


**ENVIRONMENTAL IMPACT ASSESSMENT RENEWAL
FOR THE COMPLETION OF THE TOWN PLANNING
PROCEDURES FOR THE CREATION OF AN ERF FOR A
SERVICE STATION, A RURAL RESIDENTIAL AND
NATURE STATE, BUSINESS ERVEN AND STREET
PORTIONS ON THE REMAINDER OF PORTION 1 OF
FARM GROSS HAIGAMAS NO. 447, KHOMAS REGION**

2025

App - 250425005757

Project Name:	<i>ENVIRONMENTAL IMPACT ASSESSMENT RENEWAL FOR THE COMPLETION OF THE TOWN PLANNING PROCEDURES FOR THE CREATION OF AN ERF FOR A SERVICE STATION, A RURAL RESIDENTIAL AND NATURE STATE, BUSINESS ERVEN AND STREET PORTIONS ON THE REMAINDER OF PORTION 1 OF FARM GROSS HAIGAMAS NO. 447, KHOMAS REGION</i>
The Proponent:	Birdsong Properties (Pty) Ltd P O Box 81026 Olympia Windhoek
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EXECUTIVE SUMMARY

Green Earth Environmental Consultants have been appointed by Birdsong Properties (Pty) Ltd to attend to and complete an Environmental Impact Assessment (EIA) Renewal and Environmental Management Plan (EMP) Renewal in order to obtain an Environmental Clearance Certificate Renewal to finalise the town planning procedures for the creation of an erf for a service station, a rural residential and nature estate, business erven and street portions on the Remainder of Portion 1 of Farm Gross Haigamas No. 447, Khomas Region as per the requirements of the Environmental Management Act (No. 7 of 2007) and the Environmental Impact Assessment Regulations (GN 30 in GG 4878 of 6 February 2012).

The MEFT issued an Environmental Clearance on 9 December 2021 for the activities triggered by the proposed development. The ECC expired on 9 December 2024 and must be renewed. The implementation of the project has been delayed due to the following reasons:

The implementation of the proposed development has been delayed as the construction of the realignment and upgrading of the Rehoboth – Windhoek Trunk Road has not been completed. The proposed development will take access from the new interchange to be constructed off the to be upgraded Windhoek Rehoboth Trunk Road.

The land within the immediate vicinity of the proposed development is predominately characterised by natural open spaces associated with farming, tourism and residential activities. In terms of the Regulations of the Environmental Management Act (No 7 of 2007) an Environmental Impact Assessment Renewal has to be done to address the following ‘Listed Activities’:

ENERGY GENERATION, TRANSMISSION AND STORAGE ACTIVITIES

1. *The construction of facilities for -*
 - (a) *the generation of electricity.*
 - (b) *the transmission and supply of electricity.*

WASTE MANAGEMENT, TREATMENT, HANDLING AND DISPOSAL ACTIVITIES

- 2.1 *The construction of facilities for waste sites, treatment of waste and disposal of waste.*
- 2.2 *Any activity entailing a scheduled process referred to in the Atmospheric Pollution Prevention Ordinance, 1976.*
- 2.3 *The import, processing, use and recycling, temporary storage, transit or export of waste.*

LAND USE AND DEVELOPMENT ACTIVITIES

- 5.1 *The rezoning of land from -*
 - (a) *residential use to industrial or commercial use.*
- 5.2 *The establishment of land resettlement schemes.*

WATER RESOURCE DEVELOPMENTS

8.1 The abstraction of ground or surface water for industrial or commercial purposes.

8.6 Construction of industrial and domestic wastewater treatment plants and related pipeline systems.

HAZARDOUS SUBSTANCE TREATMENT, HANDLING AND STORAGE

9.1 The manufacturing, storage, handling or processing of a hazardous substance defined in the Hazardous Substances Ordinance, 1974.

9.2 Any process or activity which requires a permit, licence or other form of authorisation, or the modification of or changes to existing facilities for any process or activity which requires an amendment of an existing permit, licence or authorisation or which requires a new permit, licence or authorisation in terms of a law governing the generation or release of emissions, pollution, effluent or waste.

INFRASTRUCTURE

10.1 The construction of-

(a) oil, water, gas and petrochemical and other bulk supply pipelines.

(b) public roads.

10.2 The route determination of roads and design of associated physical infrastructure where -

(a) it is a public road.

(b) the road reserve is wider than 30 meters; or

(c) the road caters for more than one lane of traffic in both directions.

The type of activities that will be carried out on the site will not negatively affect the amenity of the locality and the activities will not adversely affect the environmental quality of the area. None of the potential impacts identified are regarded as having a significant impact to the extent that the proposed project should not be allowed. However, the operational activities further on need to be controlled and monitored by the assigned managers and the proponent. Mitigation measures will be provided that can control the extent, intensity, and frequency of these named impacts in order not to have substantial negative effects or results.

It is believed that the overall cumulative impact on the biophysical environment will be low and there will be a significant positive impact on the socio-economic environment.

The Environmental Impact Assessment Renewal which follows upon this paragraph was conducted in accordance with the guidelines and stipulations of the Environmental Management Act (No 7 of 2007) meaning that all possible impacts have been considered and the details are presented in the report.

Based upon the conclusions and recommendations of the Environmental Impact Assessment Report and Environmental Management Plan following this paragraph the Environmental Commissioner of the Ministry of Environment, Forestry and Tourism is herewith requested to:

1. Accept the Environmental Impact Assessment Renewal.
2. Approve the Environmental Management Plan Renewal.
3. Issue an Environmental Clearance Renewal for the town planning procedures for the creation of an erf for a service station, a rural residential and nature estate, business erven and street portions on the Remainder of Portion 1 of Farm Gross Haigamas No. 447, Khomas Region for Birdsong Properties (Pty) Ltd and for the following “listed activities”:

ENERGY GENERATION, TRANSMISSION AND STORAGE ACTIVITIES

1. *The construction of facilities for -*
 - (a) *the generation of electricity.*
 - (b) *the transmission and supply of electricity.*

WASTE MANAGEMENT, TREATMENT, HANDLING AND DISPOSAL ACTIVITIES

- 2.1 *The construction of facilities for waste sites, treatment of waste and disposal of waste.*
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 - (a) *oil, water, gas and petrochemical and other bulk supply pipelines.*
 - (b) *public roads.*
- 10.2 *The route determination of roads and design of associated physical infrastructure where -*

- (a) it is a public road.*
- (b) the road reserve is wider than 30 meters; or*
- (c) the road caters for more than one lane of traffic in both directions.*

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LIST OF ABBREVIATIONS

DCM	Deputy Chief of Mission
EC	Environmental Clearance
ECO	Environment Control Officer
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
I&APs	Interested and Affected Parties
MEFT	Ministry of Environment, Forestry and Tourism
SQM	Square Meters
TIA	Transport Impact Assessment

1. INTRODUCTION

Green Earth Environmental Consultants have been appointed by Birdsong Properties (Pty) Ltd to attend to and complete an Environmental Impact Assessment (EIA) Renewal and Environmental Management Plan (EMP) Renewal in order to obtain an Environmental Clearance Certificate Renewal for the completion of the town planning procedures for the creation of an erf for a service station, a rural residential and nature estate, business erven and street portions on the Remainder of Portion 1 of Farm Gross Haigamas No. 447, Khomas Region as per the requirements of the Environmental Management Act (No. 7 of 2007) and the Environmental Impact Assessment Regulations (GN 30 in GG 4878 of 6 February 2012).

The project site is surrounded by predominately open areas with farming, tourism and residential related activities with associated infrastructure.

The MEFT issued an Environmental Clearance on 9 December 2021 for the activities triggered by the proposed development. The ECC expired on 9 December 2024 and must be renewed. See a copy of the ECC below:



REPUBLIC OF NAMIBIA
MINISTRY OF ENVIRONMENT, FORESTRY AND TOURISM

OFFICE OF THE ENVIRONMENTAL COMMISSIONER

ENVIRONMENTAL CLEARANCE CERTIFICATE

ISSUED

In accordance with Section 37(2) of the Environmental
Management Act (Act No. 7 of 2007)

TO

Birdsong Properties (Pty) Ltd.
P. O. Box 2401, Windhoek.

TO UNDERTAKE THE FOLLOWING LISTED ACTIVITY

COMPLETION OF THE TOWN PLANNING PROCEDURES FOR THE
CREATION OF AN ERF FOR A SERVICE STATION, A RURAL
RESIDENTIAL AND NATURE STATE, BUSINESS ERVEN AND STREET
PORTIONS ON THE REMAINDER OF PORTION 1 OF FARM GROSS
HAIGAMAS NO. 447, KHOMAS REGION.

Issued on the date: 2021-12-09

Expires on this date: 2024-12-09

(See conditions printed over leaf)

This certificate is printed without erasures or alterations


14 DEC 2021
ENVIRONMENTAL COMMISSIONER
OFFICE OF THE ENVIRONMENTAL COMMISSIONER



The implementation of the proposed development has been delayed as the construction of the realignment and upgrading of the Rehoboth – Windhoek Trunk Road has not been completed. The proposed development will take access from the new interchange to be constructed off the to be upgraded Windhoek Rehoboth Trunk Road.

The Environmental Management Act (No. 7 of 2007) and the Environmental Impact Assessment Regulations (GN 30 in GG 4878 of 6 February 2012) stipulates that an Environmental Impact Assessment (EIA) report and management plan are required as the following 'Listed Activities' are involved:

ENERGY GENERATION, TRANSMISSION AND STORAGE ACTIVITIES

1. The construction of facilities for -
 - (a) the generation of electricity.
 - (b) the transmission and supply of electricity.

WASTE MANAGEMENT, TREATMENT, HANDLING AND DISPOSAL ACTIVITIES

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 - (a) oil, water, gas and petrochemical and other bulk supply pipelines.
 - (b) public roads.

10.2 The route determination of roads and design of associated physical infrastructure where -

(a) it is a public road.

(b) the road reserve is wider than 30 meters; or

(c) the road caters for more than one lane of traffic in both directions.

The Environmental Impact Assessment below contains information on the proposed project and the surrounding areas, the proposed operations and activities, the applicable legislation to the study conducted, the methodology that was followed, the public consultation that was conducted, and the receiving environment's sensitivity, any potential ecological, environmental and social impacts.

2. TERMS OF REFERENCE

The proponent (Birdsong Properties (Pty) Ltd) intends to apply for an Environmental Clearance Certificate Renewal to finalise the town planning procedures for the creation of an erf for a service station, a rural residential and nature estate, business erven and street portions on the Remainder of Portion 1 of Farm Gross Haigamas No. 447, Khomas Region. To be able to implement the project, an Environmental Impact Assessment Renewal is required. For the Environmental Impact Assessment, Green Earth Environmental Consultants followed the terms of reference as stipulated under the Environmental Management Act.

The aim of the environmental impact assessment was:

- To comply with Namibia's Environmental Management Act (2007) and its regulations (2012).
- To ascertain existing environmental conditions on the site to determine its environmental sensitivity.
- To inform I&APs and relevant authorities of the details of the proposed operations and to provide them with an opportunity to raise issues and concerns.
- To assess the significance of issues and concerns raised.
- To compile a report detailing all identified issues and possible impacts, stipulating the way forward and identify specialist investigations required.
- To outline management guidelines in an Environmental Management Plan (EMP) to minimize and/or mitigate potentially negative impacts.

The tasks that were undertaken for the Environmental Impact Assessment included the evaluation of the following: climate, water (hydrology), vegetation, geology, soils, social, cultural heritage, groundwater, sedimentation, erosion, biodiversity, sense of place, socio-economic environment, health, safety and traffic.

The EIA and EMP from the assessment will be submitted to the Environmental Commissioner for consideration. An Environmental Clearance Renewal will only be obtained (from the DEA) once the EIA and EMP has been examined and approved for the listed activity. The public consultation process as per the guidelines of the Act has been followed.

The methods that were used to assess the environmental issues and alternatives included a desk top study, the collection of data on the project site and area from the proponent and identified stakeholders. Consequences of impacts were determined in five categories: nature of project, expected duration of impact, geographical extent of the event, probability of occurring and the expected intensity.

All other permits, licenses or certificates that are further on required for the operation of the proposed project still need to be applied for by the proponent.

3. BACKGROUND INFORMATION ON PROJECT

3.1.SITE LOCATION AND DESCRIPTION

The Remainder of Portion 1 is located ± 30 km south of Windhoek on the B1 Road, directly northeast of Omeya and is 78,8482ha in extent. Portion 1 is zoned 'rural residential' as per the stipulations of the Aris Town Planning Scheme with an approved consent for a Nature Estate.

The portion is bordered on the western and northern sides by the National B1 Road and on the eastern side by the Remainder of Gocheganas No. 26, while the Remainder of Portion 2 of the Farm Gross Haigamas No. 447 and Farm Kransneus No. 219 is located on the southern boundary of the Portion.

