


***ENVIRONMENTAL IMPACT ASSESSMENT FOR
THE RENEWAL OF THE ENVIRONMENTAL
CLEARANCE TO FINALISE THE TOWN
PLANNING PROCEDURES FOR THE
ESTABLISHMENT OF A TOWNSHIP ON
PORTION 5 OF FARM ONGOS No. 38***

July 2023

App - 230726001793

Project Name:	<p align="center">ENVIRONMENTAL IMPACT ASSESSMENT FOR THE RENEWAL OF THE ENVIRONMENTAL CLEARANCE TO FINALISE THE TOWN PLANNING PROCEDURES FOR THE ESTABLISHMENT OF A TOWNSHIP ON PORTION 5 OF FARM ONGOS No. 38</p>
Proponent:	<p align="center">Albida Development Trust P O Box 11588 WINDHOEK</p>
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EXECUTIVE SUMMARY

Green Earth Environmental Consultants have been appointed by Albida Development Trust to attend to and complete an Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) **to renew the Environmental Clearance (EC) for the proposed township development/establishment on Portion 5 of Farm Ongos No. 38, Windhoek, 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). It is required to renew the Environmental Clearance (EC) as the old EC which was issued on 2 June 2020 expired on 2 June 2023.

The activities listed below, which forms part of the proposed operations, may not be undertaken without an Environmental Clearance Renewal:

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

5.2 *Establishment of land resettlement schemes*

INFRASTRUCTURE

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 impacts during the operational phase of the proposed project:

IMPACTS DURING OPERATIONAL PHASE			
Aspect	Impact Type	Significance of impacts Unmitigated	Significance of impacts Mitigated
Ecology Impacts	-	M	L
Dust and Air Quality	-	M	L
Groundwater Contamination	-	M	L
Waste Generation	-	M	L
Failure of Reticulation Pipeline	-	M	L
Fires and Explosions	-	M	L
Safety and Security	-	M	L

IMPACT EVALUATION CRITERION (<i>DEAT 2006</i>):		
Criteria	Rating (Severity)	
Impact Type	+	Positive
	O	No Impact
	-	Negative
Significance of impacts	L	Low (Little or no impact)
	M	Medium (Manageable impacts)
	H	High (Adverse impact)

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 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 renewed Environmental Impact Assessment Report and Environmental Management Plan, the Environmental Commissioner of the Ministry of Environment, Forestry and Tourism is herewith requested to:

1. Accept and approve the renewed Environmental Impact Assessment.
2. Accept and approve the renewed Environmental Management Plan.
3. Issue a renewed Environmental Clearance for the proposed township development/establishment on Portion 5 of Farm Ongos No. 38 for Albida Development Trust and for the following listed activities:

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

5.2 Establishment of land resettlement schemes

INFRASTRUCTURE

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

EC	Environmental Clearance
ECO	Environment Control Officer
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
I&APs	Interested and Affected Parties
MAWLR	Ministry of Agriculture, Water and Land Reform
MEFT	Ministry of Environment, Forestry and Tourism

1. INTRODUCTION

Green Earth Environmental Consultants have been appointed by Albida Development Trust to attend to and complete an Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) **to renew the Environmental Clearance (EC) for the proposed township development/establishment on Portion 5 of Farm Ongos No. 38, Windhoek, 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). It is required to renew the Environmental Clearance (EC) as the old EC which was issued on 2 June 2020 expired on 2 June 2023.

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5.2 Establishment of land resettlement schemes

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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 following Environmental Impact Assessment Renewal contains information on the project and the surrounding areas and activities.

2. TERMS OF REFERENCE

To be able to implement the project, an Environmental Impact Assessment Renewal and Environmental Clearance Renewal is required. For this environmental impact exercise, *Green Earth Environmental Consultants* followed the terms of reference as stipulated under the Environmental Management Act.

The aim of the environmental impact assessment is:

- 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 activities 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 adhere to the National Solid Waste Management Strategy of the Ministry of Environment, Forestry and Tourism
- To outline management guidelines in an Environmental Management Plan (EMP) to minimize and/or mitigate potentially negative impacts.

The tasks that will be undertaken for the Environmental Impact Assessment Renewal include 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 renewed EIA and EMP from the assessment will be submitted to the Environmental Commissioner for consideration. A renewed Environmental Clearance will only be obtained (from the DEA) once the renewed EIA and EMP has been examined and approved for the listed activities.

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 the collection of data on the project site and area from the proponent and identified stakeholders. All other permits, licenses or certificates that are further on required for the operation of the proposed project still needs to be applied for by the proponent.

3. PROJECT DESCRIPTION/SITE INFORMATION

3.1. LOCALITY OF PROJECT SITE

Portion 5 of Farm Ongos No. 38 is located just north of the Havana Township in Windhoek. The portion is surrounded by predominately open areas with farming related activities with associated infrastructure. It is the intention to establish a township of ±944 residential erven, 12 general residential erven, 15 business erven, 1 institutional erf, 8 public open spaces and a street portion on Portion 5.

The proposed land is currently undeveloped and natural terrain is largely visible. Bulk infrastructure and services on and near the portion include an access road but no water, electricity or sewer networks are available. The proposed development will be serviced by the normal bulk services including electrical and water reticulation systems, a waterborne sewer system and street network in accordance with Municipal requirements. See below locality of project site:

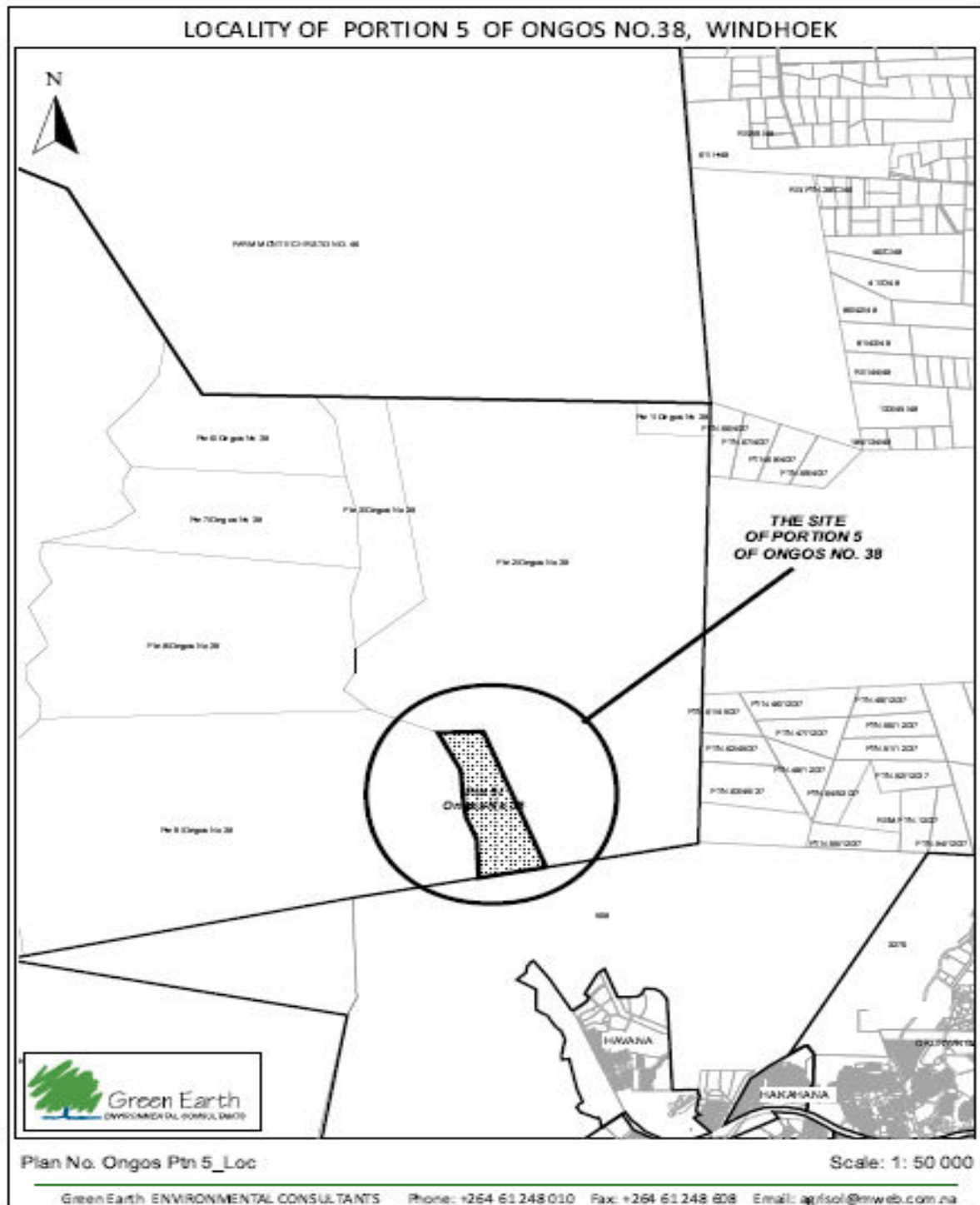


Figure 1: Locality Map of the Project Site

The proposed land uses as per the Windhoek Town Planning Scheme and the areas allocated to the different land uses are summarized in the *Table* below:

Table 1: Land Uses

ZONING	ERF NUMBERS	TOTAL NUMBER ERVEN	TOTAL AREA (sqm)	% AREA
RESIDENTIAL	1-6 and 10 to 947	944	321,305	34%
GEN RES	7 to 9 and 969 to 977	12	135,391	14%
BUSINESS	948 to 962	15	37,862	4%
GOVERNMENT	978	1	1,773	0%
POS	979 to 986	8	132,617	14%
INSTITUTIONAL	963 to 968	6	21,449	2%
STREETS	Remainder		287,398	31%
Total		986	937,795	100%

Due to the scale and magnitude of the project it is envisaged to be phased as indicated on the image below. Phasing of the development is required to allow for the construction of bulk services as well as to manage the cash flow of the development.

