

**RECREATIONAL AND TOURIST DEVELOPMENT
GANSPAN-PAN WETLAND RESERVE
PHOKWANE LOCAL MUNICIPALITY, NORTHERN CAPE PROVINCE**

ENVIRONMENTAL IMPACT ASSESSMENT REPORT

DENC REFERENCE NUMBER: NC/BA/18/FB/PHO/GAN1/2019

DRAFT

Prepared for



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Expertise of the EAP

EOH CES is a South African based company, with its head office in Grahamstown, and offices in Cape Town, Port Elizabeth, East London and Johannesburg, South Africa, as well as a wholly owned subsidiary in Maputo, Mozambique (EOH CES is registered as an Environmental Practitioner with the Mozambican authorities). Coastal and Environmental Services (Pty) Ltd was established in 1990, to service a then fledgling market in the field of Environmental Management and Impact Assessment. The Company has grown apace with the increased market demand for environmental and social advisory services, in South Africa and numerous other African countries. Our principal area of expertise is in assessing the impacts of development on the natural, social and economic environments through, among other instruments, the environmental impact assessment process, and in so doing contribute towards sustainable development.

In 2013, EOH Mthombo (Pty) Ltd acquired all the shares in Coastal and Environmental Services (Pty) Ltd, and the company now operates as EOH Coastal & Environmental Services (EOH CES). We are proud to be associated with EOH which is one of the largest providers of enterprise applications, technology, outsourcing, cloud and managed services, as well as consulting services in a range of disciplines. The group is active in South Africa and Africa and has a strong Black Economic Empowerment profile. This acquisition has enabled EOH CES to combine EOH's great reach and reputation with our recognized excellence in environmental and social advisory services. It has allowed us to maximize our strengths and our comprehensive offerings in the environmental and social fields, with the EOH Group providing additional administrative and fiduciary support. Our staff is currently comprised of 35 professional staff and 12 support staff. All professional staff members are well qualified, and as many as 90% have advanced postgraduate qualifications, including PhD, MSc and MA degrees in the biological, social and environmental sciences. In addition, EOH CES has well-developed working relationships with a number of other individual specialist and specialist consulting companies who provide us with expertise in disciplines such as air quality impact assessments, noise impacts, heritage assessments, radiation hazard assessments, groundwater studies and health impact assessments. We have a demonstrated ability to manage EIAs for large and complex projects. This experience was initially gained during the undertaking of integrated environmental management studies, as well as the management of large and complex environmental and social impact assessments. EOH CES has managed numerous large EIAs from pre-feasibility through to operation for international clients in six southern African countries. These have been rigorously reviewed by parties such as the World Bank, MIGA, European Investment Bank, IFC, German Investment Bank (KfW), African Development Bank, BHP Billiton international peer review team and the Dutch Development Bank (FMO).

Mr Roberto Almanza

(Role: Report Production)

Roberto obtained his BSc (Environmental Sciences) from Nelson Mandela Metropolitan University majoring in Geology and Geography and obtained his BSc Honours in Geology in 2012. Roberto then went on to complete his MSc (Geology) while working as a geology consultant on a number of exploration projects across South Africa. Roberto joined CES in 2015 and has managed several

projects from Basic Assessments to Full Scoping and Environmental Impact Reports. He has also undertaken Environmental Auditing, Site Remediation, Water Use Applications and GIS mapping. Roberto now manages a number of projects from the CES Port Elizabeth office and is becoming involved in several waste-related studies, including waste assessments for large mining projects, contamination assessment and waste license auditing.

Ms Amber Jackson

(Role: Report Review)

Amber is a Principal Environmental Consultant and has been employed with EOH CES for the last 7 years. She has an MPhil in Environmental Management and has a background in both Social and Ecological work. Her undergraduate degrees focused on Ecology, Conservation and Environment with particular reference to landscape effects on Herpetofauna, while her masters focused on the environmental management of social and ecological systems. With a dissertation in food security that investigated the complex food system of informal and formal distribution markets. During her time at CES Amber has worked extensively in Mozambique managing a number of Environmental and Social Impact Assessment to both national standards and international lenders standards (AfDB, EIB and IFC). Amongst which she has conducted large scale faunal impact assessments in the both South Africa and northern of Mozambique, alone and assisted by and to Prof Bill Branch.

DOCUMENT CHECKLIST

Requirements for the Environmental Impact Assessment Report in terms of Appendix 3 of GN R. 982 (as amended in GN R. 326) and where the relevant information can be found within this Report.

Item in GN R.982 (Appendix 2)	Requirement	Relevant Chapter/ Section
3	An environmental impact assessment report must contain the information that is necessary for the competent authority to consider and come to a decision on the application, and must include—	
(a) Details of—	(iii) the EAP who prepared the report; and (iv) the expertise of the EAP, including a curriculum vitae;	Refer to Author and EAP details above as well as Appendix B.
(b) The location of the development footprint of the activity on the approved site as contemplated in the accepted scoping report, including:	(i) the 21 digit Surveyor General code of each cadastral land parcel; (ii) where available, the physical address and farm name; and (iii) where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties;	Refer to Chapter 2, Section 2.1, Table 2.1.
(c) A plan which locates the proposed activity or activities applied for as well as the associated structures and infrastructure at an appropriate scale, or, if it is—	(i) a linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken; (ii) on land where the property has not been defined, the coordinates within which the activity is to be undertaken;	Refer to Figure 1.1 and Figure 2.1.
(d) A description of the scope of the proposed activity, including—	(i) all listed and specified activities triggered and being applied for; and (ii) a description of the associated structures and infrastructure related to the development;	Refer to Chapter 2, Section 2.2 to 2.4 and Chapter 5, Section 5.2, Table 5.3.
(e)	A description of the policy and legislative context within which the development is located and an explanation of how the proposed development complies with and responds to the legislation and policy context;	Refer to Chapter 5.
(f)	A motivation for the need and desirability for the proposed development, including the need and desirability of the activity in the context of the preferred development footprint within the approved site as contemplated in the accepted scoping report;	Refer to Chapter 4.
(g)	A motivation for the preferred development footprint within the approved site as contemplated in the accepted scoping report;	Refer to Section 3.4.
(h) A full description of the process followed to reach the proposed development footprint within the approved site as contemplated in the accepted scoping report, including:	(i) details of the development footprint alternatives considered; (ii) details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs; (iii) a summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them; (iv) the environmental attributes associated with the development footprint alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;	Refer to: (i) Chapter 3; (ii) Chapter 9 and Appendix A; (iii) Appendix A; (iv) Chapter 6; (v) Chapter 8, Section 8.2; (vi) Chapter 8, Section 8.1; (vii) Chapter 8; (viii) Chapter 8; (ix) Section 3.4; (x) Section 3.1 and 3.4.

	<p>(v) the impacts and risks identified including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts—</p> <p>(aa) can be reversed;</p> <p>(bb) may cause irreplaceable loss of resources; and</p> <p>(cc) can be avoided, managed or mitigated;</p> <p>(vi) the methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks;</p> <p>(vii) positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;</p> <p>(viii) the possible mitigation measures that could be applied and level of residual risk;</p> <p>(ix) if no alternative development footprints for the activity were investigated, the motivation for not considering such; and</p> <p>(x) a concluding statement indicating the location of the preferred alternative development footprint within the approved site as contemplated in the accepted scoping report;</p>	
<p>(i) A full description of the process undertaken to identify, assess and rank the impacts the activity and associated structures and infrastructure will impose on the preferred development footprint on the approved site as contemplated in the accepted scoping report through the life of the activity, including—</p>	<p>(i) a description of all environmental issues and risks that were identified during the environmental impact assessment process; and</p> <p>(ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures;</p>	<p>Refer to Chapter 8, Section 8.2.</p>
<p>(j) an assessment of each identified potentially significant impact and risk, including—</p>	<p>(i) cumulative impacts;</p> <p>(ii) the nature, significance and consequences of the impact and risk;</p> <p>(iii) the extent and duration of the impact and risk;</p> <p>(iv) the probability of the impact and risk occurring;</p> <p>(v) the degree to which the impact and risk can be reversed;</p> <p>(vi) the degree to which the impact and risk may cause irreplaceable loss of resources; and</p> <p>(vii) the degree to which the impact and risk can be mitigated;</p>	<p>Refer to Chapter 8, Section 8.2.</p>
<p>(k)</p>	<p>where applicable, a summary of the findings and recommendations of any specialist report complying with Appendix 6 to these Regulations and an indication as to how these findings and recommendations have been included in the final assessment report;</p>	<p>Refer to Chapter 7.</p>
<p>(l) an environmental impact statement which contains—</p>	<p>(i) a summary of the key findings of the environmental impact assessment;</p> <p>(ii) a map at an appropriate scale which superimposes the proposed activity and its associated structures and infrastructure on the</p>	<p>Refer to Chapter 10.</p>

	environmental sensitivities of the preferred development footprint on the approved site as contemplated in the accepted scoping report indicating any areas that should be avoided, including buffers; and (iii) a summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;	
(m)	based on the assessment, and where applicable, recommendations from specialist reports, the recording of proposed impact management outcomes for the development for inclusion in the EMPr as well as for inclusion as conditions of authorisation;	Refer to Chapter 10.
(n)	the final proposed alternatives which respond to the impact management measures, avoidance, and mitigation measures identified through the assessment;	Refer to Chapter 3, Section 3.4.
(o)	any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorisation;	Refer to Chapter 10, Section 10.4 and 10.5.
(p)	a description of any assumptions, uncertainties and gaps in knowledge which relate to the assessment and mitigation measures proposed;	Refer to Section 1.3
(q)	a reasoned opinion as to whether the proposed activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation;	Refer to Chapter 10, Section 10.4.
(r)	where the proposed activity does not include operational aspects, the period for which the environmental authorisation is required and the date on which the activity will be concluded and the post construction monitoring requirements finalised;	Refer to Chapter 10, Section 10.3.
(s) an undertaking under oath or affirmation by the EAP in relation to—	(i) the correctness of the information provided in the reports; (ii) the inclusion of comments and inputs from stakeholders and I&APs; (iii) the inclusion of inputs and recommendations from the specialist reports where relevant; and (iv) any information provided by the EAP to interested and affected parties and any	Refer to Appendix B.
(t)	where applicable, details of any financial provision for the rehabilitation, closure, and ongoing post decommissioning management of negative environmental impacts;	Not applicable.
(u) an indication of any deviation from the approved scoping report, including the plan of study, including—	(i) any deviation from the methodology used in determining the significance of potential environmental impacts and risks; and (ii) a motivation for the deviation;	Not applicable.
(v)	any specific information that may be required by the competent authority; and	No specific information has been requested from the DENC to date.
(w)	any other matters required in terms of section 24(4)(a) and (b) of the Act.	The requirements of Section 24(a) and (b) have been met in this EIR.

TABLE OF CONTENTS

1.	INTRODUCTION	1
1.1.	PROJECT OVERVIEW	1
1.2.	OBJECTIVE OF THIS REPORT	2
1.3.	ASSUMPTIONS AND LIMITATIONS.....	3
2.	PROJECT DESCRIPTION.....	5
2.1.	LOCATION AND SITE DESCRIPTION OF THE PROPOSED DEVELOPMENT	5
2.2.	PROJECT CONCEPT	9
2.3.	DETAILED DESCRIPTION OF THE PROPOSED DEVELOPMENT	9
2.4.	SUPPORTING INFRASTRUCTURE	15
2.5.	PHASES OF THE DEVELOPMENT PROCESS	17
3.	ALTERNATIVES	19
3.1.	REASONABLE AND FEASIBLE ALTERNATIVES	19
3.2.	FUNDAMENTAL ALTERNATIVES.....	19
3.2.1	LOCATION ALTERNATIVES	19
3.2.2	DIFFERENT TYPE OF DEVELOPMENT	19
3.3.	INCREMENTAL ALTERNATIVES	20
3.3.1	LAYOUT ALTERNATIVES	20
3.3.2	TECHNOLOGY ALTERNATIVES.....	20
3.3.3	OPERATIONAL ALTERNATIVES	20
3.4.	PREFERRED ALTERNATIVE	21
3.5.	NO-GO ALTERNATIVE	21
4.	PROJECT NEED AND DESIRABILITY	22
4.1	NATIONAL LEVEL	22
4.2	PROVINCIAL LEVEL.....	22
4.3	DISTRICT AND LOCAL LEVEL	23
4.4	PROJECT DESIRABILITY.....	23
5.	RELEVANT LEGISLATION	25
5.1.	THE CONSTITUTION (ACT NO. 108 OF 1996).....	27
5.2.	NATIONAL ENVIRONMENTAL MANAGEMENT ACT (ACT NO. 107 OF 1998, AS AMENDED)	27
5.3.	NATIONAL ENVIRONMENTAL MANAGEMENT: PROTECTED AREAS ACT (ACT NO. 57 OF 2003, AS AMENDED).....	30
5.4.	NATIONAL ENVIRONMENT MANAGEMENT: BIODIVERSITY ACT (ACT NO. 10 OF 2004) 31	
5.5.	CONSERVATION OF AGRICULTURAL RESOURCES ACT (ACT NO. 43 OF 1983).....	32
5.6.	NATIONAL FORESTS ACT (ACT NO. 84 OF 1998)	32
5.7.	NATIONAL ENVIRONMENTAL MANAGEMENT: WASTE ACT (ACT NO. 59 OF 2008)..	33
5.8.	NATIONAL WATER ACT (ACT NO. 36 OF 1998).....	34
5.9.	NATIONAL ENVIRONMENTAL MANAGEMENT: AIR QUALITY ACT (ACT NO. 39 OF 2004, AS AMENDED).....	35
5.10.	NATIONAL HERITAGE RESOURCES ACT (ACT NO. 25 OF 1999)	35
5.11.	OCCUPATIONAL HEALTH AND SAFETY ACT (ACT NO. 85 OF 1993).....	36
5.12.	NATIONAL ROAD TRAFFIC ACT (ACT NO. 93 OF 1996).....	37
5.13.	OTHER RELEVANT LEGISLATION.....	37
6.	DESCRIPTION OF THE AFFECTED ENVIRONMENT.....	38
6.1.	CLIMATE	38
6.2.	GEOLOGY AND TOPOGRAPHY	38
6.3.	LAND USE.....	41
6.4.	VEGETATION	42
6.5.	AQUATIC ENVIRONMENT.....	45

6.6.	SUMMARY OF THE BIO-PHYSICAL ENVIRONMENT	47
6.7.	SOCIO-ECONOMIC PROFILE.....	48
7.	KEY FINDINGS OF THE Specialist studies	49
7.1.	HERITAGE IMPACT ASSESSMENT	49
7.1.1	ARCHAEOLOGICAL SURVEY.....	49
7.1.2	SPECIALIST OPINION.....	53
7.1.3	RECOMMENDATIONS	53
7.2.	PALAEONTOLOGICAL IMPACT ASSESSMENT	54
7.3.1	DESCRIPTION OF SIGNIFICANT FOSSIL OCCURRENCES	54
7.3.2	MANAGEMENT AND MITIGATION MEASURES.....	54
7.3.3	RECOMMENDATIONS	55
7.3.	BIODIVERSITY ASSESSMENT: ECOLOGICAL AND WETLAND.....	55
7.5.1	PROTECTED SPECIES.....	55
7.5.2	VEGETATION SURVEY.....	55
7.5.3	PLANT SPECIES OBSERVED.....	56
7.5.4	SENSITIVITY ASSESSMENT	56
7.5.5	ALIEN INVASIVE SPECIES	60
7.5.6	RECOMMENDATIONS	61
7.5.7	SPECIALIST'S OPINION	62
7.4.	AVIFAUNAL IMPACT ASSESSMENT.....	62
7.7.1	IMPORTANT BIRD AREAS.....	62
7.7.2	HABITATS.....	64
7.7.3	AVIFAUNA ON SITE	65
7.7.4	BIRD SPECIES OF CONSERVATION CONCERN	65
7.7.5	HABITAT SENSITIVITY	66
7.7.6	CONCLUSIONS AND RECOMMENDATIONS.....	67
8.	IMPACT ASSESSMENT.....	69
8.1.	ISSUES IDENTIFICATION MATRIX	69
8.2.	DETAILED IMPACT ASSESSMENT	75
9.	PUBLIC PARTICIPATION PROCESS	83
9.1.	OBJECTIVES OF PUBLIC PARTICIPATION	83
9.2.	PUBLIC PARTICIPATION PROCESS.....	83
9.2.1	INTERESTED AND AFFECTED PARTIES DATABASE.....	84
9.2.2	NOTIFICATION OF INTERESTED AND AFFECTED PARTIES.....	84
9.2.3	PUBLIC REVIEW OF THE DRAFT EIR.....	85
9.2.4	ISSUES AND RESPONSES TRAIL IN THE EIR	85
9.3.	SUMMARY OF PPP TO DATE	85
10.	CONCLUSIONS AND RECOMMENDATIONS	86
10.1.	ENVIRONMENTAL IMPACT STATEMENT	86
10.2.	SITE SENSITIVITY ANALYSIS.....	87
10.3.	ENVIRONMENTAL AUTHORISATION REQUIREMENTS	89
10.4.	OPINION OF THE EAP.....	90
10.5.	RECOMMENDATIONS OF THE EAP:.....	90
10.6.	RECOMMENDED PLANS:	91
11.	REFERENCES	92
	APPENDIX A – PUBLIC PARTICIPATION DOCUMENTATION	94
	APPENDIX B – CVS OF THE PROJECT TEAM AND EAP DECLARATION	135
	APPENDIX C – ACCEPTANCE OF THE FINAL SCOPING REPORT	136

LIST OF TABLES

Table 2.1: Property Holding Associated with the Proposed Development.	5
Table 2.2: Development Phasing (after Urban-Econ, 2015).	17
Table 5.1: Relevant Legislation.	25
Table 5.2: NEMA Environmental Management Principles.	27
Table 5.3: NEMA Listed Activities triggered by the proposed development.	29
Table 5.4: Management and conservation of biodiversity within the framework of NEMA.	31
Table 5.5: Health and safety of persons at work according to the Occupational Health and Safety Act.	36
Table 6.1: Wetland classification for the Ganspan Wetland (NFEPA, 2011).	46
Table 6.2: Biodiversity summary for the Phokwane Local Municipality (BGIS, 2015).	47
Table 7.1: Northern Cape Fossil Heritage: Palaeontological Highlights (from Almond and Pether, 2009).	54
Table 7.2: List of potential plant SCC that may occur on site.	55
Table 7.3: Vegetation communities found within the Ganspan Wetland Reserve site.	55
Table 7.4: SCC observed on site.	56
Table 7.5: Potential plant SCC that were not observed but may still occur on site.	56
Table 7.6. Criteria used for the analysis of the sensitivity of the Ganspan Wetland Reserve development project.	57
Table 7.7: List of criteria contributing to the sensitivity map.	58
Table 7.8: Sensitivity classes identified within the Ganspan Wetland Reserve.	58
Table 7.9: List of Alien and Invasive Plant Species identified within the Ganspan Wetland Reserve project site.	60
Table 7.10: Occurrence of bird species according to habitat type in the project site.	65
Table 8.1: Criterion used to rate the significance of an impact.	71
Table 8.2: Matrix used to determine the overall significance of the impact based on the effect and likelihood of occurrence.	71
Table 8.3: Environmental Significance Scale.	72
Table 8.4: Criteria considered post mitigation.	72
Table 8.5: Impacts and Key Mitigation Measures.	75
Table 10.1 below shows the significance of the impacts associated with the preferred alternative before and after mitigation is taken into account.	86

LIST OF FIGURES

Figure 1.1: Proposed Location for the Ganspan-Pan Wetland Reserve Upgrade.	1
Figure 2.1: Locality map of the proposed project property.	5
Figure 2.2a: Conceptual design framework defining the land use precincts for the proposed development (from Urban-Econ, 2015).	6
Figure 2.2b: Conceptual design number 12 of the proposed development (from Urban-Econ, 2015).	7
Figure 2.2c: Proposed project design layout (from Urban-Econ, 2015).	8
Figure 2.3: Design of the proposed residential units (from Urban-Econ, 2015).	10
Figure 2.4: Design of the proposed chalets (from Urban-Econ, 2015).	10
Figure 2.5: Design of the proposed bird blinds (from Urban-Econ, 2015).	11
Figure 2.6: Design of the proposed lodge adjacent to the game reserve (from Urban-Econ, 2015).	11
Figure 2.7a: Design of the proposed village centre (from Urban-Econ, 2015).	12
Figure 2.7b: Design of the proposed village centre (from Urban-Econ, 2015).	12
Figure 2.7c: Design of the proposed village centre (from Urban-Econ, 2015).	13
Figure 2.8: Design of the proposed picnic and braai areas (from Urban-Econ, 2015).	13
Figure 6.1. A: The average annual rainfall for Jan Kempdorp; B: The average annual temperature range for Jan Kempdorp (from Climate Data, 2018).	38
Figure 6.2. The geology of the proposed project area.	39
Figure 6.3a. Elevation profiles of the project area (as per Figure 6.3b below).	39
Figure 6.3b: The topography of the proposed project area.	40
Figure 6.4: Land use at the Ganspan Wetland Reserve site and surrounding areas.	41
Figure 6.5: Vegetation found at the Ganspan Wetland Reserve and surrounding areas.	42
Figure 6.6: Northern Cape CBA Map (2007) for the Ganspan Wetland Reserve site.	44
Figure 6.7: Illustrating the distances of various protected areas to the Ganspan Wetland Reserve sites (a protected site).	44
Figure 6.8: Quaternary catchment locality of the Ganspan Wetland Reserve.	45
Figure 6.9: The NFEPA wetland map of the site and surrounding areas.	46
Figure 6.10: Hydrology surrounding the proposed project area.	47

Figure 7.1: Aerial imagery of Ganspan Pan dating to 1957 (top) and 2018 (bottom). Note the apparent absence of man-made structures in the footprint area in 1957. Later structures, dating to approximately 1980, are indicated by the orange arrow in the 2018 image. 50

Figure 7.2: Aerial map indicating the location of Stone Age remains in the Ganspan-Pan Wetland Reserve Development area, discussed in the text..... 51

Figure 7.3: MSA scarpers (left), a broken blade (centre) and a point (right) noted in the project area in disturbed areas..... 52

Figure 7.4: An upper grind stone / conical stone, possibly from the LSA located in the project area. Note scarring (left) and smoothed surfaces for grinding (right) visible on the stone..... 52

Figure 7.5: Vegetation community map of the Ganspan Wetland Reserve with the proposed development overlay. 56

Figure 7.6: Ecosystem sensitivity within the Ganspan Wetland Reserve site. 59

Figure 7.7: Biodiversity sensitivity within the Ganspan Wetland Reserve site 59

Figure 7.8: Physical sensitivity within the Ganspan Wetland Reserve site. 60

Figure 7.9: Proposed Biodiversity Corridors for the Ganspan Wetland Reserve site. 61

Figure 7.10: Important Bird Areas in relation to Ganspan. 63

Figure 7.11: Habitat map of the Ganspan Wetland Reserve..... 64

Figure 7.12: Curlew Sandpiper (*C. ferruginea*) observed on the northern bank at Ganspan. 66

Figure 7.13: Habitat sensitivity map of the Ganspan Wetland Reserve. 67

Figure 8.1: Logic used to rate overall significance post mitigation. 74

Figure 10.1: Combined ecological and archaeological sensitivity with the proposed layout..... 88

Figure 10.2: Combined environmental sensitivity with the EAP’s suggested layout changes 89

LIST OF PLATES

Plate 2.1: Existing entrance: buildings to be demolished and replaced by reception, security and information centre (refer to Fig 7.a). 14

Plate 2.2: Existing buildings to be demolished. 14

Plate 2.3: Existing jetty on the southern edge of the Ganspan Pan wetland. 15

1. INTRODUCTION

1.1. Project overview

The Frances Baard District Municipality (FBDM) has proposed the development of a recreational and tourist area at the Ganspan-Pan Wetland Reserve (formerly the Ganspan Waterfowl Nature Reserve) situated on Holding 476 of Vaalharts Settlement B, located approximately 6.5 kilometres (km) west of Jan Kempdorp, within the Northern Cape Province. The proposed development is situated approximately 90 km north of Kimberley, located within the Phokwane Local Municipality, seated within the FBDM (Figure 1.1).

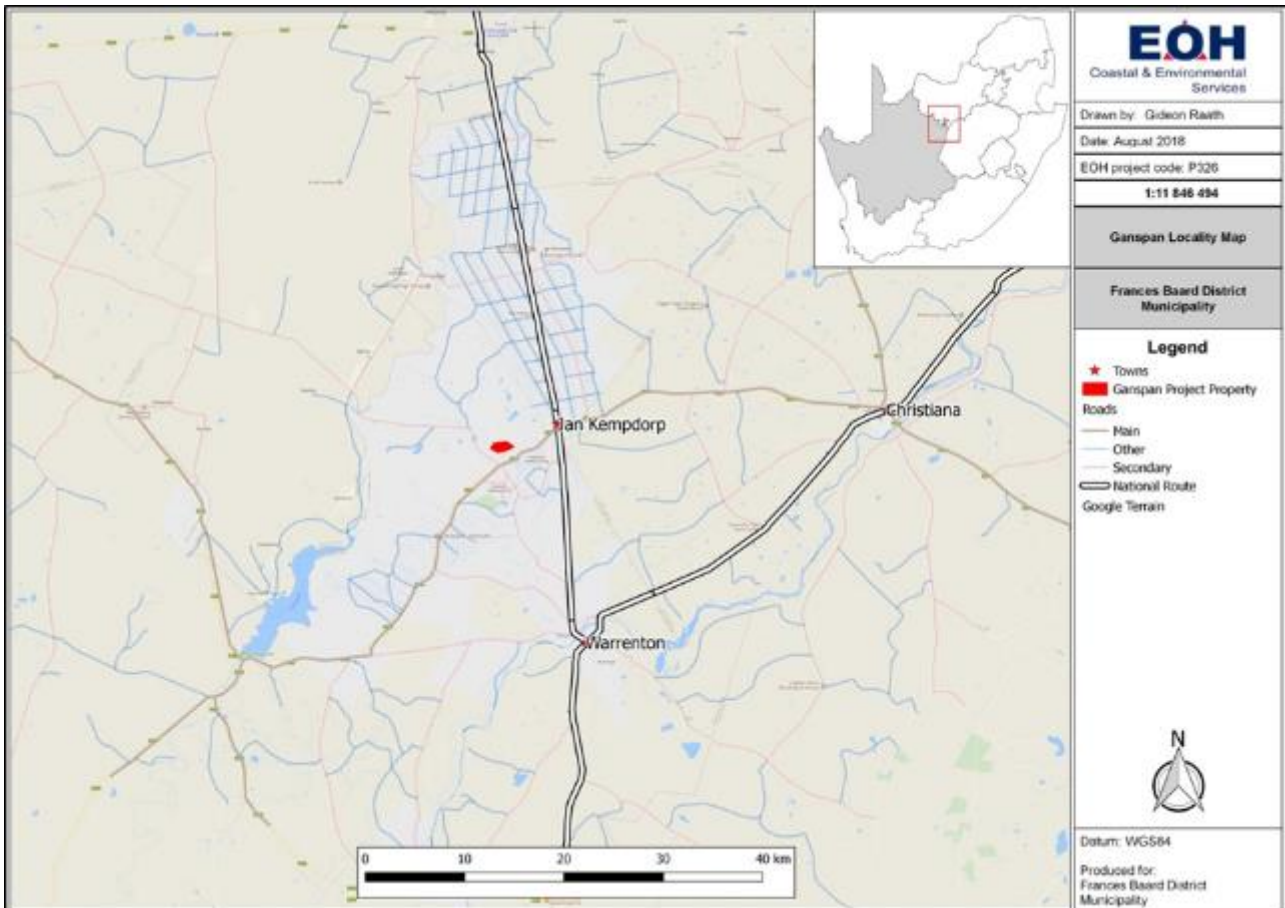


Figure 1.1: Proposed Location for the Ganspan-Pan Wetland Reserve Upgrade.

The project involves the development and upgrading of infrastructure in the Ganspan-Pan Wetland Reserve to restore the area as a safe, attractive and sustainable tourism attraction. The project will include the following activities:

- The development, upgrading and the restoration of viable tourism and recreational facilities such as:
 - Fishing;
 - Camping facilities;
 - Bird-viewing;
 - Braai and picnic spots;
 - Hiking and biking trails;
 - Children's playground;
 - Restaurant;
 - Self-catering chalets;
 - Jetties for boat launch sites;
 - Informal market area; and

- Multipurpose centre; and
- Upgrading and development of access roads, security gates, parking and reception.

EOH Coastal & Environmental Services (EOH CES) has been appointed by the FBDM to apply for an Environmental Authorisation (EA) by means of conducting a Scoping and Environmental Impact Reporting (S&EIR) process.

1.2. Objective of this report

This report follows the Final Scoping Report, which was accepted by the Northern Cape Department of Environment and Nature Conservation (DENC) on the 29th of July 2019 (please refer to Appendix C) and is the second of a number of reports produced in the Environmental Impact Assessment (EIA) process. This Environmental Impact Assessment Report (EIR) has been compiled in accordance with the requirements as stipulated in Section 23 and Appendix 3 of the 2014 EIA Regulations (as amended in April 2018) (GN R 982, as amended by GN R 326), which clearly outlines the content of an EIR.

The objective of the environmental impact assessment process is to, through a consultative process—

- (a) *determine the policy and legislative context within which the activity is located and document how the proposed activity complies with and responds to the policy and legislative context;*
- (b) *describe the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the development footprint on the approved site as contemplated in the accepted scoping report;*
- (c) *identify the location of the development footprint within the approved site as contemplated in the accepted scoping report based on an impact and risk assessment process inclusive of cumulative impacts and a ranking process of all the identified development footprint alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects of the environment;*
- (d) *determine the—*
 - (i) *nature, significance, consequence, extent, duration and probability of the impacts occurring to inform identified preferred alternatives; and*
 - (ii) *degree to which these impacts—*
 - (aa) *can be reversed;*
 - (bb) *may cause irreplaceable loss of resources, and*
 - (cc) *can be avoided, managed or mitigated;*
- (e) *identify the most ideal location for the activity within the development footprint of the approved site as contemplated in the accepted scoping report based on the lowest level of environmental sensitivity identified during the assessment;*
- (f) *identify, assess, and rank the impacts the activity will impose on the development footprint on the approved site as contemplated in the accepted scoping report through the life of the activity;*
- (g) *identify suitable measures to avoid, manage or mitigate identified impacts; and*
- (h) *identify residual risks that need to be managed and monitored.*

This EIR is structured as follows:

Chapter 1 – Introduction: Provides background information on the proposed project, a brief description of the EIA process required by the National Environmental Management Act (NEMA) (Act No. 107 of 1998, as amended) and its associated regulations, and describes the key steps in the EIA process that have been undertaken thus far, and those that are still to be undertaken.

Chapter 2 – Project Description: Provides a description of the proposed development, a description of the activities and technical details of the process to be undertaken, the proposed location/properties on which the development is to occur and the preliminary layout of the development and its associated infrastructure.

Chapter 3 – Alternatives: Identifies all the potential alternatives associated with the project including the fundamental, incremental and no development alternatives. An analysis of the alternatives is provided as well as a motivation for not considering certain alternatives. The preferred alternative is also identified and reasons are given as to why this is the preferred alternative.

Chapter 4 – Need and desirability of the project: Provides motivation on the need and desirability of the proposed development with respect to national and local plans and policies.

Chapter 5 – Relevant Legislation: Identifies all the legislation and guidelines that have been considered in the preparation of this EIR and outlines the Listed Activities triggered by the proposed development.

Chapter 6 – Description of the Affected Environment: Provides an overview of the biophysical and socio-economic characteristics of the site and its environs that may be affected by the proposed development, compiled largely from published information, but supplemented by information from the site visits.

Chapter 7 – Key Findings of Specialist Studies: Provides the findings of the various specialists which were appointed to the project including the scope of the work, the date and season of the assessment conducted, the methodology used, the sensitivity of the project site, the identification and rating of impacts, the provision of mitigation measures and the recommended conditions or monitoring requirements for inclusion in the EA.

Chapter 8 – Impacts Assessment: Identifies the positive and negative impacts on the environment and the community that will result from the proposed activity. This will include the assessment of geographical, physical, biological, social, economic, heritage and cultural aspects and will include possible mitigation measures for each identified impact. The direct, indirect and cumulative impacts will be assessed using a prescribed methodology. A summary of the impacts will be provided along with the recommendations of the EAP.

Chapter 9 – Public Participation Process: Provides the activities conducted during the mandatory 30-day Public Participation Period, as legislated. This will include details regarding the public meeting events that were held during this period, the advertisements and notifications which were placed, the comments or queries received from Interested and Affected Parties as well as the responses provided by the EAP.

Chapter 10 – Conclusions and Recommendations: Provides a final statement from the EAP which sums up the EIR and the overall impact that the proposed project will have on the environment. The mitigation measures, which should be included in the EA, will be summarised in the concluding statement.

References: Cites any texts referred to during preparation of this report.

Appendices: Contains all supporting and supplementary information.

1.3. Assumptions and Limitations

This report is based on information that is currently available and, as a result, the following limitations and assumptions under which this report was compiled are implicit:

- Descriptions of the natural and social environments are based on limited fieldwork and available literature;
- The report is based on a project description taken from preliminary design specifications and site layouts for the proposed Ganspan-Pan Wetland Reserve Upgrade that have not yet been finalised and are likely to undergo a number of iterations and refinements (based on environmental and technical inputs) before they can be regarded as definitive; and
- It should be emphasised that information, as presented in this document, only has reference to the study area as indicated on the project maps. Therefore, this information cannot be applied to any other area without a detailed investigation being undertaken.

2. PROJECT DESCRIPTION

2.1. Location and Site Description of the Proposed Development

The proposed development is situated approximately 90 km north of Kimberley, located within the Phokwane Local Municipality, seated within the FBDM of the Northern Cape Province (Figure 2.1). The proposed Ganspan-Pan Wetland Reserve is located within one property holding (Table 2.1). The National Landcover map of South Africa (NLC, 2014) classifies areas within the property as 'wetland', 'bare - none vegetated', 'low shrubland', 'grassland', 'water seasonal', 'woodland/open bush' and 'thicket/dense bush'. The majority of the property is permanent water and seasonal wetland areas.

Table 2.1: Property Holding Associated with the Proposed Development.

Description of affected farm portion				
Property Name and Number	21-digit SG Code	Ward	Municipality/ Province	Farm size (ha)
Holding 476 of Vaalharts Settlement B	C00700070000047600000	10	Phokwane Local Municipality	183.3294

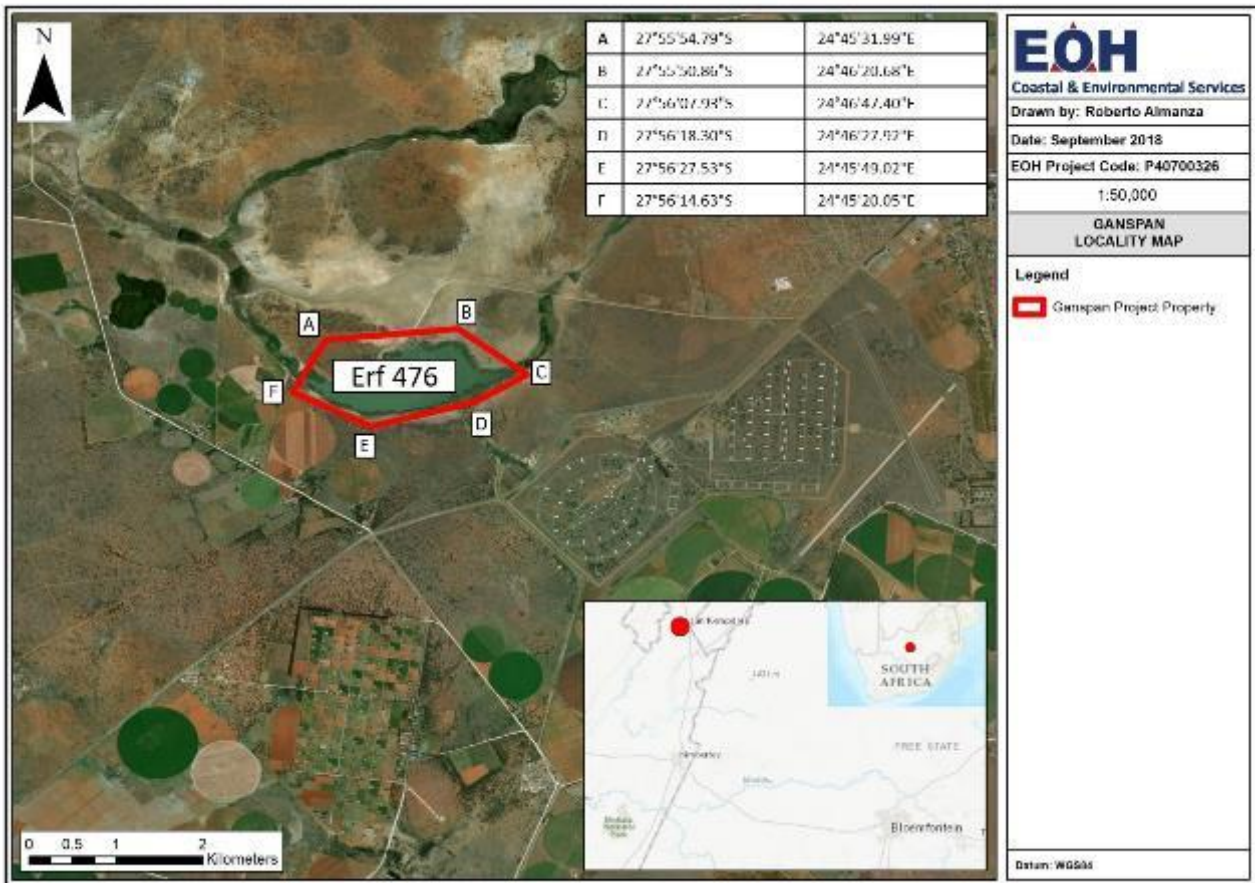


Figure 2.1: Locality map of the proposed project property.

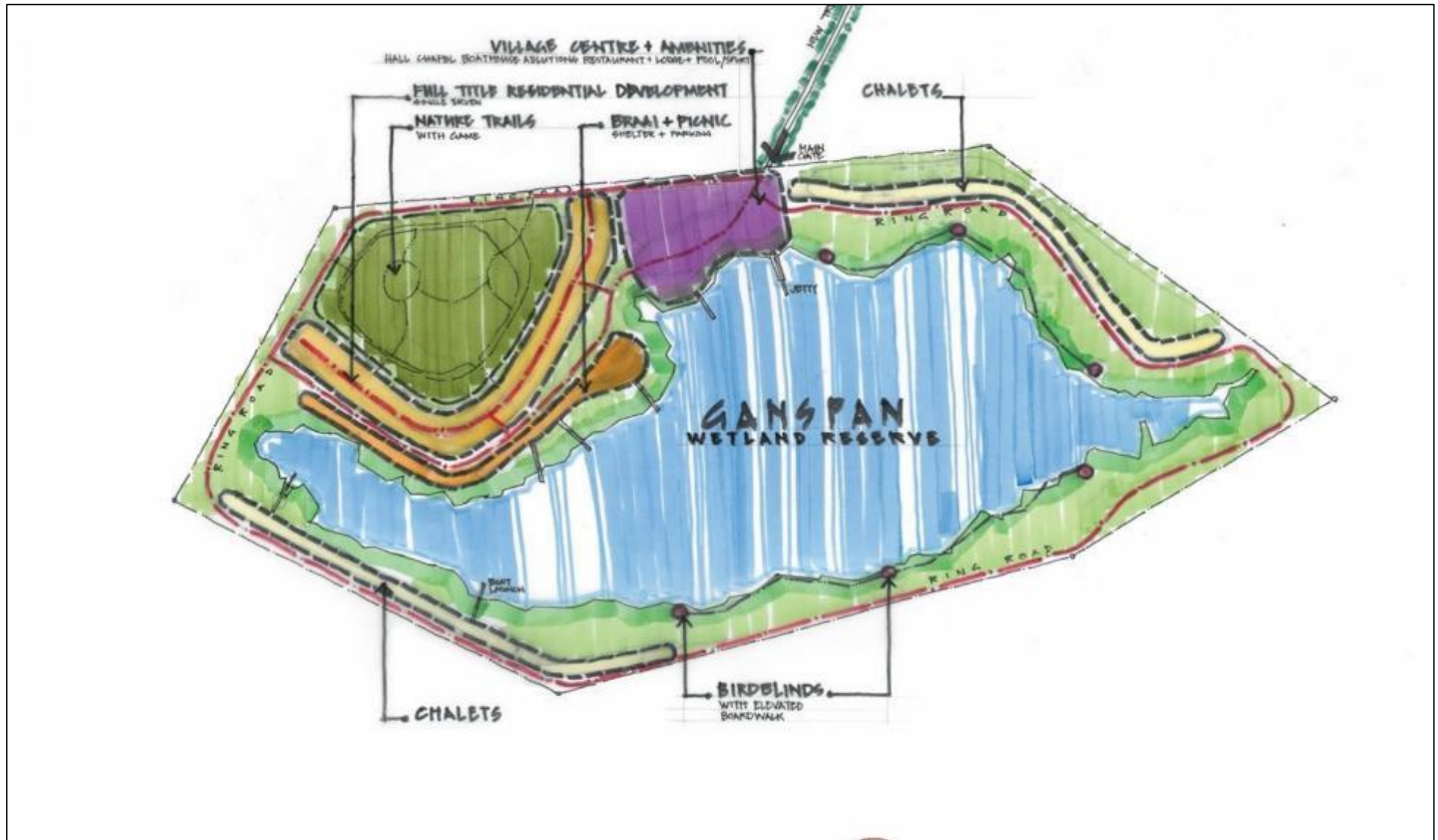


Figure 2.2a: Conceptual design framework defining the land use precincts for the proposed development (from Urban-Econ, 2015).



Figure 2.2b: Conceptual design number 12 of the proposed development (from Urban-Econ, 2015).

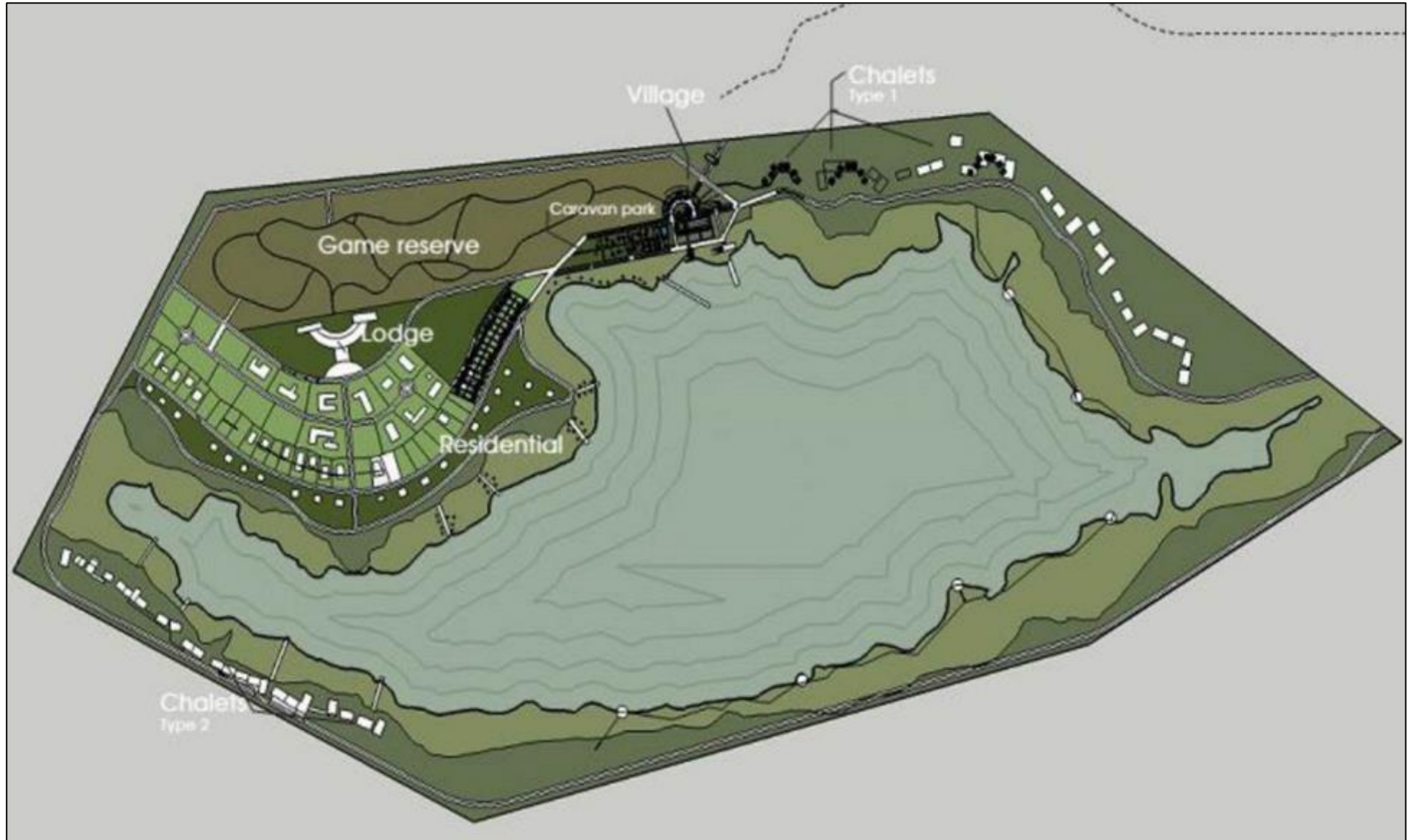


Figure 2.2c: Proposed project design layout (from Urban-Econ, 2015).

2.2. Project Concept

The purpose of the proposed Ganspan-Pan Wetland Reserve Upgrade is to develop a tourism destination that takes into consideration the social, economic and environmental aspects of the area and results in an accommodation and recreational area for local and foreign tourists. A framework design for the proposed development was initially established to define various land use precincts within the property (Figure 2.2a). The largest property precincts that will be developed within the property are the full title housing units, the village and amenities area and the chalets. The proposed project will also include the following general components (Figure 2.2b):

- Accommodation:
 - Self-catering chalets
 - Camping facilities
 - Reception

- Recreational facilities:
 - Restaurant
 - Multipurpose centre
 - Informal market area
 - Children's playground
 - Braai and picnic spots
 - Hiking and biking trails
 - Jetties for boat launches
 - Bird hides

- Supporting infrastructure:
 - Bulk infrastructure (e.g. water, sewerage, electricity etc.)
 - Upgrading and development of access roads
 - Security gates
 - Fencing
 - Parking

2.3. Detailed Description of the Proposed Development

A more detailed design of the proposed upgrade has been developed based on the abovementioned concept together with various refinements and revisions that have been made following workshops held with various stakeholders (Figure 2.2c). The applicant intends on forming a Public Private Partnership to enable the construction and operation of the Ganspan-pan wetland reserve as a recreational and tourist facility. Should the proposed layout or activities change from that presented in the EIA, the final layout will need to be approved by DENC and incorporated into the EMPr.

Of the 188 ha property, a minimum area of approximately 97 ha will remain unchanged as this constitutes the waterbody located in the middle of the property. The remaining area (approximately 91 ha) will consist of a total infrastructure footprint of approximately 29 ha, made up of the following components:

- Residential units - 17 ha
- Chalets - 6 ha
- Lodge - 3 ha
- Caravan park - 2 ha
- Village Centre - 1 ha

The remaining 64 ha will consist of open space which will include grassed areas with a number of picnic sites, camping facilities, playgrounds and other natural areas including a game park which will be approximately 15 ha in size.

Residential Units

Two types of erven are proposed, namely small sites (approximately 400 m²) that could be developed for weekend accommodation and larger sites (approximately 600 m²) for permanent occupation (Figure 2.3). There will be approximately 160 erven sold throughout the entire property. It has been proposed that general 'green building principles' will apply to all construction that will take place within the property. This includes the use of solar panels, solar geysers, rain water harvesting tanks and the use of building materials that require less maintenance. The design of the buildings will also incorporate natural cross-ventilation (to minimise the need for mechanical ventilation), optimisation of sun exposure and the use of natural light.



Figure 2.3: Design of the proposed residential units (from Urban-Econ, 2015).

Chalets

There are currently no accommodation facilities within the Ganspan-Pan Wetland Reserve. Several chalets, approximately 80 m² each, will be erected to the south and north of the Ganspan waterbody (Figure 2.4). The number of chalets will depend on the demand, and could be added in phases over time as the demand dictates. Initially, approximately fourteen (14) chalets will be developed within the property. As with the private housing, the chalets could also be privatised.



Figure 2.4: Design of the proposed chalets (from Urban-Econ, 2015).

In addition to the chalets, six (6) bird blinds (also known as bird hides), will be developed along the edge of the waterbody. A bird blind is defined as a shelter, often camouflaged, that is used to observe wildlife, especially birds, at close quarters. The bird blinds will be wooden structures each approximately 6 m² in area consisting of an elevated wooden boardwalk that allows birdwatchers to be able to have visual contact with the water above the reeds. The wooden boardwalk will also form part of a hiking route around the edge of the water (Figure 2.5).

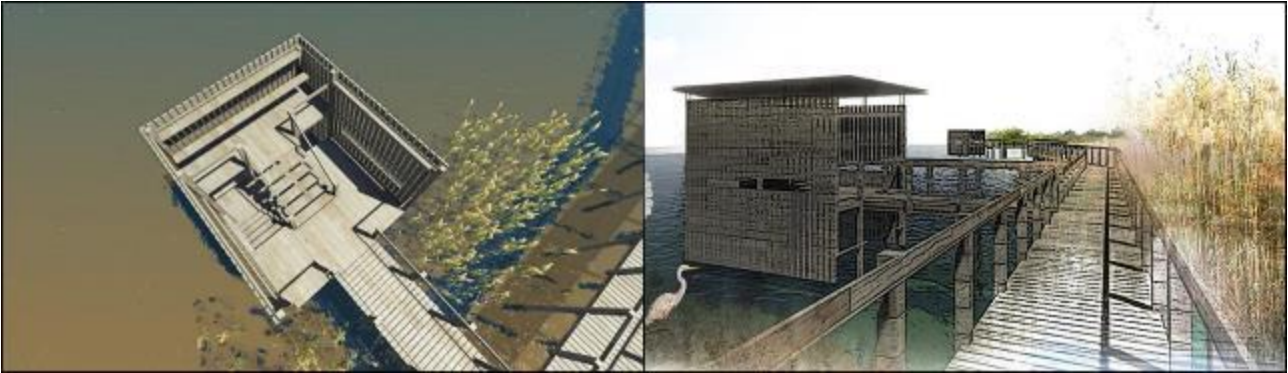


Figure 2.5: Design of the proposed bird blinds (from Urban-Econ, 2015).

Lodge

A game lodge with fifty (50) rooms, stables, a large lapa and braai area will be developed towards the north west of the property adjacent to the proposed game reserve and designated hiking trails (Figure 2.6). The lodge will be approximately 3 ha and will be able to accommodate up to 120 people. When combined with the accommodation at the chalets, caravan park and camping sites, it is expected that approximately 220 people can be accommodated at the proposed development once it is completed.



Figure 2.6: Design of the proposed lodge adjacent to the game reserve (from Urban-Econ, 2015).