The area south of the access road onto Re/Portion 1 accommodates the Out of Nature Estate development while the area immediately south of the Remainder of Portion 1 (on which this development is proposed) is the Out of Nature Lodge. See below Map showing the locality of the project:

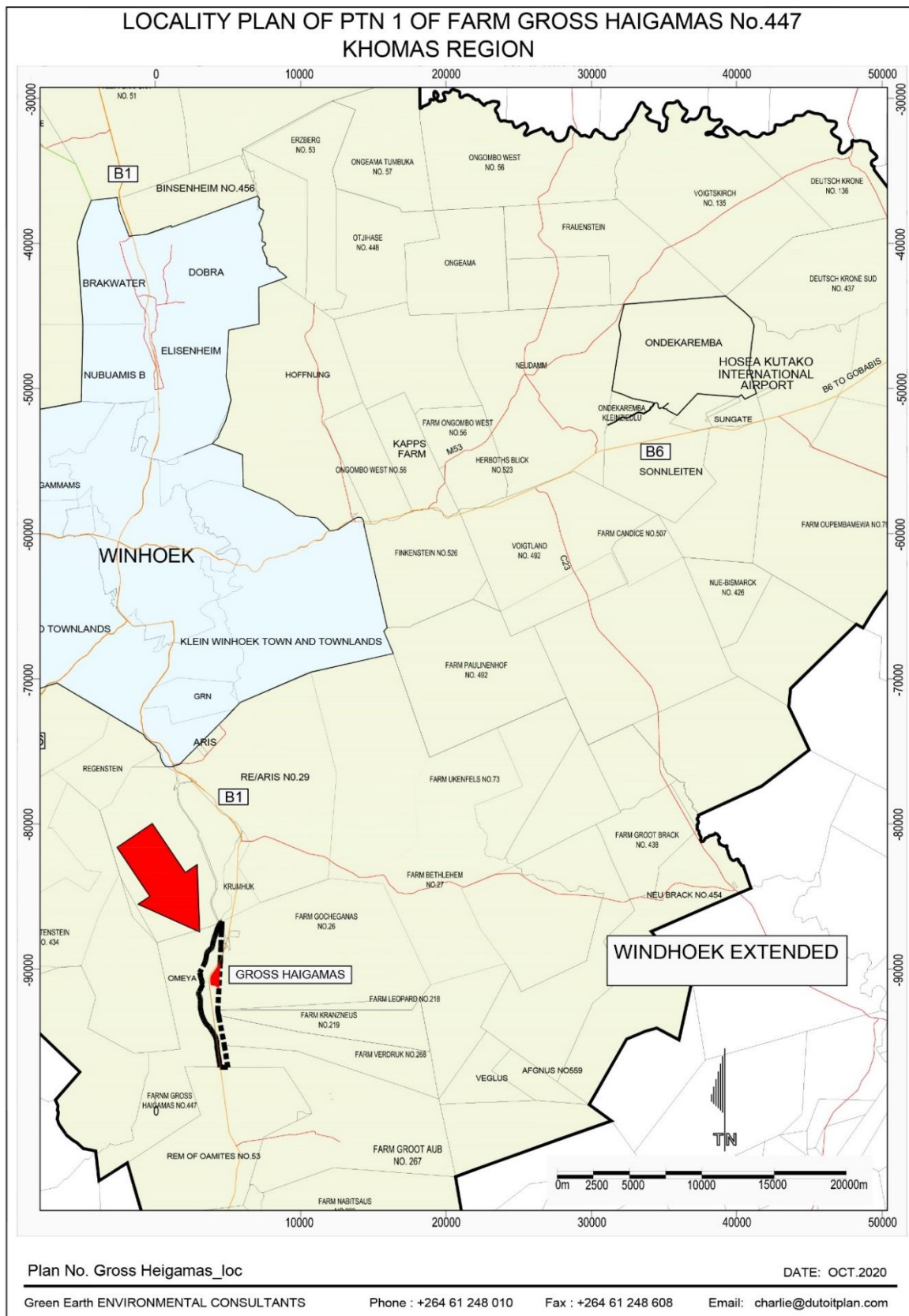


Figure 1: Locality Map

The Remainder of Portion 1 is currently vacant and unutilized. The Portion accommodates various species of wildlife and birds and is entirely enclosed with an electrified wildlife fence.

Other than the existing borehole, no service infrastructure exists on the site and all has to be provided by the developer. More details on infrastructure provision are provided later in the document.

Several subdivisions and township establishments have already taken place along the B1, for example Gocheganas, Regenstein, Auas View and Omeya, where erven/plots were created.

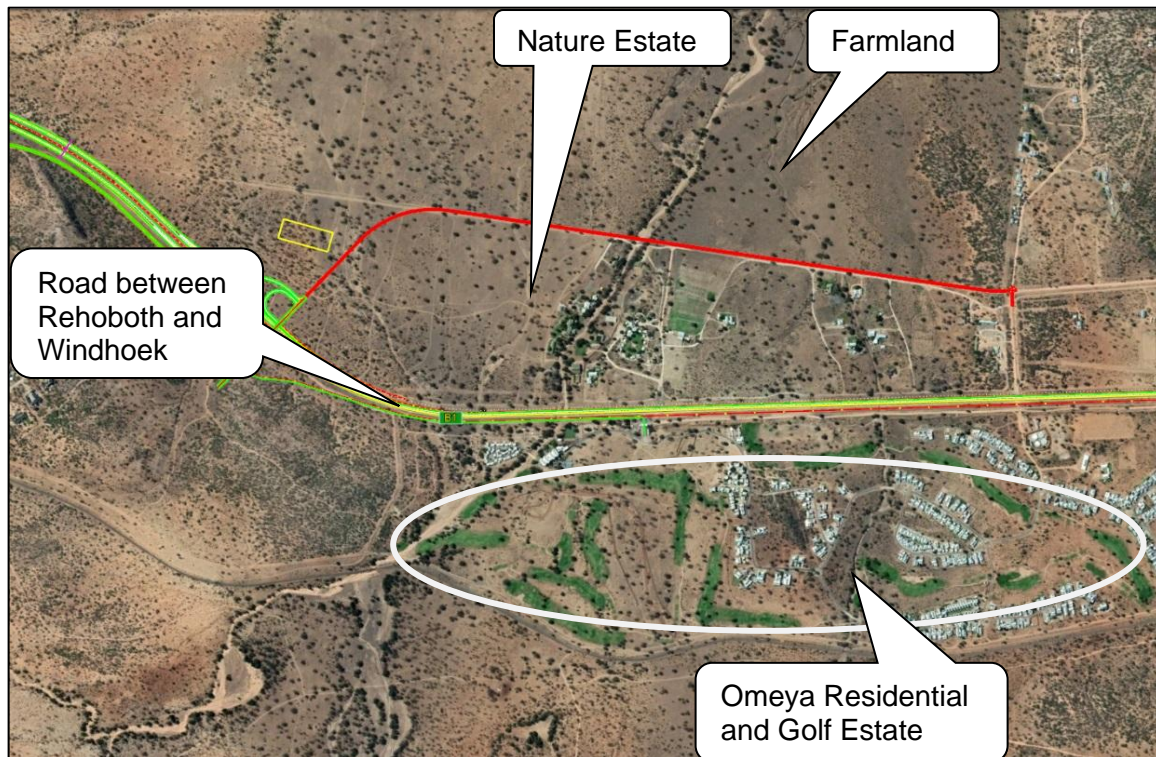


Figure 2: Surrounding uses

The area to the south, including Farm Gross Haigamas, is incorporated into the Municipal area of Windhoek per proclamation 184 in Government Gazette 4801 of 30 September 2011.

Topography and vegetation

The topography of the Farm is characterized by a mixture of low hills and steeper koppies at the far western side where the slope is approximately 10%, as well as flat land with a slope of approximately 2%. Vegetation consists of medium and light grass cover, and average occurrence of bushes, shrubs and trees.

Current Zoning

The Remainder of Portion 1 is situated within the boundaries of the Town Planning Scheme area of Aris Farm. The Remainder of Portion 1 is zoned 'rural residential' with an approved consent for a Nature Estate in terms of the Aris Town Planning scheme.

Access to the Portion is currently obtained from an existing Roads Authority approved access off the National B1 Road and an existing right of way on the southern boundary of the Out of Nature Development represented by Portion 42 (a Portion of Portion 1) of the Farm Gross Haigamas as indicated by Diagram A 575/2007 (ROW). The site is currently accessed from the B1. See *Photo* of current access below:



Figure 3: Current access

4. PROJECT PROPOSAL

Willem Schutz Town and Regional Planning Consultant (WSTRPC) was appointed by the Proponent as the Town Planner on the project. According to WSTRPC, the Portion was originally intended to be subdivided in several low-density residential plots and preliminary approval was granted by the City of Windhoek in 2019. However, the re-alignment of the B1 Trunk Road onto the Remainder of Portion 1 has a major impact on the original subdivision plan and require that the subdivision and land use plan had to be amended.

As part of the realignment of the road, a new interchange is intended off the, to be upgraded, Windhoek Rehoboth Trunk Road. The planned road and intersection will encroach onto the northwestern portion of Re/Portion 1 of the Farm Gross Haigamas No. 447. See below the drawing of the proposed intersection received from Roads Authority (RA):

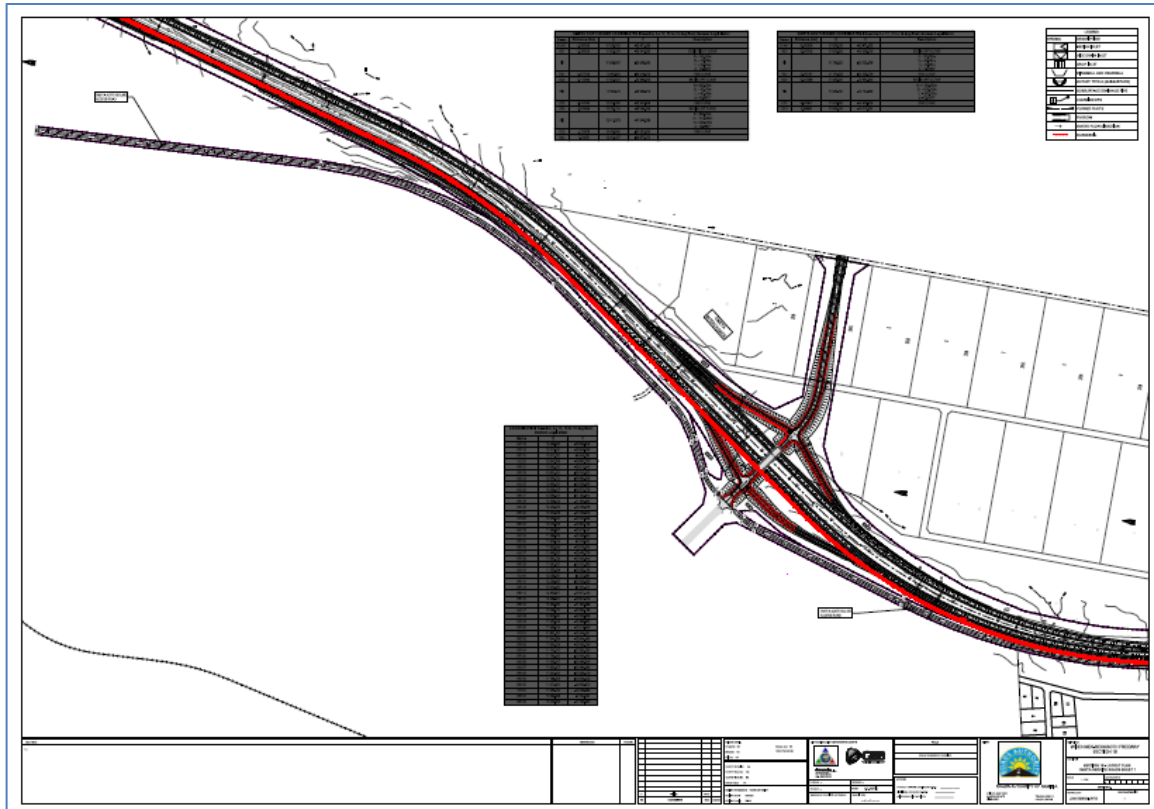


Figure 4: Realignment and Intersection Plan

According to the RA, the realignment of the road and proposed new intersection is in the process of being proclaimed. Proclamation is expected within the next 4 - 6 months. RA could however not provide a timeline for the proposed construction of the new road and intersection.

The residential developments of Out of Nature, Omeya, Auas View and others will in future, once the intersection and the new road is constructed, access the Trunk Road from this intersection.

Due to the realignment of the road and its impact on the site, it is now the intention to create a small business center including a service station that will serve the surrounding area and developments of Omeya, Out of Nature and several residential developments further to the south while the approved nature estate consent will be accommodated on the southern part of the Remainder.

The re-alignment of the B1 will thus encroach onto the portion and will be accommodated as a street portion. The proposal is therefore to subdivide the Remainder of Portion 1 into 5 Portions and the Remainder and to rezone the proposed Portions as follows:

Portion 1 - Remains Rural Residential

Portion 2 - Service Station

Portion 3 - Business

Portion 4 - Business

Portion 5 - Remains Nature Estate as per current approved consent use

The Remainder - To be reserved as street as it accommodates the re-alignment and slip lanes of the B1 Road as stated.

