



FINAL SCOPING REPORT

Proposed Extension of the Existing Roy Point Cemetery on the Remainder of Erf 1 Newcastle, Roy Point, Newcastle Local Municipality, KwaZulu-Natal

ORIGINAL

GE39078

25 February 2021



GIBB
ENVIRONMENTAL

Final Scoping Report: Proposed Extension of the Roy Point Cemetery located on the Remainder of Erf 1 Newcastle, Roy Point, Newcastle Local Municipality, KwaZulu-Natal

CONTENTS

Chapter	Description	Page
<hr/>		
CONTENTS 1		
	Appendices	3
	List of Figures	4
	List of Tables	4
	Contact Information	i
	Approval	ii
	Amendment Record	ii
	Disclaimer	ii
	Distribution List	iii
	Abbreviations / Acronyms / Definitions	iii
	Executive Summary	vi
1	Introduction	1
	1.1 Project Description	1
	1.2 Project Location and Site Description	5
	1.3 Need and Desirability of Proposed Activity	8
	1.4 Need and Desirability in terms of Location	11
	1.5 Summary of the Authorisation Requirements	19
	1.6 Details of the Project Role Players	20

	1.7	Structure of this report	27
2		Legal Requirements	30
	2.1	National Legislation	30
3		Alternatives	44
	3.1	Location Alternative	44
	3.2	Land Use Alternative (Type of Activity)	45
	3.3	Layout Alternatives	45
	3.4	Technology Alternative	46
	3.5	Operational Alternative	46
	3.6	No Go Alternative	46
4		Scoping and EIR Process	47
	4.1	Scoping Phase	49
	4.2	Public Participation Process during the Scoping Phase	51
	4.3	Conclusion	54
5		Receiving Environment	55
	5.1	Climate	55
	5.2	Topography	55
	5.3	Geology and Soils	55
	5.4	Groundwater	57
	5.5	Regional Vegetation	57
	5.6	Conservation targets and Status for Vegetation Types in KwaZulu-Natal	58
	5.7	Listed Ecosystems	59
	5.8	The KwaZulu-Natal Systematic Conservation Planning	61
	5.9	Study site vegetation	64
	5.10	Hydrology and Wetlands	65

5.11	Socio-Economic Environment	67
6	Potential Key Environmental Issues	74
6.1	Biophysical Environment	74
6.2	Social Environment	79
6.3	Summary of Potential Environmental Issues	82
6.4	No-Go Impacts	89
6.5	Key issues identified that could result in Cumulative Impact	89
7	Plan of Study for Environmental Impact Assessment Phase (PoS for EIR)	91
7.1	Purpose of the Plan of Study for the EIR	91
7.2	Detailed Impact Assessment Phase	93
7.3	Terms of Reference for Specialist Studies	108
7.4	Plan of Study Summary	109
8	Conclusion and Recommendations	110
8.1	Brief Findings and Recommendations	110
9	References	112

Appendices

Appendix A: CVs of the Project Team

Appendix B: Authority Consultation

Appendix B1: Correspondence with EKZNW

Appendix B2: Pre-application meeting with KZN EDTEA held on 25 March 2020

Appendix B3: DEA Screening Report

Appendix B4: Application for Environmental Authorisation Form

Appendix B5: KZNEDTEA Acknowledgement of receipt of application

Appendix C: Preliminary Site Layout Plan

Appendix D: Site Photograph Plate

Appendix E: Feasibility Study

Appendix F: Specialist Assessments

Appendix F1:	Geotechnical Assessment (Terratest: 2012)	
Appendix F2:	Geotechnical Assessment (Geo-Caluza Consulting Engineers)	
Appendix F3:	Ecological Assessment	
Appendix F4:	Wetland Assessment	
Appendix F5:	Hydrological Assessment	
Appendix F6:	Geohydrological Assessment	
Appendix F7:	Hydropedological Assessment	
Appendix G:	Public Participation Process	
Appendix G1:	I&AP Database	
Appendix G2:	Media Advertisement	
Appendix G2.1:	Media Advertisement Proof	
Appendix G3:	I&AP Notification Letter	
Appendix G3.1:	I&AP Notification Proof	
Appendix G4:	Site Notice	
Appendix G4.1:	Site Notice Proof	
Appendix H:	EAP Declaration Under Oath	

List of Figures

Figure 1: Locality Map (Topographical Sheet) illustrating access to site from Karbochem Road	4
Figure 2: Locality Map (Orthophoto) illustrating access to site from Karbochem Road	7
Figure 3: Contour map of the site for Roy Point Cemetery Extension	13
Figure 4: Scoping and Environmental Impact Assessment Process	48
Figure 5: The study area in relation to terrestrial CBAs according to the KZN BSP	63
Figure 6: FEPA and non-FEPA wetlands in proximity to the site	66
Figure 7: Cumulative Impacts	99

List of Tables

Table 1: GPS Co-ordinates of the site (outer points of the boundary)	6
Table 2: Surrounding Land uses	6
Table 3: Details of the Applicant	20
Table 4: Details of the Independent Environmental Assessment Practitioner (EAP)	20
Table 5: GIBB Project Team and Expertise	22
Table 6: External Specialist Team	25
Table 7: Details of the Competent Authority	26
Table 8: Legislated Requirements for SR content as detailed in GNR 982 (as amended)	27

Table 9: Listed activities in terms of NEMA EIA Regulations (2014), as amended	31
Table 10 : Health, safety and major hazardous installations regulations	36
Table 11: Legislation applicable to noise management	38
Table 12: Air Quality Management Legislation	38
Table 13: Legislation for waste management which applies to the current project	39
Table 14: Brief review of other relevant policies, legislation, guidelines and standards applicable to the S&EIR	40
Table 15: Proposed Specialist Studies	50
Table 16: Media Advert and Site Notification	53
Table 17: Locations where the DSR was placed for I&AP Review	54
Table 18: Conservation status thresholds for KZN (Jewitt, 2011)	59
Table 19: Criteria used to identify threatened terrestrial ecosystems (DEA, 2011)	59
Table 20: Summary of key issues identified in relation to the proposed project (includes all alternatives)	82
Table 21: Cumulative Impacts	89
Table 22: Proposed Criteria and rating Scales to be used in the Assessment of the Potential Impacts	95
Table 23: Explanation of Assessment Criteria	97
Table 24 : Example of Impact Assessment Matrix	100
Table 25: Impact Assessment Matrix Key	101
Table 26: Ranking of Consequence	103
Table 27: Likelihood categories and definitions	103
Table 28: Residual risk categories	104
Table 29: Implications for decision-making of the different residual risk categories	104
Table 30: Proposed Specialist Studies to be undertaken during the Environmental Impact Reporting Phase of the Project	108

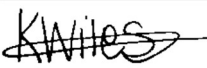


Contact Information

Please contact the undermentioned should you require further information.

GIBB Environmental	
Address: Durban Office	Durban Norfolk House 54 Norfolk Terrace 2 nd Floor Westville 3630
Website	www.gibb.co.za
Contact Person	Mrs. Katherine Wiles Senior Environmental Scientist
	
Contact number	+27 31 267 8567
Cell number	0713558781
Fax Number	n/a
Email	kwiles@gibb.co.za

Approval

The signatures below certify that this document has been reviewed and approved.

	Name	Signature	Position	Date
Prepared by	Katherine Wiles		Senior Environmental Scientists	25/02/2021
Reviewed by	Sarah Caulfield		Discipline Lead	25/02/2021
Approved by	Sarah Caulfield		Discipline Lead	25/02/2021

Amendment Record

This document is reviewed to ensure its relevance. A record of contextual additions or omissions is given below.

Rev No.	Issue Date	Revision Description	Prepared/Updated By	Reviewed By	Approved By
0	01 July 2020	Draft Scoping Report: Extension of Roy Point Cemetery	N Lalie	S Caulfield	S Caulfield
1	21 January 2021	Draft Scoping Report: Extension of Roy Point Cemetery	K Wiles	S Caulfield	S Caulfield
2	25 February 2021	Final Scoping Report Extension of Roy Point Cemetery	K Wiles	S Caulfield	S Caulfield

Disclaimer

This report, and information or advice, which it contains, is provided by GIBB (or any of its related entities) solely for internal use and reliance by its Client in performance of GIBB's duties and liabilities under its contract with the Client. Any advice, opinions, or recommendations within this report should be read and relied upon only in the context of the report as a whole. The advice and opinions in this report are based upon the information made available to GIBB at the date of this report and on current South African standards, codes, technology and construction practices as at the date of this report. Following final delivery of this report to the Client, GIBB will have no further obligations or duty to advise the Client on any matters, including development affecting the information or advice provided in this report. This report has been prepared by GIBB in their professional capacity as Consulting Engineers. The contents

of the report do not, in any way, purport to include any manner of legal advice or opinion. This report is prepared in accordance with the terms and conditions of the GIBB contract with the Client. Regard should be had to those terms and conditions when considering and/or placing any reliance on this report. Should the Client wish to release this report to a Third Party for that party's reliance, GIBB may, at its discretion, agree to such release provided that:

- a) GIBB's written agreement is obtained prior to such release, and
- b) By release of the report to the Third Party, that Third Party does not acquire any rights, contractual or otherwise, whatsoever against GIBB and GIBB, accordingly, assume no duties, liabilities or obligations to that Third Party, and
- c) GIBB accepts no responsibility for any loss or damage incurred by the Client or for any conflict of GIBB interests arising out of the Client's release of this report to the Third Party.

Distribution List

Copies to:

Copy 1 of 1 Interested & Affected Parties (I&APs)

Etc.

Abbreviations / Acronyms / Definitions

AEL	Air Emissions License
BAP	Biodiversity Action Plan
BA	Basic Assessment
CA	Competent Authority
CBA	Critical Biodiversity Area
CR	Critically Endangered
DEIR	Draft Environmental Impact Report
DEA	Department of Environmental Affairs
DSR	Draft Scoping Report
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner

EKZNW	Ezemvelo KwaZulu-Natal
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EIR	Environmental Impact Report
EMPr	Environmental Management Programme
FSR	Final Scoping Report
FEPA	Freshwater Ecosystem Priority Area
HIA	Heritage Impact Assessment
I&APs	Interested and Affected Parties
IEM	Integrated Environmental Management
IWWMP	Integrated Water and Waste Management Plan
IWMP	Integrated Waste Management Plan
KZN	KwaZulu-Natal
KZN EDTEA	KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs
mamsl	Meters above mean sea level
NEMA	National Environmental Management Act, 1998 (Act 107 of 1998)
NEM:AQA	National Environmental Management: Air Quality Act 2004 (Act 39 of 2004)
NEM:BA	National Environmental Management: Biodiversity Act (Act No. 10 of 2004)
NEM:WA	National Environmental Management Waste Act (No. 59 of 2008)
NFEPA	National Freshwater Ecosystem Priority Area
NHRA	National Heritage Resources Act, 1999 (Act 25 of 1999)
NLM	Newcastle Local Municipality
NBA	National Biodiversity Assessment
NWA	National Water Act, 1998 (Act 36 of 1998)

OHS Act	Occupational Health and Safety Act 1993 (Act No. 85 of 1993)
PAIA	Promotion of Access to Information Act, 2000 (Act No. 2 of 2000)
PoS	Plan of Study
PPP	Public Participation Process
QDGC	Quarter Degree Grid Cell
RSA	Republic of South Africa
SAHRA	South African Heritage Resources Agency
SDF	Spatial Development Framework
SEA	Strategic Environmental Assessment
ToR	Terms of Reference
WML	Waste Management Licence
WUA	Water Use Authorisation
WUL	Water Use Licence
WULA	Water Use Licence Application

Executive Summary

Introduction

GIBB (Pty) Ltd (GIBB) has been appointed as the independent Environmental Assessment Practitioner (EAP) by the Newcastle Local Municipality (NLM) to undertake an application for Environmental Authorisation (EA), subject to a Scoping and Environmental Impact Reporting (S&EIR) process for the extension of the existing Roy Point Cemetery in Newcastle, KwaZulu-Natal (KZN). The proposed development site is located on the Remainder of Erf 1, Newcastle, in KZN.

A S&EIR process will be conducted for this project, based on the triggering of activities listed in terms of the National Environmental Management Act, 1998 (Act 107 of 1998) (NEMA) and the Environmental Impact Assessment (EIA) Regulations, 2014 (as amended). This application will be subject to an S&EIR process based on the triggering of listed activities within Government Notice R 983, 984 and 985 of the EIA Regulations.

Project Description

The NLM has committed to facilitate the extension of the existing Roy Point Cemetery to create more space for burials due to the expected increase in deaths due to the COVID-19 pandemic, HIV/AIDS and other natural causes. A Feasibility Study undertaken in 2013 by Uddi Development Consultants identified that the existing Roy Point Cemetery was favourable in terms of expansion and hence, the investigation of the expansion of this site via an EA emerged.

The proposed site for cemetery extension is intended to enable provision of adequate facilities to cater for the needs of those people who will be utilising the cemetery. Support facilities for the cemetery extension which are proposed be established are as follows: office for Cemetery Manager, caretaker's room, storeroom, boundary fence, parking, open space areas, rest areas, benches and ablution blocks, main access to site and exit out of site, internal roads through the site, and footpaths.

The various Specialist Studies that will be undertaken during the Environmental Impact Reporting (EIR) phase of the project are aimed at defining which areas of the proposed development site are suitable for the cemetery extension. A Composite Site Sensitivity Map will be compiled that will illustrate the environmental constraints (if any) that allow for, or prohibit areas on site for development. Sensitive environmental aspects may be due to the occurrence of wetlands, groundwater seepage areas, areas where floral conservation species occur, archaeological sites and so on. The Composite Sensitivity Map and the Final Site Layout Plan will be provided in the forthcoming Draft Environmental Impact Report (DEIR) that will be available for public review and comment during the EIR phase.

Potential Key Environmental Issues

The table below summarises the potential key issues associated with the proposed project. The impacts stemming from the key issues will be further investigated during the EIR phase and mitigation measures for significant impacts will be stipulated in the Environmental Management Programme (EMPr).

Summary of key issues identified in relation to the proposed project (includes all alternatives)

Environmental Aspect	Potential Impact	Proposed method of investigation
Biodiversity (Fauna and Flora)	<ul style="list-style-type: none"> • Destruction of faunal habitat and or disturbance to fauna of conservation concern, as a result of clearing of the site of vegetation for the development; • Destruction of indigenous vegetation and increased potential of spread of alien plant species, as a result of clearing of the site for the proposed burials. • Disturbance to sensitive habitat, due to construction activities. • Disturbance to fauna, due to construction activities. • Impact on surrounding habitats and species. • Increased disturbance to natural areas and destruction of habitat refugia, due to removal of islands of vegetation and increased human activity during the operational phase. • Habitat fragmentation and associated loss of ecological connectivity within and through the site, plus various ecological edge effects. 	Refer attached in Appendix F3.
Freshwater resources (wetlands and watercourses)	<ul style="list-style-type: none"> • Loss of wetland habitat and displacement of sensitive species, compaction of soils, sedimentation, pollution and erosion as a result of the construction activities. • Surface water contamination / pollution due to accidental spillage during construction and operational phases. 	Refer attached in Appendix F4.

Environmental Aspect	Potential Impact	Proposed method of investigation
	<ul style="list-style-type: none"> • Potential erosion of topsoil and concomitant siltation of watercourses, if not carefully controlled during the operational phase. • Potential contamination of freshwater resources as a result of pathogenic organisms released during corpse decomposition during the operational phase. • Changes to stream characteristics because of loss or transformation of habitat. • Degradation of water quality of the streams and rivers due to increase of sediment and silt and hydrocarbon spillage contaminating storm water flow. • Degradation of surface water quality due to leachates from the decomposition of inhumed bodies. • Degradation of aquatic and riparian habitats due to dumping of solid waste. • Loss of indigenous plant species local to the study area resulting in the encroachment of alien invasive plant species. 	<p>An Aquatic Impact Assessment will be undertaken during the EIR</p>
Geo-hydrology	<ul style="list-style-type: none"> • Disturbing vadose zone during soil excavations/activities. • Land subsidence due to collapsible soils. • Shallow groundwater table pollution (if perched groundwater conditions exist). • Poor quality seepage from machinery used to excavate soils. • Surface and shallow groundwater contamination from the following activities: <ul style="list-style-type: none"> ○ Equipment and vehicles are washed in the water bodies (when there is water); ○ Erosion and sedimentation of watercourses if graves are left open due to unforeseen circumstances (i.e. bad weather); 	<p>Refer attached in Appendix F6.</p>

Environmental Aspect	Potential Impact	Proposed method of investigation
	<ul style="list-style-type: none"> ○ Poor quality seepage from oxidised soils stockpiles. • Poor quality seepage from established graves at the cemetery; and poor quality seepage from domestic waste generated during funeral services. • Shallow groundwater table pollution (if perched groundwater conditions exist). • Existing groundwater users (if they exist) downstream of the site may be at risk if pathogens enter the groundwater aquifer. • Poor quality seepage from vehicles parked at the site, during a funeral service. • Degradation of water quality of streams situated downstream of development activities is likely to occur if domestic waste (generated during funeral services and not cleaned) accumulates in the drainage lines. • Potential groundwater contamination as a result of poor stormwater drainage on site. • Induced poor quality percolation into the shallow water table if graves are not properly capped/constructed. Graves need to be constructed per Newcastle Cemetery Bylaws. 	
Soils and Geology	<ul style="list-style-type: none"> • Loss of soil resources and related land capability as a result of soil contamination through spills/leaks from vehicles, machinery, construction waste, litter and use of portable ablution facilities. • Loss of soil resources and related land capability as a result of soil compaction from movement of vehicles/ machinery and soil erosion. 	This impact will be addressed in more detail at the EIR phase and the mitigation measures associated with this impact will be included in the Environmental Management Programme (EMPr).
Hydropedology	<ul style="list-style-type: none"> • Potential for infilling of wetlands inducing alternative flow paths. • Disturbing natural hydrological and hydropedological flow paths and drivers. 	Refer attached in Appendix F7.

Environmental Aspect	Potential Impact	Proposed method of investigation
	<ul style="list-style-type: none"> • Sedimentation of nearby watercourses if sodic soils exist in the area. • Short term impacts on the hydropedological processes supporting the wetlands. • Soil compaction. • Soil erosion. • Land subsidence due to collapsible soils. • Compaction of soils due to service and funeral vehicles. • Alteration of natural hydropedological flow paths, or inducing new flow paths, leading to degradation of wetlands and associated wetland recharge and interflow soils. Severe disturbance could change PES. • Exposure of soils, leading to increased runoff from cleared areas and erosion of the wetlands, and thus increased the potential for sedimentation of the wetlands. • Impacts on the hydropedological processes supporting the wetlands. • Potential for soil compaction and erosion through vegetation clearance. • Poor quality stormwater discharge, poor quality seepage and runoff from vehicles parked at the site may impact primary surface water receivers. 	
Hydrology	<ul style="list-style-type: none"> • Disturbing vadose zone during soil excavations/activities. • Land subsidence due to collapsible soils. • Poor quality runoff from machinery used to excavate soils. • Surface water contamination and sedimentation from the following activities: <ul style="list-style-type: none"> ○ Equipment and vehicles are washed in the water bodies (when there is water); ○ Erosion and sedimentation of watercourses if graves 	Refer attached in Appendix F5.

Environmental Aspect	Potential Impact	Proposed method of investigation
	<p>are left open due to unforeseen circumstances (i.e. bad weather); and</p> <ul style="list-style-type: none"> ○ Alteration of natural drainage lines which may lead to ponding or increased runoff patterns (i.e. may cause stagnant water levels or increase erosion). • Poor quality seepage and runoff from vehicles parked at the site, during a funeral service. • Degradation of water quality of streams situated downstream of development activities is likely to occur if domestic waste (generated during funeral services and not cleaned) accumulates in the drainage lines. • Potential surface water contamination as a result of poor stormwater drainage on-site. • Increased erosion due to vegetation loss. • Bank erosion and sedimentation of watercourses due to altered runoff patterns; and • Poor quality runoff from open or flooded graves. 	
Socio-economic	<ul style="list-style-type: none"> • Job creation for the local community which may have a temporary positive impact on the local economy. • Potential skills transfer to the local community who could benefit in the short-term through employment opportunities. • Potential availability of space for burials in Newcastle, thereby alleviating pressure on municipal resources. • Potential for the local community to uphold their rights to religious and traditional burials. 	A Socio-Economic Impact Assessment will be undertaken at the EIR phase of the project.
Visual	Construction and earthmoving activities, movement of vehicles and construction equipment may impact on	This impact will be addressed in more detail at the EIR phase and the mitigation measures

Environmental Aspect	Potential Impact	Proposed method of investigation
	<p>the aesthetic environment during construction.</p> <p>The clearance of indigenous grassland for the graves may change the sense of place through the presence of grave stones.</p>	associated with this impact will be included in the Environmental Management Programme (EMPr).
Noise	<p>Use of increased construction traffic, machinery, earthmoving activities and excavation for the ablution blocks, internal roads and fencing around the site may cause nuisance impacts of a temporary nature during construction. During the operational phase, there will be limited noise impacts associated with mourners attending burial services.</p> <p>During the operational phase, there may be noise generated by the mourners attending burial services and additional traffic and human movement on site.</p>	This impact will be addressed in more detail at the EIR phase and the mitigation measures associated with this impact will be included in the Environmental Management Programme (EMPr).
Air Quality	Dust generation as a result of construction activities for internal roads, footpaths and an ablution block. There may be emissions from vehicles through an increase in dust fallout from cleared land, soil handling, and vehicle/machinery movement resulting in increased air pollution	This impact will be addressed in more detail at the EIR phase and the mitigation measures associated with this impact will be included in the Environmental Management Programme (EMPr).
Waste management	<p>Most waste is expected to be litter generated by the construction staff and construction rubble, which has to be disposed of appropriately to minimise impact on the receiving environmental resources.</p> <p>During the operational phase, through regular maintenance there will be garden refuse, dead flowers from the graves and domestic waste that will need to be collected in waste bins and removed from site for disposal at a nearest general waste landfill site.</p>	This impact will be addressed in more detail at the EIR phase and the mitigation measures associated with this impact will be included in the Environmental Management Programme (EMPr).
Health, safety and security	The health and safety of workers and other personnel utilizing the site might be at risk if proper house-keeping and preventative measures are not put in	This impact will be addressed in more detail at the EIR phase and the mitigation measures

Environmental Aspect	Potential Impact	Proposed method of investigation
	place during the construction and operational phases.	associated with this impact will be included in the Environmental Management Programme (EMPr).
	The impact on security at the cemetery may be hampered by vagrants that enter the site looking for opportunities to steal on site or vandalise graves.	
Traffic patterns	Construction vehicles using the existing road networks to access the proposed site.	Traffic aspects will be investigated further in the draft EIR stage.
	Increase in the number of vehicles on the existing networks during operation.	
	Movement of construction vehicles within the study area and the impact on the surrounding road network.	
Culture and Heritage Resources	Loss of local heritage resources and cultural artefacts through excavation activities for internal roads and support facilities on the site.	A detailed Phase 1: Cultural and Heritage Impact Assessment will be undertaken during the EIR phase.
Paleontological resources	Loss of paleontological resources and artefacts through excavation activities for internal roads and support facilities on the site.	A detailed Paleontological Impact Assessment will be undertaken during the EIR phase.

Conclusion

The Draft Scoping Report (DSR) was released for public review and comment for a period of 30 calendar days (**21 January 2021 to 22 February 2021**). Concerns raised by Interested and Affected Parties (I&APs) and key stakeholders during the Public Participation Process (PPP) have been captured in the Comments and Response Report (CRR), which are included in this Final Scoping Report (FSR).

The EIR Phase may only commence once the CA accepts the FSR and instructs the EAP to continue with the tasks contemplated in the Plan of Study for the EIR phase of the environmental application process. GIBB as the EAP and the project team commits to the following:

- To facilitate a fair and transparent process going forward;
- To capture and consider all comments received from stakeholders and I&APs;
- To remain independent of the Applicant;
- To present the CA with the necessary information to reach a decision; and
- To fulfil any and all other obligations placed on the EAP, in terms of the NEMA.

PURPOSE OF DOCUMENT

The Scoping Phase is the first of two phases associated with an application process for EA, as prescribed by the NEMA. The purpose of this Scoping Report (SR) is to provide stakeholders with an overview of the proposed project and the applicable Listed Activities for which EA is sought, and to capture comment and input on the proposed project.

The SR identifies the potential biophysical and socio-economic impacts of the proposed development on the receiving environment, and invites comments from stakeholders in the identification of key issues and areas of concern, in order to inform the Environmental Impact Assessment (EIA) process. The main objectives of the Scoping phase (aligned to GNR 982 (Section 21 and Appendix 2) of the EIA Regulations, 2014 (as amended)) are as follows:

- Identify the relevant policies and legislation relevant to the activity;
- Motivate the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location;
- Identify and confirm the preferred site and associated alternatives;
- Identify the key issues to be addressed in the assessment phase;
- Agree on the level of assessment to be undertaken, including the methodology to be applied, the expertise required as well as the extent of further consultation to be undertaken to determine the impacts and risks the activity will impose on the preferred site through the life of the activity, including the nature, significance, consequence, extent, duration and probability of the impacts to inform the location of the development footprint within the preferred site; and
- Identify suitable measures to avoid, manage or mitigate identified impacts and to determine the extent of the residual risks that need to be managed and monitored.

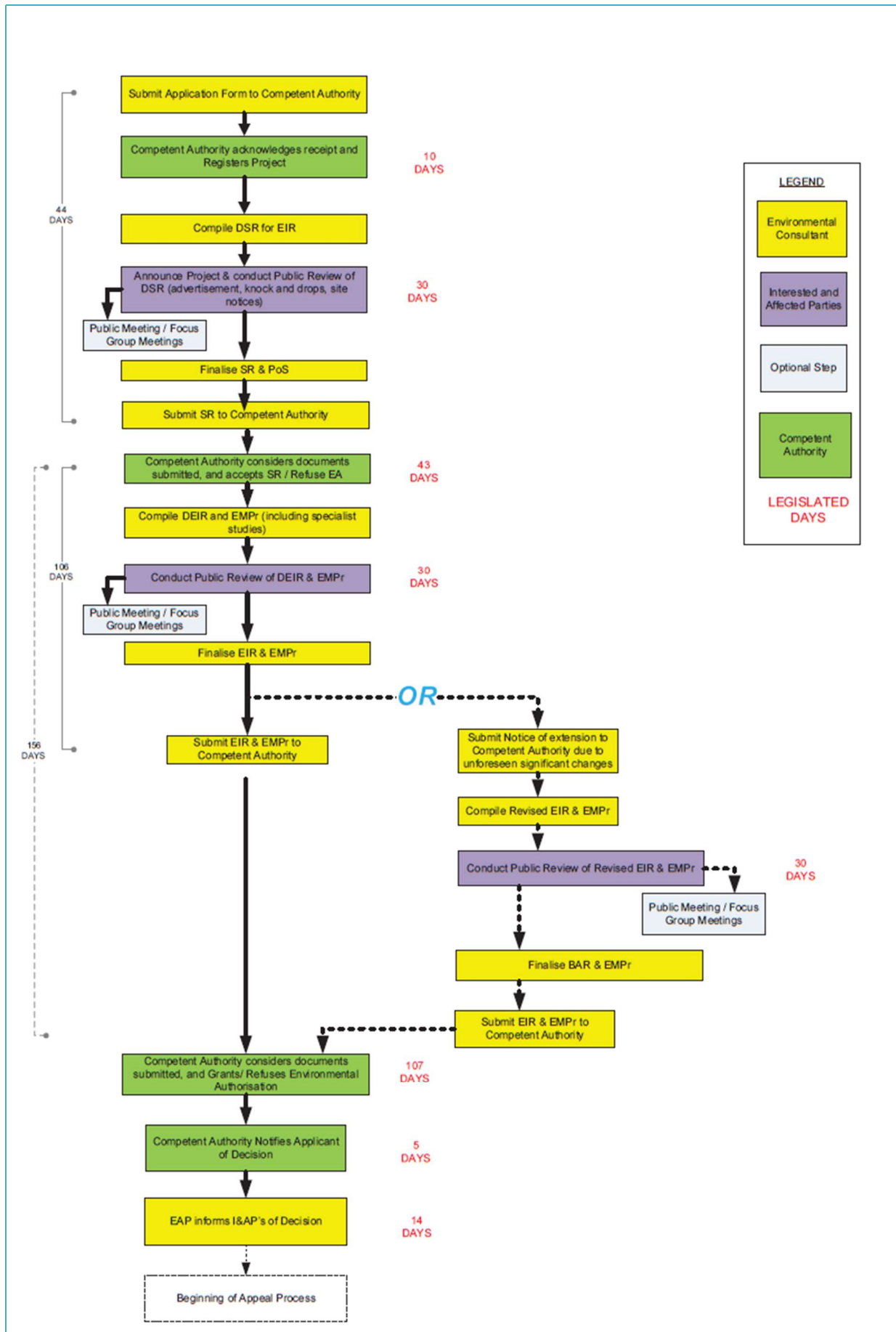
A period of 30 calendar days (**21 January 2021 to 22 February 2021**) was provided for public review and comment on the DSR. All I&APs, key stakeholders as well as State Departments were notified of this review period.

The DSR was also made available on the GIBB website at the following link:

https://projects.gibb.co.za/Roypoint_Cemetery_Extension_EIA

All comments received on the DSR were collated, responded to and incorporated into this Final Scoping Report (FSR). The FSR will now be submitted to the KZN EDTEA for consideration. If the FSR is accepted, the Environmental Impact Report (EIR) phase will be initiated.

The flow diagram below highlights the phases in the project where I&APs have the opportunity to participate in the process.



1 Introduction

GIBB Environmental (Pty) Ltd (GIBB) has been appointed as the independent Environmental Assessment Practitioner (EAP) by the Newcastle Local Municipality (NLM) to undertake an application process for Environmental Authorisation (EA), subject to a Scoping and Environmental Impact Reporting (S&EIR) process. The S&EIR is undertaken for the proposed extension of the existing Roy Point Cemetery located on Erf 1 Newcastle in Newcastle, KwaZulu-Natal.