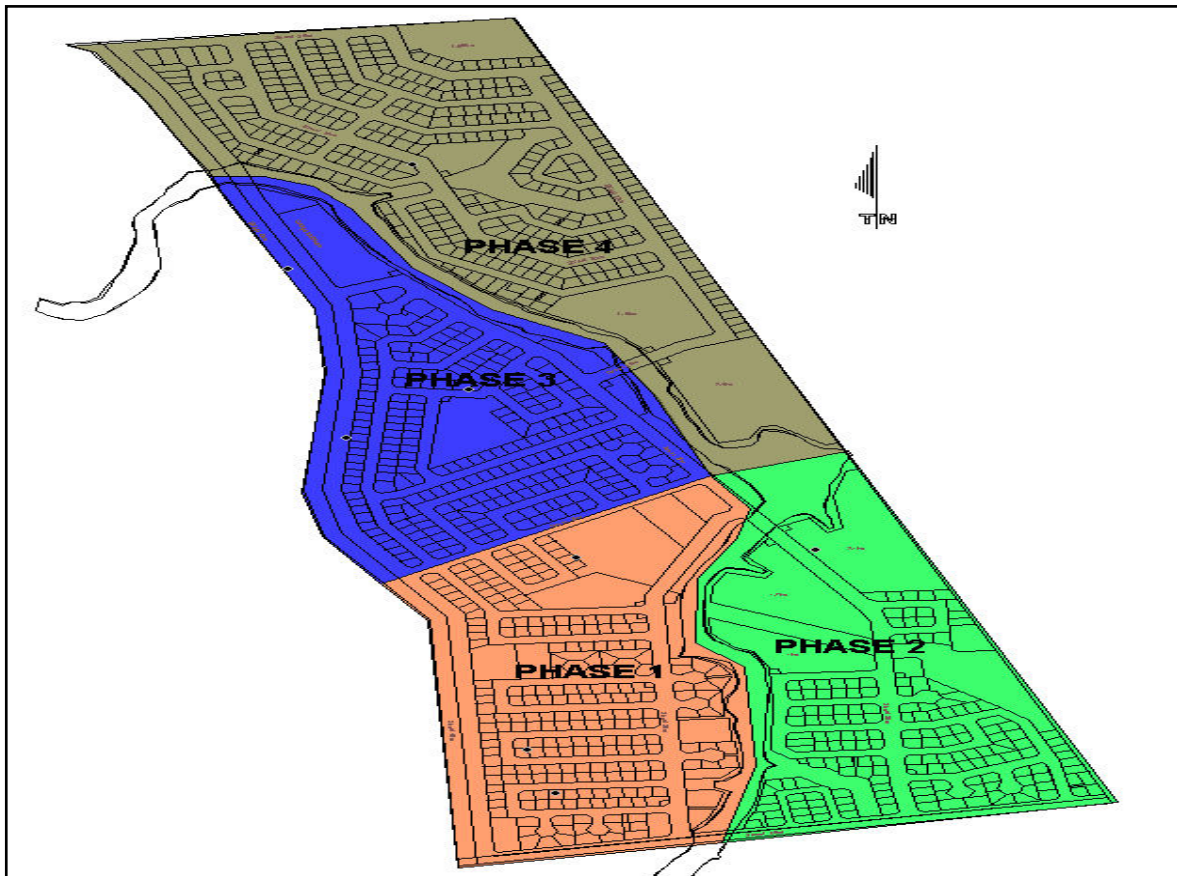


Figure 2: Development Phases

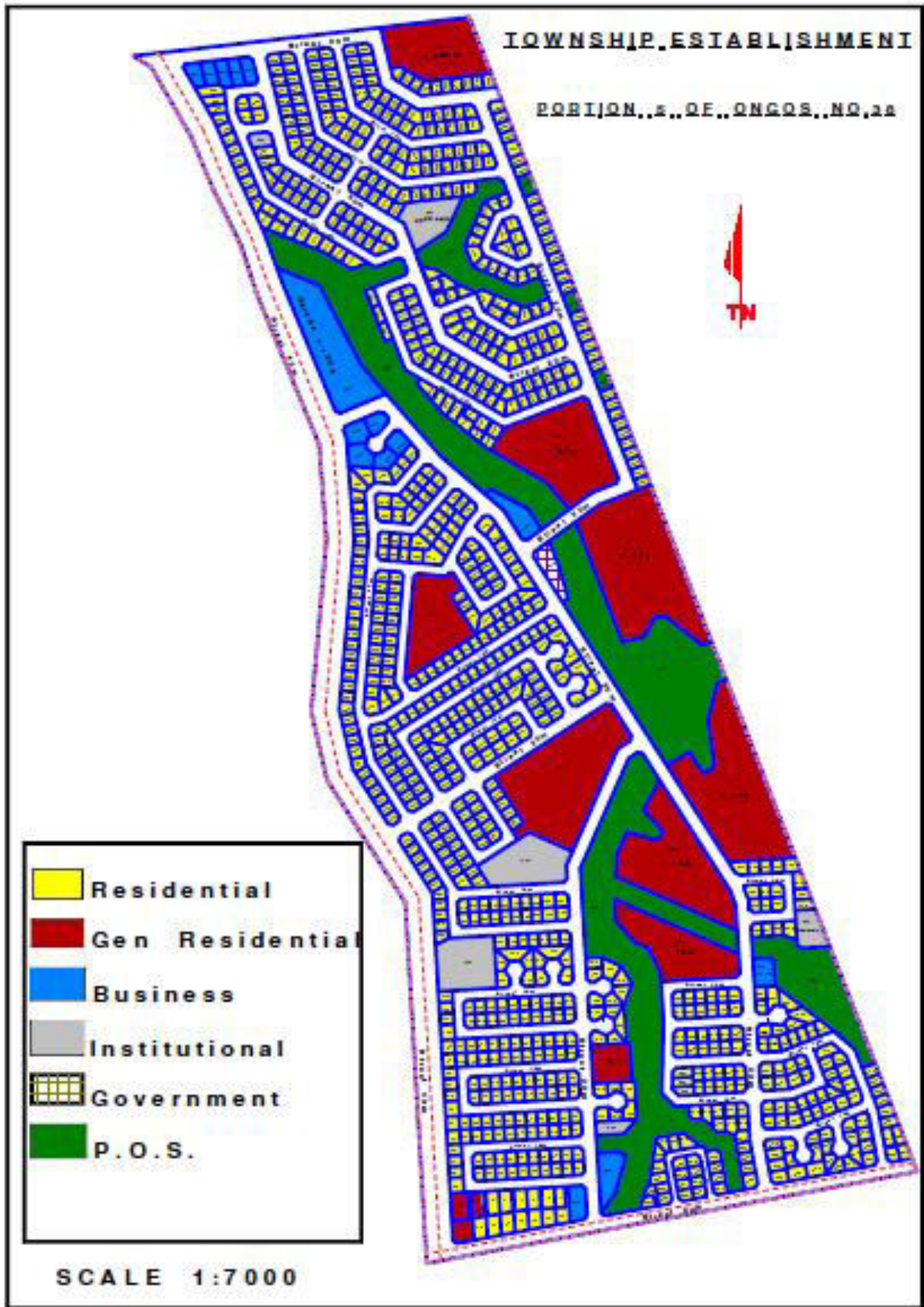


Figure 3: Layout and Land use Plan

4. CURRENT STATUS OF THE PROJECT

It is the Proponent's intension to establish a residential township including a township of ±944 residential erven, 12 general residential erven, 15 business erven, 1 institutional erf, 8 public open spaces and a street portion on Portion 5. Before any construction can start, the Proponent must obtain the various statutory approvals from the City of Windhoek, the Ministry of Environment, Forestry and Tourism, Namibian Planning and Advisory Board, Townships Board as well as the Surveyor General's Office. The final approvals of the Townships Board and Surveyor General's Office is still outstanding although all the other approvals were obtained. It is the intension of the Proponent to continue with the implementation of the project as soon as the General Plan is approved.

The processes to obtain the above approvals took longer than anticipated and the Environmental Clearance expired and thus must be renewed. The EC must now be renewed in order to allow the Proponent to proceed with the following stages of the project.