The locality of the intersection and how it encroaches onto the Remainder of Portion 1 of Farm Gross Haigamas No. 447 is shown on the Photo/Plan below:

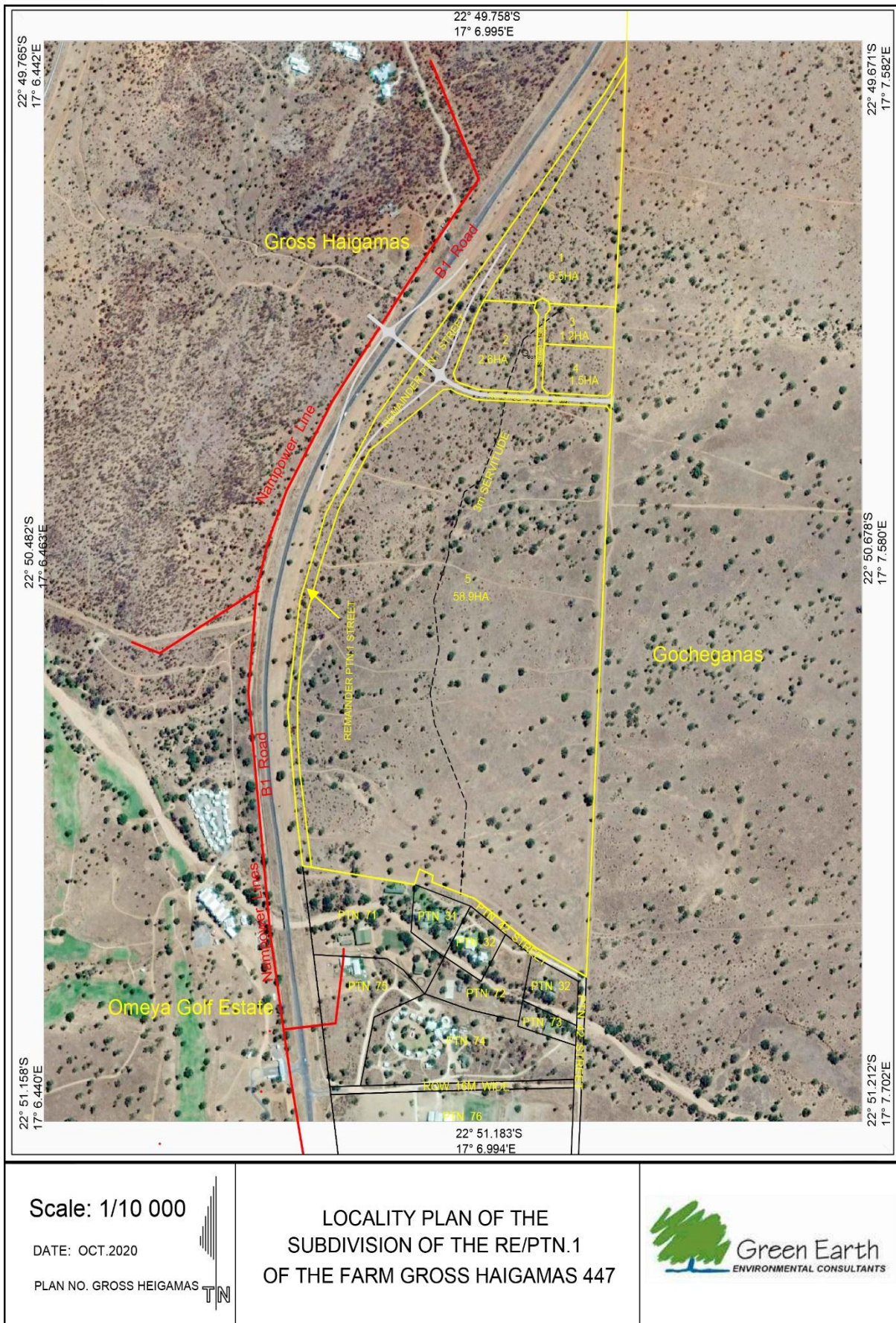


Figure 5: Photo/Plan showing the new road and intersection

According to WSTRPC, it is the intension to subdivide Re/Portion1 to create land portions for a rural residential development and nature estate, a service station, two portions for business use and streets to be used to access the newly created portions. The proposed subdivision is summarized in the *Table* below:

Table 1: Portion Information

Portion Number	Land Use	Hectare
1	Rural Residential Estate	6.5
2	Service Station	2.6
3	Business	1.2
4	Business	1.5
5	Rural Residential with consent for Nature Estate	58.9
Remainder	Street	8.1
Total Area		78.8

The proposed subdivision Plan is shown below:

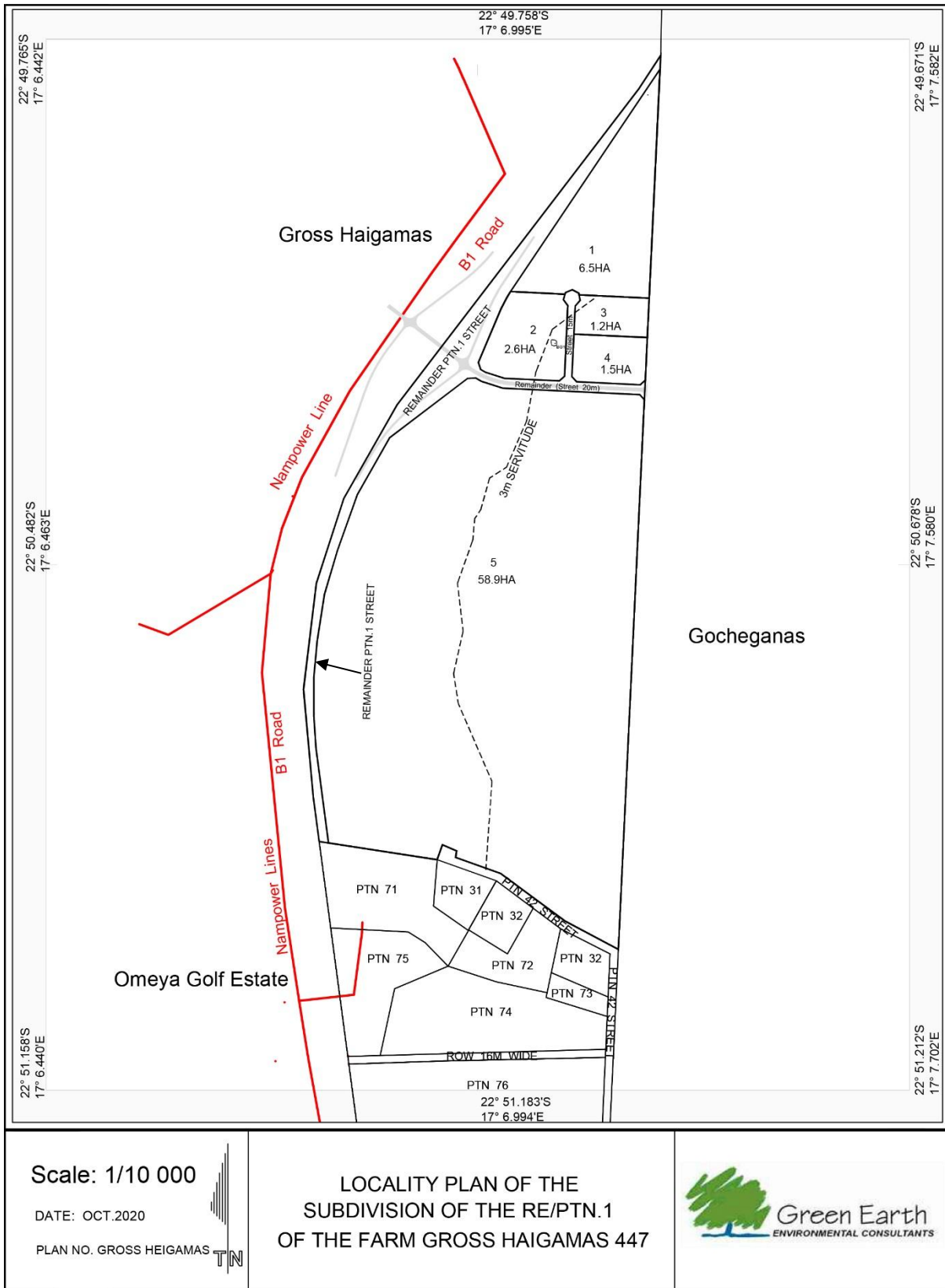


Figure 4: The proposed subdivision plan

An internal road to be created in the subdivision of the Portion will link up with the proposed intersection to be created. WSTRPC confirmed that an application was submitted to RA for an access to the proposed development to the existing Trunk Road until the new intersection is constructed. This access will intersect with the Trunk Road at the proposed locality of the new intersection.

WSTRPC submitted an application to COW for the subdivision of Re/Portion1 to create land portions for a rural residential development and nature estate, a service station, two portions for business use and streets to be used to access the newly created portions. This application is currently being considered by City of Windhoek. Once recommended by City of Windhoek, application will be submitted to the Urban and Regional Planning Board for final approval. The Urban and Regional Planning Board consideration and approval of the proposed subdivision and land use is subject to obtaining an Environmental Clearance Certificate for the proposed project.

5. BULK SERVICES AND INFRASTRUCTURE

The availability of bulk/municipal services to the Remainder of Portion 1 of Farm Gross Haigamas No. 447 is discussed in the paragraphs below. Please note that except for an existing borehole located on the site, no other service infrastructure exists on the site. The bulk/municipal services required to support the proposed land uses must be created by the Proponent/Developer.

5.1.ACCESS AND INTERNAL ROADS

Re/Portion 1 is currently accessed via the existing access point serving the Out of Nature Estate. See photo below for the current intersection with the Trunk Road. Re/Portion 1 is linked via Right of Way (ROW) Servitude and internal streets with this access. Until the newly created interchange from the B1 is Proclaimed and/or approval is granted by RA for the access from the Trunk Road, access to proposed Portions 1 to 4 will be taken from a ROW Servitude which will be registered parallel with the eastern boundary of proposed Portion 5. It is projected that the interchange will be Proclaimed before the final approval of the proposed subdivision of Re/Portion 1.



Figure 6: Existing Turn-off from B1 Road to Out of Nature Estate

The interchange off the B1 road will ultimately give access to all the created portions and the Remainder via a 20-meter-wide street from the approved access point. Access to the service station and business zoned erven will be provided via a 15-meter-wide street. The proposed 15-meter-wide street will end in a cull de sac providing access to the rural residential erf. The width of the streets and the diameter of the turning circle will be subject to City of Windhoek approval. The road will be shaped in place. Provision will be made for the river crossing and other minor storm water structures as per City of Windhoek Stormwater Management Controls.

5.2.WATER SUPPLY

The Project Site obtains water from a borehole located on the site. The borehole has been tested by Namib Hydrosearch and it was confirmed that it has the capacity to provide in the requirements as demanded by the proposed development on a sustainable level.

5.3.ELECTRICITY RETICULATION

Electricity to each Portion will be obtained from solar systems and where required from the existing NamPower network.

5.4.SEWAGE TREATMENT AND DISPOSAL

It is proposed that a green sewer system be installed to allow the reuse of water. The system to be installed will be subject to the design standards of City of Windhoek and their approval.

5.5.SOLID WASTE DISPOSAL/REFUSE REMOVAL

The solid waste generated on the site will be stored in a proper place, to prevent it from being blown away or accessed by scavengers/animals, to be disposed of at an approved

landfill site. Hazardous Waste which might be generated on the site will be dealt with in accordance with regulations of Windhoek Municipality for hazardous waste.

5.6.FIRE PROTECTION

The Proponent will put in the necessary fire protection infrastructure as per the requirements of Windhoek Municipality.

6. APPROACH TO THE STUDY

The assessment included the following activities:

a) Desktop sensitivity assessment

Literature, legislation and guidance documents related to the natural environment and land use activities available on the site and area in general were reviewed to determine potential environmental issues and concerns.

b) Site assessment (site visit)

A site visit was conducted on 19 November 2020 at 15:00 when the proposed operations and the immediate surrounding area were assessed. Further site visits to investigate the environmental parameters on site to enable further understanding of the potential impacts on site also took place.

c) Public participation

The public were invited to give input, comments and opinions regarding the proposed project. Notices were placed in the local newspapers (New Era and the Republikein/Sun/Allgemeine Zeitung of 1 / 2 October and 8 October 2020) on two consecutive weeks inviting the public to participate and provide comments on the proposed project. The closing date for any questions, comments, inputs or information on the Newspaper Notices was 23 October 2020 and on the Background Information Document it was 6 November 2020. A public meeting was held on 19 November 2020 at the site.

d) Scoping

Based on the desktop study, site visits and public participation, the environmental impacts were determined in five categories: nature of project, expected duration of impact, geographical extent of the event, probability of occurring and the expected intensity. The findings of the scoping have been incorporated in the environmental impact assessment report below.

e) Environmental Management Plan (EMP)

To minimize the impact on the environment, mitigation measures have been identified to be implemented during planning, construction and implementation. These measures have

been included in the Environmental Management Plan to guide the planning, construction and operation of the residential development which can also be used by the relevant authorities to ensure that the project is planned, developed and operated with the minimum impact on the environment.