1.1 Project Description

The Applicant, NLM has identified a need to extend the existing Roy Point Cemetery that is located on the outskirts of the Newcastle Central Business District (CBD) within an industrial area that is adjacent and south of Karbochem Industrial and the Newcastle Airport. The existing cemetery, which is a registered cemetery in Newcastle, will in a few years reach its capacity within the confines of its allotted boundary. Vacant land that is approximately 47 hectares (ha) in extent and owned by the NLM occurs adjacent west, east and south of the existing Roy Point Cemetery. This site has been identified by the NLM for potential extension of the existing cemetery.

A Preliminary Site Layout Plan was generated for the proposed extension of the Roy Point Cemetery (refer to **Appendix C**). An overhead electrical power line servitude registered in favour of Eskom occurs adjacent and to the east of the site. A railway line occurs north and east of the site. The proposed cemetery extension will take cognisance of these servitudes and will not encroach onto them.

The proposed site for cemetery extension should enable provision of adequate facilities to cater for the needs of those people who will be utilising the cemetery. Facilities for the cemetery extension that can be established are as follows:

- Office for Cemetery Manager;
- Caretaker's room;
- Storeroom;
- Boundary fence;
- Parking area;
- Open space areas;
- Rest areas;
- Benches;
- Ablution blocks;
- Main access to site and exit out of site;
- Internal roads through the site; and
- Footpaths.

The Preliminary Site Layout Plan will be revisited at the EIR phase, based on the suitability of the site in terms of its biophysical and socio-economic characteristics for establishment of a cemetery and the size of the site that is available for the extension of the existing cemetery. The various Specialist Studies that will be undertaken at the EIR phase of the project are aimed at defining which areas are suitable for the cemetery extension. A Composite Site Sensitivity Map will be compiled that will illustrate the environmental constraints (if any) that allow for, or prohibit areas on site for development. Sensitive environmental aspects may be due to the occurrence of wetlands, groundwater seepage areas, areas where floral conservation species occurs, archaeological sites and so on. The Composite Sensitivity Map and the Final Site Layout Plan will be provided in the forthcoming Draft Environmental Impact Report (DEIR) that will be available for public review and comment at the EIR phase.

1.1.1 Civil Services

(a) Water and sewerage

The existing Roy Point Cemetery is fully serviced with access to municipal water and sewer mains. Should there be any new ablution blocks constructed at the site for the extension of the cemetery, tie-ins to the existing water and sewer mains are available and accessible to the new development.

(b) Electricity

Electricity at the existing Roy Point Cemetery is provided from the municipal main. Lighting requirements for the site for extension of the cemetery will be obtained from the existing municipal electricity mains that is accessible to the site.

A Technical Report providing the details of tie-ins to the municipal water, sewer and electrical main will be provided in the forthcoming Draft EIR.

(c) Stormwater

Stormwater drainage at the proposed extension of the cemetery site must be managed to ensure ingress of surface water into graves is minimized and storm water run-off should be controlled as far as possible. The risk of groundwater pollution must be minimised and excessive ponding of stormwater and soil saturation must be avoided through proper stormwater management on site. The risk of erosion must also be addressed through sufficient stormwater drainage.

A Stormwater Management Plan will be provided in the forthcoming Draft EIR and the aim of this plan will be to ensure that the extension of the cemetery is designed in a manner that ensures proper drainage on site to mitigate the risks mentioned above.

1.1.2 Transport Access

The existing cemetery is accessible via Karbochem Road off the N11. This existing road network access within the existing cemetery presents an opportunity for linking access to adjoin both existing and the proposed cemetery extension sites (*which are directly opposite each other*). The proposed entrance-exit access and parking within the site earmarked for the extension of the cemetery provides a higher order and controllable traffic movement. Pathways will be proposed to promote movement within the cemetery site.

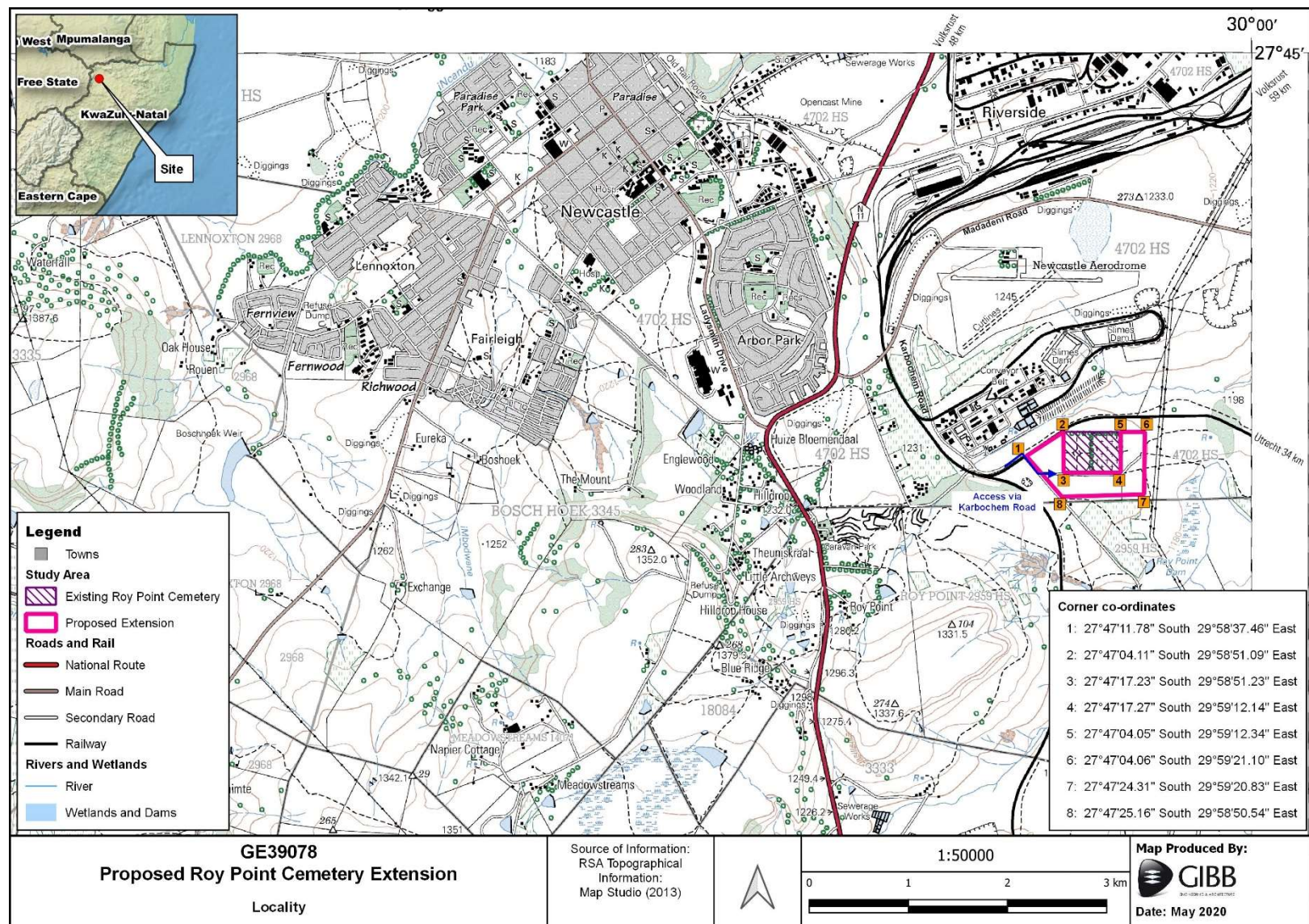


Figure 1: Locality Map (Topographical Sheet) illustrating access to site from Karbochem Road

1.2 Project Location and Site Description

The 'Application' site for the extension of the existing Roy Point Cemetery is a vacant plot that occurs adjacent to the western, eastern and southern boundaries of the existing cemetery located within Newcastle and accessible via Karbochem Road. The site occurs within Ward 20 of the Newcastle Local Municipality of the Amajuba District Municipality.

The site is approximately 47ha in extent, vacant and unutilised, consisting of indigenous grassland. The Ngagane River occurs approximately 437m south of the site. Existing infrastructure occurs in close proximity to the site, including the following (refer to the Site Photograph Plate in **Appendix D**):

- A high voltage overhead Eskom power line adjacent and to the east of the site;
- A medium voltage power line occurs adjacent and to the south-west of the site;
- The N11 (National Road) occurs 2km north-west of the site;
- The R34 occurs 2.6km north-west of the site;
- Karbochem Road occurs adjacent and to the west of the site;
- A railway line occurs adjacent and to the north of the site;
- A railway line occurs 214m west of the site;
- A purification plant occurs 1.3km south of the site; and
- Provincial Road P483 occurs 2.3km north of the site.

The site occurs on the Remainder of Erf 1 of Newcastle (Surveyor General - SG Code: NOHS02210000000100000) and is presently zoned open space. According to the NLM Spatial Development Framework (SDF), 2019-2020, the site for the cemetery extension occurs within the 'urban edge'. However, this urban edge boundary has not been adopted by the CA, i.e. KZN EDTEA. An enquiry email was sent to Mr. Dominic Wieners of Ezemvelo KwaZulu-Natal Wildlife (EKZNW) on 31 March 2020 to confirm if the site falls within the edge of the built-up area/urban area. In an email dated 12 May 2020, Mr. Wieners confirmed that the site does not occur within a built-up/urban area. Refer to email correspondence in **Appendix B1**. For purposes of this Application, the site is therefore outside of the 'urban area'.

The areas adjacent to the western, southern, and eastern boundary of the site are undeveloped and vacant. However, the land use adjacent and to the north of the site consists of the Karbochem industrial area, which is built-up.

Please refer to **Table 1**, for the GPS co-ordinates of the proposed site. The site falls within Quarter Degree Grid Cell (QDGC) 2729DD and lies approximately at 27°47' 21.09" south and 29°59'03.16" east (Refer to Locality Map in **Figure 2**).

Table 1: GPS Co-ordinates of the site (outer points of the boundary)

	Latitude /Longitude	Degrees	Minutes	Seconds
Point 1	South	27°	47′	11.78″
	East	29°	58′	37.46″
Point 2	South	27°	47′	04.12″
	East	29°	58′	51.09″
Point 3	South	27°	47′	17.23″
	East	29°	58′	51.23″
Point 4	South	27°	47′	17.27″
	East	29°	59′	12.14″
Point 5	South	27°	47′	04.05″
	East	29°	59′	12.34″
Point 6	South	27°	47′	04.06″
	East	29°	59′	21.10″
Point 7	South	27°	47′	24.31″
	East	29°	59′	20.83″
Point 8	South	27°	47′	25.16″
	East	29°	58′	50.54″

A summary of the surrounding land uses are indicated in the **Table 2** below.

Table 2: Surrounding Land uses

Direction	Distance	Land Uses
North	Adjacent	Industrial area (Karbochem Chemical Factory)
	1.5km	Newcastle Airport
	2.5km	Riverside Industrial area
	5km	Barry Hertzog Park suburb
	5km	Ncandu suburb
North east	2.4km	Kwamathukuza suburb
East	6.2km	Madadeni H suburb
South east	6.7km	Madadeni H suburb
South	5.5km	Ingagane suburb
South-west	5.6km	Kilbarchan suburb
West	3km	Hilldrop suburb
North west	3.2km	Casino and Newcastle Mall

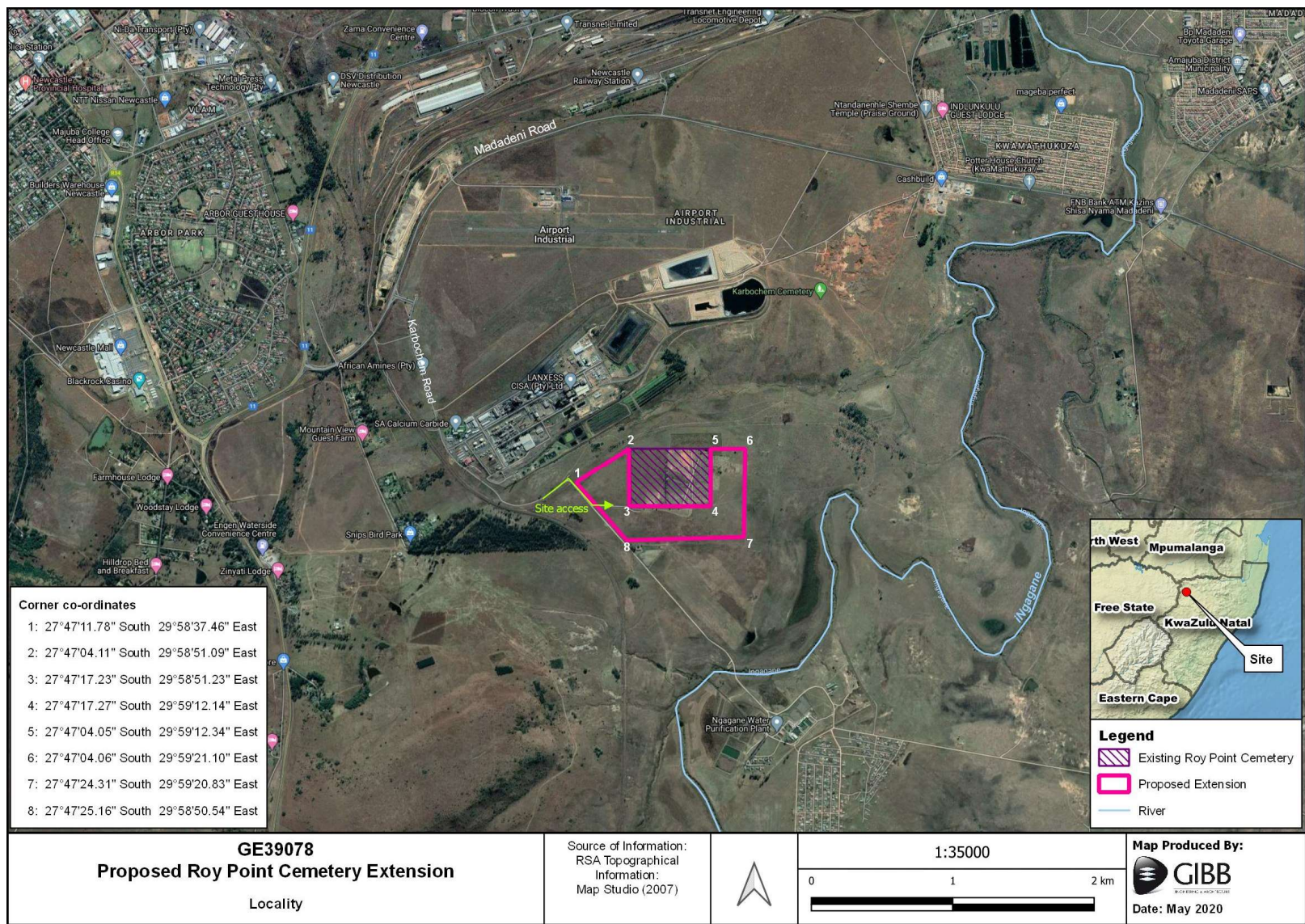


Figure 2: Locality Map (Orthophoto) illustrating access to site from Karbochem Road

1.3 Need and Desirability of Proposed Activity

A Feasibility Study for the extension of the existing Roy Point Cemetery was undertaken by Uddi Environmental, Planning and Development Consultants (*hereafter referred to as Uddi*) in 2013. Refer to **Appendix E1**.

Many people of different faiths, such as Islamic, Christians and traditional Africans perceive burial as the most appropriate end-of life choice. Some people believe that burial is the most respectful and dignified way to treat the body, and find comfort in having a specific gravesite to visit in memory of their loved ones. Nationally, there is an increasing demand for cemetery space, while land availability for new cemeteries and / or expansion continues to decrease. This trend is also evident in Newcastle, KZN.

KwaZulu-Natal is faced with the highest HIV/AIDS infection rates in the country. This phenomenon has placed a considerable demand for burial space within various municipalities in the province (Uddi, 2007).

There are several factors that need to be considered when determining the size of land required for a cemetery development. The factors include:

- Population growth;
- Demographic indicators;
- Mortality rate;
- Cremation rate;
- Burial migration; and
- Land area available for interment.

According to the Community Survey (2016) conducted by Statistics SA, there has been a 7.1 % increase in population growth over a 5-year period from the year 2011 in Newcastle. This means that on average, Newcastle has experienced a 1.42% annual growth rate, which translates to 5 176 people per year.

The Newcastle IDP (2012) identifies HIV/AIDS as one of the key factors that will influence development over the next few decades in Newcastle. It is therefore noted that HIV/AIDS should increase the requirements for the expansion of the cemetery in the short- to medium-term.

With the significant increase in the mortality rate due to the impact of the HIV/AIDS pandemic, the load on cemetery facilities operated by the majority of the local authorities located within KwaZulu-Natal (KZN) has increased. With the increase in HIV/AIDS-related deaths, the implication for cemetery/crematorium provision in KZN becomes manifestly obvious. The Newcastle Municipality is one of those municipalities faced with a major challenge pertaining to access to burial facilities.

An important consideration by the Newcastle Local Municipality is to find ways of conserving space and maximising the use of land allocated for cemeteries. With the increasing death rate due to HIV/AIDS discussed above, it is critical that careful considerations are given to the use of land and how to deal with the deceased.

For the final disposal of human remains, embalmed interment remains the dominant method for disposal of the dead. However, the most popular alternative to embalmed interment by far remains cremation (Prothero, 2001 cited in Coutts *et al.* (2011)). In most cases people tend to prefer, due to cultural and spiritual beliefs, embalmed interment which needs burial space / cemetery. However, other methods of disposing human remains should be explored, methods such as cremation and secondary burial.

1.3.1 Existing Cemeteries in Newcastle

Currently, there are eight (8) registered cemeteries in Newcastle Local Municipality. Three of these cemeteries are located in Charlestown and were formerly divided according to race, i.e. Black, White and Indian (Muslim). The other five cemeteries are Roy Point, Madadeni, Osizweni, Cavan (Drycut) and the Newcastle Cemetery, which is further divided into two cemetery sites, the former White cemetery and the former Hindu, Coloured and Muslim cemetery. Ngagane Cemetery has been identified as an unregistered cemetery in Newcastle.

Regarding cemeteries, Newcastle Local Municipality is faced with different challenges which includes the following:

- Most cemeteries have reached their capacity or are reaching capacity;
- The Newcastle area is characterised by unfavourable geological conditions since the area has a high water table; and
- There is a significant number of informal / unregistered graves especially on farms and in backyards.

It is worth noting, that although there is only one crematorium in Amajuba District, which is based in Newcastle, this crematorium is underutilized. This implies that most of Newcastle residents still prefer embalmed interment.

Having identified challenges associated with cemeteries in Newcastle Municipality, it is safe to indicate that there is a need to either identify new cemetery sites or extend existing cemeteries, which are not affected by the unfavourable geological conditions.

The local undertakers are overburdened, especially over weekends and funeral parlours run, on average, three funerals a day.

Through the Feasibility Study by Uddi, 2013, further background with regards to the existing cemeteries was provided, as follows:

1) Drycut Cemetery

Drycut Cemetery, which is one of the registered cemeteries in the Newcastle area, has the problem of Phorid Flies. Phorid flies, though they can be found in households, are also commonly found around flowers and moist decaying matter. Several species have the common name of the coffin fly, because they breed on human corpses with such tenacity, and they can even continue their life cycle within buried coffins (Amajuba Draft IDP, 2012/13).

The Newcastle IDP (2017/18 – 2021/22) indicates that, although Drycut Cemetery was properly planned and laid out, it appears that the plan has not been followed. As a result, some graves are located in environmentally sensitive areas, and the facility remains poorly developed.

2) Ngagane Cemetery

Isibuko se Africa Development Planners (2012) identified Ngagane Cemetery site as an informal/unregistered cemetery. Ngagane Cemetery has not been assessed for suitability nor does it have approved cemetery layout plans.

3) Charlestown Cemetery

Charlestown Cemetery is positioned in close proximity to a major wetland system, which may be a problem due to potential water contamination. It is also located away from Newcastle, which may prove to be out of reach for the community.

4) Madadeni and Osizweni Cemeteries

According to the Amajuba IDP (2012/13), the Madadeni and Osizweni Cemeteries are located on a high water table area. It is suggested that further utilization of Madadeni and Osizweni cemeteries could contravene the KwaZulu-Natal Cemeteries and Crematoria Act (Act No. 12 of 1996), with regards to atmospheric or water pollution, or any related health hazard. Therefore, continued use of the cemetery is discouraged.

5) Informal graveyards

Many informal graveyards are being established. Some of these informal graveyards are located on farms and in backyards, while others are located in environmentally sensitive areas such as flood plains and wetlands. In addition, Uddi (2007) indicated that informal cemetery sites face shallow water tables and the transmission of hazardous substances through contaminated water from the pathogenic organisms released during corpse decomposition.

6) Roy Point Cemetery

The existing Roy Point Cemetery is the most utilized cemetery in Newcastle and it is considered as the regional facility which serves the whole of Newcastle and beyond. In addition, it is one

of the registered and operational cemeteries in Newcastle. It is also fast approaching capacity, thus there is a high potential and need for the Roy Point Cemetery extension (Newcastle Municipality, 2012). This Scoping Report is for the extension of this cemetery.

A Feasibility Study for the extension of the Roy Point Cemetery was undertaken in 2013 by Uddi Environmental Planning and Development Consultants. Key findings of the study have shown that Newcastle Municipality is faced with a major challenge of running out of burial space. This is due to the fact that most of the cemeteries in Newcastle area have reached capacity or approaching capacity, while others are located in environmentally sensitive areas. Based on the analysis of the study for Roy Point cemetery extension, the findings show, among other things, that:

- The proposed development site does not appear to be prone to any unfavourable environmental conditions;
- Other existing cemeteries, namely Roy Point Cemetery are either full or approaching capacity, while others are experiencing high water table. It is not advisable to consider extension of cemetery on sites that have already been assessed and proved to be experiencing several problems. Meanwhile, Roy Point extension does not appear to be experiencing similar problems;
- There are already imminent graves in phase 2 of the existing Roy Point Cemetery site which indicates the likelihood of community members accepting the proposed cemetery extension; and
- Geotechnical investigations have also identified the proposed site as being suitable for the development of cemetery.

It can be concluded from the Feasibility Study, based on the above-mentioned key findings, that the site for the proposed Roy Point Cemetery extension is feasible and will serve a purpose for potential grave site availability within the Newcastle area.

1.4 Need and Desirability in terms of Location

As indicated previously, the existing cemetery is reaching its capacity and the vacant land adjacent to the western, eastern and southern boundary of the existing Roy Point Cemetery has been identified as a potential site for expansion of this cemetery. As part of the Feasibility Study undertaken by Uddi, a site analysis was undertaken for the extension of the existing Roy Point Cemetery.

Uddi (2013) identified several criteria for site evaluation for extension of the existing Roy Point Cemetery, which included the following:

- Accessibility to the local communities;
- Access to basic services and facilities;
- Socio-economic considerations;
- Topography/slope suitability;
- Geotechnical suitability;

-
- Hydrological suitability;
 - Compatibility with surrounding land uses;
 - Areas of high agricultural potential;
 - Biophysical constraints (such as wetland areas, potential for groundwater contamination, areas with high conservation priority);
 - Avoidance of wooded areas;
 - Proximity to registered grave sites;
 - Community acceptability; and
 - Land size and ownership.

The above criteria is explained in more detail in the paragraphs that follow, with regards to the suitability of the 'site' for extension of the existing Roy Point Cemetery.

1.4.1 Accessibility to the local communities

Access to cemetery facilities is an important component for successful cemetery development in predominantly low-income areas. Local access must be facilitated, to ensure minimization of costs for local residents. Some people may not be able to afford high transportation costs associated with transporting the corpse, and transportation of mourners over significant distances between their residential areas and the local cemetery. It is, therefore, important to locate a cemetery within the easy reach of local communities. The site for the proposed extension of Roy Point Cemetery is located within close proximity to major road networks such as the N11, R34 and the P483 and thereby providing accessibility to the cemetery.

1.4.2 Access to basic services and facilities

Basic services such as water, sanitation and electricity are important requirements and therefore, it recommended that proposed development should be closer to such facilities.

The existing Roy Point Cemetery is fully serviced in terms of accessibility to municipal water, sewerage, electricity and refuse removal. However, it is worth noting that, there might be a need to extend such services to accommodate the proposed extension.

1.4.3 Socio-economic considerations

The Newcastle area has a generally low-income population with a large number of people living in abject income poverty, as they do not have a reliable source of income. Employment has decreased yet the population is increasing.

Thus, regarding transport affordability, this implies that much of the population within the area may not be able to afford to incur major travel costs to a cemetery.

It has been noted that the proposed cemetery site is not located in close proximity to residential areas. This implies that local communities may incur travelling costs when going for burial in the proposed cemetery. However, there is no available space within closer proximity to the local communities to accommodate a cemetery.

Major road networks such as N11, R34 and P483 connects the site for extension of the Roy Point Cemetery to most of the residential suburbs, such as Fernwood, Hilldrop, Equarand, Kilbarchan, Newcastle CBD, Paradise, Lennoxton, Fairleigh, Vlam, Ncandu Park, Hutton Heights, Madadeni, Osizweni and Ingagane.

1.4.4 Topography/slope suitability

The topography of the site is relatively flat. Refer to **Figure 3** below. Therefore, it is easier to develop and have minimal chances of contributing to soil erosion and contamination of water catchments during rainfall seasons.



Figure 3: Contour map of the site for Roy Point Cemetery Extension

1.4.5 Geotechnical suitability

The Geotechnical Investigation for the proposed Roy Point Cemetery extension has been conducted in phases. Terratest (Pty) Ltd (2012) undertook the Geotechnical Assessment for the western triangular portion of the site for the extension of the cemetery and Geo-Calaza (Pty) Ltd (2013) undertook the Geotechnical Assessment for the remainder of the site that typically resembles an L-shape. Refer to the Geotechnical Assessments by Terratest and Geo-Calaza in **Appendix F1 and F2** respectively.

The findings of the Geotechnical Assessments are described below and will be assessed in greater detail for the Draft EIR.

a) Groundwater

Western portion

No ground water seepage was observed in any of the test holes excavated during investigation. However, during periods of prolonged rainfall, particularly during the summer season, a marked increase in the occurrence and magnitude of groundwater seepage flow can be anticipated. Perched groundwater flows at the transported soil / residual soil interface are likely to become more prolific in the rainy months. This is characterised by the ferruginous horizon. It is an indication of shallow groundwater seepage levels that can be expected during and after wet periods. Any cuttings that are taken below this horizon are likely to experience groundwater seepage problems during the wet summer season.

L-shaped portion

Groundwater seepage was observed in IP1 at 1.6 metres and IP11 at 1.0 metres below existing ground level, respectively. However, during periods of prolonged rainfall, particularly during the summer season, a marked increase in the occurrence and magnitude of groundwater seepage flow can be anticipated. Perched groundwater flows at the transported soil / residual soil interface are likely to become more prolific in the rainy months. This is characterised by the ferruginous horizon. It is an indication of shallow groundwater seepage levels that can be expected during and after wet periods. Any cuttings that are taken below this horizon are likely to experience groundwater seepage problems during the wet summer season.

b) Soil excavatability

Western portion

The ease at which the soil can be excavated is an important criteria in the selection of a site. The majority of cemetery sites use labour to dig the graves sites by hand and hence, it must be possible to excavate a hole to a depth of 1.8m below ground level with a pick and shovel. Excavation of the soils at Roy Point Cemetery would be within the capabilities of manual labour.

L-shaped portion

The proposed site for the future cemetery extension was found to be underlain by mantle of transported and residual soils overlying sandstone bedrock of the Vryheid Formation. The bedrock is generally of very soft rock strength and excavation was undertaken using a TLB machine, which proved to be feasible across the site. However, the ferruginous horizon occasionally exhibits strength approaching that of rock material, where a TLB machine refused.

c) Site drainage

Western and L-portion

Site drainage is very important as the ingress of surface water into open graves must be minimized and storm water run-off should be controlled as far as possible for the following reasons:

- High velocity run-off increases the erosion potential;
- Excessive ponding will enhance the ingress of water into the soil, and saturation of the soil will increase the risk of groundwater pollution;
- Poor site drainage will increase the risk of flooding open grave sites;
- Poor drainage results in marshy conditions, reducing mobility around grave sites; and
- Poor drainage creates the impression of a badly kept cemetery site.

Due to the gentle slope and the relatively flat nature of the ground at the site, it is recommended that the ingress of surface water, groundwater and storm water run-off should be controlled as far as possible at the proposed additional area at Roy Point Cemetery.

d) Soil permeability

Western portion

Soil permeability is the major factor determining the rate of fluid movement through the soil. For cemetery purposes, soil permeability must fall within a predetermined permeability range. From the laboratory test undertaken on samples retrieved from the trial pits put down during investigation, the soils are classified as silty sand and clayey silt which as indicated in the Council for Geoscience Guidelines to have permeability in the range of approximately 5×10^{-4} to 1×10^{-8} cm/sec. This range is described as ideal to partially suitable for cemetery purposes. A permeability that is too low will result in anaerobic and septic conditions and permeability that is too high will result in rapid leaching and possible pollution to both surface and groundwater.

L-shaped portion

Laboratory tests indicated that the soils underlying the proposed additional area at Roy Point Cemetery to be classified as silty sands and clayey sands. These fall within the predetermined permeability range and have permeability in the range of approximately 5×10^{-4} to 1×10^{-8} cm/sec. The soils underlying the site are therefore described as being ideal to suitable for cemetery site, according to the Council for Geoscience Guideline.

e) Positioning in Respect to Domestic Water Supplies

Western portion

The western portion of the site is more than 500m from a domestic water source i.e. Ngagane River (south of the site), which is utilized for human consumption. Water borne diseases reaching watercourses must be prevented. The minimum distance from the cemetery site and the nearest water source has therefore been prescribed and is based on the permeability of the soil.