5. APPROVALS OBTAINED

The following approvals have been obtained to allow the implementation of this project:

5.1. APPROVAL CITY OF WINDHOEK

Windhoek Municipal Council in July 2017, per Council Resolution 152/07/2017, approved the subdivision of Portion 5 of Farm Ongos No. 38 and the Remainder and the Need and Desirability for the establishment of a township development on Portions 1 to 4 (911 to 914) of Portion 5 of Farm Ongos No. 38 in terms of the Local Authorities Act 1992 (No. 23 of 1992). See copy of Council's Resolution letter of approval below:

OFFICE OF THE CHIEF EXECUTIVE

☒ 59
80 Independence Avenue
WINDHOEK, NAMIBIA



Tel: (+264) 61 290 2615

Fax: (+264) 61 290 2344

Enq: Ms Narikutuke Naruses
Tel: +264 612 902 387

Ref: L/Ptn.5, Ongos, No. 38
Date: 9 September 2017

Willie Schultz Town and Regional Planning Consultant
P.O. Box 31761
WINDHOEK

Attention: Mr Willie Schultz

Dear Sir,

RE: APPLICATION FOR THE SUBDIVISION OF PORTION 5 OF FARM ONGOS NO. 38 INTO FOUR (4) PORTIONS AND THE REMAINDER AND NEED AND DESIRABILITY FOR TOWNSHIP ESTABLISHMENT ON PORTIONS 1 TO 4 (911 TO 914) OF PORTION 5 OF FARM ONGOS NO. 38.

Reference is herewith made to your application dated 10 August 2015 regarding the abovementioned.

Council per Resolution **152/07/2017** approved your application as per the attached resolution. Also find attached, date stamped supporting layout plans as received from your office for inclusion in your statutory submissions to NAMPAB and Townships Board.

Kindly proceed with the finalisation of the town planning and cadastral procedures to give effect to the above resolution.

Trusting that you find the above in good order.

Yours faithfully


RN KAHIMISE
CHIEF EXECUTIVE OFFICER



cc: Strategic Executive: Urban Transport and Planning

All official correspondence must be addressed to the Chief Executive Officer

Figure 4: City of Windhoek's Letter of approval of the project

See below the subdivision and layout plans approved and date stamped by City of Windhoek:

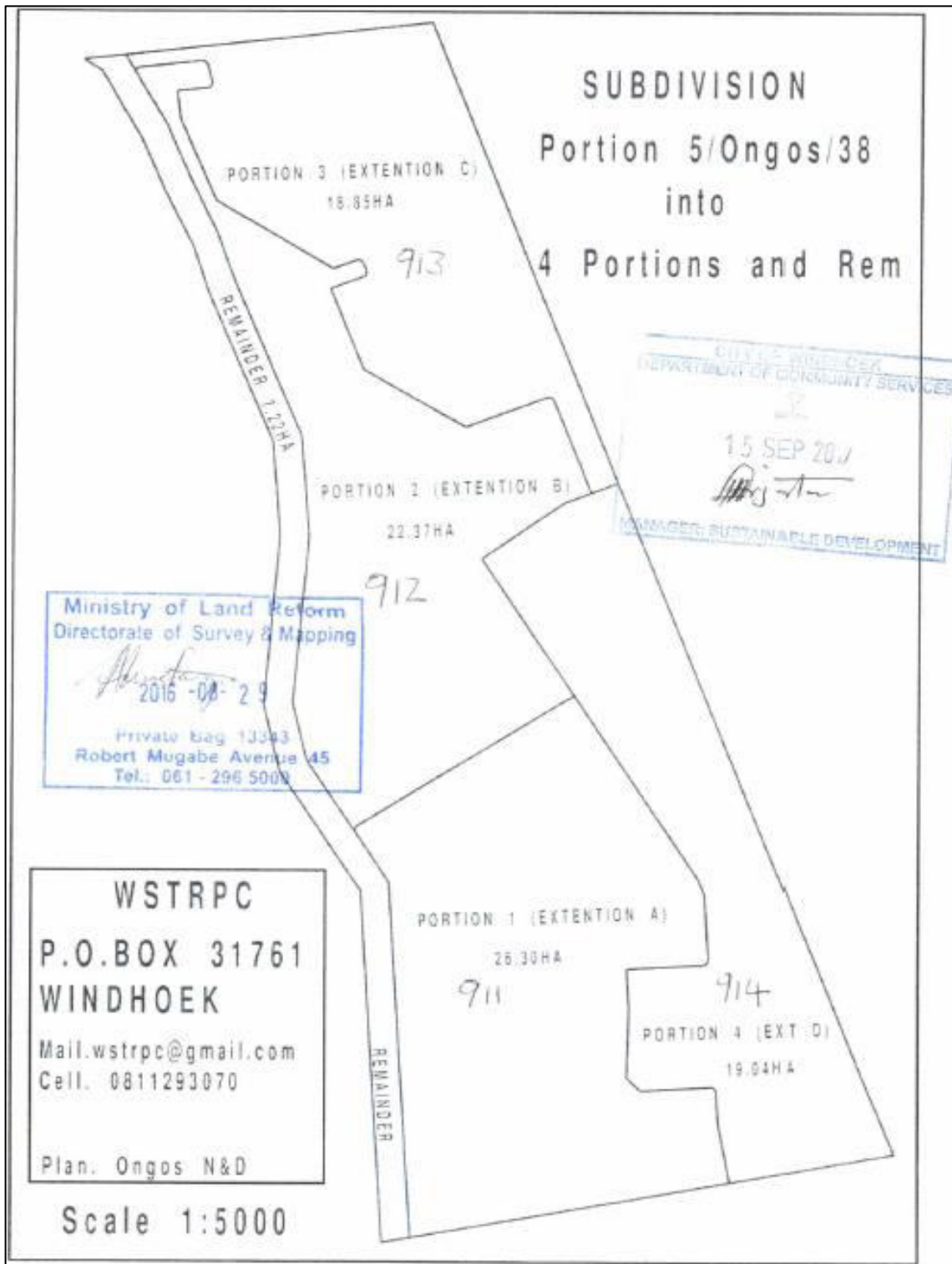


Figure 5: City of Windhoek approved the subdivision plan

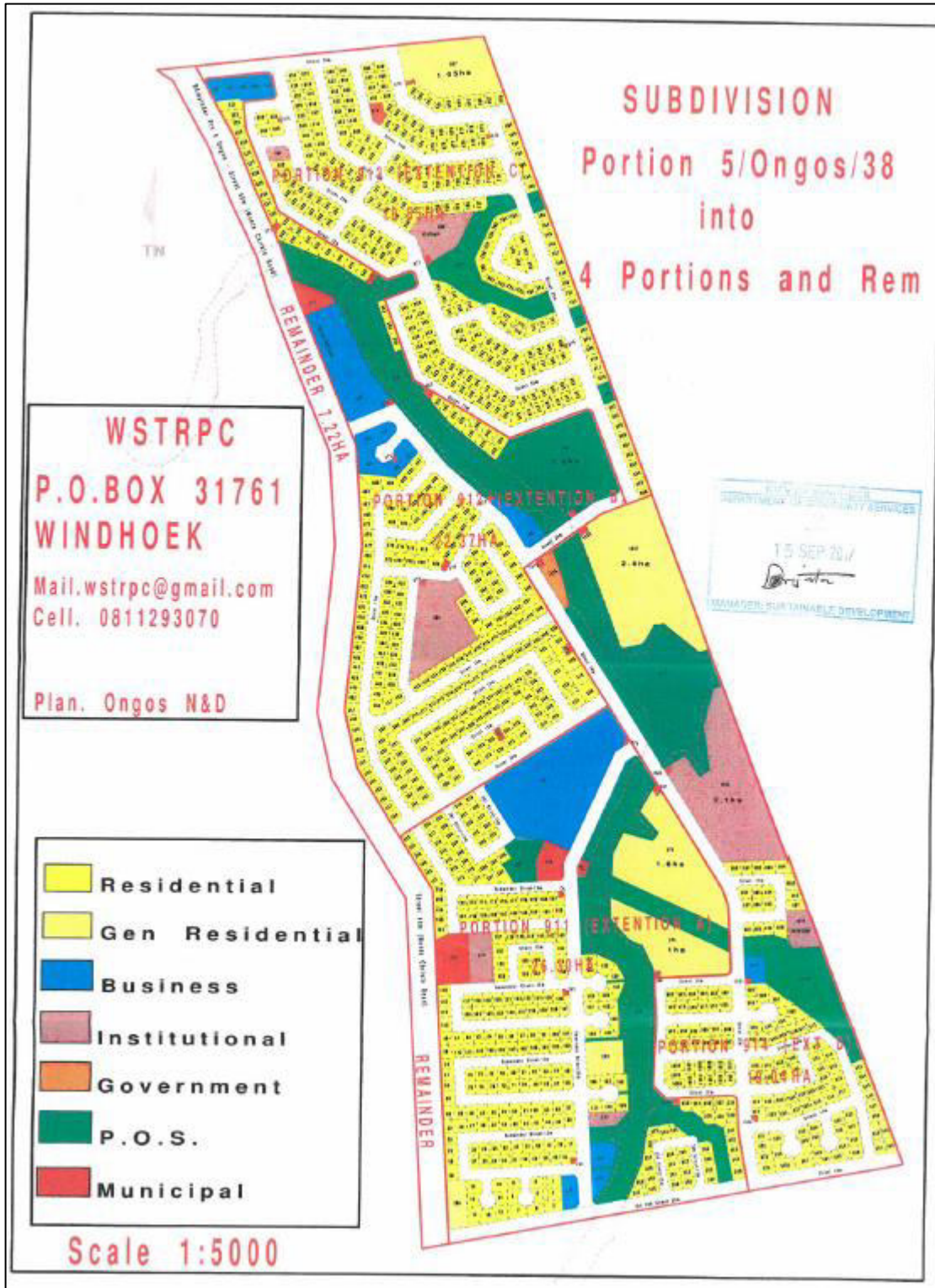


Figure 6: City of Windhoek approved the layout and land use plan

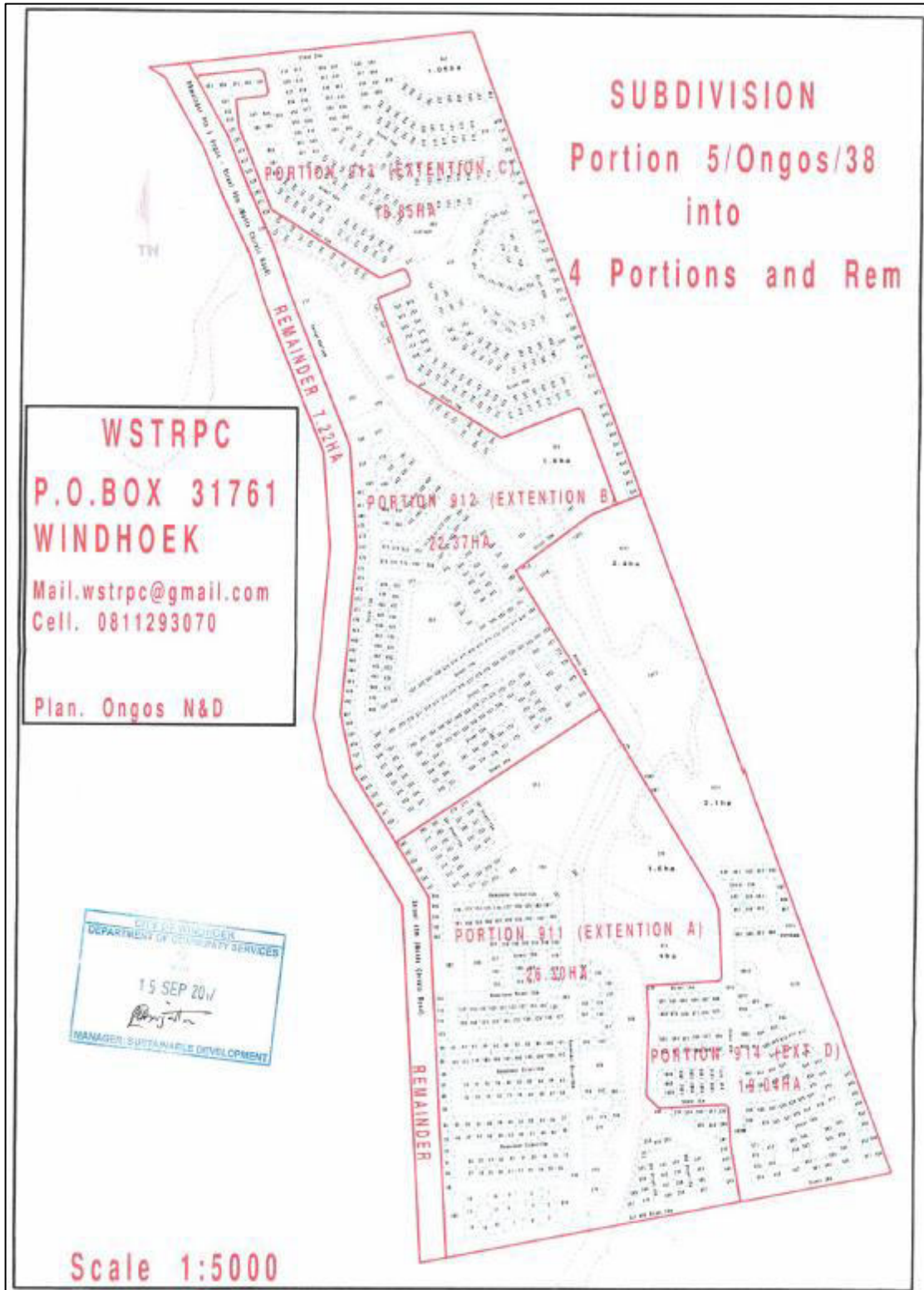


Figure 7: City of Windhoek approved the layout and land use plan

5.2. APPROVAL NAMIBIA PLANNING AND ADVISORY BOARD

The Minister of Urban and Rural Development through NAMPAB (Namibia Planning and Advisory Board) on 6 November 2017 approved the subdivision of Portion 5 of Farm Ongos No. 38 (to be known as Ongos, Ongos Extensions 1 to 3) into Portions 58 to 61 and the Remainder (street, free of conditions) and the Need and Desirability for the establishment of a Township on Portions 58 to 61 of Farm Ongos No. 38 (to be known as Ongos, Ongos Extensions 1 to 3). See below the Ministerial Approval letter and subdivision Certificates:


Republic of Namibia

Ministry of Urban and Rural Development

Tel: (+264 61) 2975111 Government Office Park Private Bag 13289
Fax: (+264 61) 2975096 Luther Street Windhoek, Namibia
E-mail: enquiries@murd.gov.na
Website: www.murd.gov.na

Enquiries: T. Kamati Our Ref: 17/4/1/W3 Date: 8 November 2017
Tel: (+264+61) 297 5201 Your Ref:
Fax: (+264+01) 2973303

Willie Schutz Town and Regional Planning Consultants
P O Box 31761
WINDHOEK

Dear Mr. W. Schutz

ITEM NO. 103/2017: WINDHOEK: SUBDIVISION OF PORTION 5 OF THE FARM ONGOS NO. 38 INTO PORTIONS 58 TO 61 AND THE REMAINDER (STREET) AND THE NEED AND DESIRABILITY FOR TOWNSHIP ESTABLISHMENT ON PORTIONS 58 TO 61 OF PORTION 5 OF THE FARM ONGOS NO. 38 (TO BE KNOWN AS ONGOS, ONGOS EXTENSIONS 1 TO 3)

With reference to the above-mentioned application:

You are hereby informed that the Minister of Urban and Rural Development has, on 06 November 2017, approved the subdivision of Portion 5 of the Farm Ongos No. 38 into Portions 58 to 61 and Remainder (street, free of conditions) in terms of Section 21 of the Townships and Division of Land Ordinance, 1963 (Ordinance 11 of 1963), as amended and the need and desirability for township establishment on Portions 58 to 61 of the Farm Ongos No. 38 (to be known as Ongos, Ongos Extensions 1 to 3) in terms of Section 5(5)(a)(i) of the Townships and Division of Land Ordinance, 1963 (Ordinance 11 of 1963) as amended.

Attached, please find the original Subdivision Certificate.

Yours sincerely

NAMPAB SECRETARIAT



All official correspondence must be addressed to the Permanent Secretary

Figure 8: Ministerial Approval of Project

5.3. APPROVAL ENVIRONMENTAL CLEARANCE

The current Environmental Clearance Certificate was issued by the Ministry of Environment, Forestry and Tourism on 2 June 2020 which expired on 2 June 2023. See below a copy of the current Certificate:



The purpose of this submission is to renew the Environmental Clearance for a further 3 years to allow the Proponent to continue with the implementation of the project.

6. BULK SERVICES AND INFRASTRUCTURE PROVISION

The site will have the following bulk services:

6.1. ACCESS AND INTERNAL ROADS

The main access to the proposed residential township will be from the south via Monte Christo Road which links the development with the Western Bypass (B1 Trunk Road) from where the rest of Windhoek or Namibia can be accessed by the existing road network. Monte Christo Road is tarred up to the intersection with Mashitshi Road at the entrance of the Hakahana Township from where it becomes a gravel road. See map below:

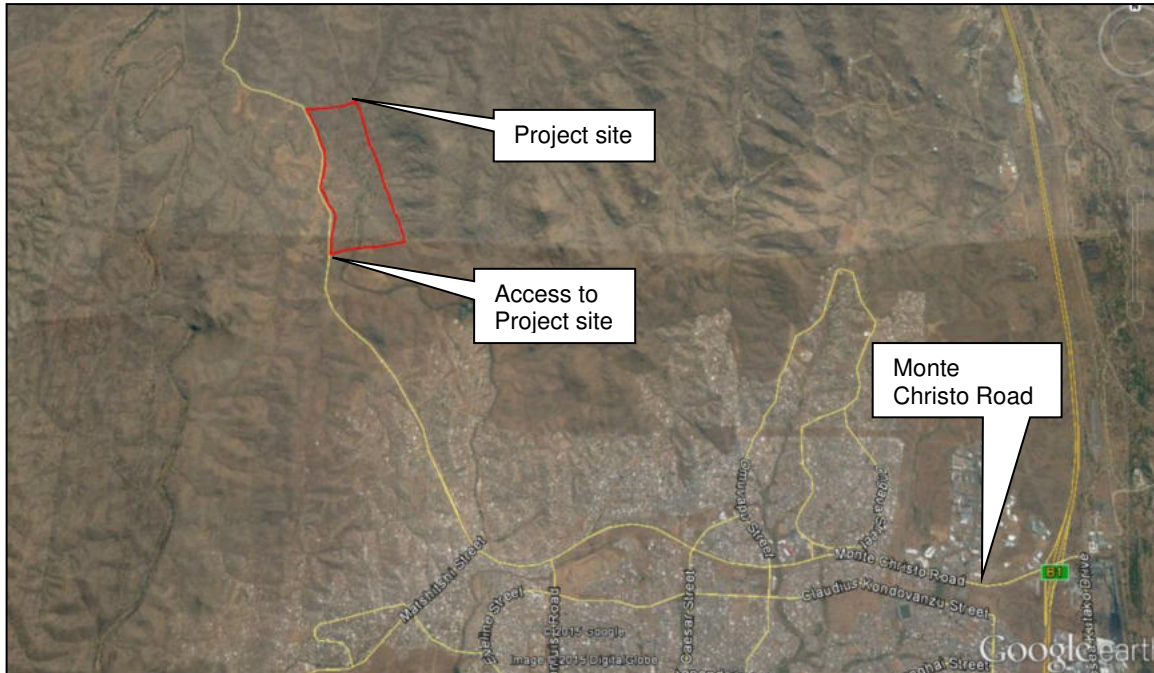


Figure 9: Access to the project site

Internal roads will be gravel roads, while main routes will have asphalt surfacing to allow for bus and public transport. The gravel surfacing will enable the future upgrading of the streets to block paving or asphalt surfacing.