Village Centre and Caravan Park

The village centre will be located at the north of the property and directly accessible from the main entrance gate. It will include a reception, information and security area, a multipurpose hall, a chapel, an open-air amphitheatre, a restaurant, sports facilities (e.g. tennis courts and swimming pools),

ablution facilities, boathouse, jetties, children’s play area, and a formal and informal market space. The caravan park, which will be approximately 2 ha, will be positioned directly west of the village centre (Figure 2.7a to Figure 2.7c).

The restaurant is proposed to be developed on the banks of the waterbody to provide overnight and day visitors with food and beverage in an optimal setting within the property. The multipurpose centre is proposed to seat up to fifty (50) people will be designated for conferences, weddings, expositions, concerts and other functions and will consist of a large hall, office space, ablution facilities and a small kitchen.

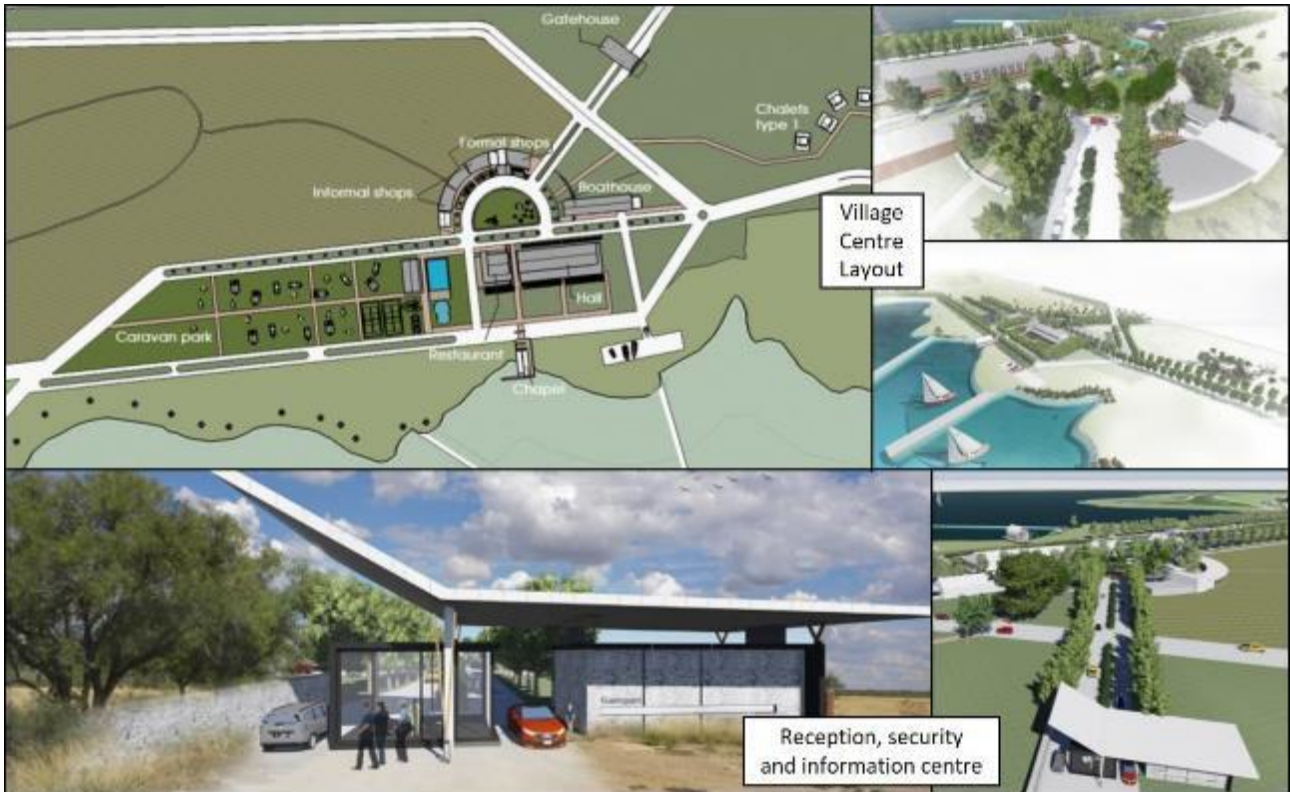


Figure 2.7a: Design of the proposed village centre (from Urban-Econ, 2015).



Figure 2.7b: Design of the proposed village centre (from Urban-Econ, 2015).



Figure 2.7c: Design of the proposed village centre (from Urban-Econ, 2015).

Picnic, Braai and Other Facilities

Approximately fifteen (15) braai shelters, each up to 4 m², will be developed at picnic areas along the edge of the waterbody adjacent to the residential developments (Figure 2.8). The picnic areas are enhanced by an aggressive programme of tree planting to further protect these spaces, and to enhance the quality of the picnic experience. Forty (40) camping stands, each between approximately 25 m² and 36 m², will be demarcated in areas next to the waterbody.



Figure 2.8: Design of the proposed picnic and braai areas (from Urban-Econ, 2015).

Demolishment of Existing Structures

There are a number of existing dilapidated structures located within the Ganspan-Pan Wetland Reserve whose foundations may be used during the proposed upgrade (Plate 2.1 and 2.2). For example, the existing entrance structure, located at the intersection of the access road and the northern boundary of the property, has broken and missing windows and doors, but the general structure, with a new roof, may be suitable for the entrance to the proposed upgraded development. The manager's residence, situated directly adjacent to the northern embankment of the wetland, will need to be renovated and likely rebuilt as a result of water damage and broken walls. The existing ablution facilities, located adjacent to the manager's residence, are completely dilapidated and, due to the fact that there are no internal bathroom facilities, completely new structure will need to be built. The existing braai and picnic facilities will also require replacement. Following discussions held between the proponent and their architects, it was concluded that the most cost-effective option would be to demolish all existing structures.



Plate 2.1: Existing entrance: buildings to be demolished and replaced by reception, security and information centre (refer to Fig 7.a).



Plate 2.2: Existing buildings to be demolished.

Jetties and Boat Launch Sites

There are currently two existing jetties located along the wetland embankment, one directly south of the manager's residence and one along the southern embankment of the wetland (Plate 2.3). Although the southern jetty appears to be in good condition, it would need to be determined if it would be safe to use and if it would suit the design of the new jetties proposed for the site. The northern jetty is currently below the water line and would therefore need to be completely removed. The proposed design concept includes the construction of two (2) jetties located along the northern wetland embankment which will be situated directly south of the proposed caravan park and village.

The existing boat launch ramp, located parallel to the existing jetty along the northern embankment, is in fairly good condition and will require some refurbishment. The design concept makes provision for an additional boat launch site along the south-western bank of the wetland which will be located directly north of the proposed 'Type 2' chalets. The boat launch ramps will be approximately 15 m long and 3 m wide.



Plate 2.3: Existing jetty on the southern edge of the Ganspan Pan wetland.

Ganspan-Pan Wetland

The wetland itself is currently in reasonable condition. Water analyses will need to be carried out to determine if the quality of the water is sufficient for recreational use. A number of waste items dumped along the wetland embankment would need to be cleaned up and the inlet works located in the western corner of the site will need to be cleared of existing rubbish and regularly maintained going forward.

2.4. Supporting Infrastructure

Various supporting infrastructure will be required to facilitate the construction and operation of the proposed recreational and tourist development. The final layout of the infrastructure described below will be determined by the FBDM at a later stage and will need to be approved DENC before construction can commence. The sections below are thus included to provide insight into the proposed functionality of the Ganspan development, but will not be assessed further in this report.

Energy Sources

Electricity for the proposed development will be sourced from the National Grid, provided permission is obtained from Eskom. During the construction phase, electricity will be sourced from the existing Eskom connections near the site. The estimated electricity usage envisaged for the construction of the proposed development is approximately 4 800 Kilowatt Hours (kWH) per each construction phase. The estimated electricity usage envisaged during the operational phase of the proposed development is 34 600 kWH based on an average use of 9.5 kWH per person per day.

To cater for the above FBDM have proposed the development of a new medium voltage overhead powerline, approximately 300 m in length, will be constructed together with two (2) 200 kV substations. This infrastructure will be used to transmit electricity to the relevant sections of the proposed development via two (2) distribution boxes which will be installed on site. This will be subject to a Basic Environmental Assessment GNR 327(11) at a later stage.

Water Supply

During the construction phase, water will be obtained from the existing municipal water supply via water tanks which will be provided by the Contractor. It is estimated that approximately 180 m³ of water will be required for each phase of the construction of the proposed development. During construction, a new water supply pipeline, which will be approximately 2 km long with a diameter of 160mm and a throughput capacity of approximately 0.2 litres per second, will be constructed in order for water to be reticulated to the site from the Phokwane Local Municipality municipal water supply. It is estimated that approximately 23.75 m³ of water will be required on a monthly basis during the operational phase as it is expected that the maximum daily water consumption will be approximately 340 litres per person per day. Water will also be stored on site in four (4) 'JoJo' tanks which will be able to hold a maximum of up to 10 000 litres each. No boreholes or groundwater sources will be utilized for the provision of water.

Solid Waste

There is an existing informal dumping site located adjacent to the un-tarred access road. It is proposed that the dumping site become legalised and this can then be utilized for the disposal of general waste during the construction and operational phases of the proposed development. In addition, the legalisation and fencing-off of the dumping site will ensure that litter cannot easily spread into the surrounding areas. During the construction phase, an estimated 10 000 m³ of solid waste will be generated each month. Until such time that the existing dumping site is formalised and receives the necessary licencing, the Contractor will dispose of the construction waste at another nearby registered landfill site. During the operational phase, approximately 14 m³ of solid waste will be produced on a monthly basis. This waste will be collected and disposed of as part of the Phokwane Local Municipality collection services.

Wastewater and Sewage

During the construction phase, portable ablution facilities will be implemented by the Contractor and will be serviced by a registered service provider. It is expected that approximately 280 litres of wastewater and sewage will be produced on a daily basis during the construction phase. As part of the construction phase, a new sewage pipeline, with a length of approximately 4 km with an internal diameter of approximately 200 mm, will be implemented. This pipeline will act as the main method of disposal of effluent and/or wastewater during the operational phase of the proposed development.

Several ablution facilities will be installed throughout the site, but the public ablution facilities will be concentrated in the areas which will receive the majority of the heavy foot traffic (e.g. camping spots, reception area, braai facilities and the multipurpose centre). An existing water treatment facility (septic tank) is located amongst the wetland vegetation on the northern embankment of the wetland. Although the proponent has suggested that the septic tank could be refurbished by covering it and inspecting the underground conditions, a septic tank is not regarded as an efficient sewage treatment facility. Instead, it would be better suited to connect the proposed infrastructure to the existing municipal sewage network via new pipeline infrastructure, which will then result in the sewage and wastewater being piped to the Jan Kempdorp Wastewater Treatment Plant. Alternatively, the client may consider containerised (packaged) treatment facilities which will be used to treat effluent from the various precincts of the property. It is estimated that approximately 7 000 litres of effluent and/or wastewater will be produced on a daily basis during the operational phase. These options will be discussed with the Department of Water and Sanitation during the Water Use Authorisation process.

Access Roads and Parking

The project site is located on Holding 476 of Vaalharts Settlement B and can be accessed from Kimberley via the National Route 12 (N12) and N18 highways, the R370 regional road and then via an un-tarred access road which leads to the site. This un-tarred access road is currently poorly maintained and exhibits flooding in certain area. It is used by farmers who tend to land on the surrounding farms and who primarily make use of 4x4 vehicles to access their land. Several un-

tarred access roads, which are currently situated within the Ganspan-Pan Wetland Reserve, can be used to access the majority of the project area. The existing access road will require the implementation of stormwater drainage channels in order to address the problem currently experienced during the rainy season.

A narrow vehicular ring road will be developed to link all the various elements with the main entrance gate. This route will also be used by the village estate’s security that would then be able to patrol and monitor the boundaries of the property. The boundaries will be secured with a suitable fence and cameras. A central parking area will be developed adjacent to the information/reception area at the entrance to the property. Smaller parking areas will also be provided adjacent to each chalet.

Stormwater Infrastructure

During construction, stormwater will initially be directed via temporary earth drains until such time that the proposed permanent stormwater infrastructure is functional and able to be used for stormwater management. Stormwater drainage pipes, approximately 150 m in length with an internal diameter of approximately 600mm, will be implemented. Their throughput capacity and final layout will be determined following the completion of the final engineering designs.

2.5. Phases of the Development Process

The most important facilities to be upgraded would be the entrance building, the fencing, the site roads, ablution facilities, treatment facilities (if required), picnic and braai areas, the jetties and the boat ramps. The initial project development plan was divided into three (3) phases, and was developed in terms of the urgency of the infrastructure required. However, after consideration of the income which is required to be generated during the progression of the development, it was decided that certain clusters of the proposed chalets, as well as the multi-purpose hall, must be developed at early stage.

Phase 1 of the development will therefore include site preparation, ablution facilities, fourteen (14) chalets, jetties, boat launch sites, water and dumping site rehabilitation, construction of the multi-purpose hall, camping areas, parking areas and approval of plots for private residences. Phase 2 will involve the development of the village infrastructure, including the children’s playground and the shop/market areas, as well as the establishment of hiking and/or biking trails, fishing areas and other recreational activities (e.g. horseback riding and, potentially, a petting zoo). Finally, Phase 3 will include the development of the restaurant, the remaining chalets, the chapel and the proposed lodge (Table 2.2). Phase 1 is expected to take up to two (2) years for construction, while Phase 2 and Phase 3 may take anywhere up to an additional nine (9) years. The estimated timeline of the proposed development is therefore approximately twelve (12) years. The project will be phased according to availability of municipal funding.

Table 2.2: Development Phasing (after Urban-Econ, 2015).

Phase of the Development	Proposed Development
Phase 1	<ul style="list-style-type: none"> • Site preparation and installation of bulk services; • Fencing of the property; • Erection of the entrance gate house for information and entrance control; • Start of aggressive tree planting programme; • Development of ablution facilities; • Development of braai and picnic area; • Development of Chalet Type 1 and Chalet Type 2 (7 of each type); • Restoration of Jetties for boat launches; • Construction of bird blinds; • Cleaning up of the dumping site; • Rehabilitation of water for aquatic activities; • Demarcation of zones for swimming, canoeing and fishing; • Construction of the multi-purpose hall; • Development of camping areas for tents and caravans;

Volume 1: Environmental Impact Assessment Report

	<ul style="list-style-type: none">• Development of a parking area;• Erection of sufficient signage in the surrounding area; and• Planning and approval of plots for private residence.
Phase 2	<ul style="list-style-type: none">• Develop playground for children;• Development of hiking and biking trails;• Construction of a small shop/ informal market area in the village area;• Information centre;• Development of fishing activities;• Erection of information boards on the type of fauna and flora in the area; and• Development of a petting zoo and horseback riding.
Phase 3	<ul style="list-style-type: none">• Construction of a restaurant;• Construction of further self-catering chalets;• Development of lodge and game Reserve area; and• Construction of the chapel.

3. ALTERNATIVES

According to Appendix 3, Section 3 (1), of the 2014 EIA Regulations (as amended), “an environmental impact assessment report must contain the information that is necessary for the competent authority to consider and come to a decision on the application, and must include—

- (g) a motivation for the preferred development footprint within the approved site as contemplated in the accepted scoping report;
- (h) a full description of the process followed to reach the proposed development footprint within the approved site as contemplated in the accepted scoping report, including:
 - (i) details of the development footprint alternatives considered;
 - (ix) if no alternative development footprints for the activity were investigated, the motivation for not considering such; and
 - (xi) a concluding statement indicating the location of the preferred alternative development footprint within the approved site as contemplated in the accepted scoping report;
- (n) the final proposed alternatives which respond to the impact management measures, avoidance, and mitigation measures identified through the assessment;

3.1. Reasonable and feasible alternatives

Alternatives should include consideration of all possible means by which the purpose and need of the proposed activity could be accomplished. The no-go alternative must also, in all cases, be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed. The determination of whether the preferred activity, site or site location is appropriate is informed by the specific circumstances of the proposed development and its environment.

“**Alternatives**”, 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.
- (f) the option of not implementing the activity.

There are two types of alternatives: Fundamental Alternatives and Incremental Alternatives.

3.2. Fundamental Alternatives

Fundamental alternatives are developments that are entirely different from the proposed project and usually involve a different type of development on the proposed site, or a different location for the proposed development.

3.2.1 Location alternatives

The proposed project location is currently zoned as a permanent water and seasonal wetland areas surrounded by agricultural land (Phokwane LM SDF, 2008). The property has been designated by the district and local municipalities as a potential tourism area due to the presence of the existing waterbody and availability of surrounding land. The proposed development (a recreational and tourism area) has been specifically designed for this property and the land is also owned by the applicant, the FBDM. For this reason, no location alternatives have been considered.

3.2.2 Different type of development

There are a number of different types of developments which could potentially be constructed on the predominantly open land within the Ganspan-Pan Wetland Reserve however, because this is a protected area and is also a sensitive area in terms of ecology and hydrology, the type of

development must be limited to one which serves the preservation of the environment. Possible development alternatives would thus be to maintain the area solely as a nature reserve and prevent any development from taking place. This, however, would not be feasible as the maintenance and upkeep associated with a nature reserve requires continuous funding and cannot rely on the limited budget of the municipality. Therefore, a more feasible alternative is to develop a tourism area which will not only bring a steady income to area in order to assist with the required maintenance and upkeep, but will also aim to preserve the environmental aspects of the area while providing opportunities for recreational and leisure activities. For this reason, the type of development (the development of a recreational and tourism area) is the only reasonable and feasible alternative.

3.3. Incremental Alternatives

Incremental alternatives are modifications or variations to the design of a project that provide different options to reduce or minimise environmental impacts. There are several incremental alternatives that can be considered, including:

- The design or layout of the activity;
- The technology to be used in the activity;
- The operational aspects of the activity.

3.3.1 Layout Alternatives

The detailed design for the Ganspan Wetland Reserve is the combined result of a concept design and a workshop that was held on the concept design. To fully understand the design, it is important to realise that this design represents a variety of ideas and development options that could be pursued by the local and/or district authorities, in conjunction with interested private developers. This design does not give a blueprint of how the Ganspan Wetland Reserve is going to be developed as this would restrict the attraction of private sectors. The current proposed development encompasses a wide variety of land uses that can be developed to the benefit of the Ganspan Wetland Reserve. The diversity within the design is also accompanied with versatility in the sense that all the infrastructure does not necessarily have to be developed simultaneously. There are therefore a number of specific layout alternatives which may be considered at a later stage of the development planning. At present, however, the design layout shown in Figure 2.2c shows the most accurate representation of the proposed development layout. At this stage, no specific layout alternatives will be considered.

3.3.2 Technology Alternatives

As the activity is related to the construction and upgrading of the Ganspan-Pan Wetland Reserve, the most appropriate construction methods will be used based on what is available in terms of equipment and materials. During the construction phase, water will be obtained from the existing municipal water supply and electricity from the existing Eskom connections. Although the proponent has suggested that the existing septic tank could be refurbished by covering it and inspecting the underground conditions, a septic tank is not regarded as an efficient sewage treatment facility. Instead, it would be better suited to connect the proposed infrastructure to the existing municipal sewage network via new pipeline infrastructure, which will then result in the sewage and wastewater being piped to the Jan Kempdorp Wastewater Treatment Plant. Alternatively, the client may consider containerised (packaged) treatment facilities which will be used to treat effluent from the various precincts of the property. The technology for the operational phase will depend on what is available on the market at the time. Where possible, standard practices regarding energy efficiency during the operational phase will be followed e.g. the use energy-saving light bulbs and solar geysers. For these reasons, no additional technology alternatives have been assessed in this EIR.

3.3.3 Operational Alternatives

The operational phase of the project will consist of activities related to operating and managing the Ganspan-Pan Wetland Reserve, whose primary role is to function as a recreational tourist attraction. This will be the only operational alternative relevant to the project and, therefore, this EIR has not

considered any other operational alternatives.

3.4. Preferred Alternative

The preferred alternative considered in this EIR involves the construction and operation of the upgrade of the Ganspan-Pan Wetland Reserve. The preferred site alternative was determined by the local and district municipalities, who are not only the designated custodians of the land, but are also responsible for ensuring sustainable growth in the local economy (including growth of the tourism sector) and protection of the local environmental. Only the preferred alternative will be assessed in this report as this alternative is the only reasonable and feasible means of meeting the requirements of the proposed project.

3.5. No-Go Alternative

It is mandatory to consider the “no-go” option in the EIA process. The no development alternative option assumes the site remains in its current state, i.e. there is no upgrade of the Ganspan-Pan Wetland Reserve and the project area remains in its current condition. The no-go alternative is assessed in an objective manner in this EIR.

4. PROJECT NEED AND DESIRABILITY

According to Appendix 3, Section 3 (1) of the 2014 EIA Regulations (as amended), “an environmental impact assessment report must contain the information that is necessary for the competent authority to consider and come to a decision on the application, and must include—
 (f) a motivation for the need and desirability for the proposed development, including the need and desirability of the activity in the context of the preferred development footprint within the approved site as contemplated in the accepted scoping report.”

4.1 National Level

The 2030 National Development Plan (NDP, 2013) places emphasis on the development of economic infrastructure including water resources and services and states that “*water will be recognised as a foundation for activities such as tourism and recreation, reinforcing the importance of its protection.*” A key development policy outlined under economic infrastructure is that of tourism infrastructure, including accommodation and tourism products, which will play an important role in attracting a variety of tourists to different parts of South Africa. It also outlines the importance of ensuring environmental sustainability while allowing for the delivery of cultural benefits, including recreational opportunities, in order to achieve the national social and economic development objectives. The main goal outlined in the NDP is to boost economic growth, increase employment opportunities and reduce overall poverty. The NDP (2013) details the goals of achieving an inclusive and integrated rural economy in which people living in the rural areas may have more opportunities to take part in the economic, social and political life of the country. One method of achieving this is by “*developing industries such as tourism, fisheries and small enterprises where potential exists.*” In addition, the rural development strategy for the transformation of society and creation of equal opportunities aims to ensure that job creation is achieved in various sectors including the tourism sector (NDP, 2013). The proposed development aligns itself with the NDP (2013) as it will be contributing to rural land reform, job creation, tourism and economic infrastructure development.

4.2 Provincial Level

Similar to the NDP (2013), the Northern Cape Provincial Development and Resource Management Plan / Provincial Spatial Development Framework (Northern Cape PSDF, 2012) has several sustainable development objectives which include achieving economic sustainability by promoting employment creation. The Northern Cape PSDF (2012) also aims to promote the “*development of tourism-related amenities and activities along the main routes through the province.*” The tourism sector in the Northern Cape currently contributes approximately 6% to the provincial gross geographic product (GGP) resulting in an average annual growth of 17% in national visitors and 25% annual growth in international visitors between 2001 and 2011. The province is divided into several precincts, one of which is the tourism precinct. The tourism precinct in the Northern Cape consists of existing and envisaged tourism and recreational facilities such as resorts and public parks, similar to those proposed for this particular development. The PSDF outlines several areas as ‘Statutory Protected Areas’ which are defined as “*areas designated in terms of legislation for biodiversity conservation, defined categories of outdoor recreation and non-consumptive resource use.*” The PSDF also declares that nature reserves, such as the Ganspan-Pan reserve, must provide opportunities for nature-based recreation and tourism. In addition to this, core conservation areas must be managed as, amongst others, “*sites providing opportunities for solitude or primitive and unconfined types of recreation.*” As directed by the Northern Cape Planning and Development Act (Act No. 7 of 1998), the objectives of the PSDF include the need for bulk engineering and social services including recreational facilities. Settlements must also place a focus on offering leisure activities as well as local natural and cultural recreation opportunities for residents and tourists (Northern Cape PSDF, 2012). The proposed development aligns itself with the Northern Cape PSDF (2012) as it will be contributing to employment, tourism precincts and recreational infrastructure development.

4.3 District and Local Level

The FBDM Integrated Development Plan (IDP) 2017/18 – 2021/22 (FBDM IDP, 2017) lists several key performance areas required to improve local economic growth. One of these key performance areas is tourism and the goal within this sector is to “*ensure the development of a vibrant tourism sector that facilitates sustainable economic, environmental and social benefits in the district.*” The tourism sector within the FBDM provides several opportunities for economic growth and must look to involve the local communities. This will be achieved through participation and ownership of tourism-related businesses which will create employment opportunities and other economic benefits. The N18 has been identified as an appropriate tourism route for the district (FBDM IDP, 2017). The FBDM IDP (2017) also outlines several priority areas including reduction of unemployment, recreational facilities and infrastructure development.

The development objectives of the district municipality, as outlined in the 2014-2019 spatial development framework (FBDM SDF, 2014), include the upgrading, maintenance and provision of recreational, health, social and educational facilities. One of the spatial issues identified within the district is the current lack of upgraded recreational facilities as well as the lack of new recreational facilities. The objective earmarked to address this issue aims to “*facilitate the upgrading, maintenance and provision of recreational, health, social and educational facilities within the next five years.*” The type of investment required in the FBDM includes a recreational centre where leisure activities can be undertaken by residents and tourists in an effort to engage in natural and cultural recreational opportunities. The FBDM Local Economic Development Strategy ((LED, 2014) identifies hiking and cycling trails as an important recreational resource to attract foreign and domestic tourists. The FBDM SDF (2014) states that land uses outside of urban areas include that of recreational facilities which involve, amongst others, hiking, hunting, adventure sports, horse riding schools and stables. It also makes special mention of the Ganspan dumping site and the fact that it is currently illegal and is resulting in the occurrence of extensive illegal dumping in close proximity to surrounding residential areas. The FBDM have also indicated that the upgrading of wetlands within the district formed part of the Tourism Strategy for the 2015/2016 financial year in the attempt to attract more tourism to the area. The budget for this programme was secured during the 2016/2017 financial year.

According to the Northern Cape PSDF (2012), local government is responsible for the provision and maintenance of municipal parks and recreational areas. The Phokwane Local Municipality Integrated Development Plan 2017/2022 (Phokwane IDP, 2017) identifies recreational facilities as a priority issue within the local municipality and makes specific reference to the development of a business plan for the upgrading and restoration of the Ganspan-Pan Waterfowl Nature Reserve. This project is also identified as one of the economic development projects of the local municipality. The Phokwane Local Municipality Spatial Development Framework (Phokwane SDF, 2014) notes that the absence of recreational facilities within the Ganspan and Jan Kempdorp areas is a key issue for the local municipality and, in order to address this, the refurbishment and upgrading of existing recreational facilities must be undertaken. Tourism is identified as a development opportunity for the area and will include historical, natural and leisure-based opportunities. One of the overarching spatial development strategies outlined in the Phokwane SDF (2014) is the development of tourism and eco-residential estates which will aim to beautify the area and improve living conditions for the residents located in Ganspan and Jan Kempdorp. In addition to this, the Ganspan Waterfowl is identified as a tourist attraction which requires additional protection. According to the Phokwane SDF (2014) map, the project area is classified as a ‘possible extension of the Vaalharts Irrigation Scheme,’ which is the second largest irrigation scheme in the southern hemisphere. The proposed development is in line with the district and local municipalities’ IDPs and SDFs.

4.4 Project Desirability

The proposed development will ensure that the communities are involved in both the construction and operational aspects of the project. This will be achieved by creating opportunities for Small, Medium and Micro-sized Enterprises (SMMEs) and by ensuring that there is an overall increase of economic activity in the area. During an initial stakeholder engagement process held by the FBDM,

the majority of the stakeholders agreed that a newly developed recreational facility will be good for job creation and socio-economic upliftment. It was also concluded that there are currently insufficient recreational facilities in the area and a new facility, providing the local community with a place to relax and enjoy the outdoors, will be welcomed by the nearby residents.

The current land use of the property is categorised by the South African National Land Cover (NLC, 2014) as 'waterbodies' (80%), 'natural' (15%) and 'degraded' (5%). At present, the proposed development site has no functioning infrastructure and is dilapidated. The proposed new and/or upgraded infrastructure will ensure that the natural areas of the site are returned to a pristine condition and that all infrastructure is fully functioning. The proposed upgrading of the existing access road will not only be beneficial to the future visitors to the reserve, but also to existing farmers who currently make use of the road in order to access their land. Other internal roads will also be developed and upgraded within the reserve. The existing dumping site located at the entrance to the Ganspan-Pan Wetland Reserve will be legalised and cleaned up and the proposed fencing of the project area will result in less general waste and litter spreading to the surrounding environment. The security of the area will be vastly improved by the proposed fencing and the employment of security guards will not only further promote a secure environment, but will also create a number of permanent jobs during the operational phase. In addition, it is proposed that the inlet to the Ganspan water body will be cleared of rubbish and additional measures would be implemented to ensure that the water is returned to a suitable quality for recreational purposes.

The Ganspan-Pan Wetland Reserve will contribute to tourism in the area by being integrated into the existing N18 tourism route. One example of this would be to link the Spitskop Dam, a popular birdlife area located near Warrenton, and promote this area of the N18 route as an Avi-tourism node. The proposed development aims to cater for all tourists however the visiting friends and relatives (VFR) tourists are likely to account for the majority of the reserve's future revenue. Not only will the proposed development cater for hiking, cycling, swimming, canoeing, paddle boating, fly fishing and other daily activities, it will also provide for overnight camping, caravanning and self-catering accommodation, which will attract people who are looking for a break-away destination for a long weekend. In addition to this, the upgraded facility will contribute to the promotion of nature based heritage tourism.

There will be a number of picnic and braai areas which will attract additional tourism to the area and will encourage people to spend money at local shops and convenience outlets. This will also provide the local residents with an opportunity to display and sell their arts and crafts to tourists in an attempt to generate additional income. Arts, crafts and farmers markets could be held at the proposed upgraded Ganspan-Pan Wetland Reserve. This will not only promote local artists, but also attract tourists from surrounding areas and promote small-scale business opportunities and job creation. The proposed development would also be made suitable for the hosting of popular annual events such as running races, fishing tournament, water-sport events, music festivals and other themed events for special occasions such as New Years' eve, Easter and/or Christmas.

The projected revenue for the proposed upgraded Ganspan-Pan Wetland Reserve is approximately R 26 355.00 during the first year of operation, growing steadily to an estimated R 1 643 947.00 in the tenth year. The total salaries and wages to be paid out during this ten-year period are estimated to be up to R 7.8 million. This will include the creation of a number of temporary jobs during the construction phase as well as numerous jobs during the operational phase. The proposed development therefore aligns itself with national, provincial, district and local development plans as well as the local spatial development framework. It will contribute to recreation infrastructure, tourism, job creation and sustainable economic development.

5. RELEVANT LEGISLATION

According to Appendix 3, Section 3 (1), of the 2014 EIA Regulations (as amended), “an environmental impact assessment report must contain the information that is necessary for the competent authority to consider and come to a decision on the application, and must include—
(e) a description of the policy and legislative context within which the development is located and an explanation of how the proposed development complies with and responds to the legislation and policy context.”

The development of the proposed Ganspan-Pan Wetland Reserve Upgrade will be subject to various South African legislative requirements. In addition to the environmental authorisation, there are other permits, contracts and licenses that will need to be obtained by the project proponent for the proposed project, some of which fall outside the scope of the S&EIR project. The relevant national legislation, policies and conventions to which South Africa is a signatory to, must be used to guide the proposed development in order to ensure that it remains fully legal and compliant (Table 5.1)

Table 5.1: Relevant Legislation.

Legislation	Relevance to the Proposed Project	Permit / Licence Required	Comment
ENVIRONMENTAL			
The Constitution of South Africa (Act No. 108 of 1996)	The developer has an obligation to ensure that the proposed activity is ecologically sustainable, will not result in pollution and ecological degradation while demonstrating economic and social development and upholding environmental rights.	-	-
National Environmental Management Act (NEMA) (Act No. 7 of 1998)	This S&EIR will be undertaken in terms of NEMA requirements. The developer must be mindful of the principles, broad liability and implications associated with NEMA and must eliminate or mitigate any potential impacts.	-	-
Environmental Impact Assessment (EIA) Regulations, 2014 (as amended in April 2017)	The proposed development triggers the three lists of activities, published on 4 December 2014 (as amended on 7 April 2017), as Listing Notices GN R.983, R.984, and R.985 (as amended by R.327, R.325 and R.324). These Listing Notices define the activities that require, respectively, a Basic Assessment or an S&EIR process. Based on the NEMA EIA listed activities identified by EAP, namely the Listing Notice 2 (GN R.984, as amended by GN R. 325), the proposed project will be subject to the S&EIR process as stipulated in the Regulations. The relevant competent authority is the Northern Cape Department of Environment and Nature Conservation (DENC). This Assessment will be submitted to DENC to ensure that the national environmental principles, fair decision making and integrated environmental management approach is applied throughout the process. The assessment and associated environmental management plan aims to prevent pollution and ecological degradation, promote conservation and secure ecological sustainable development and use of natural resources while promoting justifiable economic and social development, as outlined in the Act.	✓	Environmental Authorisation required
National Environmental Management: Protected Areas Act (NEMPAA_	The proposed development is located within the Ganspan Waterfowl Nature Reserve which has been declared a Protected Area under NEMPAA.	N/A	-

Legislation	Relevance to the Proposed Project	Permit / Licence Required	Comment
(Act No. 57 of 2003)			
The National Environment Management: Biodiversity Act (NEMBA) (Act No. 10 of 2004)	The project development area is located within the Northern Cape in an area considered to be a Critical Biodiversity Area (CBA) which means there is potentially sensitive and potentially irreplaceable vegetation. To avoid and or mitigate threats to any endangered ecosystems all impacts on sensitive ecosystems will be assessed in detail during the EIA process to ensure the impacts of the proposed development are understood and can be mitigated. If the specialist ecological assessment identifies protected species on site that will be at risk due to project related activities, the developer will require the necessary permit(s) in terms of this act. Construction and operational activities could leave the development area susceptible to alien vegetation. To avoid alien vegetation from establishing on disturbed areas, appropriate measures will be implemented.	✓	A permit may be required for the removal of indigenous vegetation.
Conservation of Agricultural Resources Act (43 of 1983) & Subdivision of Agricultural Land Act (No. 70 of 1970)	The Act provides a list of declared weeds and invader plants as well as indicators of bush encroachment. In	-	-
National Forests Act (Act No. 84 of 1998)	If any protected trees in terms of this Act occur on site, the developer will require a licence from the Department of Agriculture, Forestry and Fisheries (DAFF) to perform any of the above-listed activities.	✓	A permit may be required for the removal of indigenous vegetation.
National Environmental Management: Waste Act (Act No. 59 of 2008)	Construction activities will generate construction related waste that will need to be disposed of at a registered landfill site if the waste cannot be recycled or reused. Waste generated will be dealt with in a manner compliant with the requirements of the Act.	-	-
National Water Act (NWA) (Act No. 36 of 1998)	The proposed development and its associated infrastructure will alter the bed, banks, course or characteristics of a watercourse. Once the layout is finalised and exact locations of the affected areas of the watercourse are confirmed, the developer will apply for the relevant water use authorisations from DWS.	✓	WUL will be required
National Environmental Management: Air Quality Act (Act No. 39 of 2004)	The clearing of vegetation, foundation excavations, stockpiles and transportation of materials might result in construction-related dust. It is expected to be below the dust control regulations of 2013 since mitigation measures will be implemented to reduce dust fall out. Dust control regulations were published under Government Notice R827 in Government Gazette 36974 of 1 November 2013.	-	-
SOCIAL			
National Heritage Resources Act (25 of 1999)	The project will be registered with South African Heritage Resource Agency (SAHRA). A desktop heritage assessment must be undertaken to determine if heritage features occur on site and what level impact assessment (if any) maybe required. In the event that archaeological or historically significant sites would be destroyed, damaged, excavated, altered or defaced by the proposed	-	-

Legislation	Relevance to the Proposed Project	Permit / Licence Required	Comment
	project activity the relevant permit will be granted before the project can continue.		
Occupational Health and Safety Act (85 of 1993)	The developer must be mindful of the principles and broad liability and implications contained in the Operational Health and Safety Act and mitigate any potential impacts.	-	-
PLANNING			
National Road Traffic Act (No. 93 of 1996)	All the requirements stipulated in the NRTA will need to be complied with during the construction and operational phases of the proposed development.	-	-

5.1. The Constitution (Act No. 108 of 1996)

This is the supreme law of the land. As a result, all laws, including those pertaining to the proposed development, must conform to the Constitution. The Bill of Rights - Chapter 2 of the Constitution, includes an environmental right (Section 24) according to which, “everyone has the right –

- (a) To an environment that is not harmful to their health or well-being; and
- (b) To have the environment protected for the benefit of present and future generations, through reasonable legislative and other measures that–
 - (i) prevent pollution and ecological degradation.
 - (ii) promote conservation; and
 - (iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.”

Relevance to the proposed Ganspan-Pan Wetland Reserve Upgrade
The proponent has an obligation to ensure that the proposed development will: <ul style="list-style-type: none"> • Not result in pollution and ecological degradation; and • Be ecologically sustainable, while demonstrating economic and social development.

5.2. National Environmental Management Act (Act No. 107 of 1998, as amended)

The objective of the National Environmental Management Act (NEMA) is “provide for co-operative environmental governance by establishing principles for decision-making on matters affecting the environment, institutions that will promote cooperative governance and procedures for co-ordinating environmental functions exercised by organs of state; to provide for certain aspects of the administration and enforcement of other environmental management laws; and to provide for matters connected therewith.”

NEMA provides the basis for environmental governance in South Africa by establishing principles and institutions for decision-making on matters affecting the environment. A key aspect of NEMA is that it provides a set of environmental management principles that apply throughout South Africa to the actions of all organs of state that may significantly affect the environment. Section 2 of NEMA contains principles relevant to the proposed project, and likely to be utilised in the process of decision making by DENC (Table 5.2).

Table 5.2: NEMA Environmental Management Principles.

(2)	<i>Environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably.</i>
(3)	<i>Development must be socially, environmentally and economically sustainable.</i>
(4)(a)	<i>Sustainable development requires the consideration of all relevant factors including the following:</i> <ul style="list-style-type: none"> <i>i. That the disturbance of ecosystems and loss of biological diversity are avoided, or, where they cannot be altogether avoided, are minimised and remedied;</i> <i>ii. That pollution and degradation of the environment are avoided, or, where they cannot be altogether avoided, are minimised and remedied;</i>

	<i>iii. That waste is avoided, or where it cannot be altogether avoided, minimised and re-used or recycled where possible and otherwise disposed of in a responsible manner.</i>
(4)(e)	<i>Responsibility for the environmental health and safety consequences of a policy, programme, project, product, process, service or activity exists throughout its life cycle.</i>
(4)(i)	<i>The social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated, and decisions must be appropriate in the light of such consideration and assessment.</i>
(4)(j)	<i>The right of workers to refuse work that is harmful to human health or the environment and to be informed of dangers must be respected and protected.</i>
(4)(p)	<i>The costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment.</i>
(4)(r)	<i>Sensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, estuaries, wetlands, and similar systems require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure.</i>

As these principles are utilised as a guideline by the competent authority in ensuring the protection of the environment, the proposed development should, where possible, be in accordance with these principles. Where this is not possible, deviation from these principles would have to be very strongly motivated. NEMA introduces the duty of care concept, which is based on the policy of strict liability. This duty of care extends to the prevention, control and rehabilitation of significant pollution and environmental degradation. It also dictates a duty of care to address emergency incidents of pollution. A failure to perform this duty of care may lead to criminal prosecution, and may lead to the prosecution of managers or directors of companies for the conduct of the legal persons.

In addition NEMA introduced a framework for environmental impact assessments, which aims to avoid detrimental environmental impacts through the regulation of specific activities that cannot commence without prior environmental authorisation. Authorisation in terms of these Regulations, the 2014 EIA Regulations (GN R. 982, as amended by GN R. 326 in 2017), either requires a Basic Assessment or a Full Scoping and Environmental Impact Assessment report (S&EIR), depending on the type of activity. These assessments specify mitigation and management guidelines to minimise negative environmental impacts and optimise positive impacts.

Relevance to the proposed Ganspan-Pan Wetland Reserve Upgrade

An application for Environmental Authorisation (as triggered by the 2014 EIA Regulations (as amended) will be required. In terms of Section 28, every person who causes, has caused, or may cause significant pollution or degradation of the environment, must take reasonable measures to prevent pollution or rectify the damage caused. The undertaking of various specialist studies, in order to identify potential impacts on the environment and to recommend mitigation measures to minimise these impacts, complies with Section 28 of NEMA. The developer must apply the NEMA principles, the fair decision-making and conflict management procedures that are provided for in NEMA. The developer must apply the principles of Integrated Environmental Management and consider, investigate and assess the potential impact of existing and planned activities on the environment, socio-economic conditions and the cultural heritage.

Three lists of activities, provided in the EIA Regulations published on 4 December 2014 as Government Notice Numbers R.983, R.984, and R.985 (as amended by R.327, R.325 and R.324 respectively), define which process would be required to assess impacts associated with a particular development. The impacts of the development may be subject to a Basic Assessment (BA) process, which applies to activities with limited environmental impacts (GN R.983 and R.984, as amended), or may be subject to a more rigorous, two-tiered approach comprising of an S&EIR, required to assess activities with potentially more significant environmental impacts (GN R.985, as amended). The listed activities triggered by the proposed Ganspan-Pan Wetland Reserve Upgrade include activities from each of the three listing notices (Table 5.3).

Table 5.3: NEMA Listed Activities triggered by the proposed development.

Activity No	Description of each listed activity based on the project description	Project component
Listing Notice 1 of GN R 983 (2014 EIA Regulations, as amended in GN R 327 on 7 April 2017)		
12	<i>The development of: (ii) infrastructure or structures with a physical footprint of 100 square metres or more, where such development occurs – (a) within a watercourse; (b) in front of a development setback; or (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse.</i>	Various infrastructure, with a total footprint of approximately 28.2 ha, will be developed within 32 metres of the Ganspan wetland. Some of the infrastructure (e.g. jetties) will be developed within the wetland.
19	<i>The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse.</i>	Excavations and infilling of material of more than 10 m ³ will occur within the Ganspan wetland during the construction of the proposed infrastructure.
Listing Notice 2 of GN R 984 (2014 EIA Regulations, as amended in GN R 325 on 7 April 2017)		
15	<i>The clearance of an area of 20 hectares or more of indigenous vegetation.</i>	Various infrastructure, with a total footprint of approximately 28.2 ha, will be developed and will require the clearance of indigenous vegetation.
24	<i>The extraction or removal of peat or peat soils, including the disturbance of vegetation or soils in anticipation of the extraction or removal of peat or peat soils, but excluding where such extraction or removal is for the rehabilitation of wetlands in accordance with a maintenance management plan.</i>	Excavations of material will occur within the Ganspan wetland during the construction of the proposed infrastructure and, depending on the composition of the soil, may result in the removal of peat soils or associated vegetation. Although one of the aims of the project is to rehabilitate the wetland, this is not being conducted as per any prescribed maintenance management plan.
Listing Notice 3 of GN R 985 (2014 EIA Regulations, as amended in GN R 324 on 7 April 2017)		
4	<i>The development of a road wider than 4 metres with a reserve less than 13,5 metres. g. Northern Cape ii. Outside urban areas: (aa) A protected area identified in terms of NEMPAA, excluding disturbed areas; (ee) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans; (gg) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core areas of a biosphere reserve, excluding disturbed areas.</i>	Access roads and onsite roads will be developed and may be wider than 4 metres. The proposed development is located within the Northern Cape, outside the urban edge and is located within the Ganspan Waterfowl Nature Reserve, which is a protected area identified in terms of NEMPAA and is also classified as a CBA according to the 2016 Northern Cape Critical Biodiversity Areas database.
6	<i>The development of resorts, lodges, hotels, tourism or hospitality facilities that sleeps 15 people or more. g. Northern Cape ii. Outside urban areas: (aa) A protected area identified in terms of NEMPAA, excluding conservancies; (ee) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans; (gg) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of</i>	Tourism facilities, including a lodge, will be developed to sleep fifteen people or more. The proposed development is located within the Northern Cape, outside the urban edge and is located within the Ganspan Waterfowl Nature Reserve, which is a protected area identified in terms of NEMPAA, is classified as a CBA according to the 2016 Northern Cape Critical Biodiversity Areas database and is located within a wetland as defined by the National Freshwater Ecosystem Priority Areas (NFEPA).

Activity No	Description of each listed activity based on the project description	Project component
	<i>NEMPAA or from the core area of a biosphere reserve;</i> <i>(ii) Areas within a watercourse or wetland; or within 100 metres from the edge of a watercourse or wetland; or</i>	
12	<i>The clearance of an area of 300 square metres or more of indigenous vegetation.</i> <i>g. Northern Cape</i> <i>ii. Within critical biodiversity areas identified in bioregional plans;</i> <i>iv. On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning.</i>	Various infrastructure, with a total footprint of approximately 28.2 ha, will be developed and will require the clearance of indigenous vegetation. The proposed development is located within the Northern Cape, within a CBA according to the 2016 Northern Cape Critical Biodiversity Areas database and is located within a wetland (conservation area) as defined by the Phokwane Local Municipality Spatial Development Framework (SDF).
14	<i>The development of:</i> <i>(ii) infrastructure or structures with a physical footprint of 10 square metres or more, where such development occurs-</i> <i>(a) within a watercourse;</i> <i>(b) in front of a development setback; or</i> <i>(c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse.</i> <i>g. Northern Cape</i> <i>ii. Outside urban areas:</i> <i>(aa) A protected area identified in terms of NEMPAA, excluding conservancies;</i> <i>(ff) Critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;</i> <i>(hh) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve;</i>	Various infrastructure, with a total footprint of approximately 28.2 ha, will be developed within 32 metres of the Ganspan wetland. Some of the infrastructure (e.g. jetties) will be developed within the wetland. The proposed development is located within the Northern Cape, outside the urban edge and is located within the Ganspan Waterfowl Nature Reserve, which is a protected area identified in terms of NEMPAA and is also classified as a CBA according to the 2016 Northern Cape Critical Biodiversity Areas database.

Relevance to the proposed Ganspan-Pan Wetland Reserve Upgrade

Based on the listed activities identified in Listing Notice 2 of GN R 325 (2014 EIA Regulations, as amended on 7 April 2017), the proposed project will be subject to an S&EIR process. In order to comply with NEMA, the impacts associated with the activities listed above will need to be identified and assessed during this process and will include the necessary specialist reports required. The Competent Authority (CA) for this project is identified as the Member of the Executive Council (MEC) of the Northern Cape Department of Environment and Nature Conservation (DENC).

5.3. National Environmental Management: Protected Areas Act (Act No. 57 of 2003, as amended)

The purpose of the National Environmental Management: Protected Areas Amendment Act (NEMPAA) is to provide for the protection and conservation of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes.

The objectives of NEMPAA are:

- (a) To provide, within the framework of national legislation, including the National Environmental Management Act, for the declaration and management of protected areas;*

- (b) To provide for co-operative governance in the declaration and management of protected areas;
- (c) To effect a national system of protected areas in South Africa as part of a strategy to manage and conserve its biodiversity;
- (d) To provide for a representative network of protected areas on state land, private land and communal land;
- (e) To promote sustainable utilisation of protected areas for the benefit of people, in a manner that would preserve the ecological character of such areas;
- (f) To promote participation of local communities in the management of protected areas, where appropriate; and
- (g) To provide for the continued existence of South African National Parks.

Relevance to the proposed Ganspan-Pan Wetland Reserve Upgrade

The proposed development is located within the Ganspan Waterfowl Nature Reserve which has been declared a Protected Area under NEMPAA.

5.4. National Environment Management: Biodiversity Act (Act No. 10 of 2004)

The National Environment Management: Biodiversity Act (NEMBA) provides for the management and conservation of South Africa’s biodiversity and the protection of species and ecosystems that warrant national protection.

The objectives of NEMBA are:

- (a) within the framework of the National Environmental Management Act, to provide for—
 - (i) the management and conservation of biological diversity within the Republic and of the components of such biological diversity;
 - (ii) the use of indigenous biological resources in a sustainable manner; and
 - (iii) the fair and equitable sharing among stakeholders of benefits arising from bioprospecting involving indigenous biological resources;
- (b) to give effect to ‘ratified international agreements relating to biodiversity which are binding on the Republic;
- (c) to provide for co-operative governance in biodiversity management and conservation; and
- (d) to provide for a South African National Biodiversity Institute to assist in achieving the objectives of this Act.

The Act provides for the management and conservation of South Africa’s biodiversity within the framework of NEMA (Table 5.4). In terms of the Biodiversity Act, the developer has a responsibility for:

- The conservation of endangered ecosystems and restriction of activities according to the categorisation of the area (including The Endangered and Threatened Ecosystem Regulations, Government Notice R. 1002 dated 9th December 2011);
- Application of appropriate environmental management tools in order to ensure integrated environmental management of activities thereby ensuring that all developments within the area are in line with ecological sustainable development and protection of biodiversity;
- Limit further loss of biodiversity and conserve endangered ecosystems.

Table 5.4: Management and conservation of biodiversity within the framework of NEMA.

Chapter 4	<ul style="list-style-type: none"> • Provides for the protection of species that are threatened or in need of national protection to ensure their survival in the wild; • To give effect to the Republic’s obligations under international agreements regulating international trade in specimens of endangered species; and • Ensure that the commercial utilization of biodiversity is managed in an ecologically sustainable way.
Chapter 5 (Part 2) Section 73	<p>A person who is the owner of land on which a listed invasive species occurs must:</p> <ul style="list-style-type: none"> a) Notify any relevant competent authority, in writing, of the listed invasive species occurring on that land;

	<p>b) Take steps to control and eradicate the listed invasive species and to prevent it from spreading; and</p> <p>c) Take all required steps to prevent or minimise harm to biodiversity.</p>
<p>Chapter 5 (Part 2) Section 75</p>	<ul style="list-style-type: none"> Control and eradication of a listed invasive species must be carried out by means or methods that are appropriate for the species concerned and the environment in which it occurs. Any action taken to control and eradicate a listed invasive species must be executed with caution and in a manner that may cause the least possible harm to biodiversity and damage to the environment. The methods employed to control and eradicate a listed invasive species must also be directed at the offspring, propagating material and re-growth of such invasive species in order to prevent such species from producing offspring, forming seed, regenerating or re-establishing itself in any manner.

NEMBA's permit system is further regulated in the NEMBA Threatened or Protected Species Regulations Government Notice R. 152 of 2007. The NEMBA Alien and Invasive Species List (Government Notice R 599 of 2014) defines Alien and Invasive species that are regulated by the NEMBA Alien and Invasive Species Regulations (Government Notice 98 of 2014).

Relevance to the proposed Ganspan-Pan Wetland Reserve Upgrade

The proponent must:

- Not cause a threat to any endangered ecosystems and must protect and promote biodiversity;
- Assess the impacts of the proposed development on endangered ecosystems;
- Not remove or damage any protected species without a permit;
- Ensure that the site is cleared of alien vegetation using appropriate means;
- Implement an invasive species monitoring, control and eradication plan for land/activities under their control should be developed, as part of their environmental plans in accordance with Section 11 of NEMA.

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

The Conservation of Agricultural Resources Act (CARA) aims to control over-utilisation of the natural agricultural resources to promote the conservation of soil, water sources and vegetation through the combat of weeds and invader plants. Regulations 15 and 16 under this Act, which relate problem plants, were amended in March 2001. The Act provides a list of declared weeds and invader plants as well as indicators of bush encroachment. In terms of weeds and invader plants:

- A land user shall control any category 1 plants that occur on any land or inland water surface;
- No person shall, except for the purposes of a biological control reserve:
 - Establish, plant, maintain, multiply or propagate weeds and invader plants;
 - Import or sell propagating material of category weeds and invader plants; and
 - Acquire propagating material of weeds and invader plants.

