	1	1	4	0.8	-8	Acceptable

4) Exotic weeds

Once occupied, it is unlikely that the residents will continue with the weed eradication efforts undertaken during the construction phase. Exotic weeds are likely to proliferate, as has been observed in a number of similar areas, over the years. Unless undertaken by the local authority no weed eradication practices are expected to be undertaken by the residents.

Table 11: Impact assessment – exotic weeds (operational phase)

	N	M	S	E	D	P	Total	Class
No Mitigation	-1	3	2	1	4	1	-30	Medium
Mitigation	-1	2	2	1	4	1	-20	Medium

Indirect impacts
Construction Phase

1) Wetland and watercourse impacts

Excessive and silt laden runoff can cause a number of issues for watercourses and wetlands. Excessive runoff can cause instream erosion, altering the characteristics of the channel permanently (or creating a channel when on was no present previously) often resulting in a change in functionality of the system. High silt loads can cause excessive sediment deposition, smothering habitat and changing the characteristics of the system. Sedimentation impacts may be temporary in nature and offset by the erosive forces experienced during high runoff events. High turbidity can also be experienced, often affecting downstream water uses. Appropriate construction phase stormwater control measures should be implemented. If done correctly, impacts can be reduced enough to maintain natural functionality.

Table 12: Impact assessment – wetland and watercourse impacts (construction phase)

	N	M	S	E	D	P	Total	Class
No Mitigation	-1	2	2	2	1	1	-12	Acceptable
Mitigation	-1	1	2	2	1	1	-6	Acceptable

2) Biodiversity

Although identified as falling within a CBA 3 area the site is of low biodiversity importance due to its transformed nature – previously agricultural land, currently abandoned – and is not considered to contribute significantly to the biodiversity conservation within the Metro. The clearance of vegetation – excluding the wetland areas and buffer – will not result in the loss of any significant species.

Table 13: Impact assessment – biodiversity (construction phase)

	N	M	S	E	D	P	Total	Class
No Mitigation	-1	2	2	2	4	1	-24	Medium
Mitigation	-1	1	2	2	4	1	-12	Acceptable

Operational Phase

1) Wetland and watercourse impacts

Similar to those identified for the construction phase, however high and variable flow conditions are likely to be more common, with little or no sedimentation occurring. Under such conditions, particularly with no mitigation, channel erosion and altered hydrology is inevitable. If the formal

stormwater capture and control system is adequate, impacts can be significantly reduced, having little impact on the ecological functioning of the system.

Table 14: Impact assessment – wetland and watercourse impacts (operational phase)

	N	M	S	E	D	P	Total	Class
No Mitigation	-1	2	2	2	4	1	-24	Medium
Mitigation	-1	2	2	2	4	0.8	-19.2	Medium

2) Biodiversity

As per the construction phase – “Although identified as falling within a CBA 3 area the site is of low biodiversity importance due to its transformed nature – previously agricultural land, currently abandoned – and is not considered to contribute significantly to the biodiversity conservation within the Metro. The clearance of vegetation – excluding the wetland areas and buffer – will not result in the loss of any significant species.”

Table 15: Impact assessment – biodiversity (operational phase)

	N	M	S	E	D	P	Total	Class
No Mitigation	-1	2	2	2	4	1	-24	Medium
Mitigation	-1	1	2	2	4	1	-12	Acceptable

3) Socio economic

The proposed housing development will contribute to meeting a growing housing demand within the eThekweni Municipality. This will significantly improve the lives of the beneficiaries. A significant positive impact of the proposed development.

Table 16: Impact assessment – socio-economic (operational phase)

	N	M	S	E	D	P	Total	Class
No Mitigation	+1	3	0	1	4	1	0	Acceptable
Mitigation								

Cumulative impacts

1) Urban and peri urban expansion

The demand for low income housing has resulted in both informal and formal development taking place, expanding the urban edge and creating a large “peri-urban” band around the outskirts of the eThekweni Municipality. This expansion has led to numerous cumulative ecological impacts such as catchment degradation which has in turn contributed to estuarine degradation. Although a relatively small area, the site falls within the catchment of the Little Amanzimtoti River, a highly stressed system, overcome by peri urban expansion. The proposed development contributes further to the degradation of the catchment and expanding peri-urban edge. No level of mitigation can alleviate the effect of catchment degradation and peri-urban expansion.