7. ASSUMPTIONS AND LIMITATIONS

It is assumed that the information provided by the proponent (Birdsong Properties (Pty) Ltd), Willem Schutz Town and Regional Planning Consultant, City of Windhoek and other relevant parties are accurate. Alternative sites were not evaluated as the proposed site is the site owned by the proponent. The site was visited several times and any happenings after this are not mentioned in this report. (The assessment was based on the prevailing environmental conditions and not on future happenings on the site.) However, it is assumed that there will be no significant changes to the proposed project, and the environment will not adversely be affected between the compilation of the assessment and the implementation of the proposed activities.

8. ADMINISTRATIVE, LEGAL AND POLICY REQUIREMENTS

To protect the environment and achieve sustainable development, all projects, plans, programs and policies deemed to have adverse impacts on the environment require an EIA according to Namibian legislation. The administrative, legal and policy requirements to be considered during the Environmental Assessment for the proposed development on Farm Gross Haigamas No. 447 are the following:

- The Namibian Constitution
- The Environmental Management Act (No. 7 of 2007) and Regulations (2012)
- Aris Town Planning Scheme
- Other Laws, Acts, Regulations and Policies

THE NAMIBIAN CONSTITUTION

Article 95 of Namibia's constitution provides that: "The State shall actively promote and maintain the welfare of the people by adopting, inter alia, policies aimed at the following: Management of ecosystems, essential ecological processes and biological diversity of Namibia and utilization of living natural resources on a sustainable basis for the benefit of all Namibians, both present and future; in particular, the Government shall ensure that the natural resources and features like rivers, plants, trees as well as water resources are protected and sustained by providing measures against destroying the environment and the natural resources. This article recommends that a relatively high level of environmental protection is called for in respect of activities which might impact on these natural resources. Article 144 of the Namibian Constitution deals with environmental law and it states:

"Unless otherwise provided by this Constitution or Act of Parliament, the general rules of public international agreements binding upon Namibia under this Constitution shall form part of the law of Namibia". This article incorporates international law, if it conforms to the

Constitution, automatically as “law of the land”. These include international agreements, conventions, protocols, covenants, charters, statutes, acts, declarations, concords, exchanges of notes, agreed minutes, memoranda of understanding, and agreements (Ruppel & Ruppel-Schlichting, 2013). It is therefore important that the international agreements and conventions are considered (see section 4.9).

In considering the environmental rights, the proponent, Birdsong Properties (Pty) Ltd, should consider the following in devising an action plan in response to these articles:

- Implement a “zero-harm” policy, which would guide decisions and operations.
- Ensure that no management practice or decision result in the degradation of future natural resources.
- Take a decision on how this part of the Constitution will be implemented as part of the Environmental Control System (ECS).

ENVIRONMENTAL MANAGEMENT ACT (NO. 7 OF 2007) AND REGULATIONS (2012)

The Environmental Impact Assessment Regulations (GN 30 in GG 4878 of 6 February 2012) of the Environmental Management Act (No. 7 of 2007) that came into effect in 2012 requires/recommends that an Environmental Impact Assessment and an Environmental Management Plan (EMP) be conducted for the following listed activities to obtain an Environmental Clearance Certificate:

ENERGY GENERATION, TRANSMISSION AND STORAGE ACTIVITIES

- 1. The construction of facilities for -*
 - (a) the generation of electricity.*
 - (b) the transmission and supply of electricity.*

WASTE MANAGEMENT, TREATMENT, HANDLING AND DISPOSAL ACTIVITIES

- 2.1 The construction of facilities for waste sites, treatment of waste and disposal of waste.*
- 2.2 Any activity entailing a scheduled process referred to in the Atmospheric Pollution Prevention Ordinance, 1976.*
- 2.3 The import, processing, use and recycling, temporary storage, transit or export of waste.*

LAND USE AND DEVELOPMENT ACTIVITIES

- 5.1 The rezoning of land from -*
 - (a) residential use to industrial or commercial use.*
- 5.2 The establishment of land resettlement schemes.*

WATER RESOURCE DEVELOPMENTS

- 8.1 The abstraction of ground or surface water for industrial or commercial purposes.*
- 8.6 Construction of industrial and domestic wastewater treatment plants and related pipeline systems.*

HAZARDOUS SUBSTANCE TREATMENT, HANDLING AND STORAGE

9.1 The manufacturing, storage, handling or processing of a hazardous substance defined in the Hazardous Substances Ordinance, 1974.

9.2 Any process or activity which requires a permit, licence or other form of authorisation, or the modification of or changes to existing facilities for any process or activity which requires an amendment of an existing permit, licence or authorisation or which requires a new permit, licence or authorisation in terms of a law governing the generation or release of emissions, pollution, effluent or waste.

INFRASTRUCTURE

10.1 The construction of-

(a) oil, water, gas and petrochemical and other bulk supply pipelines.

(b) public roads.

10.2 The route determination of roads and design of associated physical infrastructure where -

(a) it is a public road.

(b) the road reserve is wider than 30 meters; or

(c) the road caters for more than one lane of traffic in both directions.

Cumulative impacts associated with the project must be included as well as public consultation. The Act further requires all major industries and developers to prepare waste management plans and present these to the local authorities for approval.

The Act, Regulations, Procedures and Guidelines have integrated the following sustainability principles. These need to be given due consideration, particularly to achieve proper waste management and pollution control:

Cradle to Grave Responsibility

This principle provides that those who handle or manufacture potentially harmful products must be liable for their safe production, use and disposal and that those who initiate potentially polluting activities must be liable for their commissioning, operation and decommissioning.

Precautionary Principle

It provides that if there is any doubt about the effects of a potentially polluting activity, a cautious approach must be adopted.

The Polluter Pays Principle

A person who generates waste or causes pollution must, in theory, pay the full costs of its treatment or of the harm, which it causes to the environment.

Public Participation and Access to Information

In the context of environmental management, citizens must have access to information and the right to participate in decisions making.

CONCLUSION AND IMPACT

The proposed development that will be constructed on the Remainder of Portion 1 of Farm Gross Haigamas No. 447 has been assessed in terms of the Environmental Management Act (No. 7 of 2007) and the Regulations (2012). From the assessment, it can be concluded that the activities will have impacts on the prevailing environment but that the negative impacts can be sufficiently mitigated and managed by following the Environmental Management Plan which is part of this document.

ARIS TOWN PLANNING SCHEME

The Aris Town Planning Amendment Scheme (15 February 2007) applies to the area as indicated on the scheme maps. The Remainder of Portion 1 of Farm Gross Haigamas No. 447 falls within the area of the Scheme.

The general purpose of this Scheme is the coordinated and harmonious development of the area of Aris (including, where necessary, the reconstruction and redevelopment of any part which has already been subdivided whether there are buildings on it or not) in such a way as will most effectively tend to promote health, safety, order, amenity, convenience and general welfare as well as efficiency and economy in the process of development and improvement of communications, and where it is expedient in order to promote proper planning or development, may provide for the suspending of the operation of any provision of law or any bylaw or regulation made under such law, in so far as such provision is similar to or inconsistent with any of the provisions to the Scheme.

CONCLUSION AND IMPACT

The proposed development is in line with the stipulations of the Aris Town Planning Scheme and can thus be supported. As the area covered by the Aris Town Planning Scheme has been incorporated into the Windhoek Municipal Area, the City is currently overseeing and guiding development in this area. For the project to proceed, approval is required from City of Windhoek and this approval is subject to obtaining the ECC. The City will also, through their department of Building Control, ensure that the infrastructure to be created is designed and constructed in accordance with the City's minimum standards to ensure sustainability.

It is believed that the subdivision and proposed land use will not have a detrimental impact on the environment as the proposed development will fit in with the surrounding uses and complement the existing uses.

OTHER LAWS, ACTS, REGULATIONS AND POLICIES

Table 2: Laws, Acts, Regulations and Policies

Laws, Acts, Regulations & Policies consulted:		
Electricity Act (No. 4 of 2007)	In accordance with the Electricity Act (No. 4 of 2007) which provides for the establishment of the	The Proponent must abide to the Electricity Act.

	Electricity Control Board and provide for its powers and functions; to provide for the requirements and conditions for obtaining licenses for the provision of electricity; to provide for the powers and obligations of licenses; and to provide for incidental matters: the necessary permits and licenses will be obtained.	
Pollution Control and Waste Management Bill (guideline only)	The Pollution Control and Waste Management Bill is currently in preparation and is therefore included as a guideline only. Of reference to the mining, Parts 2, 7 and 8 apply. Part 2 provides that no person shall discharge or cause to be discharged, any pollutant to the air from a process except under and in accordance with the provisions of an air pollution license issued under section 23. Part 2 also further provides for procedures to be followed in license application, fees to be paid and required terms of conditions for air pollution licenses. Part 7 states that any person who sells, stores, transports or uses any hazardous substances or products containing hazardous substances shall notify the competent authority, in accordance with sub-section (2), of the presence and quantity of those substances. The competent authority for the purposes of section 74 shall maintain a register of substances notified in accordance with that section and the register shall be maintained in accordance with the provisions. Part 8 provides for emergency preparedness by the person handling hazardous substances, through emergency response plans.	The Proponent must adhere to the Pollution Control and Waste Management Bill.

Water Resources Management Act	The Water Resources Management Act (No. 11 of 2013) stipulates conditions that ensure effluent that is produced to be of a certain standard. There should also be controls on the disposal of sewage, the purification of effluent, measures should be taken to ensure the prevention of surface and groundwater pollution and water resources should be used in a sustainable manner.	The Act must be consulted. Fresh water abstraction and waste-water discharge permits should be obtained when required.
Solid and Hazardous Waste Management Regulations: Local Authorities 1992	Provides for management and handling of industrial, business and domestic waste.	The Proponent must abide to the solid waste management provisions.
Hazardous Substances Ordinance (No. 14 of 1974)	The Ordinance applies to the manufacture, sale, use, disposal and dumping of hazardous substances, as well as their import and export and is administered by the Minister of Health and Social Welfare. Its primary purpose is to prevent hazardous substances from causing injury, ill-health or the death of human beings.	The Proponent must abide to the Ordinance's provisions.
Atmospheric Pollution Prevention Ordinance of Namibia (No. 11 of 1976)	Part 2 of the Ordinance governs the control of noxious or offensive gases. The Ordinance prohibits anyone from carrying on a scheduled process without a registration certificate in a controlled area. The registration certificate must be issued if it can be demonstrated that the best practical means are being adopted for preventing or reducing the escape into the atmosphere of noxious or offensive gases produced by the scheduled process.	The proponent should adhere to the stipulations of the Atmospheric Pollution Prevention Ordinance.

Nature Conservation Ordinance	The Nature Conservation Ordinance (No. 4 of 1975) covers game parks and nature reserves, the hunting and protection of wild animals, problem animals, fish and indigenous plant species. The Ministry of Environment, Forestry and Tourism (MEFT) administer it and provides for the establishment of the Nature Conservation Board.	The proposed project implementation is not located in a demarcated conservation area, national park or unique environments.
Forestry Act	The Forestry Act (No. 12 of 2001) specifies that there be a general protection of the receiving and surrounding environment. The protection of natural vegetation is of great importance, the Forestry Act especially stipulates that no living tree, bush, shrub or indigenous plants within 100m from any river, stream or watercourse, may be removed without the necessary license.	No removal of protected tree species or removal of mature trees should happen. The Ministry of Environment, Forestry and Tourism should be consulted when required.
EU Timber Regulation: FSC (2013)	Forest Stewardship Council (FSC) came into effect in March 2013, with the aim of preventing sales of illegal timber and timber products in the EU market. Now, any actor who places timber or timber products on the market for the first time must ensure that the timber used has been legally harvested and, where applicable, exported legally from the country of harvest.	The Proponent is advised to adhere to the regulation.
Labour Act	The Labour Act (No. 11 of 2007) contains regulations relating to the Health, Safety and Welfare of employees at work. These regulations are prescribed for among others safety relating to hazardous substances, exposure limits and physical hazards. Regulations relating to the Health and Safety of Employees at Work are promulgated in terms of the Labour Act 6 of 1992 (GN156, GG1617 of 1 August 1997).	The proponent and contractor should adhere to the Labour Act.