These lists include:

- Combating of category 1 plants (Section 15A) according to CARA (Act No 43 of 1983); and
- Combating of category 2 plants (Section 15B) according to CARA (Act No 43 of 1983)

Relevance to the proposed Ganspan-Pan Wetland Reserve Upgrade

- An invasive species monitoring, control and eradication plan for land/activities under the control of the proponent should be developed as part of the Construction EMPr plan in accordance with CARA.

5.6. National Forests Act (Act No. 84 of 1998)

The objective of this Act is to monitor and manage the sustainable use of forests. In terms of Section 12 (1) (d) of this Act and GN R. 1012 (promulgated under the National Forests Act), no person may, except with a licence:

- Cut, disturb, damage or destroy a protected tree; or
- Possess, collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree or any forest product derived from a protected tree.

The list of protected trees, 1976 List of Protected Trees (Government Gazette No. 9542, Schedule A), in the 1998 National Forest Act (NFA), as amended in December 2016, should be consulted.

Relevance to the proposed Ganspan-Pan Wetland Reserve Upgrade

- No forest or trees that form part of a forest or forest association may be damaged or destroyed without a permit;
- Development that comes within 50 metres of forest must be closely monitored during the construction phase;
- No protected tree species may be damaged or destroyed without a permit from the Department of Agriculture, Forestry and Fisheries (DAFF).

5.7. National Environmental Management: Waste Act (Act No. 59 of 2008)

The National Environmental Management: Waste Management Act (NEMWA) gives legal effect to the Government’s policies and principles relating to waste management in South Africa, as reflected in the National Waste Management Strategy (NWMS).

The objects of the Act are “to protect health, well-being and the environment by providing reasonable measures for—

- *minimising the consumption of natural resources;*
- *avoiding and minimising the generation of waste;*
- *reducing, re-using, recycling and recovering waste;*
- *treating and safely disposing of waste as a last resort;*
- *preventing pollution and ecological degradation;*
- *securing ecologically sustainable development while promoting justifiable economic and social development;*
- *promoting and ensuring the effective delivery of waste services;*
- *remediating land where contamination presents, or may present, a significant risk of harm to health or the environment; and*
- *achieving integrated waste management reporting and planning.”*

Chapter 4 of this Act deals with the general duty in respect to waste management and emphasises that, “a holder of waste must, within the holder’s power, take all reasonable measures to:- avoid the generation of waste and where such generation cannot be avoided, to minimise the toxicity and amounts of waste that are generated; reduce, re-use, recycle and recover waste; where waste must be disposed of, ensure that the waste is treated and disposed of in an environmentally sound manner; manage the waste in such a manner that it does not endanger health or the environment or cause a nuisance through noise, odour or visual impacts; prevent any employee or any person under his or her supervision from contravening this Act; and prevent the waste from being used for an unauthorised purpose”.

Chapter 4, Part 3 of this Act deals with reduction re-use and recovery of waste, Part 4 deals with waste management activities, Part 5 covers storage collection and transportation of waste, Part 6 deals with treatment, processing and disposal of wastes, Part 7 covers industry waste management plans and Part 8 deals with contaminated land. Chapter 5 covers all issues regarding the licensing of waste management activities.

Relevance to the proposed Ganspan-Pan Wetland Reserve Upgrade

- All reasonable measures must be taken to avoid the generation of waste and, where such generation cannot be avoided, minimise the toxicity and amounts of waste that are generated; reduce, re-use, recycle and recover waste; where waste must be disposed of, ensure that the waste is treated and disposed of in an environmentally sound manner;
- Manage the waste in such a manner that it does not endanger human health or the environment or cause a nuisance through noise, odour or visual impacts;
- Prevent any employee or any person from contravening this Act and prevent the waste from being used for an unauthorised purpose;
- All waste must be disposed of at a registered waste disposal facility.

5.8. National Water Act (Act No. 36 of 1998)

The National Water Act (NWA) provides for fundamental reform of the law relating to water resources in South Africa.

The purpose of the Act is “to ensure that the nation's water resources are protected, used, developed, conserved, managed and controlled in ways which take into account amongst other factors—

- (a) meeting the basic human needs of present and future generations;
- (b) promoting equitable access to water;
- (c) redressing the results of past racial and gender discrimination;
- (d) promoting the efficient, sustainable and beneficial use of water in the public interest;
- (e) facilitating social and economic development;
- (f) providing for growing demand for water use;
- (g) protecting aquatic and associated ecosystems and their biological diversity;
- (h) reducing and preventing pollution and degradation of water resources;
- (i) meeting international obligations;
- (j) promoting dam safety;
- (k) managing floods and droughts.”

Section 21 of the NWA describes activities defined as a water use under the Act. These activities may only be undertaken subject to the application for, and issue of, a Water Use License (WUL) or general authorisation (GA). Water use activities include—

- (a) taking water from a water resource;
- (b) storing water;
- (c) impeding or diverting the flow of water in a watercourse;
- (d) engaging in a stream flow reduction activity contemplated in section 36;
- (e) engaging in a controlled activity identified as such in section 37(1) or declared under section 38(1);
- (f) discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit;
- (g) disposing of waste in a manner which may detrimentally impact on a water resource;
- (h) disposing in any manner of water which contains waste from, or which has been heated in, any industrial or power generation process;
- (i) altering the bed, banks, course or characteristics of a watercourse;
- (j) removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people; and
- (k) using water for recreational purposes.”

Relevance to the proposed Ganspan-Pan Wetland Reserve Upgrade

- Infrastructure constructed within the 100m regulatory area of a river or drainage line or within the 500m regulatory area a wetland, will require a water use authorisation (WUA);
- According to Section 19(1) of the NWA, “an owner of land, a person in control of land or a person who occupies or uses the land on which—
 - (a) Any activity or process is or was performed or undertaken; or

(b) Any other situation exists, which 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.”

- Appropriate measures must be taken to prevent the pollution of water courses and other water resources and riparian zones must be protected;

5.9. National Environmental Management: Air Quality Act (Act No. 39 of 2004, as amended)

The National Environmental Management: Air Quality Act (NEMAQA) is the principal legislation regulating air quality in South Africa. Its purpose is:

- *to protect the environment by providing reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development while promoting justifiable economic and social development;*
- *to provide for national norms and standards regulating air quality monitoring, management and control by all spheres of government;*
- *for specific air quality measures; and for matters incidental thereto.*

The objects of the Act are to:

- (a) *to protect the environment by providing reasonable measures for—*
 - (i) *the protection and enhancement of the quality of air in the Republic;*
 - (ii) *the prevention of air pollution and ecological degradation; and*
 - (iii) *securing ecologically sustainable development while promoting justifiable economic and social development; and*
- (b) *generally to give effect to section 24(b) of the Constitution in order to enhance the quality of ambient air for the sake of securing an environment that is not harmful to the health and wellbeing of people.*

The Air Quality Act empowers the Minister to establish a national framework for achieving the objects of this Act. The said national framework will bind all organs of state. The said national framework will inter alia have to establish national standards for municipalities to monitor ambient air quality and point, non-point and mobile emissions.

Relevance to the proposed Ganspan-Pan Wetland Reserve Upgrade

- The proposed development does not require an Air Emissions Licence according to the NEMAQA;
- The “best practicable means” must be implemented for the abatement of dust during construction and operation;
- The release of fertilizer and/or other potentially toxic substances into the atmosphere must preferably be avoided or, at minimum, limited to what is required for the purposes of the development.

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

The protection of archaeological and paleontological resources is the responsibility of a provincial heritage resources authority and all archaeological objects, paleontological material and meteorites are the property of the State. “*Any person who discovers archaeological or paleontological objects or material or a meteorite in the course of development must immediately report the find to the responsible heritage resources authority, or to the nearest local authority offices or museum, which must immediately notify such heritage resources authority*”.

Relevance to the proposed Ganspan-Pan Wetland Reserve Upgrade

- No person may alter or demolish any structure or part of a structure, which is older than 60 years or disturb any archaeological or paleontological site or grave older than 60 years without a permit issued by the relevant provincial heritage resources authority;
- No person may, without a permit issued by the responsible heritage resources authority destroy, damage, excavate, alter or deface archaeological or historically significant sites;
- The South African Heritage Resources Agency (SAHRA) and the Northern Cape Provincial Heritage Authority (NCPHA) must be informed of the project.

5.11. Occupational Health and Safety Act (Act No. 85 of 1993)

The objective of the Occupational Health and Safety Act (OHSA) is to provide for the health and safety of persons at work. In addition, the Act requires that, *“as far as reasonably practicable, employers must ensure that their activities do not expose non-employees to health hazards”*. The importance of the Act lies in its numerous regulations, many of which will be relevant to the proposed development (Table 5.5). These cover, among other issues, noise and lighting.

Table 5.5: Health and safety of persons at work according to the Occupational Health and Safety Act.

8: GENERAL DUTIES OF THE EMPLOYERS TO THEIR EMPLOYEES	
(1)	Every employer shall provide and maintain, as far as is reasonably practicable, a working environment that is safe and without risk to the health of his employees.
(2)	Without derogating from the generality of an employer's duties under subsection (1), the matters to which those duties refer include in particular- a) The provision and maintenance of systems of work, plant and machinery that, as far as is reasonably practicable, are safe and without risks to health; b) Taking such steps as may be reasonably practicable to eliminate or mitigate any hazard or potential hazard to the safety or health of employees, before resorting to personal protective equipment; c) Establishing, as far as is reasonably practicable, what hazards to the health or safety of persons are attached to any work which is performed, any article or substance which is produced, processed, used, handled, stored or transported and any plant or machinery which is used in his business, and he shall, as far as is reasonably practicable, further establish what precautionary measures should be taken with respect to such work, article, substance, plant or machinery in order to protect the health and safety of persons, and he shall provide the necessary means to apply such precautionary measures; d) Providing such information, instructions, training and supervision as may be necessary to ensure, as far as is reasonably practicable, the health and safety at work of his employees; e) As far as is reasonably practicable, not permitting any employee to do any work or to produce, process, use, handle, store or transport any article or substance or to operate any plant or machinery, unless the precautionary measures contemplated in paragraphs (b) and (d), or any other precautionary measures which may be prescribed, have been taken; f) Taking all necessary measures to ensure that tire requirements of this Act are complied with by every person in his employment or on premises under his control where plant or machinery is used; g) Enforcing such measures as may be necessary in the interest of health and safety; h) Ensuring that work is performed and that plant or machinery is used under the general supervision of a person trained to understand the hazards associated with it and who have the authority to ensure that precautionary measures taken by the employer are implemented; and authority as contemplated in Section 37 (1) (b).
14: GENERAL DUTIES OF EMPLOYEES AT WORK	
Every employee shall at work:-	
(a)	Take reasonable care for the health and safety of himself and of other persons who may be affected by his acts or omissions;
(b)	As regards any duty or requirement imposed on his employer or any other person by this Act, cooperate with such employer or person to enable that duty or requirement to be performed or complied with;
(c)	Carry out any lawful order given to him, and obey the health and safety rules and procedures laid down by his employer or by anyone authorized thereto by his employer, in the interest of health or safety;

(d)	If any situation which is unsafe or unhealthy comes to his attention, as soon as practicable report such situation to his employer or to the health and safety representative for his workplace or section thereof, as the case may be, who shall report it to the employer; and
(e)	If he is involved in any incident which may affect his health or which has caused an injury to himself, report such incident to his employer or to anyone authorized thereto by the employer, or to his health and safety representative, as soon as practicable but not later than the end of the particular shift during which the incident occurred, unless the circumstances were such that the reporting of the incident was not possible, in which case he shall report the incident as soon as practicable thereafter.
15: DUTY NOT TO INTERFERE WITH, DAMAGE OR MISUSE THINGS [S. 15 substituted by S. 3 of Act No. 181 of 1993.]	
	No person shall intentionally or recklessly interfere with, damage or misuse anything which is provided in the interest of health or safety.

Relevance to the proposed Ganspan-Pan Wetland Reserve Upgrade

- The proponent must be aware of the principles and broad liability and implications contained in the OHS Act and mitigate any potential impacts.

5.12. National Road Traffic Act (Act No. 93 of 1996)

The National Road Traffic Act (NRTA) provides for all road traffic matters and is applied uniformly throughout South Africa. The Act enforces the necessity of registering and licensing motor vehicles. It also stipulates requirements regarding fitness of drivers and vehicles as well as making provision for the transportation of dangerous goods.

Relevance to the proposed Ganspan-Pan Wetland Reserve Upgrade

- All the requirements stipulated in the NRTA will need to be complied with during the construction and operational phases of the proposed development;
- The site is located adjacent to the R370 regional road and approximately 4km from the N18.

5.13. Other Relevant Legislation

Other legislation that may be relevant to the proposed development includes:

- The Environment Conservation Act No 73 of 1989 (ECA) Noise Control Regulations, which specifically provide for regulations to be made with regard to the control of noise, vibration and shock, including prevention, acceptable levels, powers of local authorities and related matters;
- Provincial Nature and Environmental Conservation Ordinance (No. 19 of 1974), which lists species of special concern which require permits for removal. Schedules 1 to 4 list protected and endangered plant and animal species;
- Spatial Planning and Land Use Management Act (SPLUMA) (Act 16 of 2013 – came into force on 1 July 2015) aims to provide inclusive, developmental, equitable and efficient spatial planning at the different spheres of the government. This act repeals national laws on the Removal of Restrictions Act, Physical Planning Act, Less Formal Township Planning Act and Development Facilitation Act;
- Frances Baard District Municipality and Phokwane Local Municipality By-Laws;

In addition to the above, the following spatial tools from the South African National Biodiversity Institute (SANBI) need to be taken into consideration:

- The South African Vegetation Map (Mucina and Rutherford);
- The Northern Cape Critical Biodiversity Areas (CBAs); and
- The National Freshwater Ecosystem Priority Areas (NFEPA) project.

6. DESCRIPTION OF THE AFFECTED ENVIRONMENT

This section of the report provides a description of the ecological, social and economic description of the environment that may be directly or indirectly affected by the proposed project.

6.1. Climate

The project area has local steppe (semi-arid) climate that, according to the Köppen and Geiger classification system, is classified as 'BSk' (cold semi-arid climate). The project area experiences minimal rainfall throughout the year with peak rainfall occurring during the summer season (from December to March). The mean annual precipitation is 442mm, with the project area receiving the lowest rainfall in July (7mm) and the highest in March (74mm) (Figure 6.1). The average maximum temperatures range from 18°C in July to 32.5°C in January. The average minimum temperatures range from 0°C in July to 17°C in January (Climate Data, 2018). The mean annual temperature is approximately 18°C and, according to the Phokwane Local Municipality Spatial Development Framework (Phokwane SDF, 2014), the area received high solar radiation throughout the year. Evaporation in the project area is generally high and the limited rainfall received in the area is mostly in the form of short, sometimes severe, thunderstorms resulting in quick run-off and limited soil water replenishment.

The Ganspan Pan offers a permanent water body all year round despite the arid landscape which makes it attractive to birdlife and fish and associated tourist activities.

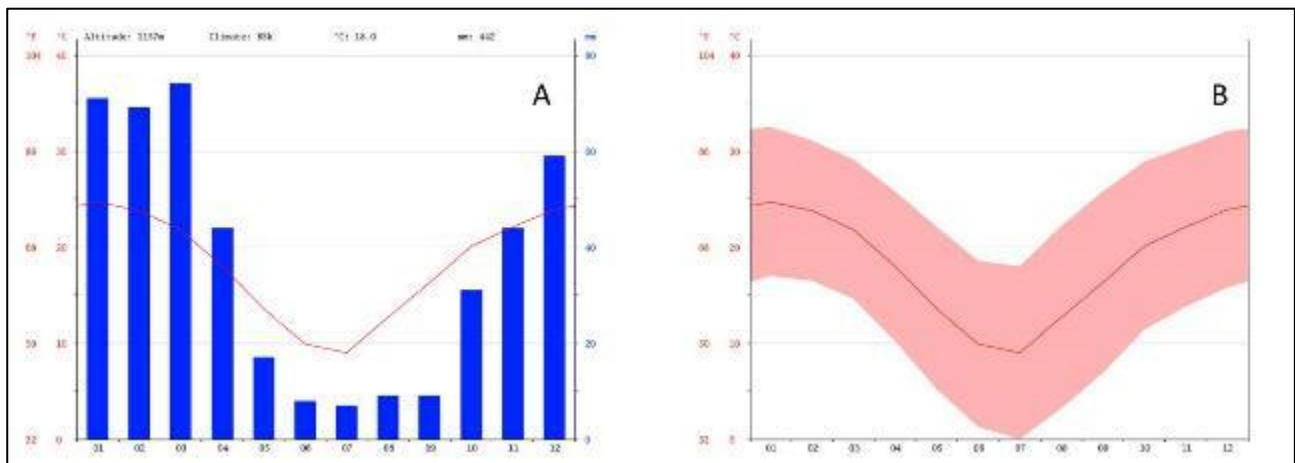


Figure 6.1. A: The average annual rainfall for Jan Kempdorp; B: The average annual temperature range for Jan Kempdorp (from Climate Data, 2018).

6.2. Geology and Topography

The surrounding area consists of a mostly flat plateau descending slightly towards the wetland located in the centre of the site. The proposed project area lies at an altitude between 1100 and 1120 metres above sea level (masl). In general, the topography of the wider area slopes downwards from east to west at a gradient of approximately 1m per 200m. The underlying geology of the project area consists of siliciclastic rocks of the Dwyka Group, within the Karoo Supergroup (Figure 6.2 and Figure 6.3a and 6.3b). The Dwyka Group rocks form the base of the Karoo Supergroup and outcrops in all nine provinces of South Africa (Lurie, 2004). This rock type, known as tillite, is formed from glacial movement occurring during the Late Carboniferous Period (323.2 million years ago to 298.9 million years ago) and is a maximum 600m thick. The tillite is a greyish blue matrix consisting of angular fragments of varying size and rock type (Lurie, 2004). The surrounding rock lithologies consist of the Rietgat Formation and the Allanridge Formation, both of which form part of the Platberg Group (within the Ventersdorp Supergroup). The former is composed of alternating volcanic and sedimentary rocks of varying thickness and composition, while the latter is composed of various shades of thick green solidified lava (van der Westhuizen *et al.*, 2006). Further east, the otherwise flat landscape is interrupted by less-weathered hard dolerite outcrops of the Karoo Dolerite Suite.

The majority of the project area comprises of Luvisols which are soils in which clay is washed down from the surface soil to an accumulation horizon below the surface. The surrounding areas consist of Arenosols which are described as sandy-textured soils that lack any significant soil profile development (Encyclopædia Britannica, 2018). According to the Geotechnical Investigation for the site, which was conducted by Thoka Geosciences (2018), no problems are foreseen for the development of single and double-story masonry structures within the project area.

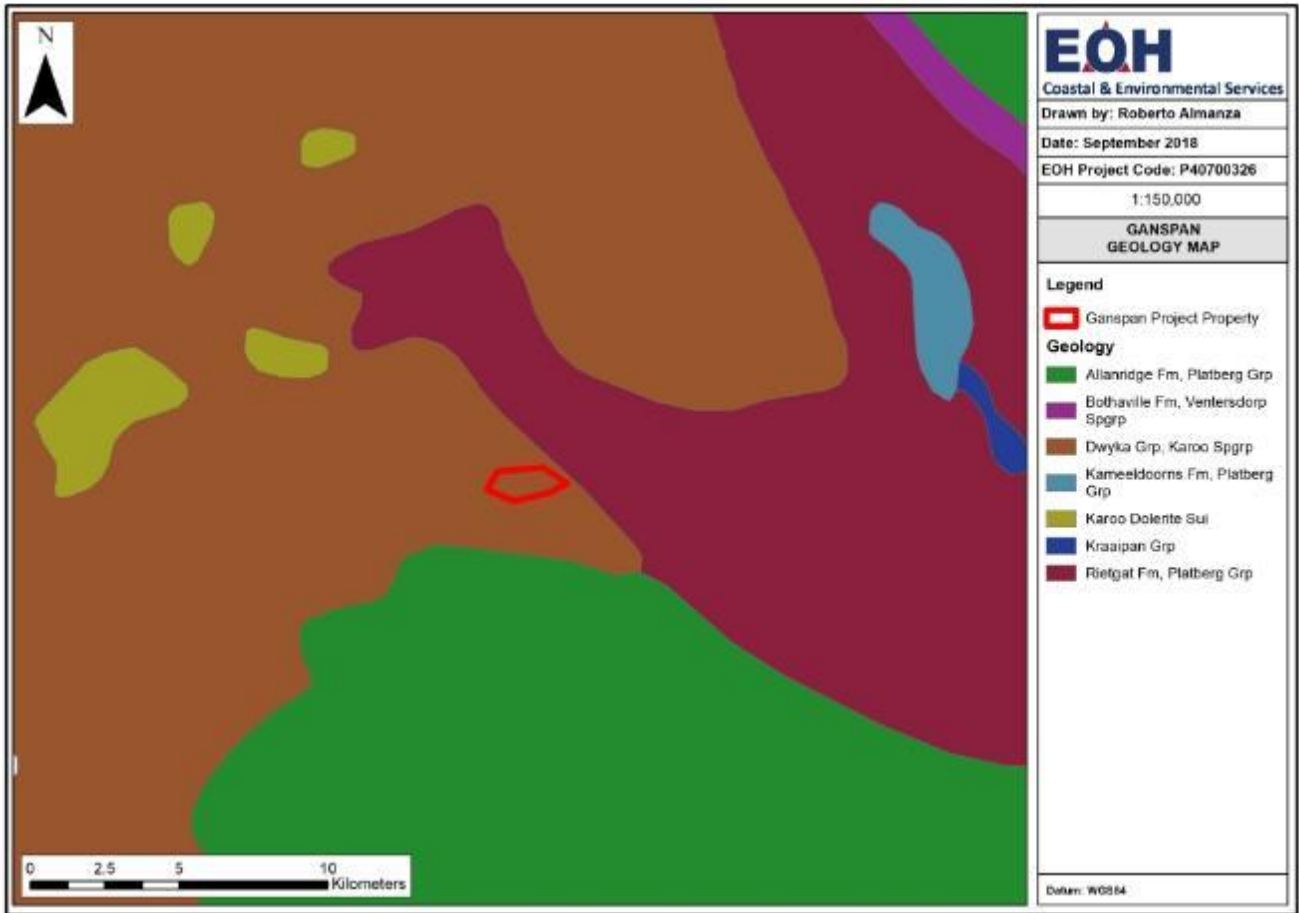


Figure 6.2. The geology of the proposed project area.



Figure 6.3a. Elevation profiles of the project area (as per Figure 6.3b below).

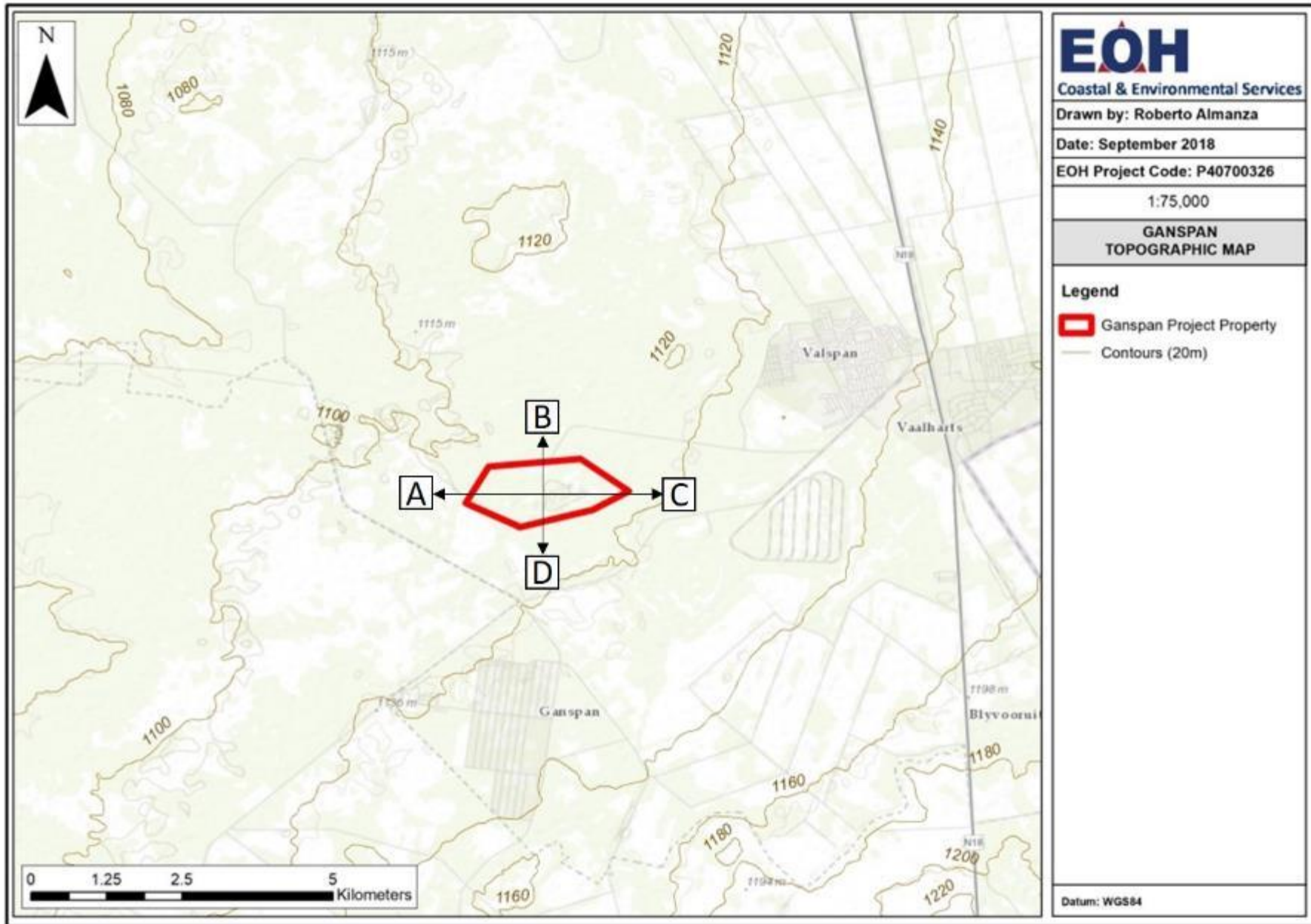

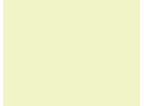





Figure 6.3b: The topography of the proposed project area.

6.3. Land Use

The entire Ganspan Wetland Reserve site is zoned as a Protected Area (Figure 6.4). Land use surrounding the Ganspan Wetland Reserve includes:

Legend	Description of legend
	Agricultural land including crops, irrigation, rangeland
	Natural vegetation including impacted and unimpacted natural vegetation
	Urban areas including high and low densities
	Existing roads
	Water bodies

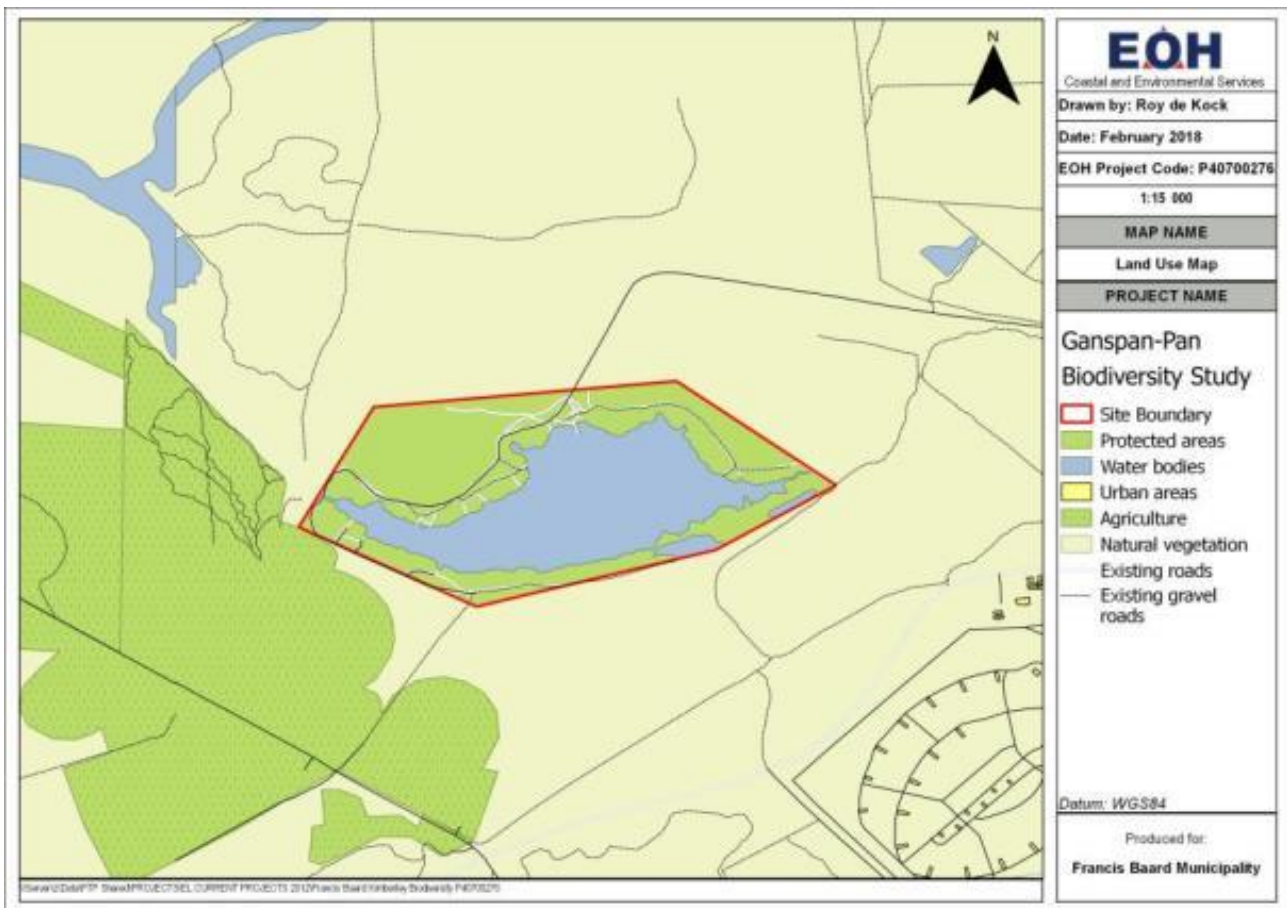


Figure 6.4: Land use at the Ganspan Wetland Reserve site and surrounding areas.

6.4. Vegetation

SANBI classification (Mucina and Rutherford, 2012)

According to the South African National Biodiversity Institute Map (Mucina and Rutherford; 2012) the proposed new Ganspan Wetland reserve project is located in the Savanna biome. This biome is defined by an herbaceous layer dominated by grass species and a discontinuous to sometimes very open tree layer. Two savannah vegetation types were mapped within the Ganspan Wetland Reserve area namely:

- Schmidtsdrif Thornveld
- Kimberley Thornveld



Figure 6.5: Vegetation found at the Ganspan Wetland Reserve and surrounding areas.

Kimberley Thornveld, the dominant vegetation type within the Ganspan Wetland Reserve area (Figure 6.5) occurs on irregular plains and consist of a well-developed tree layer with *Acacia erioloba*, *A. tortilis*, *A. karroo*, and *Boscia albitrunca* while a well-developed shrub layer with occasional stands of *Tarconanthus comphoratus* and *A. mellitera*. The grass layer is open with large areas of uncovered soil. The SA VEGMAP has determined that this vegetation type is **Least Concern** even though only 2% is statutory conserved. Some 18% has already been transformed, mostly by cultivation. Erosion is considered as low.

Schmidtsdrif Thornveld occurs on flat plateaus as a well-developed shrub layer dominated by *Tarconanthus camphoratus* and *Acacia karroo* although it only occurs in the north-western corner of the study site (Figure 6.5). Apart from grasses, bulbous and annual herbaceous plant species are also prominent. The SA VEGMAP has determined that this vegetation type is of **Least Concern** even though only 0.2% is statutory conserved. Some 13% has already been transformed, mostly by cultivation. Erosion is considered as low.

Forest classification (NFA)

No natural forest or protected tree species will be impacted by the proposed Ganspan Wetland Reserve Development.

Biodiversity indicators

South Africa's policy and legislative framework for biodiversity is well developed, providing a strong basis for the conservation and sustainable use of biodiversity. South Africa is one of the few countries in the world to have a Biodiversity Act and a National Biodiversity Institute.

Key components of the policy and legislative framework for biodiversity include:

- The White Paper on the Conservation and Sustainable Use of South Africa's Biological Diversity (1997);
- The National Environmental Management: Biodiversity Act (Act 10 of 2004) (NEMBA);
- NEMBA List of Ecosystems in need of Protection;
- NEMBA List of Threatened or Protected Species;
- NEMBA List of Alien Invasive Species;
- The National Environmental Management: Protected Areas Act (Act 57 of 2003) (NEMPAA);
- The National Biodiversity Strategy and Action Plan (NBSAP) (2015);
- The National Biodiversity Assessment (2011) (NBA);
- The National Protected Area Expansion Strategy (2008) (NPAES);
- Important Bird Areas (2015) (IBA); and the

In addition, some of South Africa's nine provinces have their own provincial biodiversity legislation, as nature conservation is a concurrent function of national and provincial government in terms of the Constitution (Act 108 of 1996). An example is the Northern Cape Critical Biodiversity Map (2016) that covers the entire Northern Cape Province.

Northern Cape Biodiversity Conservation Areas Map

According to the Northern Cape Biodiversity Areas Map (2016) the Ganspan Wetland Reserve area is located in a Protected Area with the surrounding land almost entirely located on a CBA 2 area (Figure 6.6). The management requirements for Protected Areas and CBA 2 are as follows (taken from the Technical Guidelines for CBA Maps, 2017):

CBA area	Description	Management requirements
Protected Areas	These are areas that are formally protected in terms of NEMPAA	These areas must be managed as per the Ganspan Wetland Reserve's approved Management Plan.
CBA 2	CBA 2 areas are areas of high biodiversity with a high level of irreplaceability, but there is flexibility in the landscape to achieve biodiversity targets contained in these areas.	These areas must remain in good ecological condition in order to meet biodiversity targets.

Protected areas

Various areas that are protected by legislation are located within 30km from the Ganspan Wetland Reserve sites (Figure 6.7). Protected areas in the vicinity include:

Name of protected area	Distance from site
Spitskop Dam	16.2km towards the southwest
Vallaagte Private Reserve	30km towards the southeast
Taung Skull Fossil Site	20km towards the northwest
Eastern Kalahari Bushveld (Protected ecosystem)	21km towards the south



Figure 6.6: Northern Cape CBA Map (2007) for the Ganspan Wetland Reserve site.

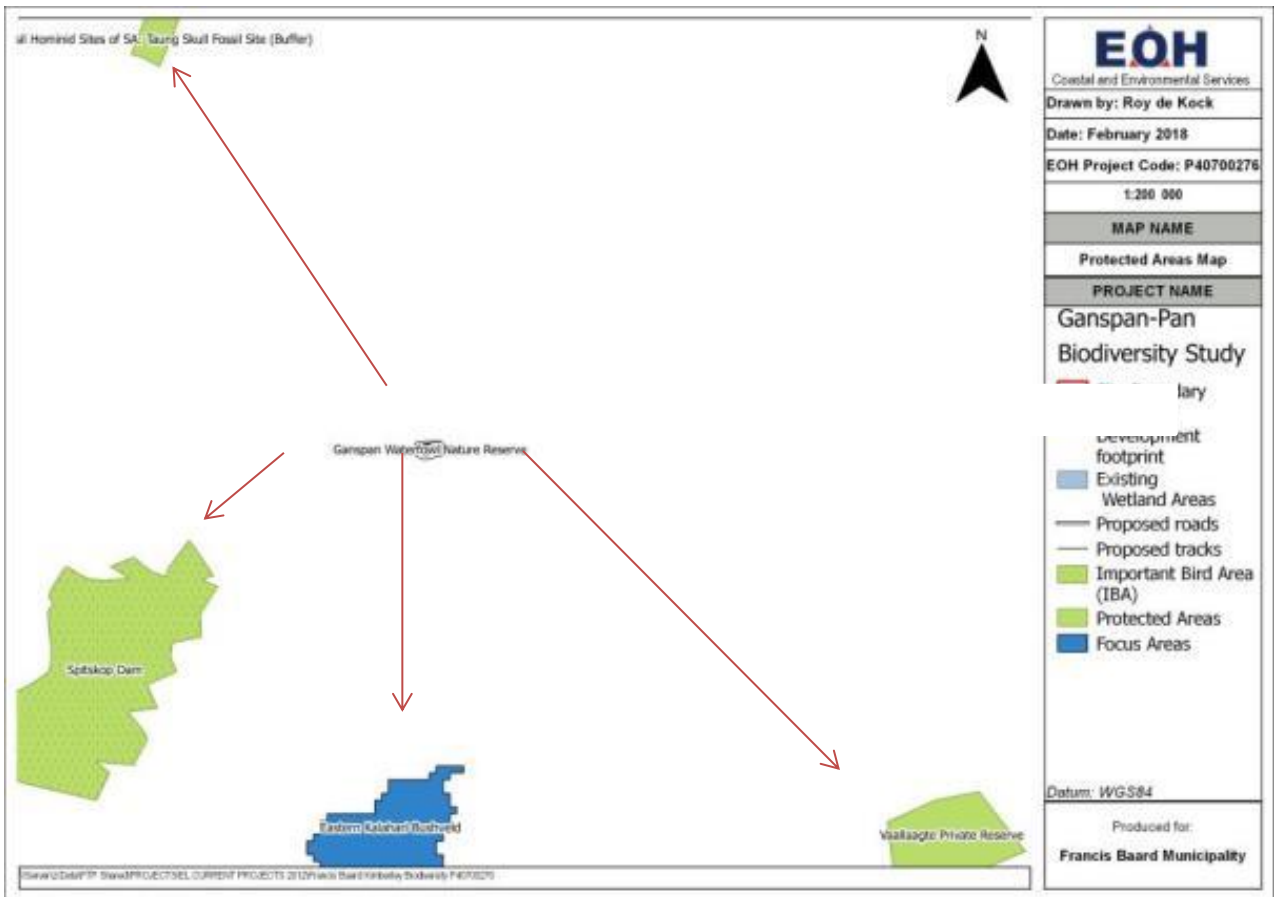


Figure 6.7: Illustrating the distances of various protected areas to the Ganspan Wetland Reserve sites (a protected site).

Threatened Ecosystems

The National Environmental Management: Biodiversity Act (No. 10 of 2004) (NEMBA) published a national list of ecosystems that are threatened and in need of protection (GN. 1002 of 2011). The Ganspan Wetland Reserve development project site is **NOT** located in any threatened ecosystem as legislated by NEMBA. The nearest threatened ecosystem is the Eastern Kalahari Bushveld located over 20km towards the south of the site (see Figure 6.7 above).

6.5. Aquatic Environment

The study area is located within Quaternary Catchment C33A (Primary Catchment C) and Water Management Area 5 (Vaal) (Figure 6.8).

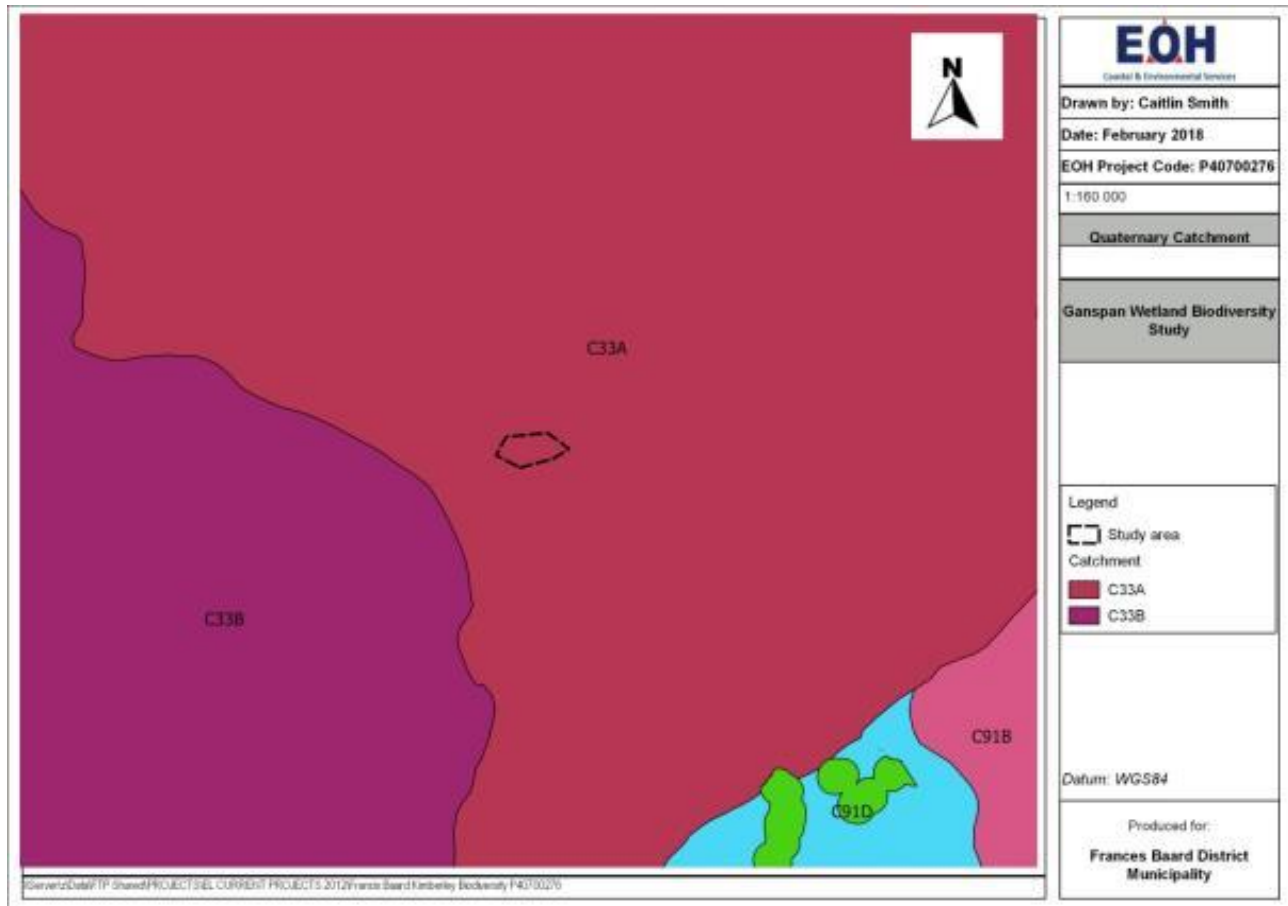


Figure 6.8: Quaternary catchment locality of the Ganspan Wetland Reserve.

NFEPA wetland classification

Wetlands in South Africa have been mapped on a broad-scale by various stakeholders and have been included in the National Freshwater Ecosystem Priority Assessment (NFEPA, 2011-2014). Due to the broad-scale nature of the NFEPA map it is not spatially accurate and therefore some error is expected. The location of NFEPA wetlands was derived from the National Land Cover 2000 (Van Den Berg *et al.*, 2008) and inland water features from the Department of Land Affairs' Chief Directorate: Surveys and Mapping (DLA-CDSM). All wetlands are classified as either 'natural' or 'artificial' water bodies.

The NFEPA wetland map identifies important or sensitive wetlands. The figure and table below illustrate the location and NFEPA classification of the Ganspan wetland (Figure 6.9 and Table 6.1).

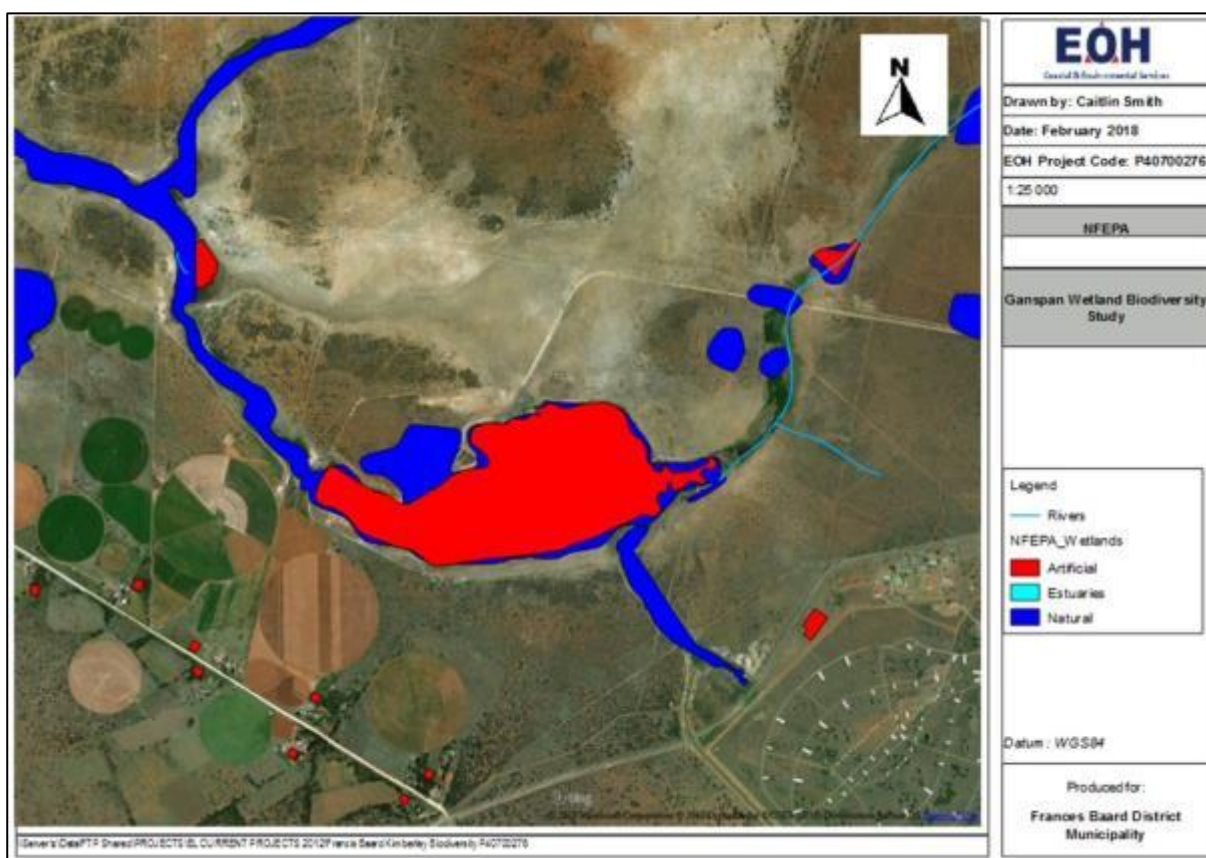


Figure 6.9: The NFEPA wetland map of the site and surrounding areas.

Table 6.1: Wetland classification for the Ganspan Wetland (NFEPA, 2011).

Wetlands	Level 3: Landscape Unit	Level 4: HGM Unit			
	Landscape setting	HGM Type	Wetland Type	Natural/Artificial	NFEPA wetland condition (if available)/ PES
Ganspan wetland	Valley floor	Channelled valley bottom	Eastern Kalahari Bushveld Group 3 Channelled valley bottom wetland	Artificial – 2013 topographical maps name this wetland the “Ganspan Dam”	Z3 – heavily to critically modified

Hydrology and Drainage

The Ganspan Wetland is filled with water from the Vaalharts Irrigation Scheme (Figure 6.10). The Vaal River is located approximately 20 km to the south-east of the proposed project area and is connected to the Harts River, located approximately 11 km to the north-west of the project area, via the irrigation scheme. A network of canals and furrows, which originate at the Vaal River near the town of Warrenton, traverse the town of Jan Kempdorp and extend north into an area now referred to as the ‘green desert.’ The Ganspan wetland fills up from the discharge point of the furrow located directly south of the wetland. The water leaves the wetland at its western-most point and flows in a westerly direction towards the Hart River.

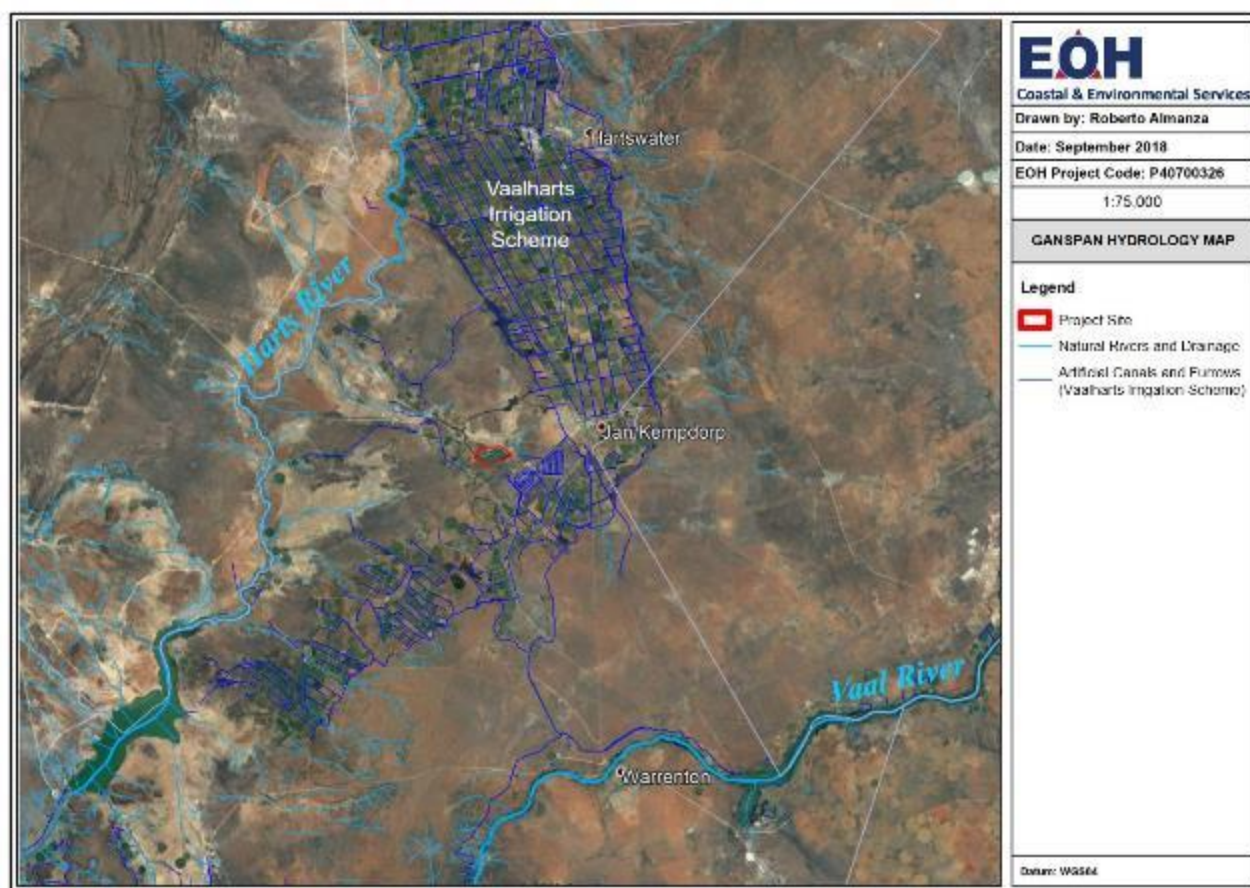


Figure 6.10: Hydrology surrounding the proposed project area.