L-shaped portion

The Guideline stipulates that the contamination of watercourses due to cemeteries should be prevented. Areas below the 1 in 50 year flood line of a river should be avoided. This includes areas close to wetlands, estuaries and flood plains.

f) Position in Respect of Drainage Features

Western portion

The position of a cemetery site in relation to a drainage feature of any description is of utmost importance, and pollutants emanating from a cemetery site must not contaminate a watercourse, conversely the cemetery must not be under threat of flooding from a watercourse. A minimum prescribed distance to watercourses is given, again depending upon the permeability of the subsoils. At Roy Point Cemetery there is a watercourse (channelled valley bottom wetland) to the north of the site, located approximately 180m from the site. The distance suggested by the Guideline is approximately 150m.

L-shaped portion

According to the Guideline mentioned above, drainage features should be located at a distance not less than 150m from cemetery site. The water course located to the north (seepage wetland) of the proposed Roy Point cemetery site is located at a distance no less than 400m.

g) Basal Buffer Zone

Western portion

A basal buffer zone refers to the vertical soil succession, which occurs between the base of the deepest grave and the water table. This buffer zone acts as an essential aeration zone which forms a barrier between the source of pollution and the water table. Through processes of filtration and absorption, the soil in the aeration (*or attenuation*) zone ensures that most microbiological pollutants do not come into contact with the water table. This buffer zone should ideally be a minimum of 2.5m thick. The proposed Roy Point Cemetery extension site is variable, having areas with a deep soil profile of an average of 2.5m with no refusal of a TLB machine.

L-shaped portion

The seepage from decaying corpses should be prevented from entering the water table directly. A buffer zone by means of thick soil cover above water table ensures prevention of pollution to water table. Soil cover and very soft rock underlying the proposed additional area at Roy Point Cemetery is anticipated to form a barrier between decaying corpses and the water table.

h) Grave stability

Western portion

Grave stability refers to the competence of the grave sides and the grave verge or lip. Stability is required for the following reasons:

- A period of a few days usually elapses after the excavation of a grave and the actual burial;
- At the time of burial many people move around the sides of the grave causing a disturbance; and
- Excessive crumbling of the excavation verge may hinder the smooth lowering of a coffin.

The subsoils encountered during the investigation at Roy Point Cemetery site were in all cases stable without any signs of side wall collapse. Particular care needs to be taken in this area though due to the majority of the soils in the trial pits of being very loose to loose consistency.

L-shaped portion

The trial pits for investigation were all stable with no sidewall collapse observed. Stability of the grave is therefore anticipated at the site provided they are left open for a maximum period of 24 hours.

Although, special care will have to be exercised due to the very loose to loose consistency of soils underlying most of the site.

i) Soil Workability

Western portion

Another potentially important consideration is soil workability, which refers to the ease at which the soil can be manipulated in and out of the grave. Soil at the proposed extension of the Roy Point Cemetery is considered to be highly to moderately workable.

j) Conclusion

The Geotechnical investigations undertaken indicated that the site is suitable for cemetery expansion purposes. Due to the gently sloping and the relatively flat nature of the ground at Roy Point Cemetery, the ingress of surface water, groundwater and storm water run-off should be controlled as far as possible. Particular care needs to be exercised due to the majority of the soils underlying the site being described as very loose to loose in consistency.

1.4.6 Hydrological Suitability

Pollutants emanating from cemetery sites should not affect water bodies such as lakes, dams and rivers. It is, therefore, important that cemeteries should be located in such a way that

drainage from graves cannot pollute domestic water supply and thus endanger public health. This means that cemeteries should not be located in close proximity to water sources.

Though the proposed site for cemetery extension is located near the Ngagane River, located south of the site (a domestic water source), the distance between the proposed site for cemetery extension and the water body is approximately 540m. As such, the proposed cemetery extension poses minimal threats in terms of contamination, to this water body.

1.4.7 Surrounding Land Uses

The proposed site for cemetery extension is mostly surrounded by industrial uses and open grasslands. This extension area is therefore located in an area where it will not negatively affect/impact on its surrounding environment in terms of existing neighbouring land uses. It is located some distance away from residential areas and therefore will not pose a nuisance in terms of noise to its surrounding receptors.

1.4.8 Areas of High Agricultural Potential

The Feasibility Study indicated that land with good agricultural potential is to be avoided and therefore, the extension area should be located on non-arable land or on arable land that is unsuitable for normal dry land cropping. The Screening Report developed as per the DEA web-based Screening Tool indicated that the site has a high sensitivity in terms of the agricultural theme, however, based on the selected classification, and the environmental sensitivities of the proposed development footprint, an Agricultural Potential Assessment was not identified as a Specialist Study for inclusion in the Environmental Impact Report. Therefore, this assessment will not be undertaken at the EIR phase. Comment will, however be sought from the KwaZulu-Natal Department of Agriculture and Rural Development (KZN DARD) as to whether or not a Specialist Agricultural Opinion is required for inclusion into the EIR.

1.4.9 Biophysical Constraints (*such as wetland areas, potential for groundwater contamination, areas with high conservation priority*)

All areas of environmental significance should be avoided. The extension area must be located away from areas of high conservation priority (such as areas where plant species of conservation importance occur) and wetland areas and areas with a shallow water table, to protect these natural resources from any possible negative impacts, such as ground and surface water contamination.

1.4.10 Avoidance of wooded areas

The extension area is not to be located in a forested area as natural forests have become protected and regarded as ecologically sensitive vegetation. Forested areas are also problematic due to potential root-disturbance during the digging of graves.

The entire site for extension of the cemetery occurs on grasslands and not on forested areas and this eliminates the issue of root disturbance that digging of graves would have caused.

1.4.11 Proximity to registered grave sites

It is assumed that the closer the extension area is to the location of registered gravesites, the better chance it stands to be socially acceptable to its users. In this instance, the site is located directly adjacent to the existing Roy Point Cemetery which is a registered grave site.

1.4.12 Community acceptability

Graves are regarded as a place of rest for loved ones and have a great spiritual significance. It is thus essential that the selected site be acceptable to the community. This means that the selected site should allow for a dignified burial at a place that is acceptable to its users.

It is most likely that the local communities will accept the proposed cemetery extension, given the fact that the extension will be from the existing facility that has been used by the community since 1994 without any objections from the public.

1.4.13 Land size and ownership

The site identified for extension of the existing Roy Point Cemetery is owned by the Newcastle Local Municipality and is approximately 47,3ha in extent. This is an advantage as the site has already been acquired by the Applicant, Newcastle Local Municipality. As per the Preliminary Site Layout Plan, the size of the site is able to accommodate areas for parking, graves and open space areas. The extent of the proposed site for cemetery extension is sufficient to enable a prolonged lifespan for the cemetery (approximately 30 years).

1.5 Summary of the Authorisation Requirements

An application for EA, by way of a S&EIR process, is being conducted for the proposed extension of the existing Roy Point Cemetery, based on the triggering of Listed Activities published in terms of the NEMA and its associated EIA Regulations, 2014 (as amended).

In addition, a Water Use Authorisation (WUA) in terms of the National Water Act, 1998 (Act 36 of 1998) [NWA] is also required from the Department of Water and Sanitation (DWS) as there are wetlands that occur within the 500m regulated area. The Water Use Licence Application (WULA) will be undertaken concurrently with the S&EIR process.

1.6 Details of the Project Role Players

1.6.1 Details of the Applicant

The Newcastle Local Municipality is the Applicant for the project. The details of the Applicant are provided in **Table 3** below.

Table 3: Details of the Applicant

Project Applicant	Newcastle Local Municipality		
Contact Person	Mr M. J. Mayisela		
Physical Address	37 Murchison Street Newcastle CBD Newcastle 2940		
Telephone	034 328 7600	Cell:	-
E-mail	MM@Newcastle.gov.za		

1.6.2 Details of Independent Environmental Assessment Practitioner (EAP)

GIBB (Pty) Ltd (GIBB) is an integrated group of scientists, project managers, engineers and architects providing cost-effective solutions and specialist services in a wide range of disciplines. The multi-disciplinary consulting, management and design approach allows for the execution of projects in a holistic way, as this is believed to be the best approach to fully meet the needs of our Clients.

GIBB Environmental has a formidable track record and comprises highly qualified and experienced technical staff viz, Environmental Scientists and Specialists, which collectively form the National Environmental Team. The team members have broad experience in terms of working on a range of environmental projects within the public and private sector across South Africa. Refer to

Table 4 for the contact details of the Lead EAP.

Table 4: Details of the Independent Environmental Assessment Practitioner (EAP)

Project EAP	GIBB (Pty) Ltd
Contact Person	Mrs. Katherine Wiles
Role in Project	Project leader Project management and coordination Process management Specialist team management Client liaison Report compilation
Physical Address	54 Norfolk Terrace Norfolk House 2 nd Floor Westville 3630

Project EAP	GIBB (Pty) Ltd		
Postal Address	P.O. Box 1365, Westville, 3630		
Postal code	3630	Fax:	-
Telephone	031 267 6174	Cell:	071 355 8781
Email	kwiles@gibb.co.za		
Expertise	<p>Ms. Katherine Wiles is a Senior Environmental Scientist and a Registered Certificated Natural Scientist (<i>Cert.Sci.Nat.</i>) in the field of environmental science, with ten years of environmental consulting experience.</p> <p>Katherine has a background in environmental management and in 2009 and 2010 she assisted her Senior Lecturers in lecturing environmental courses (Biophysical Environments, Environmental Impact Assessment and Soil Erosion & Land Degradation) at the University of KwaZulu-Natal.</p> <p>Over the last 10 years, Katherine has gained consulting experience through her involvement in environmental processes such as Environmental Impact Assessments, Integrated Waste Management Plans (IWMPs), Integrated Water Use Licenses and Environmental Compliance Auditing.</p> <p>Katherine has diverse project experience in the environmental field and has worked in Swaziland and extensively in South Africa, particularly in KwaZulu-Natal, Gauteng and Mpumalanga.</p> <p>Katherine is currently involved in assisting industries and Government in obtaining various Environmental Licensing requirements, namely Environmental Impact Assessments, Preparation of Environmental Management Plans or Programmes, Public Participation Processes, Waste Management Licences, Air Emissions Licences and Water Use Licenses.</p> <p>As a Senior Environmental Scientist, Katherine is involved in project co-ordination and management for various environmental, water and waste projects on a client representative and consulting basis. Her responsibilities include project quality and financial administration, the development and compilation of reports, planning and co-ordination of public participation, co-ordination and interpretation of specialist studies, and tendering and proposal work.</p> <p>Through her co-ordination and management of projects, she has gained valuable insight (Technical, Financial and Quality) into a number of her projects.</p>		

Please refer to **Table 5** for the roles and responsibilities of other GIBB Project Team Members on this project. CV's of the Project Team are included in **Appendix A**.

Table 5: GIBB Project Team and Expertise

Project Roles		Team Member		Expertise
Technical Review of Reports to ensure that they meet legal requirements	Peer	Mrs Caulfield	Sarah	<p>Mrs Sarah Caulfield is the Discipline Leader and a Registered Professional Natural Scientist (Pr.Sci.Nat.) in the Licensing Unit, with more than 11 years of experience.</p> <p>Her key experience includes lodging applications for Environmental Authorisation, subject to Basic Assessment or Scoping and EIA processes, in line with the requirements of the National Environmental Management Act, 1998 (Act 107 of 1998) (NEMA) and its EIA Regulations; Waste Management License applications, as required in terms of the National Environmental Management Waste Act, 2008 (Act 59 of 2008) (NEMWA) and its associated Listed Activities; Lodging applications for Water Use Authorisations, as required by Section 21 of the National Water Act, 1998 (Act 36 of 1998) (NWA); compilation of construction- and operational-phase Environmental Management Programmes (EMPr's), as well as Environmental Control Officer (ECO) duties comprising compliance monitoring and auditing of EMPr implementation; Public participation processes in line with the requirements of the NEMA and the relevant guidelines; Pre-application environmental and legislative Screening Assessments; and Environmental Legal Due Diligence Assessments.</p> <p>She is also involved in the following:</p> <ul style="list-style-type: none"> - Technical Peer Review of documents in terms of relevant legislation; - Management of Environmental Impact Assessment Practitioners; - Management, review, writing and provision of technical and advisory input into large scale EIAs and environmental processes; - Environmental Management Planning; - Management of specialist teams; - Public Participation Processes and consultation, including coordinating, facilitating and managing such processes; and - Mentoring of junior team members.
Assistance in Report writing		Natasha Lalie		<p>Ms. Natasha Lalie has been an Environmental Assessment Practitioner (EAP) for seventeen</p>

Project Roles	Team Member	Expertise
		<p>years. She has undertaken numerous Screening and Feasibility Studies, Basic Assessment Reports, Scoping Reports, Environmental Impact Reports (EIR's), Environmental Management Programmes (EMPr's) and Public Participation Processes, as required by the National Environmental Management Act, 1998 (Act No. 107 of 1998) as amended and the EIA Regulations of 2006, 2010 and 2014. She has also undertaken Integrated Water Use Licence Applications (IWULA's) for a number of projects, as required by the National Water Act, 1998 (Act No. 36 of 1998). She has been involved in a wide range of projects, which included Waste Management License Applications, industrial, township establishments, mixed-use development, road upgrades, infrastructure developments, change of land use, lodge developments, proposed bulk water pipelines, proposed transmission power lines, public transportation, proposed filling stations, shopping centre developments and so on. She has worked extensively in South Africa, particularly in KwaZulu-Natal and Gauteng.</p> <p>Her key experience includes the following:</p> <ul style="list-style-type: none"> – Lodgement of environmental enquiries with the KZN EDTEA, Environmental Impact Assessments, including Basic Assessments, Screening Assessments, public participation and coordination and review of specialist studies for a variety of services including infrastructure, industrial and mixed-use developments – Tender compilations for Environmental Services – Integrated Water Use Licence Applications and Integrated Water and Waste Management Plans (IWWMPs) and Waste Management Licenses (WML) <p>Project Co-ordination for various environmental, water and waste projects on a client representative and/or consulting basis. Responsibilities included the development of reports, planning and co-ordination of public participation, tendering and proposal work.</p> <p>-</p>
Public Participation Administrator	Ms. Carmen Krishandutt	Ms. Carmen Krishandutt is an Environmental Scientist with over three years of experience in the environmental field, Carmen Krishandutt

Project Roles	Team Member	Expertise
		<p>specialises in the environmental monitoring field. Carmen has been involved in Environmental Impact Assessments, Basic Assessments and Water Use License Applications.</p> <ul style="list-style-type: none"> - Her key experience includes: - Various site inspections - Dust fallout monitoring - Water quality assessment - Ambient air quality monitoring - Associated field sampling - Report writing and reviewing - Project administration - Quality management administration - Proposal and tender administration - Assistance with various licencing projects, providing input in the following: <ul style="list-style-type: none"> o Environmental Basic Assessment Report (BAR) o Environmental Management Plan/Programme (EMP) o Water Use Licence (WULA)
<p>Terrestrial Ecologist (Faunal Specialist)</p> <p>Specialist Study: Ecological Impact Assessment</p>	<p>Mrs. Robyn Phillips</p>	<p>Robyn Phillips holds an MSc degree in Zoology from the University of KwaZulu-Natal, Pietermaritzburg. She has around 19 years working experience in the ecological field. Robyn is currently registered as a Professional Natural Scientist with the South African Council for Natural Scientific Professions (Reg. No. 400401/12).</p> <p>The majority of her professional career has been spent working in ecological research at the University, having specialised in avifaunal ecology. She has been involved in many projects requiring biodiversity surveys and ecological assessments. As a Faunal and Avifaunal Specialist her duties include biodiversity and ecological assessments for reports such as Scoping and Environmental Impact Assessments (EIA), Basic Assessments (BA), Strategic Environmental Assessments (SEA), Environmental Management Plans (EMP), and Biodiversity Action Plans (BAP).</p> <p>As a Senior Specialist at GIBB, her duties also include managing and coordinating specialist studies for projects managed out of the KwaZulu-Natal Regional Office.</p>

Project Roles	Team Member	Expertise
Terrestrial Ecologist (Floral Specialist) Specialist Study: Ecological Impact Assessment	Mr. Thembela Mshengu	Thembela Mshengu is a young ecologist who has just submitted his MSc dissertation in Plant Biotechnology. His junior degree was in Ecology and his honours in plant ecophysiology. Over the past year he has been involved in various projects including Floral Ecological Assessment, Water Quality Assessments and Monitoring, Air Quality Monitoring that involves Dust Fallout sampling and Ambient Air Quality monitoring and Aquatic Biomonitoring. Thembela is currently involved in Ecological Assessments in Richards Bay, Durban and Gauteng. This includes habitat sensitivity, impact assessment and mitigation. He is also involved in Aquatic Biomonitoring in Richards Bay for SANRAL and for Richards Bay Minerals (RBM).
Wetland Ecologist Specialist Study: Wetland/Riparian Delineation and Functional Assessment	Ms. Salicia Gounden	Salicia Gounden completed her Masters in Environmental Science at the University of KwaZulu-Natal for which she graduated Cum Laude in April 2017. Her master's thesis was based on wetlands and entailed a similar approach to wetland study reports. Additionally, she has received a certificate of competency from a Tools for Wetland Assessment course hosted by Professor Ellery at Rhodes University. Her key experience includes; utilising Wet-Health, utilising Wet-Ecoservices, wetland sampling procedures, and wetland delineation.

1.6.3 Specialist Studies

In order to comprehensively investigate the impact of the proposed project on the receiving environment, a number of specialist studies will be undertaken by independent specialists during the Environmental Impact Reporting Phase (**Table 6** below provides details of the Specialist Team).

Table 6: External Specialist Team

Specialist Studies	Specialist	Status
Phase 1: Heritage Impact Assessment (HIA-	Mr. Trust Mlilo SATIVA (Pty) Ltd	Specialist Study to be completed and submitted with the Draft EIR.
Paleontological Impact Assessment	TBC SATIVA (Pty) Ltd	Specialist Study to be completed and submitted with the Draft EIR.
Aquatic Impact Assessment	Ms. Karin Loukes GCS Consulting (Pty) Ltd	Specialist Study to be completed and submitted with the Draft EIR.

Specialist Studies	Specialist	Status
Hydrological Impact Assessment	TBC GCS Consulting (Pty) Ltd	See attached in Appendix F5.
Geotechnical Assessment	TBC Geo-Caluzza Consulting Engineers (Pty) Ltd	See attached in Appendix F2.
	TBC Terratest (Pty) Ltd	See attached in Appendix F1.
Geohydrological Impact Assessment	Mr. Henri Botha GCS Consulting (Pty) Ltd	See attached in Appendix F6.
Hydropedological Impact Assessment	Mr. Henri Botha GCS Consulting (Pty) Ltd	See attached in Appendix F7.
Stormwater Management Plan	TBC	Specialist Study to be completed and submitted with the Draft EIR.
Services Report	TBC	Specialist Study to be completed and submitted with the Draft EIR.
Socio-Economic Impact Assessment	Mr. Eugene de Beer Urban-Econ Development Economists	Specialist Study to be completed and submitted with the Draft EIR.

Further details, such as the Terms of Reference (ToR) of the proposed specialist studies, are provided in **Section 7** of this SR i.e. the Plan of Study (PoS) for the EIR. The findings of the Specialist Studies will be included in the Draft and Final Environmental Impact Reports (EIR), which will be compiled during the detailed Impact Assessment phase of the S&EIR Process.

1.6.4 Details of Competent / Relevant Authority

The KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs (KZN EDTEA) will be the Competent Authority (CA) for the Application for Environmental Authorisation by way of a S&EIR process. **Table 7** sets out the contact details of the relevant Case Officer.

A Pre-Application Meeting was held with KZN EDTEA on 25 March 2020. The objectives of this meeting were to provide background to the project, to obtain clarity regarding the Listed Activities triggered by the proposed development, as well as to obtain clarity regarding the required Specialist Studies. Refer to the minutes of the Pre-Application Meeting in **Appendix B2**.

Table 7: Details of the Competent Authority

Competent Authority	KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs (KZN EDTEA)
Case Officer	Mr. Poovie Moodley
Reference Number	DC25/0001/2021:KZN/EIA/0001478/2021
Postal Address	PO Box 170 Newcastle 2940

Postal code	2940	Fax:	
Telephone	034 328 1210	Cell:	082 719 9907

1.7 Structure of this report

The SR has been drafted in accordance with the requirements of the NEMA EIA Regulations (published in GNR 982 of 8 December 2014) (as amended). The SR has been compiled in a diligent and independent manner. **Table 8** below indicates the relevant regulated requirements and the corresponding sections within this report which have been prepared to comply with these requirements.

Table 8: Legislated Requirements for SR content as detailed in GNR 982 (as amended)

Legislated requirements as per the NEMA GNR 928	Relevant Report Section
Details of the EAP who compiled the report.	Section 1.6.2 and Appendix A (CVs)
Details of the expertise of the EAP to carry out an Environmental Impact Assessment (EIA).	Section 1.6.2 and Appendix A (CVs)
The location of the activity, including- <ul style="list-style-type: none"> The 21 digit Surveyor General code of each cadastral land parcel; Where available, the physical address and farm name; and Where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties. 	Section 1.2
A plan which locates the proposed activity or activities applied for at an appropriate scale, or, if it is-a linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken; or on land where the property has not been defined, the coordinates within which the activity is to be undertaken.	Figure 1, Figure 2. Refer to Appendix C for the preliminary Site Layout Plan
A description of the scope of the proposed activity, including- All listed and specified activities triggered; and A description of the activities to be undertaken, including associated structures and infrastructure.	Section 1.1 Table 9: Section 2.1.2
A description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process.	Section 2
A motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location.	Section 1.3 and Section 1.4
A full description of the process followed to reach the proposed preferred activity, site and location within the site, including -	
Details of all the alternatives considered.	Section 3

Legislated requirements as per the NEMA GNR 928	Relevant Report Section
Details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs.	Section 4.2
A summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them.	To be included in the Final Scoping Report
The environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects.	Section 5 and 6
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- Can be reversed; May cause irreplaceable loss of resources; and Can be avoided, managed or mitigated.	Section 3 and 6 Will be investigated in more detail during the EIR Phase
The methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives.	Section 7 Will be reported in more detail during the EIR Phase
Positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects.	Section 6 Will be investigated in more detail during the EIR Phase
The possible mitigation measures that could be applied and level of residual risk.	Will be investigated in more detail during the EIR Phase
The outcome of the site selection matrix.	Not Applicable.
If no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such.	Section 3
A concluding statement indicating the preferred alternatives, including preferred location of the activity.	Will be investigated during the EIR Phase
A plan of study for undertaking the environmental impact assessment process to be undertaken, including-	Section 7
A description of the alternatives to be considered and assessed within the preferred site, including the option of not proceeding with the activity.	Section 3
A description of the aspects to be assessed as part of the environmental impact assessment process.	Section 7
Aspects to be assessed by specialists.	Section 6 and 7
A description of the proposed method of assessing the environmental aspects, including a description of the proposed method of assessing the environmental aspects including aspects to be assessed by specialists.	Section 7
A description of the proposed method of assessing duration and significance.	Section 7

Legislated requirements as per the NEMA GNR 928	Relevant Report Section
An indication of the stages at which the competent authority will be consulted.	Section 7
Particulars of the public participation process that be conducted during the Environmental Impact Assessment process.	Section 7
A description of the tasks that will be undertaken as part of the Environmental Impact Assessment process.	Section 7
Identify suitable measures to avoid, reverse, mitigate or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored.	Will be investigated in more detail during the EIR Phase
An undertaking under oath or affirmation by the EAP in relation to- The correctness of the information provided in the report; The inclusion of comments and inputs from stakeholders and interested and affected parties; and Any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested or affected parties.	Appendix G

2 *Legal Requirements*

This chapter details the applicable legal provisions and the policy context for the Scoping and Environmental Impact Reporting (S&EIR) process. It provides a review of relevant legislation, regulations and policy documents, which are applicable to (or have implications for) the proposed extension of the existing Roy Point Cemetery.

The authorisation process associated with the project will be carried out in compliance with South Africa's environmental legislation. The legal framework applicable to this project is diverse. A summary of the key environmental legislation and relevant policies and/or guidelines is provided in the following sections.

One of the main focus points of this section is on the provisions of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended (NEMA). The NEMA is the primary South African legislation governing the requirements for environmental impact assessment. In the context of the proposed development, the provisions of NEMA and associated EIA Regulations (regarding Scoping and EIR) are of fundamental relevance.

The section also describes other legislation relevant to constitutional and administrative legal precepts in South African law, as well as environmental legislation of specific relevance to water resources; heritage; biodiversity and land use planning, among others.

2.1 *National Legislation*

2.1.1 **Constitution of the Republic of South Africa (No. 108 of 1996)**

The Constitution of the Republic of South Africa is the legal source for all law, including environmental law, in South Africa. The Constitution enshrines the basic, fundamental and inalienable rights of the citizens of the Republic.

2.1.2 **National Environmental Management Act, 1998 (Act No. 107 Of 1998)**

The National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended (NEMA) is the primary South African legislation governing the requirements for Environmental Impact Assessment (EIA). In the context of the project, the provisions of NEMA and the associated EIA Regulations (regarding Scoping and EIR) have reference.

NEMA is the most significant single piece of legislation dealing with environmental management in the Republic of South Africa (RSA).

Chapter 5 of NEMA, entitled "Integrated Environmental Management" establishes the environmental impact assessment regime in the RSA. Since 3 July 2006, the procedural and substantive requirements for undertaking EIAs in South Africa have been regulated in terms of the provisions contained in section 24 of NEMA and the NEMA EIA Regulations 2014 (as amended).

The EIA Regulations, 2014 (as amended) identify lists of activities which have the potential to result in detrimental environmental impacts and thus require EA, subject to either “Basic Assessment” or “Scoping and Environmental Impact Reporting Process – S&EIR”. Listed activities in terms of GNR 984 (Listing Notice 2) are triggered by the proposed development and therefore the applicable environmental process to be undertaken is the S&EIR process.

The Regulations prescribe the procedural and substantive requirements for the undertaking of EIAs and the issue of EA’s. Activities identified in terms of section 24(2)(a) and (d) of NEMA, which may not commence without environmental authorisation from the CA and in respect of which the investigation, assessment and communication of the potential impact of such activities must thus follow the procedure as described in the EIA Regulations.

In terms of the EIA Regulations, activities listed in GNR 983 (Listing Notice 1), GNR 984 (Listing Notice 2) and GNR 985 (Listing Notice 3) require EA before they can proceed and be implemented, and the following listed activities (**Table 9**) are deemed applicable to the proposed development.

The environmental application process in terms of the listing notices is described below:

- GNR 983 (Listing Notice 1) identifies activities that require EA, subject to a Basic Assessment (BA) process, prior to commencement of that activity;
- GNR 984 (Listing Notice 2) identifies activities that require EA subject to a full S&EIR process, prior to commencement of that activity; and
- GNR 985 (Listing Notice 3) identifies activities within specific geographical areas of sensitivity that require EA subject to a BA process, prior to commencement of that activity.

Table 9: Listed activities in terms of NEMA EIA Regulations (2014), as amended

No.	Activity Description	Project relevance
Listing Notice 1: GNR 983 (as amended)		
12	<i>The development of— (ii) infrastructure or structures with a physical footprint of 100 square metres or more; where such development occurs (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse.</i>	There may be structures (e.g. ablution blocks, buildings, and fencing on site) that will occur within 32m of watercourse. This will be confirmed by the Site Layout Plan in relation the delineated wetlands / watercourses at the EIR phase.
44	<i>The expansion of cemeteries by 2 500 square meters or more.</i>	The existing Roy Point cemetery will be expanded on a site that is approximately 47,3ha in extent.
56	<i>The widening of a road by more than 6 meters, or the lengthening of a road by more than 1 kilometer-</i>	The site occurs outside of an urban area. Should there be road widening or lengthening, this activity will be

No.	Activity Description	Project relevance
	<p>(i) where the existing reserve is wider than 13,5 meters; or</p> <p>(ii) where no reserve exists, where the existing road is wider than 8 meters excluding where widening or lengthening occur inside urban areas.</p>	triggered, however its relevance will be confirmed at the EIR phase.
Listing Notice 2: GNR 984 (as amended)		
15	<p>The clearance of an area of <u>20 hectares</u> or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for-</p> <p>(i) undertaking of a linear activity; or</p> <p>(ii) maintenance purposes undertaken in accordance with a maintenance management plan.</p>	There will be the removal of 20ha or more of indigenous vegetation for the proposed extension of the existing Roy Point Cemetery.
Listing Notice 3: GNR 985 (as amended)		
4	<p>The development of a road wider than 4 metres with a reserve less than 13.5 metres.</p> <p>d. <u>KwaZulu-Natal</u></p> <p>(vii) Critical Biodiversity Areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans</p>	<p>According to the DEA Screening Tool, the site occurs within the CBA.</p> <p>The proposed development will require the development of internal roads. The width of the roads will be confirmed at the EIR phase.</p>
12	<p>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.</p> <p>d. <u>KwaZulu-Natal</u></p> <p>(v) Within critical biodiversity areas identified in bioregional plans;</p> <p>(vi)</p> <p>(vii) on land where, at the time of coming into effect of this Notice or thereafter, such land was zoned open space, conservation or had an equivalent zoning.</p>	There will be removal of more than 300 square metres of indigenous vegetation for extension of the existing Roy Point Cemetery. Part of the site occurs within the CBA. The site is zoned open space as per the Town Planning Zoning Certificate.
14	<p>The widening of a road by more than 4 meters, or the lengthening of a road by more than 1 kilometer,</p> <p>d. In KwaZulu-Natal</p>	Part of the site occurs within a CBA. Should there be road widening or lengthening, this activity will be triggered. It will be confirmed at the EIR phase.