Crossfall values of the internal streets will be designed in such a way as to intercept stormwater runoff and assist in stormwater accommodation.


The streams and rivers in the area are mostly ephemeral and therefore low water crossings are envisaged for most areas where streams are to be crossed by roads. Bridges will form part of the final phases of the development where necessary and in conjunction with the master planning for the area, to allow for crossings of major routes during peak storm events.

The required parking areas will be provided at the different facilities that form part of the development and will be shown on the site development plans of the town planners and/or architects.

6.2. WATER SUPPLY

Water will be supplied either directly from NamWater or from the City of Windhoek's water reticulation system. Based on the project proposal, Element Consulting Engineers calculated the water usage/water demand as in the *Table* below:

Table 2: Water demand calculations

		PROJECTED WATER DEMAND FIGURES FOR PORTION 5 OF ONGOS					
		DESCRIPTION	NUMBER	AREA (m ²)	DEMAND PER DAY		
LITRE / UNIT	LITRE/ 100m ²				LITRE/ PERSON		
Residential		944		1000			944
General residential (1:250m ² and 60% of available area)		326		500			163
Business (70% of available area)			26503		400		106
Government (70% of available area)			1250		400		5
Public Open Space			132617				30
Institutional (70% of available area)			15500		400		62
Total							1310
Total including 48 hour storage							2620
Allowance for fire water storage for Group 1, thus 2hour storage at 500 litre/min							60
Total storage requirement for emergency and fire water							2680
Reservoir capacity to be allowed for							≈ 3000

Bulk water connections to the area are not available at this point in time. However, bulk water provision will be made by the City of Windhoek, according to a master planning project, currently underway in the area. Temporary supply lines are proposed for the

short-term development of the initial phases, should the supply and availability of water be sufficient in the northern supply zones.

Below are calculations indicating possible demand requirements for the developing phases starting in phase 1 and with the development being completed in phase 4 and resulting in the above-mentioned water demands.

Table 3: Phase 1 Projected Water Demands


		PROJECTED WATER DEMAND FIGURES FOR PORTION 5 OF ONGOS				
		Phase 1				
DESCRIPTION	NUMBER	AREA (m ²)	DEMAND PER DAY			TOTAL DEMAND PER DAY (m ³ /day)
			LITRE / UNIT	LITRE/ 100m ²	LITRE/ PERSON	
Residential	223		1000			223
General residential (1:250m ² and 60% of available area)	45		500			22.5
Business (70% of available area)		1941		400		8
Government (70% of available area)		0		400		0
Public Open Space		4432				10
Institutional (70% of available area)		7431		400		30
Total						293
Allowance per day (m ³)						300
Peak flow rate in litres/second at a peak of 1.6						5.556

Table 4: Phase 2 Projected Water Demands



		PROJECTED WATER DEMAND FIGURES FOR PORTION 5 OF ONGOS				
		Phase 2				
DESCRIPTION	NUMBER	AREA (m ²)	DEMAND PER DAY			TOTAL DEMAND PER DAY (m ³ /day)
			LITRE / UNIT	LITRE/ 100m ²	LITRE/ PERSON	
Residential	156		1000			156
General residential (1:250m ² and 60% of available area)	114		500			57
Business (70% of available area)		770		400		3
Government (70% of available area)		0		400		0
Public Open Space		4432				5
Institutional (70% of available area)		1455		400		6
Total						227
Total for Phase 1						293
Allowance per day (m ³)						520
Peak flow rate in litres/second at a peak of 1.6						9.628

Table 5: Phase 3 Projected Water Demands

		PROJECTED WATER DEMAND FIGURES FOR PORTION 5 OF ONGOS				
		Phase 3				
DESCRIPTION	NUMBER	AREA (m ²)	DEMAND PER DAY			TOTAL DEMAND PER DAY (m ³ /day)
			LITRE / UNIT	LITRE/ 100m ²	LITRE/ PERSON	
Residential	237		1000			237
General residential (1:250m ² and 60% of available area)	23		500			11.5
Business (70% of available area)		11531		400		46
Government (70% of available area)		1158		400		5
Public Open Space		4432				5
Institutional (70% of available area)		7431		400		30
Total						334
Total for Phase 1						293
Total for Phase 2						251
Allowance per day (m ³)						878
Peak flow rate in litres/second at a peak of 1.6						16.259

Phase 4 will thus result in the total demand figures as per the water demand calculations indicating demand for the entire development.

Internal water provision will be done by means of PVC-U water pipes (the class and diameters to be confirmed upon final design). Demand calculations and projections for future expansions and growth will be done according to the Guidelines for Human Settlement Planning and Design Volume 2 and where deemed necessary, the Tshwane Metro Municipality Guidelines for the Design and Construction of Water and Sanitation Systems.

The fire water and the domestic water will be served from the same reticulation network. Necessity of treatment/purification of the water supply will be considered upon verification of bulk water supply connection and origins of the water.

Adequate storage capacity, to provide for backup storage to bridge interruptions in supply or downtime due to system maintenance, will be provided in the form of storage tanks and/or reservoirs. These reservoirs will also provide storage for fire situations where necessary. Projected water demand figures are in the range of 1310 m³/day or 25l/s on the supply line for the entire development during peak usage with a 1.6 peak factor.

6.3. ELECTRICITY RETICULATION

Electricity will be supplied by City of Windhoek through the City's electrical distribution network.

Electricity Demand

The electricity demand for the development is estimated with the following criteria:

- Three phase supplies to all the business, government and institutional erven.
- Single phase supplies to all the group/town house type residential units.
- Single phase supplies to all the 300m²-600m² residential erven.

The After Diversity Maximum Demand (ADMD) of the group/town house type residential units is expected to be around 1.6kVA. The ADMD of the business, government and institutional erven are expected to be around 60VA/m² and the ADMD of the 200-600m² residential units are expected to be around 2kVA.

The total load for this area can be expected to be in the region of 8600kVA.

Electricity supply

The Internal Main medium voltage backbone shall be an 11kV underground cable network. This Internal Primary system shall feed mini substations, optimally positioned for an effective LV system. The Secondary system shall be a network of underground LV main feeder cables between the mini substations and street kiosks. These street kiosks shall feed erven per underground LV cables.

Buildings such as the garages and retail developments might be served with a medium voltage connection.

Presently there is not sufficient medium voltage (11kV) bulk capacity available from City of Windhoek, who is the supply authority for this area, but there is adequate High Voltage (132/66kV) supply available at Goreangab Load Centre. A new 66/11kV step down substation will be required with 2 X 20MVA transformers initially. The developer will be required to cover the cost of the substation on a pro rata basis, which could be up to 90% of the costs. The lead time for such a substation would be a minimum of three years. This includes the EIA and the procurement of long delivery items such as the transformers.

Street kiosks shall be used as breaker and metering domains. Metering shall be of the pre-pay metering type. Metering of streetlight energy usage shall be done at mini substations.

Street Lighting

All street lighting shall be done according to the Municipal standards.

Energy Conservation

There are presently energy and capacity constraints in Namibia, a situation that is expected to remain for up to ten years. Supply is being made available under an interim requirement that consumers reduce their consumption by 10%. Measures should be built into the development to demonstrate compliance to this requirement.

Energy conservation is an end user activity. Construction of dwellings and buildings should thus be energy efficient, namely energy efficient lamps, light fittings and Inverter type air conditioning should be implemented and the same applies for the eventual appliances to be used.

Telecommunication

A system of underground ducts and accessible junction boxes will be installed for telephone and other communications services. The duct system will link to all individual erven and other facilities on the development. A dedicated room will be provided for exchange equipment.

6.4. SEWAGE TREATMENT AND DISPOSAL

Currently there are no bulk sewer services in the area. Element is thus proposing a sewer solution for the site which will be planned, constructed and managed along guidelines to be provided by City of Windhoek and the Laws and guidelines governing the planning, construction and management of bulk sewer systems. In recent years, major development has taken place in the area of technology for the supply of affordable, small, environmentally friendly sewage treatment systems. Numerous different sewage treatment systems are available on the market that ranges from systems that service one single house to systems that can service an entire development. These systems are able to treat domestic effluent to acceptable standards according to National Standards as required by law. The effluent can be discharged into existing water courses or used for irrigation purposes, without any adverse effects to the environment. Consideration is being given to the implementation of similar systems to enable development of the area in phases.

Internal sewer reticulation will be done by means of Class 34 PVC-U sewer pipes (the diameters to be confirmed upon final design). Flow calculations and projections for future expansions and growth will be done according to the Guidelines for Human Settlement Planning and Design Volume 2.

Effluent quantities are regarded as approximately 80% of total water demand per day, which results in an estimated flow rate of 1050m³/day. At peak a total of ±22ℓ/s for the entire development area (peak of 1.8 for bulk sewer line) is obtained. With the development of the area in phases, the flows can be divided proportionally to get an indication of the effluent flow rates for planning purposes.