6.6. Summary of the Bio-Physical Environment

The proposed development falls within the Phokwane Local Municipality, seated within the FBDM of the Northern Cape Province. The Phokwane Local Municipality is 828km² covered by approximately 90% remaining natural areas (including the water body). There are no national parks or nature reserves located within the municipality with the closest conservation area being the Mattanu Private Game Reserve located approximately 80km south of the project area.

The municipality contains of only one biome, the Savanna Biome and, according to the Vegetation Map of South African (Mucina and Rutherford, 2012), consists of three vegetation types, namely Schmidtsdrif Thornveld, Kimberley Thornveld and Highveld Salt Pans. There are no threatened terrestrial ecosystems located within the municipality however, the Northern Cape Critical Biodiversity Areas (CBA, 2016) identifies several areas within the municipality as CBAs, Ecological Support Areas (ESAs) and ‘other natural areas.’

The Phokwane Local Municipality is located within the Vaal Major Water Management Area (DWS, 2016) and consists of 2 rivers and 632 wetlands as delineated by the National Freshwater Ecosystem Priority Areas (NPEFA) project (Table 6.2).

Table 6.2: Biodiversity summary for the Phokwane Local Municipality (BGIS, 2015).

Feature	Phokwane Local Municipality
Size	828km
Area remaining natural	90% (including the water body)
Conservation Areas	None. The closest conservation areas are: - Mattanu Private Game Reserve (81.7km south) - Good Hope Private Reserve (90km south-west) - De Beers Dronfield Nature Reserve (103km south) - Marrick Game Lodge (119km south)
Biome	Savanna

Vegetation types	- Schmidtsdrif Thornveld - Kimberley Thornveld - Highveld Salt Pans
Threatened terrestrial ecosystems	None
Water Management Area	Vaal Major
NFEPA rivers	- Phokwane River - Harts River
No. of NFEPA wetlands	632

6.7. Socio-Economic Profile

The unemployment rate in the Phokwane Local Municipality is 37.6% and the youth (ages 15 to 34 years) unemployment rate is 48.3%. There are approximately 20 200 economically active individuals (i.e. people who are employed or unemployed but looking for work) living within the municipality. Approximately 5 000 of the people aged 15 to 34 years old are currently unemployed (StatsSA, 2016).

The Phokwane Local Municipality's total population is 61 321 and the youth (ages 15–34) account for 33% of the total population. The majority of the population are found in the peri-urban areas of the municipality. The economy is based on agriculture, community development, retail, private household and informal sectors, which provide 11 160 jobs (65%) within the municipality. Phokwane's exports include grape, citrus and olive products. Approximately 4.4% of the total population of people aged 20 years or older living in the Phokwane Local Municipality have not received any schooling. 32% have some secondary education, 10% have completed matric and only 0.7% have some form of higher education (StatsSA, 2016).

The existing tourism profile of the area includes a number of attractions that fall under the categories of accommodation; food and beverage; natural attractions; sport and recreation; and arts, culture and heritage. While there are currently a number of guesthouses and bed and breakfasts located within Jan Kempdorp, as well as within the nearby towns, there are only two (2) camping facilities located within a 30 km radius of the proposed development area. While there are a number of restaurants, take-away outlets and coffee shops located within a 30 km radius of the site, there are currently no natural areas where people can relax and enjoy nature. The closest natural area is the Mattanu Private Game Reserve, which is located approximately 82 km south of the site. In terms of sport and recreation, there are currently a limited number of facilities within the surrounding area. These include the Jan Kempdorp Golf Club (10 km from the site), Dolf's Vishoekie fishing site (28 km from the site) and the Hartswater Golf Course (27 km from the site). There are currently no arts, culture and/or heritage areas located within 30 km of the site, with the closest facility being the Warrenton Cultural Resort located 34 km south of the proposed site (Urban-econ, 2015).

7. KEY FINDINGS OF THE SPECIALIST STUDIES

According to Appendix 3, Section 3 (1), of the 2014 EIA Regulations (as amended), “an environmental impact assessment report must contain the information that is necessary for the competent authority to consider and come to a decision on the application, and must include—
(k) where applicable, a summary of the findings and recommendations of any specialist report complying with Appendix 6 to these Regulations and an indication as to how these findings and recommendations have been included in the final assessment report.”

Specialist studies and their associated Terms of Reference, which were identified during the Scoping Phase, have been approved by the DENC as per the acceptance of the Final Scoping Report dated the 29th of July 2019 (please refer to Appendix C). The following specialist studies were subsequently undertaken during the EIA process by appropriately qualified and experienced specialists:

<i>Mr Neels Kruger</i>	Heritage Specialist	Exigo
<i>Dr Heidi Fourie</i>	Paleontological Specialist	Exigo
<i>Mr Roy de Kock</i>	Ecological Specialist	EOH CES
<i>Ms Jaclyn Smith</i>	Wetland Specialist	EOH CES
<i>Ms Amber Jackson</i>	Faunal Specialist	EOH CES

A summary of the key finding of the abovementioned specialist studies is provided below.

7.1. Heritage Impact Assessment

7.1.1 Archaeological Survey

In terms of heritage resources, the general landscape around the project area is primarily well known for its Stone Age and Colonial / Historical Period archaeology primarily related to the development of intensive farming operations around Vaalharts as well as the Diamond Mining industry of the past century and resulting ruralization and industrialization. No particular reference to archaeological sites or features of heritage potential were recorded during an examination of literature thematically or geographically related to the project area at Ganspan Pan. A careful analysis of historical aerial imagery and archive maps indicate that portions of the target property– and particularly areas subject to this assessment have been altered extensively by past and more recent development of recreational facilities along the Ganspan Pan. No man-made structures were noted to be present in the project areas during the first part of the 20th century but buildings appear on the site at around 1980 (Figure 7.1). An analysis of historical aerial imagery and archive maps of areas subject to this assessment suggests a landscape which has been subjected to historical farming activities possibly sterilising the area of heritage remains. This inference was confirmed during an archaeological site assessment during which no in situ archaeological or heritage remains were encountered. The following observations were made:

1. Stone Age remains associated with geo-morphological exposures along the Harts and the Vaal River, as well as rock outcrops are known to exist in the larger Kimberley area. Similarly, single Middle Stone Age (MSA) lithics and possible Later Stone Age (LSA) tools were found in a north-western portion of the project landscape on surfaces extensively transformed by animal burrowing and the past digging of trenches (S27.932694° E24.762824°) (Figure 7.2). Artefacts observed include both residue and debris, and formal MSA tools such as scrapers, points, blades, cores and residue flakes (Figure 7.3). The artefacts were manufactured from banded ironstone and fine-grained dolerite and other Cryptocrystalline Silica (CCS) material. An elongated upper grind stone / conical stone with signs of secondary flaking and scarring were also noted in this area (Figure 7.4). This artefact could be attributed to LSA food production and in certain instances conical stones also hold a ceremonial or ritual function. The presence of this stone might suggest a prominent LSA presence in the landscape in prehistoric times.

As the Stone Age lithics were found in areas previously transformed and no organic material were noted within this provenance, their primary context has in all probability been lost compromising their scientific value.



Figure 7.1: Aerial imagery of Ganspan Pan dating to 1957 (top) and 2018 (bottom). Note the apparent absence of man-made structures in the footprint area in 1957. Later structures, dating to approximately 1980, are indicated by the orange arrow in the 2018 image.

2. A frontier zone between the east and the west, the Northwest and Northern Cape landscape contains traces of precolonial Iron Age Farmer Period remnants. However, the site inspection produced no Iron Age farmer sites or remains.



Figure 7.2: Aerial map indicating the location of Stone Age remains in the Ganspan-Pan Wetland Reserve Development area, discussed in the text.

- Kimberley and its surroundings have a long and extensive Colonial Period settlement history. From around the first half of the 19th century, the area was frequented by explorers, missionaries and farmers who all contributed to a recent history of contact and conflict. Even though structures dating to Historical Period farming occurs north of the project footprint in features relating to the built environment of the early Historical Period were observed in the project footprint.



Figure 7.3: MSA scarpers (left), a broken blade (centre) and a point (right) noted in the project area in disturbed areas.



Figure 7.4: An upper grind stone / conical stone, possibly from the LSA located in the project area. Note scarring (left) and smoothed surfaces for grinding (right) visible on the stone.

- No graves or signs of human burials were observed in the project. In the rural areas of the Northern Cape Province graves and cemeteries often occur within settlements or around homesteads but this seem not to be the case in Ganspan owing to the centralization of burials at the dedicated municipal cemetery. However, the probability of additional and informal human burials encountered during development should not be excluded. If any human bones are found during the course of construction work then they should be reported to an archaeologist and work

in the immediate vicinity should cease until the appropriate actions have been carried out by the archaeologist.

The absence of heritage sites can be attributed to the fact that general landscape has been transformed as a result of historical and more recent crop and livestock farming.

7.1.2 Specialist Opinion

Cognisant of known site distribution patterns in this section of the Northern Cape Province, and based on general on-site observations and off-site assessments and, notably the fact that the project site and its immediate surrounds have previously been transformed by past infrastructure development, the heritage specialist is of the opinion that the Ganspan-Pan Wetland Reserve Development, will have a minimal (if any) impact on archaeological artefacts, features or structures surviving in primary context, subject to the fact that no previously undetected heritage remains (for example, those in sub-surface deposits) are exposed at any stage of the development.

7.1.3 Recommendations

The larger landscape around the project area indicate a rich heritage horizon encompassing Stone Age and Colonial / Historical Period archaeology primarily related to the development of intensive farming operations around Vaalharts as well as the Diamond Mining industry of the past century and resulting ruralisation and industrialisation. Locally, portions of the target property (and particularly areas subject to this assessment) have been altered extensively by past and more recent development of recreational facilities along the Ganspan Pan. Cognizance should nonetheless be taken of archaeological material that might be present in surface and sub-surface deposits along drainage lines and in pristine areas. The following recommendations are made based on general observations in the proposed Ganspan-Pan Wetland Reserve Development area:

1. A Paleontological Desktop Assessment has been commissioned for the project. Should fossil remains such as fossil fish, reptiles or petrified wood be exposed during construction, these objects should be carefully safeguarded and the relevant heritage resources authority (SAHRA) should be notified immediately so that the appropriate action can be taken by a professional palaeontologist.
2. Single Middle Stone Age (MS) and possible Later Stone Age (LSA) lithics, including formal tools such as broken points, scrapers and a blade as well as an upper grindstone / conical stone were noted in the project area on previously altered and disturbed surfaces. The transformed nature of the local landscape has resulted in a loss of primary context and by implication, the scientific value of the artefacts. However, it is recommended that any development activities be monitored in order to avoid the destruction of previously undetected Stone Age occurrences.
3. Considering the localised nature of heritage remains, the general monitoring of the development progress by an ECO or by the heritage specialist is recommended for all stages of the project. Should any subsurface palaeontological, archaeological or historical material, or burials be exposed during construction activities, all activities should be suspended and the archaeological specialist should be notified immediately.
4. It is essential that cognizance be taken of the larger archaeological landscape of the area in order to avoid the destruction of previously undetected heritage sites. It should be stated that it is likely that further undetected archaeological remains might occur elsewhere in the Study Area along water sources and drainage lines, fountains and pans would often have attracted human activity in the past. Also, since Stone Age material seems to originate from below present soil surfaces in eroded areas, the larger landscape should be regarded as potentially sensitive in terms of possible subsurface deposits. Burials and historically significant structures dating to the Colonial Period occur on farms in the area and these resources should be avoided during all phases of construction and development, including the operational phases of the development.

In addition to these site-specific recommendations, careful cognizance should be taken of the following:

- As Palaeontological remains occur where bedrock has been exposed, all geological features should be regarded as sensitive.
- Water sources such as drainage lines, fountains and pans would often have attracted human activity in the past. As Stone Age material occur in the larger landscape, such resources should be regarded as potentially sensitive in terms of possible subsurface deposits.

7.2. Palaeontological Impact Assessment

7.3.1 Description of Significant Fossil Occurrences

A very wide range of possible Quaternary fossil remains may occur, though these are often sparse, but may include mammalian bones and teeth, tortoise remains, ostrich eggshells, non-marine mollusc shells, ostracods, diatoms, and other micro fossil groups, trace fossils (e.g. calcretised termitaria, rhizoliths, burrows, vertebrate tracks), freshwater stromatolites, plant material such as peats, foliage, wood, pollens, within calc tufa. Stromatolite structures range from a centimetre to several tens of metres in size. They are the result of algal growth in shallow water, indicating a very rich growth that would have caused an enrichment in the amount of oxygen in the atmosphere (Groenewald and Groenewald 2014).

Table 7.1: Northern Cape Fossil Heritage: Palaeontological Highlights (from Almond and Pether, 2009).

FOSSIL BIOTA & AGE	KEY LOCALITIES / AREAS	PALAEONTOLOGICAL SIGNIFICANCE
Later Quaternary aeolian and cave deposits with ESA, MSA and LSA artefacts, associated with exploited prey remains	Widespread fossils in aeolianites, on deflation surfaces and locally in caves (eg Spoeg Rivier on coast. interior sites e.g. Wonderwerk Cave)	Biological context of early Man. Poorly investigated overall.

Details of the location and distribution of all significant fossil sites or key fossiliferous rock units are often difficult to be determined due to thick topsoil, subsoil, overburden and alluvium. Depth of the overburden may vary a lot. The threats include earth moving equipment/machinery (for example haul trucks, front end loaders, excavators, graders, dozers) during construction, activities, the sealing-in or destruction of fossils by development, vehicle traffic, and human disturbance.

7.3.2 Management and Mitigation Measures

Mitigation involves planning the protection of significant fossil sites, rock units or other palaeontological resources and/or excavation, recording and sampling of fossil heritage that might be lost during development, together with pertinent geological data. The mitigation may take place before and / or during the construction phase of development. The Mitigation is done in order to rescue representative fossil material from the study area to allow and record the nature of each locality and establish its age before it is destroyed and to make samples accessible for future research. It also interprets the evidence recovered to allow for education of the public and promotion of palaeontological heritage.

Should further fossil material be discovered during the course of the development (e. g. during bedrock excavations), this must be safeguarded, where feasible *in situ*, and reported to a palaeontologist or to the Heritage Resources authority. In situations where the area is considered palaeontologically sensitive (e. g. Karoo Supergroup Formations, ancient marine deposits in the interior or along the coast) the palaeontologist might need to monitor all newly excavated bedrock. The developer needs to give the palaeontologist sufficient time to assess and document the finds and, if necessary, to rescue a representative sample.

7.3.3 Recommendations

The following recommendations were made by the Palaeontological specialist:

- (a) There is no objection to the development, but it may be necessary to request a Phase 1 Palaeontological Impact Assessment (i.e. a field study to locate fossiliferous outcrops as the palaeontological sensitivity is high and a Phase 2 Palaeontological Mitigation which is generally required if the Phase 1 Palaeontological Assessment identified a fossiliferous formation or surface fossils or if fossils are found during construction);
- (b) This project will benefit the environment, economy, and social development of the community;
- (c) The following should be conserved: i) If any palaeontological material is exposed during digging, excavating, drilling or blasting, SAHRA must be notified; ii) All construction activities must be stopped, a 30 m no-go barrier constructed, and a palaeontologist should be appointed to determine precise mitigation measures.

7.3. Biodiversity Assessment: Ecological and Wetland

7.5.1 Protected Species

Table 7.2 below list all plant Species of Conservation Concern (SCC) that may potentially occur on site. This list was used to assist in the location and identification of any SCC found on site during the site visit.

Table 7.2: List of potential plant SCC that may occur on site.

Family	Species	Threat status	Lifecycle	Growth forms
APOCYNACEAE	<i>Ceropegia crassifolia</i> var. <i>crassifolia</i>	Protected (PNCO)	Perennial	Climber, succulent
IRIDACEAE	<i>Gladiolus permeabilis</i> subsp. <i>edulis</i>	Protected (PNCO)	Perennial	Geophyte, herb
IRIDACEAE	<i>Moraea natalensis</i>	Protected (PNCO)	Perennial	Geophyte, herb

7.5.2 Vegetation Survey

Six vegetation communities were identified within the Ganspan Wetland Reserve area (Table 7.3 and Figure 7.5). Classifications were based on species composition within each community.

Table 7.3: Vegetation communities found within the Ganspan Wetland Reserve site.

Community #	Name of vegetation community
1	Water bodies
2	Aquatic vegetation
3	Dense thornveld
4	Open savanna
5	Cleared areas
6	Degraded grassland

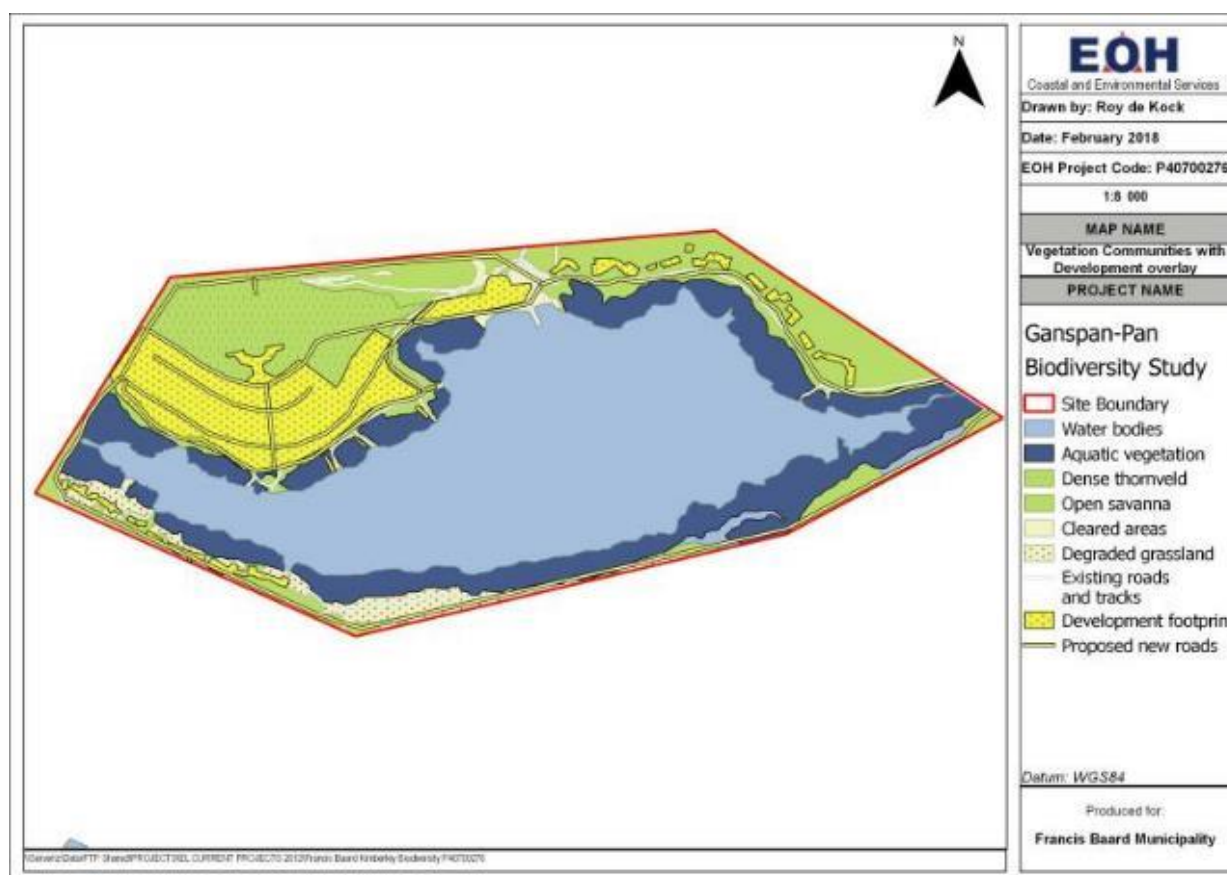


Figure 7.5: Vegetation community map of the Ganspan Wetland Reserve with the proposed development overlay.

7.5.3 Plant Species Observed

A total of 33 plant species were identified within the Ganspan Wetland Reserve site. Savanna is the dominant vegetation biome present with vegetation changing from dense thornveld in the north-western portions to open savannah and grassland in the south and east. Alien & invasive plants occur in places but are not dominant. Of these 33 species, only three are listed as SCC (Table 7.4). The implication is that these species will require a permit for removal or transplant prior to construction. This should be done through a Search and Rescue exercise prior to commencement of clearing.

Table 7.4: SCC observed on site.

Species	Vegetation community	Threat status
<i>Aloe grandidentata</i>	Dense thornveld; Open savanna	Protected (PNCO)
<i>Boscia albitrunca</i>	Dense thornveld	Protected tree (DAFF)
<i>Euphorbia sp.</i>	Dense thornveld	Protected (PNCO)

The following plant SCC were not observed on site, but may still occur (Table 7.5):

Table 7.5: Potential plant SCC that were not observed but may still occur on site.

Species	Threat status
<i>Ceropegia crassifolia var. crassifolia</i>	Protected (PNCO)
<i>Gladiolus permeabilis subsp. edulis</i>	Protected (PNCO)
<i>Moraea natalensis</i>	Protected (PNCO)

7.5.4 Sensitivity Assessment

A sensitivity map was developed for the entire study area based on the following criteria (Table 7.6).

Table 7.6. Criteria used for the analysis of the sensitivity of the Ganspan Wetland Reserve development project.

CRITERIA		LOW SENSITIVITY	MODERATE SENSITIVITY	HIGH SENSITIVITY
1	Topography	Level or even (For all areas)	Undulating; fairly steep slopes	Complex and uneven with steep slopes
2	Vegetation - Extent or habitat type in the region	Extensive throughout the region (For all areas)	Restricted to a particular region / zone	Restricted to a specific locality / site
3	Conservation status of fauna / flora or habitats	Well conserved independent of conservation value (For all vegetation communities)	Not well conserved, moderate conservation value	Not conserved - has a high conservation value (For water bodies)
4	Species of conservation concern - Presence and number	None, although occasional regional endemics (For all vegetation communities other than dense thornveld)	No Species of Conservation Concern, some indeterminate or rare endemics (For Dense Thornveld)	One or more Species of Conservation Concern, or more than 2 endemics or rare species
5	Habitat fragmentation leading to loss of viable populations	Extensive areas of preferred habitat present elsewhere in region not susceptible to fragmentation (For all areas)	Reasonably extensive areas of preferred habitat elsewhere and habitat susceptible to fragmentation	Limited areas of this habitat, susceptible to fragmentation
6	Biodiversity contribution	Low diversity or species richness	Moderate diversity, and moderately high species richness (For all vegetation communities)	
7	Erosion potential or instability of the region	Very stable and an area not subjected to erosion (For all areas)	Some possibility of erosion or change due to episodic events	Large possibility of erosion, change to the site or destruction due to climatic or other factors
8	Rehabilitation potential of the area or region	Site is easily rehabilitated	There is some degree of difficulty in rehabilitation of the site (For all areas)	Site is difficult to rehabilitate due to the terrain, type of habitat or species required to reintroduce
9	Disturbance due to human habitation or other influences (alien invasive species)	Site is very disturbed or degraded	There is some degree of disturbance of the site (For all areas)	The site is hardly or very slightly impacted upon by human disturbance
10	Ecological function	Habitat widely represented in the landscape not specifically harbouring any unique habitat features...etc. (For all areas)	Intermediate role in ecological function	Key habitat involved in ecological processes (ecological corridors and network areas or key niche habitats)
11	Ecological Services	Little to no ecological services	Some ecological services.	Various ecological services. Areas should be conserved. (For all areas)

Site sensitivity was determined based on the following criteria as classified in Table 7.6 above:

Table 7.7: List of criteria contributing to the sensitivity map.

Biodiversity element	Sensitivity mapping rule	Sensitivity allocation
- Conservation status	Dense thornveld is limited within the study site	Moderate sensitivity
	Wetlands have a high conservation value	High sensitivity
- Plant SCC	Presence within a vegetation community	Moderate sensitivity
- Disturbance and rehabilitation	Some areas show signs of disturbance. It will be difficult to rehabilitate the site.	Moderate sensitivity
- Ecological services	Various ecological services (drainage and ecosystem areas)	High sensitivity

Depending on each criterion as described in Table 7.6 and listed in Table 7.7 above, sensitivity levels may vary for a specific vegetation community within the Ganspan Wetland Reserve area. Therefore site sensitivity was divided into the following classes:

Table 7.8: Sensitivity classes identified within the Ganspan Wetland Reserve.

Sensitivity classes	Criteria included as per Table 7.6
Ecosystems	<ul style="list-style-type: none"> - Ecological function - Ecological services - Habitat fragmentation
Biodiversity	<ul style="list-style-type: none"> - Biodiversity contribution - Rehabilitation potential - Vegetation - Conservation status - Species of Conservation Concern
Physical	<ul style="list-style-type: none"> - Topography - Disturbance - Erosion potential

The following series of maps reflects the different sensitivity classes identified within the Ganspan Wetland Reserve:

Figure 7.6 shows that the entire Ganspan Wetland Reserve site is considered as a highly sensitive ecosystem area. This is due to the high level of ecological services (ecosystems, drainages etc.) occurring on site.

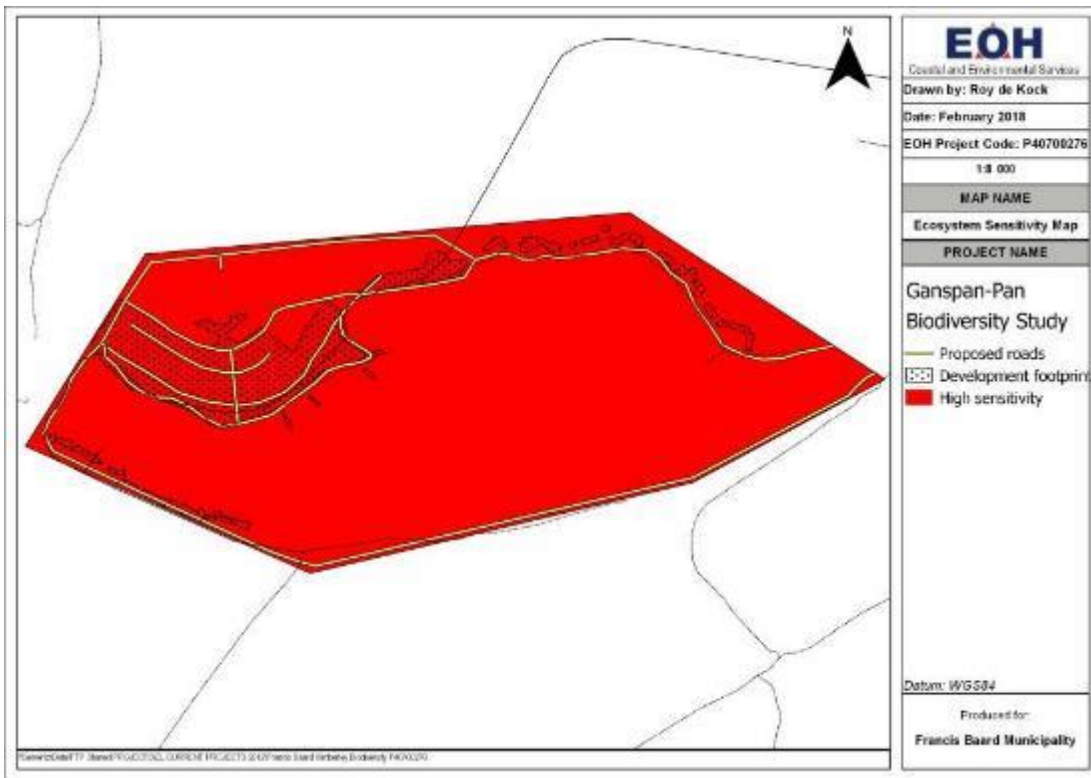


Figure 7.6: Ecosystem sensitivity within the Ganspan Wetland Reserve site.

Figure 7.7 shows that all water bodies have a high sensitivity allocation. Dense thornveld (Schmidtsdrift Thornveld) has a moderate sensitivity because of the presence of SCC while the remainder of the site has been allocated a low sensitivity.

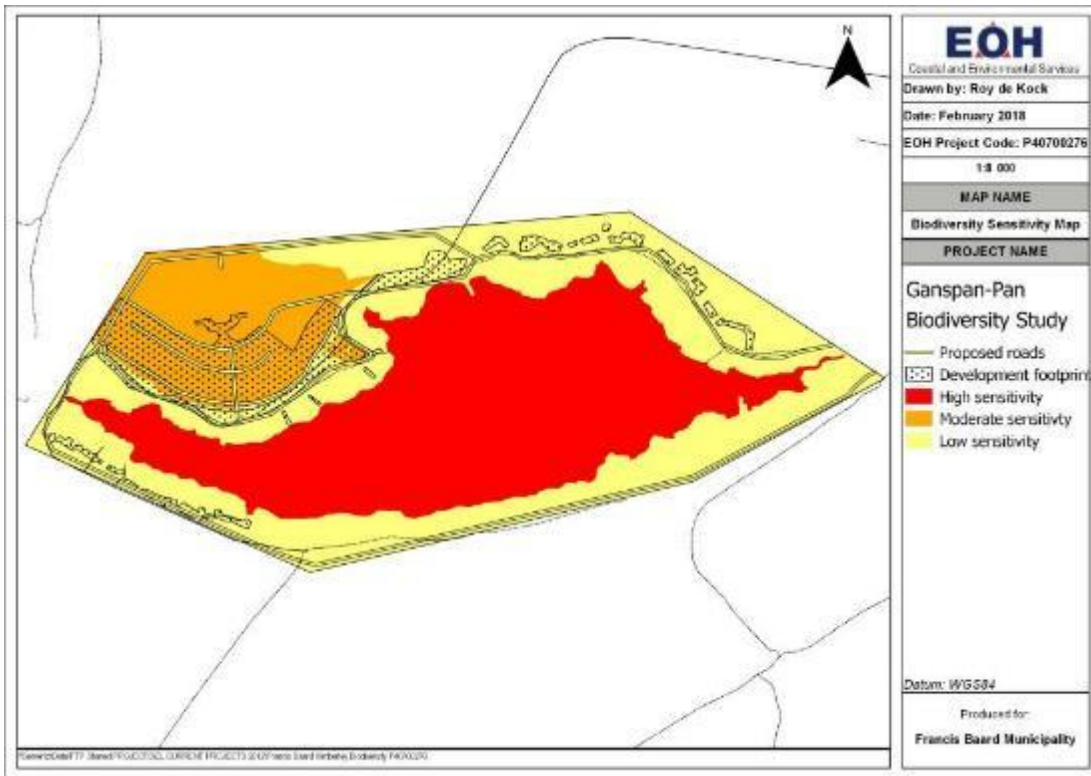


Figure 7.7: Biodiversity sensitivity within the Ganspan Wetland Reserve site.

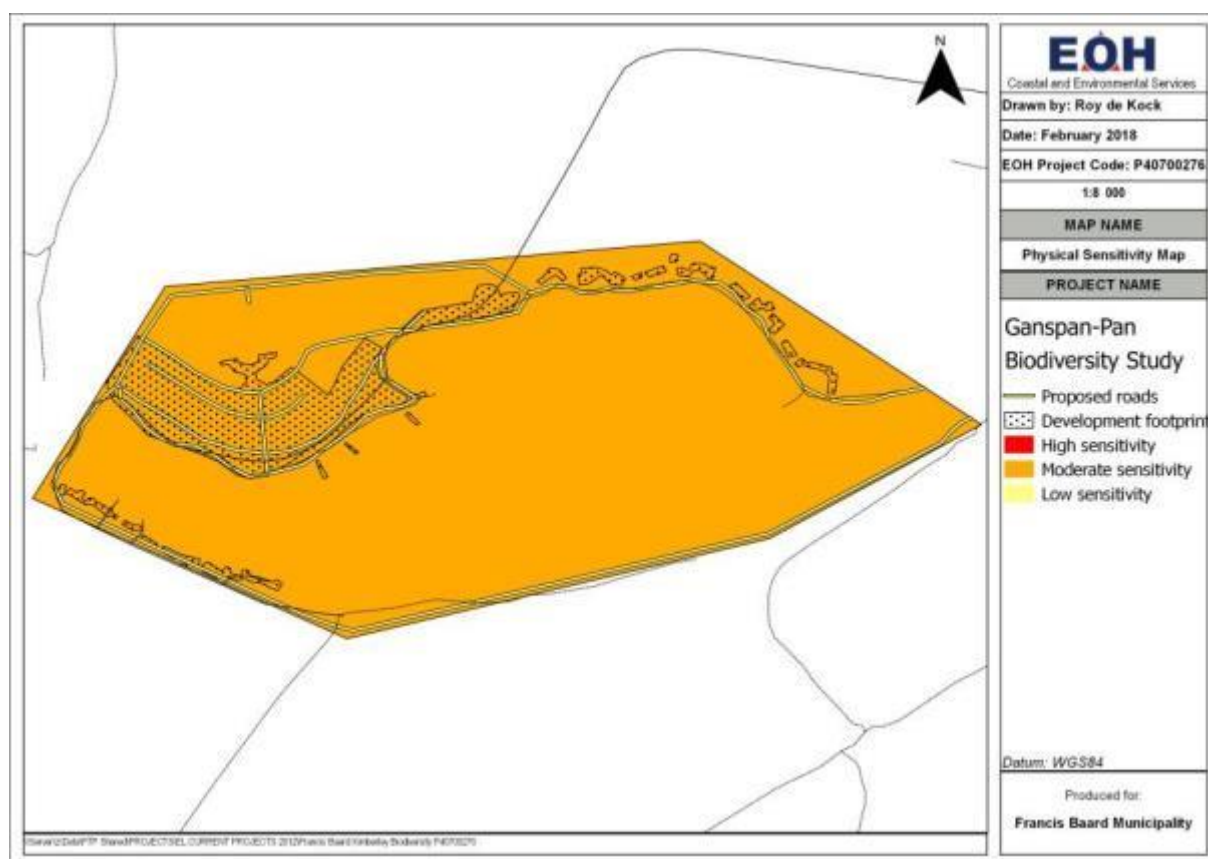


Figure 7.8: Physical sensitivity within the Ganspan Wetland Reserve site.

All water bodies within the site as well as the dense thornveld vegetation community (called Schmiddrif Thornveld by Mucina and Rutherford; 2012) are considered as highly sensitive. All other ecosystems are considered as low sensitive. However, the entire Ganspan Wetland Reserve site is considered as a highly sensitive biodiversity area. Even though separate ecosystems within the site may vary in sensitivity, the overall functioning of these ecosystems are considered as highly sensitive. Compared to this, the overall physical attributes of the site (namely topography, Disturbance levels and Erosion) is considered as moderate for the site.

The proposed development falls within both areas that have already been transformed and areas that are still in a natural state. Dense thornveld (Schmiddrif Thornveld) is considered as almost completely intact except for smaller areas on the fringes that has been cleared by sand mining activities, but the largest footprint will occur here. This will result in an approx. 50% permanent loss of natural vegetation. This vegetation type has been allocated a moderate sensitivity due to the amount of SCC occurring here. It is not considered as sustainable for the development to essentially be covering 50% of the land area contained in the Protected Area. At worst a Protected Area could be development justifiably 10-15% of the PA, maybe a bit more considering the small size of the site.

7.5.5 Alien Invasive Species

Alien and Invasive plant species were identified within the Ganspan Wetland Reserve area. These included:

Table 7.9: List of Alien and Invasive Plant Species identified within the Ganspan Wetland Reserve project site.

Plant name	Common name	Category
<i>Cassuarina equisetifolia</i>	Cassuarina/horsetail tree	2
<i>Opuntia ficus-indica</i>	Pricky pear	1b
<i>Prosopis glandulosa</i>	honey mesquite	3

Other non-declared alien vegetation recorded surrounding the Ganspan Wetland Reserve project area includes:

- *Bidens bipinnata*
- *Oxalis corniculata*
- *Pennisetum clandestinum*
- *Tagetes minuta*

Alien species are present on site and their category according to the NEMBA Alien and Invasive Species Regulations (published 1 August 2014).

7.5.6 Recommendations

The site visit showed that large portions of land have already been impacted by infrastructure development, sand mining and grazing. These areas should be preferentially used for lodge development and where not used, rehabilitated back to their natural state. A Conservation Management Plan must be developed and approved. The wetland itself including the aquatic vegetation community related to the wetland should be avoided during development. If unavoidable, the mitigations recommended in the Wetland Management Plan must be adhered to. Since this project involved the development of infrastructure within a Nature Reserve s, it is advised that an Alien Vegetation Management Plan is generated and implemented during the construction phase (for clearing) and operation phase, throughout the life of the project, and that active management of alien species listed as category 1b is carried out.

It is recommended that green belts be identified within the Ganspan Wetland Reserve where no development (current or future) or limited development may occur. This is to allow movement of fauna and flora within the Reserve site. These green belts must also connect to green belts outside the Reserve site to allow regional movements. The following green belts are proposed:

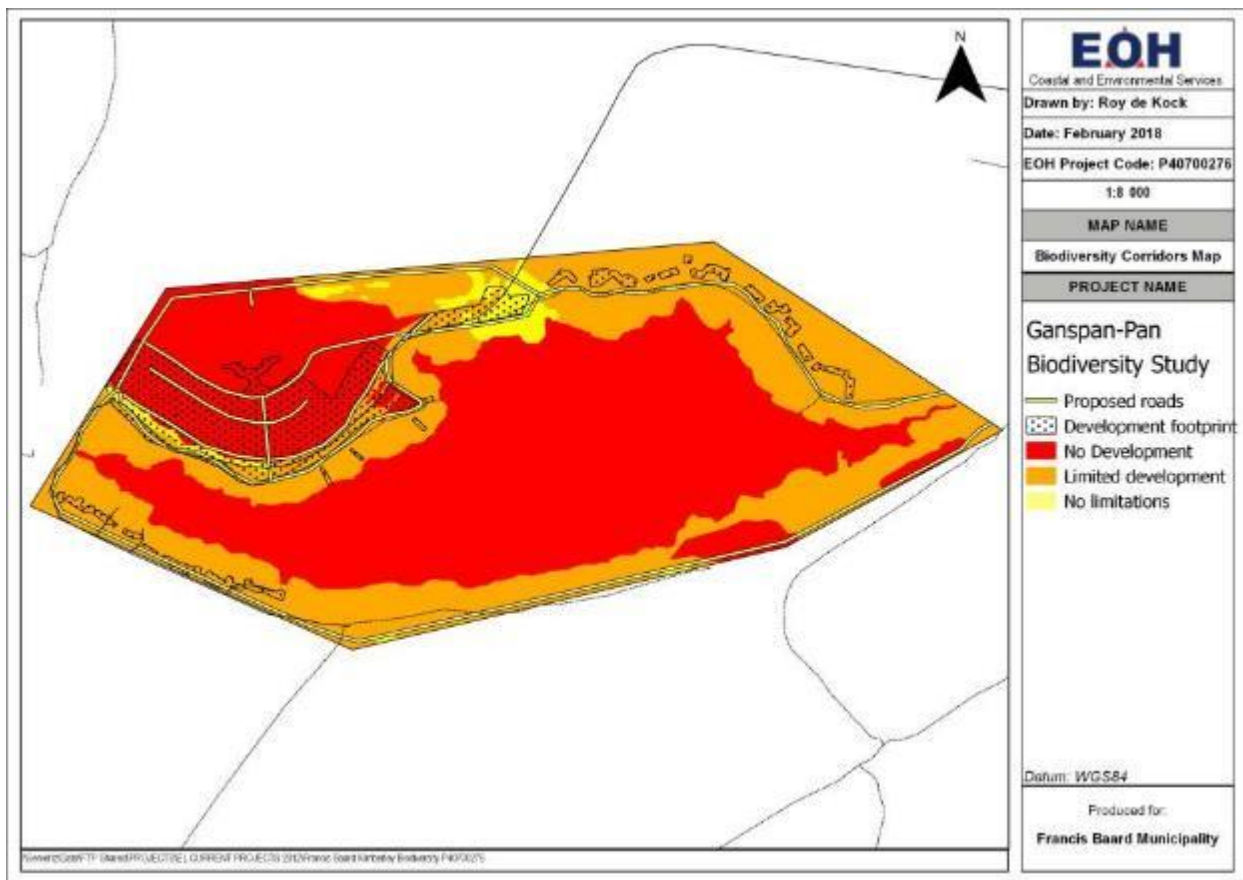


Figure 7.9: Proposed Biodiversity Corridors for the Ganspan Wetland Reserve site.

The following recommendations are made for each Biodiversity Corridor identified:

No Development corridor:

- No development must take place in these areas.
- If unavoidable, biodiversity offsets must be calculated as per the National Biodiversity Offset Policy (GN R 276 of 2017 of NEMA) for any areas impacting into this corridor.

Limited Development corridor:

- Low density development will be allowed in these areas like chalets, limited parking, etc.
- No fence lines will be allowed in these areas. This is to allow movement of fauna in these areas.

No Limitation corridor:

- Any relevant development will be allowed in these areas.

7.5.7 Specialist's Opinion

The biodiversity impacts of all aspects (including both terrestrial and aquatic environments) for the proposed Ganspan Wetland Reserve project were assessed and considered to be ecologically acceptable, provided that the footprint is reduced to a sustainable area and that mitigation measures provided by the specialist are implemented. Implementation of recommended mitigation measures coupled with comprehensive rehabilitation and monitoring in terms of re-vegetation and restoration is an important element of the mitigation strategy. The proposed development is not considered to be fatally flawed.

7.4. Avifaunal Impact Assessment

7.7.1 Important Bird Areas

Important Bird Areas (IBA) are sites critical for the long-term survival of bird species that are globally threatened, have a restricted range, are restricted to specific biomes/vegetation types and/or have significant populations (BirdLife SA, 2019). IBA's are split into Global and Regional based on South Africa has 101 Global IBAs and an additional 21 Regional IBAs. For an IBA to be classified as a Global IBA the site would have to host significant numbers of species of global conservation concern, range restricted species, biome restricted species and congregations of waterbirds, seabirds, migratory species and Ramsar sites. Regional IBA's fall within the Global IBA's but have Legal recognition and protection.

The closest IBA to Ganspan is the Spitskop Dam IBA, located 33 km southwest of Ganspan which has a Global IBA (A1, A41) status (BirdLife SA, 2019). The Spitskop Dam IBA is 2,495 ha in extent. This wetland host an average of 10,000 birds and a recorded maximum of 18,000. The dam supports significant numbers of Pelicans, Caspian Terns and Greater and Lesser Flamingos. The site also hosts the Great Crested Grebe, Great Cormorant, African Darter, Spoonbill, South African Shield Duck, Yellow-billed Duck, Red-Knobbed Coot and Pied Avocet. The Kimberley Thorn-Bushveld Savanna and Kalahari Thornveld that surrounds Spitskop supports the Kalahari Scrub Robin, Burchels Sandgrouse and Namaqua Sandgrouse, among other species. Spitskop is one of the largest wetlands in the semi-arid Northern Cape region. It holds water permanently, and is a vital water-source when all the other ephemeral and temporary wetlands in the region have dried up. Occurring in a region where rainfall is unpredictable, any permanent water-body is of major importance during drier periods when other wetlands dry up.

Kamfers Dam IBA (A41) is 400 ha in extent and is located 2 km north of Kimberley. This IBA is a non-perennial, closed-basin pan at the junction of three biomes; the Karoo, Kalahari and Grasslands. It receives water from Kimberley's stormwater and treated sewage effluent systems as well as the catchment. It hosts 4,000–10,000 (with a recorded maximum of 20,000 during periods of drought) individuals of resident, migratory and nomadic waterbirds. The site occasionally hosts large numbers of Egyptian Geese, Black-Necked Grebes and South African Shiled Ducks. During winter,

when Palearctic migrants are absent, the site supports substantially fewer birds. The threatened African Marsh Harrier and Chestnut-Banded Plover have also been recorded at Kamfers Dam.

Sandveld and Bloemhof Dam Nature Reserve IBA is 55,372 ha in extent and located 110 km to the east of Ganspan on the Free State/North-West Province border and downstream of the Vaal Dam. Sandveld Nature Reserve protects a remnant patch of the eastern form of Kalahari Thornveld and previously grazed or cultivated areas persist in the reserve either as open grassland or regenerating woodland. In addition, low dam water levels presents exposed islands and aquatic vegetation. This IBA hosts 5,000 waterbirds and it has once supported more than 10,000 individuals. Of significance is the mixed heronries (egrets, herons and cormorants), one heronry supporting over 3,500 breeding pairs and another, 30 km away, supports 2,200 breeding pairs.

The dam regularly holds notable numbers of Lesser Flamingos, Caspian Terns, Yellow-Billed Storks and a few pairs of African Marsh Harriers. The Kalahari Thornveld surrounding the dam supports several large raptors and terrestrial bird species, including the breeding Tawny Eagle, White-Backed Vulture and Kori Bustard, as well as the visiting Pallied Harrier and Martial Eagle.

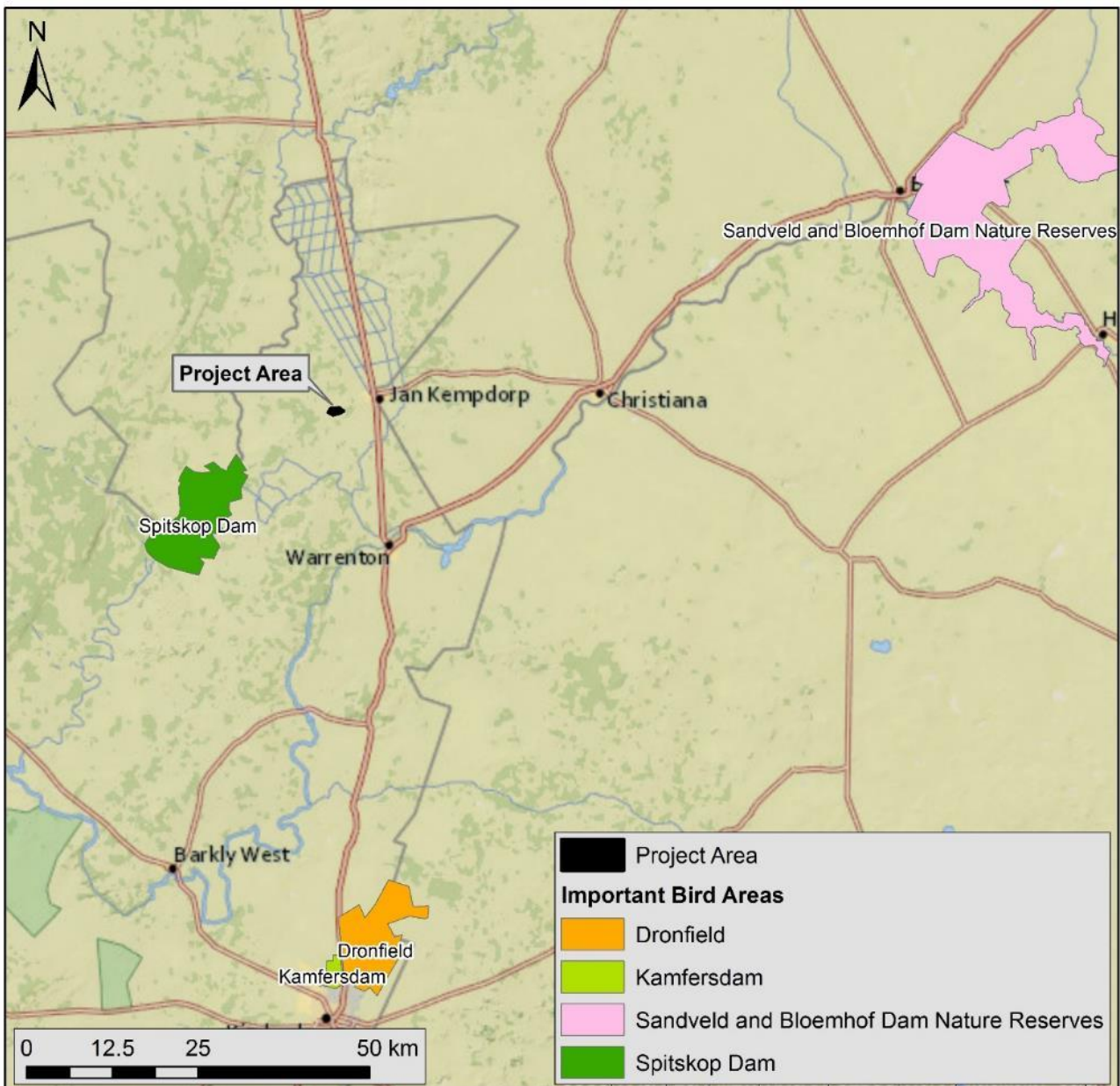


Figure 7.10: Important Bird Areas in relation to Ganspan.

7.7.2 Habitats

Six broad habitats were identified across the Ganspan Wetland Reserve, namely:

- Aquatic habitats
 - Fringe vegetation
 - Water bodies
 - Wetland
- Terrestrial habitats
 - Degraded grassland
 - Thorn veld
 - Derelict buildings and alien trees.

These habitats are described in the Avifaunal Specialist Report with accompanying photographs and are presented spatially in Figure 7.11.

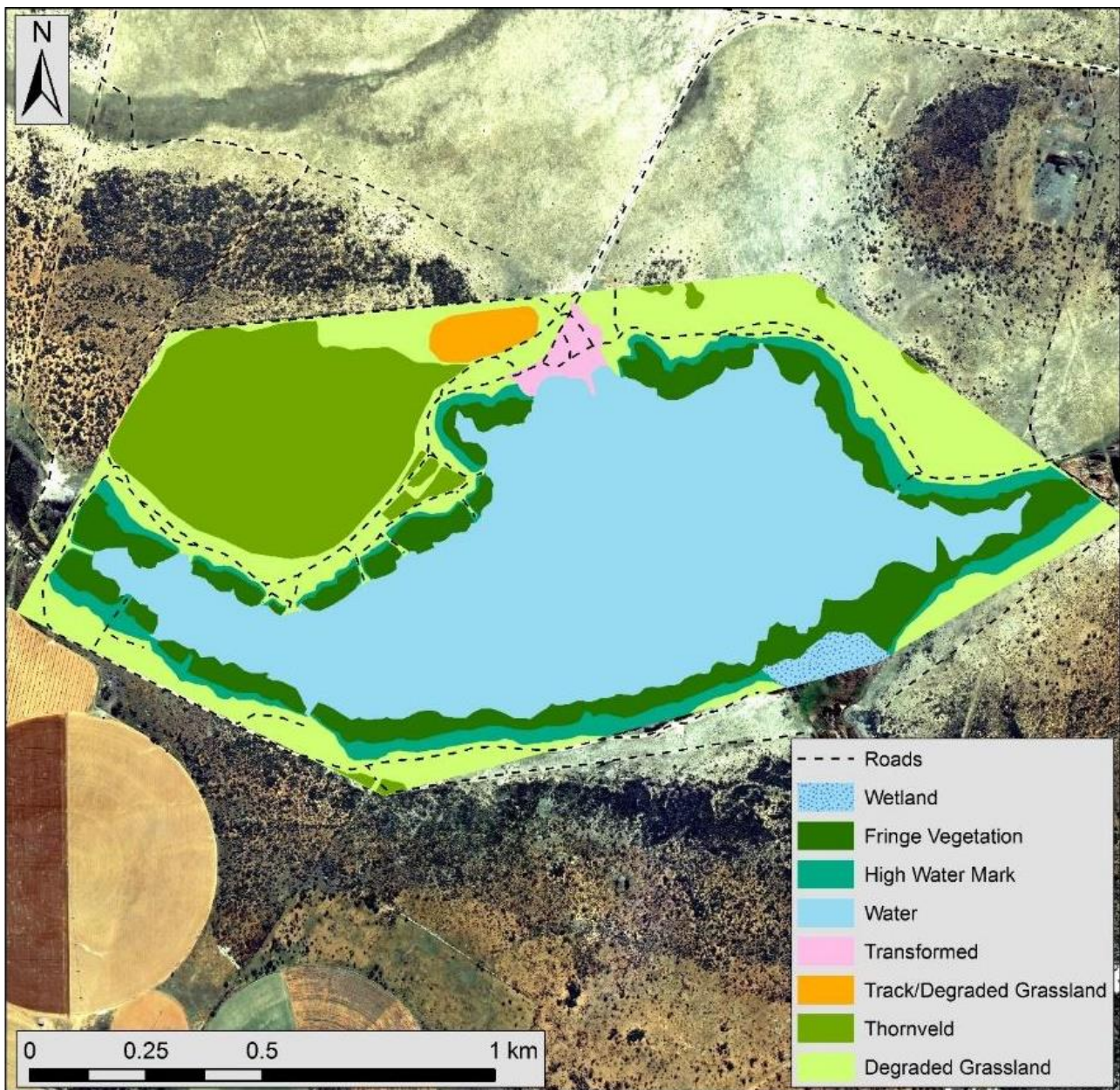


Figure 7.11: Habitat map of the Ganspan Wetland Reserve.