No.	Activity Description	Project relevance
	<i>viii Critical Biodiversity Areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans</i>	
23	<p><i>This expansion of infrastructure or structures where the physical footprint is expanded by 10m² or more. where such expansion occurs—</i></p> <p><i>(c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse;</i></p> <p><i>In (d) KwaZulu-Natal</i></p> <p><i>(vii) Critical biodiversity areas or ecological support areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans.</i></p>	Part of the site occurs in a CBA. The expansion of the cemetery may occur 32m from the edge of a watercourse. This activity is to be confirmed by the Site Layout Plan and the delineation of the watercourses at the EIR phase.

It must be noted that activities requiring a Basic Assessment process i.e. (GNR No. 983 and GNR No. 985), as well as activities requiring a S&EIR process (GNR 984) are triggered by the proposed project. As such, the assessment has been prepared in accordance with the more stringent S&EIR requirements.

2.1.3 National Heritage Resources Act (Act No. 25 of 1999)

The National Heritage Resources Act, 1999 (Act 25 of 1999) (NHRA) aims to introduce an integrated system for the management of South Africa's heritage resources. Further, the Act empowers civil society to nurture and conserve their heritage resources so that they can be passed on to future generations. The Act provides a framework for the management of heritage resources in South Africa and to protect heritage resources of national significance. In order to meet these objectives, the Act introduces an integrated system that can allow for the identification, assessment and management of heritage resources in South Africa.

According to Section 38 (1) of NHRA:

Subject to the provisions of Subsections (7), (8) and (9) of the same section, any person who intends to undertake a development categorised as:

- *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 50m 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 the South African Heritage Resources Agency (SAHRA) or a Provincial Heritage Resources Authority (PHRA);*
 - *The re-zoning of a site exceeding 10 000 m² in extent; or*
 - *Any other category of development provided for in Regulations by the South African Heritage Resources Agency (SAHRA); must at the very earliest stages of initiating such a development, notify the responsible Heritage Resources Authority (HRA) and furnish it with details regarding the location, nature and extent of the proposed development.*

(a) Legal requirements for this project

The National Heritage Resources Act, 1999 (Act No. 25 of 1999) legislates the necessity for Heritage Impact Assessment (HIA) in areas earmarked for development, which exceed 0.5 ha. Therefore, a Phase 1: HIA will be undertaken at the EIR phase of the project and the findings thereof will be provided in the forthcoming Draft EIR.

2.1.4 National Environmental Management: Biodiversity Act (Act No. 10 of 2004)

The National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004) (NEMBA) has as an objective to provide for the management and conservation of biological diversity within the Republic and of the components of such biological diversity. The focus of this legislation is on the preservation of species and ecosystems irrespective of whether or not they are situated in protected areas.

Chapter 4 of the NEM: BA is particularly relevant and provides for:

- The protection of threatened or protected ecosystems, with particular emphasis on critically endangered, endangered, vulnerable and protected ecosystems. – List of Threatened Ecosystems (Notice 1002 of Government Gazette 34808 dated 9 December 2011).
- Listing of species that are threatened or in need of protection to ensure their survival in the wild, while regulating the activities, including trade, which may involve such listed threatened or protected species and activities which may have a potential impact on their long-term survival. - Threatened or Protected Species Regulations (Regulation 152 of 2007).
- The protection of natural systems from invasive species.

Chapter 5 of the Act specifically deals with species and organisms posing potential threats to biodiversity. To summarise, the purpose of Chapter 5 is to:

- Prevent the unauthorised introduction and spread of alien species and invasive species to ecosystems and habitats where they do not naturally occur;

-
- To manage and control alien species and invasive species to prevent or minimise harm to the environment and to biodiversity in particular; and
 - To eradicate alien species and invasive species from ecosystems and habitats where they may harm such ecosystems or habitats.

Furthermore Section 73 (2) states that a person who is the owner of land on which a listed invasive species occurs must:

- Notify any relevant CA, in writing, of the listed invasive species occurring on that land;
- Take steps to control and eradicate the listed invasive species and to prevent it from spreading; and
- Take all the required steps to prevent or minimise negative impacts on biodiversity.

(a) Legal Requirements for this Project

The impacts on the receiving ecological environment and potential need for relocation permits for the flora and fauna, will be assessed in more detail in the EIR phase. An Ecological Assessment has been included in Appendix F3.

2.1.5 National Water Act, 1998 (Act No 36 of 1998)

The National Water Act, 1998 (Act No. 36 of 1998) (NWA) aims to provide for the management of the national water resources, to achieve sustainable use of water for the benefit of all water users. This requires that the quality of water resources is protected as well as integrated management of water resources with the delegation of powers to institutions at the regional or catchment level. The purpose of the Act is to ensure that the nation's water resources are protected, used, developed, conserved, managed and controlled in responsible ways.

Of specific importance to this application is Section 19 of the NWA, which states that an owner of land, a person in control of land or a person who occupies or uses the land, who causes, has caused or is likely to cause pollution of a water resource, must take all reasonable measures to prevent any such pollution from occurring, continuing or recurring, and must therefore comply with any prescribed waste standard or management practices.

(a) Legal Requirements for this Project

A Wetland/Riparian Delineation and Functional Assessment is included in Appendix F4. Freshwater features found on site included several small seasonally wet areas, which could have historically been part of the Cape Flats seasonal wetland system.

Due to the possible presence of wetlands within 500m of the site earmarked for the extension of the cemetery, the following Section 21 water uses in terms of the NWA may be triggered:

- c) impeding or diverting the flow of water in a watercourse; and
- i) altering the bed, banks, course or characteristics of a watercourse.

There may be additional water use activities that will be triggered and will be confirmed by Specialist Studies, such as the Hydropedological Assessment, Geohydrological Assessment and Hydrological Assessment which will be undertaken at the EIR phase.

Accordingly, the proposed activities mentioned above will require a Water Use Authorisation Application, which is administered by the National Department of Water and Sanitation (DWS). The Applicant has been informed of the need for this application and is in the process of appointing a service provider.

2.1.6 Spatial Planning and Land Use Management Act, 2013 (Act No. 16 of 2013) (SPLUMA)

The Spatial Planning and Land Use Management Act (Act No. 16 of 2013) (SPLUMA) aims to achieve the following:

- To provide a framework for spatial planning and land use management in the Republic;
- To specify the relationship between the spatial planning and the land use management system and other kinds of planning;
- To provide for the inclusive, developmental, equitable and efficient spatial planning at the different spheres of government;
- To provide a framework for the monitoring, coordination and review of the spatial planning and land use management system;
- To provide a framework for policies, principles, norms and standards for spatial development planning and land use management;
- To address past spatial and regulatory imbalances;
- To promote greater consistency and uniformity in the application procedures and decision-making by authorities responsible for land use decisions and development applications;
- To provide for the establishment, functions and operations of Municipal Planning Tribunals;
- To provide for the facilitation and enforcement of land use and development measures; and
- To provide for matters connected therewith.

The current zoning of the site is open space and a SPLUMA application will be submitted to the Newcastle Local Municipality for the rezoning from open space to cemetery following the submission of the Final EIR to the KZN EDTEA.

2.1.7 Health and Safety

Regulations in terms of the Occupational Health and Safety Act (Act No. 85 of 1993) (OHSA), address the health and safety of the employer and workers during both construction and operation of the proposed development. **Table 10** below provides a list of legislation that applies to the proposed project in terms of health and safety.

Table 10 : Health, safety and major hazardous installations regulations

Legislation	Description
Occupational Health and Safety Act 1993 (Act No. 85 of 1993) (OHSA)	<p>The Minister of Labour has, after consultation with the Advisory Council for Occupational Health and Safety, under section 43 of the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993), made the regulations in the Schedule.</p> <p>The main objective is to provide for the health and safety of persons at work, including aspects which are hazardous to health and safety. In terms of major hazardous installation, the regulations shall apply to employers, self-employed persons and users, who have on their premises, either permanently or temporarily, a major hazard installation or a quantity of a substance which may pose a risk that could affect the health and safety of employees and the public.</p> <p>During both the construction and operational phase of this development all the requirements of Occupational Health and Safety Act 1993 will need to be adhered to.</p> <p>The Newcastle Local Municipality must consider the general duties of employers to their employees with regards to Health and Safety on site during construction and operational phases. They also needs to consider general duties of employers and self-employed persons to persons other than their employees.</p>
Hazardous Chemical Substance Regulations 1995	<p>These regulations stipulate requirements for storage and handling of hazardous chemical substances and provide guidelines for training of staff.</p> <p>Any hazardous chemical substances used during the construction and operational phases must be identified, stored used and disposed of in accordance with this legislation.</p>
Environmental Regulations for Workplaces 1987	<p>These regulations specify optimal working conditions for staff including thermal conditions, illumination requirements, requirements for ventilation; noise levels etc. and also specify requirements for housekeeping.</p>
General Administrative Regulations 2003	<p>These regulations stipulate the administration of the various Occupational Health and Safety regulations incusing designation of health and safety committees, reporting and recording of incidents and occupational diseases.</p>
Construction Regulations 2014	<p>These Regulations apply to any persons involved in construction work and are therefore applicable to the construction phase. The regulations provide guidelines for safe operation during construction.</p>
Newcastle Local Municipality By-laws relating to the cemetery and crematorium	<p>“Cemetery” shall have the meaning assigned to it in the Cemeteries and Crematoria Ordinance No. 39 of 1969 and shall include any land set aside for the burial of deceased natural persons.</p> <p>The by-laws related to cemeteries must be adhered to with regards to the proposed extension of the Roy Point Cemetery.</p>

2.1.8 Noise Management

There is a potential for the generation of noise during construction of the proposed project.

Table 11 below lists the regulations and other by-laws which apply to the current project in terms of noise management.

Table 11: Legislation applicable to noise management

Legislation	Description
Environment Conservation Act (Act 73 of 1989) [ECA]	<p>The Act outlines general prohibitions for noise control. It is also specifies noise management during construction. Specifically section 3(i) states that no person shall use any power tool or power equipment for construction, earth drilling or demolition works, or allow it to be used, in a residential area during the following periods of time:</p> <ul style="list-style-type: none">i) Before 06:00 and after 18:00 from Monday to Saturday; andii) At any time on any Sunday, Good Friday, Ascension Day, Day of the Covenant and Christmas Day, or any other day as may be determined by a local authority; <p>The provisions of the regulations may not apply if any person may by means of a written application, in which the reasons are given in full, apply to the local authority concerned for exemption from any provision of these Regulations.</p>
Noise induced Hearing Loss Regulations 2003	<p>These regulations specify safe working conditions in environments where noise levels exceed safe levels and gives guidelines for assessment of noise, training measures, provisions of information to staff etc.</p>
National Standards (SANS10103:2003)	<p>Specifies the maximum ambient noise level acceptable in various land use type zones.</p>

2.1.9 Air Quality Management

There is a potential for impacts on air quality during the construction and operation phase of the development. The monitoring and control of air quality is governed by the National Environmental Management: Air Quality Act 2004 (Act 39 of 2004) (NEM: AQA) and relevant emissions standards which are listed in **Table 12** below.

Table 12: Air Quality Management Legislation

Legislation	Description
-------------	-------------

National Environmental Management: Air Quality Act 2004 (Act 39 of 2004) [NEM:AQA]	Crucially, in terms of section 21 of the NEM: AQA the relevant authority may promulgate a list of activities which result in atmospheric emissions which are reasonably believed to have a significant detrimental effect on the environment. No person may conduct an activity so listed without a provisional atmospheric emission licence (AEL). As the Application for the Environmental Authorisation for the proposed cemetery extension includes burial sites and no on-site cremation, an AEL will not be required for the project. Dust emissions may result from vehicle movement during construction. These impacts will be managed in line with requirements of the EMPr.
--	---

2.1.10 Waste Management

During construction and operation, the production of wastes, either liquid, solid or and/or hazardous, will require that they be adequately disposed of. **Table 13** below provides a list of the applicable waste legislation.

Table 13: Legislation for waste management which applies to the current project

Legislation	Description
Environment Conservation Act 1989 [ECA]	Section 31A provides that the Minister of Environmental Affairs or the Administrator, local authority or government institution concerned may take specified action if any person performs any activity or fails to perform any activity as a result of which the environment is or may be seriously damaged. Section 20(6) of the Act states that, subject to the provisions of any other law, no person shall discard waste or dispose of it in any manner, except at a disposal site for which a permit has been issued, and in a manner or by mean of a facility or method and subject to such conditions as the Minister may prescribe. All waste generated during both the construction and operational phase of the development must be disposed of appropriately and is outlined in the EMPr.
National Environmental Management Act 1998 (Act 107 of 1998)	Outlines principles that serve as the general framework within which environmental management and implementation plans must be formulated: "4 (iv) that waste is avoided, or where it cannot be altogether avoided, minimised and reused or recycled where possible and otherwise disposed of in a responsible manner;"
National Environmental Management Waste Act (No. 59 of 2008) [NEM:WA]	Section 20 of the NEM:WA states that no person may commence, undertake or conduct a waste management activity except in accordance with a Waste Management Licence (WML). A list of waste management activities that require a WML was published in GNR 921 (29 November 2013). GNR 921 states that a person who wishes to

Legislation	Description
	<p>commence with a waste management activity must undertake the required BA or S&EIR process in accordance with GNR 326 stipulated under NEMA.</p> <p>GIBB undertook a detailed analysis of the listed activities contained in GNR 921 and none of the activities are applicable to the current project stage.</p>
Newcastle Local Municipality by-laws	Waste Management by-law, 2000

2.1.11 Other Legal Requirements

The section below highlights any other applicable or relevant policies, legislation, guidelines and standards associated with the project.

Table 14: Brief review of other relevant policies, legislation, guidelines and standards applicable to the S&EIR

Applicable Legislation/ guideline/ standard	Details/Applicable Sections
National Legislation	
The KwaZulu-Natal Cemeteries and Crematoria Act (No.12 of 1996)	<p>The KwaZulu-Natal Cemeteries and Crematoria Act (No 12 of 1996) provides for establishment, control, management maintenance, operation, closure, reopening and regulation of cemeteries and crematoria, and the exhumation, re-internment or disposal or cremation of human remains.</p> <p>This Act defines a cemetery as any place:</p> <p>(a) Where human remains are buried in an orderly, systematic and pre-planned manner in identifiable burial plots;</p> <p>(b) Which is intended to be permanently set aside for and used only for the purposes of the burial of humans.</p> <p>This Act prohibits the burial of human remains elsewhere, but it stipulates that human remains should either be buried in a cemetery or be cremated.</p> <p>The proposed cemetery extension is responding to the Act by providing the local communities with an opportunity of having access to a formal burial space / cemetery.</p> <p>Therefore, the proposed cemetery extension should adhere to the regulations stipulated in this Act by:</p> <p>Providing a development that will not pose any danger to public health or nuisance to the owners or occupiers of nearby properties.</p>

Applicable Legislation/ guideline/ standard	Details/Applicable Sections
<p>The KwaZulu-Natal Cemeteries and Crematoria Amendment Act (No. 2 of 2005)</p>	<p>This Act aims at amending the KwaZulu-Natal Cemeteries and Crematoria Act, 1996, to make provision for burials other than at the establish cemeteries, and to provide for matters connected therewith.</p> <p><i>“Amendment of section 3 of Act 12 of 1996”</i></p> <p>The following section is hereby substituted for section 3 of the principal Act:</p> <p>“Prohibition against burial or cremation elsewhere than at established cemeteries and crematoria. (1) Subject to the provisions of section 2, no human remains shall be –</p> <p>(a) Buried except in a cemetery; or</p> <p>(b) cremated except at a crematorium,</p> <p>Established and operated in terms of this Act and the regulations made thereunder.</p> <p>(2) Despite the provisions of subsection (1) (a), but otherwise subject to this Act, an occupier may bury a deceased member of the family of the occupier, who at the time of the death of the deceased, was residing on land on which the occupier resides.</p> <p>(3) A burial contemplated in subsection (2) –</p> <p>(a) may take place only if there exists an established practice in respect of the land on which the occupier resides; and</p> <p>(b) may be conducted in accordance with the religion or cultural belief of the occupier”.</p> <p>This Act is an amendment of the KwaZulu-Natal Cemeteries and Crematoria Act, 1996, it provides for burial of occupier, after the notification of the owner of land has been undertaken, in a land that he / she was residing at the time of death.</p> <p>The said burials should also conform to stipulations of the 1996 Act such as that the cemeteries / graves catered for under the 2005 Amendment Act should also not pose any environmental and / health danger to the communities.</p> <p>Since, there is this Amendment Act, which caters for people who prefers to be buried on the land they residing by the time of their death, when making projections for the proposed cemetery extension, consideration should be given to the fact that some of Newcastle community members may choose to be buried in the land they were residing in, during their time of death.</p>

Applicable Legislation/ guideline/ standard	Details/Applicable Sections
The Health Act (No 63 of 1977)	<p>In terms of the Health Act proposed Regulations for the control of environmental conditions constituting a danger to health or a nuisance are as follows:</p> <p>In terms of Regulation 4(1), no person shall bury a corpse in or on any premises, which have not been registered by the local authority for that purpose. This regulation does not apply to areas where the burials or the establishment or maintenance of cemeteries are regulated in terms of any other law.</p> <p>In terms of Regulation 5(1), any person seeking registration of any premises for the purpose of conducting thereon an activity referred to in regulation 4, shall give notice of such intention substantially as stipulated in Annexure 2 of the regulations. After consideration of any objections, the local authority will register the premises if it is satisfied that no danger to health or that any nuisance will be caused, subject to any conditions as it may determine.</p> <p>The proposed cemetery extension should conform to this Act by taking into consideration that the cemetery extension should not pose any danger to health or nuisance to the nearby residents.</p>
Promotion of Access to Information Act, 2000 (Act No. 2 of 2000) [PAIA]	<p>The purpose of the Promotion of Access to Information Act ("PAIA") is to give effect to the constitutional right of access to any information held by the State and any information that is held by another person and that is required for the exercise or protection of any rights, and to provide for matters connected therewith.</p> <p>For the purpose of this project, information has been shared in line with legislative public participation guidelines under NEMA.</p>
Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983) [CARA]	<ul style="list-style-type: none"> • Prohibition of the spreading of weeds (Section 5). • Classification of categories of weeds and invader plants (Regulation 15 of GN R1048) and restrictions in terms of where these species may occur. • Requirement and methods to implement control measures for alien and invasive plant species (Regulation 15E of GN R1048). • The proposed site, as well as surrounding areas are located within an industrial, built up area therefore there is no agricultural land. <p>For the purpose of this project, alien invasive species may establish as a result of construction activities etc. It is imperative that the establishment of alien invasive</p>

Applicable Legislation/ guideline/ standard	Details/Applicable Sections
	species is managed according to conditions of the EMPr which will be included in the EIR Phase.
National Environmental Management Act (Act No. 107 of 1998) Public Participation Guideline (GN.R807 of 2012)	<ul style="list-style-type: none"> In 2010, the Minister gazetted a new set of regulations on the requirements for conducting EIAs in terms of Chapter 5 of NEMA. In order to assist potential Applicants, interested and affected parties and environmental assessment practitioners to understand their role, the DEA has produced a series of guidelines. These guidelines must be read in line with NEMA and the EIA Regulations of 2010 as they do not substitute primary legislation. The guideline updates and revises the draft integrated environmental management guideline which was developed in 2005. The public participation guideline provides for inter alia: the minimum legal requirements for public participation processes (PPP); the steps of a PPP; guidelines for planning a PPP; and a description of the roles and responsibilities of the various role players. <p>For the purpose of this project, Public Participation has taken into consideration all the legislative requirements for allowing the public to comment and provide their concerns throughout the process.</p>
Municipal By-laws	
This chapter, which considers the potentially relevant national and provincial environmental legislative dimension of the project, does not include discussion on relevant municipal by-laws. However, it is possible that certain municipal bylaws will be relevant to the project and these will be discussed further during the impact assessment phase of the S&EIR process.	
Policy and Planning Context	
National Spatial Biodiversity Assessment	The NSBA establishes protection and conservation priority status for terrestrial, inland water, estuarine and marine ecosystems at a 1:250,000 scale nationally and suggested implementation options for priority areas. It provides the national context for development of biodiversity plans at the sub-national and local scale.
Newcastle Local Municipality Spatial Development Framework (SDF)	The site is earmarked for use as a cemetery and therefore aligns with the development proposal for the site.

3 Alternatives

The EIA procedures and regulations stipulate that the environmental investigation needs to consider feasible alternatives as part of proposed development. During the EIR phase of the project, the identified alternatives will be assessed, in terms of environmental acceptability as well as socio-economic feasibility. Therefore, a number of possible proposals or alternatives for accomplishing the same objectives should be identified and investigated.

The term “alternatives” as per GNR 982 is defined as follows:

“...in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to:

- a) The property on which or location where it is proposed to undertake the activity;*
- b) The type of activity to be undertaken;*
- c) The design or layout of the activity;*
- d) The technology to be used in the activity;*
- e) The operational aspects of the activity; or*
- f) The option of not implementing the activity.”*

For the purpose of this Scoping Report, all proposed alternatives are further explained below. The alternatives identified below, will be investigated further and the preferred alternatives will be identified during the EIR phase of the project.

Note: Additional alternatives may arise through the Public Participation Process and findings of the specialist studies. These will also be further investigated for the EIR phase of the project.

3.1 Location Alternative

As indicated in **Section 1.3**, a need was identified for the expansion of cemeteries to accommodate new burials in the Newcastle area. The Feasibility Study by Udidi, 2013 confirmed the need to extend the existing Roy Point Cemetery, which is the most utilized cemetery in Newcastle, and it is considered as a regional facility which serves the whole of Newcastle and beyond. In addition, it is one of the registered and operational cemeteries in Newcastle. As it fast approaching capacity, a need has been identified to expand the existing cemetery.

The availability of vacant land, measuring approximately 47,3ha in extent, and located adjacent to the existing Roy Point Cemetery, has been deemed a suitable site for expansion of the existing cemetery. The site is owned by the Newcastle Local Municipality, making it advantageous in terms of the otherwise lengthy process it would involve for land acquisitions, if owned by other parties. This site is accessible to the low-income areas located at varying distances in the Newcastle area. The site for the proposed extension of Roy Point Cemetery is located within close proximity to major road networks such as the N11, R34 and the P483 and

thereby providing accessibility to the cemetery. It is most likely that the local communities will accept the proposed cemetery extension, given the fact that the extension will be from the existing facility that has been used by since 1994.

The site is located adjacent to an industrial area and open grasslands and not next to residential areas, which could have been sensitive receptors that may be impacted by traffic and noise from the cemetery extension.

Access to basic services makes the site suitable for expansion of the Roy Point Cemetery. The existing cemetery is fully serviced in terms of accessibility to municipal water, sewerage, electricity and refuse removal. Municipal connections to extend such services to accommodate the proposed extension are required and accessible.

3.2 Land Use Alternative (Type of Activity)

From a spatial policy perspective, the spatial designation of the site earmarked for the proposed extension of Roy Point Cemetery is, and always was, for cemetery development purposes. This is reflected in approved policy directives over time, from the Newcastle Local Municipality Spatial Development Framework (SDF).

The principle of the site now being proposed for extension of the cemetery, is consistent with the aforementioned policies, not requiring any deviations from these spatial policy directives.

The site is flat and consists of open grassland. Therefore, it is easier to develop and have minimal chances of contributing to soil erosion and contamination of water catchments during the rainy season. The site's proximity to the existing cemetery makes it ideal for use for extension of the existing cemetery as it would be a compatible land use. After considering all the other cemeteries in Newcastle, the extension of Roy Point Cemetery is considered the most feasible. According to the Geotechnical Assessment, excavation of the soils at the site for the trenches for proposed burial would be within the capabilities of manual labour. The soil is also considered to be highly to moderately workable. The soil permeability of the site is ideal to partially suitable for cemetery purposes.

3.3 Layout Alternatives

Various Specialist Studies will be undertaken by independent experts in their respective fields of study, including wetlands, botanical, faunal, aquatic, hydrological, archaeological, paleontological and geohydrological at the EIR phase of the project. A Preliminary Site Layout Plan was compiled for the proposed extension of the cemetery. This layout plan included various land uses for graves, open space areas, footpaths, internal roads, parking areas, special areas and the main access road.

Subject to the findings of the various Specialist Studies, the Site Layout Plan will be revisited in accordance with the Environmental Sensitivity Map emanating from Specialist recommendations for areas to avoid, should there be any constraints to development.

Therefore, Site Layout Alternatives will be presented graphically to provide a visual understanding or description of these environmental sensitivities in more detail at the EIR phase in the Draft EIR, once all Specialist recommendations are available. The importance of Specialist Studies are therefore key development layout informants.

3.4 Technology Alternative

There are no feasible and reasonable technology alternatives. The facility will be a cemetery and must therefore conform to municipal standards for burials.

3.5 Operational Alternative

Once operational, the only activities that will be undertaken are related to burials, maintenance and upkeep of the development and associated infrastructure. Operational alternatives (if any) will be investigated further for the EIR Phase.

3.6 No Go Alternative

The “No Go” alternative refers to the alternative of not embarking on the proposed project. This alternative would imply that the current *status quo* of the biophysical and social environment, without the proposed extension of Roy Point Cemetery Project, would remain.

The identified preliminary key biophysical and socio-economic issues (**Section 6**) related to the proposed cemetery extension during the construction and operational phases may not occur should the proposed development not be approved. It is important to note that the No-Go Alternative will be assessed in conjunction with all other feasible alternatives associated with the project requirements, as part of the EIR Phase of the project.

There is an increase in the demand for burial space in Newcastle due to amongst others, deaths caused by natural causes, the impact of the HIV/AIDS pandemic and of late, the COVID-19 pandemic. Should the development not be approved, the Newcastle Municipality will continue to be faced with the challenge of access to burial facilities as the existing facilities are reaching capacity and have unfavourable geological conditions. As religious, cultural and traditional rights have to be followed by majority of the population in Newcastle, burials are the accepted form of disposal of human remains. Other forms of disposal such as cremation is therefore not supported by majority of the community.

The local community will continue to face hardships in accessing cemeteries due to the high transportation costs of other facilities in Newcastle. Should the no-go alternative be implemented, these existing challenges would be exacerbated.

4 *Scoping and EIR Process*

A Scoping and Environmental Impact Reporting (S&EIR) process for the proposed development is being undertaken in accordance with the EIA Regulations, 2014 (as amended), promulgated in terms of the NEMA.

An S&EIR process for the project is used to:

- Identify potential environmental impacts;
- Examine the significance of environmental implications;
- Assess whether impacts can be mitigated;
- Recommend preventive and corrective mitigating measures;
- Inform the decision-makers and concerned parties about the environmental implications; and
- Provide the decision maker with the necessary independent environmental and socio-economic information to determine whether the development should go ahead.

The two main phases, namely the Scoping Phase and Environmental Impact Reporting Phase, and the various activities associated with each phase, are outlined and described in **Figure 4**.

This Final Scoping Report documents the tasks that have been undertaken as part of the Scoping Phase, and the Plan of Study (contained within **Section 7** of the Report) addresses the activities that will be undertaken as part of the EIR Phase.

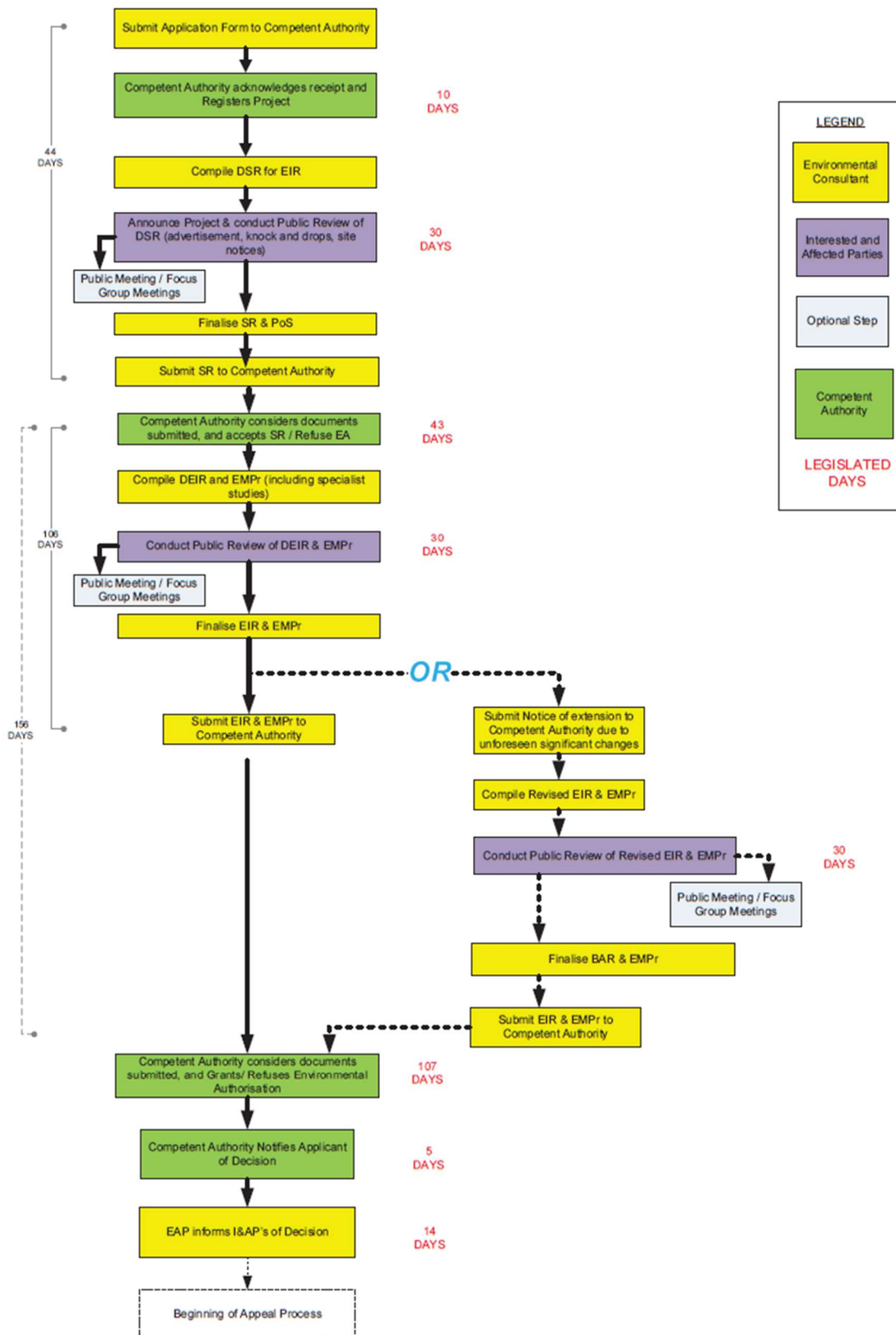


Figure 4: Scoping and Environmental Impact Assessment Process

4.1 Scoping Phase

The Scoping Phase serves to define the scope of the later detailed assessment of potential impacts resulting from a proposed project and to establish the baseline conditions of the receiving environment. The Scoping Phase has been undertaken in accordance with the requirements of sections 24 and 24(d) of the NEMA, as read with GNR 982 (Section 21 and Appendix 2), 983, 984 and 985 and the Integrated Environmental Management (IEM) Information Series (DEAT, 2002). The objectives of the Scoping Phase are thus to:

- Ensure that the process is open and transparent and involves the relevant Authorities, the project Applicant and key stakeholders;
- Engage with stakeholders at an early stage of the development so that they may contribute their views and raise any concerns regarding the project;
- To identify and describe the affected environment;
- Ensure that feasible and reasonable alternatives are identified and selected for further assessment;
- Determine possible impacts of the proposed project on the biophysical and socio-economic environment and associated mitigation measures;
- To define the scope and methodology of the Environmental Impact Reporting (EIR) Phase within a Plan of Study for EIA;
- To provide sufficient information, to enable the environmental authorities to make an informed decision on the project (*including the scope and extent of specialist studies that will be required to be undertaken as part of the EIR Phase of the process*);
- To comply with the requirements of NEMA and the EIA Regulations, as well as the Integrated Environmental Series (DEAT, 2002); and
- Ensure compliance with the relevant legislation.