It is envisaged that there will be two areas dedicated to the treatment of effluent. This will however be confirmed upon finalization of discussions with neighbouring landowners

pertaining to sewage treatment options. Special applications may be submitted to Water Affairs to minimise the required buffer zone to a treatment works to 50m. This will also involve alterations to the standard treatment processes. These areas will cater for the installation of package plants in sets, as the development size increases, and the effluent becomes more.

Treatment will take place to required standards and the treated effluent will be discharged into an existing water course. The necessary permits will be obtained from the relevant authorities. Concrete manholes at intervals not exceeding 75m will provide service access to the sewer network for maintenance purposes.

6.5. SOLID WASTE DISPOSAL/REFUSE REMOVAL

Solid waste disposal will be done in accordance with regulations as per the local authority. The provision of solid waste disposal services in the area will be undertaken by the local authority or by designated service providers in the area.

6.6. STORMWATER MANAGEMENT

The high-level flood line investigation report, indicating cross-sections and positions of the 1:50 and 1:100 year flood lines, is attached. The town planning (layout and land use plan) was done with this report in consideration, with the placement of erven being done as not to intersect with the flood lines.

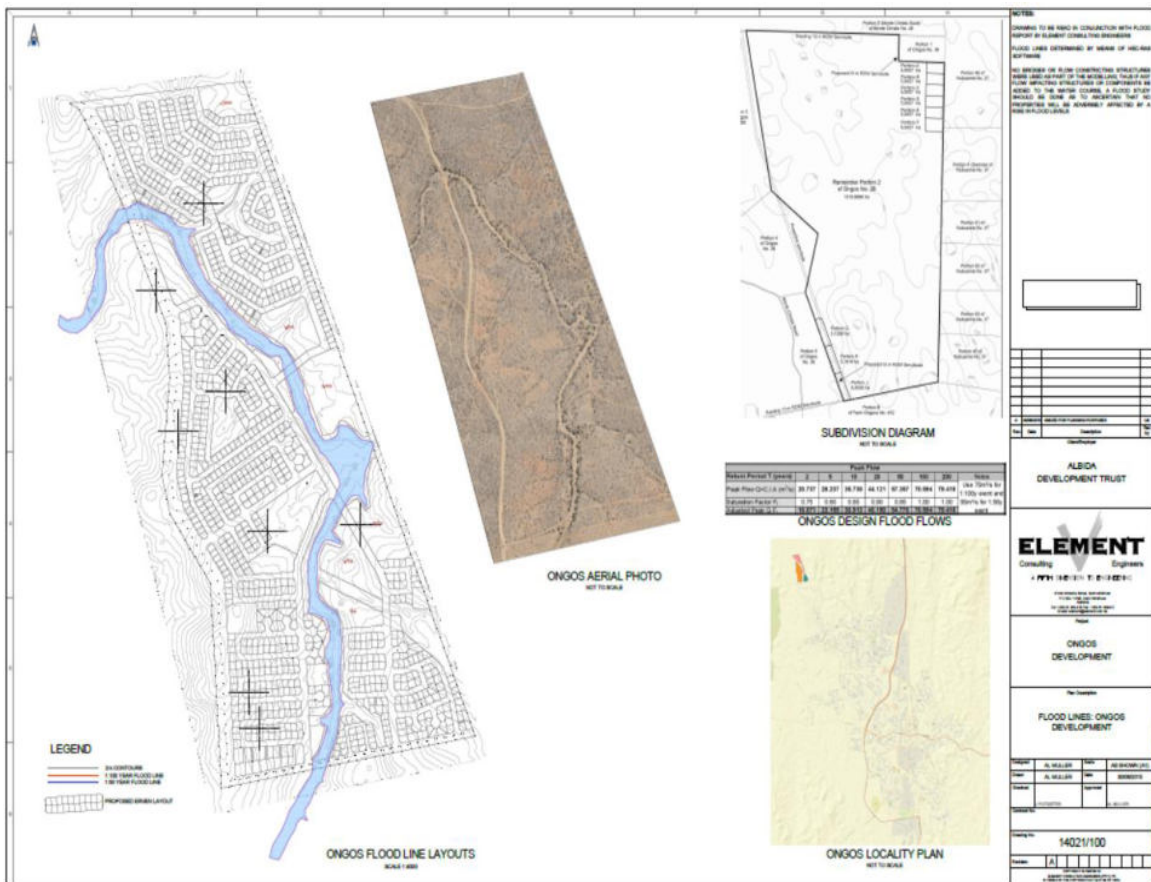


Figure 10: Stormwater Management

Internal roads and channels will serve as conduits during storm events to convey runoff into formalized water courses. Pipe culverts and formalized stormwater systems will be utilised where drainage cannot be facilitated by means of overland flow. No development will take place in the 1:100 year flood area.

6.7. FIRE PROTECTION

The Proponent will put in the necessary fire protection infrastructure / extinguishers as per requirements. It is advised that a specialist Fire Protection Specialist is contracted to introduce a proper fire protection plan with the required infrastructure and to oversee the annual auditing and maintenance of the infrastructure.

7. ASSUMPTIONS AND LIMITATIONS

It is assumed that the information provided by the proponent (Albida Development Trust), Willie Schutz Town and Regional Planning Consultants, the 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 project are the following:

- The Namibian Constitution
- The Environmental Management Act (No. 7 of 2007)
- The Townships and Division of Land Ordinance (No. 11 of 1963)
- The Windhoek 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 provide measures against the dumping or recycling of foreign nuclear and toxic waste on Namibian territory.” This article recommends that a relatively high level of environmental protection is called for in respect of pollution control and waste management.

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*).

CONCLUSION AND IMPACT

In considering the environmental rights, Albida Development Trust should consider the following in devising an action plan in response to the articles:

- Implement a “zero-harm” policy that would guide decisions.
- 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 Albida Development Trust’s Environmental Control System (ECS).

ENVIRONMENTAL MANAGEMENT ACT (NO. 7 OF 2007)

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 Renewal and an Environmental Management Plan Renewal be conducted for the following listed activities in order to obtain an Environmental Clearance Certificate:

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

5.2 Establishment of land resettlement schemes

INFRASTRUCTURE

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 development must be included as well as public consultation. The Act further requires all major industries 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. They 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

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

The public were invited to give input, comments and opinions regarding the proposed project. Letters have been sent to Interested and Affected Parties (I&APs) and to relevant authorities. Notices were placed in two local newspapers (the Namibian and Republikein of 24 June 2015 and 1 July 2015) on two consecutive weeks inviting the public to participate and provide comments on the proposed project. Notices were also displayed on the Town Planning Notice Board in the Customer Care Centre, Municipal Offices, Rev. Michael Scott Street, Windhoek and at the entrance to the site.

A public meeting was held on 17 July 2015 at 10h00 in Windhoek in the Offices of Green Earth Environmental Consultants. This meeting served as a platform to share information with I&AP's and the general public.

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 project site 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.

THE TOWNSHIPS AND DIVISION OF LAND ORDINANCE (NO. 11 OF 1963)

The Townships and Division of Land Ordinance (No. 11 of 1963) as amended by Act No. 28 of 1992 regulates the consolidation and amendment of the laws relating to the establishment

of townships and to provide for the regulation and control of the development and subdivision of land and for matters incidental thereto.

CONCLUSION AND IMPACT

Both the City of Windhoek as well as the Minister of Urban and Rural Development followed the guidelines and stipulations of the Act in approving the Subdivision of Portion 5 of Farm Ongos No. 38.

THE WINDHOEK TOWN PLANNING SCHEME

The Windhoek Town Planning Scheme (as amended in Windhoek Amendment Scheme No. 97 – promulgated 15 August 2018 in Government Gazette No. 6680, Notice 188) applies to the area as indicated on the scheme maps and corresponds with the Townlands Diagram for Windhoek Town and Townlands. Portion 5 of Farm Ongos No. 38 falls in the Windhoek Municipal Townlands but outside both the Windhoek Town Planning Schemes. The land is therefore not zoned and deemed to be “undetermined” as per the definitions of the Windhoek Town Planning Scheme. The proposed new Township (Ongos, Ongos Extensions 1 – 3) will be included under the Windhoek Town Planning Scheme. The proposed land uses will be aligned in accordance with the stipulations and any future development will be subject to the stipulations of the Scheme.

The general purpose of this Scheme is the coordinated and harmonious development of the area of Windhoek (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 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 so the Scheme.

The erven to be created will thus be zoned and used in accordance with the Windhoek Town Planning Scheme stipulations. The Town Planning Scheme provisions as well as other supporting Policies of the City of Windhoek supports the proposed uses on the Erven.

CONCLUSION AND IMPACT

Willem Schutz Town and Regional Planning Consultants (WSTRPC) applied to City of Windhoek for the approval of the proposed township. Further approvals for the proposed project are subject to the renewal of the Environmental Clearance for the proposed development.

The proposed township establishment and land use will not have a negative impact on the public as the surrounding uses are also mixed residential and farming.

Table 6: Other 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 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.	The Proponent must abide to the Electricity Act.
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 subsection (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	The Proponent must adhere to the Pollution Control and Waste Management Bill.

	emergency preparedness by the person handling hazardous substances, through emergency response plans.	
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	The proponent should adhere to the stipulations of the Atmospheric Pollution Prevention Ordinance.

	produced by the scheduled process.	
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.