Table 17: Impact assessment – urban and peri urban expansion

	N	M	S	E	D	P	Total	Class
No Mitigation	-1	2	3	2	4	1	-30	Medium
Mitigation								

2) Loss of agricultural land

The development of the property will result in the permanent loss of potential agricultural land. The site is however considered to be of marginal value given its small size, steep topography and clayey soils. Although contributing to the loss of agricultural land, the impact is considered insignificant. No mitigation is available.

Table 18: Impact assessment – loss of agricultural land

	N	M	S	E	D	P	Total	Class
No Mitigation	-1	1	0	3	4	1	0	Acceptable
Mitigation								

3) Service capacity

The proposed housing project will utilise municipal services including potable water, sewerage, solid waste and electricity. This adds to the cumulative strain on the capacity of these services. Although potentially a serious problem, suitable infrastructure planning should alleviate any negative impact on existing services within the municipality.

Table 19: Impact assessment – Service capacity

	N	M	S	E	D	P	Total	Class
No Mitigation	-1	2	1	2	4	1	18	Acceptable
Mitigation	-1	2	0	2	4	1	0	Acceptable

8. Management and mitigation

Table 20,21 and 22 below provides a summary of the identified impacts, the proposed mitigation measures and the significance of the impacts after mitigation.

Table 20: The identified *direct* impacts and proposed mitigation measures to reduce the significance of the impacts.

Impact	Phase	Before Mitigation	Proposed Mitigation	After Mitigation
Clearance of vegetation	Construction	Medium	<ul style="list-style-type: none"> • Manage buffer zones to improve integrity 	Acceptable
Site camp – services and ablutions	Construction	Acceptable	<ul style="list-style-type: none"> • Establish temporary connections to municipal services • Manage chemical toilets – utilise services of a service provider. 	Acceptable
Construction Waste	Construction	Acceptable	<ul style="list-style-type: none"> • Establish and follow formal waste management plant that ensures waste is stored in a designated area and is removed from site regularly – once a week 	Acceptable
Stormwater and Erosion	Construction	Acceptable	<ul style="list-style-type: none"> • Implement stormwater and erosion management measures such as sand bags and silt curtains. • Re-vegetate banks and slopes as soon as possible 	Acceptable
Dust	Construction	Acceptable	<ul style="list-style-type: none"> • Dampen of roads and exposed areas of the site regularly. • Establish wind breaks where necessary – 1.8 m high shade cloth fence. • Cover stock pile material with hessian or shade cloth. 	Acceptable
Noise	Construction	Acceptable	<ul style="list-style-type: none"> • No work on site before 6 am or after 6 pm. • Check overly noisy equipment for mechanical problems • No raucous behaviour on site. 	Acceptable
Exotic weeds	Construction	Medium	<ul style="list-style-type: none"> • Implement and exotic weed control programme 	Acceptable
Stormwater management	Occupational	Medium	<ul style="list-style-type: none"> • Ensure the stormwater system is suitable for the expected runoff volumes • Maintain stormwater system • No direct disposal into the watercourses. 	Acceptable
Influence of residents	Occupational	Medium	<ul style="list-style-type: none"> • Municipality to implement bylaws and react to service related issues 	Acceptable
Problematic services	Occupational	Acceptable	<ul style="list-style-type: none"> • Ensure services are maintained and emergency response protocol carried 	Acceptable

			out.	
Exotic weeds	Occupational	Medium	<ul style="list-style-type: none"> Municipality to undertake regular weed eradication 	Medium

Table 21: The identified *indirect* impacts and proposed mitigation measures to reduce the significance of the impacts.

Impact	Phase	Before Mitigation	Proposed Mitigation	After Mitigation
Wetland and watercourse impacts	Construction	Acceptable	<ul style="list-style-type: none"> Ensure stormwater management is implemented. 	Acceptable
Biodiversity impacts	Construction	Medium	<ul style="list-style-type: none"> Manage buffer zones and improve integrity thereof. 	Acceptable
Wetlands and watercourse impacts	Occupational	Medium	<ul style="list-style-type: none"> Maintain stormwater system. 	Medium
Biodiversity	Occupational	Medium	<ul style="list-style-type: none"> Manage buffer zones and improve integrity thereof. 	Acceptable
Socio economic	Occupational	Acceptable	Positive impact – no mitigation required.	Acceptable

Table 22: The identified *cumulative* impacts and proposed mitigation measures to reduce the significance of the impacts.

Impact	Before Mitigation	Proposed Mitigation	After Mitigation
Urban and peri-urban expansion	Medium	None possible	Medium
Loss of agricultural land	Acceptable	None possible	Acceptable
Service capacity	Acceptable	<ul style="list-style-type: none"> Suitable infrastructure planning 	Acceptable

A detailed environmental management programme (EMPr) has been drawn up and is included in Appendix D.