4.1.1 Consultation with KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs (KZN EDTEA)

Consultation with the relevant officials at the KZN EDTEA has commenced and will continue throughout the duration of the project.

An Authority Pre-Application Meeting took place on 25 March 2020. The purpose of the meetings were as follows:

- To provide background to the project;
- To discuss the required information to complete the Application for Environmental Authorisation, Scoping Report and Environmental Impact Reporting (EIR);
- To confirm specialist studies required; and
- To understand key concerns.

Refer to the minutes of the meeting in **Appendix B2**.

4.1.2 Consultation with Other State Departments

The authorities and state departments who have been contacted are included in the I&AP Database (**Appendix G1**).

Authority consultation will continue throughout the remainder of the S&EIR process and the list will be updated accordingly.

4.1.3 Identification of Specialist Studies

The following Specialist Studies were identified during the Scoping Phase and will be carried through during the EIR Phase of the project. The specialists listed below are also aligned to the requirements of the DEA Screening Tool Screening Report (Refer to **Appendix B3**).

Table 15: Proposed Specialist Studies

Specialist Studies	Source of Requirement	Specialist	Status Quo
Phase 1: Archaeological and Cultural Heritage Impact Assessment	DEA Screening Assessment	SATIVA (Pty) Ltd	Specialist Study to be completed and submitted with the Draft EIR.
Paleontological Impact Assessment	DEA Screening Assessment	SATIVA (Pty) Ltd	Specialist Study to be completed and submitted with the Draft EIR.
Terrestrial Biodiversity Impact Assessment (to include Flora, avifauna and fauna)	DEA Screening Assessment	GIBB (Pty) Ltd	Appendix F3.
Wetland/Riparian Delineation and Functional Assessment	Requirement in terms of the establishment of cemeteries	GIBB (Pty) Ltd	Appendix F4.
Aquatic Impact Assessment	DEA Screening Assessment	GCS (Pty) Ltd	Specialist Study to be completed and submitted with the Draft EIR.
Hydrological Assessment	DEA Screening Assessment	GCS (Pty) Ltd	Appendix F5.
Geo-hydrological Assessment	Requirement identified at Pre-Application Meeting with KZN EDTEA and for the establishment of cemeteries	GCS (Pty) Ltd	Appendix F6.
Hydropedological Assessment	Requirement in terms of the	GCS (Pty) Ltd	Appendix F7.

Specialist Studies	Source of Requirement	Specialist	Status Quo
	establishment of cemeteries		
Geotechnical Assessment	Requirement in terms of establishment of cemeteries	GeoCaluza Consulting Terratest Consulting	Appendix F1 and F2.
Engineering Services Report	Proposed developments to ensure services are available in terms of accessibility and capacity (municipal requirement)	TBC	Specialist Study to be completed and submitted with the Draft EIR.
Stormwater Management Plan	Identified in the Feasibility Study	TBC	Specialist Study to be completed and submitted with the Draft EIR.
Socio-Economic Impact Assessment	DEA Screening Assessment	Urban-Econ Development Economists	Specialist Study to be completed and submitted with the Draft EIR.

N.B. The Screening Report identified that a Landscape/VIA be undertaken. However, at the Pre-Application Meeting with KZN EDTEA on 25 March 2020, reasons for not undertaking this study were outlined. A motivation for not undertaking this study is included in **Section 5.11.2** of the SR for consideration by the Department.

Further details of the proposed studies are provided in **Section 7**. The findings/results of the above Specialist Studies will be discussed further in the EIR. The EIR will include a detailed assessment of the impacts identified by the Professional Team, Specialists, the Stakeholders and the Authorities, as well as recommended mitigation measures for the avoidance, minimisation and control of these impacts.

4.2 Public Participation Process during the Scoping Phase

GIBB will conduct the Public Participation Process (PPP) for the project in line with the requirements set out in Chapter 6 of the EIA Regulations and Appendix 2 for Scoping Reports. The principles of NEMA govern the Public Participation Process, including consultation with Interested and Affected Parties (I&APs).

Public participation is the involvement of all parties who potentially have an interest in a development or project, or may be affected by it. The principal objective of the PPP is to inform and enrich decision-making. This is also its key role in the Scoping Report.

These principles include the provision of sufficient and transparent information to I&APs on an on-going basis, to allow them to comment and ensuring the participation of historically disadvantaged individuals, including women, the disabled and the youth.

The PPP aims to:

- Ensure all relevant key stakeholders and I&APs have been identified and invited to engage in the Scoping Phase;
- Raise awareness, educate and increase understanding of stakeholders about the proposed project, the affected environment and the environmental process being undertaken;
- Create open channels of communication between key stakeholders and I&APs and the project team;
- Provide opportunities for key stakeholders and I&APs to identify issues or concerns and propose suggestions for enhancing potential benefits and to prevent or mitigate impacts; and
- Accurately document all opinions, concerns and queries raised regarding the project.

4.2.1 Identification of Key Stakeholders and I&APs

The identification and registration of I&APs will be an on-going activity during the course of the S&EIR process. GIBB will develop, maintain and constantly update an electronic I&AP database for the project (see **Appendix G1**). As such, I&APs will be identified using the following:

- Existing I&AP databases for other projects within the study area;
- Identification of any occupiers of the site (if any);
- Identification of directly adjacent land owners and occupiers;
- Placement of advertisements in local newspapers;
- Placement of site notices at strategic locations near the site, as well as at libraries and other public places; and
- Discussions with ward councillors.

As indicated above a preliminary I&AP database is included in **Appendix G1**. Interested and Affected Parties (I&APs) representing the following sectors of society has been identified:

- National, provincial and local government;
- Ward councillors and committees;
- Rate Payers Associations;
- Community Based Organisations;
- Non-Governmental Organisations;
- Business, Religious and Civic Organisations; and
- Service Providers.

4.2.2 Notification of Draft Scoping Report for Public Review and Comment and invitation to register as an Interested and Affected Party

The project and S&EIR process has been widely announced with an invitation to the general public to register as I&APs and comment on the Draft Scoping Report and to actively participate in the PPP (refer to **Appendix G2, G3 and G4** for the announcement documents). Proof of

publication of the advertisements and site notices placement has been included in this Final Scoping Report. Public announcement of the project, the invitation to comment on the Draft Scoping Report and to register as I&APs, were announced as follows:

- Publication of media advertisement in English in the Newcastle Advertiser **on 21 January 2021** (Refer to media advert text in **Appendix G2**);
- Distribution of notification letters, comment and registration sheet by email to all organs of state, entity in control of the property, service providers, Non-Governmental Organizations (NGO's) and Ward Councillors and adjacent landowners on **21 January 2021** (see **Appendix G3**) for reference to the information package consisting of notification letters, details availability of the Draft Scoping Report for public review and comment, locality map and registration and comment sheet);
- Project site notices (English) were strategically located at **the site and visible to motorists passing by on 22 January 2021 (Appendix G4).**

In accordance with the requirements of the EIA Regulations, the I&AP registration period commenced with the advertisement of the project in the local newspaper and the placement of site notices. As stated, the purpose of the advertisements and site notices was to notify the public about the proposed project and to invite them to register as I&APs and comment on the Draft Scoping Report. The relevant advertisement dates are listed in **Table 16**.

Table 16: Media Advert and Site Notification

Method	Where	Publication/Placement Date
Advertisement	Newcastle Advertiser	21 January 2021
Site Notices	Entrance to the site on Karbochem Road	22 January 2021
	Intersection of P473 and Karbochem Road	
	Northern boundary of site adjacent to existing Roy Point Cemetery	
	Ngagane Settlement south of the site	

The Draft Scoping Report was made available to the public for review from **21 January 2021 to 22 February 2021** for a period of 30 days, at the venues listed in **Table 17**. The DSR was also made available to the public on the GIBB website.

Table 17: Locations where the DSR was placed for I&AP Review

Place	Address	Contact Person	Telephone
Newcastle Municipality	37 Murchison Street, Newcastle	Shahil Singh	034 328 7600
<p>Due to Covid-19 the Newcastle Library was closed, so the library copy was placed at the Municipality. The DSR was also made available on the GIBB website at the following link:</p> <p>https://projects.gibb.co.za/Roypoint_Cemetery_Extension_EIA</p> <ul style="list-style-type: none">An electronic copy is available upon request (Contact: the Public Participation Office (031 267 8560))			

4.2.3 Final Scoping Report (FSR)

The comments received from I&APs during the review of the DSR have now been considered and the report has been finalised accordingly. The FSR will now be submitted to KZN EDTEA for decision making.

4.3 Conclusion

This Chapter has discussed the various tasks that have been undertaken as part of the Scoping phase of the S&EIR process. The Environmental Scoping phase has been undertaken in accordance with the requirements of sections 24 and 24(d) of NEMA, as read with GNR 982 (Section 21 and Appendix 2), 983, 984 and 985.

5 *Receiving Environment*

5.1 Climate

Newcastle lies 1200 meters above sea level (masl) and falls in the summer rainfall area. This means warm summers with rain and cool dry winters. The study area has an average maximum temperature of 25.5 degrees Celsius (°C). Winters are also dry and cold between 0.5°C and 18°C and occurs between May and August. The annual rainfall is approximately 779mm. The least amount of rain occurs in June and the highest precipitation occurs in January.

5.2 Topography

Topographically, the site gently slopes at an average declination of 2.9° in a south-easterly direction, as measured on the 1:50 000 scale Newcastle Topographic Map, 2729DD and consequently can be classified as being relatively flat. This makes the site ideal for selection of a cemetery site. The recommended maximum slope angle of the ground should be within 6° to 9°, as flat topographic areas promote human and mechanical mobility and minimize erosion. Topographically, the proposed additional area at Roy Point Cemetery falls within the acceptable range.

5.3 Geology and Soils

The Geotechnical Assessment for the western portion of the existing Roy Point Cemetery was undertaken by Terratest (2012). Refer to this study in **Appendix F1**.

A Geotechnical Assessment was undertaken for a portion of the site i.e. east and south of the existing Roy Point Cemetery, by Geo-Caluzza Consulting Engineers (2013). Refer to this study in **Appendix F2**.

The findings of the Geotechnical Assessment by Terratest (Pty) Ltd for the portion of the site west of the existing Roy Point Cemetery is discussed below:

The general geology of the site is similar to the remaining extent as it is underlain by a mantle of transported and residual soils which overlie weathered sandstone bedrock of the Vryheid Formation.

The main soil types encountered during the assessment were as follows:

- The site was overlain by a mantle of colluvium which was described as dry, orange greyish brown, generally loose, fine to medium grained sands containing roots. This layer occurs from the surface level to depths between 0.2 and 0.6m below existing ground level;
- Underlying the colluvium was a horizon of residual soils developed from the complete in situ weathering of sandstone. This horizon comprised slightly moist, light orange brown, streaked light grey, loose to medium dense, medium grained, silty sands and clayey silt. This layer also comprises ferruginised nodules in places;

-
- Ferruginous horizon / pedogenic soils which have been chemically altered as a result of fluctuations in water levels were encountered across the site. These soils comprise dry to slightly moist, light yellowish brown, reddish brown and black, very loose to loose and medium dense in places, very fine grained gravelly sand with gravel components comprising ferruginous nodules. The occurrence of the pedogenic soils / ferruginous horizon indicates the periodic presence of groundwater at this level across the site; and
 - The underlying bedrock was described as orange brown to greyish brown, highly to completely weathered, generally very soft rock strength, medium grained sandstone.

The findings of this study by Geo-Caluza (2013) are discussed below.

The Geological Map Series, 2728 Frankfort to scale 1:250 000 and field observations indicated that the area within which the proposed extension is to be located, is underlain by a mantle of transported and residual soils which overlie weathered sandstone bedrock of the Vryheid Formation. The main soil types encountered in the test pits during the site investigation and their detailed descriptions are presented below:

a) Transported Material

The site is overlain by a mantle of transported material, mainly colluvium. The colluvial soils occur from the surface to average depths between 0.1 and 0.5m below existing ground level. This layer is described as dry to slightly moist, greyish brown to light brown, generally very loose to medium dense, fine to medium grained silty sands containing roots. This layer is consistent across the site and was encountered in all test pits put for investigation.

The colluvial soils generally overlie a layer of ferruginous horizon / pedogenic soils which have been chemically altered as a result of fluctuations in water levels were encountered across the site. The ferruginous horizon comprise slightly moist, orange brown to light yellowish brown and reddish brown to black, loose and medium dense, fine to medium grained gravelly sand to slightly clayey silty gravel, with gravel components comprising ferruginous nodules. This horizon is well cemented in other areas and is as hard as bedrock, TLB machine used for investigation refused on this horizon.

The occurrence of the pedogenic soils / ferruginous horizon indicates the periodic presence of groundwater at this level across the site. In general, this gravelly layer extends to depth ranging between 0.6 and 1.6 metres below existing ground level.

b) Residual Sandstone and Weathered Sandstone Bedrock

Underlying the transported material is a horizon of residual soils developed from the complete in situ weathering of sandstone. This horizon comprised slightly moist, light brown to yellowish brown, streaked dark reddish brown, loose to medium dense, fine to medium grained, silty sands and clayey silt.

The residual soils occur to depths ranging between 0.45 and 1.5m below existing ground level. This layer also comprises ferruginised nodules in places. The residual soils are underlain by

weathered sandstone bedrock of the Vryheid Formation that occurs down to depths between 0.45 and 1.3m below existing ground level. This sandstone bedrock is described as yellowish orange brown, speckled and mottled white and dark greyish brown, highly to completely weathered, generally very soft rock strength.

5.4 Groundwater

As per the Geotechnical Assessment undertaken by Geo-Calufa Consulting Engineers (Pty) Ltd, groundwater seepage was observed in IP1 at 1.6m and IP11 at 1.0m below existing ground level, respectively. However, during periods of prolonged rainfall, particularly during the summer season, a marked increase in the occurrence and magnitude of groundwater seepage flow can be anticipated.

Perched groundwater flows at the transported soil / residual soil interface are likely to become more prolific in the rainy months. This is characterised by the ferruginous horizon. It is an indication of shallow groundwater seepage levels that can be expected during and after wet periods. Any cuttings that are taken below this horizon are likely to experience groundwater seepage problems during the wet summer season. Is it therefore a recommendation that this area be avoided for locating graves. It should be kept as an open space area.

As per the Geotechnical Assessment undertaken by Terratest (2012), no ground water seepage was observed in any of the test holes excavated during investigation. However, during periods of prolonged rainfall, particularly during the summer season, a marked increase in the occurrence and magnitude of groundwater seepage flow can be anticipated. Perched groundwater flows at the transported soil / residual soil interface are likely to become more prolific in the rainy months. This is characterised by the ferruginous horizon. It is an indication of shallow groundwater seepage levels that can be expected during and after wet periods. Any cuttings that are taken below this horizon are likely to experience groundwater seepage problems during the wet summer season.

5.5 Regional Vegetation

The study area is situated within the Grassland Biome (Rutherford and Westfall, 1994), which is characterised by high summer rainfall and dry winters. Frost during winter and marked diurnal temperature variations are unfavourable for tree growth resulting in the Grassland Biome consisting mainly of sweet and sour grasses and plants with perennial underground storage organs, such as bulbs and tubers. Trees are restricted to specialised habitats such as rocky outcrops or kloofs. The majority of the non-grassy herbaceous species (forbs) remain dormant during winter or very dry seasons, and re-sprout during early summer if rains are sufficient. Rare and Threatened species in grasslands are mostly small, very localised and visible for only a few weeks in the year when they flower (Ferrar and Lötter, 2007). The majority of Rare and Threatened plant species in the summer rainfall regions of South Africa are restricted to high-rainfall grasslands, making this the biome in most urgent need of conservation (Mucina and Rutherford, 2006).

The biomes within South Africa are divided into smaller units known as vegetation types. Both Mucina and Rutherford (2018) on a national scale, and Scott-Shaw and Escott (2011) in KwaZulu-Natal place the study site within the KwaZulu-Natal Highland Thornveld vegetation type). The Northern KwaZulu-Natal Moist Grassland occurs approximately 1.3km to the southwest.

According to Mucina and Rutherford (2006) KwaZulu-Natal Highland Thornveld occurs as a series of patches within the central-northern regions of KwaZulu-Natal province at altitudes ranging from 920 to 1440m above sea level. It occurs within the undulating plains, hilly landscapes and broad valleys, in both dry valleys and moist upland. It is characterised by tall tussock grassland usually dominated by *Hyparrhenia hirta*, with occasional savannoid woodlands with scattered *Vachellia sieberiana* var. *woodii* and in small pockets also with *V. karroo* and *V. nilotica*. According to Mucina and Rutherford (2006), KwaZulu-Natal Highland Thornveld is classified as Least Threatened with more than 16% of the region transformed for cultivation, urban developments, and road infrastructure. Invasions by alien plant species such as *Opuntia*, *Eucalyptus*, *Populus*, *Acacia* and *Melia* pose a threat to the remaining natural areas, however, the greatest threat to the remaining natural areas of this unit is bush encroachment. The target is to conserve 23% of the area covered by this vegetation unit but currently only 2% is statutorily conserved in Nature Reserves.

5.6 Conservation targets and Status for Vegetation Types in KwaZulu-Natal

Biodiversity targets refer to quantitative estimates of a feature such as a vegetation type that should be incorporated into a regional plan to conserve that feature adequately. The biodiversity targets for KwaZulu-Natal were derived from the following sources:

- National targets for vegetation types of South Africa (Desmet and Cowling, 2004; Mucina and Rutherford, 2006; 2012; 2018),
- Provincial targets for vegetation types (Jewitt, 2011),
- Targets for forest (Berliner, 2005), and
- Targets from the National Protected Area Expansion Strategy (DEA, 2010).

The provincial conservation agency (Ezemvelo KwaZulu-Natal Wildlife [EKZNW]) calculated the conservation status of vegetation types in KwaZulu-Natal by using the latest provincial vegetation maps, accumulated transformation maps, and biodiversity conservation targets. The vegetation types were used as coarse filter surrogates for many species that do not have explicit species targets in conservation planning (Jewitt, 2011). The conservation status of vegetation types in KwaZulu-Natal was determined by comparing the amount of natural habitat remaining for a vegetation type in the province with the biodiversity conservation target of the vegetation type. **Table 18** shows the thresholds used by EKZNW to derive the conservation status of vegetation types.

The province supports 101 vegetation types of which 19 are Critically Endangered, 16 are Endangered, 16 are Vulnerable and 50 are Least Threatened (Jewitt, 2011). The study area falls within the KwaZulu-Natal Highland Thornveld, which is currently listed as Least Threatened in KwaZulu-Natal according to EKZNW (Jewitt, 2011).

Table 18: Conservation status thresholds for KZN (Jewitt, 2011)

Threshold	Conservation Status
Remaining natural habitat <= the biodiversity target	Critically Endangered
Remaining natural habitat <= biodiversity target +15%	Endangered
Remaining natural habitat <= 60% of original area of ecosystem	Vulnerable
Remaining natural habitat > 60% of original area of ecosystem	Least Threatened

5.7 Listed Ecosystems

The National Environmental Management: Biodiversity Act (Act No. 10 of 2004) (NEMBA) provides for listing threatened or protected ecosystems, in one of four categories: Critically Endangered (CR), Endangered (EN), Vulnerable (VU) or Protected (Pr) (DEA, 2011). The main purpose of listing threatened ecosystems is to reduce the rate of ecosystem and species extinction and includes the prevention of further degradation and loss of structure, function and composition of threatened ecosystems. Threatened terrestrial ecosystems identified in the NEMBA were delineated using the following:

- The South African Vegetation Map (Mucina and Rutherford, 2006; SANBI, 2012 [beta update]);
- National forest types (Von Maltitz *et al.*, 2003);
- Priority areas identified in a provincial systematic biodiversity plan; or
- High irreplaceability forest patches and clusters identified by the Department of Agriculture, Forestry and Fisheries (DAFF; Berliner, 2005).

Extensive stakeholder engagement and the best available science formed the basis of the criteria used to identify threatened terrestrial ecosystems listed in the NEMBA. The criteria for thresholds for Critically Endangered, Endangered and Vulnerable ecosystems are summarised in **Table 19**.

Table 19: Criteria used to identify threatened terrestrial ecosystems (DEA, 2011)

Criterion	Critically Endangered	Endangered	Vulnerable
A1: Irreversible loss of natural habitat	Remaining natural habitat < biodiversity target	Remaining natural habitat < biodiversity target + 15%	Remaining natural habitat < 60% of original area
A2: Ecosystem degradation and loss of integrity	> 60% of ecosystem significantly degraded	> 40% of ecosystem significantly degraded	> 20% of ecosystem significantly degraded

C: Limited extent and imminent threat	-	Ecosystem extent < 3000ha and imminent threat	Ecosystem extent < 6000ha and imminent threat
D1: Threatened plant species associations	> 80 threatened Red List plant species	> 60 threatened Red List plant species	> 40 threatened Red List plant species
F: Priority areas for meeting explicit biodiversity targets as defined in a systematic biodiversity plan	Very high irreplaceability and high threat	Very high irreplaceability and medium threat	Very high biodiversity and low threat

The implications are that any development in listed ecosystems will require the following:

- Planning: linked to the requirement in the NEMBA for listed ecosystems to be taken into account in municipal Integrated Development Plans (IDPs) and Spatial Development Frameworks (SDFs);
- Environmental Authorisation (EA): in terms of the EIA Regulations, 2014 (as amended) promulgated under the NEMA;
- Proactive management: in terms of the NEMBA; and
- Monitoring and reporting: in terms of the NEMBA.

The EIA Regulations include three lists of activities that require EA:

- Listing Notice 1: activities that require a Basic Assessment (BA) (GNR326 of 2014);
- Listing Notice 2: activities that require Scoping and Environmental Impact Report (EIR) (GNR325 of 2014); and
- Listing Notice 3: activities that require a BA in specific identified geographical areas only (GNR324 of 2014).

Activity 12 in Listing Notice 3 relates to the clearance of 300 square metres (0.03ha) or more of vegetation within any Critically Endangered or Endangered ecosystem listed in terms of Section 52 of NEMBA. This means any development that involves loss of natural habitat in a listed Critically Endangered or Endangered ecosystem is likely to require at least a BA in terms of the EIA Regulations.

The proposed development site is not located within any of the ecosystems listed in terms of Section 52 of NEMBA (DEA, 2011). Should listed activities from Listing Notice 2 (GNR 984) of the EIA Regulations of 2014 (as amended) be triggered by the proposal development, a S&EIR process takes precedence over a BA process. As indicated in **Section 2.1.2**, Listed Activity 15 of Listing Notice 2 (GNR 984) of the EIA Regulations 2014 (as amended) is triggered and therefore a S&EIR process will be undertaken for the proposed extension of the Roy Point Cemetery development.

5.8 The KwaZulu-Natal Systematic Conservation Planning

A Provincial Conservation Plan aims to build on national plans at the provincial level. It is intended to be used by all who are involved in land-use and development planning, most particularly those specialists who need a comprehensive source of biodiversity information. EKZNW developed the KwaZulu-Natal Systematic Conservation Plan (KZNSCP; Jewitt, 2011), which has subsequently been replaced by the KwaZulu-Natal Biodiversity Sector Plan (KZN BSP) to guide the long-term conservation of biodiversity in the province (Escott *et al.*, 2016).

The GIS layer lists land areas containing high biodiversity using irreplaceability measures. An irreplaceability measure quantifies the contribution of a particular site to achieve representation biodiversity targets (Ferrier *et al.*, 2000).

The KZN BSP provides a spatial representation of land and coastal marine area required to ensure the persistence and conservation of biodiversity within KZN, reflected as Critical Biodiversity Areas (CBA) and Ecological Support Areas (ESA). The Plan has been produced as a tool for: (i) guiding protected area expansion priority areas and identification of stewardship sites and (ii) informing all other economic sector' strategic spatial planning processes with the intention of ensuring more sustainable development in KZN. It also informs other internal EKZNW strategic processes such as alien clearing programme prioritisation, informs District Conservation Officer priorities, and informs the decisions and nature of response to development applications by EKZNW's Integrated Environmental Management Unit.

The categories included in the KZN BSP map are as follows (Escott *et al.* 2016):

- **Formal Protected Areas (PAs):** Area's identified for formal protection under the National Environmental Management: Protected Areas Act, 2003 (Act 57 of 2003, NEMPAA);
- **CBA Irreplaceable:** Planning units (PU) that represent the only localities for which the conservation targets for one or more of the biodiversity features contained within can be achieved i.e. there are no alternative sites available. The distribution of the biodiversity features is not always applicable to the entire extent of the PU, but is often confined to a specific niche habitat e.g. a forest or wetland reflected as a portion of the PU in question. In such cases, development could be considered within the PU if special mitigation measures are put in place to safeguard the feature(s) and if the nature of the development is sympathetic to the conservation objectives. However, this is site and case dependant;
- **CBA Optimal:** Indicates the presence of one (or more) features with a very high irreplaceability score. In practical terms, this means that there are alternate sites within which the targets can be met, but there are not many. The site represents the most optimal area for choice in the systematic planning process, meeting both the target goals for the features concerned, as well as a number of other guiding criteria such as high agricultural potential area avoidance, or falls within a macro-ecological corridor. Again, development could be considered within the PU if special mitigation measures are put in place to safeguard the feature(s) and if the nature of the development is sympathetic to the conservation objectives. This is also site and case dependant;

-
- **ESA:** Areas that are required to support and sustain the ecological functioning of Critical Biodiversity Areas (CBAs). For terrestrial and aquatic environments, these areas are functional but are not necessarily pristine natural areas. They are however required to ensure the persistence and maintenance of biodiversity patterns and ecological processes within the CBAs, and which also contributes significantly to the maintenance of Ecological Infrastructure (EI). ESAs are further split into ESA: Species Specific, ESA: Protected Area Buffers, and ESA: Corridors; and
 - **Natural Biodiversity Area:** Areas identified as Natural Biodiversity Areas (NBAs) represent the natural and/or near natural environmental areas (i.e. Not 100% modified either by tillage or construction) not identified within the optimisation software output. It is important to note that whilst these areas are not highlighted in MINSET and MARXAN analysis, this lack of selection should not be misinterpreted as reflecting areas of no biodiversity value. Whilst it is preferred that development be focussed within these areas, development still has to be conducted in an informed and sustainable manner. Important species and Ecosystem Services can still be associated with these Planning Units (PUs) and should be accounted for in the Environmental Impact Assessment (EIA) process.

According to the KZN BSP, the south-western portion of the study area occurs within CBA Optimal, which is associated with the Ngagane River system and wetlands, as well as threatened millipede species that could potentially occur in the area (**Figure 5**). *Doratogonus minor* (Minor Black Millipede) is currently listed as Endangered and occur in sub-tropical dry grassland.