7.7.3 Avifauna on Site

A total of 295 bird species have distribution ranges that includes the survey area (Lepage, 2016; Hockey *et al.* 2016). Of the bird species which may be found in the study area SABAP 2 recorded 129 species and CWAC 56 species. During the field survey 61 species were observed within the project area. Table 7.10 below provides a breakdown of the bird species seen in each habitat type.

Table 7.10: Occurrence of bird species according to habitat type in the project site.

Habitat Type	# Bird species recorded
Aquatic habitats	
Water bodies	7
Fringe vegetation	5
Waders	5
Bank	6
Wetland	5
	28
Terrestrial habitats	
Degraded grassland	11
Thorn veld	15
Derelict buildings and alien trees	7
	33

It is of interest that a brood-parasite species (Red-Chested) and its host species (Cape Wagtail) were seen within 50 m of each other. The presence of brood parasite species suggests that additional host species would occur in the survey area that were perhaps not present at the time of the survey, and hence were not possible to record during the survey period (Table 7.11).

Table 7.11: Host species of the brood parasites recorded within the survey area.

Brood Parasites	Most Common Host Species
Lesser Honeyguide	Hoopoe, Bee-eaters, Barbets, Kingfishers & Starlings.
Whydah (Pin-tailed & Shaft-tailed)	Common Waxbill
Eastern Paradise-Whydah	Green-winged Pytilia
Village Indigobird	Red-billed Firefinch
African Emerald Cuckoo	Southern Masked-Weaver, Cape Sparrow etc.
Red-chested cuckoo	At least 15 bird species, but mainly Cape-Robin Chat
Klaas's Cuckoo	At least 18 bird species including Batises, small Warblers and Sunbirds

Based on the above table, it is possible that in addition to the birds recorded during the survey, the Lesser Honeyguide, the Klaas's Cuckoo and the African Emerald Cuckoo may exist on-site as their primary hosts were observed onsite, including the European Bee-Eater, Cape Starling, Lesser Swamp Warbler, Southern Red Bishop, Southern Masked-Weaver and Cape Sparrow.

7.7.4 Bird Species of Conservation Concern

Out of a possible 12 bird species of conservation concern (SCC) (Table 7.12) only one SCC was recorded on site during the field study. The Curlew Sandpiper (*Calidris ferruginea*) listed as Near Threatened (IUCN, 2019) was observed on the northern bank of the pan below the transformed area near the slipway (Figure 7.12). The Lesser Flamingo (*Phoeniconaias minor*) was recorded by SABAP 2. Of the other 10 SCC five are large raptors which may occur within the project area, although minimal habitat exists on site for roosting purposes. Two of the remaining 5 SCC are grassland birds. In addition, the Blue Crane occurs mainly in agricultural areas and the Secretary Bird in pristine grasslands and as such are not present onsite. The Maccoa Duck has not been recorded within the Pentad (2755_2445) (CWAC, SABAP2). No other SCC were recorded during the assessment. It is

also possible that some rarer or secretive SCC species were unrecorded due to the time of year and limited time to perform the survey.

Table 7.12: SCC likely to occur within the study area.

COMMON NAME	SPECIES NAME	STATUS	RECORDED	SANBAP 2 (2755_2445)
White-backed Vulture	<i>Gyps africanus</i>	CE		
Ludwig's Bustard	<i>Neotis ludwigii</i>	EN		
Cape Griffon	<i>Gyps coprotheres</i>	EN		
Lappet-faced Vulture	<i>Torgos tracheliotos</i>	EN		
Maccoa Duck	<i>Oxyura maccoa</i>	VU		
Secretary Bird	<i>Sagittarius serpentarius</i>	VU		
Blue Crane	<i>Anthropoides paradiseus</i>	VU		
Martial Eagle	<i>Polemaetus bellicosus</i>	VU		
Lesser Flamingo	<i>Phoeniconaias minor</i>	NT		1
Curlew Sandpiper	<i>Calidris ferruginea</i>	NT	1	
Kori Bustard	<i>Ardeotis kori</i>	NT		
Chestnut-banded Plover	<i>Charadrius pallidus</i>	NT		



Figure 7.12: Curlew Sandpiper (*C. ferruginea*) observed on the northern bank at Ganspan.

7.7.5 Habitat Sensitivity

The habitat sensitivity map was developed by identifying areas of high, medium and low sensitivity. Aquatic habitat (wetlands, fringe vegetation and banks) provides protection for avifaunal species from predators and offers important breeding, nesting and foraging grounds. The wetland hosts a high species richness and abundance of waterfowl, shorebirds and waders. One SCC was seen on the shore of the Ganspan Pan, the Curlew Sandpiper. The fringe vegetation offers nesting grounds to large bird species on site, such as, cormorants, herons and egrets as well as other more secretive

bird species. Wetlands are important ecological process areas and given the intact nature of the aquatic habitat it has been classified as areas of high sensitivity.

The terrestrial habitat (thornveld and grassland) provides important refugia for different avifaunal species to those found in the aquatic habitats. The more intact the thornveld and grassland the greater the sensitivity. The greatest number of birds were observed in the thornveld during the field visit and more are expected to occur in this habitat type, the thornveld is thus rated as High Sensitivity. The grassland is considered a highly degraded habitat and does not offer much in terms of shelter for nesting and breeding, this habitat is primarily used for foraging and is thus designated a rating of Moderate Sensitivity. The manmade habitat is limited and although it may provide some avifaunal species with habitat there is no shortage of this habitat at Jan Kempdorp. Manmade habitat is thus designated a rating of Low Sensitivity.

Alien trees offers a sheltered elevated habitat in which avifaunal species can nest, breed and find protection from predators. It provides safe roosting sites for large birds of prey (raptors), e.g. Fish Eagle and large birds such as the Cattle Egret. There are not many large trees on site and although they are alien, they provide habitat that would otherwise be absent. For this reason, it is considered to be of Moderately Sensitivity.

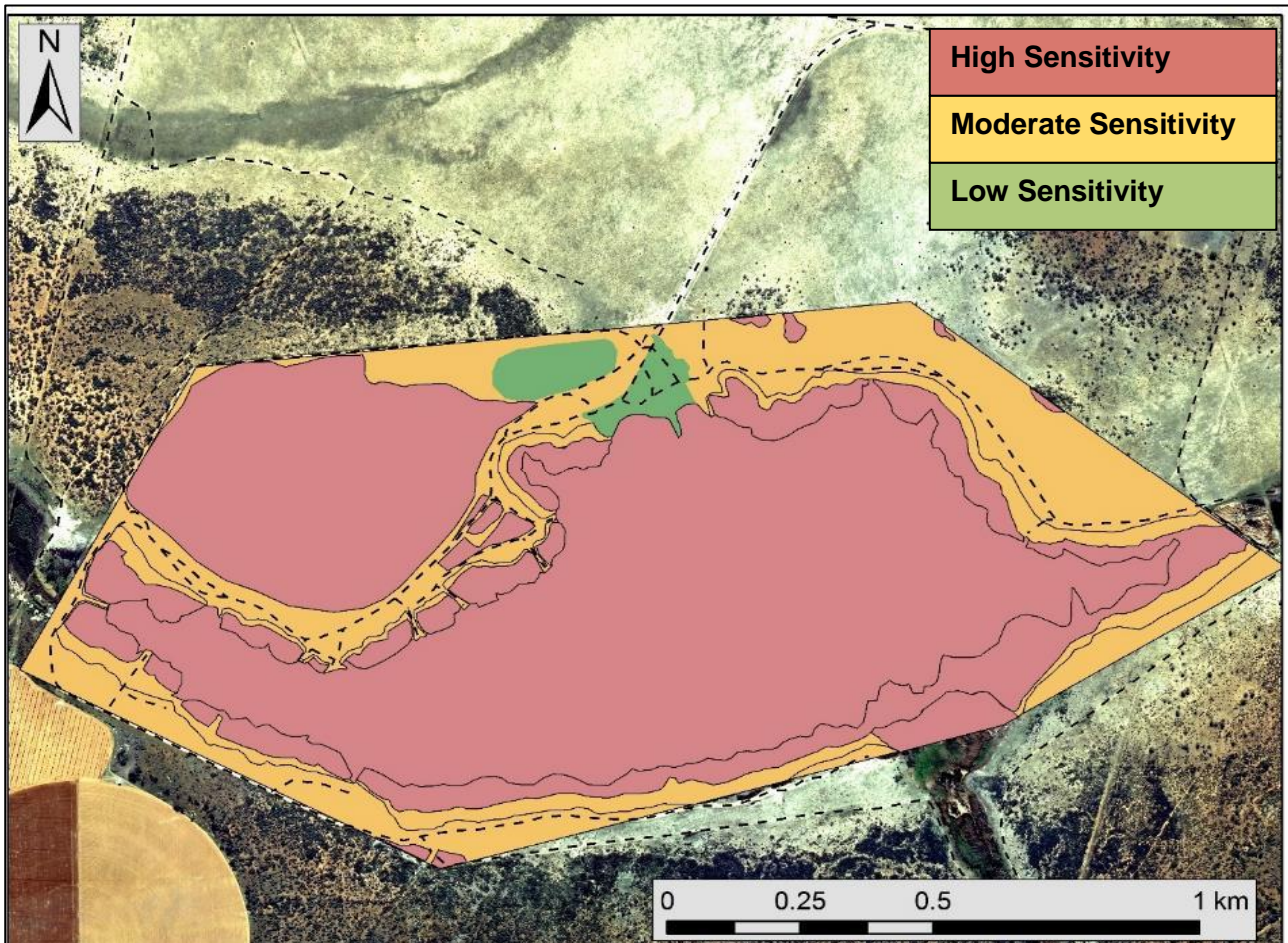


Figure 7.13: Habitat sensitivity map of the Ganspan Wetland Reserve.

7.7.6 Conclusions and Recommendations

The Ganspan Wetland Reserve offer avifauna both aquatic habitats (water body, fringe vegetation and wetland) and terrestrial habitats (degraded grassland, thorn veld and manmade habitat). The reserve is 188 ha in extent. The proposed development will retain the waterbody covering half the site (97 ha) and will introduce a game park (15 ha), recreational/natural areas (49 ha) and developed areas (29 ha) consisting of accommodation and residential housing. The proposed development impacts both terrestrial and aquatic avifaunal habitats at the Ganspan-Pan Wetland Reserve.

Construction of residential and tourist accommodation will replace portions of the terrestrial avifaunal habitat and construction related activities are expected to disturb avifaunal activities (roosting, nesting, breeding, foraging). During operation certain recreational activities have the potential to negatively impact avifaunal activities thereby displacing resident species and attracting pest species. Operation also has the potential to positively impact on avifaunal habitat through restoration and continued monitoring. Given the existing state of the reserve and proposed benefits the development may offer (an opportunity to provide a prime birding site for tourists), the development should be authorised.

The following recommendations have been provided by the specialist:

- The road that crosses the inlet river/wetland in the south of the site should either stop before the wetland and not continue around the pan or should be elevated over the wetland and appropriate WULA must be acquired prior to construction;
- A bird monitoring programme must be drafted and implemented for the proposed development; and
- A conservation fee must be built into the entrance fee and residents' rates and placed into a separate account and must only be used for conservation and rehabilitation of the Ganspan Wetland Reserve.

8. IMPACT ASSESSMENT

According to Appendix 3, Section 3 (1), of the of the 2014 EIA Regulations (as amended), “an environmental impact assessment report must contain the information that is necessary for the competent authority to consider and come to a decision on the application, and must include—

- (h) a full description of the process followed to reach the proposed development footprint within the approved site as contemplated in the accepted scoping report, including:
 - (v) the impacts and risks identified including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts—
 - (aa) can be reversed;
 - (bb) may cause irreplaceable loss of resources; and
 - (cc) can be avoided, managed or mitigated;
 - (vi) the methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks;
 - (vii) positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;
 - (viii) the possible mitigation measures that could be applied and level of residual risk;
 - (ix) the outcome of the site selection matrix;
- (i) a full description of the process undertaken to identify, assess and rank the impacts the activity and associated structures and infrastructure will impose on the preferred development footprint on the approved site as contemplated in the accepted scoping report through the life of the activity, including—
 - (i) a description of all environmental issues and risks that were identified during the environmental impact assessment process; and
 - (ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures;
- (j) an assessment of each identified potentially significant impact and risk, including—
 - (i) cumulative impacts;
 - (ii) the nature, significance and consequences of the impact and risk;
 - (iii) the extent and duration of the impact and risk;
 - (iv) the probability of the impact and risk occurring;
 - (v) the degree to which the impact and risk can be reversed;
 - (vi) the degree to which the impact and risk may cause irreplaceable loss of resources; and
 - (vii) the degree to which the impact and risk can be mitigated.

8.1. Issues Identification Matrix

EOH CES has developed an evaluation criteria for impacts in accordance with the requirements outlined in Appendix 2 of the EIA Regulations (2014, as amended). This methodology takes into consideration the following variables:

Nature

Negative or positive impact on the environment.

Type

Direct, indirect and/or cumulative effect of impact on the environment.

Significance prior to mitigation

Four factors need to be considered when assessing the significance of impacts, namely:

- Relationship of the impact to temporal scales - the temporal scale defines the significance of the impact at various time scales, as an indication of the duration of the impact.
- Relationship of the impact to spatial scales - the spatial scale defines the physical extent of the impact.
- The severity of the impact - the severity/beneficial scale is used in order to scientifically evaluate how severe negative impacts would be, or how beneficial positive impacts would be on a particular affected system or a particular affected party. The severity of impacts can be evaluated with and without mitigation in order to demonstrate how serious the impact is when nothing is done about it. The word '*mitigation*' means not just '*compensation*', but includes concepts of containment and remedy. For beneficial impacts, optimization means anything that can enhance the benefits. However, mitigation or optimization must be practical, technically feasible and economically viable.
- The likelihood of the impact occurring - the likelihood of impacts taking place as a result of project actions differs between potential impacts. There is no doubt that some impacts could occur (e.g. loss of vegetation), but other impacts are not as likely to occur (e.g. vehicle accident), and may or may not result from the proposed development. Although some impacts may have a severe effect, the likelihood of them occurring may affect their overall significance.

Each criterion (Table 8.1) is ranked with scores to determine the overall significance of an activity. The criterion is then considered in two categories, viz. effect of the activity and the likelihood of the impact. The total scores recorded for the effect and likelihood are then read off the matrix presented in Table 8.2, to determine the overall significance of the impact (Table 8.3). The overall significance is either negative or positive.

The environmental significance scale is an attempt to evaluate the importance of a particular impact. This evaluation needs to be undertaken in the relevant context, as an impact can either be ecological or social, or both. The evaluation of the significance of an impact relies heavily on the values of the person making the judgment. For this reason, impacts of especially a social nature need to reflect the values of the affected society.

Prioritising

The evaluation of the impacts, as described above is used to prioritise which impacts require mitigation measures.

Negative impacts that are ranked as being of "VERY HIGH" and "HIGH" significance will be investigated further to determine how the impact can be minimised or what alternative activities or mitigation measures can be implemented. These impacts may also assist decision makers i.e. numerous HIGH negative impacts may bring about a negative decision.

For impacts identified as having a negative impact of "MODERATE" significance, it is standard practice to investigate alternate activities and/or mitigation measures. The most effective and practical mitigations measures will then be proposed.

For impacts ranked as “LOW” significance, no investigations or alternatives will be considered. Possible management measures will be investigated to ensure that the impacts remain of low significance.

Table 8.1: Criterion used to rate the significance of an impact.

EFFECT	Temporal scale		
	Short term	Less than 5 years	
	Medium term	Between 5 and 20 years	
	Long term	Between 20 and 40 years (a generation) and from a human perspective almost permanent.	
	Permanent	Over 40 years and resulting in a permanent and lasting change that will always be there	
	Spatial Scale		
	Localised	At localised scale and a few hectares in extent	
	Study area	The proposed site and its immediate environs	
	Regional	District and Provincial level	
	National	Country	
	International	Internationally	
	Severity		Benefit
	Slight / Slightly Beneficial	Slight impacts on the affected system(s) or party (ies)	Slightly beneficial to the affected system(s) or party (ies)
	Moderate / Moderately Beneficial	Moderate impacts on the affected system(s) or party(ies)	An impact of real benefit to the affected system(s) or party (ies)
Severe / Beneficial	Severe impacts on the affected system(s) or party (ies)	A substantial benefit to the affected system(s) or party (ies)	
Very Severe / Very Beneficial	Very severe change to the affected system(s) or party(ies)	A very substantial benefit to the affected system(s) or party (ies)	
LIKELIHOOD	Likelihood		
	Unlikely	The likelihood of these impacts occurring is slight	
	May Occur	The likelihood of these impacts occurring is possible	
	Probable	The likelihood of these impacts occurring is probable	
	Definite	The likelihood is that this impact will definitely occur	

Table 8.2: Matrix used to determine the overall significance of the impact based on the effect and likelihood of occurrence.

LIKELIHOOD	EFFECT		
		LOW	HIGH
	Unlikely	LOW	MODERATE
	May Occur	MODERATE	HIGH
	Probable	MODERATE	HIGH
Definite	MODERATE	VERY HIGH	

Table 8.3: Environmental Significance Scale.

Significance Rate		Description
LOW –	LOW +	An acceptable impact for which mitigation is desirable but not essential. The impact by itself is insufficient even in combination with other low impacts to prevent the development being approved. These impacts will result in either positive or negative medium to short term effects on the social and/or natural environment.
MODERATE –	MODERATE +	An important impact which requires mitigation. The impact is insufficient by itself to prevent the implementation of the project but which in conjunction with other impacts may prevent its implementation. These impacts will usually result in either a positive or negative medium to long-term effect on the social and/or natural environment.
HIGH –	HIGH +	A serious impact, if not mitigated, may prevent the implementation of the project (if it is a negative impact). These impacts would be considered by society as constituting a major and usually a long-term change to the (natural &/or social) environment and result in severe effects or beneficial effects.
VERY HIGH –	VERY HIGH +	A very serious impact which, if negative, may be sufficient by itself to prevent implementation of the project. The impact may result in permanent change. Very often these impacts are unmitigable and usually result in very severe effects, or very beneficial effects.

Significance post mitigation

Once mitigation measure are proposed, the following criteria are then used to determine the overall significance (i.e. post mitigation significance) of the impact.

- **Reversibility:** The degree to which an environment can be returned to its original/partially original state.
- **Irreplaceable loss:** The degree of loss which an impact may cause.
- **Mitigation potential:** The degree of difficulty of reversing and/or mitigating the various impacts ranges from very difficult to easily achievable. The four categories used are listed and explained in Table 8.4 below. Both the practical feasibility of the measure, the potential cost and the potential effectiveness is taken into consideration when determining the appropriate degree of difficulty.

Table 8.4: Criteria considered post mitigation.

Reversibility	
Reversible	The activity will lead to an impact that can be reversed provided appropriate mitigation measures are implemented.
Irreversible	The activity will lead to an impact that is permanent regardless of the implementation of mitigation measures.
Irreplaceable loss	
Resource will not be lost	The resource will not be lost/destroyed provided mitigation measures are implemented.
Resource will be partly lost	The resource will be partially destroyed even though mitigation measures are implemented.

Resource will be lost	The resource will be lost despite the implementation of mitigation measures.
Mitigation potential	
Easily achievable	The impact can be easily, effectively and cost effectively mitigated/reversed.
Achievable	The impact can be effectively mitigated/reversed without much difficulty or cost.
Difficult	The impact could be mitigated/reversed but there will be some difficulty in ensuring effectiveness and/or implementation, and significant costs.
Very Difficult	The impact could be mitigated/reversed but it would be very difficult to ensure effectiveness, technically very challenging and financially very costly.

These criteria are applied using the logic represented in the flow chart below (Figure 8.1).

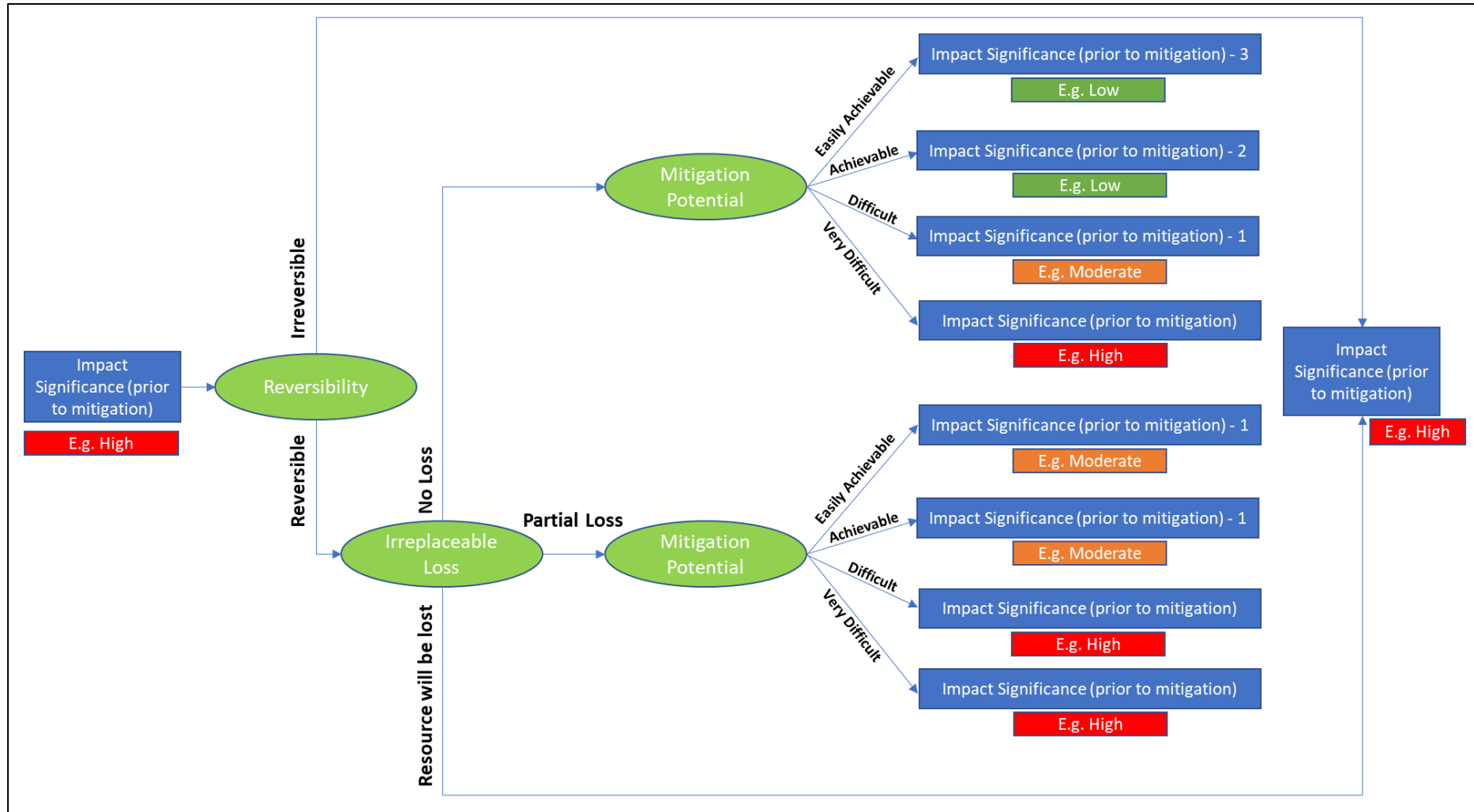


Figure 8.1: Logic used to rate overall significance post mitigation.

8.2. Detailed Impact Assessment

A detailed impact assessment of all the identified impacts is provided in Table 8.5 below.

Table 8.5: Impacts and Key Mitigation Measures.

IMPACT	DEVELOPMENT PHASE	PROJECT ALTERNATIVE	CAUSE AND COMMENT	DURATION	EXTENT	CONSEQUENCE	PROBABILITY	REVERSIBILITY AND MITIGATION	SIGNIFICANCE	MITIGATION MEASURES	RISIDUAL RISK
BIODIVERSITY IMPACTS											
Loss of Natural Vegetation	Construction	Preferred Alternative	During the construction phase the clearing of natural vegetation outside the approved development footprint will lead to the unnecessary loss of natural vegetation and habitat for other taxonomic groups.	Medium Term	Localised	Moderate	May Occur	Difficult	MODERATE –	<ul style="list-style-type: none"> The construction footprint must be surveyed and demarcated prior to construction commencing; No construction activities will be allowed outside the demarcated footprint; Clearing of vegetation should avoid thornveld areas wherever possible; Where vegetation has been cleared, site rehabilitation in terms of soil stabilisation and vegetation must be undertaken. 	LOW –
Loss of Species of Conservation Concern	Construction	Preferred Alternative	During the construction phase the clearing of natural vegetation will lead to the destruction of habitats and identified and unidentified plant and animal SCC.	Medium Term	Study Area	Moderate	May Occur	Difficult	MODERATE –	<ul style="list-style-type: none"> All areas that will be impacted must be ground truthed and demarcated by a suitably qualified specialist (botanical/faunal) prior to vegetation and topsoil removal in order to locate and rescue any SCC within the area and relocate them; Search and rescue must be undertaken by a professional and qualified specialist; The contractor's staff must not poach or trap wild animals; The contractor's staff must not harvest any natural vegetation. 	LOW –
Invasion of Alien Species	Construction and Operation	Preferred Alternative	During the construction and operational phase, the loss of natural vegetation will increase the potential invasion by alien plant species. This, coupled with the lack of implementation of an alien vegetation management plan may result in large scale alien plant invasion.	Long Term	Study Area	Moderate	May Occur	Achievable	MODERATE –	<ul style="list-style-type: none"> An Alien Vegetation Management Plan must be implemented during the construction and operational phase to reduce the establishment and spread of undesirable alien plant species; Alien plants must be removed through appropriate methods such as hand pulling, application of chemicals, cutting, etc. as in accordance to the NEMBA: Alien Invasive Species Regulations. 	LOW –
Impacts resulting from Material Stockpiling	Construction	Preferred Alternative	During the construction phase, stockpiling of construction materials within 50 m of the wetland could result in erosion and mobilisation of the materials into the wetland, resulting in sedimentation and a decrease in water quality and aquatic habitat.	Medium Term	Study Area, downstream of watercourses	Moderate	May Occur	Achievable	MODERATE –	<ul style="list-style-type: none"> As far as possible no construction material or other stock piles should be stored within 50 m of the wetland. Stockpiles within 50 m of the wetland must be monitored for erosion and mobilisation of materials towards wetland. If this is noted by an ECO, suitable cut-off drains or berms must be placed between the stockpile area and the wetland. 	LOW –
Impacts on Water Quality	Construction	Preferred Alternative	During the construction phase, accidental chemical spills or other spills (sewage, concrete, etc.) in the vicinity of wetland will result in water pollution, adversely affecting the wetland ecosystem.	Short-term	Study Area, downstream of watercourses	Moderate	May Occur	Difficult	MODERATE –	<ul style="list-style-type: none"> No machinery must be parked overnight within 50 m of the wetland. All stationary machinery must be equipped with a drip tray to retain any oil leaks. Chemicals used for construction must be stored safely on bunded surfaces in the construction site 	LOW –

IMPACT	DEVELOPMENT PHASE	PROJECT ALTERNATIVE	CAUSE AND COMMENT	DURATION	EXTENT	CONSEQUENCE	PROBABILITY	REVERSIBILITY AND MITIGATION	SIGNIFICANCE	MITIGATION MEASURES	RISIDUAL RISK
										<ul style="list-style-type: none"> camp and not within 50 m of the wetland. Emergency plans must be in place in case of spillages. No ablution facilities should, as far as possible, be located within 50 m of the wetland. Chemical toilets must be regularly maintained/ serviced to prevent ground or surface water pollution. Concrete mixing should not take place within 50 m of the wetland. All concrete mixing must occur on impermeable surfaces. 	
Sedimentation and wetland pollution	Construction	Preferred Alternative	During the construction phase encroachment into wetland areas, unnecessary and indiscriminate vegetation removal could result in the loss of wetland habitat, which may also impact downstream aquatic ecosystems.	Short-term	Localised and downstream	Severe	Definite	Very Difficult	HIGH –	<ul style="list-style-type: none"> The construction footprint and route for construction vehicles must be clearly demarcated. Vehicles and machinery should not encroach into areas outside the planned project footprint. All wetland vegetation removal must take place under supervision of a qualified Environmental Control Officer (ECO). 	LOW –
	Operation		During the operation phase failure to monitor and maintain the stormwater management system could result in erosion and sedimentation of the wetland system. In addition, poor maintenance of sewage infrastructure (i.e. septic tanks, sewage pipes, etc.) could result in pollution of the wetland.	Long Term	Study Area, Downstream	Moderate	May Occur	Very Difficult	MODERATE –	<ul style="list-style-type: none"> Stormwater management structures must be monitored and maintained throughout the operation phase. All sewage infrastructures in the residential area, lodge and chalets must be regularly serviced and maintained. Any leaks must be repaired immediately. 	LOW –
Rehabilitation of disturbed areas	Operation	Preferred Alternative	During the Operational Phase, continuous rehabilitation of disturbed areas may lead to the permanent degradation of ecosystems as well as allow alien vegetation species to expand.	Long-term	Study Area	Moderate	May Occur	Achievable	MODERATE –	<ul style="list-style-type: none"> All cleared areas must be continuously rehabilitated with indigenous vegetation post-establishment. 	LOW –
HERITAGE AND PALAEOLOGICAL IMPACTS											
Impacts to Stone Age Artefacts	Construction	Preferred Alternative	The value and significance of archaeological and other heritage sites might be impacted on by any activity that would result immediately or in the future in the destruction, damage, excavation, alteration, removal or collection from its original position, of any archaeological material or object	Permanent	Localised	Slight	Probable	Very Difficult	LOW –	<ul style="list-style-type: none"> Locate previously undetected heritage remains / graves as soon as possible after disturbance so as to maximize the chances of successful rescue/mitigation work. An ECO must be appointed to conduct regular examination of trenches and excavations. 	LOW –
Loss of Paleontological Resources	Construction	Preferred Alternative	The construction phase of the proposed development may include excavations into the superficial sediment cover as well as the underlying bedrocks. This may adversely affect any fossils located at or below the ground surface within the study area by damaging or permanently destroying them. However, should these fossils be correctly identified and excavated by a trained professional, it could contribute to a better understanding of the	Long Term	Study Area	Moderate	Unlikely	Achievable	MODERATE –	<ul style="list-style-type: none"> Excavations must be monitored, either by a palaeontologist or by an ECO trained by and in correspondence with a palaeontologist. This should be discussed between the palaeontologist, ECO and site engineer prior to the commencement of work. 	LOW +

IMPACT	DEVELOPMENT PHASE	PROJECT ALTERNATIVE	CAUSE AND COMMENT	DURATION	EXTENT	CONSEQUENCE	PROBABILITY	REVERSIBILITY AND MITIGATION	SIGNIFICANCE	MITIGATION MEASURES	RISIDUAL RISK
			paleontological characteristics of the area.								
AVIFAUNAL IMPACTS											
Loss of extent of terrestrial avifaunal habitat due to construction phase habitat clearing	Construction	Preferred Alternative	The removal of the remaining terrestrial habitat (thornveld and grassland) that occurs in areas expected to undergo transformation to create the residential areas and accommodation will remove existing avifaunal habitat important for nesting and roosting and also displace potential prey items reducing the overall size of the foraging habitat. The loss of extent in available habitat would reduce the number of avifauna that it can sustain and thus displace the birds currently utilising the habitat.	Permanent	Localised	Severe	Definite	Difficult	HIGH –	<ul style="list-style-type: none"> Design development footprint to avoid highly sensitive avifaunal habitat where practical. Minimise the number of roads required to access the project area, thereby avoiding unnecessary loss of faunal habitat. Wherever possible clearing of vegetation should be undertaken in winter months, when birds are not nesting and breeding. It is possible that some of the large trees in the area could provide nesting opportunities for birds, these areas should be marked, and construction/clearing should only commence in the vicinity of the nesting site after the fledgling has left the nest; All clearing activities must deploy search and rescue teams in front of clearing machinery to assist in avoiding or relocating nesting avifaunal species out of the clearing path and relocating them to the game reserve. Residents, staff and visitors must not be allowed to capture, poison or hunt birds on site. Do not perform activities that may damage the instream aquatic habitat (e.g. the use of a bulldozer within fringe habitat). Any contractor employed for development work must ensure that no avifaunal species are disturbed, trapped, hunted or killed by them and their team during the construction phase. Conservation-orientated clauses should be built into contracts for construction personnel, complete with penalty clauses for non-compliance. The width of the road should be kept to a minimum and should be left unsurfaced (gravel) to reduce contaminated (i.e. hydrocarbons) stormwater runoff into wetland habitat. Feeding of birds should not be allowed (all areas). Construct bird hides during the dry season. Minimise development in thornveld vegetation where possible. Walkways must be elevated where possible. All visitors should keep to designated walkways and should not be allowed to venture outside of these areas. 	MODERATE –
Disturbance of avifauna due to an increase in noise levels	Construction	Preferred Alternative	Construction activities will introduce increased noise levels into the proposed development area. The birds that do occur onsite will generally move away from the source of disturbance, especially if activity increases rapidly and may choose to breed elsewhere. Displaced avifauna may return after construction and/or new individuals may inhabit the area.	Short Term	Study Area	Severe	Definite	Difficult	MODERATE –		LOW –
Loss of Species of Conservation Concern	Construction	Preferred Alternative	SCC occur in the project area and are likely to be disturbed by construction activities including noise, dust, human activity and a reduction in or loss of habitat. This disturbance may cause these species to leave the project area and may take several years to return if ever.	Long term	Localised	Severe	Probable	Difficult	MODERATE –		MODERATE –
Disturbance and reduction of avifaunal species due to operational activities including visitors, boats and permanent inhabitants	Operation	Preferred Alternative	During the operation, the Ganspan-Pan Wetland Reserve will be open to the public for recreational activities including fishing, boating, cycling, picnics and braaiing. Permanent residence will also partake in these activities. These operational activities will disturb avifaunal species. The level of disturbance will depend on the number of visitors and/or residents within the reserve at any one time. Avifauna will likely become habituated to many of the activities. The introduction of boats that create large waves which will impact most on the aquatic habitat and waterfowl.	Long term	Localised	Moderate	Definite	Very Difficult	MODERATE –		LOW –
Increase in pest Avifaunal Species during Operational Phase	Operation	Preferred Alternative	The presence of humans, their food and associated refuse will attract opportunistic species of birds such as the Pied Crow which was recorded in the project area. Indigenous avifaunal species that	Long term	Localised	Severe	Probable	Difficult	MODERATE –		LOW –

IMPACT	DEVELOPMENT PHASE	PROJECT ALTERNATIVE	CAUSE AND COMMENT	DURATION	EXTENT	CONSEQUENCE	PROBABILITY	REVERSIBILITY AND MITIGATION	SIGNIFICANCE	MITIGATION MEASURES	RISIDUAL RISK
			are opportunistic may also become problematic. Some species may include Starlings, Sparrows and even Hornbills which will scavenge food from picnic tables and bins. The increase in numbers of these species will displace existing resident species by outcompeting for shared habitat resources for roosting, nesting and breeding sites.							<ul style="list-style-type: none"> Limit construction activities to daytime (8am-5pm) Noise should be kept to a minimum; Should night-lighting be required (e.g. for security purposes) these should be of the low UV emitting types, such as most LEDs, which attract significantly less insects and use down-lighting to reduce light spill. Domestic waste should not be stored on site and should be removed from the study area as soon as possible; temporary waste storage must be covered. Preferably no domestic pets should be allowed within the reserve. Should this be unfeasible, all domestic pets (dogs and cats) must be sterilised and all domestic cats must wear a collar with a bell. No livestock grazing must take place in the reserve. Ensure that the correct permits are in place when moving or stocking live fish or removing any indigenous faunal species from site. Ensure dust is controlled through speed limits and wetting roads. Maximum speed limits are 60km/h on tar roads, 40km/h on gravel roads and an average of 20km/h when game viewing. Habitats not impacted on by the development footprint must be restored. Bird hides must include signs for: no noise, quiet and posters of birds likely to be seen from the hide. The reserve must promote the use of paddle boats, kayaks, canoes, kickboats etc. and must restrict the use of motorboats. Should motor boats be required, only low powered motor boats should be allowed, and speed must be limited to ensure no wake is created. Consider having exclusion zones where no angling or powerboats are allowed. For example in front of bird hides and within 30 m of bird hides or walkway view-points. 	
Continued habitat loss, fragmentation and degradation	Construction and Operation	No-Go Alternative	The Ganspan Wetland Reserve appears to currently have little active/permanent management. There is no access control, neighbouring cattle roam and graze freely on site, recreational fishermen utilise the pan and there is evidence of recreational gatherings, i.e. open fires and empty alcohol bottles. Although the reserve is relatively clean, refuse removal in Jan Kempdorp is inconsistent and as a result the access road to the pan is bordered with litter, this is likely to enter the wetland itself and offers an unsightly entrance. Without protection and/or remedial action the grassland and thornveld habitat types are expected to continue to degrade. It may take several years to establish natural vegetation and thus restore faunal habitats which in most cases may be long past the life spans of most faunal groups. The Spitskop IBA is also located 33 km downstream and as such if the Ganspan wetland is mismanaged this may have an impact on the IBA.	Long term	Study area	Severe	Definite	Very Difficult	HIGH –		HIGH –
Increased conservation efforts due to availability of funding	Operation	Preferred Alternative	The proposed development offers an opportunity to proactively manage the important environmental features that lead to the designation of a reserve in the first place. The proposed development aims to generate income to sustain the development and increase conservation efforts. There is an opportunity to rehabilitate the degraded Thornveld and Grassland habitats and monitor the wetland health.	Long term	Localised	Beneficial	Probable	N/A	MODERATE +	<ul style="list-style-type: none"> Not Applicable. 	MODERATE +

IMPACT	DEVELOPMENT PHASE	PROJECT ALTERNATIVE	CAUSE AND COMMENT	DURATION	EXTENT	CONSEQUENCE	PROBABILITY	REVERSIBILITY AND MITIGATION	SIGNIFICANCE	MITIGATION MEASURES	RISIDUAL RISK
GENERAL AND OTHER IMPACTS											
Surface and Groundwater Pollution	Construction and Operation	Preferred Alternative	The construction phase of the proposed development will result in the clearance of vegetation and disturbance of topsoil during the construction of foundations for the project infrastructure. Substances such as oil, diesel and cement may enter the Ganspan Pan if spillages are not effectively managed and/or prevented. Should this occur, these substances may flow into, and cause pollution to the waterbody. In addition, spillages can permeate the soil and potentially contaminate groundwater resources located below the site.	Long Term	Study Area	Moderate	May Occur	Achievable	MODERATE –	<ul style="list-style-type: none"> Construction vehicles and equipment should be maintained and daily checks should be done for leaks; Spill kits and drip trays must be readily available; Should fuel or chemicals be stored, this must be kept in a bunded area; It is recommended that ready mixed cement is used. If cement is mixed on site then this must be done on an impermeable surface and dust generated from this activity must be controlled; it is recommended that snow netting is erected around the river banks and treated as a 'no-go' area; Servicing of machinery and vehicles must occur off site unless this is done in a bunded area. 	LOW –
		No-Go Alternative	The Ganspan Pan is classified as 'heavily to critically modified' and is impacted on by upstream agricultural activities as well as a number of informal villages and dilapidated areas located along its banks. These will continue to negatively impact surface and groundwater pollution regardless of if the proposed development goes ahead.	Long Term	Study Area	Low	Definite	N/A	MODERATE –	Not Applicable	
Soil Erosion and Sedimentation	Construction and Operation	Preferred Alternative	Exposed soils are easily susceptible to erosion by water runoff and wind during periods of heavy rainfall or strong winds. The non-cohesive nature of the <i>in-situ</i> material coupled with the lack of vegetation creates a potential for soil erosion at the proposed site. This may result in increased surface water flow as opposed to water absorption and subsequently contribute to soil erosion. This can subsequently result in increased sedimentation of the Ganspan Pan and cause a disruption to the flow dynamics downstream from the study area.	Long Term	Study Area	Low	May Occur	Achievable	MODERATE –	<ul style="list-style-type: none"> Vegetation clearing must be kept to a minimum; Where possible, areas must be rehabilitated with indigenous vegetation; Temporary stabilization measures (e.g. silt traps) should be implemented until vegetation is fully rehabilitated; Appropriate erosion control measures must be implemented to ensure that no erosion is taking place. At the first sign of erosion the necessary remedial action must be taken; Care must be taken to ensure that runoff is well dispersed so as to limit erosion; A site specific stormwater management plan should be designed to eliminate the potential of surface erosion. 	LOW –
		No-Go Alternative	There are currently signs of limited erosion in certain areas of the proposed site. Under the no-go alternative, limited erosion will continue indefinitely.	Long Term	Study Area	Moderate	Definite	N/A	MODERATE –	Not Applicable	
Solid Waste Pollution	Construction and Operation	Preferred Alternative	The construction phase of the activity will produce construction waste in the form of building rubble, excavated soil, excess concrete as well as general waste (e.g. litter from workers on site).	Long Term	Study Area	Slight	Definite	Easily Achievable	MODERATE –	<ul style="list-style-type: none"> Construction material should be reused or recycled where possible; Waste that cannot be reused or recycled should be disposed of in the correct manner at the nearest registered waste disposal site; Any hazardous materials (e.g. paint, fuel, oil) must be disposed of 	LOW –

IMPACT	DEVELOPMENT PHASE	PROJECT ALTERNATIVE	CAUSE AND COMMENT	DURATION	EXTENT	CONSEQUENCE	PROBABILITY	REVERSIBILITY AND MITIGATION	SIGNIFICANCE	MITIGATION MEASURES	RISIDUAL RISK
			During the operational phase, the proposed eating facilities, accommodation and other facilities will produce solid waste. The incorrect management of this waste will have a negative impact on the environment as it can cause unnecessary pollution and also have a detrimental effect on the aesthetics of the proposed site and on water quality.							<ul style="list-style-type: none"> immediately and in the correct manner; General good house-keeping should be practiced on site; While transporting the waste, care should be taken as to not spill waste en route to the landfill site; If rubble is stored on site it should be stored on designated portions of land, preferably in areas deemed to already be ecologically degraded. Designated areas for storage of rubble should be set aside at the onset of construction; Litter must be controlled during construction e.g. adequate bins must be made available on site at all times. These must be made scavenger proof and must be emptied on a regular basis; Construction materials stored at the camp site must be secured (i.e. plastics must be covered to prevent being blown off site). Skips must be regularly emptied and must be covered; 	
		No-Go Alternative	The presence of the existing unlicensed dumping site directly adjacent to the Ganspan-Pan Wetland Reserve currently results in litter and other wind-blown waste entering the property. This will continue indefinitely should the proposed development not go ahead.	Long Term	Study Area	Moderate	Definite	N/A	MODERATE –	Not Applicable	
Dust Pollution	Construction	Preferred Alternative	The removal of vegetation and the exposure of topsoil increase the potential for dust. During the construction phase of the activity, materials will be moved to and from the project site and this could result in dust pollution not only from the materials, but also from the construction vehicles which will be operating on site. The effects of dust will be exacerbated during high wind conditions.	Short Term	Study Area	Slight	May Occur	Easily Achievable	LOW –	<ul style="list-style-type: none"> Construction should preferably cease during period of high winds; Exposed soil surfaces should be wet down where required to avoid dust emissions; Vehicles transporting construction material such as building sands should remain at a speed limit of 30km/h and if required cover their loads with a tarpaulin to avoid dust emissions. 	LOW –
Traffic	Construction and Operation	Preferred Alternative	During construction, there will be an increase in the number of vehicles using the gravel access road including heavy construction vehicles. This may result in damage to the road as well as increased potential for road accidents. The construction vehicles could also impede traffic at certain sections of the un-tarred access road to the site if not adequately managed and controlled. As a result of the proposed development, there is likely to be an increase in the use of the roads within the site and leading to the site (e.g. the N18 and R370).	Long Term	Study Area	Slight	Unlikely	Achievable	LOW –	<ul style="list-style-type: none"> Appropriate warning signs must be erected at and before the entrance to the site, in accordance with the requirements of the District Road Engineer; Any damage caused to public roads by vehicles related to the proposed development must be repaired immediately to the satisfaction of the District Roads Engineer; Vehicles must be roadworthy and serviced and must abide by the standard traffic laws; Any Abnormal Loads must be approved with the traffic authorities and must comply with any conditions imposed by the authorities; 	LOW –

IMPACT	DEVELOPMENT PHASE	PROJECT ALTERNATIVE	CAUSE AND COMMENT	DURATION	EXTENT	CONSEQUENCE	PROBABILITY	REVERSIBILITY AND MITIGATION	SIGNIFICANCE	MITIGATION MEASURES	RISIDUAL RISK
										<ul style="list-style-type: none"> The contractor must employ flag staff in order to prevent on-site accidents; Speed limits on site must not exceed 30km/h and the speed limits along the public roads must be adhered to at all times; Manage the travelling times of the delivery trucks so as to allow them to depart and arrive at spaced out time intervals, thus reducing the intensity of traffic and avoiding the formation of convoys of heavy vehicles. 	
		No-Go Alternative	A significant number of vehicles currently make use of the surrounding national and provincial roads (the N18 and the R370) resulting in road damage and the potential for vehicular accidents.	Long Term	Study Area	Slight	Definite	N/A	LOW –	Not Applicable	
Noise Disturbance	Construction and Operation	Preferred Alternative	<p>It can be expected that there will be an increase in noise levels during the site preparation and construction phase of the development. The increase in noise will be associated with the operation of construction vehicles and equipment and labourers.</p> <p>During the operational phase, noise will be generated by people living, working and visiting the site. The noisiest areas will likely be within the village and also at the restaurant. Additional noise may result from motorised boats and other recreational activities occurring at the site.</p> <p>The movement of vehicles to and from site will also produce noise, but is unlikely to have any significant impact on sensitive receptors.</p>	Long Term	Study Area	Slight	Definite	Easily Achievable	MODERATE –	<ul style="list-style-type: none"> All construction vehicles and equipment to be properly serviced in order to meet the necessary noise level requirements; Restriction of work to daylight hours where possible; Restriction of any unnecessary noise e.g. portable radios, vehicle radios, whistles etc.; Construction employees should not be housed on site; Machinery should be fitted with the required mufflers, and notice given to surrounding residents prior to the commencement of construction; Adhering to the municipal by-laws regarding noise. 	LOW –
Employment Creation and Economic Benefits	Construction and Operation	Preferred Alternative	The construction phase of the proposed project is expected to create a number of temporary jobs during the construction phase. In addition, the operation of the proposed development will create numerous permanent jobs during the operational phase. The operation of the proposed development will likely stimulate business growth in the area and have a positive impact on the local economy.	Long Term	Study Area	Moderate Beneficial	Definite	N/A	LOW +	<ul style="list-style-type: none"> As far as possible, local labour should be used during construction; Purchase materials locally, where possible, in order to support the local communities. 	MODERATE +
		No-Go Alternative	If the status quo remains the same, there will be no construction phase and therefore temporary employment opportunities will be lost. In addition to this, the numerous jobs expected to become available during the operation of the proposed development will be lost and	Long Term	Study Area	Moderate	Definite	N/A	MODERATE –	Not Applicable	

IMPACT	DEVELOPMENT PHASE	PROJECT ALTERNATIVE	CAUSE AND COMMENT	DURATION	EXTENT	CONSEQUENCE	PROBABILITY	REVERSIBILITY AND MITIGATION	SIGNIFICANCE	MITIGATION MEASURES	RISIDUAL RISK
			therefore no contribution will be made to the existing poverty and lack of employment in the region.								
Tourism Benefits	Operation	Preferred Alternative	The proposed development aims to increase the tourism potential of the site and to attract tourists from local surrounding areas as well as from other parts of South Africa.	Long Term	Study Area	Moderate Beneficial	Definite	N/A	LOW +	<ul style="list-style-type: none"> Ensure that the tourism potential of the area is fully realised; Encourage local and national tourism by means of a suitable marketing strategy. 	MODERATE +
		No-Go Alternative	If the status quo remains the same, the area will remain dilapidated and the tourism potential of the area will not be realised.	Long Term	Study Area	Moderate	Definite	N/A	MODERATE -	Not Applicable	

9. PUBLIC PARTICIPATION PROCESS

According to Appendix 3, Section 3 (1), of the of the 2014 EIA Regulations (as amended), “an environmental impact assessment report must contain the information that is necessary for the competent authority to consider and come to a decision on the application, and must include—

- (h) a full description of the process followed to reach the proposed development footprint within the approved site as contemplated in the accepted scoping report, including:
 - (ii) details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs;
 - (iii) a summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them.

9.1. Objectives of Public Participation

The Public Participation Process (PPP) aims to:

- Disclose activities planned by the project proponent and the EIA team;
- Identify issues and concerns from I&APs;
- Harness local expertise, needs and knowledge from the I&APs;
- Respond to grievances and enquiries from I&APs;
- Identify additional or new stakeholders and people affected by, or interested in, the proposed project;
- Gather perceptions and comments on the proposed terms of reference for the specialist assessments;
- Ensure that all issues raised by I&APs have been adequately addressed and/or assessed;
- Share the findings of the EIA and specialists’ assessments, such as significant impacts, mitigation measures, management actions, and monitoring programmes; and
- Include any new concerns or comments that arise.

This information is used to:

- Identify underestimated or unanticipated impacts;
- Alert the project to possible communication breakdowns and emerging problems and concerns;
- Encourage the use of local resources and knowledge in the project;
- Identify development opportunities and community projects; and
- Ensure that all issues and concerns raised are dealt with adequately in the EIA Process. This is achieved through the preparation of an IRT, also referred to as a Comments Report (CR).