Communal Land Rights	Communal land is land that belongs to the State and is held in trust for the benefit of the traditional communities living in those areas. Communal land cannot be bought or sold, but one can be given a customary land right or right of leasehold to a part of communal land in accordance with the provisions of the Communal Land Reform Act (No. 5 of 2002) and Communal Land Reform Amendment Act (No. 13 of 2013) . The Communal Land Reform Act provide for the allocation of rights in respect of communal land to establish Communal Land Boards to provide for the powers of Chiefs and Traditional Authorities and boards in relation to communal land and to make provision for incidental matters. Consent and access to land for the proposed project should be requested from the relevant traditional authority through the Regional Council and Regional Communal Land Boards.	Consent should be obtained from Traditional Authorities, Communal Boards, Chiefs, Kings, Queens etc. if required.
Traditional Authorities Act (No. 17 of 1995)	The Traditional Authorities Act (No. 17 of 1995) provide for the establishment of traditional authorities, the designation and recognition of traditional leaders; to define their functions, duties and powers; and to provide for matters incidental thereto.	Traditional Authorities should be consulted when required.
Public and Environmental Health Act	The Public and Environmental Health Act (No. 1 of 2015) provides with respect to matters of public health in Namibia. The objects of this Act are to: (a) promote public health and wellbeing; (b) prevent injuries, diseases and disabilities; (c) protect individuals and communities from public health risks; (d) encourage community participation in order to create a	The proponent and contractor should adhere to the Public and Environmental Health Act.

	healthy environment; and (e) provide for early detection of diseases and public health risks.	
National Heritage Act (No. 27 of 2004)	All protected heritage resources discovered need to be reported immediately to the National Heritage Council (NHC) and require a permit from the NHC before it may be relocated. This should be applied from the NHC.	The National Heritage Council should be consulted when required.
National Monuments Act of Namibia (No. 28 of 1969) as amended until 1979	No person shall destroy, damage, excavate, alter, remove from its original site or export from Namibia: (a) any meteorite or fossil; or (b) any drawing or painting on stone or a petroglyph known or commonly believed to have been executed by any people who inhabited or visited Namibia before the year 1900 AD; or (c) any implement, ornament or structure known or commonly believed to have been used as a mace, used or erected by people referred to in paragraph; or (d) the anthropological or archaeological contents of graves, caves, rock shelters, middens, shell mounds or other sites used by such people; or (e) any other archaeological or palaeontological finds, material or object; except under the authority of and in accordance with a permit issued under this section.	The proposed site for development is not within any known monument site both movable or immovable as specified in the Act, however in such an instance that any material or sites or archeologic importance are identified, it will be the responsibility of the developer to take the required route and notify the relevant commission.
Public Health Act (No. 36 of 1919)	Under this act, in section 119: "No person shall cause a nuisance or shall suffer to exist on any land or premises owned or occupied by him or of which he is in charge any nuisance or other condition liable to be injurious or dangerous to health."	The proponent will ensure that all legal requirements of the project in relation to protection of the health of their employees and surrounding residents is protected and will be included in the EMP. Relevant protective equipment shall be provided for employees in construction.

		The development shall follow requirements and specifications in relation to water supply and sewerage handling and solid waste management so as not to threaten public health of future residents on this piece of land.
Soil Conservation Act (No. 76 of 1969)	The objectives of this Act are to: Make provisions for the combating and prevention of soil erosion; Promote the conservation, protection and improvement of the soil, vegetation, sources and resources of the Republic;	Only the area required for the operations should be cleared from vegetation to ensure the minimum impact on the soil through clearance for construction.
Air Quality Act (No. 39 of 2004)	The Air Quality Act (No. 39 of 2004) intends 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 proponent and contractor should adhere to the Air Quality Act.
Vision 2030 and National Development Plans	Namibia's overall development ambitions are articulated in the Nation's Vision 2030. At the operational level, five-yearly national development plans (NDP's) are prepared in extensive consultations led by the National Planning Commission in the Office of the President. Currently the Government has so far launched a 4th NDP which pursues three overarching goals for the Namibian nation: high and sustained economic growth; increased income equality; and employment creation.	The proposed project is an important element in employment creation.

CONCLUSION AND IMPACT

Green Earth Environmental Consultants believe the above administrative, legal and policy requirements which specifically guides and governs the development at the proposed project site will be followed and complied with in the assessment of the activity.

A flowchart indicating the entire EIA process is shown in the *Figure* below.

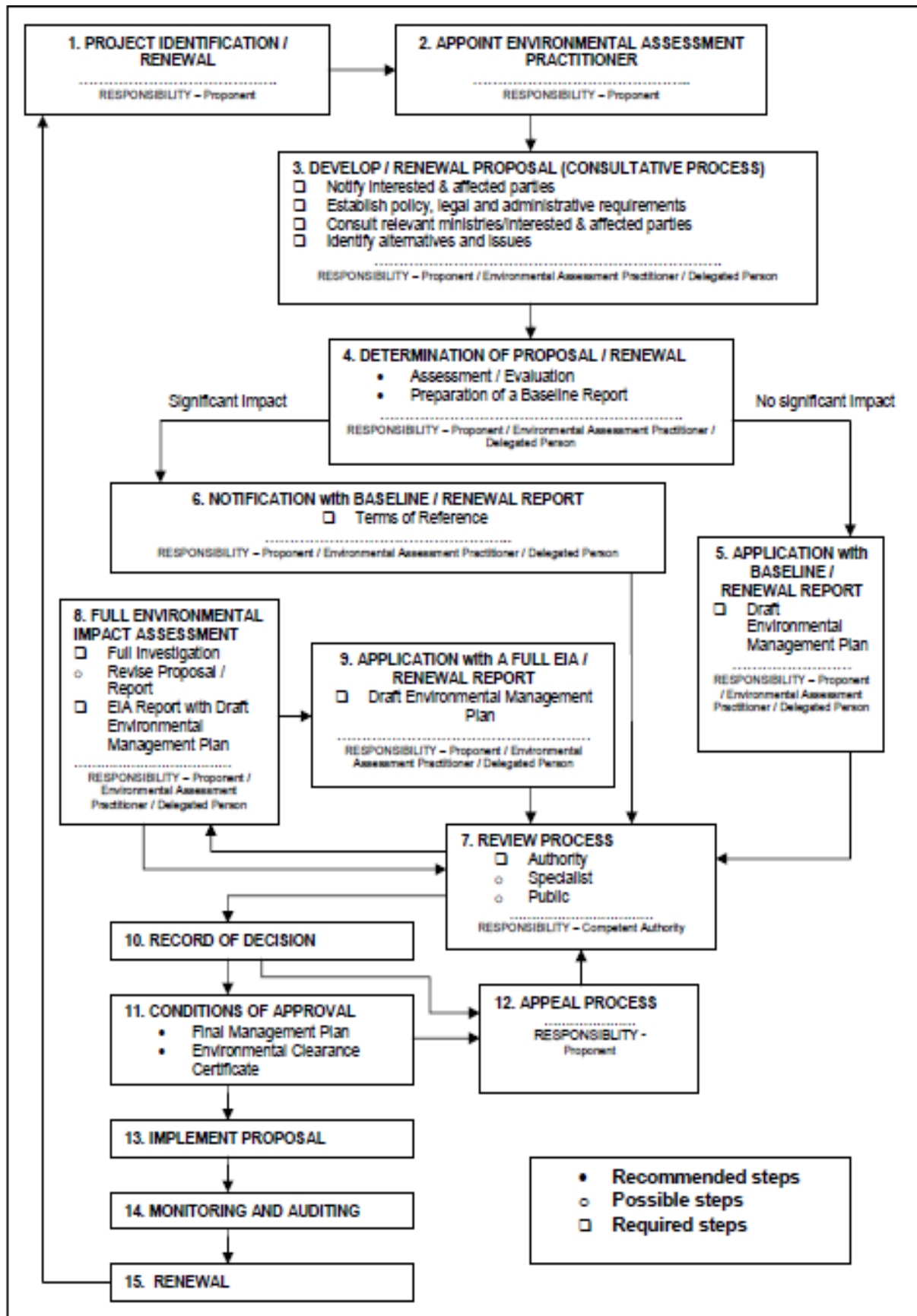


Figure 7: Flowchart of the Impact Process

9. AFFECTED RECEIVING ENVIRONMENT

9.1. BIODIVERSITY AND VEGETATION

The vegetation on the Remainder of Portion 1 of Farm Gross Haigamas No. 447 where the development will take place forms part of the Tree and Shrub Savannah Biome, specifically the Highland Savannah. The project site is showing evidence of some human inference namely informal tracks are present on some areas of the site and a few gravel roads are present on the site.



Figure 8: Biomes of Namibia (Atlas of Namibia, 2002)

Small birds and insects were observed during the site visit. The natural characteristics of the project site namely the vegetation clearance and the destruction of habitats are expected to further on have a low impact on the environment before the mitigation measures are taken and after the mitigation measures are taken, the impact will be very low.

9.2. CLIMATE

No specific climate data is available for the project site. The Remainder of Portion 1 of Farm Gross Haigamas No. 447 and surroundings in general is characterized with a semi-arid highland savannah climate typified as very hot in summer and moderate dry in winter. The highest temperatures are measured in December with an average daily temperature of maximum 31°C and a minimum of 17°C. The coldest temperatures, conversely, are measured in July with an average daily maximum of 20°C and minimum 6°C (*Weather - the Climate in Namibia*, 1998 – 2012). The area therefore has low frost potential.

Rainfall in the form of thunderstorms is experienced in the area during the summer months between October and April. The annual average rainfall for the area is 350mm to 400mm however the average evaporation rate is 3 400mm a year (*Weather - the Climate in Namibia*, 1998 – 2012). Over 70% of the rainfall occurs in the summer months' period

between November and March. Rainfall in the area is typically sporadic and unpredictable however the average highest rainfall months are January to March.

Wind is expected to prevent the spread of any nuisance namely noise and smell. The predominant wind in the region is easterly with westerly winds from September to December (*Weather - the Climate in Namibia, 1998 – 2012*). Extreme winds are experienced in the months of August and September and thus significant wind erosion on disturbed areas is visible.

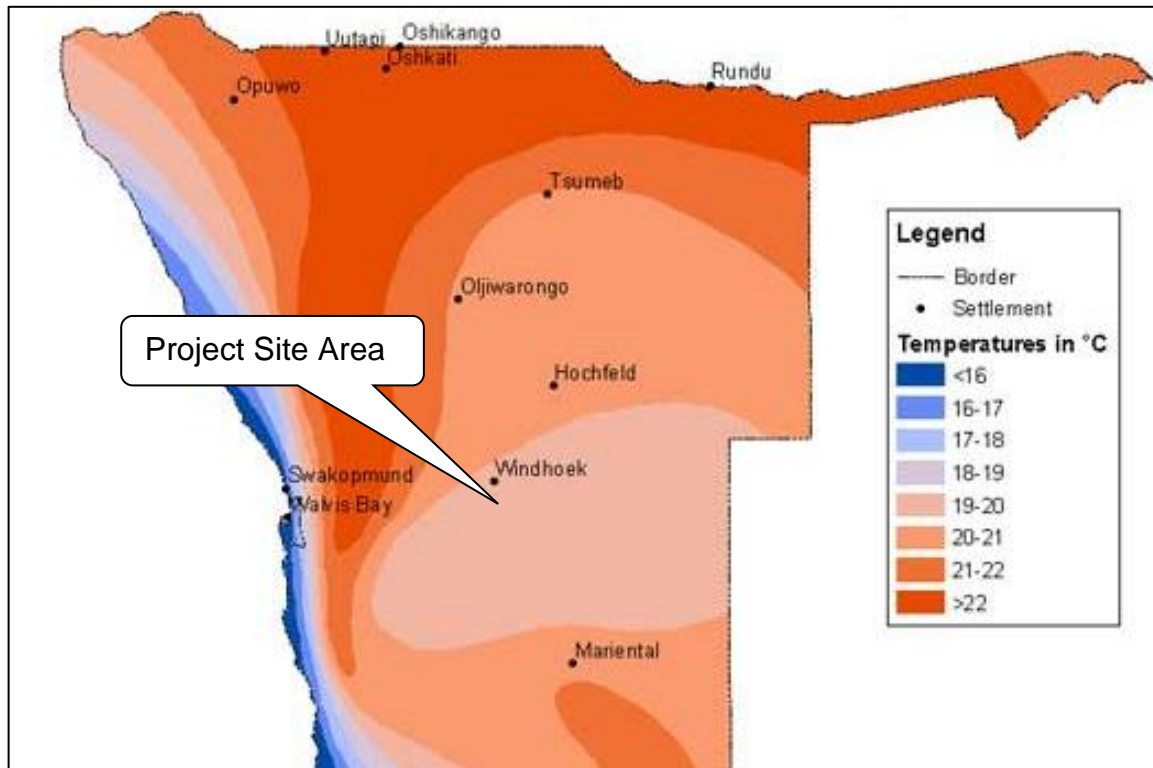


Figure 9: Temperatures in Namibia (*Atlas of Namibia Project, 2002*)

9.3.GEOLOGY AND SOILS

See below the Geological Map of Namibia obtained from the *Atlas of Namibia (2004)*:

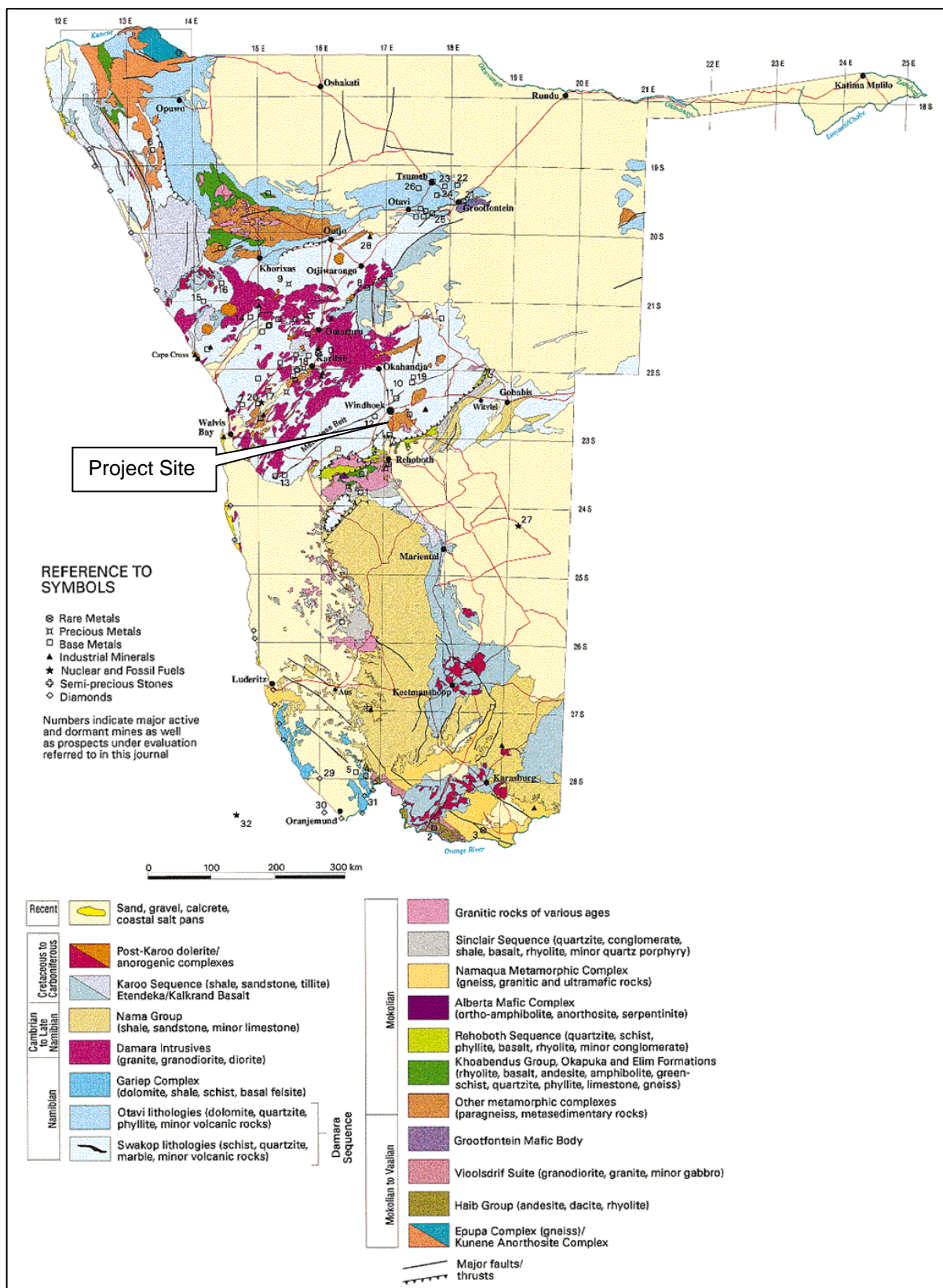


Figure 10: Geological Map of Namibia (Atlas of Namibia, 2004)

9.4.GEOHYDROLOGICAL CHARACTERISTICS OF SITE

See below *Map* showing the groundwater basins and rock types in the area:

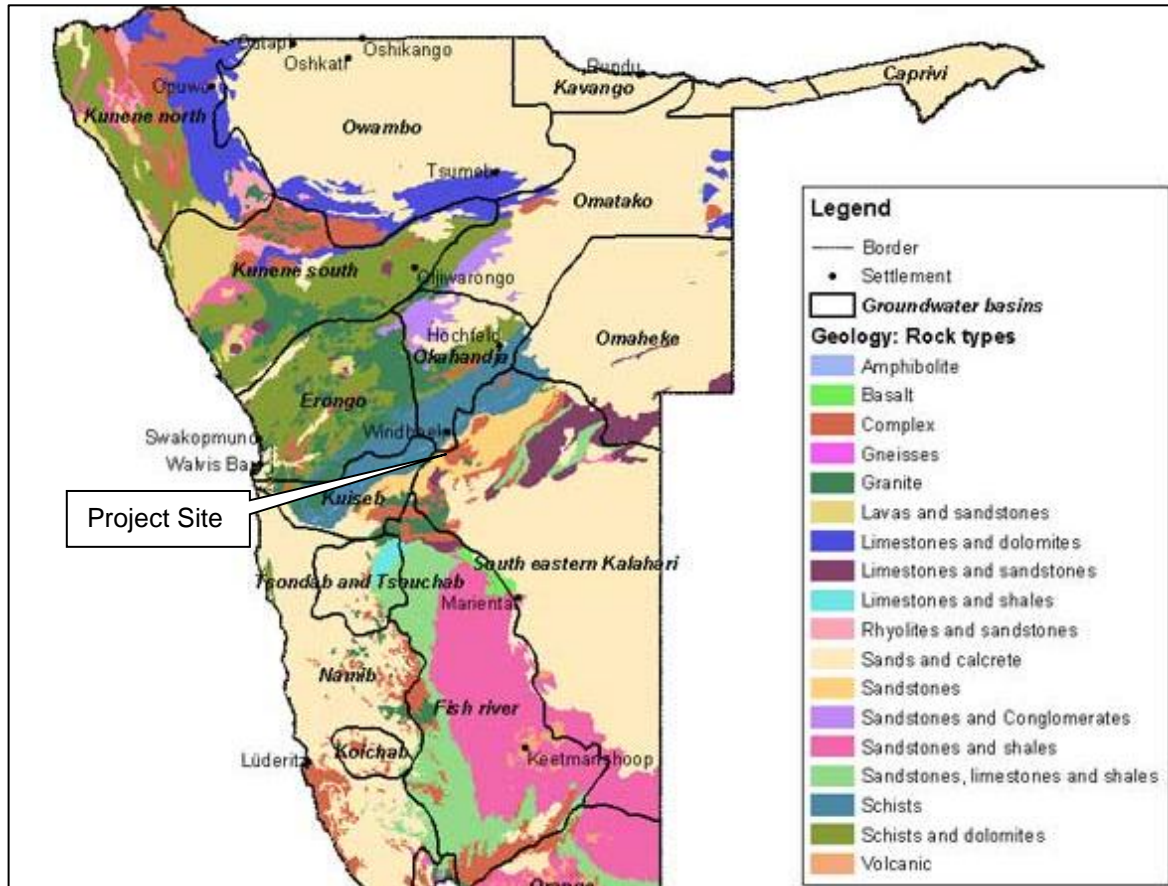


Figure 11: Groundwater basins and rock types (Atlas of Namibia Project, 2002)

See below the Hydrogeological Map of Namibia obtained from the *Geological Survey of Namibia (2015)* which shows that the study area falls in a zone of rock bodies with little groundwater potential (generally low potential; locally moderate potential) in an area of metamorphic rocks:

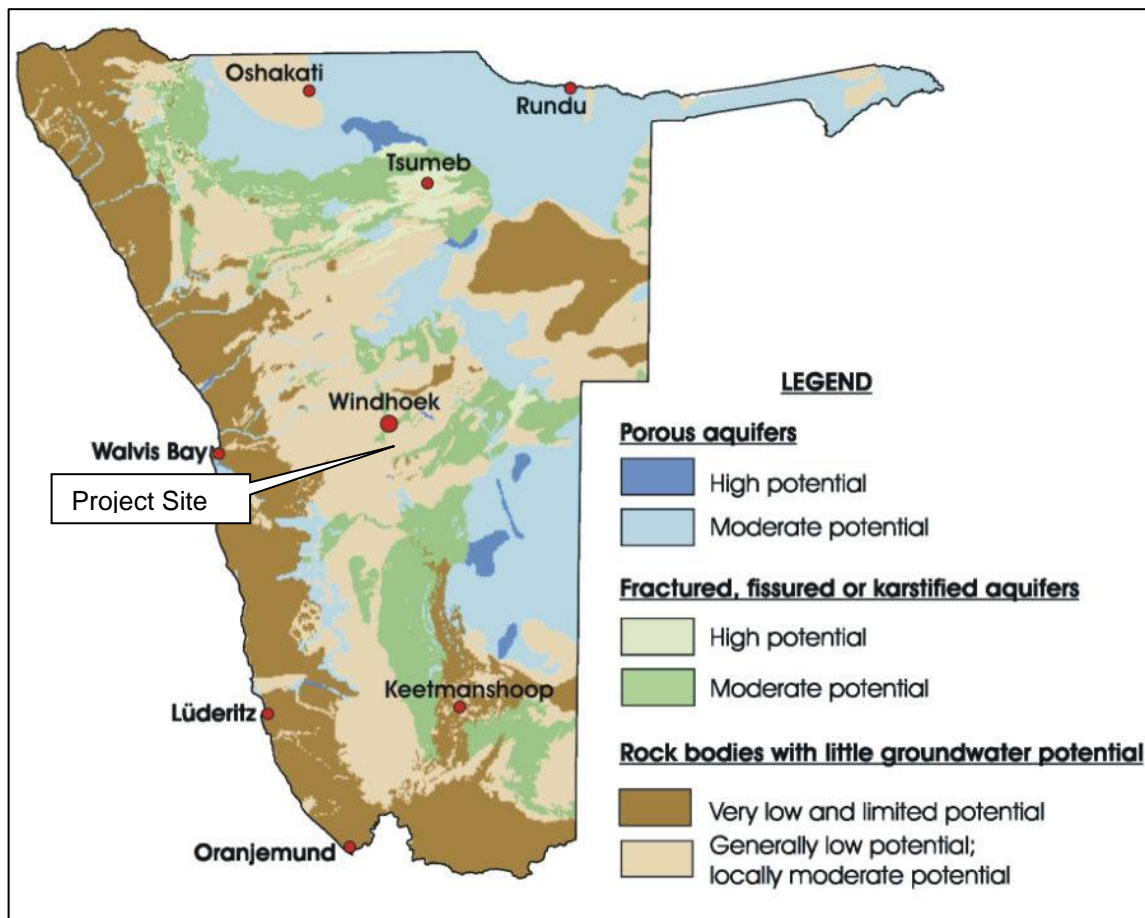


Figure 12: Hydrogeological Map of Namibia (Geological Survey of Namibia, 2015)

9.5.GROUNDWATER

Ground water pollution can have a negative effect on the receiving environment as well as on the surrounding areas. Soil, geological and geo-hydrological characteristics of the site indicate that the potential significance that water resources will be damaged is very small. For ground water to be contaminated, large amounts of oil or fuel will have to seep through the soil over a period. The Water Resource Management Act (No. 24 of 2004) stipulates that even the potential sources of pollution still requires attention namely planning, controlling and managing the possible pollution of the receiving environment as the cumulative impact of many environmentally harmful incidents will in the long run have a detrimental impact on the downstream water sources, resources and users. With precautionary measures that are in place, groundwater contamination is easily prevented, and the proposed operations are not expected to have a detrimental impact on water resources in the area.

9.6.SURFACE WATER

See below map showing rivers, basins, pans and lakes obtained from the *Atlas of Namibia Project (2002)*:

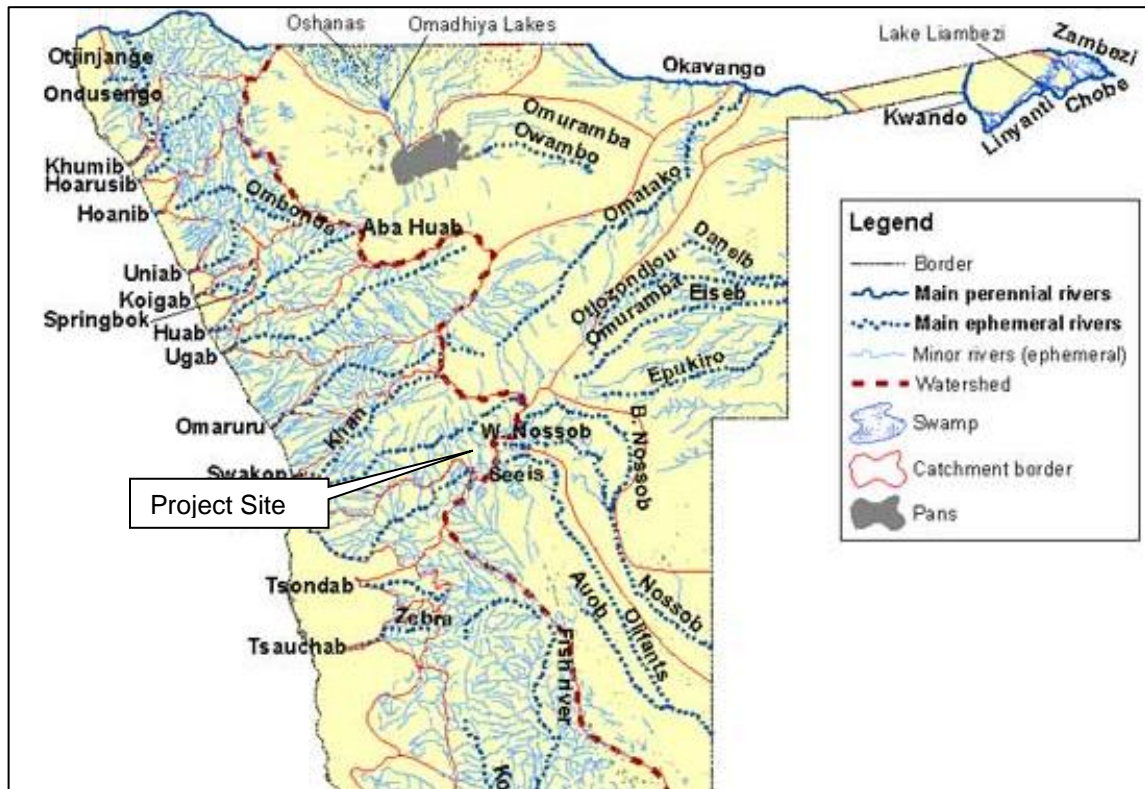


Figure 13: Rivers, Basins, Pans and Lakes (Atlas of Namibia Project, 2002)

Erosion and sedimentation could result from soils that are being exposed during the clearing of land, grading and the installation of underground utilities namely water pipes or related infrastructure, etc. Erosion and sedimentation could further result in the degradation of habitats in the rainy season. Severe impacts may occur if erosion and sedimentation impacts are not taken into consideration namely loss of valuable topsoil, vegetation and habitat. The infrastructure that will be constructed on the site is believed to have a limited impact on erosion and sedimentation since drainage channels will be kept open and will be incorporated in the operations.