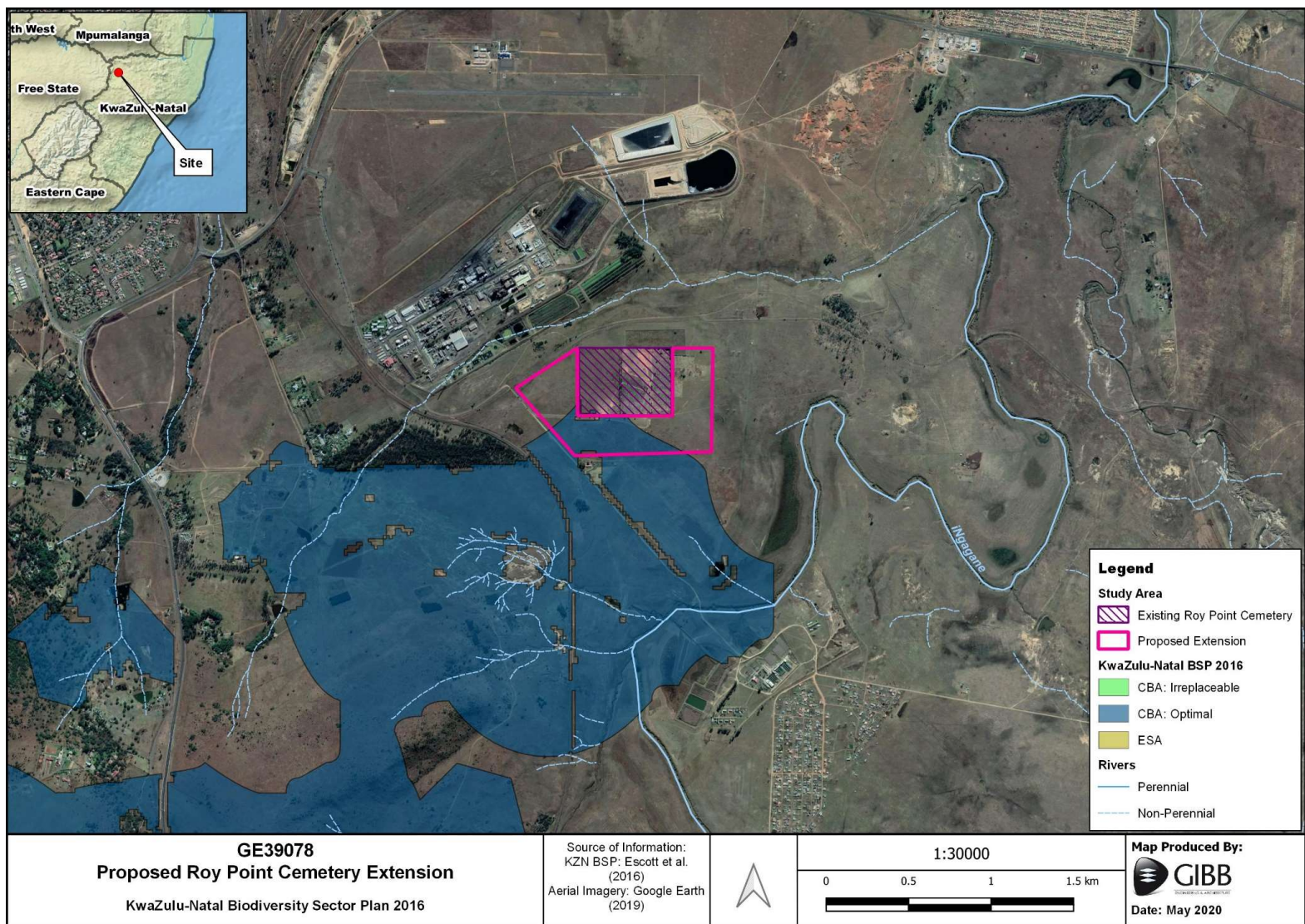


Figure 5: The study area in relation to terrestrial CBAs according to the KZN BSP

5.9 Study site vegetation

The vegetation in the study area comprised mostly disturbed, open grassland, with a few large trees planted within the existing cemetery, farmstead in the north-eastern corner of the site, and along the roads. The study area was largely disturbed through grazing, footpaths, formal and informal roads, the fenced farmstead, and dumping of building rubble in places. Such disturbances in turn make the environment susceptible to alien plant invasions. Such invasions in the study area occurred mostly around the fence lines, farmstead and in severely overgrazed areas. The study area was divided into two main categories based on the character of the vegetation, namely irreversible modified (transformed) and Disturbed Dry Grassland. **Photoplate 1** shows the vegetation categories defined within the study area.



Photo Plate 1: Disturbance within the study area included roads, mowed areas, fence lines, building rubble, and grazing domestic animals

Disturbed Dry Grassland

Most of the study site comprised, dry, open natural grassland with sparsely scattered woody shrubs, as well as a poorly developed herbaceous layer. The grassland was generally disturbed with overgrazing evident in most areas. The grass component comprised a mixture of tall and short species with bare ground occurring in places. Ground cover varied between 80% and 60% in total with vegetation cover estimated at about 60% grasses, 20% herbs, 0.5% trees and woody species.



Photo Plate 2: Disturbed dry grassland within the study area

An Ecological Impact Assessment (encompassing the floral, faunal and avifaunal assemblages on site) has been undertaken and the detailed impact assessment will be undertaken in the EIR phase. An Ecological Sensitivity Map will be presented to illustrate the areas on site having high, medium and low ecological importance and sensitivity.

5.10 Hydrology and Wetlands

The National Freshwater Ecosystem Priority Areas (NFEPA) project represents a multi-partner project between the Council for Scientific and Industrial Research (CSIR), the South African National Biodiversity Institute (SANBI), the Water Research Commission (WRC), the Department of Human Settlements, Water and Sanitation (DHWS), the Department of Environmental Affairs (DEA), the Worldwide Fund for Nature (WWF), the South African Institute of Aquatic Biodiversity (SAIAB) and South African National Parks (SANParks). More specifically, the NFEPA project aims to:

- Identify Freshwater Ecosystem Priority Areas ('FEPAs') to meet national biodiversity goals for freshwater ecosystems; and
- Develop a basis for enabling effective implementation of measures to protect FEPAs, including free-flowing rivers.

The first aim utilises systematic biodiversity planning to recognise priorities areas for conserving South Africa's freshwater ecosystems, taking into consideration equitable social and economic development. The second aim encompasses a national and sub-national constituent: The national component aims to align DWA and DEA policy mechanisms and tools for managing and conserving freshwater ecosystems. The sub-national component aims to use three case study areas to demonstrate how NFEPA products should be implemented to influence land and water resource decision-making processes at a sub-national level. The project further aims to maximize collaborations between other national level initiatives such as the National Biodiversity Assessment (NBA) and the Cross-Sector Policy Objectives for Inland Water Conservation.

From the NEFPA dataset, it is identified that the proposed extension of the existing Roy Point Cemetery occurs in close proximity to two non-FEPA wetlands, one to the north of the cemetery and the other to the south. The non-FEPA wetland to the south forms a part of the Ngagane River, which occurs approximately 550m away from the southern tip of the eastern boundary of the site. The non-FEPA wetland is adjacent north of the site. No NFEPA wetlands occur within 500m of the proposed development. The closest NFEPA wetland occurs approximately 900m north-west of the cemetery. Refer to **Figure 6** for the proximity of the FEPA and non-FEPA wetlands to the site.

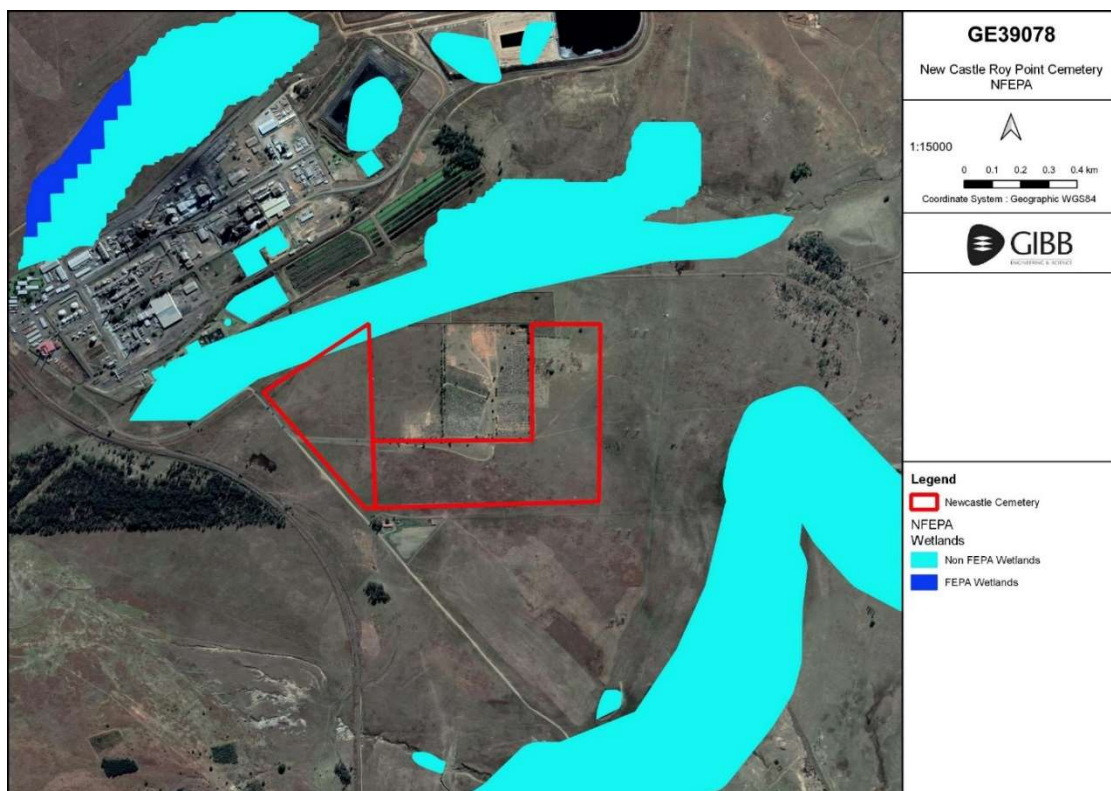


Figure 6: FEPA and non-FEPA wetlands in proximity to the site

5.11 Socio-Economic Environment

5.11.1 Demographics of Newcastle

According to the recent Community Survey (2016) conducted by Statistics SA, Newcastle Local Municipality (KZN252) remains the highest contributor in terms of population growth within Amajuba District Municipality. As of 2016, the population of Newcastle is recorded at 389 117 people, thus marking a 7.1 % increase (25 881 people) over a 5-year period from the year 2011 (363 236 people). This means that on average, Newcastle has experienced a 1.42% annual growth rate, which translates to 5 176 people per year. Newcastle has also experienced a significant increase in the total youth proportion of the population.

In terms of the wider KwaZulu-Natal Province, Newcastle ranks 2nd as the local municipality with the highest number of people when compared to other local municipalities, with the highest being the Msunduzi Local Municipality.

The population of Newcastle is spread unevenly over 34 wards as per the outcomes of a delimitation process by the Demarcation Board. The population is multiracial comprising of African, Coloured, Indian and White race groups, as well as, a small number of “other / unspecified” residents being of other descent.

Newcastle’s population is relatively young with 46% of the total population being younger than 19 years of age, and the age group between 20 and 34 years accounting for 27% of the of the total population. Collectively the youth in Newcastle (0 – 34 years) makes up 71% of the total population, and this places immense pressure on the provision of educational facilities, social welfare, health services and the stimulation of the economy to provide job opportunities and economic development. There is a relatively high dependency ratio among the young population. The emigration of the youth and economically active population implies an increasing need for both recreational and educational facilities (i.e. shopping malls and institutes of higher learning) locally, and places more pressure on the need for employment opportunities.

Regarding gender distribution within the Newcastle municipal area, 52% of the total population is female, while males account for the remaining 48%. This observed trend in gender distribution conforms to the national norm. Due to such, there is a need for programmes specifically targeted towards gender equity. In response to this, Newcastle Municipality has prioritized gender issues as part of its Special Programmes. It is imperative that specific projects and programmes aligned to the National Program should be developed and rolled out in line with the municipal program of action.

The population growth rate in Newcastle is in an upward trajectory with the majority of the growth occurring mainly in the eastern areas – around the Madadeni and Osizweni Townships. These are largely underdeveloped areas relative to the western areas, and they are occupied mainly by majority low income and poor communities. The current population movement patterns in the region suggest that the urbanization phenomenon continues, characterised by the natural growth rate, breakdown in extended families and immigration being the main drivers

of growth. Immigration arises mainly from perceived urban opportunities and prospects for a better life, poor access to services and lack of employment opportunities in the rural hinterland, and general decline in employment opportunities in the agricultural sector. Over the last ten years, Newcastle's agricultural region has registered a net decline in both production and employment opportunities, hence the migration of people from Newcastle to areas that offer employment opportunities. A closer look into the population figures down at ward level shows that the average population size per ward is 10 683 people.

The HIV and AIDS pandemic has had a profound impact on both the quality of life of communities and families and on the economy. A number of initiatives have been implemented through the National Department of Health to combat the current epidemic, however major challenges still remain. Within Newcastle, the number of HIV positive persons has increased at an average annual growth rate of 2.9% during the period 2000 - 2010, bringing the percentage of the population with HIV to almost 17% of the total population. The number of AIDS related deaths has increased at an average annual growth rate of 8.7% during the period 2000 – 2010, with AIDS deaths accounting for about 62% of total deaths in the municipality. This highlights the severity of the current situation and the need for interventions that target and attempt to address these HIV/AIDS challenges.

Since 2001, significant progress has been made with regards to the improvement of the levels of literacy in Newcastle. In terms of the total number of people who did not have any formal education, there has been a significant decline from 11.33% (37 738) in 2001 to 4.75% (17 270) in 2011. In terms of gender, the situation remains unchanged. In 2001 the highest concentration of illiteracy within Newcastle was amongst the female population at 54.58% (20 598) as compared to the male population at 45.42% (17 140). In the year 2011 the highest concentration of illiteracy is amongst the female population at 59.21% (10 149) as compared to the male population at 40.49% (7 121). This implies that illiteracy levels are increasing amongst the female population whilst they decrease amongst the male population. The illiteracy gap in terms of gender remains at 3 028 females more than the males.

In terms of the number of people with access to primary education as the highest level of education (Grade 0 – Grade 9), there has been a decreased since 2001. In 2001 the number of people who had access to primary education as the highest level of education constituted 52.08% (173 404) of the total population. This decreased in the year 2011 to 40.11% (145 730). In terms of the people with secondary education (Grade 10 – Grade 12) as the highest level of education, Newcastle has shown some progress. In the year 2001 the number of people with secondary education as the highest level of education constituted 27.99% (93 229) of the total population. This increased in the year 2011 to 35.66% (129 522). The assumption made regarding the observed decrease in primary education and the increase in secondary education is that the majority of the population that was surveyed as having access to primary education in 2001 have progressed and went on to secondary school in 2011.

There has been a drastic increase in the number of people with access to tertiary education as the highest level of education from the period 2001 to 2011. In 2001 the number of people who had access to tertiary education as the highest level of education constituted 1.81% (6 040) of

the total population whereas in 2011 they constitute 3.35% (12 177) of the total population. In basic terms, the amount has double from what it was in the year 2001. In terms of the number of people with access to higher post graduate education as the highest level of education, we have also seen an increase. In 2001 the number of people with access to higher post graduate education as the highest level of education constituted 3.15% (10 497) of the total population whereas in 2011 this increased to 4.05% thus marking a 0.9% increase at a growth rate of 0.09% increase annually. However, it is envisaged that the figure pertaining to the number of people with access to higher education as the highest level of education could rise drastically if some tertiary institutions were to be introduced within the confines of the Newcastle Local Municipality. This would also aid in the provision of employment opportunities and help in retaining highly qualified labour within Newcastle.

Newcastle Municipality has a generally low income population with a large number of people living in abject income poverty as they do not have a reliable source of income. The majority of the households income is between R9 601 – R19 600 per annum (16 017 households) closely followed by households who earn between R19 601 – 38 200 per annum (15 638 households). Dependence on grant funding such as social welfare grants and pensions is also relatively high. As indicated in figure 6 above, the level of representation drops sharply as income brackets increases. As a result, the levels of affordability are generally low while dependency on social grants is high. 22 000 people applied to be registered on the indigent list for the municipality in 2010 and, as of July 2014 the figure had dropped drastically to 18 415, marking a 16.3% decrease. However, based on figures from the ‘Summary of Registered Indigent Account Holders’ (July 2014 – June 2015), as of January 2015, there has been a slight increase in the list to 18 973, marking an increase by 13.3%.

Furthermore, there has been a 7% increase (6 075) in the number of households within Newcastle from 84 272 in 2011 to 90 347 in 2016, with the average household size remaining constant at 4.3 people per dwelling unit. In relation to other local municipalities within the KwaZulu-Natal Province, in the year 2011, Newcastle Local Municipality was ranked 3rd after the Msunduzi and uMhlathuze Local Municipalities respectively. However, recent statistical figures reveal that Newcastle Local Municipality has dropped to 4th place after the Msunduzi, uMhlathuze, and KwaDukuza Local Municipalities respectively. In terms of the 2nd and 3rd ranked local municipalities, the reason for growth in the number of households without any significant growth in the population thereof may be attributed to a general decrease in the average household size thereof, from 3,9 to 3,6 people, and 3,3 to 3,0 people per household respectively.

There has been a 23.04% decline in the level of unemployment within Newcastle, from 87 619 (60.48%) in 2001 to 37 686 (37.44%) in 2011. In terms of unemployment by gender, the highest concentration is amongst the female population. With regards to formal employment by sector within Newcastle Municipality, trade/retail is the highest employer of the population at 8 888 as of July 2012, followed by Government services at 18 324. Government services as an employment sector is closely followed by manufacturing at 6 419, and subsequently finance at 5 375. As of 2013 the Gross Domestic Product (GDP) of Newcastle was recorded as occupying 80.20% of the total GDP (0.7%) generated by Amajuba District within the KwaZulu-Natal

Province. In terms of the Human Development Index (HDI – the composite measure of life expectancy, education, and income used to measure human development), Newcastle is currently sitting at 0.57 which is deemed by the United Nations Development Programme as being medium human development index. Regarding the levels of poverty, Newcastle has also experienced a decrease from 56.0% in 2002, 51.0% in 2006 and 44, 4% in 2012. The annual income per capita of Newcastle Municipality is currently sitting at R2 264, thus meaning that the majority of individuals within Newcastle earn R2 438,66 per month hence falling above the global poverty line of \$1,25 per day based on the dollar – rand exchange rate (Newcastle Local Municipality (2017/18 – 2021/22)).

Of the total population of Newcastle, 61% are within the working age bracket (16 - 64 years). Approximately 55% of those within the working age bracket are not-economically active. In terms of the strict definition of unemployment (those who are unemployed, and have given up looking for employment), 29.2% of the labour force (those willing and able to work) are classified as unemployed. This is in line with the district unemployment rate of 29.7%, yet higher than the provincial average of 23.2%. Of those employed, 79.7% are employed within the formal market, while the remaining 20.3% are employed in the informal market.

5.11.2 Visual

According to the web-based DEA Screening Tool, a Landscape/Visual Impact Assessment (VIA) was identified as a Specialist Study for inclusion in the Draft EIR. At the Pre-Application Meeting with KZN EDTEA on 26 March 2020, the Department requested a motivation as to why a Landscape/VIA will not be undertaken at the EIR Phase. It is the EAP's opinion that a Landscape/VIA is not required based on the motivation below (*refer to photographic evidence of the site below*):

The site is flat and consists of grasslands over a large extent, including the areas surrounding it. Besides Karbochem (industrial) (*which is adjacent north of the site and the existing Roy Point Cemetery*) there are no other sensitive receptors that overlook the site for the extension of the cemetery. GIBB will further investigate the potential impacts on the Roy Point Housing Development. Potential fencing around the site for the extension of the cemetery and the planting of trees around the boundary fence would provide visual screening to Karbochem.

As the site occurs adjacent to the existing Roy Point Cemetery, extension of the cemetery on the application site will therefore be a compatible land use. The new graves at the application site will be at, or near the ground surface (*not higher than 1.1m for tombstones*) and the site is very flat. Cemeteries are therefore not a visually intrusive land use (*e.g. as opposed to a development with tall/dense buildings*), or a development that is visually illuminated causing light intrusion at night.

	
<p>1. Karbochem (industrial land use) adjacent north of the site)</p>	<p>2. The site is flat with grasslands. Ridge occurs north of the site providing visual screening</p>
	
<p>3. Ridge occurring on the south-western portion of the site</p>	<p>4. East of the site is forested area consisting of alien invasive plant species</p>
	
<p>5. Kilbarchan residential area is 5.8km south of the site. Site is flat and new graves will be at the ground surface and tombstones will not be higher than 1.1m.</p>	<p>6. Land use to the west of the site is vacant land</p>

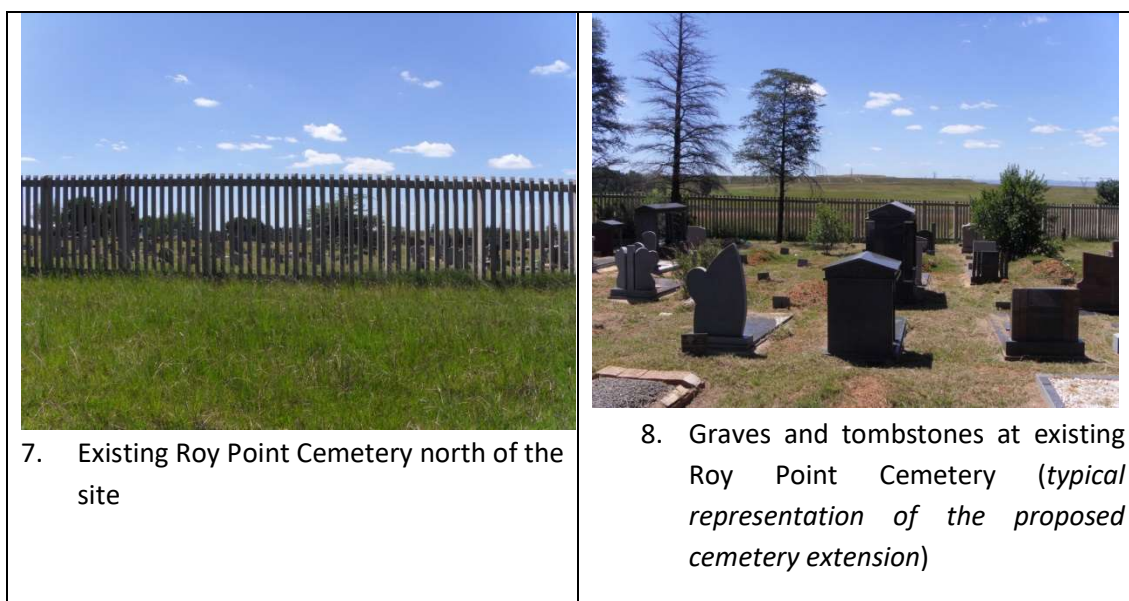


Photo plate 3: Existing land uses surrounding the site and site photos

5.11.3 Noise Generation

The noise levels on the site are relatively low, as majority of the surrounding areas are undeveloped. The closest land use i.e. Karbochem Industrial is not a generator of noise. There is no traffic noise on Karbochem Road which is the main access road to site. Possible sources of noise may occur from the existing Roy Point Cemetery during funerals.

5.11.4 Air Quality

The site is currently vacant and vegetated with grassland. Therefore, there is no dust entrainment on site. Karbochem Road is tarred and therefore not a source of dust entrainment.

5.11.5 Traffic Patterns

The site is accessible via Karbochem Road which is not a highly trafficked road and used mainly by the patrons to the existing Roy Point Cemetery and the Carbochem chemicals factory.

Traffic impacts and considerations will be further addressed in the forthcoming Draft EIR.

5.11.6 Cultural and Heritage Resources

(a) Palaeontology

In terms of the SAHRIS mapping system of the Paleontological Sensitivity, the site has a very high paleontological sensitivity. A field assessment and protocol for finds is required. Furthermore, as per the findings of the web-based DEA Screening Tool, a Paleontological Impact Assessment is required. In light of these requirements, a Paleontological Impact Assessment will be undertaken at the EIR phase. The findings of this study will be included in the forthcoming Draft EIR that will be available for public review and comment.

(b) Archaeology and Cultural Heritage

In terms of the National Heritage Resources Act, 1999 (Act No. 25 of 1999), a development area larger than 0.5 hectares requires that a Heritage Impact Assessment (HIA) is conducted prior to the development, thereof. A Heritage Specialist will therefore, be required to assess the impact of extension of the existing Roy Point Cemetery on heritage resources, if any.

A Phase 1: Archaeological and Cultural Heritage Impact Assessment will be undertaken at the EIR phase to determine the archaeological, historical and cultural importance of the site. The findings of this study will be included in the forthcoming Draft EIR that will be available for public review and comment.

If any heritage resources are affected by potential destruction, damage, relocation etc., the subsequent heritage permit will be required, by Amafa KwaZulu-Natal (Provincial Heritage Authority of KZN).

(c) Built Environment

There are no historic structures on the site earmarked for the proposed extension of Roy Point Cemetery.

6 *Potential Key Environmental Issues*

The over-arching objective of the Scoping Phase is to identify, record and describe the potential environmental issues associated with the proposed project. This enables the Specialist Studies to be clearly focused on aspects of significant concern. It also provides a framework for the assessment of the impacts that the proposed project will have on the environment, and of the impacts the environment will have on the proposed project. Based on inputs from the project team, stakeholders, I&APs and specialists, the potential environmental (biophysical, social and cultural) impacts have been identified as possible associated impacts as a result of the proposed development and will be further investigated during the EIR phase of the process.

6.1 **Biophysical Environment**

6.1.1 **Terrestrial Ecology**

A Terrestrial Ecological Assessment has been undertaken (Appendix F3) for the proposed project. The following preliminary key issues have been identified, related to the construction and operation of the project on the receiving floral and faunal environment:

6.1.1.1 **Floral Environment**

- Destruction of indigenous vegetation and increased potential of spread of alien plant species, as a result of clearing of the site for the proposed burials; and
- Loss of habitat and related flora (including species of conservation concern) through physical vegetation clearing and other construction activities.

6.1.1.2 **Faunal Environment**

- Destruction of faunal habitat and death or disturbance to fauna of conservation concern, as a result of clearing of the site for construction of roads and footpaths and burials;
- Disturbance to sensitive habitat, due to construction activities;
- Disturbance to fauna, due to construction activities;
- Impact on surrounding habitats and species;
- Increased disturbance to natural areas and destruction of habitat refugia, due to removal of islands of vegetation and increased human activity during the operational phase; and
- Habitat fragmentation and associated loss of ecological connectivity within and through the site, plus various ecological edge effects.

A detailed Ecological specialist study (avifaunal, fauna and flora), including a detailed site investigation has been undertaken (Appendix F3), the abovementioned impacts will be further assessed in the EIR Phase, as well as any other impacts that may be identified, and appropriate mitigation measures will be implemented to minimise the potential impacts, where relevant.

6.1.2 Freshwater Environment

6.1.1.2 Wetlands/Riparian Areas

A Wetland/Riparian Delineation and Functional Assessment has been included in Appendix F4. This study involved both ground-truthing and a desktop analysis to identify and delineate watercourses (wetlands) on the site and within the DWS regulated area for wetlands/water use (i.e. 500m radius of the development site).

The following preliminary key issues have been identified, related to the construction and operation of the project in the receiving environment:

- Loss of wetland habitat and displacement of sensitive species, compaction of soils, sedimentation, pollution and erosion as a result of the construction activities;
- Surface water contamination/pollution due to accidental spillage during construction and operational phases;
- Potential erosion of topsoil and concomitant siltation of watercourses, if not carefully controlled during the operational phase; and
- Potential contamination of freshwater resources as a result of pathogenic organisms released during corpse decomposition during the operational phase.

The above impacts will be further assessed at the EIR Phase, as well as any other impacts that may be identified, and appropriate mitigation measures will be implemented to minimise the potential impacts, where relevant.

6.1.1.3 Aquatic Environment

An Aquatic Impact Assessment will be undertaken at the EIR phase as per the requirements of the findings of the web-based DEA Screening Tool. As the study area occurs within 400m of the Ngagane River, an Aquatic Assessment will be undertaken to measure *in situ* water quality variables through sampling of the river. The integrity of the aquatic habitat will be established and the health of the watercourse(s) according to the aquatic macro-invertebrates present will be determined.

The following preliminary key issues have been identified, related to the construction and operational phases of the project on the receiving environment:

- Changes to stream characteristics because of loss or transformation of habitat;
- Degradation of water quality of the streams and rivers due to increase of sediment and silt and hydrocarbon spillage contaminating storm water flow;
- Degradation of aquatic and riparian habitats due to dumping of solid waste; and
- Loss of indigenous plant species local to the study area resulting in the encroachment of alien invasive plant species.

Through the Aquatic Impact Assessment that will be undertaken at the EIR phase, the above impacts will be further assessed, as well as any other impacts that may be identified, and

appropriate mitigation measures will be implemented to minimise the potential impacts, where relevant.

6.1.3 Geological Constraints

A Geotechnical Assessment was undertaken in 2012 (Terratest) for the western portion of the site and by Geo-Caluza Consulting Engineers in 2013 for the L-shaped portion of the site. Refer to **Appendix F1 and F2**.

The objectives of the Geotechnical investigations were to assess the soil/rock profiles to determine the subsurface soil conditions and provide comments on the excavatability, permeability and topography of the site. In addition, the study commented on groundwater seepage and potential geotechnical problems which may affect the site for use as cemetery.

The geotechnical investigation undertaken by Terratest for the western portion of the site indicated that the site is suitable for the cemetery purposes. The soil is highly to moderately workable. Due to the gently sloping and the relatively flat nature of the ground at Roy Point Cemetery, the ingress of surface water, groundwater and storm water run-off should be controlled as far as possible. Particular care needs to be exercised due to the majority of the soils underlying the site being described as very loose to loose in consistency.

The geotechnical investigation undertaken by Geo-Caluza Consulting Engineers for the L-shaped portion indicated that the site is ideal to suitable for the cemetery purposes. Similar to the western portion, the site is gently sloping and the relatively flat and therefore, the ingress of surface water, groundwater and storm water run-off should be controlled as far as possible. Special care needs to be exercised due to the majority of the colluvial soils underlying the site described as very loose to loose in consistency.

6.1.4 Impact on Soils

The following possible impacts on soil may result from the associated project:

- Loss of soil resources and related land capability as a result of soil contamination through spills/leaks from vehicles, machinery, construction waste, litter and use of portable ablution facilities; and
- Loss of soil resources and related land capability as a result of soil compaction from movement of vehicles/ machinery and soil erosion.

The above impacts will be further assessed at the EIR phase, and appropriate mitigation measures will be implemented to minimise the potential impacts, where relevant.