9.2. Public Participation Process

There are four key steps in the PPP to ensure that I&APs are informed of the proposed development and afforded sufficient opportunity to raise comments and or concerns. These include:

1. Identifying potential I&APs;
2. Notifying I&APs through:
 - i. Site notices;
 - ii. Written notice;
 - iii. Advertisements;
 - iv. Public meeting;
3. Making provision for I&APs to review and comment on all draft reports before they are finalised and submitted to the competent authority; and
4. Compiling a record of responses to any comments and concerns provided by the I&APs and including and addressing these concerns in final reports.

9.2.1 Interested and Affected Parties Database

I&APs and Key Stakeholders were identified during the Scoping Phase of the project. The identification and engagement of I&APs and Key Stakeholders will continue through into the EIA phase of the project as the public participation process is a continuous process that runs throughout the duration of an environmental investigation.

All I&AP information (including contact details), together with dates and details of consultations and a record of all issues raised, is recorded within a comprehensive database of I&APs. This database will be updated on an on-going basis throughout the project, and will act as a record of the communication and involvement process.

9.2.2 Notification of Interested and Affected Parties

I&APs are notified through the following:

- Site notices;
- Written notice;
- Advertisements; and
- Public meeting.

Site Notice

A site notice was placed on the boundary of the proposed properties that will be affected. Please refer to Appendix A for proof of placement of the site notice.

Written Notice

Letters of notification and Background Information Documents were sent out via email on the 8th of August 2018 and again on the 4th of December 2018 and the 5th of March 2019. All landowners and surrounding landowners were contacted telephonically in order to obtain and confirm contact details and preferred methods of communication. As all these parties confirmed email communication, no registered mail has been sent out to date. Should the need arise in the future this will be conducted. In addition, hard copies of the notification letter and BID were distributed during the initial site visit. All I&APs were notified, via email, of the availability of the Draft Scoping Report on the 3rd of June 2019. Please refer to Appendix A for proof of notifications sent to I&APs.

Advertisement

A Newspaper advertisement was placed in the Diamond Fields Advertiser (DFA), a provincial and local newspaper, on the 3rd of June 2019 in order to notify the general public of the proposed development and availability of the Draft Scoping Report for public review. Please refer to Appendix A for proof of placement of the newspaper advert.

Public meeting

A public meeting was held at the Phokwane Municipal Offices in Jan Kempdorp (1 Heuwil Avenue, Jan-Kempdorp, 8560) on the 19th of June 2019, during the release of the Draft Scoping Report. The details of this meeting were conveyed to the public in the advert that was placed in the DFA on the 3rd of June 2019 as well as via emails dated the 3rd of June 2019 as well as the 13th of June 2019. The public meeting was only attended by two (2) representatives of the FBDM and one (1) representative from the Phokwane Local Municipality. No comments or questions were raised during the public meeting. Please refer to Appendix A for the attendance register as well as photos of the public meeting.

The Draft Scoping Report was made available for a thirty (30) day public review period, from the 31st of May 2019 until the 1st of July 2019. A hard copy of the Draft Scoping Report was made available at the Phokwane Local Municipality buildings (1 Heuwil Ave, Jan Kempdorp and 24 Hertzog Street, Hartswater). An electronic copy was available on request from the EAP. Please refer to Appendix A for proof of public participation conducted during the public review period together with the Issues and Responses Trail (IRT) which details the comments received from the I&APs.

9.2.3 Public Review of the Draft EIR

The Draft EIR will be made available for a thirty (30) day public review period. The availability of the Draft EIR will be advertised and all registered I&APs will be notified of the availability of the Draft EIR for public comment. In addition (and if required), a public meeting will be held during this public review period. Proof of the public participation conducted during the public review period for the Draft EIR will be included in the Final EIR.

9.2.4 Issues and Responses Trail in the EIR

All issues, comments and concerns raised during the public participation process of the EIA Process will be compiled into an Issues & Response Trail (IRT) and incorporated and submitted as part of the Final EIR.

9.3. Summary of PPP to date

Phase	Requirement	Date
Inception Phase	Site notice	Placed on 7 June 2018
	I&AP data base	Drafted on 23 July 2018
	BID	Sent on 8 August 2018, 4 December 2018 and 3 March 2019
	Letters of notification	Sent on 8 August 2018, 4 December 2018 and 3 March 2019
Scoping Phase (30-day mandatory PPP period)	Newspaper Advert	3 June 2019 in the Diamond Fields Advertiser (DFA)
	Letters of notification	3 June 2019
	Commenting Period	31 May 2019 to 1 July 2019
	Public Meeting	19 June 2019 at 17h00 at the Phokwane Municipal Offices in Jan Kempdorp (1 Heuwil Avenue, Jan-Kempdorp, 8560)
EIR Phase (30-day mandatory PPP period)	Newspaper Advert	7 October 2019 in the Diamond Fields Advertiser (DFA) (TBC)
	Letters of notification	7 October 2019 (TBC)
	Commenting Period	7 October to 6 November 2019 (TBC)

10. CONCLUSIONS AND RECOMMENDATIONS

According to Appendix 3, Section 3 (1), of the of the 2014 EIA Regulations (as amended), “an environmental impact assessment report must contain the information that is necessary for the competent authority to consider and come to a decision on the application, and must include—

- (l) An environmental impact statement which contains:
 - (i) A summary of the key findings of the environmental impact assessment;
 - (ii) A map at an appropriate scale which superimposes the proposed activity and its associated infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers; and
 - (iii) A summary of the positive and negative impacts and risks of the proposed activity and identified alternatives.
- (o) Any aspects which were conditional to the finding of the assessment either by the EAP or specialist which are to be included as condition of the authorisation;
- (q) A reasoned opinion as to whether the proposed activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation.

In line with the above-mentioned legislative requirement, this Chapter of the EIR provides a summary of the findings of the proposed development and a comparative assessment of the positive and negative implications of the proposed project. In addition, this Chapter provides the EAP’s opinion as to whether the activity should or should not be authorised as well as the reason(s) for the opinion.

10.1. Environmental Impact Statement

Table 10.1 below shows the significance of the impacts associated with the preferred alternative before and after mitigation is taken into account.

IMPACT		WITHOUT MITIGATION	WITH MITIGATION
BIODIVERSITY IMPACTS			
1	Loss of Natural Vegetation	MODERATE –	LOW –
2	Loss of Species of Conservation Concern	MODERATE –	LOW –
3	Invasion of Alien Species	MODERATE –	LOW –
4	Impacts resulting from Material Stockpiling	MODERATE –	LOW –
5	Impacts on Water Quality	MODERATE –	LOW –
6	Sedimentation and wetland pollution (construction)	HIGH –	LOW –
7	Sedimentation and wetland pollution (operation)	MODERATE –	LOW –
8	Rehabilitation of disturbed areas	MODERATE –	LOW –
HERITAGE AND PALAEOLOGICAL IMPACTS			
9	Impacts to Stone Age Artefacts	LOW –	LOW –
10	Loss of Paleontological Resources	MODERATE –	LOW +
AVIFAUNAL IMPACTS			
11	Loss of extent of terrestrial avifaunal habitat due to construction phase habitat clearing	HIGH –	MODERATE –
12	Disturbance of avifauna due to an increase in noise levels	MODERATE –	LOW –
13	Loss of Species of Conservation Concern	MODERATE –	MODERATE –
14	Disturbance and reduction of avifaunal species due to operational activities including visitors, boats and permanent inhabitants	MODERATE –	LOW –
15	Increase in pest Avifaunal Species during Operational Phase	MODERATE –	LOW –
16	Increased conservation efforts due to availability of funding	MODERATE +	MODERATE +

IMPACT		WITHOUT MITIGATION	WITH MITIGATION
GENERAL AND OTHER IMPACTS			
17	Surface and Groundwater Pollution	MODERATE -	LOW -
18	Soil Erosion and Sedimentation	MODERATE -	LOW -
19	Solid Waste Pollution	MODERATE -	LOW -
20	Dust Pollution	LOW -	LOW -
21	Traffic	LOW -	LOW -
22	Noise Disturbance	MODERATE -	LOW -
23	Employment Creation and Economic Benefits	LOW +	MODERATE +
24	Tourism Benefits	LOW +	MODERATE +

Twenty-four (24) impacts have been identified for the preferred alternative. Without mitigation, there will be 2 negative impacts of high significance, 16 negative impacts of moderate significance and 3 negative impacts of low significance. There will also be 3 positive impacts (1 moderate and 2 low). With the implementation of the recommended mitigation measures, this will reduce the impacts to 18 negative impacts of low significance and 2 impacts of moderate significance. There will also be 3 positive impacts of moderate significance which will result from the development.

The no-go alternative assumes that the status quo will remain unchanged and that there will be no new development. Under the No-go alternative, the property will remain unchanged. The No-go alternative will mean that there will be no upgrading of the Ganspan Wetland Reserve and therefore there will be no improvement to the current dilapidated nature of the area. This will also result in a loss of much job opportunities as well as the tourism benefits derived from the proposed development. There will be no positive impacts associated with the No-go alternative.

Overall, the development of this project will result in impacts of moderate and low significance which are easily mitigatable and therefore environmentally acceptable.

10.2. Site Sensitivity analysis

A site development sensitivity map was developed based on specialist and general site information gathered, and the site was classified into areas of No Development, Limited Development and No Limitations areas (Figure 10.1).

- No development areas included areas of high sensitivity indicated by the biodiversity specialist.
- Limited Development areas (moderate and high sensitivity areas) are areas where construction is conditional on the fulfilment of certain aspect-specific requirements. For example, Limited Development areas include areas of moderate sensitivity identified by the avifaunal specialist and ecologically sensitive areas such as watercourses, wetlands and thicket vegetation.
- No Limitations areas are areas of Low Sensitivity where construction may take place without hindrance.

The main objective of the sensitivity analysis is to guide development away from sensitive areas and have development footprints located in areas of lower sensitivity. In certain cases, development is required to make the project financially viable. The specialist studies have restricted development in the Thornveld vegetation. The Ecological study has declared the area a No development area based on it being an important corridor for fauna to access water from the pan. The avifaunal assessment has also rated it as having a high sensitivity. For these reasons CES proposes that the footprint of the residential area and braai/picnic site be reduced to accommodate a natural corridor from the Game Reserve to the Pan for ease of access of water and to the drainage line which acts as a natural corridor for faunal movements (Figure 10.2). The ring road also ends at the south-west chalets thereby not crossing the inlet wetland and only allowing for walking trails (Figure 10.2; Figure 7.11). So, it's not no-go but developmentally constrained.

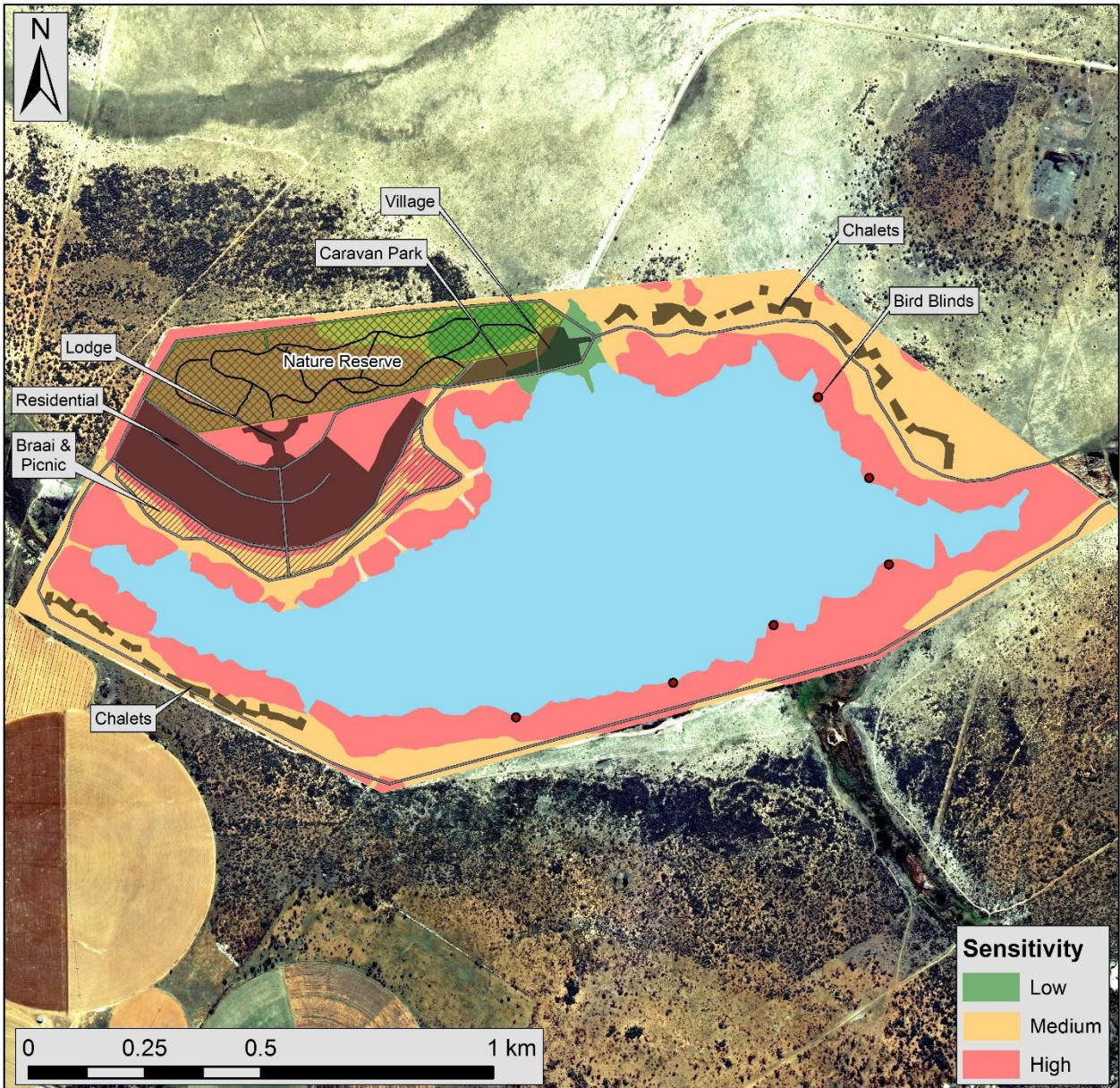


Figure 10.1: Combined ecological and archaeological sensitivity with the proposed layout.

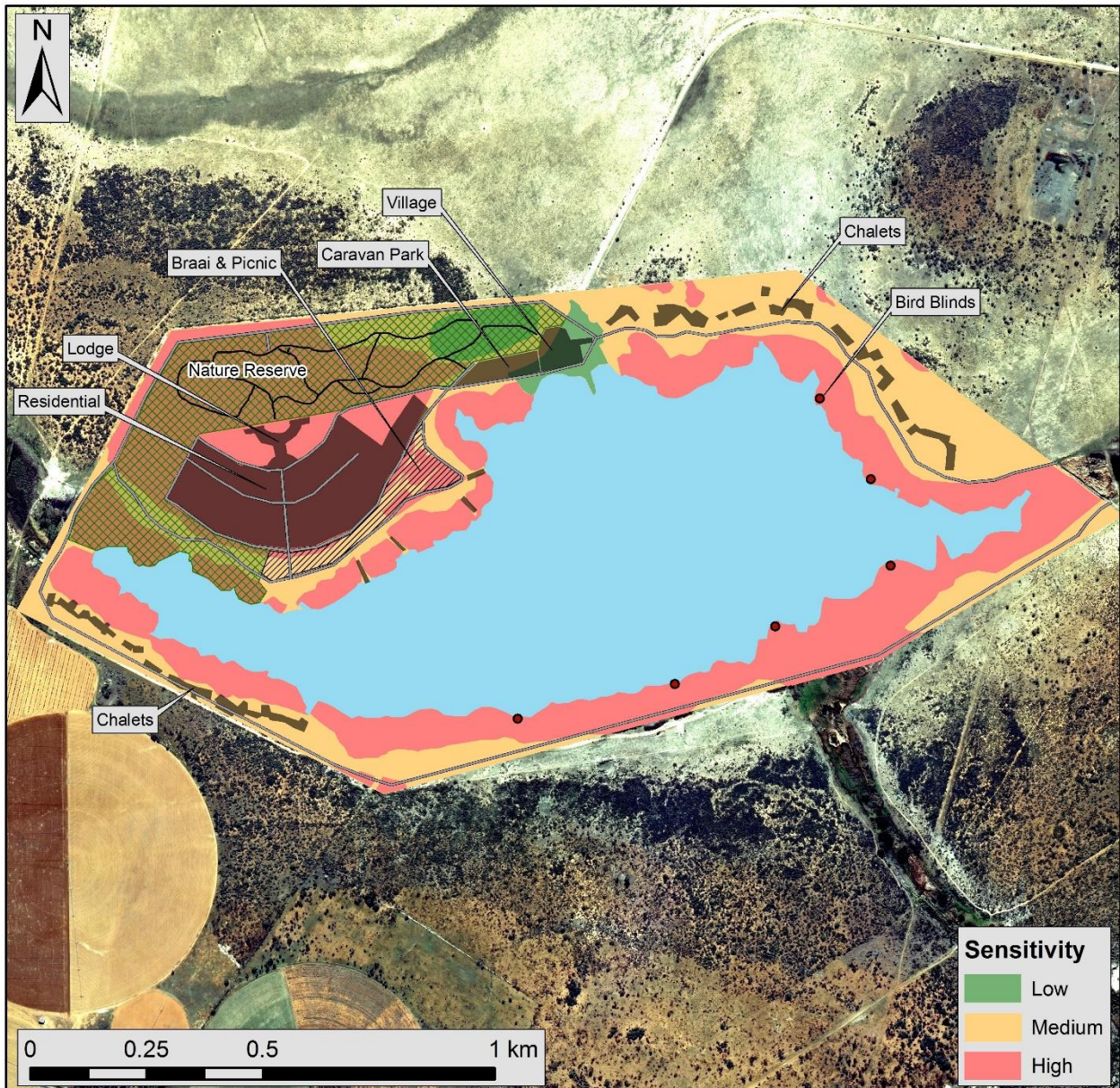


Figure 10.2: Combined environmental sensitivity with the EAP's suggested layout changes

10.3. Environmental Authorisation Requirements

The Environmental Authorisation (EA) for the construction of the proposed development is required for a period of twelve (12) years. This will allow sufficient time for the applicant to undertake the procurement process to appoint a contractor, to furnish the appointed contractor with the details of the EA and the conditions included in the EMP, to complete the construction of the proposed recreation and tourism infrastructure and to undertake the necessary rehabilitation of the site. The activity related to the construction of the proposed development is expected to be concluded on or before the 31st of December 2031 however, this is subject to available funding and, therefore, construction may be undertaken in a phased manner. Certain phases of the proposed project may only commence once sufficient funds are made available to the FBDM. An ESO must be appointed for the duration of the construction period, full time, and must complete daily check-sheets and the ECO must submit monthly audit reports to the DENC.

The operational phase of the proposed development is predicted to continue into perpetuity. It is recommended that an ECO is appointed to conduct quarterly monitoring for the first year following the completion of construction to ensure that the revegetation of the disturbed areas has been

completed successfully. In addition, the ECO must monitor the water quality of the wetland and must make recommendations to the FBDM for the improvement of the water quality in the area. Following this, the FBDM should undertake internal monitoring on an annual basis.

10.4. Opinion of the EAP

It is the opinion of the EAP that no fatal flaws are associated with the proposed development and that all impacts can be adequately mitigated to reduce the risk or significance of impacts to an acceptable level. The significance of the benefits associated with the proposed development has the potential to outweigh the significance of the negative aspects. It is the opinion of the EAP that this report contains sufficient information to allow the DENC to make an informed decision. It is therefore recommended that the application for Environmental Authorisation should be approved on condition that the recommended mitigation measures stated herein are effectively implemented.

10.5. Recommendations of the EAP:

All mitigation measures, which have been outlined in this report, in the specialist reports, as well as in the Environmental Management Programme (EMPr), must be fully adhered to and implemented. In addition, the following recommendations have been made:

Pre-Construction:

- Service delivery (water, electricity, sewage and waste) must be secured and sewage design approved by DENC prior to construction commencing. No septic tanks are allowed within the reserve.
- Water quality testing must be done and approved by DWS for safe recreational use prior to any guests or staff being allowed in the water.
- The contractor is encouraged to use an existing fully serviced site in an already disturbed area for construction camp purposes;
- All protected flora species of conservation concern must not be disturbed or removed prior to permit approval from relevant National and Provincial authorities;
- A water quality baseline must be developed; and
- All no-development areas must be suitably demarcated prior to the commencement of construction.
- No water should be removed from the pan for construction or operation without DWS approval (licence).

Construction Phase:

- An ECO must be employed to ensure that the construction activities remain within the designated area and that no unauthorised activities occur;
- The ECO should submit monthly site audits detailing the applicant's compliance with the EMPr;
- An efficient stormwater management system must be implemented during construction;
- Workers must be educated on environmental management aspects; and
- All listed alien and invasive plant species must be eradicated according to NEMBA.

Operational Phase:

- Water efficient systems, such as dual-flush toilets and water-efficient taps should be implemented to ensure that water is used sparingly;
- Waste removal must be properly managed at all times,
- All listed alien and invasive plant species must be monitored according to NEMBA.
- Post construction monitoring must occur for 12 months after completion of the site, at quarterly intervals, to ensure that the site is revegetated; and
- Water quality monitoring must be undertaken on a monthly basis and any indication of water pollution immediately reported to the DENC and the DWS.

Please refer to Volume 3: Environmental Management Programme (EMPr) for detailed environmental management measures.

10.6. Recommended plans:

The following plans for management and monitoring have been proposed for this project:

- Construction
 - Chance Find Procedure for heritage, archaeological and palaeontological remains
 - Permits for removal and/or transplant of SCC
 - Search and Rescue
- Conservation Management Plan
 - Wetland Management Plan
 - Water quality baseline
 - Bird monitoring programme
 - Alien Vegetation Management Plan
- Rehabilitation Management Plan
- Stormwater management plan
- Waste management plan

11. REFERENCES

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APPENDIX A – PUBLIC PARTICIPATION DOCUMENTATION

1. ADVERTISEMENT

A Newspaper advertisement was placed in the Diamond Fields Advertiser (DFA), a provincial and local newspaper, on the 3rd of June 2019 in order to notify the general public of the proposed development and availability of the Draft Scoping Report for public review.

Advertisement page from Diamond Fields Advertiser, Monday June 3, 2019. The page is divided into several sections:
- Top Left: 'Herbalist' and 'MUTHU 4 LOCK' advertisement.
- Top Center: 'Legals & Tenders' advertisement for DFA.
- Top Right: 'Classified advertising' advertisement.
- Middle Left: 'FOR SALE RODEPAN R350 000', 'Accommodation', 'To Let Flats', 'Golf Estate House', 'To Let Homes', 'Flats, Houses, Offices and Warehouses To Let', 'Adult Entertainment', 'Escorts', 'Business', 'Offices', 'Property'.
- Middle Center: 'EOH Coastal & Environmental Services' advertisement regarding an Environmental Impact Assessment for the proposed wetland reserve.
- Middle Right: 'GEREGTELIKE VERKOPING ONROERENDE EIENDOM' advertisement for land parcels in Barksy-Wes.
- Bottom Center: 'INVIATION FOR PUBLIC CONSULTATIONS AND SUBMISSION OF COMMENTS ON THE SECOND DRAFT NATIONAL FRESHWATER (INLAND) WILD CAPTURE FISHERIES POLICY'.
- Bottom Right: 'LEGALIS' advertisement with a scales of justice logo.



Coastal & Environmental Services

ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED RECREATIONAL AND TOURIST DEVELOPMENT GANSPAN-PAN WETLAND RESERVE, PHOKWANE LOCAL MUNICIPALITY, NORTHERN CAPE PROVINCE

DENC REFERENCE NUMBER: NC/BA/18/FB/PHO/GAN1/2019

Notice is hereby given in terms of regulation 41, as published in the 2014 Environmental Impact Assessment (EIA) regulations (as amended in 2017) of the National Environmental Management Act (NEMA) (Act No. 107 of 1998, as amended), for the intent to undertake a Scoping and Environmental Impact Reporting (S&EIR) process. EOH Coastal & Environmental Services (EOH CES) has been appointed by the Frances Baard District Municipality to apply for environmental authorisation (EA) for the following Listed Activities as described in GN R 983, GN R 984 and GN R 985 (as amended by GN R 327, GN R 325 and GN R 324).

The Draft Scoping Report (DSR) is available for review from the 31st of May 2019 until the 1st of July 2019. Copies of the DSR will be available for review on request from EOH CES and at the Phokwane Local Municipality buildings (1 Heuwil Ave, Jan Kempdorp and 24 Hertzog Street, Hartswater) Further to this, a public meeting will be held on the 19th of June 2019 at 17h00 – the details of the location of the public meeting will be communicated to all registered I&APs. Comments can be submitted in writing by post or email to Mr Roberto Almanza: 36 Pickering Street, Newton Park, Port Elizabeth, 6045; Tel: 041-393 0700; Email: roberto.almanza@eoh.co.za or r.almanza@cesnet.co.za

2. SITE NOTICE

Site notice positions	Latitude	Longitude
	27°55'52.40"S	24°46'04.44"E
	27°55'12.36"S	24°49'06.79"E
Date placed	7 June 2018	



Site notice 1 placed along the northern boundary of the property at the entrance to the Ganspan-Pan Wetland Reserve (27°55'52.40"S; 24°46'04.44"E).



Site Notice 2 placed along the R370 regional road adjacent to Tlhwahalang Secondary School in Jan Kempdorp (27°55'12.36"S; 24°49'06.79"E).

3. INTERESTED AND AFFECTED PARTIES (I&APs) DATABASE

NAME	ORGANISATION/AFFILIATION	CONTACT NUMBER	EMAIL ADDRESS	POSTAL ADDRESS
APPLICANT				
Mr Ntshavheni (Freddy) Netshivhodza (Manager: Town & Regional Planning) - Frances Baard District Municipality (NC)			freddy.netshivhodza@fbdm.co.za	
FBDM	Mr Boitumelo Koena – Phokwane LM		boitumelo@phokwane.gov.za	
FBDM	Ms Joh-nè Jansen – FBDM (Chairperson)	053 838 0923	joh-ne.jansen@fbdm.co.za	
Phokwane LM - Ganspan office			mdichaba@phokwane.org.za	Gert Lubbe Street, Ganspan, Jan Kempdorp, 8561 Northern Cape
Phokwane LM			alubbe@phokwane.org.za	Gert Lubbe Street, Ganspan, Jan Kempdorp, 8561 Northern Cape
Mr Lesego Ngwira (LED & Tourism Manager) - Frances Baard District Municipality (NC)			lesego.ngwira@fbdm.co.za	
LANDOWNER				
Farm 476, Portion 0	Ms Joh-nè Jansen – FBDM (Chairperson)	053 838 0923	joh-ne.jansen@fbdm.co.za	
NEIGHBOURS				
Godfrey		082 698 7819	gmfetoane@gmail.com	
Julius		063 840 3673	info@kolong.co.za	
Mr J.H.D. (Hennie) Bloem	Erf 366	082 921 2900	bloemboer@vodamail.co.za	
NATIONAL GOVERNMENT				
Ms Natasha Higgitt (Heritage Officer)	SAHRA	021 462 4502	info@sahra.org.za	P.O. Box 4637, Cape Town, 8001
Nicole Abrahams (Environmental Coordinator)	South African National Roads Agency SOC Limited (SANRAL)	021 957 4602	AbrahamsN@nra.co.za	Bellville, Western Cape, 7530
Mr Dimakatso Viljoen Mothibi (Head of Department)	Department: Agriculture, Forestry & Fisheries	053 838 9102	cfortune@agri.ncape.gov.za	162 George Street, Private Bag X5018, KIMBERLEY, 8300

Volume 1: Environmental Impact Assessment Report

Mr. Tawana A.M (Provincial Coordinator)	Department: Agriculture, Forestry & Fisheries	053 839 7806	atawana@ncpg.gov.za	162 George Street, Kimberly Building, KIMBERLEY, 8300
Ms. Lillian Senosi (District Director)	Department: Agriculture, Forestry & Fisheries	053 456 5800	lkgobokwe@ncpg.gov.za	
Dr Hanneline Smit-Robinson (Terrestrial bird conservation)	Birdlife South Africa	011 789 1122	conservation@birdlife.org.za	Private Bag X16, Pinegowrie, 2123
Daniel Marnewick (Important Bird & Biodiversity Areas Programme)		011 789 1122	daniel.marnewick@birdlife.org.za	
Mr Jacob Dikgang	Department of Transport: Directorate: Environmental Analysis		DikgangJ@dot.gov.za	
Mr Solly Fourie	Department of Economic Development and Tourism: Head of Department		ecohead@westerncape.gov.za	
DEA Office	DEA National	086 111 2468	callcentre@environment.gov.za	Environment House, 473 Steve Biko, Arcadia, Pretoria, 0083 South Africa
Tendani Mashamba	DEA: Biodiversity Conservation		TMashamba@environment.gov.za	
Ms Wilma Lutsch			Wlutsch@environment.gov.za	
Stanley Tshitwamulomoni	DEA: Biodiversity Subdirectorates		StanleyT@environment.gov.za	
PROVINCIAL GOVERNMENT				
Ms G. Letimela	Dept:Environment & Nature Conservation NC	053 807 7300 053 807 7462	gletimela@ncpg.gov.za	90 Long Street Private Bag X 6102 Kimberley 8300
Ms D. Werth	Environmental Officer: Impact Management: Dept:Environment & Nature Conservation NC		DWerth@ncpg.gov.za	
Ms E. Botes (HoD)	Dept:Environment & Nature Conservation NC		bbotes@ncpg.gov.za	
Ms Dineo Moleko	Department of Environment and Nature Conservation		dmoleko@ncpg.gov.za	

Volume 1: Environmental Impact Assessment Report

	(DENC) Assistant Director: Impact Management			
Mrs Judy Scholtz (PA to Mr Fisher)	Department of Environment and Nature Conservation (DENC)		judyscholtz@ncpg.gov.za	
Mr Bryan Fisher	Department of Environment and Nature Conservation (DENC) Director: Environmental Quality Management		bfisher@ncpg.gov.za	
Mr K. Nogwili (HoD)	Department: Roads & Public Works NC	053 861 9600	KNogwili@ncpg.gov.za	P.O. Box 3132, Kimberley, 8301
Mr Ali Diteme (Media Liaison Officer)	Department: Agriculture, Land Reform & Rural Development NC	053 838 9118	aliditeme@ncape.gov.za	Private Bag X5018, Kimberley, 8300
Mr A. Abrahams (Chief Director)	Department: Water & Sanitation NC	053 830 8800	AbrahamsA@dws.gov.za	Private Bag X6101, Kimberley, 8300
Mr Thivhonalu Masindi	Department: Water & Sanitation NC	053 830 8804	MasindiT@dws.gov.za	28 Central Road, Beaconsfield, Kimberley, 8300
Ms Mangalane Du Toit (Chief Director)	Regional Land Claims Commission	053 807 5700	Mangalane.DuToit@drdlr.gov.za	
Ms Nicole Abrahams	SANRAL Environmental Coordinator: Western Region	021 957 4602 062 215 8945	AbrahamsN@nra.co.za	Private Bag X19, Bellville, 7535
Tess White	SANParks	053 204 8000	tess.white@sanparks.org	
Andrew Timothy	Provincial Heritage authority	021 462 4502	rtimothy@nbkb.org.za	
LOCAL GOVERNMENT				
Mr Ntshavheni (Freddy) Netshivhodza	(Manager: Town & Regional Planning) - Frances Baard District Municipality (NC)		freddy.netshivhodza@fbdm.co.za	
Mr Lesego Ngwira (LED & Tourism Manager) - Frances			lesego.ngwira@fbdm.co.za	

Volume 1: Environmental Impact Assessment Report

Baard District Municipality (NC)				
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Mr M. Mogale	Municipal Manager: Phokwane Local Municipality	053 474 9700		
Mr Zithulele Nikane	Planning and operations Director: Phokwane Local Municipality	053 474 9700	nikane@phokwane.gov.za	
Mr Tallies Viljoen	Superintended Municipal Works: Phokwane Local Municipality	053 474 9700	viljoent@phokwane.gov.za	
Mrs Elsa de Klerk	Chief Traffic Department: Phokwane Local Municipality	053 474 9700	deklerk@phokwane.gov.za	
Clr. VD Khen	Ward 8 Clr: Office of the Speaker		khen@phokwane.gov.za	
Mr Shadrack Thube	Ward 10 Councillor	0823908358	7thube@gmail.com	
Andre Lubbe	Jan Kempdorp/Ganspan : Unit Manager	053 456 0111	alubbe@phokwane.gov.za	
KEY STAKEHOLDERS				
Dries Fourie	Senwes grain silo	053 456 1632	Jankempdorp.grainlink@senwes.co.za	
Alfonso Visser	Golden Peanut Agriculture Cooperative	053 474 1345	pavisser@pfarm.co.za	PO Box 654, Hartswater, 8570
Ratha Timothy	Heritage Northern Cape (Northern Cape PHRA)	053 831 2537	ratha.timothy@gmail.com	1 Roper Street, Kimberley, 8300
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Dr. Harriet Davies-Mostert	EWT: Head of Conservation	053 381 3068	harrietd@ewt.org.za	P.O.Box 172, Loxton, 6985
Head Office	WWF SA (Cape Town)	021 657 6600	info@wwf.org.za	1st Floor, Bridge House, Boundary Terraces, Mariendahl Lane, Newlands, Cape Town

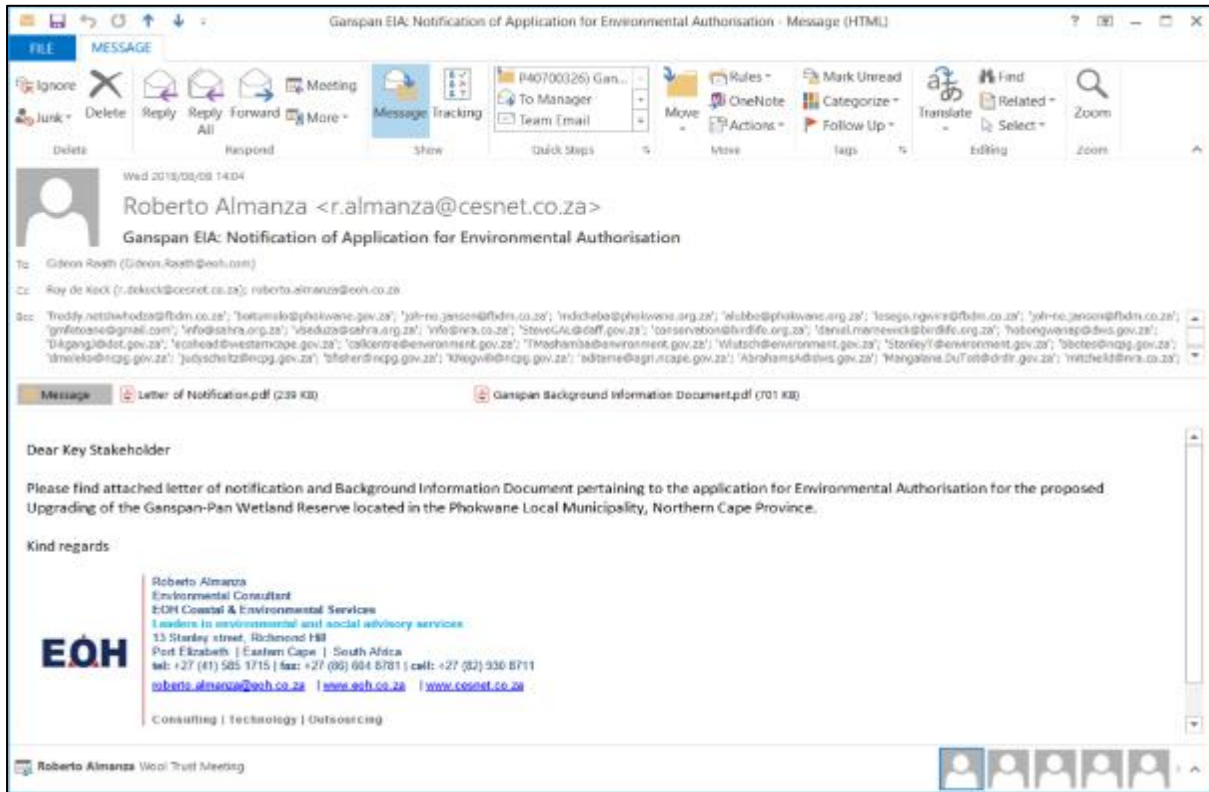
Volume 1: Environmental Impact Assessment Report

Cornel van Zyl	NG Kerk Ganspan Church	053 458 9042 053 832 9581 082 634 5319	ngkhartskroon@vodamail.co.za	15 VILLIERS STREET, KIMBERLEY, 8301
	GWK Jan Kempdorp	053 456 0139	emailus@gwk.co.za	DE VILLIERS STREET, DOUGLAS NORTHERN CAPE, SOUTH AFRICA
Colonel Loy de Jager	SANDF		loydejager@hotmail.com	
General Fordred			ian.fordred@dod.mil.za	
I&APS WHO REGISTERED DURING THE SCOPING PROCESS				
Raymond Mzandile Mene	Private Person	Not provided	Maxed2day@yahoo.com	Not provided
Ivan Steenkamp	CEO – Evers Xcellence	053 831 2974	ivan@eversxcellence.co.za	25 Villiers Street, Herlear, Kimberley, 8300

4. PROOF OF NOTIFICATION OF AUTHORITIES AND KEY STAKEHOLDERS

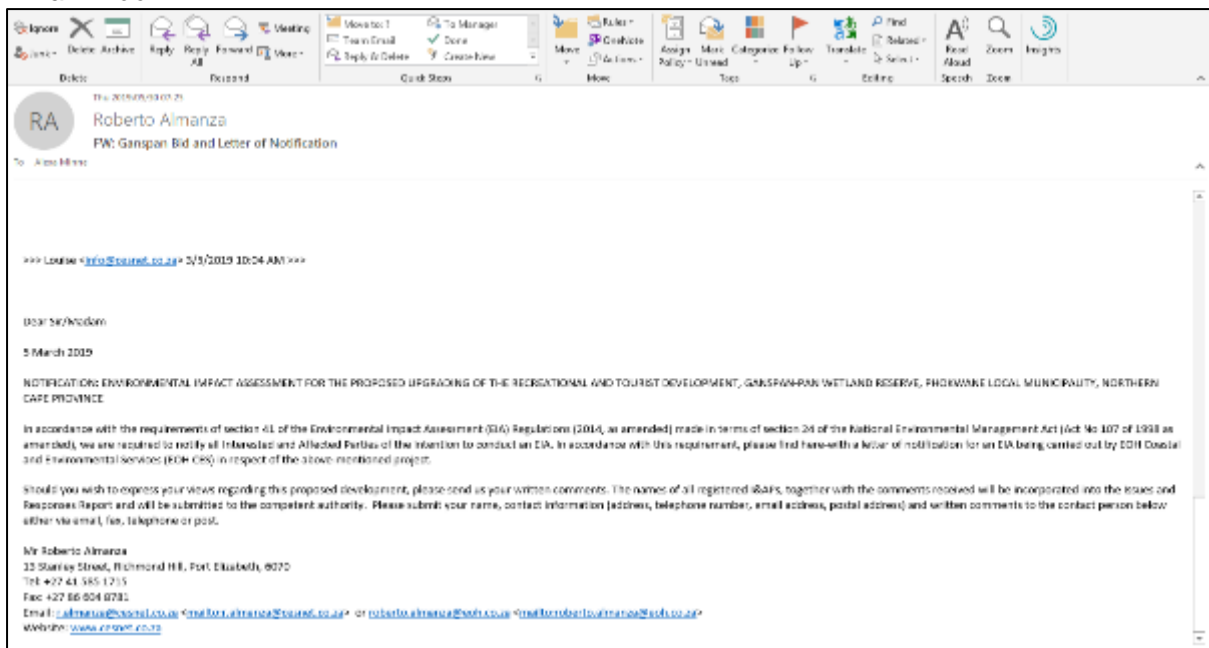
Notifications Sent on 8 August 2018:

Email Proof:



Notifications Sent on 5 May 2018:

Email Proof:



Letter of Notification:



8 August 2018

Dear Interested and Affected Party/ies

NOTIFICATION: ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED UPGRADING OF THE GANSPAN-PAN WETLAND RESERVE LOCATED IN THE PHOKWANE LOCAL MUNICIPALITY, NORTHERN CAPE PROVINCE

In accordance with the requirements of section 41 of the Environmental Impact Assessment (EIA) Regulations (2014 as amended) made in terms of section 24 of the National Environmental Management Act (Act No 107 of 1998 as amended), we are required to notify all Interested and Affected Parties of the intention to conduct an EIA. In accordance with this requirement, please find here-with a letter of notification for an EIA being carried out by EOH Coastal and Environmental Services (EOH CES) in respect of the above-mentioned project.

Project Description: Frances Baard District Municipality (FBDM) intend on developing a recreational and tourist area in the Ganspan-Pan Wetland Reserve (formerly the Ganspan Waterfowl Nature Reserve) situated on Erf 357 of Vaalharts settlement B outside Jan Kempdorp in the FBDM. The project involves the development and upgrading of infrastructure in the Ganspan-Pan Wetland Reserve to restore the area as a safe, and attractive tourism attraction. The proposed site is approximately 37ha in size. The project will include the following activities:

- The development, upgrading and the restoration of viable tourism and recreational facilities such as:
 - Fishing;
 - Camping facilities;
 - Bird-viewing;
 - Braai and picnic spots;
 - Hiking and biking trails;
 - Children playground;
 - Restaurant;
 - Self-catering chalets;
 - Jetties for boat launches;
 - Informal market area; and
 - Multipurpose centre.
- Upgrading and development of access roads, security gates, parking, reception and relaxation areas; and
- Upgrading, restoration and development of safe, attractive, and sustainable tourism facilities.

In accordance with the EIA regulations, the proposed development will require a full Scoping and EIA process, based on the listed activities triggered. The provincial Northern Cape Department: Environment and Nature Conservation (DENC) will be the decision making authority for this application. Furthermore, the Water Use Licence Application (to the Department of Water and Sanitation, Northern Cape) will be required for the project.

Consulting | Technology | Outsourcing
Directors: AM Axi (MD), A Babbot and JW King

Coastal and Environmental Services (Pty) Ltd
Tel: +27 21 045 0900
The Point, Suite 408, 4th floor, 76 Regent Road
Sea Point, 8000, Cape Town, South Africa
www.eoh.co.za | www.cesnet.co.za
reg no: 2012/151672/07



- Following the release of the Scoping and EIA reports, a public meeting will be held to present the project and to give the public an opportunity to comment on the proposed development. You will be notified of the date, time and venue for the public meeting accordingly.
- EOH CES hereby requests you please **confirm** your **receipt** of this notification via email, fax, phone or post, and request to be registered as an Interested and Affected Party (I&AP) should you be interested in remaining involved as the project unfolds.

For more information, please feel free to contact me at the EOH CES Johannesburg office, on the contact numbers shown below.

Yours sincerely,


Mr. Gideon Raath
Senior Environmental Consultant

Block D, Gillooly's View Office Park (EOH Business Park),
1 Osborne Lane, Bedfordview, Johannesburg, 2007.
Tel: +27 (11) 607 8389 | Fax: +27 (11) 616 9929 |

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www.eoh.co.za | www.cesnet.co.za
reg no: 2012/151672/07

Background Information Document Sent to All I&APs



EOH
Coastal & Environmental Services

ENVIRONMENTAL IMPACT ASSESSMENT FOR THE UPGRADING OF THE GANSPAN-PAN WETLAND RESERVE LOCATED IN THE PHOKWANE LOCAL MUNICIPALITY, NORTHERN CAPE PROVINCE

BACKGROUND INFORMATION DOCUMENT & INTENTION TO COMMENT

Introduction

Natural heritage given in terms of the National Environmental Management Act (Act No. 26 of 1989), as amended, and the associated environmental management and control systems in the Cape Floristic Region (Western Horns) and the Sardinia Acacia (Sardinia Forest) zones on the southern coast of South Africa, have been identified by the Department of Forestry, Fisheries and the Environment (DFFE) (Figure 1). The project will be governed by the 2014 National Environmental Management Act (NEMA) regulations (as amended in April 2022) and will trigger a Section 219 environmental impact assessment (EIA) process in terms of the regulation 22.2 as published in GFR 229 as amended by GFR 227.

EOH Coastal & Environmental Services (EOH CES) has been appointed by the Project Board Chair of the project (2024) to apply for an environmental authorisation (EA) in terms of the above-mentioned legislation for the upgrading of the SRM.




Figure 1: Location of the proposed development



EOH
Coastal & Environmental Services

ENVIRONMENTAL IMPACT ASSESSMENT FOR THE UPGRADING OF THE GANSPAN-PAN WETLAND RESERVE LOCATED IN THE PHOKWANE LOCAL MUNICIPALITY, NORTHERN CAPE PROVINCE

ENVIRONMENTAL IMPACT ASSESSMENT FOR THE UPGRADING OF THE GANSPAN-PAN WETLAND RESERVE LOCATED IN THE PHOKWANE LOCAL MUNICIPALITY, NORTHERN CAPE PROVINCE

1.1 Background and context

The proposed development is a strategic project aimed at enhancing the biodiversity and ecological health of the Ganspan-Pan Wetland Reserve, situated within the 2224 of the Northern Cape Province. The wetland is a critical habitat for various bird species, including the Cape Sparrow, Orange-breasted Honeyeater, Sardinia Acacia, and various species of the Sardinia Acacia (Sardinia Forest) zones on the southern coast of South Africa, have been identified by the Department of Forestry, Fisheries and the Environment (DFFE) (Figure 1). The project will be governed by the 2014 National Environmental Management Act (NEMA) regulations (as amended in April 2022) and will trigger a Section 219 environmental impact assessment (EIA) process in terms of the regulation 22.2 as published in GFR 229 as amended by GFR 227.

1.2 Project location

The project is located in the Ganspan-Pan Wetland Reserve, situated within the 2224 of the Northern Cape Province. The project will be governed by the 2014 National Environmental Management Act (NEMA) regulations (as amended in April 2022) and will trigger a Section 219 environmental impact assessment (EIA) process in terms of the regulation 22.2 as published in GFR 229 as amended by GFR 227.

1.3 Project objectives

The project aims to enhance the biodiversity and ecological health of the Ganspan-Pan Wetland Reserve, situated within the 2224 of the Northern Cape Province. The project will be governed by the 2014 National Environmental Management Act (NEMA) regulations (as amended in April 2022) and will trigger a Section 219 environmental impact assessment (EIA) process in terms of the regulation 22.2 as published in GFR 229 as amended by GFR 227.

1.4 Project description

The project involves the construction and upgrading of infrastructure for the Ganspan-Pan Wetland Reserve, including the construction of a new access road, the upgrading of existing infrastructure, and the construction of a new access road. The project will be governed by the 2014 National Environmental Management Act (NEMA) regulations (as amended in April 2022) and will trigger a Section 219 environmental impact assessment (EIA) process in terms of the regulation 22.2 as published in GFR 229 as amended by GFR 227.

1.5 Project benefits

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EOH
Coastal & Environmental Services

ENVIRONMENTAL IMPACT ASSESSMENT FOR THE UPGRADING OF THE GANSPAN-PAN WETLAND RESERVE LOCATED IN THE PHOKWANE LOCAL MUNICIPALITY, NORTHERN CAPE PROVINCE

ENVIRONMENTAL IMPACT ASSESSMENT FOR THE UPGRADING OF THE GANSPAN-PAN WETLAND RESERVE LOCATED IN THE PHOKWANE LOCAL MUNICIPALITY, NORTHERN CAPE PROVINCE



Figure 2: Proposed new system boundaries 2000, 2010

1.1 Project description

The proposed development is a strategic project aimed at enhancing the biodiversity and ecological health of the Ganspan-Pan Wetland Reserve, situated within the 2224 of the Northern Cape Province. The project will be governed by the 2014 National Environmental Management Act (NEMA) regulations (as amended in April 2022) and will trigger a Section 219 environmental impact assessment (EIA) process in terms of the regulation 22.2 as published in GFR 229 as amended by GFR 227.

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EOH
Coastal & Environmental Services

ENVIRONMENTAL IMPACT ASSESSMENT FOR THE UPGRADING OF THE GANSPAN-PAN WETLAND RESERVE LOCATED IN THE PHOKWANE LOCAL MUNICIPALITY, NORTHERN CAPE PROVINCE

ENVIRONMENTAL IMPACT ASSESSMENT FOR THE UPGRADING OF THE GANSPAN-PAN WETLAND RESERVE LOCATED IN THE PHOKWANE LOCAL MUNICIPALITY, NORTHERN CAPE PROVINCE

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Coastal & Environmental Services

ENVIRONMENTAL IMPACT ASSESSMENT FOR THE UPGRADING OF THE GANSPAN-PAN WETLAND RESERVE LOCATED IN THE PHOKWANE LOCAL MUNICIPALITY, NORTHERN CAPE PROVINCE

Section No.	Provision	Topic/condition
SECTION 4 GENERAL PROVISIONS	1.1. The project proponent must submit an environmental impact assessment report to the relevant authority for approval prior to the commencement of the project. 1.2. The impact assessment report must be submitted to the relevant authority for approval prior to the commencement of the project. 1.3. The impact assessment report must be submitted to the relevant authority for approval prior to the commencement of the project.	The proposed development must not be the subject of an environmental impact assessment report unless it is approved by the relevant authority.
SECTION 5 SCOPE AND BOUNDARIES	2.1. The project proponent must submit an environmental impact assessment report to the relevant authority for approval prior to the commencement of the project. 2.2. The impact assessment report must be submitted to the relevant authority for approval prior to the commencement of the project.	2.1. The project proponent must submit an environmental impact assessment report to the relevant authority for approval prior to the commencement of the project. 2.2. The impact assessment report must be submitted to the relevant authority for approval prior to the commencement of the project.
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Scoping and Environmental Impact Report Process

The project proponent must submit an environmental impact assessment report to the relevant authority for approval prior to the commencement of the project. The impact assessment report must be submitted to the relevant authority for approval prior to the commencement of the project.



Coastal & Environmental Services

ENVIRONMENTAL IMPACT ASSESSMENT FOR THE UPGRADING OF THE GANSPAN-PAN WETLAND RESERVE LOCATED IN THE PHOKWANE LOCAL MUNICIPALITY, NORTHERN CAPE PROVINCE

Approved by the relevant authority for approval prior to the commencement of the project.



Notice to comment

All interested parties are invited to comment on the proposed development. Comments should be submitted to the relevant authority for approval prior to the commencement of the project.