9.7.SOCIAL-ECONOMIC COMPONENT

The proposed development will have a positive impact on the socio-economic environment because of employment creation and the provision of plots. Apart from the proponent's intention to make a profit out of the proposed activities, advantages to the area are numerous. The proposed operations will create the need for more business activities such as building maintenance, vehicle maintenance, electrical and additional support for schools and other existing businesses etc.

The proposed project will create semi permanent employment. The operations will give the area a much-needed economic injection which will have a multiplier effect in the

community regarding sales and services. Services that will benefit from the development are amongst other shops, doctors, garages, etc. The operations will also bring in investments and buying power. Since most land use in and around the area is characterised by farming, tourism and residential related activities, the operations will not have a negative impact on the neighbours or the surrounding areas.

9.8.CULTURAL HERITAGE

The proposed project site is not known to have any historical significance prior to or after Independence in 1990. The specific area does not have any National Monuments and the specific site has no record of any cultural or historical importance or on-site resemblance of any nature. No graveyard or related article was found on the site.

9.9.SENSE OF PLACE

The proposed development of Birdsong Properties (Pty) Ltd will be located on Farm Gross Haigamas No. 447 outside Windhoek. The proposed activities will not have a large/negative impact on the sense of place in the area. An untidy or badly managed site can detract from the ecological well-being and individuality of the area. Unnecessary disturbance to the surroundings could be caused by poorly planned or poorly managed operational activities. The site should be kept neat and clean where possible. Vegetation should not be removed or harmed if not necessary since it covers topsoil which prevents erosion. Noise and dust should be limited in the operational phase.

9.10.HEALTH

The safety, security and health of the labour force, employees and neighbours are of great importance, workers should be orientated with the maintenance of safety and health procedures and they should be provided with PPE (Personal Protective Equipment). A health and safety officer should be employed to manage, coordinate and monitor risk and hazard and report all health and safety related issues in the work place. The introduction of external workers into the area is sometimes accompanied with criminal activities posing security risks for neighbors. However, the proponent will take certain measures to prevent any activity of this sort. The welfare and quality of life of the neighbours and workforce needs to be considered for the project to be a success on its environmental performance. Conversely, the process should not affect the overall health of persons related to the project including the neighbours.

9.11.ROAD INFRASTRUCTURE

A development is usually associated with an increase in vehicles to and from the site since worker busses, delivery vehicles and trucks are needed for construction and operations. It is important that all vehicle drivers be informed of their potential impact on the environment and on the roads, and that the necessary measures should be taken to prevent any accidents as a result of increased traffic.

10. ASSESSMENT AND EVALUATION

Development, no matter the type or scale, within an un-spoilt or even altered natural environment, is bound to have an impact or further impacts on the environment. This assessment concentrates on both the positive and negative impacts of the proposed housing development. The positive impacts are in terms of financial gain, employment creation and provision of building material.

11. IMPACT ASSESSMENT AND EVALUATION

The Environmental Impact Assessment sets out potential positive and negative environmental impacts associated with the proposed project site which is located on Farm Gross Haigamas. The following assessment methodology will be used to examine each impact identified, see *Table* below:

Table 3: Impact Evaluation Criterion (DEAT 2006)

Criteria	Rating (Severity)	
Impact Type	+	Positive
	O	No Impact
	-	Negative
Significance of impact being either	L	Low (Little or no impact)
	M	Medium (Manageable impacts)
	H	High (Adverse impact)

Probability:	Duration:
5 – Definite/don't know	5 - Permanent
4 – Highly probable	4 – Long-term (impact ceases)
3 – Medium probability	3 – Medium term (5 – 15 years)
2 – Low probability	2 – Short-term (0 – 5 years)
1 – Improbable	1 - Immediate
0 - None	
Scale:	Magnitude:
5 – International	10 – Very high/don't know
4 – National	8 - High
3 – Regional	6 - Moderate

2 – Local	4 - Low
1 – Site only	2 - Minor
	0 - None

The impacts identified during the environmental assessment are grouped as those impacts that might happen during the construction activities and the impacts during the operational activities and are the following:

11.1.IMPACTS DURING CONSTRUCTION

Some of the impacts that the development will have on the environment includes water will be used for the construction and operation activities, electricity will be used, a sewer system will be constructed, and wastewater will be produced on the site that will have to be handled.

11.1.1. WATER USAGE

Water is a scarce resource in Namibia and therefore water usage should be monitored and limited in order to prevent unnecessary wastage. The proposed development will make use of water in its construction phase and operations however it is not anticipated that it will entirely be water-based operations.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Ecology	-	2	3	4	3	M	L

11.1.2. ECOLOGICAL IMPACTS

The proposed development will be constructed in an area which is sparsely covered with vegetation. Special care should be taken to limit the destruction or damage of the vegetation and trees. However, impacts on fauna and flora are expected to be minimal. Disturbance of areas outside the designated working zone is not allowed.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Ecology	-	1	2	4	2	L	L

11.1.3. DUST POLLUTION AND AIR QUALITY

Dust generated during the transportation of building materials; construction and installation of bulk services, and problems thereof are expected to be low and site specific due to the sandy nature of the top soils. Dust is expected to be worse during the winter months when strong winds occur. Release of various particulates from the site during the construction phase and exhaust fumes from vehicles and machinery related to the construction of bulk services are also expected to take place. Dust is regarded as a nuisance as it reduces visibility, affects the human health and retards plant growth.

It is recommended that regular dust suppression be included in the construction activities, when dust becomes an issue. No unnecessary revving of engines or operation of vehicles is allowed. In general, the servicing of these extensions is envisaged to have minimal impacts on the surrounding air quality.

Impact evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Dust & Air Quality	-	2	2	2	2	M	L

11.1.4. NOISE IMPACT

An increase of ambient noise levels at the proposed site is expected due to the construction activities. Noise pollution due to heavy-duty equipment and machinery will be generated.

It is not expected that the noise generated during construction will impact any third parties due to the distance of the neighbouring activities. Ensure all mufflers on vehicles are in full operational order; and any audio equipment should not be played at levels considered intrusive by others. The construction staff should be equipped with ear protection equipment.

Impact evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Noise	-	2	1	4	2	M	L

11.1.5. HEALTH, SAFETY AND SECURITY

The safety, security and health of the labour force, employees and general public are of great importance. Workers should be orientated with the maintenance of safety and health procedures and they should be provided with PPE (Personal Protective Equipment). A health and safety officer should be employed to manage, coordinate and monitor risk and hazard and report all health and safety related issues in the work place.

Safety issues could arise from the earthmoving equipment and tools that will be used on site during the construction phase. This increases the possibility of injuries and the contractor must ensure that all staff members are made aware of the potential risks of injuries on site. The presence of equipment lying around on site may also encourage criminal activities (theft).

Sensitize operators of earthmoving equipment and tools to switch off engines of vehicles or machinery not being used. The contractor is advised to ensure that the team is equipped with first aid kits and that they are available on site, always. Workers should be equipped with adequate personal protective gear and properly trained in first aid and safety awareness.

No open flames, smoking or any potential sources of ignition should be allowed at the project location. Signs such as 'NO SMOKING' must be prominently displayed in parts where inflammable materials are stored on the premises. Proper barricading and/or fencing around the site especially trenches for pipes and drains should be erected to avoid entrance of animals and/or unauthorized persons. Safety regulatory signs should be placed at strategic locations to ensure awareness. Adequate lighting within and around the construction locations should be erected, when visibility becomes an issue.

Impact evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Safety & Security	-	1	2	4	2	M	L

11.1.6. CONTAMINATION OF GROUNDWATER

Care must be taken to avoid contamination of soil and groundwater. Use drip trays when doing maintenance on machinery. Maintenance should be done on dedicated areas with linings or concrete flooring. The risk can be lowered further through proper training of staff. All spills must be cleaned up immediately. Excavations should be backfilled and sealed with appropriate material, if it is not to be used further.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Ground-water	-	2	2	2	2	M	L

11.1.7. SEDIMENTATION AND EROSION

Vegetation stabilizes the area against wind erosion. Vegetation clearance and creation of impermeable surfaces could result in erosion in areas across the proposed area. The clearance of vegetation will further reduce the capacity of the land surface to slow down the flow of surface water, thus decreasing infiltration, and increasing both the quantity and

velocity of surface water runoff. The proposed construction activities will increase the number of impermeable surfaces and therefore decrease the amount of groundwater infiltration. As a result, the amount of storm water during rainfall events could increase. If proper storm water management measures are not implemented this will impact negatively on the water courses close to the site.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Erosion and Sedimentation	-	1	2	4	2	M	L

11.1.8. GENERATION OF WASTE

This can be in a form of rubble, cement bags, pipe and electrical wire cuttings. This waste should be gathered and stored in enclosed containers to prevent it from being blown away by the wind. Contaminated soil due to oil leakages, lubricants and grease from the construction equipment and machinery may also be generated during the construction phase.

The oil leakages, lubricants and grease must be addressed. Contaminated soil must be removed and disposed of at a hazardous waste landfill. The contractor must provide containers on-site, to store any hazardous waste produced. Regular inspection and housekeeping procedure monitoring should be maintained by the contractor.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Waste	-	1	1	4	2	M	L

11.1.9. CONTAMINATION OF SURFACE WATER

Contamination of surface water might occur through oil leakages, lubricants and grease from the equipment and machinery during the installation, construction and maintenance of bulk services at the site. Oil spills may form a film on water surfaces in the nearby streams causing physical damage to water-borne organisms.

Machinery should not be serviced at the construction site to avoid spills. All spills should be cleaned up as soon as possible. Hydrocarbon contaminated clothing or equipment's should not be washed within 25m of any surface water body.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Surface water	-	2	2	4	3	M	L

11.1.10. TRAFFIC AND ROAD SAFETY

All drivers of delivery vehicles and construction machinery should have the necessary driver's licenses and documents to operate these machines. Speed limit warning signs must be erected to minimise accidents. Heavy-duty vehicles and machinery must be tagged with reflective signs or tapes to maximize visibility and avoid accidents.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Traffic	-	2	2	4	3	M	L

11.1.11. FIRES AND EXPLOSIONS

There should be enough water available for firefighting purposes. Ensure that all fire-fighting devices are in good working order and they are serviced. All personnel must be trained about responsible fire protection measures and good housekeeping such as the removal of flammable materials on site. Regular inspections should be carried out to inspect and test firefighting equipment by the contractor.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Fires and Explosions	-	2	2	4	2	M	L

11.1.12. SENSE OF PLACE

The placement, design and construction of the proposed development should be as such as to have the least possible impact on the natural environment. The proposed activities will not have a large/negative impact on the sense of place in the area since it will be constructed in a manner that will not affect the neighbouring land and it will not be visually unpleasing.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Nuisance Pollution	-	1	1	2	2	L	L

11.2.IMPACTS DURING OPERATIONAL PHASE

11.2.1. ECOLOGICAL IMPACTS

Staff and visitors should only make use of walkways and existing roads to minimise the impact on vegetation. No firewood may be collected on the site. Minimise the area of disturbance by restricting movement to the designated working areas during maintenance and drives.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Ecology Impacts	-	1	2	4	2	L	L

11.2.2. DUST POLLUTION AND AIR QUALITY

Vehicles transporting goods and staff will contribute to the release of hydrocarbon vapours, carbon monoxide and sulphur oxides into the air. Possible release of sewer odour, due to sewer system failure or maintenance might also occur. All maintenance of bulk services and infrastructure at the project site must be designed to enable environmental protection.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Dust & Air Quality	-	2	2	4	4	M	L

11.2.3. CONTAMINATION OF GROUNDWATER

Spillages might also occur during maintenance of the sewer system. This could have impacts on groundwater especially in cases of large sewer spills. Proper containment should be used in cases of sewerage system maintenance to avoid any possible leakages. Oil and chemical spillages may have a health impact on groundwater users. Potential impact on the natural environment from possible polluted groundwater also exists.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Groundwater contamination	-	2	2	4	2	L	L

11.2.4. GENERATION OF WASTE

Household waste from the activities at the development and from the staff working at the site will be generated. This waste will be collected, sorted to be recycled and stored in on site for transportation and disposal at an approved landfill site.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Waste Generation	-	1	2	2	2	M	L

11.2.5. FAILURE IN RETICULATION PIPELINES

There may be a potential release of sewage, storm-water or water into the environment due to pipeline/system failure. As a result, the spillage could be released into the environment and could potentially be health hazard to surface and groundwater. Proper reticulation pipelines and drainage systems should be installed. Regular bulk services infrastructure and system inspection should be conducted.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Failure of Reticulation Pipeline	-	1	1	4	2	M	L

11.2.6. FIRES AND EXPLOSIONS

Food will be prepared on gas fired stoves. There should be enough water available for firefighting purposes. Ensure that all fire-fighting devices are in good working order and they are serviced. All personnel must be trained about responsible fire protection measures and good housekeeping such as the removal of flammable materials on site. Regular inspections should be carried out to inspect and test firefighting equipment by the contractor.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Fires and Explosions	-	2	1	4	2	M	L

11.2.7. HEALTH, SAFETY AND SECURITY

The safety, security and health of the labour force, employees and neighbours are of great importance, workers should be orientated with the maintenance of safety and health procedures and they should be provided with PPE (Personal Protective Equipment). Workers should be warned not to approach or chase any wild animals occurring on the site.