6.1.5 Geohydrology

A Geohydrological Assessment has been undertaken (Appendix F6). The aim of the Geohydrological Study was to identify the *in-situ* geohydrological conditions of the site, with key

focus on sensitive groundwater interaction areas. Subsequently, the potential impact on the groundwater aquifer, existing water users and surrounding water bodies will be determined.

The following preliminary key issues have been identified, related to the construction phase (*preparation of gravesites before burial*) of the project on the receiving environment:

- Disturbing vadose zone during soil excavations/activities;
- Land subsidence due to collapsible soils;
- Shallow groundwater table pollution (if perched groundwater conditions exist);
- Poor quality seepage from machinery used to excavate soils;
- Surface and shallow groundwater contamination from the following activities:
 - Equipment and vehicles are washed in the water bodies (when there is water);
 - Erosion and sedimentation of watercourses if graves are left open due to unforeseen circumstances (i.e. bad weather); and
 - Poor quality seepage from oxidised soils stockpiles.

The following preliminary key issues have been identified, related to the operational phase of the project on the receiving environment:

- Poor quality seepage from established graves at the cemetery; and poor quality seepage from domestic waste generated during funeral services;
- Shallow groundwater table pollution (if perched groundwater conditions exist);
- Existing groundwater users (if they exist) downstream of the site may be at risk if pathogens enter the groundwater aquifer;
- Poor quality seepage from vehicles parked at the site, during a funeral service;
- Degradation of water quality of streams situated downstream of development activities is likely to occur if domestic waste (generated during funeral services and not cleaned) accumulates in the drainage lines;
- Potential groundwater contamination as a result of poor stormwater drainage on site; and
- Induced poor quality percolation into the shallow water table if graves are not properly capped/constructed. Graves need to be constructed per Newcastle Cemetery Bylaws.

The above impacts will be further assessed in the EIR Phase, as well as any other impacts that may be identified, and appropriate mitigation measures will be implemented to minimise the potential impacts, where relevant.

6.1.6 Hydropedology

A Hydropedological Assessment has been undertaken to evaluate the hydropedological flow drivers, regimes and interaction areas of the site (Refer to Appendix F7). Water flow dynamics will be conceptualised to derive hydropedological flow buffer areas for wetlands identified in the area. Potential hydropedological impacts and mitigation measures to minimise the impacts will be provided in the assessment.

The following preliminary key issues have been identified, related to the construction phase (*preparation of gravesites before burial*) of the project on the receiving environment:

- Potential for infilling of wetlands inducing alternative flow paths;
- Disturbing natural hydrological and hydropedological flow paths and drivers;
- Sedimentation of nearby watercourses if sodic soils exist in the area;
- Short term impacts on the hydropedological processes supporting the wetlands;
- Soil compaction; and
- Soil erosion.

The following preliminary key issues have been identified, related to the operational phase of the project on the receiving environment:

- Land subsidence due to collapsible soils;
- Compaction of soils due to service and funeral vehicles;
- Alteration of natural hydropedological flow paths, or inducing new flow paths, leading to degradation of wetlands and associated wetland recharge and interflow soils. Severe disturbance could change Present Ecological Status (PES);
- Exposure of soils, leading to increased runoff from cleared areas and erosion of the wetlands, and thus increased the potential for sedimentation of the wetlands;
- Impacts on the hydropedological processes supporting the wetlands;
- Potential for soil compaction and erosion through vegetation clearance;
- Poor quality stormwater discharge, poor quality seepage and runoff from vehicles parked at the site may impact primary surface water receivers;
- Soil compaction; and
- Soil erosion.

The above impacts will be further discussed and assessed in the forthcoming Draft EIR as well as any other impacts that may be identified, and appropriate mitigation measures will be implemented to minimise the potential impacts, where relevant.

6.1.7 Hydrological Environment

A Hydrological Assessment has been undertaken to describe all surface water impacts and proposed mitigation measures (Refer to Appendix F5). A Surface Water Management Plan will be proposed, based on the downstream receptors and risks identified.

The following preliminary key issues have been identified by the specialist assessment, related to the construction and operational phases of the project on the receiving environment:

The construction impacts (preparation of gravesites before burial):

- Disturbing vadose zone during soil excavations/activities.
- Land subsidence due to collapsible soils.
- Poor quality runoff from machinery used to excavate soils.
- Surface water contamination and sedimentation from the following activities:

-
- Equipment and vehicles are washed in the water bodies (when there is water);
 - Erosion and sedimentation of watercourses if graves are left open due to unforeseen circumstances (i.e. bad weather); and
 - Alteration of natural drainage lines which may lead to ponding or increased runoff patterns (i.e. may cause stagnant water levels or increase erosion).

Operational phase:

- Poor quality seepage and runoff from vehicles parked at the site, during a funeral service.
- Degradation of water quality of non-perennial streams situated downstream of development activities is likely to occur if domestic waste (generated during funeral services and not cleaned) accumulates in the drainage lines.
- Potential surface water contamination as a result of poor stormwater drainage on-site.
- Increased erosion due to vegetation loss.
- Bank erosion and sedimentation of watercourses due to altered runoff patterns; and
- Poor quality runoff from open or flooded graves.

Through the Hydrological Assessment that will be undertaken at the EIR phase, the above impacts will be further assessed, as well as any other impacts that may be identified, and appropriate mitigation measures will be implemented to minimise the potential impacts, where relevant.

6.2 Social Environment

6.2.1 Change in Socio-economic Environment

There is the potential for socio-economic impacts to surrounding residential communities, both positive and negative. Some local labour will be required during the construction phase. Some potential socio-economic impacts include the following:

- Potential socio-economic impacts that may arise from the construction phase are as follows:
 - Job creation for the local community which may have a temporary positive impact on the local economy; and
 - Potential skills transfer to the local community who could benefit in the short-term through employment opportunities.
- Potential socio-economic impacts that may arise from the operational phase are as follows:
 - Potential availability of space for burials in Newcastle, thereby alleviating pressure on municipal resources; and
 - Potential for the local community to uphold their rights to religious and traditional burials.

The communities, whom these employment opportunities are earmarked for, will be determined and assessed during the EIR phase of the project, by means of a Socio-Economic

Impact Assessment. The exact nature and severity of these impacts will however be determined and assessed during the EIR phase for a holistic approach and informed decision making.

6.2.2 Visual Environment – Change in Visual Character

During the construction phase, there will be construction vehicles and activities at the site for the construction of the internal roads through the site and other infrastructure such as the perimeter fence, ablution block and other buildings. This impact will be temporary during the construction phase.

There are likely to be visual changes to the receiving environment associated primarily with the operational activities for grave stones related to the extension of the Roy Point Cemetery, related mainly to the removal of vegetation. Dust generation is also likely to increase during construction mainly by construction of internal roads through the site, ablution block and footpaths, however, this impact is expected to be limited in spatial and temporal extent. These impacts will be assessed in more detail during the EIR phase and mitigation measures will be recommended in the EMPr.

6.2.3 Increased Noise Generation

Noise may be generated during the construction phase, through increased construction traffic, and use of machinery thereby impacting on the nearby property owners and occupants. However, the impact will be of short duration and the extent will be limited to the site.

During the operational phase, there will be limited noise impacts associated with mourners attending burial services and additional traffic and human movement on site. Potential noise impacts will be assessed further and appropriate mitigation measures recommended in the EIR phase to assist with the efficient planning and roll-out of the project.

6.2.4 Decreased Air Quality

During the construction phase, there may be dust generation as a result of construction activities for internal roads, footpaths and an ablution block. There may be emissions from vehicles through an increase in dust fallout from cleared land, soil handling, and vehicle/machinery movement resulting in increased air pollution.

However, the impacts will be of short duration during the construction phase and the extent of the impact will be limited to the site.

During the operational phase, there will be burials taking place at staggered intervals as when corpses are brought in. The footprint of the burial plot is relatively small and a trench will be dug for the lowering of coffins into the trench. Considering the small footprint, there will be no dust entrainment into the atmosphere, provided there is sufficient dust suppression.

The impact of air quality on the surrounding environment during the construction and operational phase will be further investigated in the EIR phase and appropriate mitigation measures will be stipulated in the EMPr.

6.2.5 Waste Generation

The proposed development is not anticipated to produce large quantities of waste.

Most waste is expected to be litter generated by the construction staff and construction rubble. Waste will be recycled as far as possible. Non-recyclable waste will be sorted into different types and disposed of at a suitably licensed waste disposal facility. Disposal of solid waste will be in line with the municipal by-laws. General waste will be stored in a skip before transportation to the landfill for disposal. A licensed waste management company will be contracted to manage the waste during the construction period. No hazardous waste is expected to be generated during the construction phase.

During the operational phase, there will be regular maintenance of the site by mowing of the grass that is naturally occurring on site. There could also be dead flowers from the graves and domestic waste that will be collected in waste bins and removed from site for disposal at a nearest general waste landfill site.

The exact nature and extent of the environmental impacts resulting for the increased waste generation and management thereof, will be identified and assessed as part of the EIR phase of the project. Recommended mitigation measures will be incorporated into the EMP for implementation.

6.2.6 Health, safety and security

The health and safety of workers and other personnel utilizing the site might be at risk if proper house-keeping and preventative measures are not put in place during the construction and operational phases.

The impact on security at the cemetery may be hampered by vagrants that enter the site looking for opportunities to steal on site or vandalise graves.

The impact on health, safety and security on the site will be further investigated in the EIR phase and appropriate mitigation measures will be stipulated where necessary.

6.2.7 Change in Traffic Patterns

The proposed development could have some impact on local traffic patterns during the construction phase, as a result of construction vehicles using the existing road networks to access the site, the movement of construction vehicles within the study area and the surrounding environment, and the increase in the number of vehicles on the surrounding road networks during operation.

All impacts associated with traffic will be further investigated in the EIR phase and appropriate mitigation measures will be stipulated where necessary.

6.2.8 Destruction of Cultural and Heritage Resources

Possible impacts associated within the proposed development may cause the following change in the receiving environment, amongst others:

- Loss of local heritage resources and cultural artefacts through excavation activities for internal roads and support facilities on the site.

All impacts associated with cultural and heritage resources will be further investigated in the EIR phase by means of a Phase 1: Cultural and Heritage Impact Assessment and appropriate mitigation measures will be stipulated where necessary.

6.2.9 Destruction of Paleontological Resources

Possible impacts associated within the proposed development may cause the following change in the receiving environment, amongst others:

- Loss of paleontological resources and artefacts through excavation activities for internal roads and support facilities on the site.

All impacts associated with paleontological resources will be further investigated in the EIR phase by means of a Paleontological Assessment and appropriate mitigation measures will be stipulated where necessary.

6.3 Summary of Potential Environmental Issues

These key issues described above and any other issues identified during the Public Participation Process will be assessed during the EIR phase of the project and specific mitigation measure will be stipulated. **Table 20** below provides a summary as well as a proposed method for investigation/plan of study for the EIA phase of the EA process. The Plan of Study is discussed in detailed in **Chapter 7**.

Table 20: Summary of key issues identified in relation to the proposed project (includes all alternatives)

Environmental Aspect	Potential Impact	Proposed method of investigation
Biodiversity (Fauna and Flora)	<ul style="list-style-type: none">• Destruction of faunal habitat and or disturbance to fauna of conservation concern, as a result of clearing of the site for the development;• Destruction of indigenous vegetation and increased potential of spread of alien plant species, as a result of clearing of the site for the proposed burials.• Disturbance to sensitive habitat, due to construction activities.	A Terrestrial Ecological /Biodiversity Impact Assessment has been undertaken (attached in Appendix F3).

Environmental Aspect	Potential Impact	Proposed method of investigation
	<ul style="list-style-type: none"> • Disturbance to fauna, due to construction activities. • Impact on surrounding habitats and species. • Increased disturbance to natural areas and destruction of habitat refugia, due to removal of islands of vegetation and increased human activity during the operational phase. • Habitat fragmentation and associated loss of ecological connectivity within and through the site, plus various ecological edge effects. 	
Freshwater resources (wetlands and watercourses)	<ul style="list-style-type: none"> • Loss of wetland habitat and displacement of sensitive species, compaction of soils, sedimentation, pollution and erosion as a result of the construction activities. • Surface water contamination/pollution due to accidental spillage during construction and operational phases. • Potential erosion of topsoil and concomitant siltation of watercourses, if not carefully controlled during the operational phase. • Potential contamination of freshwater resources as a result of pathogenic organisms released during corpse decomposition during the operational phase. • Changes to stream characteristics because of loss or transformation of habitat. • Degradation of water quality of the streams and rivers due to increase of sediment and silt and hydrocarbon spillage contaminating storm water flow. • Degradation of surface water quality due to leachates from the decomposition of inhumed bodies. 	<p>A detailed Wetland /Riparian Delineation and Functional Assessment has been undertaken (Appendix F4).</p> <p>An Aquatic Impact Assessment will be undertaken during the EIR</p>

Environmental Aspect	Potential Impact	Proposed method of investigation
	<ul style="list-style-type: none"> Degradation of aquatic and riparian habitats due to dumping of solid waste. Loss of indigenous plant species local to the study area resulting in the encroachment of alien invasive plant species. 	
Geo-hydrology	<ul style="list-style-type: none"> Disturbing vadose zone during soil excavations/activities. Land subsidence due to collapsible soils. Shallow groundwater table pollution (if perched groundwater conditions exist). Poor quality seepage from machinery used to excavate soils. Surface and shallow groundwater contamination from the following activities: <ul style="list-style-type: none"> Equipment and vehicles are washed in the water bodies (when there is water); Erosion and sedimentation of watercourses if graves are left open due to unforeseen circumstances (i.e. bad weather); Poor quality seepage from oxidised soils stockpiles. Poor quality seepage from established graves at the cemetery; and poor quality seepage from domestic waste generated during funeral services. Shallow groundwater table pollution (if perched groundwater conditions exist). Existing groundwater users (if they exist) downstream of the site may be at risk if pathogens enter the groundwater aquifer. Poor quality seepage from vehicles parked at the site, during a funeral service. Degradation of water quality of streams situated downstream of development activities is likely to occur if domestic waste (generated during funeral services and not 	A Geohydrological Assessment has been appended as Appendix F6.

Environmental Aspect	Potential Impact	Proposed method of investigation
	<p>cleaned) accumulates in the drainage lines.</p> <ul style="list-style-type: none"> • Potential groundwater contamination as a result of poor stormwater drainage on site. • Induced poor quality percolation into the shallow water table if graves are not properly capped/constructed. Graves need to be constructed per Newcastle Cemetery Bylaws. 	
Soils and Geology	<ul style="list-style-type: none"> • Loss of soil resources and related land capability as a result of soil contamination through spills/leaks from vehicles, machinery, construction waste, litter and use of portable ablution facilities. • Loss of soil resources and related land capability as a result of soil compaction from movement of vehicles/ machinery and soil erosion. 	This impact will be addressed in more detail at the EIR phase and the mitigation measures associated with this impact will be included in the Environmental Management Programme (EMPr).
Hydropedology	<ul style="list-style-type: none"> • Potential for infilling of wetlands inducing alternative flow paths. • Disturbing natural hydrological and hydropedological flow paths and drivers. • Sedimentation of nearby watercourses if sodic soils exist in the area. • Short term impacts on the hydropedological processes supporting the wetlands. • Soil compaction; and • Soil erosion. • Land subsidence due to collapsible soils. • Compaction of soils due to service and funeral vehicles. • Alteration of natural hydropedological flow paths, or inducing new flow paths, leading to degradation of wetlands and associated wetland recharge and interflow soils. Severe disturbance could change PES. • Exposure of soils, leading to increased runoff from cleared 	A Hydropedological has been appended in Appendix F7.

Environmental Aspect	Potential Impact	Proposed method of investigation
	<p>areas and erosion of the wetlands, and thus increased the potential for sedimentation of the wetlands.</p> <ul style="list-style-type: none"> • Impacts on the hydrogeological processes supporting the wetlands. • Potential for soil compaction and erosion through vegetation clearance. • Poor quality stormwater discharge, poor quality seepage and runoff from vehicles parked at the site may impact primary surface water receivers. 	
Hydrology	<ul style="list-style-type: none"> • Disturbing vadose zone during soil excavations/activities. • Land subsidence due to collapsible soils. • Poor quality runoff from machinery used to excavate soils. • Surface water contamination and sedimentation from the following activities: <ul style="list-style-type: none"> ○ Equipment and vehicles are washed in the water bodies (when there is water); ○ Erosion and sedimentation of watercourses if graves are left open due to unforeseen circumstances (i.e. bad weather); and ○ Alteration of natural drainage lines which may lead to ponding or increased runoff patterns (i.e. may cause stagnant water levels or increase erosion). • Poor quality seepage and runoff from vehicles parked at the site, during a funeral service. • Degradation of water quality of streams situated downstream of development activities is likely to occur if domestic waste (generated during funeral services and not cleaned) accumulates in the drainage lines. 	A Hydrological Assessment has been appended as Appendix F5.

Environmental Aspect	Potential Impact	Proposed method of investigation
	<ul style="list-style-type: none"> • Potential surface water contamination as a result of poor stormwater drainage on-site. • Increased erosion due to vegetation loss. • Bank erosion and sedimentation of watercourses due to altered runoff patterns; and • Poor quality runoff from open or flooded graves. 	
Socio-economic	<ul style="list-style-type: none"> • Job creation for the local community which may have a temporary positive impact on the local economy. • Potential skills transfer to the local community who could benefit in the short-term through employment opportunities. • Potential availability of space for burials in Newcastle, thereby alleviating pressure on municipal resources. • Potential for the local community to uphold their rights to religious and traditional burials. 	A Socio-Economic Impact Assessment will be undertaken at the EIR phase of the project.
Visual	<p>Construction and earthmoving activities, movement of vehicles and construction equipment may impact on the aesthetic environment during construction.</p> <p>The clearance of indigenous grassland for the graves may change the sense of place through the presence of grave stones.</p>	This impact will be addressed in more detail at the EIR phase and the mitigation measures associated with this impact will be included in the Environmental Management Programme (EMPr).
Noise	<p>Use of increased construction traffic, machinery, earthmoving activities and excavation for the ablution blocks, internal roads and fencing around the site may cause nuisance impacts of a temporary nature during construction.</p> <p>During the operational phase, there will be limited noise impacts associated with mourners attending burial services.</p> <p>During the operational phase, there may be noise generated by the</p>	This impact will be addressed in more detail at the EIR phase and the mitigation measures associated with this impact will be included in the Environmental Management Programme (EMPr).

Environmental Aspect	Potential Impact	Proposed method of investigation
	mourners attending burial services and additional traffic and human movement on site.	
Air Quality	Dust generation as a result of construction activities for internal roads, footpaths and an ablution block. There may be emissions from vehicles through an increase in dust fallout from cleared land, soil handling, and vehicle/machinery movement resulting in increased air pollution	This impact will be addressed in more detail at the EIR phase and the mitigation measures associated with this impact will be included in the Environmental Management Programme (EMPr).
Waste management	<p>Most waste is expected to be litter generated by the construction staff and construction rubble, which has to be disposed of appropriately to minimise impact on the receiving environmental resources.</p> <p>During the operational phase, through regular maintenance there will be garden refuse, dead flowers from the graves and domestic waste that will need to be collected in waste bins and removed from site for disposal at a nearest general waste landfill site.</p>	This impact will be addressed in more detail at the EIR phase and the mitigation measures associated with this impact will be included in the Environmental Management Programme (EMPr).
Health, safety and security	<p>The health and safety of workers and other personnel utilizing the site might be at risk if proper house-keeping and preventative measures are not put in place during the construction and operational phases.</p> <p>The impact on security at the cemetery may be hampered by vagrants that enter the site looking for opportunities to steal on site or vandalise graves.</p>	This impact will be addressed in more detail at the EIR phase and the mitigation measures associated with this impact will be included in the Environmental Management Programme (EMPr).
Traffic patterns	<p>Construction vehicles using the existing road networks to access the proposed site.</p> <p>Increase in the number of vehicles on the existing networks during operation.</p> <p>Movement of construction vehicles within the study area and the impact on the surrounding road network.</p>	Traffic impacts will be further addressed in the Draft EIR.
Culture and Heritage Resources	Loss of local heritage resources and cultural artefacts through excavation activities for internal roads and support facilities on the site.	A detailed Phase 1: Cultural and Heritage Impact Assessment will be undertaken during the EIR phase.

Environmental Aspect	Potential Impact	Proposed method of investigation
Paleontological resources	Loss of paleontological resources and artefacts through excavation activities for internal roads and support facilities on the site.	A detailed Paleontological Impact Assessment will be undertaken during the EIR phase.

6.4 No-Go Impacts

The “No Go” alternative refers to the alternative of not embarking on the proposed project. This alternative would imply that the current *status quo*, without the extension of the existing Roy Point Cemetery taking place.

Therefore, the preliminary biophysical, cultural and socio-economic impacts as indicated above would not take place should the proposed development not go ahead. If the project does not go ahead, the Newcastle Local Municipality’s need for the additional cemetery space will not be realised and there will not be an increase in availability of cemetery space.

6.5 Key issues identified that could result in Cumulative Impact

The following potential cumulative impacts (**Table 21**) have been identified as possibly resulting from the proposed development. Cumulative impacts are regarded as the incremental and combined effects of human activity which pose a significant threat to the environment. Cumulative impacts accrue over time, from one or more sources, and can result in the degradation of valuable resources. Cumulative impacts will be further investigated during the Environmental Impact Reporting phase.

Table 21: Cumulative Impacts

Environmental Aspect	Potential Cumulative Impact	Detailed Description
Groundwater resources	Increased potential for the infiltration of contaminants such as hydrocarbon fuels, construction waste and rubble into the subsurface with pollution/contamination of soil and groundwater.	In addition to other similar developments within the Newcastle area (<i>including the new Roy Point Housing Development</i>), there may be impact on the groundwater resources.
	Potential for groundwater pollution due to human body decomposition.	A Geohydrological Impact Assessment of the proposed development will be undertaken at the EIR phase of the project. The findings thereof will be included in the forthcoming Draft EIR. Should there be any mitigation

Environmental Aspect	Potential Cumulative Impact	Detailed Description
		measures necessary, these will be included in the DEIR and the EMPr.
Freshwater resources (wetlands and watercourses)	<p>Surface water contamination may occur as a result of inappropriate disposal of construction waste and rubble and accidental spillage of hydrocarbons.</p> <p>Soil erosion may also occur due to vegetation clearance which increases the stormwater run-off entering into freshwater resources. If stormwater is not controlled on site, pollutants can also be carried with the stormwater thereby affecting the water quality of the nearby water resources. Ponding of water on site may lead to flooding which could cause contamination, due to the buried human bodies which occur on site.</p>	<p>In addition to other similar developments (<i>including the new Roy Point Housing development</i>) within the Newcastle area, there may be impact on the Freshwater resources. A detailed Wetland/Riparian Delineation and Functional Assessment and an Aquatic Impact Assessment will be undertaken during the EIR phase and the findings thereof will be presented in the forthcoming Draft EIR.</p> <p>Should there be any mitigation measures necessary, these will be included in the DEIR and the EMPr.</p>
Traffic impacts	The impact on the surrounding road networks may be exacerbated by the addition of vehicles on the local road networks during the construction and operational phases.	The cumulative impacts relates to increased traffic congestion as a result of the new Roy Point Housing Development in the area.

This chapter provided an indication of the potential impacts and key issues which can be expected to arise as a result of the proposed extension of the Roy Point Cemetery Project. Where appropriate, a more detailed assessment of these potential impacts, as well as any mitigation measures, will be undertaken in the Impact Reporting phase of the project, following the public participation process during scoping and the findings of the various specialist studies.

7 *Plan of Study for Environmental Impact Assessment Phase (PoS for EIR)*

The EIR phase is the second phase of the project, which is aimed at assessing the significance of the environmental impacts of the proposed development. The Scoping Phase of the environmental process determined that more information on certain aspects of the development is required. As a follow up to the Scoping phase, a comprehensive EIR will be required.

In accordance with the application procedure of the NEMA and the EIA Regulations, a number of key issues and potential environmental impacts (biophysical and social) were identified during the Scoping phase. All potentially significant and cumulative impacts will be investigated and assessed within the EIR phase of the project through Specialist Studies. This Plan of Study (PoS) for the EIR outlines the procedure to be followed and methods to be employed in investigating and assessing all the issues identified in the Scoping Phase.

GIBB has as such compiled this PoS for the EIR, which outlines the sequence of actions to be taken in order to complete the EIR.

The PoS for EIR is based on the findings and recommendations of the Scoping Report and the related process. Mitigation measures recommended in the EIR phase will also be included in the Environmental Management Programme (EMPr), which will form part of the EIR. The PoS is set out below describing the manner in which GIBB, as the appointed EAP, intends undertaking the detailed EIR phase of the S&EIR process.

7.1 Purpose of the Plan of Study for the EIR

The Plan of Study (POS) sets out the proposed approach to the EIR phase. The following requirements of Appendix 2 of Government Notice R. 326 promulgated in terms of section 24 of NEMA have been considered in compiling this POS:

- (i) a description of the alternatives to be considered and assessed within the preferred site, including the option of not proceeding with the activity;
- (ii) a description of the aspects to be assessed as part of the environmental impact assessment process;
- (iii) aspects to be assessed by specialists;
- (iv) a description of the proposed method of assessing the environmental aspects, including aspects to be assessed by specialists;
- (v) a description of the proposed method of assessing duration and significance;
- (vi) an indication of the stages at which the competent authority will be consulted;
- (vii) particulars of the public participation process that will be conducted during the environmental impact assessment process; and

-
- (viii) a description of the tasks that will be undertaken as part of the environmental impact assessment process;
 - (ix) identify suitable measures to avoid, reverse, mitigate or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored.

The Plan of Study for EIR thus aims to:

- a) Describe how the EIR phase of the project will be conducted;
- b) Provide the Terms of Reference for Specialists Studies;
- c) Provide the impact assessment methodology to be used to rate impacts; and
- d) Indicate deliverables of the EIR phase and the proposed timeframe.

7.2 Detailed Impact Assessment Phase

7.2.1 Introduction

The EIR phase will aim to adequately address all potentially significant environmental issues in order to provide the Competent Authority i.e. KZN EDTEA with sufficient information to make an informed decision regarding the proposed development.

Following the acceptance of the Scoping Report by the KZN EDTEA, the detailed EIR phase of the S&EIR process will commence. This phase considers the potential impacts identified in terms of the proposed project, assesses them in terms of their significance and recommends mitigation measures where necessary. The following aspects are considered:

- i. Potential impacts during the planning and design phase;
- ii. Potential impacts during the construction phase;
- iii. Potential impacts during the operational phase;
- iv. Potential impacts during the decommissioning phase; and
- v. The potential cumulative impacts of the proposed project.

The purpose of the Impact Assessment phase of the S&EIR process is thus to:

- i. Address issues that have been raised during the Scoping phase;
- ii. Assess alternatives to the proposed activity in a comprehensive and comparative manner;
- iii. Assess all identified impacts and determine the significance of each impact; and
- iv. Formulate mitigation measures in order to minimise negative impacts and optimise the effects of positive impacts.

Numerous acceptable approaches and methodologies exist by which the above purpose can be achieved. The legislation in South Africa, including the guideline documents published in support thereof, do not provide a specific methodology for the assessment of impacts. Rather, an assessment framework is provided within which Environmental Assessment Practitioners (EAPs) are expected to structure a project-specific assessment methodology. This assessment framework recognises that there are different methodologies available for assessing the impact of a development but that the specific methodology selected must provide for the following:

- i. A clear process for impact identification, prediction and evaluation;
- ii. The specification of impact identification techniques;
- iii. Criteria for evaluating the significance of impacts;
- iv. The design of mitigation measures to address impacts;
- v. Defining types of impacts (direct, indirect or cumulative); and
- vi. Specification of uncertainties.

7.2.2 Impact Assessment Methodology

The objective of the assessment of impacts is to identify and assess all the significant impacts that may arise because of the proposed project. The process of assessing the potential impacts of the project encompasses the following four activities:

- i. Identification and assessment of potential impacts;
- ii. Prediction of the nature, magnitude, extent and duration of potentially significant impacts;
- iii. Identification of mitigation measures that could be implemented to reduce the severity or significance of the impacts of the activity; and
- iv. Evaluation of the significance of the impact after the mitigation measures have been implemented i.e. the significance of the residual impact.

The potential impacts associated with the proposed development are identified in the Scoping Phase through stakeholder consultation, as well as through input from the authorities and the EIR team. These impacts are derived from the concerns that are identified in relation to all phases of the development including the planning, construction and operational phases. During the detailed EIR phase of the S&EIR process, additional impacts will be identified through the various Specialist Studies to be undertaken and through the on-going consultation process with I&APs.

In accordance with GN R 326 of the EIA Regulations, 2014 (*as amended*), specialists will be required to assess the significance of potential impacts in terms of the following criteria:

- i. Cumulative impacts;
- ii. Nature of the impact;
- iii. Extent of the impact;
- iv. Probability of the impact occurring;
- v. The degree to which the impact can be reversed;
- vi. The degree to which the impact may cause irreplaceable loss of resources; and
- vii. The degree to which the impact can be mitigated.

Table 22 provides a summary of the criteria which GIBB proposes to use, to assess the significance of the potential impacts identified. An explanation of these impact criteria is provided in **Table 23**.