EOH Coastal & Environmental Services
 177 Newlands Road, Port Elizabeth, 6001
 Tel: 042 835 4747
 Fax: 042 835 4748
 Email: info@eoht.co.za or eoht@eoht.co.za
 Website: www.eoht.co.za



Coastal & Environmental Services

ENVIRONMENTAL IMPACT ASSESSMENT FOR THE UPGRADING OF THE GANSPAN-PAN WETLAND RESERVE LOCATED IN THE PHOKWANE LOCAL MUNICIPALITY, NORTHERN CAPE PROVINCE

BACKGROUND INFORMATION DOCUMENT & INVITATION TO COMMENT

I HEREBY WISH TO REGISTER AS AN INTERESTED AND AFFECTED PARTY (IAP) FOR THE BASIC ASSESSMENT PROCESS

Name: _____

Postal address: _____

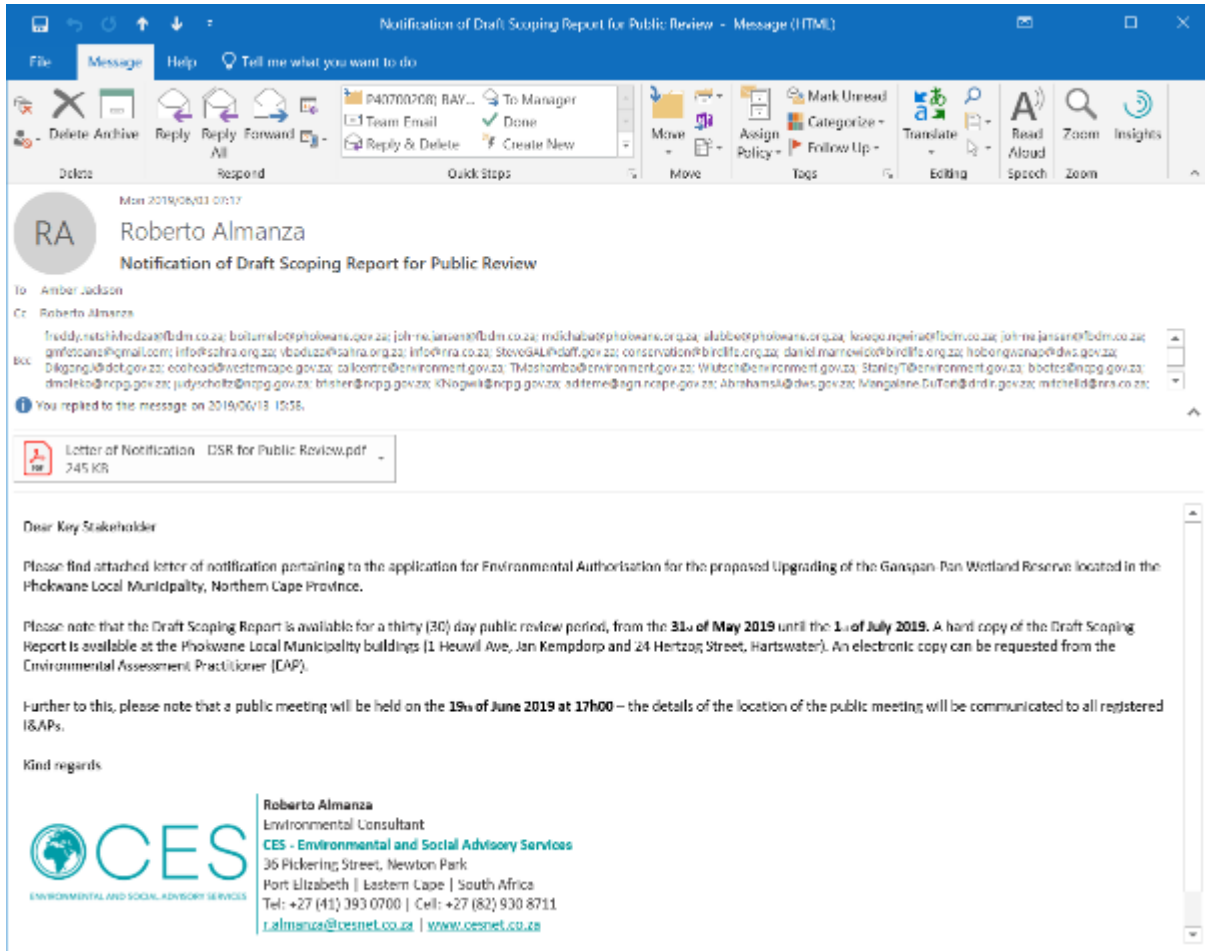
Phone: _____ Fax: _____

Cell phone: _____

How did you obtain this information: _____

Notification of Availability of Draft Scoping Report for Public Review Sent on 3 June 2019:

Email Proof:



Letter of Notification:



Coastal & Environmental Services

Dear Sir/Madam

31 May 2019

**NOTIFICATION OF DRAFT SCOPING REPORT FOR PUBLIC REVIEW:
ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED RECREATIONAL AND TOURIST DEVELOPMENT,
GANSPAN-PAN WETLAND RESERVE, PHOKWANE LOCAL MUNICIPALITY, NORTHERN CAPE PROVINCE**

DENC REF NO: NC/BA/18/FB/PHO/GAN1/2019

The Frances Baard District Municipality (FBDM) intends on developing a recreational and tourist area in the Ganspan-Pan Wetland Reserve (formerly the Ganspan Waterfowl Nature Reserve) situated on Erf 357 of Vaalharts settlement B outside Jan Kempdorp in the FGBDM. The project involves the development and upgrading of infrastructure in the Ganspan-Pan Wetland Reserve to restore the area as a safe, and attractive tourism attraction. The proposed site is approximately 37 ha in size.

The proposed activity triggers listed activities in terms of the 2014 EIA Regulations (as amended in April 2017), Listing Notices 1, 2 and 3 (GN R. 983, GN R. 984 and GN R. 985, as amended by GN R. 327, GN R. 325 and GN R. 324). EOH Coastal & Environmental Services (EOH CES) have been appointed by the FBDM (the Applicant), to apply for an Environmental Authorisation in terms of the above mentioned regulations by means of conducting a Scoping and Environmental Impact Reporting (S&EIR) process for the proposed development.

You are hereby notified of the submission of the Draft Scoping Report, to the Northern Cape Department: Environment and Nature Conservation (DENC), for comment. Please note that the Draft Scoping Report is available for a thirty (30) day public review period, from the 31st of May 2019 until the 1st of July 2019. A hard copy of the Draft Scoping Report is available at the Phokwane Local Municipality buildings (1 Heuwil Ave, Jan Kempdorp or 24 Hertzog Street, Hartswater). An electronic copy can be requested from the Environmental Assessment Practitioner (EAP). Further to this, please note that a public meeting will be held on the 19th of June 2019 at 17h00 – the details of the location of the public meeting will be communicated to all registered I&APs.

Contact details for the submission of comments or to request an electronic copy of the report:

ATTENTION:	Mr Roberto Almanza
TEL:	+27 (0) 41 393 0700
E-MAIL:	r.almanza@cesnet.co.za or roberto.almanza@eoh.co.za
PHYSICAL ADDRESS:	EOH Coastal & Environmental Services (Port Elizabeth Branch), 36 Pickering Street, Newton Park, Port Elizabeth, 6045



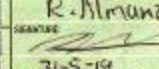



Kind regards

Mr Roberto Almanza
Environmental Consultant

Coastal and Environmental Services (Pty) Ltd
T +27 41 585 1715 | F +27 86 604 8781
13 Stanley Street, Richmond Hill, Port Elizabeth, 6001
Reg no: 2012/151672/07 | a member of the EOH Group of Companies
www.eoh.co.za | www.cesnet.co.za

Directors: Z Mayet, JW King, AM Avis.

Proof of Delivery of Draft Scoping Report to the DENC:

		HEAD OFFICE: 011 922 2600 www.globeflight.com Reg No. 1998/030652/07 / VAT NO: 4659175351				2721121280	
DATE	ACCOUNT NUMBER	COST CENTRE	SHIPPER'S REFERENCE	ORIGIN	DESTINATION	No. OF PIECES	ACTUAL WEIGHT
	210512					1	
SHIPPER: (YOUR NAME) COMPANY NAME: COASTAL AND ENVIRONMENTAL SERVICES STREET ADDRESS: 35 PICKERING STREET NEWTON PARK CITY PORT ELIZABETH COUNTRY: TELEPHONE NUMBER & E-MAIL: 041 3930700			TO: (RECIPIENT'S NAME) Mrs D. Werth COMPANY NAME: Dpt of Environment & Nature Conservation STREET ADDRESS: 90 Long St Susko Building CITY Kimberley COUNTRY: S. Africa POST/ZIP CODE: 8300 TELEPHONE NUMBER & E-MAIL: 053 807 7430			PIECES 1 DIMENSIONS 40x30x1 X X X X X X X X X X NON STACKABLE	
INTERNATIONAL SERVICES GLOBAL PARCEL EXPRESS - ICP GLOBAL DOCUMENT EXPRESS - ICD AIRFREIGHT - WF CROSS BORDER ROADFREIGHT - RF		DOMESTIC SERVICES OVERNIGHT EXPRESS - ONX BY 11H30 DAWN EXPRESS - DDX BY 9H00 SAMEDAY EXPRESS - SDX SATURDAY EXPRESS - SAT		BUDGET CARGO - DBC 1 - 2 DAYS ROADFREIGHT - RFX 2 - 4 DAYS PUBLIC HOLIDAYS / AFTER HOURS TENDER		SPECIAL INSTRUCTIONS To be delivered Monday 3/6/19 DESCRIPTION OF CONTENTS	
CUSTOMS VALUE HAZARDOUS CARGO? YES <input type="checkbox"/> NO <input type="checkbox"/> INSURANCE YES <input type="checkbox"/> NO <input type="checkbox"/> AMOUNT:		WE HAVE SEEN AND AGREE TO THE STATED VALUE OF CARGO OF GLOBAL PARCEL EXPRESS PRINT NAME: R. Almanza SIGNATURE:  DATE: 31-5-19 TIME:		RECEIVED BY GLOBEFLIGHT WORLDWIDE EXPRESS PRINT NAME:  SIGNATURE:  DATE: 31/5/19 TIME: 13:05		RECEIVED IN GOOD ORDER AND CONDITION PRINT NAME: SIGNATURE:  DATE: 3/6/19 TIME: 10:08	

DENC Acknowledgement of Receipt of Draft Scoping Report:

RE: RE: FW: DENC NEMA Application Form - Message (1) ITMU

File Message Help Tell me what you want to do

Delete Archive Reply Reply Forward All Reply & Delete Team Email Reply & Delete To Manager Done Create New Move Assign Policy Follow Up Translate Read Aloud Zoom Insights

Wed 2019/06/19 10:17

G GLetimela <GLetimela@ncpg.gov.za>
 RE: RE: FW: DENC NEMA Application Form

to: Roberto Almanza

You replied to this message on 2019/06/19 10:22.

NC-BA-18-FB-PHO-GAN1-2019_draft_BA1.pdf
 40 KB

Good day Roberto

Kindly find the attached acknowledgment letter.

My apology for the late responses.

Regards

DENC Acknowledgement Letter:



the denc

Department:
Environment & Nature Conservation
NORTHERN CAPE PROVINCE
REPUBLIC OF SOUTH AFRICA

SASKO Building
90 Long Street
Private Bag X6102
Kimberley
8300

Tel. 053-8077300
Fax: 053-8077328

Enquiries :
Dipatlisiso :
Imibuzo : D Werth
Navrae :
Reference :
Tshupelo :
Isalaliso : NC/BA/18/FB/PHO/GAN1/2019
Verwysing :

Date :
Leshupelo : 10 June 2019
Umhla :
Datum :

Mr. Robert Almanza

EOH COASTAL & ENVIRONMENTAL SERVICES
Private Bag X6102

KIMBERLEY
8300

EMAIL: Roberto.almanza@eoh.co.za

Dear Sir/Madam

APPLICATION FOR ENVIRONMENTAL AUTHORISATION: RECREATIONAL AND TOURIST DEVELOPMENT, GANSPAN-PAN WETLAND RESERVE, PHOKWANE LOCAL MUNICIPALITY, FRANCES BAARD DISTRICT MUNICIPALITY.

The Department confirms having receipted the **draft scoping report** for the abovementioned project on the 5th June 2019 as required in terms of the Environmental Impact Assessment Regulations, 2014 as amended.

The reference number for this project is: NC/BA/18/FB/PHO/GAN1/2019. Kindly quote this reference number in any future correspondence in respect of the application.

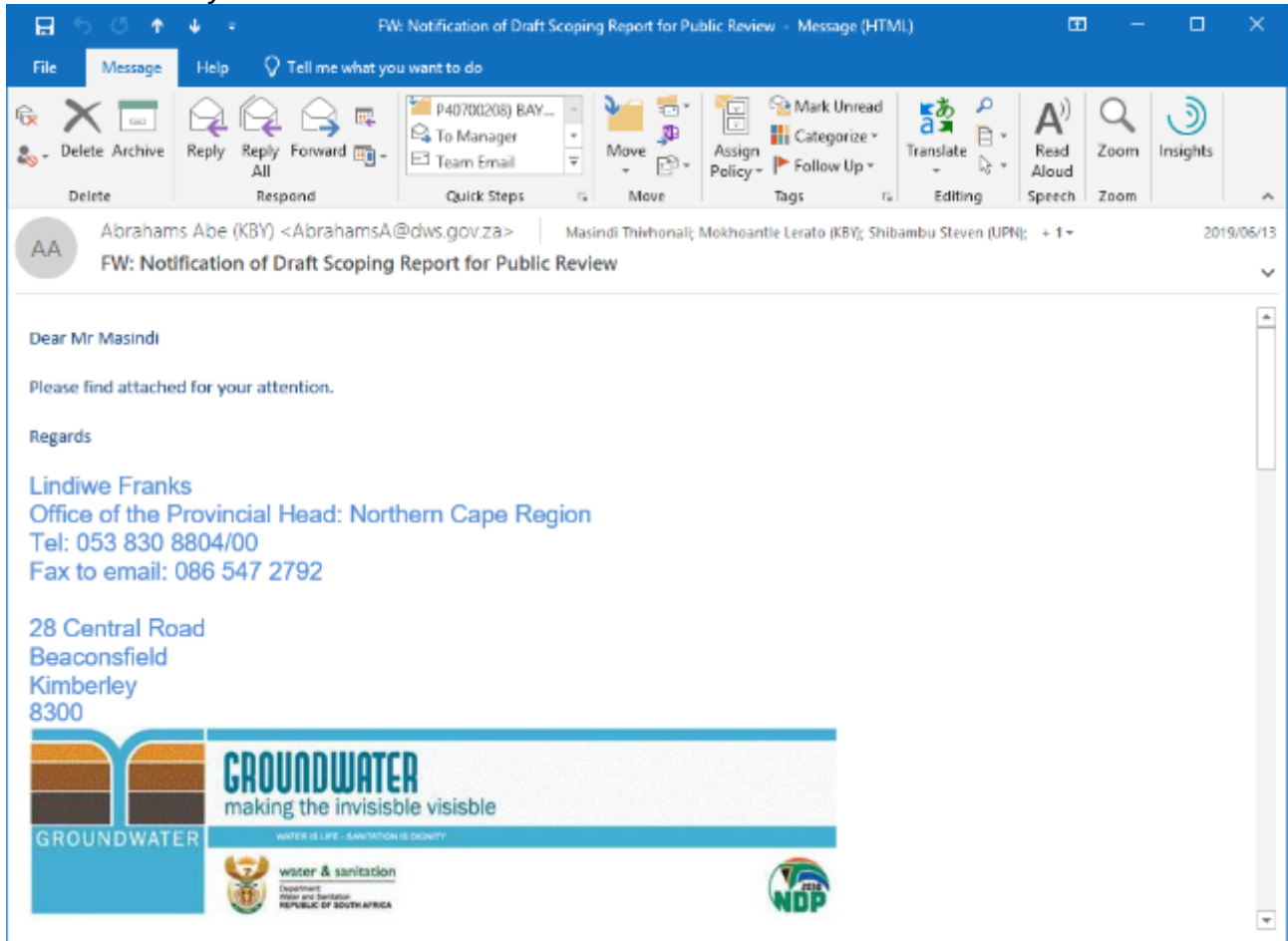
Please draw the applicant's attention to the fact that the activity may not commence prior to an environmental authorization being granted by the Department.

Kindly note the responsible officer for this project is **Mrs. D Werth** and can be contacted at this number, 053 8077 300.

Regards

G. Letimela
Senior Administration Clerk

Proof of Delivery of Notification to the DWS:



A hard copy of the Draft Scoping Report was made available at the Phokwane Local Municipality buildings (1 Heuwil Ave, Jan Kempdorp and 24 Hertzog Street, Hartswater).

Proof of Delivery of Draft Scoping Report to the Phokwane Local Municipality:

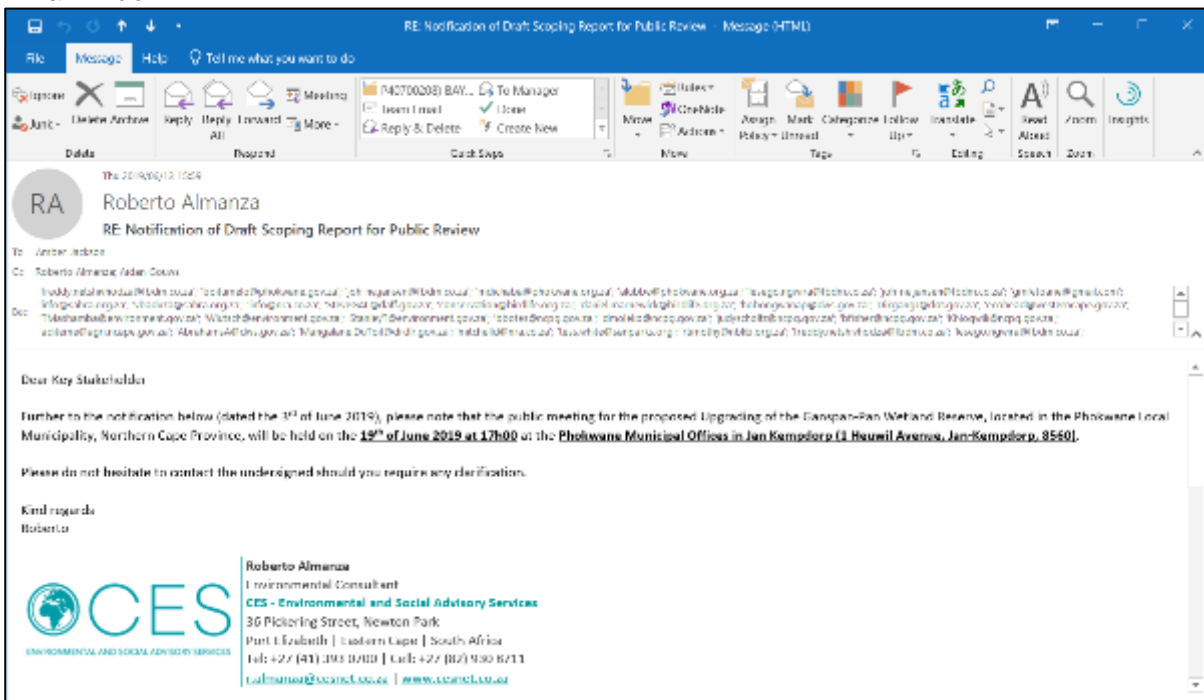
		HEAD OFFICE: 011 922 2690 www.globeflight.com Reg. No. 1998/009052/07 / VAT NO. 4650175361				2721121279	
DATE	ACCOUNT NUMBER	COST CENTRE	SHIPPER'S REFERENCE	ORIGIN	DESTINATION	No. OF PIECES	ACTUAL WEIGHT
	210919					1	1
SHIPPER: (YOUR NAME)			TO: (RECIPIENT'S NAME)			PIECES	
COMPANY NAME:			COMPANY NAME:			DIMENSIONS	
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CITY:			CITY:			x x	
COUNTRY:			COUNTRY:			x x	
TELEPHONE NUMBER & E-MAIL:			TELEPHONE NUMBER & E-MAIL:			x x	
POST/ZIP CODE:			POST/ZIP CODE:			x x	
INCIDENTAL SERVICES			COMBINED SERVICES			NON STACKABLE	
GLOBAL PARCEL EXPRESS - KCP			OVERNIGHT EXPRESS - CNK BY 11:00			SPECIAL INSTRUCTIONS	
GLOBAL DOCUMENT EXPRESS - KCD			DAWN EXPRESS - DDX BY 9:00			To be delivered on Monday 26/19	
AIRFREIGHT - IAF			BAMEDAY EXPRESS - BDX			DESCRIPTION OF CONTENTS	
CROSS BORDER ROADFREIGHT - IRF			SATURDAY EXPRESS - SAT				
CUSTOMS VALUE			RECEIVED BY (SIGNATURE)				
HAZARDOUS GOODS?			DATE				
INSURANCE			TIME				
AMOUNT:							

5. PUBLIC MEETING

A public meeting was held at the Phokwane Municipal Offices in Jan Kempdorp (1 Heuwil Avenue, Jan-Kempdorp, 8560) on the 19th of June 2019, during the release of the Draft Scoping Report. The details of this meeting were conveyed to the public in the advert that was placed in the DFA on the 3rd of June 2019 (please refer to Appendix A Section 1 above) as well as via emails dated the 3rd of June 2019 (please refer to Appendix A Section 4 above) as well as the 13th of June 2019.

The public meeting was only attended by two (2) representatives of the FBDM and one (1) representative from the Phokwane Local Municipality. No comments or questions were raised during the public meeting. Please refer to Appendix A for the attendance register as well as photos of the public meeting.

Email Proof:



Public Meeting: Phokwane Municipal Offices – 19 June 2019:

Photographs taken at the Public Meeting:

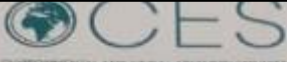








Public Meeting Attendance Register:


 ENVIRONMENTAL AND SOCIAL ADVISORY SERVICES
ATTENDANCE REGISTER


PRE-APPLICATION PUBLIC MEETING FOR THE PROPOSED RECREATIONAL AND TOURIST DEVELOPMENT
 GANSPAN-PAN WETLAND RESERVE, PHOKWANE LOCAL MUNICIPALITY, NORTHERN CAPE PROVINCE

WEDNESDAY, 19 JUNE 2019

Name	Surname	Company / Association (if applicable)	Cell Phone	Email Address
AIDAN	GOWDS	CES	0727741185	a.gowds@cesnet.co.za
Boitumelo	Kaena	Phokwane LM	077426959	boitumelo@phokwane.gov.za
Joh ne	Carlsen	FBDM	073903642	johne.jansen@fbdm.co.za
Junice	CLOPANG	FBDM	0625998916	junice@fbdm.co.za

Public Meeting Slide-show Presentation:

INTRODUCTION



- Appointed Environmental Assessment Practitioner (EAP)
- Environmental Consultancy Firm, established in 1990
- Specialise in Environmental Impact Assessments and Social Advisory Services



RECREATIONAL AND TOURIST DEVELOPMENT
GANSPAN-PAN WETLAND RESERVE
PHOKWANE LOCAL MUNICIPALITY, NORTHERN
CAPE PROVINCE

ENVIRONMENTAL IMPACT SCOPING REPORT
PUBLIC MEETING





PROJECT OVERVIEW

<p>Recreational and Tourist Area:</p> <ul style="list-style-type: none"> • Restaurant • Market • Jetties and boat launch ramps • Bird watching • Multipurpose Centre • Playground • Braai and picnic spots • Hiking and biking trails 	<p>Accommodation:</p> <ul style="list-style-type: none"> • Chalets • Camping • Lodge <p>Supporting Infrastructure:</p> <ul style="list-style-type: none"> • Water, sewerage, electricity • Access roads • Security Gates • Parking
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NATIONAL ENVIRONMENTAL MANAGEMENT ACT			
Listing Notice 2 - GN R 984 (GN R 325) (Full Scoping & EIR)	15	<p>The clearance of an area of 20 hectares or more of indigenous vegetation.</p> <p>Various infrastructure, with a total footprint of approximately 28.2 ha, will be developed and will require the clearance of indigenous vegetation.</p>	 <p>Lodge</p> <ul style="list-style-type: none"> ± 3 hectares ± 50 rooms (120 people)
	24	<p>The extraction or removal of peat or peat soils, including the disturbance of vegetation or soils in anticipation of the extraction or removal of peat or peat soils, but excluding where such extraction or removal is for the rehabilitation of wetlands in accordance with a maintenance management plan.</p> <p>Excavations of material will occur within the Ganspan wetland during the construction of the proposed infrastructure and, depending on the composition of the soil, may result in the removal of peat soils or associated vegetation.</p>	

SCOPING PHASE	ENVIRONMENTAL IMPACT ASSESSMENT (EIA) PHASE	NATIONAL ENVIRONMENTAL MANAGEMENT ACT (NEMA) LISTED ACTIVITIES
<p>2018: Project Planning and Initial Stakeholder Engagement</p> <p>2019: Drafting of Scoping Report and Initial Engagement with the DENC</p> <p>03 May 2019: Submission of the DENC Application Form and Draft Scoping Report</p> <p>30 May to 01 July 2019: Public Review Period</p> <p>03 July 2019: Final Scoping Report (60 days following submission of the Application)</p> <p>03 July 2019: Competent Authority Review Period (60 days)</p> <p>Amendments Required</p> <p>As-is plan</p>	<p>03 2019: Draft Environmental Impact Assessment Report and Environmental Management Programme/Consent</p> <p>04 2019: Mandatory Public Review Period (30 days)</p> <p>04 2019: Final EIA Report (30 days following the acceptance of the Final Scoping Report)</p> <p>04 2019 & 04 2020: Competent Authority Review Period (30 days)</p> <p>Amendments Required</p> <p>Accepted</p> <p>02 2020: Notification of Environmental Authorisation (30 days following EIA decision)</p> <p>02 2020: Appeals Period (30 days following notification of EA decision)</p>	<p>NATIONAL ENVIRONMENTAL MANAGEMENT ACT (NEMA) LISTED ACTIVITIES</p> <ul style="list-style-type: none"> Listing Notice 2 is triggered by the proposed development and therefore the Environmental Impact Assessment (EIA) process to be applied is a Full Scoping and EIR process. The competent authority will be the Northern Cape Department of Environment and Nature Conservation (DENC) 

EOH	ENVIRONMENTAL SENSITIVITIES
 <p>EOH Environmental Impact Assessment Ganspan-Pan Wetland Reserve Upgrade Final Report</p> <p>Legend: Critical Biodiversity Area Wetland Vaalharts Irrigation Scheme Vegetation Types Schimidt's Thornveld Kimberley Thornveld</p>	<ul style="list-style-type: none"> Protected Area and Critical Biodiversity Area (CBA) Wetland - National Freshwater Ecosystem Priority Area (NFEPA) Vaalharts Irrigation Scheme (Harts River) Not located within any 'threatened ecosystems' Two savannah vegetation types were mapped within the Ganspan Wetland Reserve area namely: <ul style="list-style-type: none"> Schimidt's Thornveld – Least Concern Kimberley Thornveld – Least Concern



PROPOSED SPECIALIST STUDIES

Heritage Impact Assessment • Mr Neels Kruger (Exigo)	
Ecological Impact Assessment • Mr Roy de Kock (CES)	
Wetland Impact Assessment • Ms Jaclyn Smith (CES)	
Avifaunal Impact Assessment • Ms Amber Jackson (CES)	

PUBLIC PARTICIPATION PROCESS (PPP)

Phase	Requirement	Date
Inception Phase	Site notice	Placed on 7 June 2018
	Pre-Assessment Notification	8 August 2018, 4 December 2018 and 3 March 2019
Scoping Phase (30 day mandatory PPP period)	Newspaper Advert	Placed in the DVA on the 31 st of June 2019
	Letters of notification	Sent to I&APs on the 3 rd of June 2019
	Commenting Period	31 May 2019 to 1 July 2019
	Public Meeting	19 June 2019 (today)
EIR Phase (30 day mandatory PPP period)	Newspaper Advert	September 2019
	Letters of notification	September 2019
	Commenting Period	September to October 2019
	Public Meeting	September / October 2019

IDENTIFICATION OF POTENTIAL IMPACTS

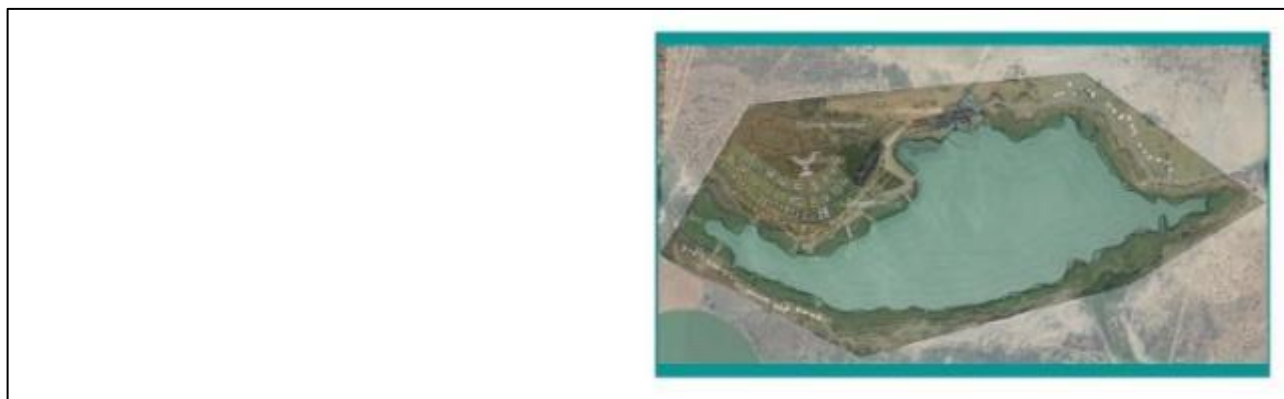
IMPACT (CONSTRUCTION / OPERATIONAL PHASE)	SIGNIFICANCE (NO / MITIGATION)	RESIDUAL RISK (AFTER CORRECT MITIGATION)
Loss of Natural Vegetation	MODERATE -	LOW -
Loss of Species of Conservation Concern	MODERATE -	LOW -
Invasion of Alien Species	MODERATE -	LOW -
Surface and Groundwater Pollution	MODERATE -	LOW -
Soil Erosion and Sedimentation	MODERATE -	LOW -
Loss of Archaeological and/or Cultural Heritage Resources	MODERATE -	LOW +
Loss of Paleontological Resources	MODERATE -	LOW +
Solid Waste Pollution	MODERATE -	LOW -
Dust Pollution	LOW -	LOW -
Traffic	LOW -	LOW -
Noise Disturbance	MODERATE -	LOW -
Employment Creation and Economic Benefits	LOW +	MODERATE +
Tourism Benefits	LOW +	MODERATE +

WAY FORWARD

- Final Scoping Report – 5 July 2019
- DENC Decision on Scoping Report – 21 August 2019
- Specialist Studies – Completed by 10 September 2019
- Draft EIR – Completed by 19 September 2019
- EIR Public Disclosure – September/October 2019

QUESTIONS AND COMMENTS

Mr Roberto Almanza
36 Pickering St, Newton Park, Port Elizabeth, 6045
Tel: +27 (0) 41 393 0700
Email: r.almanza@cesnat.co.za
www.cesnat.co.za



6. COMMENTS AND RESPONSES REPORT

I&AP DETAILS	COMMENT	EAP RESPONSE
Comments Received Following Notification of Intent to Apply for Environmental Authorisation		
<p>Mr J.H.D Bloem bloemboer@vodamail.co.za</p>	<p>1. Initial concern would be development of infrastructure like sewage for such an development in an wetland area.</p>	<p>Sewage has not been incorporated as part of this EIA. The proposed design, construction and operation of sewage infrastructure will need to be approved by DENC and potentially DWS prior to construction.</p>
	<p>2. The Quality of the water source for human entertainment.</p>	<p>Water quality testing will be done and approved by DWS for safe reaction prior to any guests or staff being allowed in the water.</p>
	<p>3. Noise Pollution and Activities on water source and its impact on bird and wildlife in an wetland reserve.</p>	<p>The Southern and south-west portion of the wetland will have little to no land access. The road will stop at the proposed chalets and only a walking trails will be available from this point. Only electric, human powered and none wake boats will be allowed on the water for fishing. The bird monitoring will determine exclusion zones on the water to reduce disturbance. No boats will be allowed in front of (In direct line of site) or within 30m of bird hides.</p>
	<p>4. Economic impact on farmlands which relies on overflow water that is registered for irrigation, originating from water source</p>	<p>No water will be used from the Ganspan wetland for the purposes of construction. During the operational phase, the water from the Ganspan wetland will mainly be used for water activities (e.g. fishing, paddle boats etc.) once the development has been completed. The FBDM does not foresee any effect to downstream water users as a result of the proposed project.</p>

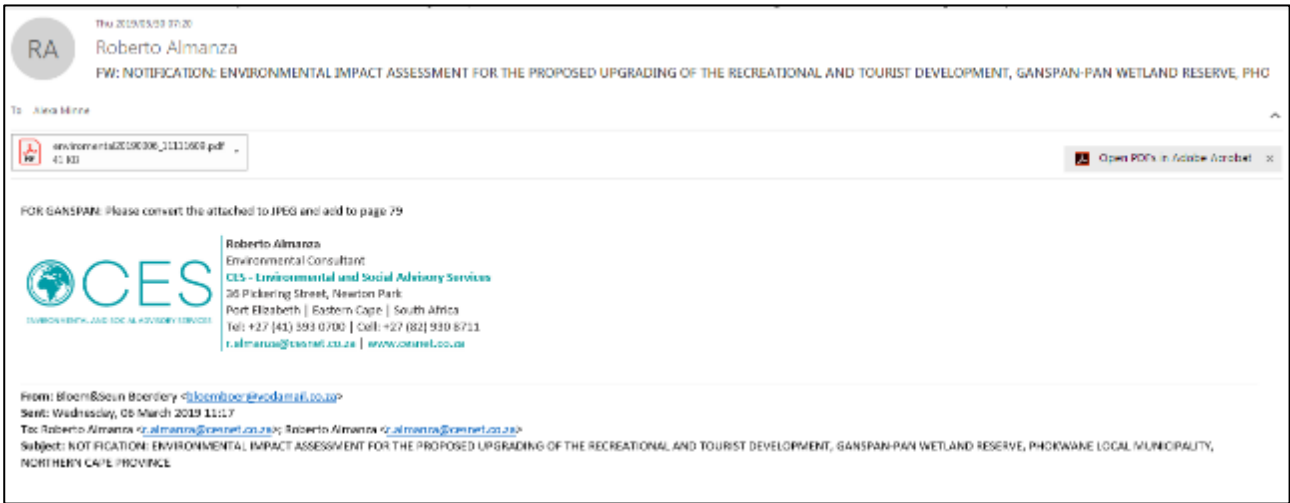
I&AP DETAILS	COMMENT	EAP RESPONSE
<p>B. Botes bbotes@ncpg.gov.za Tel: 053-8077306</p>	<p>Good day,</p> <p>This office acknowledge receipt of the email.</p> <p>Kindly note that your mail was forwarded to Mr B Fisher for his attention.</p> <p>His contact details are Tel: 053 - 8077432 E-mail; bfisher@ncpg.gov.za <mailto:bfisher@ncpg.gov.za></p>	<p>Noted.</p>
<p>Natasha Higgitt nhiggitt@sahra.org.za</p>	<p>Good morning,</p> <p>Please note that all development applications are processed via our online portal, the South African Heritage Resources Information System (SAHRIS) found at the following link: http://sahra.org.za/sahris/. We do not accept emailed, posted, hardcopy, faxed, website links or DropBox links as official submissions.</p> <p>Please create an application on SAHRIS and upload all documents pertaining to the Environmental Authorisation Application Process. As per section 38(8) of the National Heritage Resources Act, Act 25 of 1999 (NHRA), an assessment of heritage resources must form part of the process and the assessment must comply with section 38(3) of the NHRA.</p> <p>Once all documents including all appendices are uploaded to the case application, please ensure that the status of the case is changed from DRAFT to SUBMITTED. Please ensure that all documents produced as part of the EA process are submitted as part of the application, and are submitted to SAHRA at the beginning of the Public Review periods. Once all these documents have been uploaded, I will be able to issue an informed comment as per section 38(4) and 38(8) of the NHRA.</p>	<p>Noted.</p>
<p>Comments Received During the Draft Scoping Report Public Review Period</p>		
<p>Raymond Mzandile Mene Maxed2day@yahoo.com</p>	<p>Please include me in your list of people that will receive the DSR that is currently out on review.</p> <p>Thank you Roberto, Received.</p>	<p>Thank you for your email. Please note that the Draft Scoping Report has been sent to your email via the 'WeTransfer' link below. Please do not hesitate to contact me if you have any trouble accessing the document.</p>

I&AP DETAILS	COMMENT	EAP RESPONSE
		A 'WeTransfer' link was subsequently sent to the I&AP to allow them to access the Draft Scoping Report.
<p>Ivan Steenkamp CEO – Evers Xcellence ivan@eversxcellence.co.za Tel: 053-831 2974</p>	<p>Kindly forward me a copy of the Draft Scoping Report (DSR) with reference number: DENC:NC/BA/18/FB/PHO/GAN1/2019.</p> <p>Thanks for the response and document. Much appreciated.</p>	<p>Thank you for your email. Please note that the Draft Scoping Report has been sent to your email via the 'WeTransfer' link below. Please do not hesitate to contact me if you have any trouble accessing the document.</p> <p>A 'WeTransfer' link was subsequently sent to the I&AP to allow them to access the Draft Scoping Report.</p>
<p>Deneill Mitchell Road Incident Management Systems (RIMS) Project Manager Western Region 1 Havenga Street, Oakdale, Bellville, Western Cape, 7530, South Africa Mitchelld@nra.co.za Tel: 021 - 957 4634</p>	<p>Please direct all Environmental notifications to my colleague, Nicole Abrahams, who is the Environmental Coordinator for SANRAL. Herewith all details for your database: Nicole Abrahams Environmental Coordinator Western Region Bellville, Western Cape, 7530, T: 021 957 4602 M: 062 215 8945 AbrahamsN@nra.co.za www.sanral.co.za Fraud Hotline Number - 0800 204 558</p>	<p>Thank you for the information. I will add Ms Abrahams to the Interested and Affected Parties (I&AP) database.</p>
<p>Mr J.H.D Bloem bloemboer@vodamail.co.za Tel: 082 921 2900</p>	<p>Regarding the upgrading of recreational and tourist area in the Ganspan-Pan Wetland Reserve (formerly the Ganspan Waterfowl Nature Reserve) situated on Erf 357 of Vaalharts settlement B outside Jan Kempdorp in the FGBDM.</p> <p>I am a farmer adjacent to above mentioned property which works around the area daily. I have seen and have numerous reports of municipal sewage vehicles dumping sewage directly into the pan. I tried contacting the local municipality numerous times regarding this matter to no avail and would like to present a formal complaint regarding this irresponsible act through this writing, as i can not get contact details of any responsible people to lodge a complaint from the local municipality.</p> <p>As a concerned citizen, i would like to see any upgrading off infrastructure in our area, but think that the water quality of the above mentioned water source and Nature Reserve is not safe for Any human recreational activities at the moment and would like to see independent water quality tests. Also a responsible contact person from the municipality to report these problems to.</p>	<p>Your concern relating to the municipal sewage vehicles dumping sewage directly into the pan was forwarded to the Phokwane Local Municipality representatives. Their response was as follows: "This morning we've met with Mr Andre Lubbe who is our Unit Manager in Jan Kempdorp to get a report regarding Mr Bloem's concern. The response is that there is Masakeng paving road project in Jan Kempdorp and the truck tank has been taking water from the Pan to use for the road not the sewer tank as alleged."</p>

I&AP DETAILS	COMMENT	EAP RESPONSE
	<p>I hope that i can get some feedback on this matter and would like to contribute to make our area better and safer for people to enjoy.</p>	<p>It is recommended that further correspondence regarding the current activities taking place on site should be directed to Mr Koena at the Phokwane Local Municipality (boitumelo@phokwane.gov.za; 053 474 9700). Your complaint is however noted and will be included in the issues and responses trail (IRT) which will be submitted to the Department of Environment and Nature Conservation (DENC) for their consideration.</p> <p>Please note that the Environmental Management Programme (EMPr), which will form part of the Environmental Impact Assessment (EIA) process, have included recommendations for the testing and monitoring of water quality relating to the proposed development.</p> <p>Water quality monitoring has been included in the EMPr.</p>
<p>Ms D. Werth Environmental Officer: Impact Management DENC DWerth@ncpg.gov.za</p>	<p>The Draft Scoping Report which was submitted by you in respect of the above mentioned application and received by the Department on 05 June 2019. The Department: Impact Management Section has reviewed the report and is awaiting the Final Scoping Report. Please draw the applicant attention to the fact that the activity may not commence prior to an environmental authorisation being granted by the Department</p>	<p>Revised letter received, thank you.</p> <p><i>The applicant was subsequently informed that the activity may not commence prior to Environmental Authorisation being granted by the competent authority.</i></p>

Proof of Comments Received Following Notification of Intent to Apply for an EA

I&AP Comment: 6 March 2019:




EAP Response: 7 March 2019:

From: Roberto Almanza
Sent: Thursday, 07 March 2019 15:26
To: Bloem&Seun Boerdery <bloemboer@vodamail.co.za>
Subject: RE: NOTIFICATION: ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED UPGRADING OF THE RECREATIONAL AND TOURIST DEVELOPMENT, GANSPAN-PAN WETLAND RESERVE, PHOKWANE LOCAL MUNICIPALITY, NORTHERN CAPE PROVINCE

Dear Mr Bloem,

Thank you for your e-mail and comments. Your comments have been noted and they will be incorporated and addressed during the Environmental Impact Assessment (EIA) process for inclusion in the various reports. As soon as the Draft Scoping Report is available for public review, all registered Interested and/or Affected Parties (I&APs) will be notified.

Kind regards
Roberto



Roberto Almanza
Environmental Consultant
CES - Environmental and Social Advisory Services
36 Pickering Street, Newton Park
Port Elizabeth | Eastern Cape | South Africa
Tel: +27 (41) 393 0700 | Cell: +27 (82) 930 8711
r.almanza@cesnet.co.za | www.cesnet.co.za

Notice No.	Description	Triggering activity
	i. Outside urban areas and ii. Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in biogeoregions.	

Scoping and Environmental Impact Reporting Process

The process required for the proposed development is that of an EIA/IA as per Section 21 to 23 of the NEMA and regulations and involves a Public Participation Process as outlined in Section 41. This process serves primarily to inform the public and relevant authorities about the proposed project and to encourage their input. The Draft Scoping Report as well as the Draft EIA will be made available for review to all registered interested and affected parties (RIAPs) for thirty days (30) following the release of the draft reports (Figure 3). If you are registered as an RIAP, you will be notified of all major developments and your rights throughout the process. You will also be informed of the outcome of the application for environmental authorisation once it has been decided by the competent authority. The competent authority for this application is the Northern Cape Department of Environmental and Nature Conservation (DENC).

Figure 3: Generic Basic Assessment process as per the NEMA IA regulations.

Invitation to comment

Should you wish to express your views regarding the proposed development, please send us your written comments. The names of all registered RIAPs, together with the comments received will be incorporated into the Scoping and Response Report and will be submitted to the competent authority. Please submit your name, contact information (address, telephone number, email address, postal address) and written comments to the contact person below either via email, fax, telephone or post.

Mr Roberto Almeida

11 Starkey Street, Richmond Hill, Port Elizabeth, 6051
 Tel: +27 41 885 1715
 Fax: +27 41 884 8078
 Email: r.almeida@ecamp.co.za or ecamp@ecamp.co.za
 Website: www.ecamp.co.za or www.enh.co.za

I HEREBY WISH TO REGISTER AS AN INTERESTED AND AFFECTED PARTY (RIAP) FOR THE BASIC ASSESSMENT PROCESS

Name: MNR J.H.D. BLOEM (HEMME)
 Postal address: P.O. Box 530 JAN KEMPDORP
8550
 Email: hemmebloem@vodanet.co.za
 Organisation: PRIVATE LAND OWNER AND FARMER ADJACENT
 Phone: 0829212900
 Cell phone: 0829212900

Please list your initial concerns

- ① INITIAL CONCERN WOULD BE DEVELOPMENT OF INFRASTRUCTURE LIKE SEWAGE FOR SUCH AN DEVELOPMENT IN AN WETLAND AREA.
- ② THE QUALITY OF THE WATER SOURCE FOR HUMAN ENTERTAINMENT
- ③ NOISE POLLUTION AND ACTIVITIES ON WATER SOURCE AND ITS IMPACT ON BIRD AND WILDLIFE IN AN WETLAND RESERVE
- ④ ECONOMIC IMPACT OF FARMLANDS WHICH RELIES ON OVERFLOW WATER THAT IS REGISTERED FOR IRRIGATION, ORIGINATING FROM WATER SOURCE.

I&AP Comment: 6 March 2019:

From: BBotes [<mailto:bbotes@ncpg.gov.za>]
Sent: Wednesday, 06 March 2019 10:21
To: Louise Van Aardt <info@cesnet.co.za>
Cc: TWessels <TWessels@ncpg.gov.za>
Subject: Re: Ganspan Bid and Letter of Notification

Good day,

This office acknowledge receipt of the email.

Kindly note that your mail was forwarded to Mr B Fisher for his attention.

His contact details are

Tel: 053 - 8077432

E-mail; bfisher@ncpg.gov.za <<mailto:bfisher@ncpg.gov.za>>

Regards

Kindly note that it was

Beanca Botes for
MR HM NDZILILI
ACTING HEAD OF DEPARTMENT

Department of Environment and
Nature Conservation
Private Bag X6102
KIMBERLEY
8300
Tel: 053-8077306
Fax: 0866 256 470
Cellphone: 066 305 9024

I&AP Comment: 7 March 2019:

From: Natasha Higgitt [<mailto:nhiggitt@sahra.org.za>]
Sent: Thursday, 07 March 2019 08:07
To: Louise Van Aardt <info@cesnet.co.za>
Subject: RE: Ganspan Bid and Letter of Notification

Good morning,

Please note that all development applications are processed via our online portal, the South African Heritage Resources Information System (SAHRIS) found at the following link: <http://sahra.org.za/sahris/>. We do not accept emailed, posted, hardcopy, faxed, website links or DropBox links as official submissions.

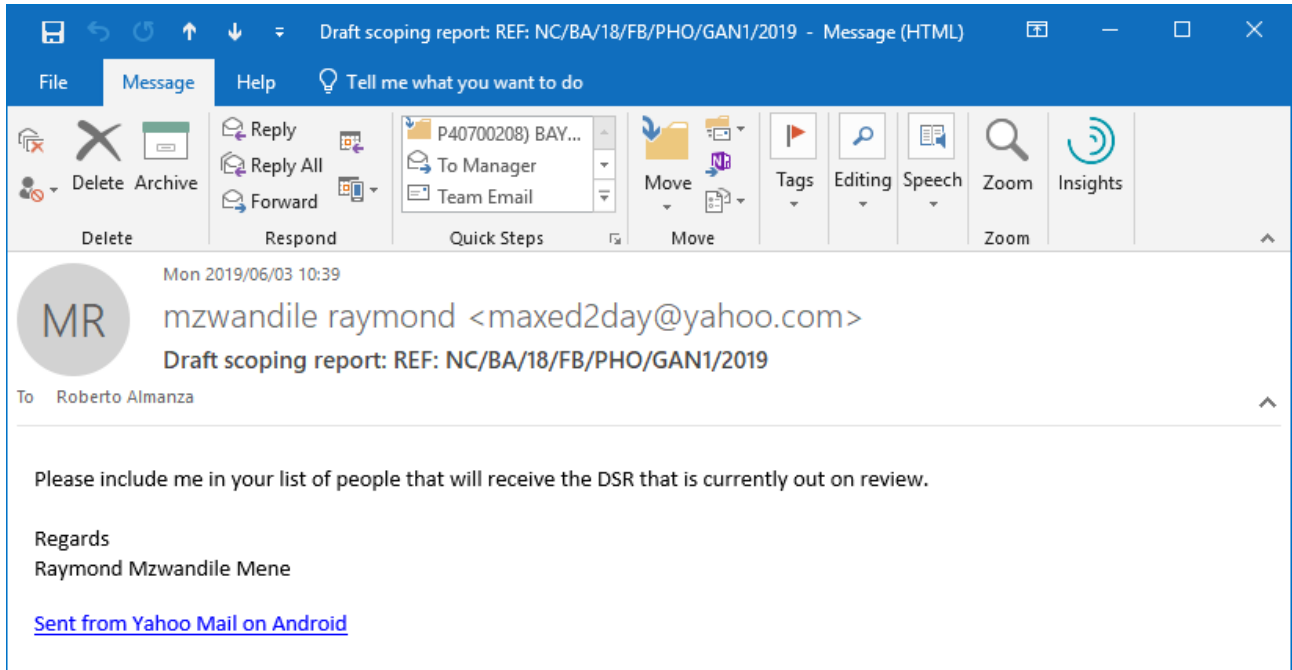
Please create an application on SAHRIS and upload all documents pertaining to the Environmental Authorisation Application Process. As per section 38(8) of the National Heritage Resources Act, Act 25 of 1999 (NHRA), an assessment of heritage resources must form part of the process and the assessment must comply with section 38(3) of the NHRA.

Once all documents including all appendices are uploaded to the case application, please ensure that the status of the case is changed from DRAFT to SUBMITTED. Please ensure that all documents produced as part of the EA process are submitted as part of the application, and are submitted to SAHRA at the beginning of the Public Review periods. Once all these documents have been uploaded, I will be able to issue an informed comment as per section 38(4) and 38(8) of the NHRA.