<p>Communal Land Rights</p>	<p>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.</p>	<p>Consent should be obtained from Traditional Authorities, Communal Boards, Chiefs, Kings, Queens etc. if required.</p>
<p>Traditional Authorities Act (No. 17 of 1995)</p>	<p>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.</p>	<p>Traditional Authorities should be consulted when required.</p>
<p>Public and Environmental Health Act</p>	<p>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 healthy environment; and (e)</p>	<p>The proponent and contractor should adhere to the Public and Environmental Health Act.</p>

	provide for early detection of diseases and public health risks.	
Coronavirus (Covid-19) Pandemic	The current global Coronavirus (Covid-19) pandemic and the associated State of Emergency and health restrictions globally may result in some delays and logistic disruptions. The pandemic might have an impact on obtaining equipment, specialist workforce mobilisation and implementation of the project. The health restrictions may have an impact on campsite set-up, traveling of personal/workers and building of the infrastructure. The proponent, contractor and subcontractors should adhere to all the international, regional and local Covid-19 health restrictions and protocols.	The proponent, contractor and workforce should adhere to the restrictions and regulations.
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,	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.

	<p>shell mounds or other sites used by such people; or</p> <p>(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.</p>	
Public Health Act (No. 36 of 1919)	<p>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.”</p>	<p>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.</p>
Soil Conservation Act (No. 76 of 1969)	<p>The objectives of this Act are to:</p> <p>Make provisions for the combating and prevention of soil erosion;</p> <p>Promote the conservation, protection and improvement of the soil, vegetation, sources and resources of the Republic;</p>	<p>Only the area required for the operations should be cleared from vegetation to ensure the minimum impact on the soil through clearance for construction.</p>
Air Quality Act (NO. 39 of 2004)	<p>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.</p>	<p>The proponent and contractor should adhere to the Air Quality Act.</p>
Vision 2030 and National Development Plans	<p>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</p>	<p>The proposed project is an important element in employment creation.</p>

	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.	
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CONCLUSION AND IMPACT

It is believed the above administrative, legal and policy requirements which specifically guide and governs development will be followed and complied with in the planning, implementation and operations of the activity.

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

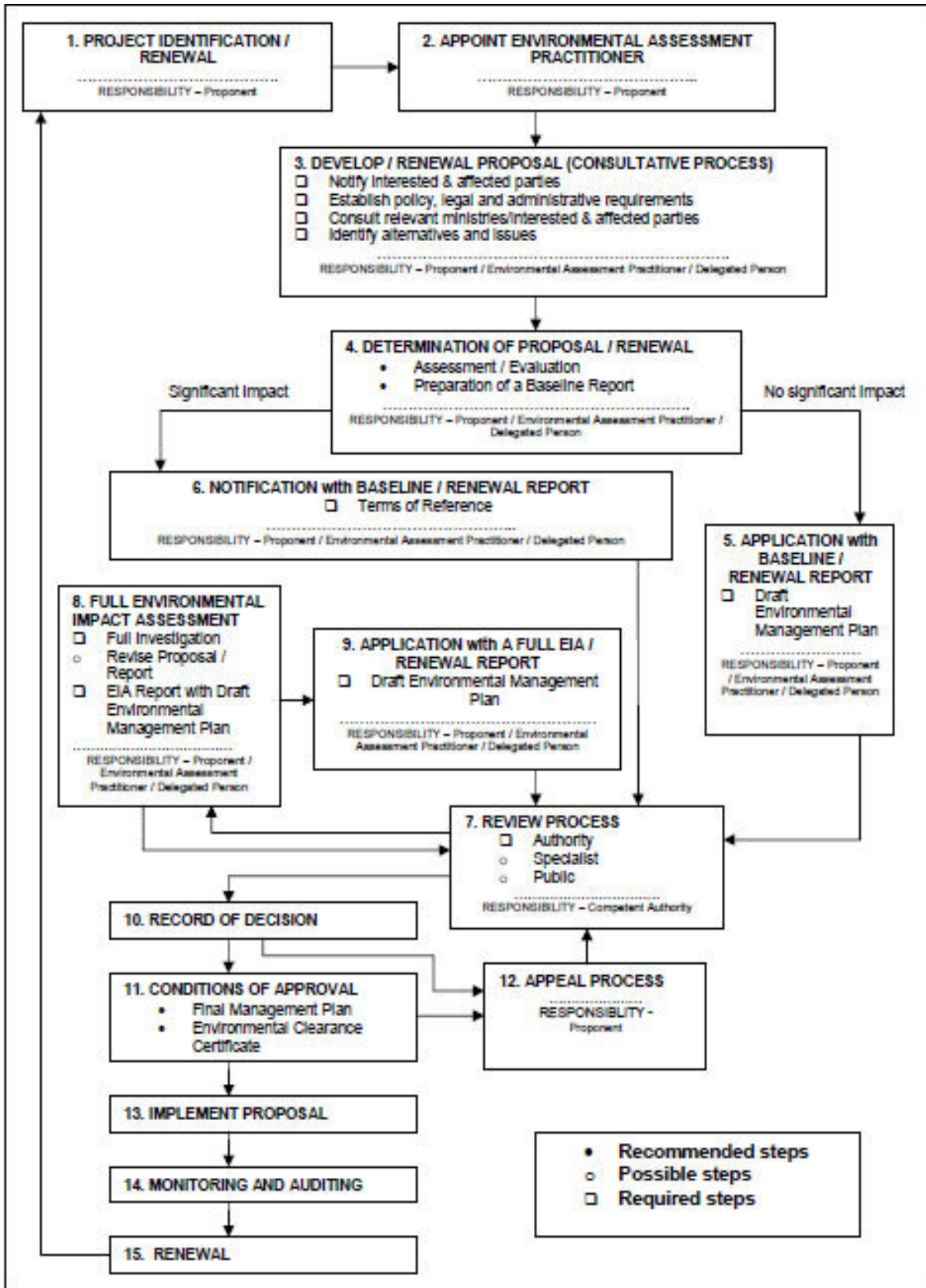


Figure 11: Flowchart of the assessment Process

9. AFFECTED NATURAL AND SOCIAL ENVIRONMENT

9.1. CLIMATE

In broad terms the climate can be described as semi-arid, with summer rainfalls and highest temperatures occurring during October and February. Maximum temperatures recorded in the area vary just under 40 degrees Celsius with an average annual temperature of more than 22 degrees Celsius (*Weather - the Climate in Namibia, 1998 – 2012*).

Rainfall in the form of thunderstorms is experienced in the area during the summer months between October and April. It is further characterised by an average annual rainfall of 400mm in comparison to 250mm for the entire country. Over 70% of the rainfall occurs in the period between November and March with mean annual gross evaporation of 2600-2800mm (*Weather - the Climate in Namibia, 1998 – 2012*).

The prevailing wind direction is expected to prevent the spread of any nuisance namely noise and smell.

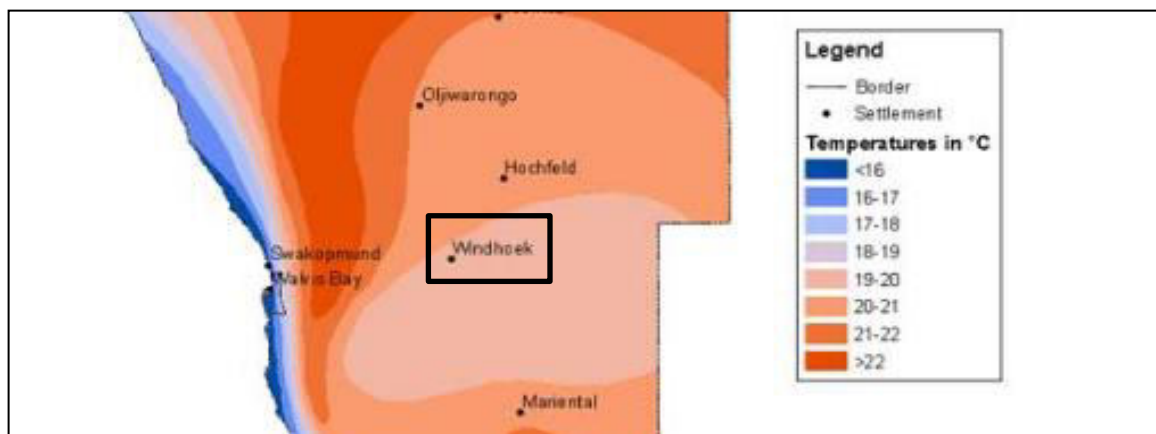


Figure 12: Average temperatures (*Atlas of Namibia Project, 2002*)

CONCLUSION AND IMPACT

The project will not have an impact on the climate.