Table 22: Proposed Criteria and rating Scales to be used in the Assessment of the Potential Impacts

Criteria	Rating Scales	Notes
Nature	Positive	An evaluation of the effect of the impact related to the proposed development.
	Negative	
Extent	Footprint	The impact only affects the area in which the proposed activity will occur.
	Site	The impact will affect only the development area.
	Local	The impact affects the development area and adjacent properties.
	Regional	The effect of the impact extends beyond municipal boundaries.
	National	The effect of the impact extends beyond more than 2 regional/ provincial boundaries.
	International	The effect of the impact extends beyond country borders.
Duration	Temporary	The duration of the activity associated with the impact will last 0-6 months.
	Short term	The duration of the activity associated with the impact will last 6-18 months.
	Medium term	The duration of the activity associated with the impact will last 18 months-5 years.
	Long term	The duration of the activity associated with the impact will last more than 5 years.
Severity	Low	Where the impact affects the environment in such a way that natural, cultural and social functions and processes are minimally affected.
	Moderate	Where the affected environment is altered but natural, cultural and social functions and processes continue albeit in a modified way; and valued, important, sensitive or vulnerable systems or communities are negatively affected.
	High	Where natural, cultural or social functions and processes are altered to the extent that the natural process will temporarily or permanently cease; and valued, important, sensitive or vulnerable

		systems or communities are substantially affected.
Potential for impact on irreplaceable resources	No	No irreplaceable resources will be impacted.
	Yes	Irreplaceable resources will be impacted.
Consequence	Extremely detrimental	A combination of extent, duration, intensity and the potential for impact on irreplaceable resources.
	Highly detrimental	
	Moderately detrimental	
	Slightly detrimental	
	Negligible	
	Slightly beneficial	
	Moderately beneficial	
	Highly beneficial	
	Extremely beneficial	
Probability (the likelihood of the impact occurring)	Unlikely	It is highly unlikely or less than 50 % likely that an impact will occur.
	Likely	It is between 50 and 75 % certain that the impact will occur.
	Definite	It is more than 75 % certain that the impact will occur or it is definite that the impact will occur.
Significance	Very high - negative	A function of Consequence and Probability.
	High - negative	
	Moderate - negative	
	Low - negative	
	Very low	
	Low - positive	
	Moderate - positive	
	High - positive	
	Very high - positive	

Table 23: Explanation of Assessment Criteria

Criteria	Explanation
Nature	This is an evaluation of the type of effect the construction, operation and management of the proposed development would have on the affected environment. Will the impact change in the environment be positive, negative or neutral?
Extent or Scale	This refers to the spatial scale at which the impact will occur. Extent of the impact is described as: footprint (affecting only the footprint of the development), site (limited to the site) and regional (limited to the immediate surroundings and closest towns to the site). Extent or scale refers to the actual physical footprint of the impact, not to the spatial significance. It is acknowledged that some impacts, even though they may be of small extent, are of very high importance, e.g. impacts on species of very restricted range. In order to avoid “double counting, specialists will be requested to indicate spatial significance under “intensity” or “impact on irreplaceable resources” but not under “extent” as well.
Duration	The lifespan of the impact is indicated as temporary, short, medium and long term.
Severity	This is a relative evaluation within the context of all the activities and the other impacts within the framework of the project. Does the activity destroy the impacted environment, alter its functioning, or render it slightly altered?
Impact on irreplaceable resources	This refers to the potential for an environmental resource to be replaced, should it be impacted. A resource could possibly be replaced by natural processes (e.g. by natural colonisation from surrounding areas), through artificial means (e.g. by re-seeding disturbed areas or replanting rescued species) or by providing a substitute resource, in certain cases. In natural systems, providing substitute resources is usually not possible, but in social systems substitutes are often possible (e.g. by constructing new social facilities for those that are lost). Should it not be possible to replace a resource, the resource is essentially irreplaceable e.g. red data species that are restricted to a particular site or habitat of very limited extent.
Consequence	The consequence of the potential impacts is a summation of above criteria, namely the extent, duration, severity and impact on irreplaceable resources.
Probability of occurrence	The probability of the impact actually occurring based on professional experience of the specialist with environments of a similar nature to the site and/or with similar projects. It is important to distinguish between probability of the impact occurring and probability that the activity causing a potential impact will occur. Probability is defined as the probability of the impact occurring, not as the probability of the activities that may result in the impact.
Significance	Impact significance is defined to be a combination of the consequence (as described below) and probability of the impact occurring. The relationship between consequence and

Criteria	Explanation
	<p>probability highlights that the risk (or impact significance) must be evaluated in terms of the seriousness (consequence) of the impact, weighted by the probability of the impact actually occurring.</p> <p>In simple terms, if the consequence and probability of an impact is high, then the impact will have a high significance. The significance defines the level to which the impact will influence the proposed development and/or environment. It determines whether mitigation measures need to be identified and implemented and whether the impact is important for decision-making.</p>
Degree of confidence in predictions	Specialists and the EIR team will be required to provide an indication of the degree of confidence (low, medium or high) that there is in the predictions made for each impact, based on the available information and their level of knowledge and expertise. Degree of confidence is not taken into account in the determination of consequence or probability.
Mitigation measures	Mitigation measures are designed to reduce the consequence or probability of an impact, or to reduce both consequence and probability. The significance of impacts has been assessed both with mitigation and without mitigation.

7.2.3 Assessment of Cumulative Impacts

Cumulative impacts can arise from one or more activities. A cumulative impact may result in an additive impact i.e. where it adds to the impact which is caused by other similar impacts or an interactive impact i.e. where a cumulative impact is caused by different impacts that combine to form a new kind of impact. Interactive impacts may be either countervailing (the net adverse cumulative impact is less than the sum of the individual impacts) or synergistic (the net adverse cumulative impact is greater than the sum of the individual impacts).

Possible cumulative impacts of the project will be evaluated in the EIR. In addition, various other cumulative impacts e.g. other external impacts that could arise from the project will be further investigated in the EIR phase of the project.

The assessment of cumulative impacts on a study area is complex; especially if many of the impacts occur on a much wider scale than the site being assessed and evaluated. It is often difficult to determine at which point the accumulation of many small impacts reaches the point of an undesired or unintended cumulative impact that should be avoided or mitigated.

There are often factors which are uncertain when potential cumulative impacts are identified.

Consideration will also be given to potential cumulative impacts as illustrated below, which occur as a result of the combined effect of incremental changes caused by other activities together with the particular project. In other words, several developments with insignificant

impacts individually may, when viewed together, have a significant cumulative adverse impact on the environment (**Figure 7**).

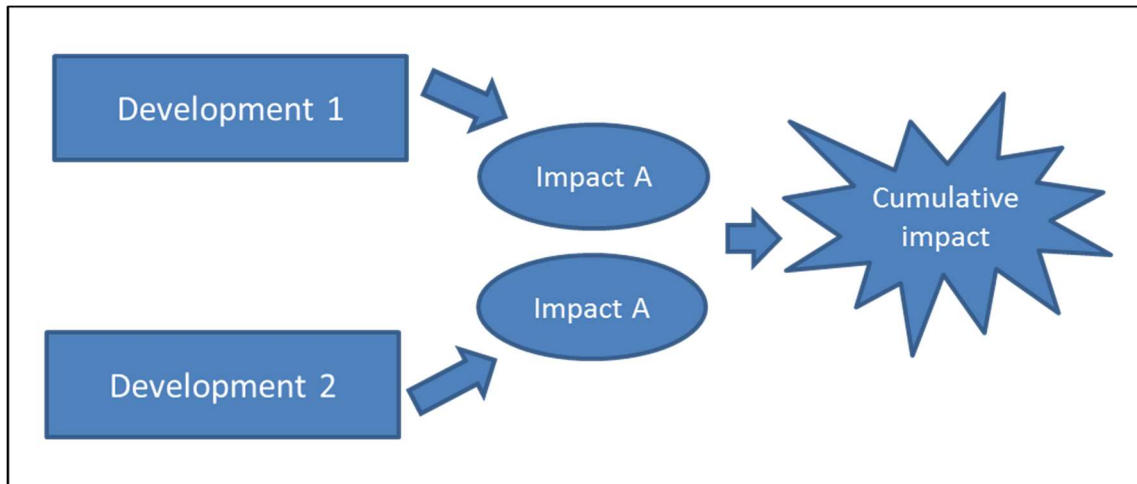


Figure 7: Cumulative Impacts

An indication of the degree of confidence (low, medium or high) that there is, in the predictions made for each impact, based on the available information and the specialist or EAP's level of knowledge and expertise will also be reported. The degree of confidence will however not be taken into account in the determination of consequence or probability.

This assessment will be done initially for the scenario where no mitigation measures are implemented. Mitigation measures will then be identified and considered for each impact and the assessment repeated in order to determine the significance of the residual impacts (the impact remaining after the mitigation measure has been implemented) (refer to **Table 24** and **Table 25**). The results of the assessment of the significance of the residual impacts will then be linked to decision-making by authorities.

Table 24 : Example of Impact Assessment Matrix

	Pre- Mitigation							Recommended mitigation	Post-Mitigation							
Impact	Duration	Extent	Severity	Impact on irreplaceable resources	Consequence	Probability	Significance	Mitigation	Duration	Extent	Severity	Impact on irreplaceable resources	Consequence	Probability	Significance	Confidence
Construction Phase																
Operational Phase:																
Decommissioning Phase:																

Table 25: Impact Assessment Matrix Key

Duration		Extent		Irreplaceable Resources		Severity		Consequence = (Duration+Extent+Irr) x Severity		Likelihood		Significance		Confidence
1	Temporary	1	Footprint	1	Yes	-3	High - negative	-25 to -33	Extremely detrimental	1	Unlikely	-73 to -99	Very high - negative	Low
2	Short term	2	Site	0	No	-2	Moderate - negative	-19 to -24	Highly detrimental	2	Likely	-55 to -72	High - negative	Medium
3	Medium term	3	Local			-1	Low -negative	-13 to -18	Moderately detrimental	3	Definite	-37 to -54	Moderate - negative	High
4	Long term	4	Regional					-7 to -12	Slightly detrimental			-19 to -36	Low - negative	
		5	National			1	Low -positive	0 to -6	Negligible			0 to -18	Very low - negative	
		6	International			2	Moderate - positive							
						3	High - positive	0 to 6	Negligible			0 to 18	Very Low - positive	
								7 to 12	Slightly beneficial			19 to 36	Low - positive	
								13 to 18	Moderately beneficial			37 to 54	Moderate - positive	
								19 to 24	Highly beneficial			55 to 72	High - positive	
								25 to 33	Extremely beneficial			73 to 99	Very high - positive	

7.2.4 Ascribing Significance for Decision-Making

The best way of expressing the environmental costs/impacts and the inherent benefit implications for decision-making is to present them as risks. Risk is defined as the consequence (implication) of an event multiplied by the probability (likelihood)¹ of that event. Many risks are accepted or tolerated on a daily basis because even if the consequence of the event is serious, the likelihood that the event will occur is low. A practical example is the consequence of a parachute not opening, is potentially death but the likelihood of such an event happening is so low that parachutists are prepared to take that risk and hurl themselves out of an airplane. The risk is low because the likelihood of the consequence is low even if the consequence is potentially severe.

It is also necessary to distinguish between the event itself (as the cause) and the consequence. Again using the parachute example, the consequence of concern in the event that the parachute does not open is serious injury or death, but it does not necessarily follow that if a parachute does not open that the parachutist will die.

Various contingencies are provided to minimise the likelihood of the consequence (serious injury or death) in the event of the parachute not opening, such as a reserve parachute. In risk terms this means distinguishing between the inherent risk (the risk that a parachutist will die if the parachute does not open) and the residual risk (the risk that the parachutist will die if the parachute does not open but with the contingency of a reserve parachute) i.e. the risk before and after mitigation.

7.2.5 Consequence

The ascription of significance for decision-making becomes then relatively simple. It requires the consequences to be ranked and likelihood to be defined of that consequence. In **Table 26** below a scoring system for consequence ranking is shown. Two important features should be noted in the table, namely that the scoring doubles as the risk increases and that there is no equivalent 'high' score in respect of benefits as there is for the costs. This high negative score serves to give expression to the potential for a fatal flaw where a fatal flaw would be defined as an impact that cannot be mitigated effectively and where the associated risk is accordingly untenable. Stated differently, the high score on the costs, which is not matched on the benefits side, highlights that such a fatal flaw cannot be 'traded off' by a benefit and would render the proposed project to be unacceptable.

¹ Because 'probability' has a specific mathematical/empirical connotation the term 'likelihood' is preferred in a qualitative application and is accordingly the term used in this document.

Table 26: Ranking of Consequence

Environmental Cost	Inherent risk
Human health – morbidity / mortality, loss of species	High
Material reductions in faunal populations, loss of livelihoods, individual economic loss	Moderate – high
Material reductions in environmental quality – air, soil, water. Loss of habitat, loss of heritage, amenity	Moderate
Nuisance	Moderate – low
Negative change – with no other consequences	Low
Environmental Benefits	Inherent benefit
Net improvement in human welfare	Moderate – high
Improved environmental quality – air, soil, water. Improved individual livelihoods	Moderate
Economic Development	Moderate – Low
Positive change – with no other consequences	Low

7.2.6 Likelihood

Although the principle is one of probability, the term ‘likelihood’ is used to give expression to a qualitative rather than quantitative assessment, because the term ‘probability’ tends to denote a mathematical/empirical expression. A set of likelihood descriptors that can be used to characterise the likelihood of the costs and benefits occurring, is presented in **Table 27**.

Table 27: Likelihood categories and definitions

Likelihood Descriptors	Definitions
Highly unlikely	The possibility of the consequence occurring is negligible
Unlikely but possible	The possibility of the consequence occurring is low but cannot be discounted entirely
Likely	The consequence may not occur but a balance of probability suggests it will
Highly likely	The consequence may still not occur but it is most likely that it will
Definite	The consequence will definitely occur

It is very important to recognise that the likelihood question is asked twice. The first time the question is asked is the likelihood of the cause and the second as to the likelihood of the consequence. In the tables that follow the likelihood is presented of the cause and then the likelihood of the consequence is presented. A high likelihood of a cause does not necessarily translate into a high likelihood of the consequence. As such the likelihood of the consequence is not a mathematical or statistical ‘average’ of the causes but rather a qualitative estimate in its own right.

7.2.7 Residual Risk

The residual risk is then determined by the consequence and the likelihood of that consequence. The residual risk categories are shown in **Table 28** where consequence scoring is shown in the rows and likelihood in the columns. The implications for decision-making of the different residual risk categories are shown in **Table 29**.

Table 28: Residual risk categories

		Residual risk				
Consequence	High	Moderate	High	High	Fatally flawed	
	Moderate – high	Low	Moderate	High	High	High
	Moderate	Low	Moderate	Moderate	Moderate	Moderate
	Moderate – low	Low	Low	Low	Low	Moderate
	Low	Low	Low	Low	Low	Low
		Highly unlikely	Unlikely but possible	Likely	Highly likely	Definite
		Likelihood				

Table 29: Implications for decision-making of the different residual risk categories

Rating	Nature of implication for Decision – Making
Low	Project can be authorised with low risk of environmental degradation
Moderate	Project can be authorised but with conditions and routine inspections
High	Project can be authorised but with strict conditions and high levels of compliance and enforcement
Fatally Flawed	The project cannot be authorised

7.2.8 Consideration of Alternatives

Various types of alternatives have been identified at the Scoping Phase (refer to **Section 3**). During the EIR phase, the alternatives will be further investigated and assessed in the forthcoming Draft EIR phase.

During the selection of the most suitable project alternatives, the following principles will be taken into consideration:

- The opinion of the public, ascertained through the Public Participation Process;
- Specialists' recommendations;
- Environmental constraints;
- Newcastle Local Municipality's SDF and local planning initiatives;
- Minimal environmental impacts; and
- Optimisation of existing infrastructure, such as access roads, municipal electrical connections and municipal sewer and water pipelines.

7.2.9 Environmental Impact Assessment (EIA) Report

The contents of the EIA report (as per Appendix 3 of GN R 982) will include the following information:

- Details and expertise of the EAP to undertake a S&EIR process;
- Detailed description of the proposed activity;
- Detailed description of the property on which the activity is to be undertaken and the location of the activity on the property;
- A description of the environment that may be affected by the activity and the manner in which the physical, biological, social, economic and cultural aspects of the environment may be affected by the proposed activity;
- Details of the PPP conducted during the detailed assessment phase of the S&EIR process;
- A description of the need and desirability of the proposed activity;
- A description of identified potential alternatives to the proposed activity, including advantages and disadvantages that the proposed activity or alternatives may have on the environment and the community that may be affected by the activity;
- An indication of the methodology used in determining the significance of potential environmental impacts;
- A description and comparative assessment of all alternatives identified during the environmental impact reporting phase;
- A summary of the findings and recommendations of any specialist report or report on specialised process;
- A description of all environmental issues that were identified during the environmental impact reporting phase, an assessment of the significance of each issue and an indication of the extent to which the issues could be addressed by the adoption of mitigation measures;
- An assessment of each identified potentially significant impact in terms of cumulative impacts, the nature of the impact, the extent and duration of the impact, the probability of the impact occurring, the degree to which the impact can be reversed, the degree to which the impact may cause irreplaceable loss of resources and the degree to which the impact can be mitigated;
- A description of any assumptions, uncertainties and gaps in knowledge;
- A reasoned opinion as to whether the 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;
- An environmental impact statement which contains a summary of the key findings of the environmental impact assessment, a comparative assessment of the positive and negative implications of the proposed activity and identified alternatives;
- A draft Environmental Management Programme report (EMPr);
- Copies of any specialist reports and reports on specialised processes; and
- Any specific information that may be required by the competent authority and any other matters required in terms of sections 24(4) (a) and (b) of NEMA.

7.2.10 Draft Environmental Management Programme Report (EMPr)

During the compilation of the EIA report, a draft EMPr will be compiled in accordance with the EIA Regulations, 2014 (as amended). The draft EMPr will provide the actions for the management of identified environmental impacts emanating from the proposed project and a detailed outline of the implementation programme to minimise and/ or eliminate the anticipated negative environmental impacts. The draft EMPr will provide strategies to be used to address the roles and responsibilities of environmental management personnel on site, and a framework for environmental compliance and monitoring. The draft EMPr will be included as part of the Draft EIR. The EMPr will include the following:

- Details and expertise of the person who prepared the EMPr;
- Information on any proposed management or mitigation measures that will be taken to address the environmental impacts that are identified in the EIR phase, including environmental impacts or objectives in respect of planning and design, pre-construction and construction activities, operation or undertaking of the activity, rehabilitation of the environment and closure where relevant;
- A detailed description of the aspects of the activity that are covered by the draft EMPr;
- An identification of the persons who will be responsible for the implementation of the mitigation measures;
- Timeframes for the implementation of the mitigation measures;
- Environmental design criteria;
- Site establishment;
- Construction camps, offices and associated activities;
- Construction and lay down areas;
- Civil works;
- Sourcing and management of construction materials;
- Concrete batching areas;
- Disruption of existing infrastructure and services;
- Site closure and rehabilitation measures;
- Proposed mechanisms for monitoring compliance with the EMPr and reporting thereon;
- Record of the Method Statements, Environmental Incident Log and Complaints Record Sheet;
- Proposed mechanisms for monitoring compliance with the EMPr and reporting thereof; and
- As far as reasonable practicable, measures to rehabilitate the environment affected by the undertaking of any listed activity or specified activity to its natural or predetermined state or to a land use which conforms to the generally accepted principle of sustainable development, including, where appropriate, concurrent or progressive rehabilitation measures.

7.2.11 Public Review of the EIR and EMPr

During the public comment period, the Draft EIR (*with Specialist Studies*) and the EMPr will be distributed to a suitable public venue (Newcastle Local Library) with a cover letter bound to the report (*that provides the EAP's contact details for further submission of written comments*

on the report). Interested and Affected Parties (I&APs) that register during the Scoping and EIR phases, will be informed of the public review venues and GIBB website link (*to access the report electronically*) location and contact details of the public venues.

A commenting period of at least 30 days will be provided for registered I&APs to comment on the Draft EIR report. Comments on the Draft EIR will be captured and responded to in the updated Comments and Response Report into the Final EIR. GIBB will respond to the I&AP comments in writing and proof of the responses and comments will be provided in the Final EIR that will be submitted to KZN EDTEA for their review and decision-making.

7.2.12 Consultation with KZN EDTEA

It is envisaged that consultation with the KZN EDTEA will coincide with the compilation and submission of the following key documents:

- Final Scoping Report and Plan of Study for EIR;
- Draft EIR and EMPr; and
- Final EIR and EMPr.

Consultation outside of the above deliverables will be undertaken as necessary, in order to ensure that KZN EDTEA is aware of the status of the project.

7.2.13 Proposed Project Programme for the EIR Phase

The proposed programme for the S&EIR process suggests the following timeframes with respect to the most important activities to be undertaken:

- Submission of the Application for Environmental Authorisation – **13 January 2021;**
- Submission of the Draft Scoping Report for public comment –**21 January 2021 to 22 February 2021;**
- Submission of the Final Scoping Report to the KZN EDTEA – **01 March 2021;**
- Submission of the Draft EIR for public comment – **TBC;** and
- Submission of the Final EIR to the KZN EDTEA for consideration and decision-making – **TBC.**

The S&EIR process is iterative by nature and it should therefore be noted that the above dates are provided as guidance only and are subject to change.

7.2.14 Environmental Authorisation

On receipt of the Environmental Authorisation (*positive or negative*), the registered I&APs will be informed of the authorisation and will be given 20 days upon receipt of the decision, in which to lodge a Notice of Intent to appeal the decision with the Minister, MEC, or delegated organ of state. The dates for lodgement of the full appeal will be communicated to the I&APs once the EA is issued.

7.3 Terms of Reference for Specialist Studies

A team of specialists will be involved in the detailed Environmental Impact Reporting (EIR) phase of the process. A summary of the Specialist Studies and the proposed specialist responsible for that study is provided in **Table 30** below.

Table 30: Proposed Specialist Studies to be undertaken during the Environmental Impact Reporting Phase of the Project

Specialist Studies	Specialist
Terrestrial/Ecological Impact Assessment (fauna, avifauna and flora)	GIBB (Pty) Ltd
Wetland/Riparian Delineation and Functional Assessment	GIBB (Pty) Ltd
Phase 1: Cultural and Heritage Impact Assessment	SATIVA
Paleontological Impact Assessment	SATIVA
Aquatic Impact Assessment	GCS Consulting (Pty) Ltd
Hydrological Impact Assessment	GCS Consulting (Pty) Ltd
Geohydrological Impact Assessment	GCS Consulting (Pty) Ltd
Hydropedological Assessment	GCS Consulting (Pty) Ltd
Geotechnical Assessment	Geo-Caluza Consulting Engineers (Pty) Ltd Terratest (Pty) Ltd
Stormwater Management Plan	TBC
Services Report	TBC
Socio-Economic Impact Assessment	Urban-Econ Development Economists

The generic scope/Terms of Reference (ToR) of the proposed Specialist Studies is provided below.

The results of the above-mentioned specialist studies will be analysed and interpreted in order to assess the potential impacts of the proposed development on the system, devise potential alternatives with respect to select activities and develop the necessary mitigation measures in order to minimise negative impacts and optimise positive impacts. The specialist recommendations will be incorporated in the EMPr. The activities as described in the project description will be assessed on both an individual as well as a cumulative level with respect to the project in its entirety.

7.3.1 General Terms of Reference for all Specialist Studies

In April 2006, the DEAT, now known as the (DEA) issued guidelines for involving specialists in S&EIR processes. The specialists are required to make themselves aware of these guidelines and amendments thereof, as well as any other guidelines, codes, standards, or applicable legislation relative to their field of expertise, and will utilise them to more precisely determine methods and approaches to their specialist studies and will reference compliance with the

above-mentioned requirements accordingly. Specialists are also expected to consider best practise when undertaking their study.

The assessment of impacts should be broadly undertaken in accordance with the guidelines provided in the Guideline Document: EIA Regulations (DEA, 1998), NEMA principles, Section 24(4) of NEMA (as amended) and the DEA guideline documents as appropriate to the specific field of study. In addition, the following General Terms of Reference (ToR) apply to each of the specialist studies:

- Undertake site visit(s);
- Design and undertake the specialist study in accordance with the specifications provided;
- Describe the baseline conditions that exist in the study area and identify any sensitive areas that would need special consideration;
- Provide an outline of the approach used in the study;
- Assess all project alternatives including the no-go alternative;
- Identify, assess and evaluate the possible impacts of the proposed project during all development phases (planning, construction and operation) of the proposed project;
- Identify and assess any cumulative impacts arising from the proposed project;
- Determine the significance of assessed impacts according to the methodology provided by the Environmental Assessment Practitioner (EAP) and provide a revised significance rating of assessed impacts after the implementation of mitigation measures;
- Undertake field surveys, appropriate to the requirements of the specialist studies;
- Identify areas where integration of studies with other specialists would ensure a better assessment and co-ordinate with other specialists in this regard;
- Apply the precautionary principle in the assessment of impacts, in particular where there is major uncertainty, low levels of confidence in predictions and poor data or information;
- Recommend practicable mitigation measures to minimise or eliminate negative impacts and/or enhance potential project benefits;
- Recommend appropriate auditing, monitoring and review measures;
- Compile all information into a stand-alone report according to the required GIBB format;
- Take cognisance of and comply with the relevant guideline documents applicable to that particular specialist study; and
- The specialist report must comply with Appendix 6 of GN R 982 of 2014 of the NEMA.

7.4 Plan of Study Summary

This Plan of Study for the EIR is aimed at meeting the requirements of the EIA Regulations, 2014 (as amended) as a minimum.

The methodologies proposed for obtaining the information required to effectively identify and assess the potential environmental impacts of the project are considered to be comprehensive and sufficient to allow for the compilation of an EIR which addresses I&AP concerns and which will provide the KZN EDTEA with the appropriate information necessary to allow for informed decision-making on the application for authorisation.

8 *Conclusion and Recommendations*

As a result of the activities described in this Report, a Scoping and Environmental Impact Reporting (S&EIR) process will be conducted for this project, based on triggered listed activities within the National Environmental Management Act, 1998 (Act No. 107 of 1998) as amended 2014, (NEMA), and the Environmental Impact Assessment (EIA) Regulations of 2014.

This Scoping Report, thus represents the Scoping phase of the process, and therefore one of its primary intentions is aimed at defining the scope of the detailed assessment phase, as well as recording the documentation of the tasks that have been undertaken as part of S&EIR process thus far which include the following:

- Identification of stakeholders and/ or Interested and Affected Parties (I&APs);
- Notification of I&APs by means of newspaper advertisements and site notice placement; and
- On-going consultation and engagement.

The Draft Scoping Report was released for public review and comment for a period of 30 calendar days (**21 January 2021 to 22 February 2021**). Concerns raised by I&APs and key stakeholders during the public participation process have been captured in the Comments and Response Report which has been included in this Final Scoping Report, to be submitted to the KZN EDTEA for review.

GIBB as the EAP and the project team commits to do the following:

- Facilitate a fair and transparent process going forward;
- Capture and consider all comments received from stakeholders and I&APs;
- Remain independent of the Applicant;
- Present the KZN EDTEA with the necessary information to reach a decision; and
- Fulfil any and all other obligations placed on the EAP in terms of the NEMA.

8.1 **Brief Findings and Recommendations**

The EIR Phase may only commence once the Competent Authority (KZN EDTEA) accepts the Final Scoping Report and PoS for EIR, and instructs the EAP to continue with the tasks contemplated in the PoS for the EIR phase of the environmental application process.

The PoS for EIR is aimed at meeting the requirements of the EIA Regulations, 2014 (as amended) as a minimum.

The methodologies proposed for obtaining the information required to effectively identify and assess the potential environmental impacts of the project are considered to be comprehensive and sufficient to allow for the compilation of an EIR which addresses I&AP concerns and which

will provide the competent authority with the appropriate information necessary to allow for informed decision-making on the application for authorisation.

For the purpose of this FSR, and based on inputs from the project team, stakeholders, I&APs and specialists, the potential environmental (biophysical, socio-economic and cultural) impacts have been identified as possible associated impacts as a result of the proposed development and will be further investigated during the EIR phase of the process.

All of the above potential environmental impacts would need to be considered for the proposed development and as such detailed impact assessments for each of the specialist fields will be conducted and included in the forthcoming EIR Phase.

9 References

- Coutts, C., Basmajian, C. and Chapin, T. 2011, Projecting landscapes of death, *Landscape and Urban Planning*, 102, pp. 254 – 261.
- Geo-Caluza Consulting Engineers (Pty) Ltd. 2013. Report to Uddi Environmental Planning and Development Consultants on a Geotechnical Investigation for the Extension of Roy Point Cemetery in Newcastle.
- Isibuko Se Africa Development Planners. 2010, Kilbarchan, Ingagane and Ballengeich Spatial Development Framework. Report for Newcastle Municipality
- Newcastle Municipality. 2012, Newcastle Integrated Development Plan 2012 to 2016. Report for Newcastle Municipality
- Terratest (Pty) Ltd. 2012. Geotechnical Investigation Report for the Extension of Roy Point Cemetery in Newcastle.
- Uddi Environmental Planning and Development Consultants (2013). Final Feasibility Study for the Extension of Roy Point Cemetery and Layout Design Report.
- Uddi Environmental, Planning and Development Consultants. 2007, Basic Assessment Report, Proposed Development of a Cemetery on Farm Buhle Bomzinyathi B, No. 17495, Danhhauser Site B, Dannhasuer Municipality, Pietermaritzburg.

Appendix A: CVs of the Project Team

Appendix B: Authority Consultation

Appendix B1: Correspondence with EKZNW

Appendix B2: Pre-application meeting with KZN EDTEA held on 25
March 2020

Appendix B3: DEA Screening Report

Appendix B4: Application for Environmental Authorisation Form

Appendix B5: KZN EDTEA Acknowledgement of Application for Environmental Authorisation

Appendix C: Preliminary Site Layout Plan

Appendix D: Site Photograph Plate

Appendix E: Feasibility Study

Appendix F1: Geotechnical Assessment (Terratest: 2012)

Appendix F2: Geotechnical Assessment (Geo-Caluză: 2013)

Appendix F3: Ecological Assessment

Appendix F4: Wetland Assessment

Appendix F5: Hydrology Assessment

Appendix F6: Geohydrology Assessment

Appendix F7: Hydropedological Assessment

Appendix G: Public Participation Process

Appendix G1: I&AP Database

Appendix G2: Media Advertisement

Appendix G2.1: Media Advertisement Proof

Appendix G3: I&AP Notification Letter

Appendix G3: I&AP Notification Proof

Appendix G4: Site Notice and Proof

Appendix G4: Site Notice Proof

Appendix H: EAP Declaration Under Oath