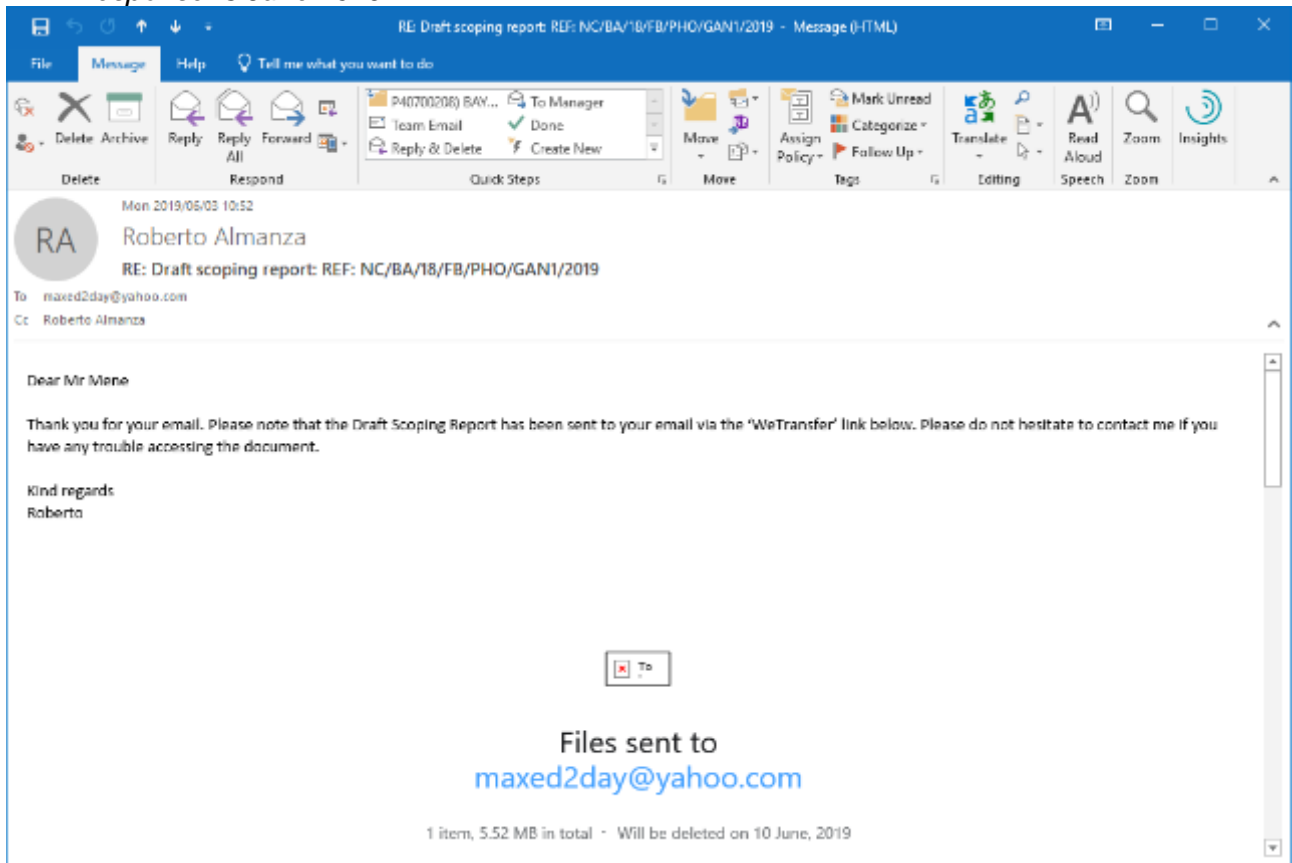
Kind regards,

Proof of Comments Received During the Draft Scoping Report Public Review Period

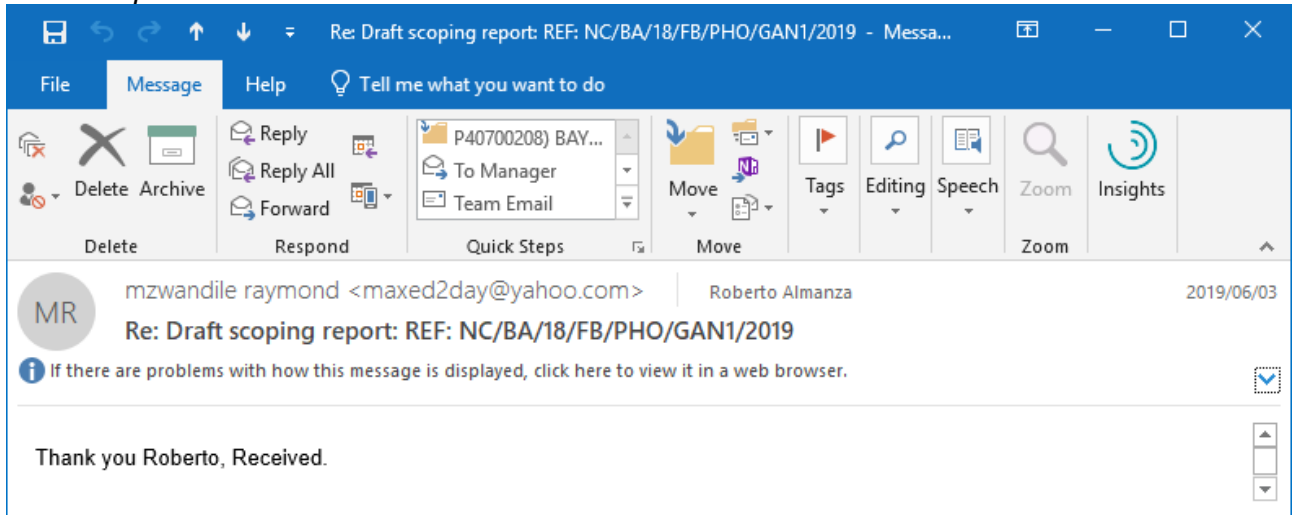
I&AP Comment: 3 June 2019:



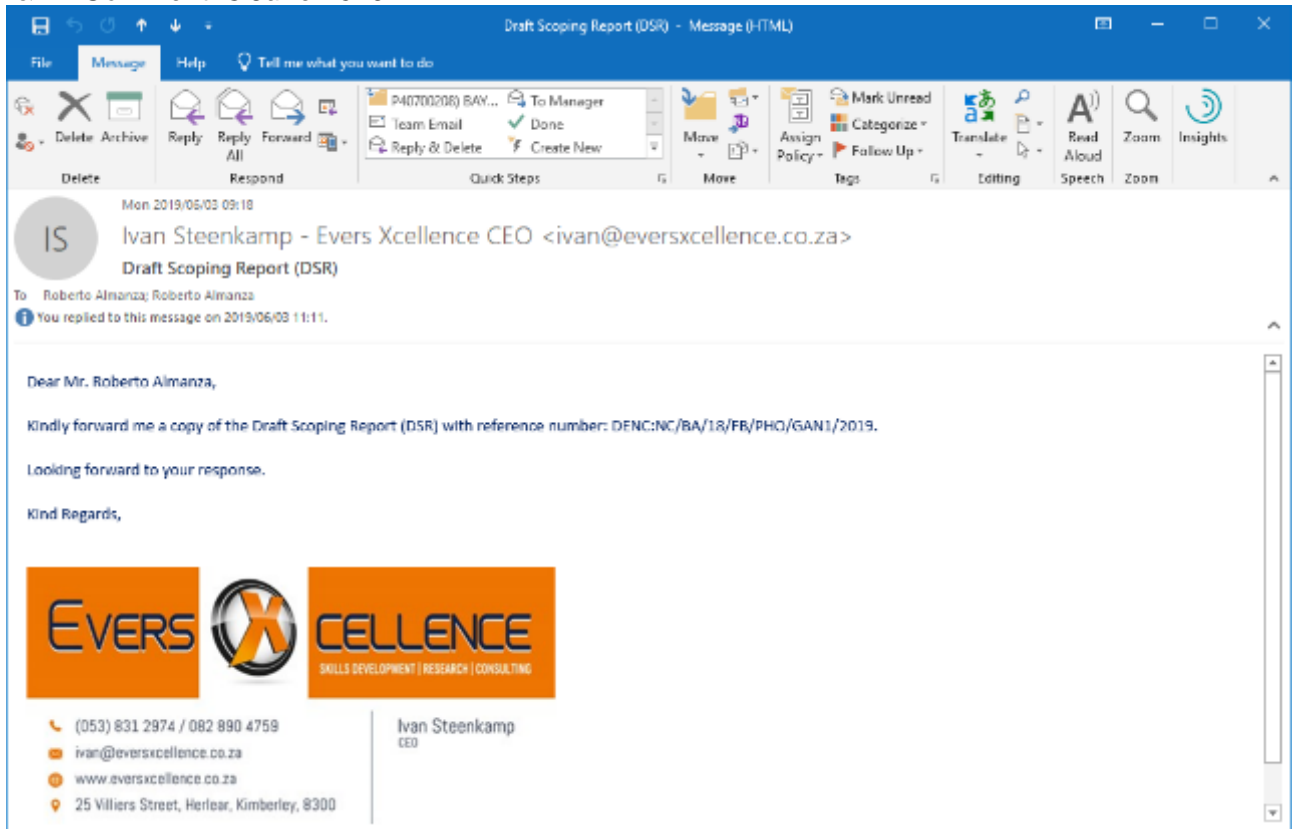
EAP Response: 3 June 2019:



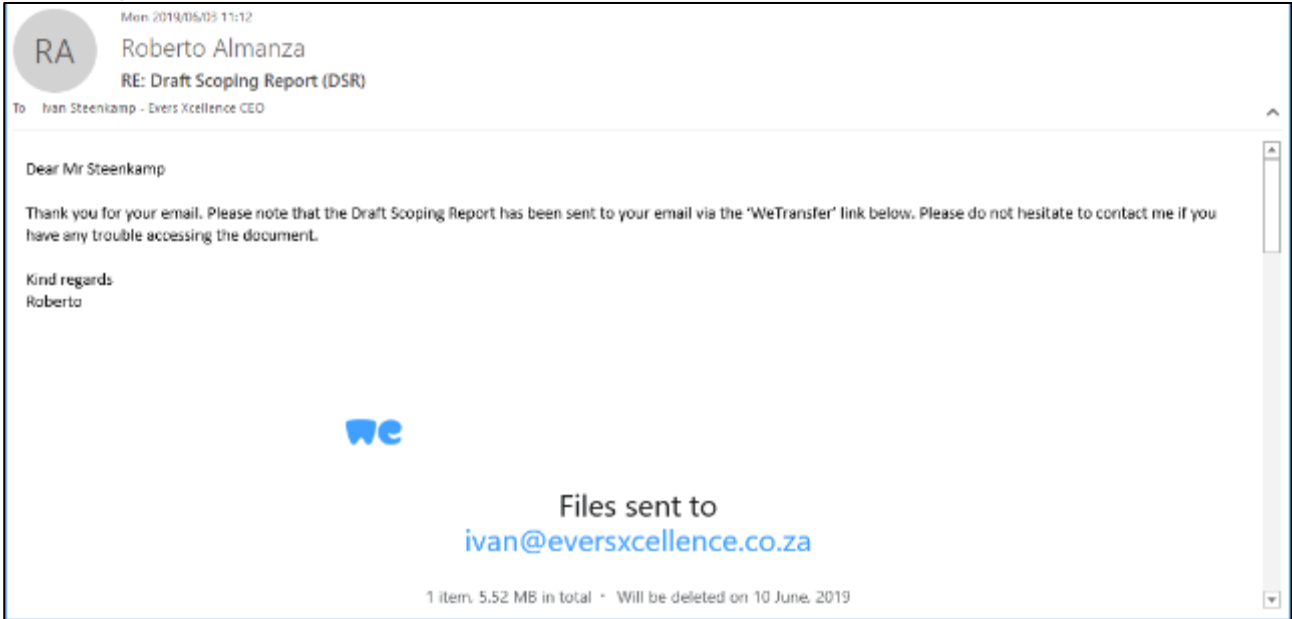
I&AP Response: 3 June 2019:



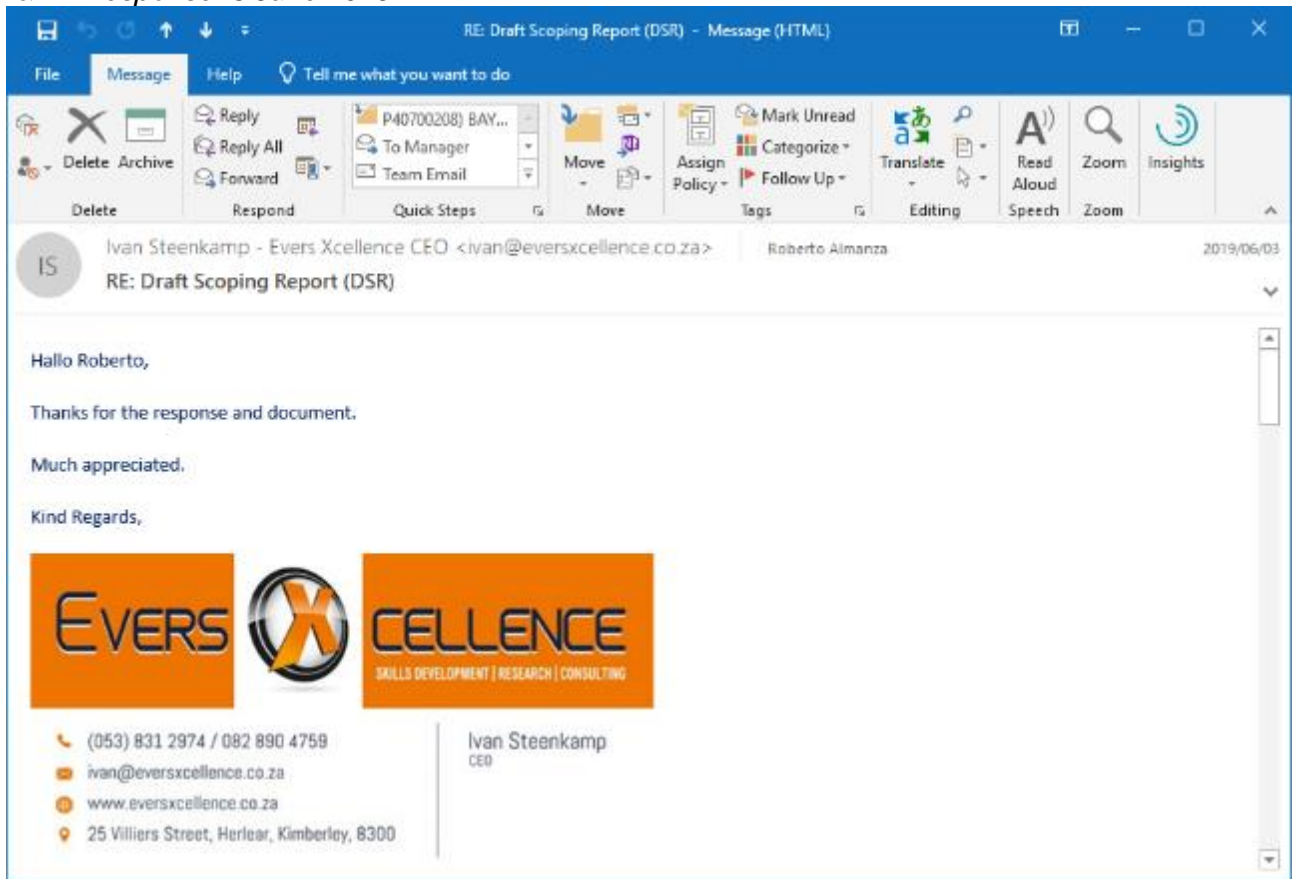
I&AP Comment: 3 June 2019:



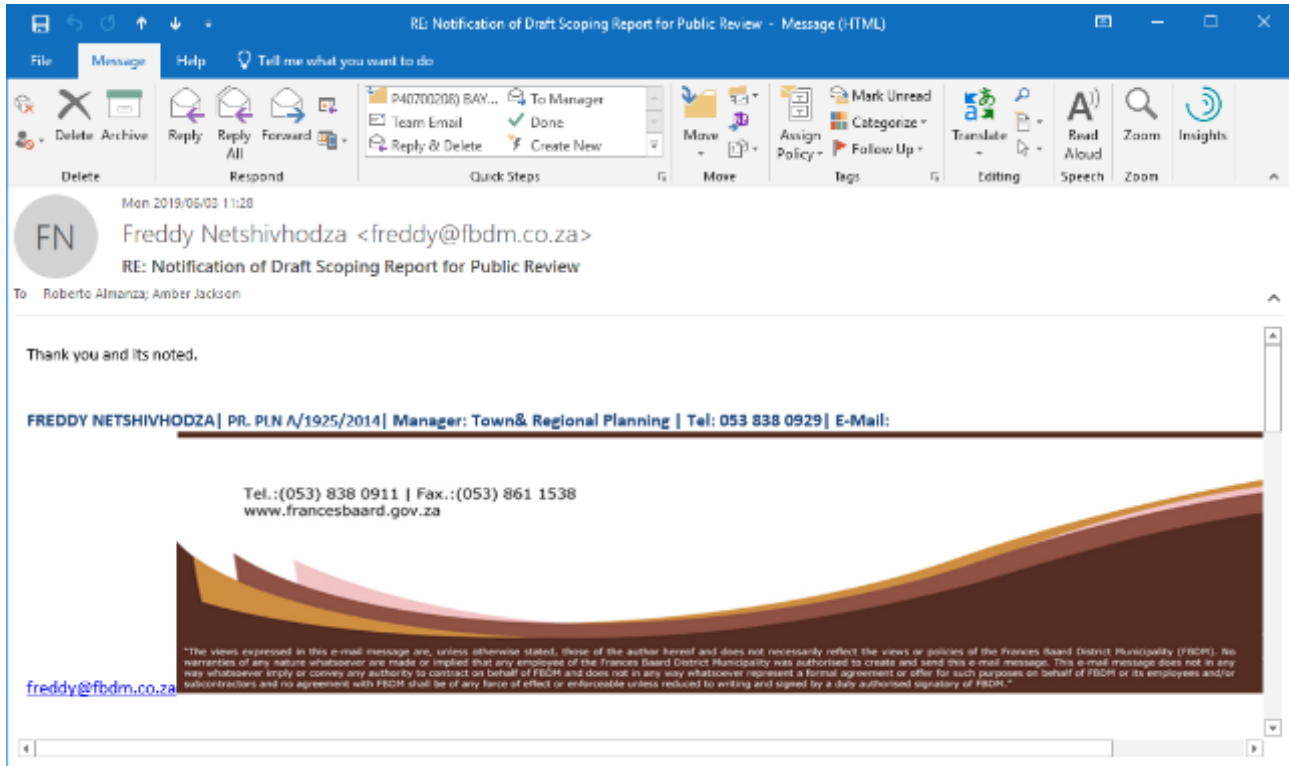
EAP Response: 3 June 2019:



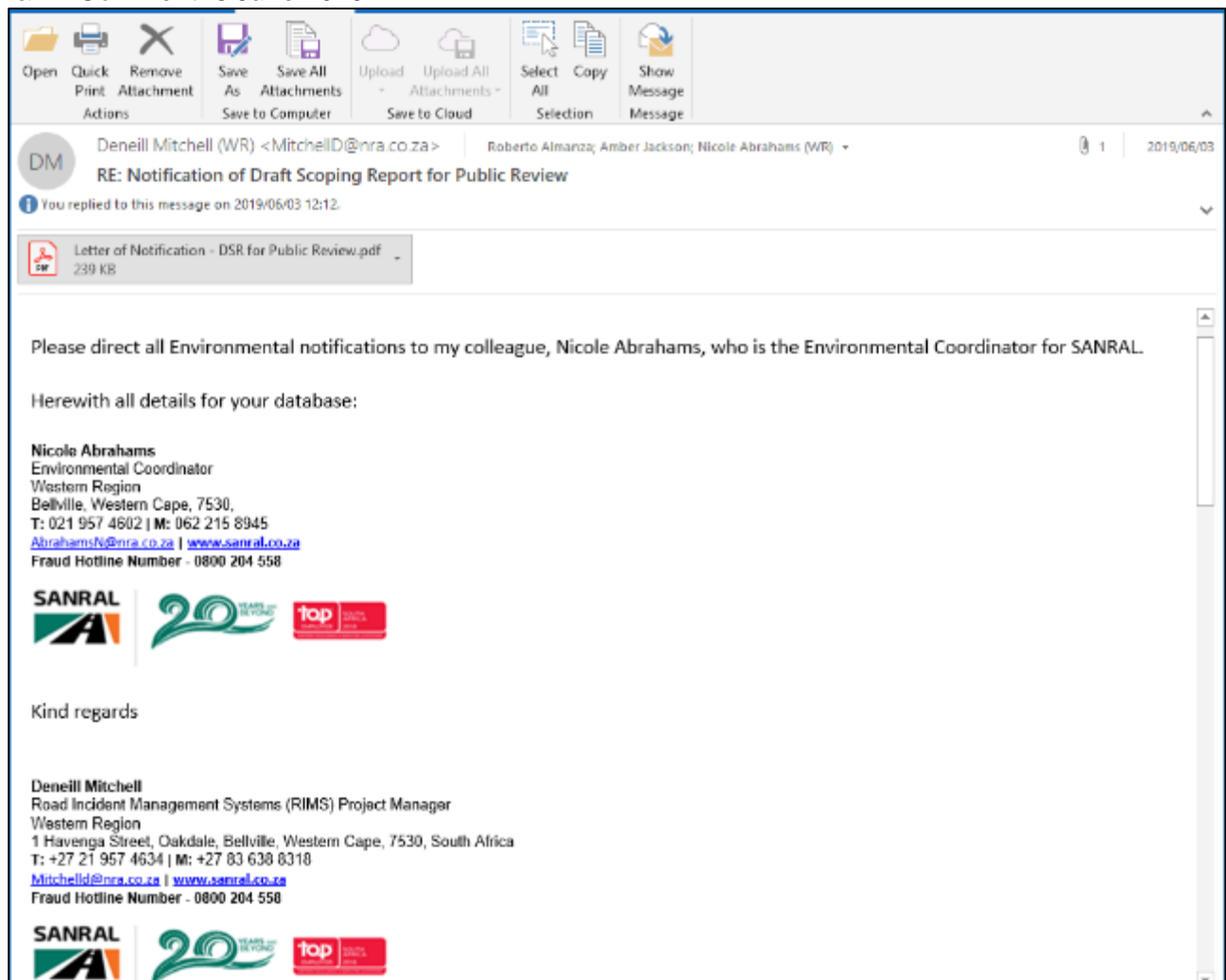
I&AP Response: 3 June 2019:



I&AP Comment: 3 June 2019:



I&AP Comment: 3 June 2019:



EAP Response: 3 June 2019:

RE: Notification of Draft Scoping Report for Public Review - Message (...)

File Message Help Tell me what you want to do

Delete Archive Reply Reply All Forward Move Tags Editing Speech Zoom Insights


RA Roberto Almanza Deneill Mitchell (WR); Nicole Abrahams (WR); Roberto Almanza 2019/06/03

RE: Notification of Draft Scoping Report for Public Review

Dear Deneill

Thank you for the information. I will add Ms Abrahams to the Interested and Affected Parties (I&AP) database.

Kind regards
Roberto

 **Roberto Almanza**
Environmental Consultant
CES - Environmental and Social Advisory Services
36 Pickering Street, Newton Park
Port Elizabeth | Eastern Cape | South Africa
Tel: +27 (41) 393 0700 | Cell: +27 (82) 930 8711
r.almanza@cesnet.co.za | www.cesnet.co.za

I&AP Comment: 14 June 2019:

Re: Notification of Draft Scoping Report for Public Review - Message (HTML)

File Message Help Tell me what you want to do

Delete Archive Reply Reply All Forward Move Assign Policy Categorize Follow Up Translate Read Aloud Zoom Insights

BB Bloem&Seun Boerdery <bloemboer@vodamail.co.za> Roberto Almanza 2019/06/14

Re: Notification of Draft Scoping Report for Public Review

You replied to this message on 2019/06/21 14:35.

To whom it may concern

Regarding the upgrading of recreational and tourist area in the Ganspan-Pan Wetland Reserve (formerly the Ganspan Waterfowl Nature Reserve) situated on Erf 357 of Vaalharts settlement B outside Jan Kempdorp in the FGBDM.

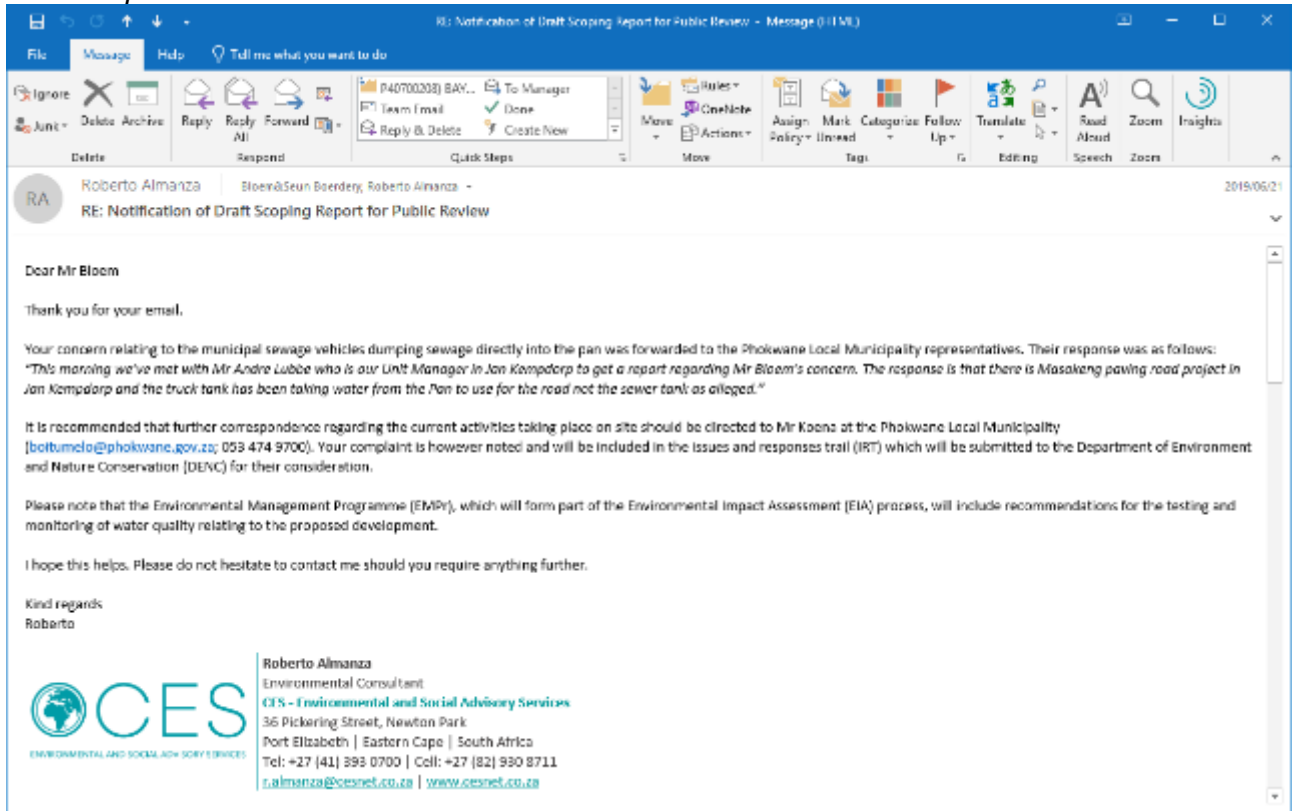
I am a farmer adjacent to above mentioned property which works around the area daily. I have seen and have numerous reports of municipal sewage vehicles dumping sewage directly into the pan. I tried contacting the local municipality numerous times regarding this matter to no avail and would like to present a formal complaint regarding this irresponsible act through this writing, as i can not get contact details of any responsible people to lodge a complaint from the local municipality.

As a concerned citizen, i would like to see any upgrading off infrastructure in our area, but think that the water quality of the above mentioned water source and Nature Reserve is not safe for Any human recreational activities at the moment and would like to see independent water quality tests. Also a responsible contact person from the municipality to report these problems to.

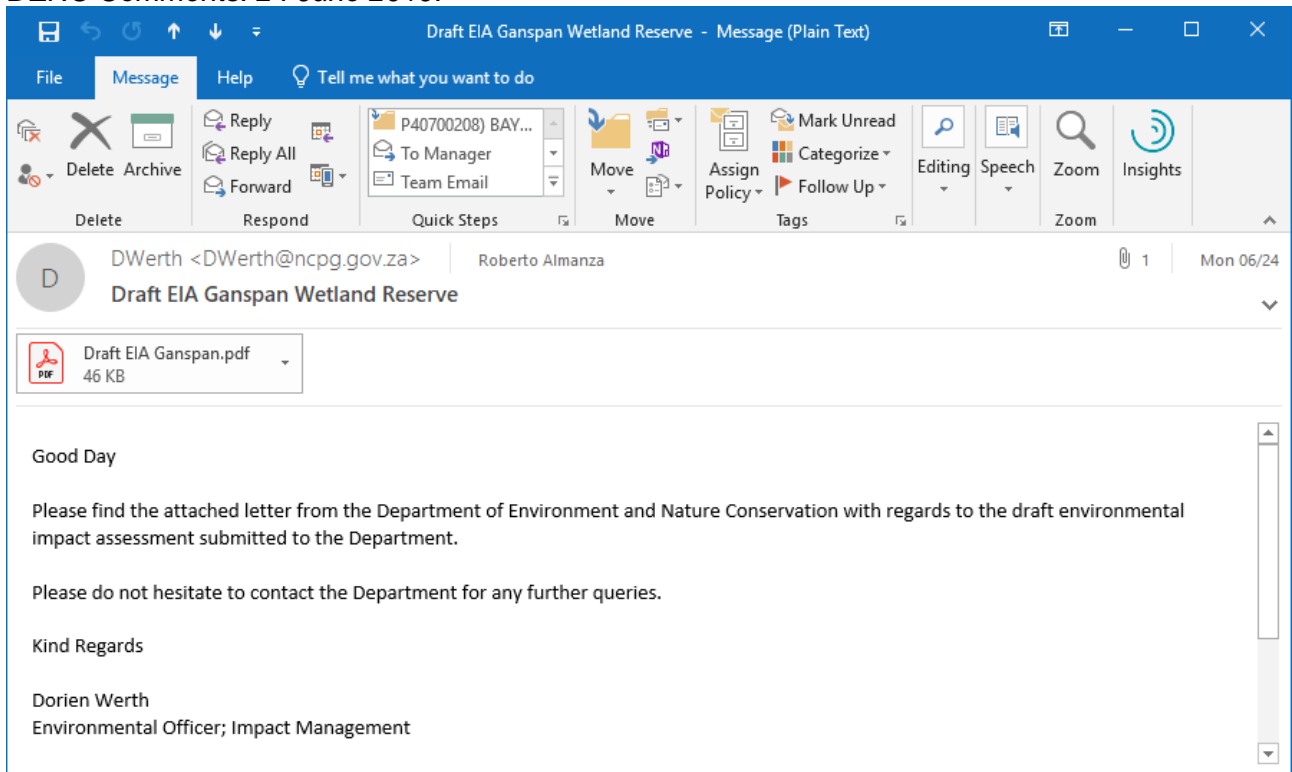
I hope that i can get some feedback on this matter and would like to contribute to make our area better and safer for people to enjoy

Regards
Hennie Bloem
0829212900

EAP Response: 21 June 2019:



DENC Comments: 24 June 2019:



Email Attachment: DENC Comments dated 24 June 2019:



the denc

Department:
Environment & Nature Conservation
NORTHERN CAPE PROVINCE
REPUBLIC OF SOUTH AFRICA

SASKO Building
90 Long Street
Private Bag X6102
Kimberley
8300

Tel. 053-8077300
Fax: 053-8077328

Enquiries : Dorien Werth
Dipatlisiso :
Imibuzo :
Navrae :

Date : 24 June 2019
Leshupelo :
Umhla :
Datum :

Reference :
Tshupelo :
Isialathiso : NC/BA/18/FB/PHO/GAN1/2019
Verwysing :

Att: Mr. Robert Almanza

EOH COASTEL & ENVIRONMENTAL SERVICES

Private Bag X6102

Kimberley

8300

Email: Roberto.almanza@eoh.co.za

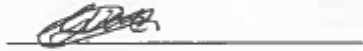
Dear Sir/Madam

APPLICATION FOR ENVIRONMENTAL AUTHORISATION: THE PROPOSED RECREATIONL AND TOURIST DEVELOPMENT, GANS-PAN WETLAND RESERVE, PHOKWANE LOCAL MUNICIPALITY, FRANCES BAARD DISTRICT MUNICIPALITY, NORTHERN CAPE PROVINCE.

The Draft **Scoping Report** which was submitted by you in respect of the above mentioned application and received by the Department on 05 June 2019. The Department: Impact Management Section has reviewed the report and is awaiting the **Final Scoping Report**.

Please draw the applicant attention to the fact that the activity may not commence prior to an environmental authorisation being granted by the Department.

Yours faithfully



Dorien Werth

Environmental Officer: Impact Management

EAP Response: 24 June 2019:

The screenshot shows an Outlook window titled "RE: Draft Scoping Report - Message (Plain Text)". The interface includes a ribbon with "File", "Message", and "Help" tabs. The "Message" ribbon contains various actions like "Delete", "Archive", "Reply", "Reply All", "Forward", "Move", "Assign Policy", "Mark Unread", "Categorize", "Follow Up", "Editing", "Speech", "Zoom", and "Insights".

The email header shows the sender as "Roberto Almanza" (initials RA) and the recipient as "DWerth". The subject is "RE: Draft Scoping Report" and the date is "Mon 06/24". A notification icon indicates that extra line breaks were removed from the message.

The body of the email contains the following text:

Dear Ms Werth

Revised letter received, thank you.

Kind regards
Roberto

Roberto Almanza
Environmental Consultant
CES - Environmental and Social Advisory Services
36 Pickering Street, Newton Park
Port Elizabeth | Eastern Cape | South Africa
Tel: +27 (41) 393 0700 | Cell: +27 (82) 930 8711 r.almanza@cesnet.co.za | www.cesnet.co.za

APPENDIX B – CVS OF THE PROJECT TEAM AND EAP DECLARATION

APPENDIX 10

DECLARATION OF THE EAP

I, Roberto Almanza, declare that –

General declaration:

- I act as the independent environmental practitioner in this application
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting environmental impact assessments, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I will take into account, to the extent possible, the matters listed in regulation 8 of the Regulations when preparing the application and any report relating to the application;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- I will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application;
- I will ensure that the comments of all interested and affected parties are considered and recorded in reports that are submitted to the competent authority in respect of the application, provided that comments that are made by interested and affected parties in respect of a final report that will be submitted to the competent authority may be attached to the report without further amendment to the report;
- I will keep a register of all interested and affected parties that participated in a public participation process; and
- I will provide the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not
- all the particulars furnished by me in this form are true and correct;
- will perform all other obligations as expected from an environmental assessment practitioner in terms of the Regulations; and
- I realise that a false declaration is an offence in terms of regulation 71 of the Regulations and is punishable in terms of section 24F of the Act.

Zas RPA

Disclosure of Vested Interest (delete whichever is not applicable)

- I do not have and will not have any vested interest (either business, financial, personal or other) in the proposed activity proceeding other than remuneration for work performed in terms of the Regulations;
- I have a vested interest in the proposed activity proceeding, such vested interest being:

[Handwritten signature]

Signature of the environmental assessment practitioner:

CES

Name of company:

30 May 2019

Date:

[Handwritten signature]

Signature of the Commissioner of Oaths:

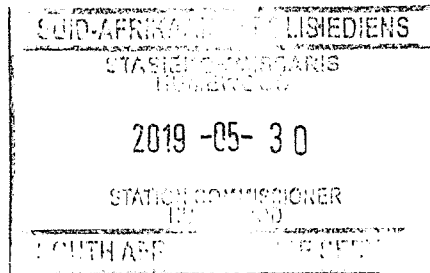
2019-05-30

Date:

[Handwritten signature]

Designation:

Official stamp (below)



CONTACT DETAILS

Name of Company	CES – Environmental and Social Advisory Services
Designation	Cape Town Branch
Profession	Principal Environmental Consultant
Years with firm	7 Years
E-mail	a.jackson@cesnet.co.za
Office number	+27 (0)21 045 0900
Nationality	South African
Professional Body	SACNASP: South African Council for Natural Scientific Profession: Professional Natural Scientist International Association of Impact Assessors South Africa
Key areas of expertise	<ul style="list-style-type: none">➤ Ecological Assessments➤ Faunal Assessments➤ Environmental Impact Assessments

PROFILE

Ms Amber Jackson

Amber is a Principal Environmental Consultant and has been employed with EOH CES for the last 6.5 years. She has an MPhil in Environmental Management and has a background in both Social and Ecological work. Her undergraduate degrees focused on Ecology, Conservation and Environment with particular reference to landscape effects on Herpetofauna, while her masters focused on the environmental management of social and ecological systems. With a dissertation in food security that investigated the complex food system of informal and formal distribution markets. During her time at CES Amber has worked extensively in Mozambique managing a number of Environmental and Social Impact Assessment. Amongst which she has conducted large scale faunal impact assessments in the both South Africa and northern of Mozambique to both national standards and international lenders standards (AfDB, EIB and IFC), alone and assisted by and to Prof Bill Branch. Her interests include, lenders requirements, range limitation, island biogeography, ecology as well as land use and natural resource management.

**EMPLOYMENT
EXPERIENCE**

Environmental Consultant and Faunal Specialist,
EOH Coastal and Environmental Services.

September 2011-Present

- Environmental Impact Assessments and Basic Assessments
- Projects involved in include graphite mines, wind farms, forestry and housing projects both local and international.
- Responsibilities include project management, working with and managing a team, budget control, invoicing, generating and maintaining deliverable timelines and public/client/authority liaison.
- Faunal Assessments for Environmental Impact Assessments and Biodiversity Assessments in Mozambique, Lesotho and South Africa to both local standards and International Finance Corporation (IFC) standards.
- **2011-** Textile warehouse management and administration. Corpikit. Completed administrative functions such as UIF, PAYE, VAT returns, packing and invoicing, cash reconciliation statements, cash flows and stock control.
- **2010-** Environmental Control Officer. Permits. Responsible protection of sensitive environments in and around the Cape Town area during film, advert and photographic sessions.
- **2008-**Volunteere field scientist in the identification of herpetafauna. Worked with the local community to find and identify herpetafauna to improve the communities' understanding, awareness and appreciation of their environment. The results from the sites surveyed from Blyder River Canyon to Kruger Park were used at the International Biodiversity Conference in Bonn, Germany
- **2008-** Kruger National Park (KNP) Field work in the KNP biodiversity survey which was run in December 2007 and January 2008. It involved the installation of traps and sampling of small sized faunal groups (incl. Birds, Amphibians, Reptiles, Rodents and Insects with specific focus on Dung beetles and Ants).
- **2004- 2008** (part time) Zebrabark Textile warehouse management and administration. Completed administrative functions such as UIF, PAYE, and VAT returns.
- **2007-** Creative counsel Sales promotions
- **2005-2006** Research Surveys Public marketing researching
- **University of Cape Town,** Cape Town
M. Phil Environmental Management *2011*
- **University of the Witwatersrand,** Johannesburg

**ACADEMIC
QUALIFICATIONS**

COURSES

BSc (Hons) Ecology, Environment and Conservation 2008

- **University of the Witwatersrand, Johannesburg**
BSc 'Ecology, Environment and Conservation' and Zoology

- **International Finance Corporation Environmental and Social Risk Management (ESRM) Program**
January – September 2018
- **IAIA WC EMP Implementation Workshop**
27 February 2018
- **IAIASa National Annual Conference**
Goudini Spa, Rawsonville.
August 2017
- **Biodiversity & Business Indaba, NBBN**
Theme: Moving Forward Together (Partnerships & Collaborations)
April 2017
- **Snake Awareness, Identification and Handling course, Cape Reptile Institute (CRI)**
November 2016
- **Coaching Skills programme, Kim Coach**
November 2016
- **Western Cape Biodiversity Information Event, IAIASa**
Theme: Biodiversity offsets & the launch of a Biodiversity Information Tool May 2016
- **Mainstreaming Biodiversity into Business: WHAT, WHY, WHEN and HOW** Hosted by Dr Marie Parramon Gurney on behalf of the NBBN at the Rhodes Business School, June 2014
- **IAIASa National Annual Conference** Thaba'Nchu Sun, Bloemfontein
September 2013
- **St Johns Life first aid course**
July 2012

**CONSULTING
EXPERIENCE**

Faunal Impact Assessments

- Suni Resources Balama Graphite Mine Project (ESIA), Mozambique.
- City of Johannesburg Municipal Reserve Proclamation for Linksfield Ridge and Northcliff Hill, South Africa.
- Battery Minerals Montepuez Graphite Mine Project (ESIA), Mozambique.
- Triton Minerals Nicanda Hills Graphite Mine Project (ESIA), Mozambique.
- Sasol Biodiversity Assessment
- Augrabies falls hydro-electric project Hydro-SA (ESIA)
- Lesotho Highlands Water Project (ESIA), Lesotho.
- Lurio Green Resources Forestry Projects (ESIA), Mozambique.
- Malawi Monazite mine Projects (ESIA) EMP ecological management contribution

Post EIA

- Crooks Brothers Post EIA Work- Environmental and Social EMPr, Policies, Management Plans and Monitoring Programmes

Mining

- Triton Ancuabe Graphite Mine (ESHIA), Mozambique.

Coastal Development

- Port St Johns Second Beach Coastal Infrastructure Project (EIA), South Africa.
- PGS Seismic Project (ESIA), Mozambique.
- Woodbridge Island Revetment checklist.

Forestry (Mozambique)

- Lurio Green Resources Forestry Projects, (ESIA Upgrade).
- Niassa Green Resources Forestry Projects (ESIA).
- Green Resources Woodchip and MDF plant (EPDA).

Renewable Energy

- G7 Brandvalley Wind Energy Project (EIA)
- G7 Rietkloof Wind Energy Project (EIA)
- G7 Brandvalley Powerlines (BA)
- G7 Rietkloof Powerlines (BA)
- Boschendal wine estate Hydro-electric schemes (BA, 24G and WULA)
- Mossel Bay Wind Energy Project (EIA)
- Mossel Bay Powerline (BA) 132kV interconnection
- Inyanda Farm Wind Energy (EIA)
- Middleton Wind Energy (EIA)
- Peddie Wind Energy (EIA)
- Cookhouse Wind Energy Project (EIA)
- Haverfontein Wind Energy Project (EIA)
- Plan 8 Wind Energy Project (EIA)
- Brakkefontein Wind Energy Project (EIA)
- Grassridge Wind Energy Project (EIA) (Coega)
- St Lucia Wind Energy Project (EIA)

Estate Projects

- Belmont Valley Golf Course and Makana Residential Estate (EIA)
- Belton Farm Eco Estate (BA).

Palm Oil Projects

- Liberia Palm bay & Butow (ESIA)

Gap Analysis

- Bankable Feasibility Study of Simandou Infrastructure Project – Port and Railway Summary of critical habitat, biodiversity offset plan and monitoring and evaluation plan.

Risk Assessment

- Blouberg Development Initiative- E&S Risk Assessment
- Port St Johns Second Beach Coastal Infrastructure Project.

CERTIFICATION

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes me, my qualifications, and my experience. I understand that any wilful misstatement described herein may lead to my disqualification or dismissal, if engaged.

AMBER JACKSON

Date: January 2019

CONTACT DETAILS

Name of Company	CES – Environmental and Social Advisory Services
Designation	Port Elizabeth Branch
Profession	Environmental Consultant Geoscience and GIS Specialist
Years with firm	4 Years
E-mail	r.almanza@cesnet.co.za
Office number	+27 (0)41 393 0700
Nationality	South African
Professional Body	SACNASP: South African Council for Natural Scientific Profession (Candidate Natural Scientist) IAIA: International Association for Impact Assessment (Registered Member)
Key areas of expertise	<ul style="list-style-type: none">➤ Geological Sciences➤ GIS Mapping➤ Environmental Authorisation Applications➤ Environmental Auditing➤ Water Use Authorisation Applications➤ Waste Studies

PROFILE

Mr Roberto Almanza

Roberto obtained his BSc (Environmental Sciences) from Nelson Mandela Metropolitan University majoring in Geology and Geography and obtained his BSc Honours in Geology in 2012. Roberto then went on to complete his MSc (Geology) while working as a geology consultant on a number of exploration projects across South Africa. Roberto joined CES in 2015 and has been involved in several projects from Basic Assessments to Full Scoping and Environmental Impact Reports. He has also assisted with Environmental Auditing, Site Remediation, Water Use Applications and GIS mapping. Roberto now manages a number of small projects from the CES Port Elizabeth office and is becoming involved in several waste-related studies, including waste assessments for large mining projects, contamination assessment and waste license auditing.

**EMPLOYMENT
EXPERIENCE**

Environmental Consultant, CES

August 2015 - Present

- Basic Assessment Reports
- EIA Applications
- GIS Mapping
- Water Use Authorisation Applications
- Public Participation
- Environmental Auditing
- Waste Studies

Geologist, Mariri Trading

March 2013 – July 2015

- Mineral exploration – limestone and gypsum
- Drilling operations management
- Field reporting

**ACADEMIC
QUALIFICATIONS**

Nelson Mandela University, Port Elizabeth

MSc (Geology)

2017

Nelson Mandela Metropolitan University, Port Elizabeth

BSc Honours (Geology)

2012

Nelson Mandela Metropolitan University, Port Elizabeth

BSc (Environmental Sciences)

2009-2011

COURSES

- Rhodes University, Grahamstown.
“Environmental Impact Assessment Procedures Short Course”. 2016.
- WITS University, Johannesburg.
“Geoskills Geological Career Workshop”. 2013.

CONSULTING EXPERIENCE

Project Management

- General Motors SA Coega IDZ Waste Facility – Project Management and ECO
- Kimberley Gypsum Prospecting – Project Management and Fieldwork Report
- Kouga Local Municipal Library – Project Management, Basic Assessment Report, GIS and PPP
- Fish Water Flats WWTW Upgrades – Project Management and ECO
- Wool Trust Deal Party Soil Contamination – Project Management, Contamination Assessments and Opinion Letters
- Automotive Industry Development Centre (AIDC) Paint Manufacturing Facility – Project Management and Opinion Letter
- Biogas Cogeneration Authorisation Amendment – Project Management and Amendment Application

- Aberdeen Bulk Water Pipeline – Project Management and Environmental Control Officer
- KwaNobuhle ECO – Project Management and Environmental Control Officer
- AC Whitcher Air Emissions License Amendment – Project Management
- SANBI Pretoria National Botanical Gardens Exhibition Centre – Project Management and Basic Assessment process
- Transnet Boshhoek and Heysterkrand Railway Loops – Project Management, Basic Assessment processes and Water Use Authorisation application
- Ganspan, Northern Cape Recreational and Tourism Area Scoping and EIA – Project Management, Scoping and EIA process and PPP
- NMBM Driftsands Sewer Augmentation – Project Management and Environmental Control Officer

Project Management Assistance

- Rushmere Noach Attorneys Environmental Technical Assistance – Project Assistance, Data Compilation, GIS and Report Writing
- Innowind Grassridge Wind Energy Farm Transmission Infrastructure – Project Management, GIS, PPP and Basic Assessment Report
- Nelson Mandela Bay Municipality Fish Water Flats WWTW Biogas Plant – Water Use License Application, Full Scoping and Environmental Impact Report
- General Motors SA Waste Recycling Facility - Basic Assessment, GIS and PPP
- Paterson WWTW Upgrade – Water Use Licence Assistance and ECO
- Prospecting Rights Applications in the North West, Limpopo and Northern Cape provinces – Project Management assistance, GIS and PPP

Basic Assessments Reports

- Slang River Low-Level Crossing Proposed Upgrade – Basic Assessment and Water Use Licence Application
- Wicklow Citrus – Basic Assessment Report
- ACSA Ekurhuleni Metropolitan Municipality Filling Station – Basic Assessment Report
- Senqu Local Municipality Pedestrian Bridges – Basic Assessment Report
- SANBI Pretoria National Botanical Gardens Exhibition Centre - Basic Assessment Report
- Transnet Boshhoek and Heysterkrand Railway Loops - Basic Assessment Report
- Polokwane N1 Ringroad Eskom Line Deviation - Basic Assessment Report

Waste Impact Assessments

- Kenmare, Pilibili Mozambique, Heavy Mineral Sands
- Suni Resources Balama Graphite Mine, Mozambique

Water Use License Applications

- Glen Hurd Drive Proposed Upgrades – Water Use Licence Application
- Graaff-Reinet WWTW – Water Use License Application
- SANRAL R63 Fort Beaufort to Alice – Water Use License
- SANRAL N2 Upgrade Caledon to Riviersondend – Water Use License
- Kap River Low-Level Crossing – Water Use Licence, Public Participation and GIS Mapping
- WBHO N2 Fish River Abstraction – Water Use Licence
- E. Macembe Primary School Extension – Water Use Application
- General Motors VCDC – Online e-WULAAS application assistance

Environmental Auditing

- Gibson Bay Wind Energy Farm – Temporary Onsite Environmental Control Officer
- Khayamandi Extension Construction Site
- Transnet National Ports Authority Vulindlela Site – Site Remediation and Closure Audit
- Transnet National Ports Authority Sand Removal – Site Demarcation and Monitoring
- Capeco Fairview Ascot
- AHS Civils Raymond Mhlaba
- Fishwater Flats Wastewater Treatment Works
- Own Haven Housing, Victoria Drive
- Paterson Wastewater Treatment Plant
- Osho Cement, Port Elizabeth – Water Use Licence Audit
- General Motors (Isuzu) Waste License audits
- MCC Malawi Resettlement Action Plan (RAP) Audit Review Assistance

Geological Specialist Work

- Diamond Drilling Operation – Project Management, Core Logging, Core Recovery Monitoring, Sampling, Rehabilitation – Patensie, Eastern Cape
- RC Drilling Operation – Project Management, Chip Logging, Sampling, Rehabilitation – Patensie, Eastern Cape
- Copper Slimes Ore Determination and Stock-pile Sampling, Rehoboth District, Namibia
- Limestone Ore Reserve Determination, Loerie-Patensie, Eastern Cape
- Gypsum Exploration, Mine Planning and Mine Rehabilitation, Mount Stewart, Eastern Cape
- Volcanic Zeolite Fieldwork, Exploration and Interested and Affected Parties Consultation, Kleinpoort, Eastern Cape
- Limestone Fieldwork, Exploration and Land Owner Consultation, Vanrhynsdorp, Western Cape
- Iron Ore Exploration and Ore Determination, Ottosdal, North West
- Iron Ore and Limestone Fieldwork and Exploration, Brits, Limpopo
- Basic Groundwater Assessment and Consultation, Loerie, Eastern Cape
- Research on Various Commodities in South Africa, Namibia, Mozambique and Congo
- Geological Background Information on Cameroon Geology for JCM Solar Panel Project
- Geological Background Information on Algoa Bay Geology for Bayview Wind Farm Project

Geographical Information Systems (GIS)

- World Titanium Resources, Toliara Mozambique, Heavy Mineral Sands – Mine Infrastructure Mapping
- Zirco Resources Northern Cape Mine – Mine Infrastructure Mapping
- PRDW Port St Johns - Forest Mapping
- Kenmare, Piliwili Mozambique, Heavy Mineral Sands – Mine Infrastructure Mapping
- Chand Masiphumelele Household Survey – Data Analysis
- Western Cape State of the Environment – Coastal Protection Zone and Ecological Mapping
- Coega LNG Development – Infrastructure Mapping
- HJT Mining – Environmental Mapping

Public Participation Process (PPP)

- SANRAL N2 Lizmore to Heidelberg
- SANRAL R56 Matatiele
- Metroplan Social Housing Project, Port Elizabeth
- Walmer Private School, Port Elizabeth
- General Motors VDCDC Markman, Port Elizabeth
- Bayview Wind Energy Farm, NMBM
- Prospecting Application near Thabazimbi

CERTIFICATION

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes me, my qualifications, and my experience. I understand that any wilful misstatement described herein may lead to my disqualification or dismissal, if engaged.



ROBERTO ALMANZA

Date: June 2019

APPENDIX C – ACCEPTANCE OF THE FINAL SCOPING REPORT



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Department:
Environment & Nature Conservation
NORTHERN CAPE PROVINCE
REPUBLIC OF SOUTH AFRICA

SASKO Building
90 Long Street
Private Bag X6102
Kimberley
8300

Tel. 053-8077300
Fax: 053-8077328

Enquiries : Dorien Werth
Dipatlisiso :
Imibuzo :
Navrae :

Date : 29 July 2019
Leshupelo :
Umhla :
Datum :

Reference :
Tshupelo :
Isalathiso : NC/BA/18/FB/PHO/GAN1/2019
Verwysing :

EOH COASTAL & ENVIRONMENTAL SERVICES

Mr. Robert Almanza
Private Bag X6102
Kimberley
8300

Email: Roberto.almanza@eoh.co.za

Dear Sir/Madam

APPLICATION FOR ENVIRONMENTAL AUTHORISATION: THE PROPOSED ESTABLISHMENT OF A RECREATIONAL AND TOURIST DEVELOPMENT, GANS-PAN WETLAND RESERVE, PHOKWANE LOCAL MUNICIPALITY, FRANCES BAARD DISTRICT MUNICIPALITY, NORTHERN CAPE PROVINCE.

The **Final Scoping report** for Environmental Impact Assessment which was submitted by you in respect of the abovementioned application and received by the Department on 09 July 2019 has been accepted by the Department; Impact Management Section. You may accordingly proceed with undertaking the **Environmental Impact Assessment** in accordance with the tasks that are outlined in the plan of study for environmental impact assessment.

Please draw the applicant attention to the fact that the activity may not commence prior to an environmental authorisation being granted by the Department.

Yours faithfully

A handwritten signature in black ink, appearing to read 'Dorien Werth', is written above a horizontal line.

Dorien Werth

Environmental Officer: Impact Management

29/07/2019