9.2. GEOLOGY, SOILS AND GEOHYDROLOGY

Portion 5 of Farm Ongos No. 38 is located in the Khomas Trough on a geological area classified as Damara Supergroup and Gariep Complex. See Map below:

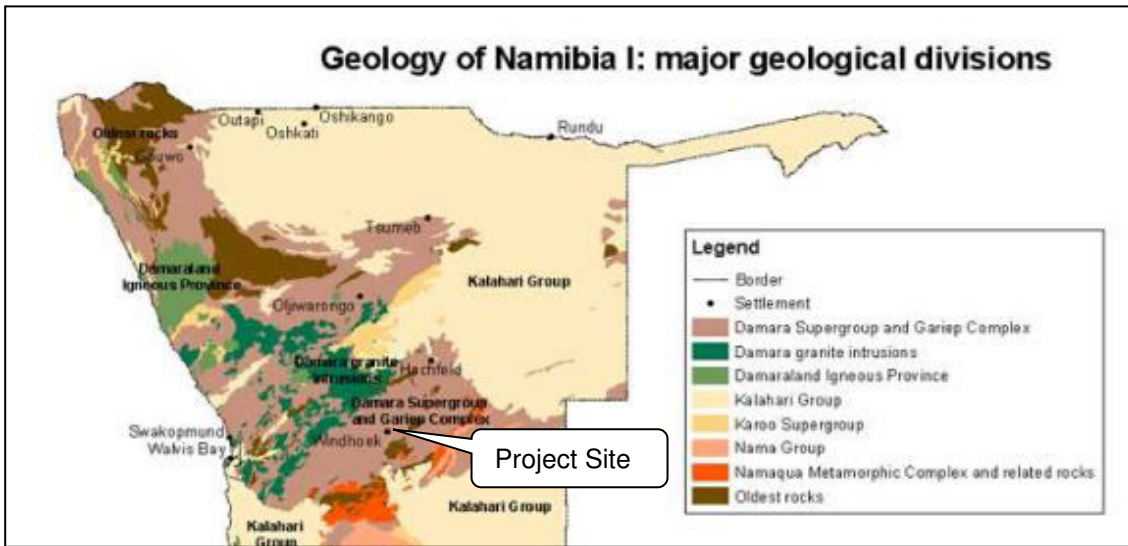


Figure 13: Geology of Namibia (Atlas of Namibia Project, 2002)

The project site is generally even with some higher areas at places. Natural slopes are seen near natural drainage courses on the project site. The soil is suitable for development however the soil is also erodible and should not be cleared unnecessarily from vegetation if not required for the placement of buildings or roads. Unnecessary clearing of soil will lead to erosion.

CONCLUSION AND IMPACT

The development will not impact on the geology, soils and geohydrology of the area. The surface drainage canals will be kept open in order that water can flow through.

9.3. BIODIVERSITY AND VEGETATION

The project site is located in the Tree and Scrub Savanna and Nama Karoo Biome. The Windhoek (including Ongos) area in general contains a large diversity of annual and perennial grass, it is estimated that there is up to 101 grass species. Four of these species are endemic namely *Eragrostis omahekensis*, *Eragrostis scopelophila*, *Pennisetum foermeranum* and *Setaria finite* (Mannheimer & Curtis, 2009). However, these species are not present on the specific site as it has been mostly cleared from vegetation. The natural characteristics of the site namely the vegetation clearance and the destruction of habitats is expected to further on have a low impact on the environment. See map below:

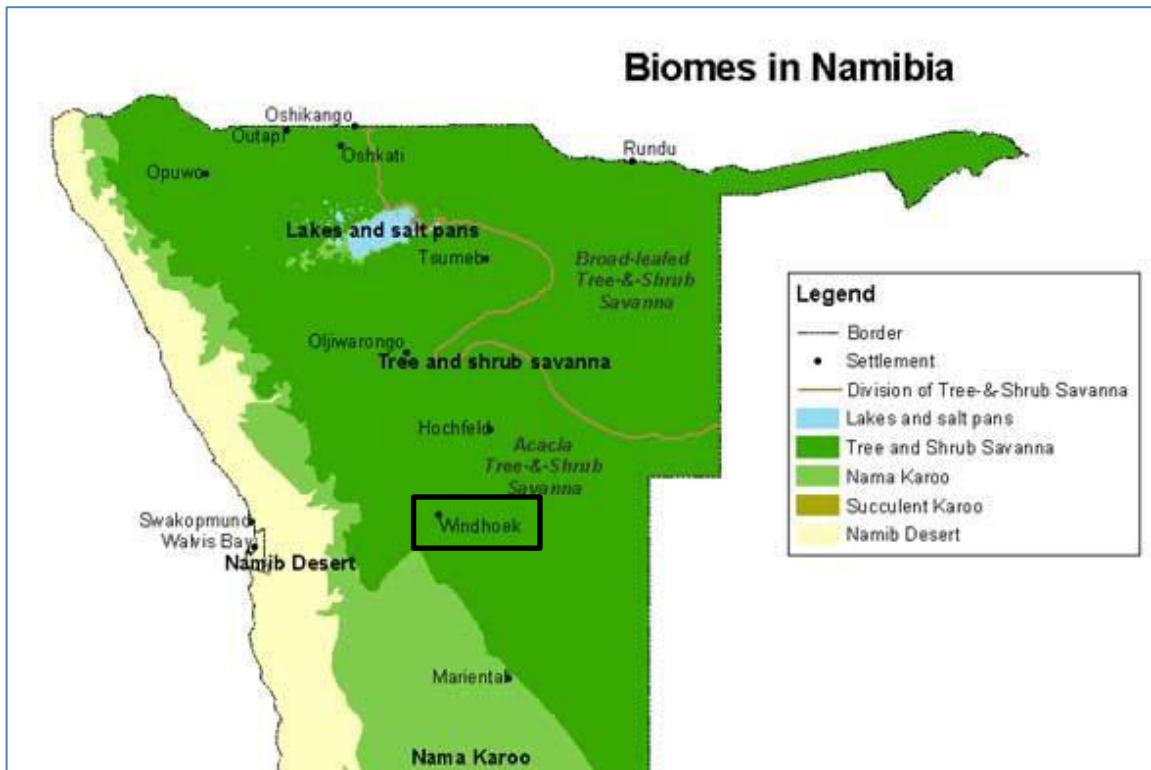


Figure 14: Biomes in Namibia (Atlas of Namibia, 2002)

CONCLUSION AND IMPACT

The development will have a low impact on vegetation, shrubs and trees.

9.4. SOCIAL-ECONOMIC COMPONENT

The proposed township development/establishment will have a positive impact on the socio-economic environment because of employment creation and the provision of erven. Apart from the proponent’s intension 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 and additional support for existing businesses etc.

The proposed project will create semi-permanent and permanent employment. Since most land use in and around the area is characterised by farming and residential activities, the operations will not have a negative impact on the neighbours or the surrounding areas.

CONCLUSION AND IMPACT

The activities will have a positive impact on the community since employment will be created.

9.5. 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 in the area. However, the Namibian National Heritage Act (No. 27 of 2004) provides for the protection and conservation of places and objects of heritage significance and the registration of such places and objects and to provide for incidental matters.

CONCLUSION AND IMPACT

No heritage resources or graveyards were observed on the site and in the area.

9.6. SENSE OF PLACE

The proposed development 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 project 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 construction phase because of the neighbouring activities.

CONCLUSION AND IMPACT

The impact on the sense of place will be low.

9.7. 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 workplace. The introduction of external workers into the area is sometimes accompanied with criminal activities posing security risks for neighbours. 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.

CONCLUSION AND IMPACT

The activity will have a low impact on the health of the affected community.

10. IMPACT ASSESSMENT AND EVALUATION

The Environmental Impact Assessment Renewal sets out potential positive and negative environmental impacts associated with the project site. The following assessment methodology will be used to examine each impact identified, see *Table* below:

Table 7: Impact Evaluation Criterion (DEAT 2006)

Criteria	Rating (Severity)	
Impact Type	+	Positive
	0	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 on the receiving environment are discussed in the paragraphs below:

10.1. IMPACTS DURING THE OPERATIONAL PHASE

10.1.1. ECOLOGICAL IMPACTS

Staff and visitors should only make use of walkways and existing roads to minimise the impact on vegetation. 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	M	L

10.1.2. 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 has to 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

10.1.3. 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	M	L

10.1.4. GENERATION OF WASTE

Household waste from the activities at the site 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

10.1.5. FAILURE IN RETICULATION PIPELINES

There may be a potential release of sewage, stormwater 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

10.1.6. FIRES AND EXPLOSIONS

There should be sufficient water available for firefighting purposes. Ensure that all fire-fighting devices are in good working order and are serviced. All personnel have to 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

10.1.7. 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	2	4	2	M	L

10.2.CUMULATIVE IMPACTS

These are impacts on the environment, which results from the incremental impacts of the construction and operation of the development when added to other past, present, and reasonably foreseeable future actions regardless of which person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. 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 construction include: sewer damages/maintenance, uncontrolled traffic and destruction of the vegetation or the 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	-	2	3	4	2	M	L

11. 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 renewal for the proposed township development/establishment on Portion 5 of Farm Ongos No. 38.

Negative impacts that can be associated with the development are most likely to include: production of solid waste, dust emissions, atmospheric emissions, noise pollution, movement of soils, increased wastewater generation, the disruption of groundwater from the foundation or other structures, 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. However, this project is believed to be an asset to this area. Facilities and employment will be made available for which there is a need.

After assessing all information available on this project, *Green Earth Environmental Consultants* believe that the development is required.

12. RECOMMENDATION

It is therefore recommended that the Ministry of Environment, Forestry and Tourism through the Environmental Commissioner support and approve the Environmental Clearance Renewal for the proposed township development/establishment on Portion 5 of Farm Ongos No. 38 and for the following listed activities:

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

5.2 Establishment of land resettlement schemes

INFRASTRUCTURE

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.

LIST OF REFERENCES

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Water Resource Management Act, 2004. *Office of the Prime Minister*. Windhoek. Namibia, pp. 6 – 67.

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