9. Environmental impact statement

The proposed Kingsburgh West extension housing project is a necessary development in terms of meeting the housing requirements of the eThekweni Municipality Department of Human Settlements. As such, the need and desirability is clear. The benefits of the housing project will be received directly by the community. This is a significant positive aspect of the proposed development.

Despite the positive nature of the development, there are number of environmental concerns, the majority conventional and easily mitigated, but some are unconventional and cause for concern, particularly the potential role that the actions of residents may have on the environment as they are not bound the requirements of the authorisation or EMPr.

The majority of impacts can be mitigated, particularly the direct impacts, which are the most obvious at a site specific level. Mitigation of the indirect and cumulative impacts is dependent on external factors and the success of the mitigation of direct impacts.

Despite the concerns raised, the site is a logical extension of an existing housing project and is of high priority. Provided the mitigation measures proposed are upheld and implemented, the overall impact of the proposed development should remain at an acceptable level.

10. Conditions of authorisation

The following conditions are recommended for inclusion into the Environmental Authorisation;

- 1) The recommendations made by Drennan Maude (Pty) Ltd regarding feasible developmental areas based on slope, active clayey soils and seepage zones/valley lines.
- 2) All mitigation measures proposed in Section 8 be included.
- 3) The authorisation be issued subject to a 21 (c) and (i) WULA application being made or confirmation from the DWS as to what they require.

11. Assumptions, uncertainties and gaps

The following assumptions/gaps and uncertainties were applied/noted during the draft Basic Assessment period:

- No heritage assessment has been undertaken to date. This is based on the assumption that the given sites location it is of no heritage importance and given the sites location immediately adjacent to a previous phase may be covered by the previous heritage impact assessment. This is subject to confirmation by AMAFA. If required a heritage specialist will be approached.
- A stormwater management plan will drawn up by the project engineer in due course.
- No wetland functionality or PES study has been undertaken during this BAR process. It is assumed that this information is only relevant for the WULA application. The wetland have been accommodated by the layout plan, with allowance of a 32 m buffer and no wetland crossings have been proposed. Confirmation is required from the DWS as to whether the proposed development requires a full WULA or a GA application as the only trigger for the WULA is that the proposed development is situated within 500 m of a wetland.

12. EAP recommendation

At this stage there is no indication of any reason why the proposed development should not be authorised. A final recommendation will be made upon conclusion of the Final BAR document

13. Period of authorisation

A validity period of 4 years is recommended for the authorisation, during which time construction must commence.

14. Declaration by EAP

I, _____ declare that I

- am the independent environmental practitioner in this application;
- do not have and will not have any vested interest (either business, financial, personal or other) in the undertaking of the proposed activity, other than remuneration for work performed in terms of the Environmental Impact Assessment Regulations, 2010;
- will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- declare that there are no circumstances that may compromise my objectivity in performing such work;
- have expertise in conducting environmental impact assessments, including knowledge of the National Environmental Management Act, 1998 (Act107 of 1998), regulations and any guidelines that have relevance to the proposed activity;
- will comply with the National Environmental Management Act, 1998 (Act107 of 1998), regulations and all other applicable legislation;
- will take the provisions of regulation 7(2) of the EIA Regulations, 2010 into account when preparing any report relating to this application;
- undertake to disclose to the applicant and the KZN Department of Economic Development, Tourism & Environmental Affairs all material information in my possession that reasonably has or may have the potential of influencing its decision with respect to this application;
- will ensure that information containing all reports in respect of this application is distributed or made available to interested and affected parties and that their participation is facilitated in such a manner that they will be provided with a reasonable opportunity to participate and provide comments on the reports;
- will provide the competent authority with access to all information at my disposal regarding this application, whether such information is favourable to the applicant or not;
- declare that all the particulars furnished by me in this form are true and correct;
- I am aware that a false declaration is an offence in terms of regulation 71(1) of the EIA Regulations, 2010 and that it is punishable in terms of regulation 71(2) of the EIA Regulations, 2010; and
- I will comply with all the requirements as indicated in the National Environmental Management Act, 1998 (Act 107 of 1998) and Environmental Impact Assessment Regulations, 2010.

Signature of the environmental assessment practitioner

Trading name

Date

APPENDIX A – Preferred Alternative Layout Plan and site location plan

APPENDIX B – Public Participation

APPENDIX C – Specialist Reports

APPENDIX D – Environmental Management Plan