No open flames, smoking or any potential sources of ignition should be allowed at the project location. Signs such as 'NO SMOKING' must be prominently displayed in parts where inflammable materials are stored on the premises.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Safety & Security	-	1	3	4	2	M	L

11.3.CUMULATIVE IMPACTS

These are impacts on the environment, which results from the incremental impacts of the construction and operation of the proposed development when added to other past, present, and reasonably foreseeable future actions regardless of what person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period. In relation to an activity, it means the impact of an activity that in it may not become significant when added to the existing and potential impacts resulting from similar or diverse activities or undertakings in the area.

Possible cumulative impacts associated with the proposed project includes sewer damages/maintenance, vegetation and animal disturbance, uncontrolled traffic and destruction of the natural environment. These impacts could become significant especially if it is not properly supervised and controlled. This could collectively impact on the environmental conditions in the area. Cumulative impacts could occur in both the operational and the construction phase.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Cumulative Impacts	-	1	3	4	3	L	L

12. INCOMPLETE OR UNAVAILABLE INFORMATION

The exact amount of people that will be employed will depend on the type and scope of the activities and the number of individuals needed at each phase of the operations. The

Environmental Management Plan (EMP) will therefore include all the possible negative effects of the project in general that could be operated on the site in order to prevent any pollution or harmful impacts whether to neighbours or the environment.

13. NEED AND DESIRABILITY

Work opportunities will be created, which will help alleviate poverty and enhance the quality of life for the people involved, especially the local people. Unemployment is a major concern in Namibia and therefore there certainly is a need for individuals to find jobs and earn a living. This project can provide employment to various individuals that are skilled and semi-skilled.

According to the information mentioned above, it is believed that there is a need and desirability for the project. The proposed project is desirable as the study area is suitable for the proposed operations, the activities will have a limited impact on the bio-physical environment, enough water is available and proper accesses can be provided to the proposed operations.

Determining what the impact of the operations would be are broken down into different categories and environmental aspects and dealt with in the Environmental Management Plan (EMP). As per the ISO 14001 definition: *an environmental aspect is an element of an organization's activities, products and/or services that can interact with the environment to cause an environmental impact e.g. land degradation or land deterioration among others, that will cause harm to the environment.*

All concerns and potential impacts raised during the public participation process and consultative meetings were evaluated. Predictions were made with respect to their magnitude and an assessment of their significance was made according to the following criteria:

The Nature of the activity: A development will be constructed on the Remainder of Portion 1 of Farm Gross Haigamas No. 447. The possible impacts that may occur are water will be used in the operational phases, waste water will be produced that will be handled by the proponent, land will be used for the proposed activities, few shrubs/grasses will be removed, and general construction activities will take place.

The Probability of the impacts to occur: The probability of the above-named impacts to occur and have a negative or harmful impact on the environment and the community is small since the Environmental Management Plan will also guide these activities. Water will still be used, and wastewater produced, however guidelines will be set that will ensure the impact is minimum.

The Extent of area that the project will affect: The specific project will most likely only have a small impact on the proposed project site itself and not on the surrounding or neighbouring farms/plots except for noise, traffic, machinery and dust and there may be a visual impact because of the size of the proposed operations. Therefore, the extent that the project will have a negative impact on is not extensive.

The Duration of the project: It is estimated that the construction will take place over 3 years however the exact duration of the activities is uncertain.

The Intensity of the project: The intensity of the project is mostly limited to the site however for the above-named processes where the intensity of the project will be felt outside the borders of the project site.

According to the information that was present while conducting the Environmental Impact Assessment for the construction and operation of the development, no high-risk impacts were identified and therefore it is believed that the operations will be feasible in the short and long run. Most of the impacts identified were characterized as being of a low impact on the receiving and surrounding environment and with mitigation measures followed, the impacts will be of minimum significance or avoided.

14. MOTIVATION

The following motivation was obtained from Willem Schutz Town and Regional Planning Consultant:

Urbanisation and overcrowding in the major urban centres of Namibia have resulted in some residents aspiring to live in more tranquil and natural surroundings on larger portions of land. This resulted in the rise of several 'life style' developments where specific aspects of a more rural and closer to nature style of living are provided. Life style developments are a worldwide phenomenon and various types and examples are found in the form of golf estates and wild life or nature estates in South Africa and in Namibia as well. The area of Aris has a strategic location. The development lies conveniently close to the capital of the country on the prominent central areas – southern transportation spine. This strategic location provides ample opportunities to attract various types of private investment as is evident with the existing residential development of Omeya.

The district of Aris has been identified by the developer as an area with immense potential to accommodate a life style concept development due to the pristine un-spoilt nature of the area. The district of Aris also has the benefit of being able to provide the location and setting where interested parties can reside out of the bustling urban areas such as Windhoek without being too far from the required services and amenities these centres provide.

15. CONCLUSION

In line with the Environmental Management Act (No 7 of 2007), *Green Earth Environmental Consultants* have been appointed to conduct an Environmental Impact Assessment for the town planning procedures for the creation of an erf for a service station, a rural residential and nature estate, business erven and street portions on the Remainder of Portion 1 of Farm Gross Haigamas No. 447, Khomas Region of Birdsong Properties (Pty) Ltd that may not be undertaken without an Environmental Clearance Certificate.

It is the intention of the proponent to use the proposed project site for a development and its associated activities. The specific site has the full potential to be used for the proposed activities. It is also believed that the activities will not have a severe negative effect on the environment. It is believed that this project can largely benefit the economic/employment needs of the area.

The negative environmental impacts that may be visible in the operational phase of the project include: increases in solid waste generation, increase in water consumption and waste water generation, can result in an increase in traffic on the nearby roads and there can be an impact on the occupational health and safety of workers. As a result of the above-mentioned possible negative impacts on the receiving and surrounding environment, an Environmental Management Plan (EMP) is required to eliminate and guide the operational phase of the project. The operations of Birdsong Properties (Pty) Ltd are believed to be an asset to the residents of Windhoek and the Namibian citizens because plots will be made available for which there is a need.

After assessing all information available on this project, *Green Earth Environmental Consultants* are of the opinion that the development of Birdsong Properties (Pty) Ltd will not have a large impact on the environment. The accompanying EMP will focus on mitigation measures that will remediate or eradicate the negative or adverse impacts.

16. RECOMMENDATION

It is therefore recommended that the Ministry of Environment, Forestry and Tourism through the Environmental Commissioner support and approve the Environmental Clearance for: the town planning procedures for the creation of an erf for a service station, a rural residential and nature estate, business erven and street portions on the Remainder of Portion 1 of Farm Gross Haigamas No. 447, Khomas Region for Birdsong Properties (Pty) Ltd and to issue an Environmental Clearance for the following 'Listed Activities':

ENERGY GENERATION, TRANSMISSION AND STORAGE ACTIVITIES

- 1. The construction of facilities for -*
 - (a) the generation of electricity.*
 - (b) the transmission and supply of electricity.*

WASTE MANAGEMENT, TREATMENT, HANDLING AND DISPOSAL ACTIVITIES

- 2.1 The construction of facilities for waste sites, treatment of waste and disposal of waste.*
- 2.2 Any activity entailing a scheduled process referred to in the Atmospheric Pollution Prevention Ordinance, 1976.*
- 2.3 The import, processing, use and recycling, temporary storage, transit or export of waste.*

LAND USE AND DEVELOPMENT ACTIVITIES

- 5.1 The rezoning of land from -*
 - (a) residential use to industrial or commercial use.*
- 5.2 The establishment of land resettlement schemes.*

WATER RESOURCE DEVELOPMENTS

8.1 *The abstraction of ground or surface water for industrial or commercial purposes.*

8.6 *Construction of industrial and domestic wastewater treatment plants and related pipeline systems.*

HAZARDOUS SUBSTANCE TREATMENT, HANDLING AND STORAGE

9.1 *The manufacturing, storage, handling or processing of a hazardous substance defined in the Hazardous Substances Ordinance, 1974.*

9.2 *Any process or activity which requires a permit, licence or other form of authorisation, or the modification of or changes to existing facilities for any process or activity which requires an amendment of an existing permit, licence or authorisation or which requires a new permit, licence or authorisation in terms of a law governing the generation or release of emissions, pollution, effluent or waste.*

INFRASTRUCTURE

10.1 *The construction of-*

(a) *oil, water, gas and petrochemical and other bulk supply pipelines.*

(b) *public roads.*

10.2 *The route determination of roads and design of associated physical infrastructure where -*

(a) *it is a public road.*

(b) *the road reserve is wider than 30 meters; or*

(c) *the road caters for more than one lane of traffic in both directions.*

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APPENDIX A: CURRICULUM VITAE OF CHARLIE DU TOIT

1. **Position:** Environmental Practitioner
2. **Name/Surname:** Charl du Toit
3. **Date of Birth:** 29 October 1960
4. **Nationality:** Namibian
5. **Education:**

Name of Institution	University of Stellenbosch, South Africa
Degree/Qualification	Hons B (B + A) in Business Administration and Management
Date Obtained	1985-1987
Name of Institution	University of Stellenbosch, South Africa
Degree/Qualification	BSc Agric Hons (Chemistry, Agronomy and Soil Science)
Date Obtained	1979-1982
Name of Institution	Boland Agricultural High School, Paarl, South Africa
Degree/Qualification	Grade 12
Date Obtained	1974-1978
6. **Membership of Professional Association:** EAPAN Member (Membership Number: 112)
7. **Languages:**

	<u>Speaking</u>	<u>Reading</u>	<u>Writing</u>
English	Good	Good	Good
Afrikaans	Good	Good	Good
8. **Employment Record:**

<u>From</u>	<u>To</u>	<u>Employer</u>	<u>Position(s) held</u>
2009	Present	Green Earth Environmental Consultants	Environmental Practitioner
2005	2008	Elmarie Du Toit Town Planning Consultants	Manager
2003	2005	Pupkewitz Megabuild	General Manager
1995	2003	Agra Cooperative Limited	Manager Trade
1989	1995		Chief Agricultural Consultant

		Namibia	
		Development	Agricultural
1985	1988	Corporation	Researcher
		Ministry of	
		Agriculture	

Certification:

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



Charl du Toit

APPENDIX B: CURRICULUM VITAE OF CARIEN VAN DER WALT

1. **Position:** Environmental Consultant
2. **Name/Surname:** Carien van der Walt
3. **Date of Birth:** 6 August 1990
4. **Nationality:** Namibian

5. **Education:**

Institution	Degree/Diploma	Years
University of Stellenbosch	B.A. (Degree) Environment and Development	2009 to 2011
University of South Africa	B.A. (Honours) Environmental Management	2012 to 2013

6. **Membership of Professional Associations:**

EAPAN Member (Membership Number: 113)

7. **Languages:**

Language	Speaking	Reading	Writing
English	Good	Good	Good
Afrikaans	Good	Good	Good

8. **Employment Record:**

From	To	Employer	Positions Held
07/2013	Present	Green Earth Environmental Consultants	Environmental Consultant
06/2012	03/2013	Enviro Management Consultants Namibia	Environmental Consultant
12/2011	05/2012	Green Earth Environmental Consultants	Environmental Consultant

9. **Detailed Tasks Assigned:**

Conducting the Environmental Impact Assessment, Environmental Management Plan, Public Participation, Environmental Compliance and Environmental Control Officer

Certification:

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

Carien van der Walt

APPENDIX C: ENVIRONMENTAL MANAGEMENT PLAN