



**URBAN
DYNAMICS**

town and regional planners

JULY 2022
REPORT NUMBER: APP-003518

APPLICATION FOR ENVIRONMENTAL CLEARANCE:

FOR TOWNSHIP ESTABLISHMENT AT ONAWA, IN THE OSHANA REGION (TO BE
KNOWN AS ONAWA PROPER)

AN ENVIRONMENTAL SCOPING ASSESSMENT



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PLANNING AND SCOPING REPORT FOR THE ESTABLISHMENT OF A TOWNSHIP AT ONAWA, PREPARED BY

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GENERAL LOCATION DESCRIPTION OF THE DEVELOPMENT AREA:

DESCRIPTOR:	LOCATION SPECIFICS:
NATURE OF ACTIVITIES:	For the construction of public roads, infrastructure and activities in watercourses within flood lines through township establishments.
REGION:	Oshana Region
LOCAL AUTHORITY:	Oshakati Town Council
FALL WITHIN:	Within the Remainder of Farm Oshakati Town and Townlands No. 880
NEAREST TOWNS / CITY:	Oshakati
SIZE OF PTN	337,368 Sqm
LAND USE:	Undetermined
STRUCTURES:	Yes
HISTORICAL RESOURCES:	No
CEMETERY:	Yes
FLOODLINES:	Yes
ENVIRONMENTAL SIGNIFICANT AREA:	<ul style="list-style-type: none"> ➤ Water areas ➤ Large Trees
LATTITUDE:	-17.750149 S,
LONGITUDE:	15.729584 E
RELEVANT LISTED ACTIVITIES:	<p>The Environmental Management Act (Act 7 of 2007),</p> <p>Section 8: Water Resource Developments;</p> <p style="padding-left: 40px;">8.8. Construction and other activities in watercourses within flood lines;</p> <p style="padding-left: 40px;">8.9. Construction and other activities within a catchment area;</p> <p>Section 10: Infrastructure:</p> <p style="padding-left: 40px;">10.1. The construction of-</p> <p style="padding-left: 80px;">(b) public roads;</p> <p style="padding-left: 40px;">10.2. Route determination of roads and design of associate physical infrastructure where-</p> <p style="padding-left: 80px;">(a) public roads.</p> <p>SECTION 11: Other activities</p> <p style="padding-left: 40px;">11.2. Construction of cemeteries, camping, leisure and recreation sites.</p>

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ABBREVIATION:	DESCRIPTION:
am	ANTE MERIDIEM / BEFORE MIDDAY
Av	AVENUE
BID	BACKGROUND INFORMATION DOCUMENT
DEM	DIGITAL ELAVATION MODEL
ER	EMPLOYERS REPRESENTATIVE
EA	ENVIRONMENTAL ASSESSMENT
EC	ENVIRONMENTAL COMMISSIONER
ECO	ENVIRONMENTAL CONTROL OFFICER
EMP	ENVIRONMENTAL MANAGEMENT PLAN
Etc.	ET CETERA / OTHER SIMILAR THINGS
e.g.	EXEMPLI GRATIA
FRMP	FLOOD RISK MANAGEMENT PLAN
HIV	HUMAN IMMUNODEFICIENCY VIRUS
i.e.	ID EST. / IN OTHER WORDS
I&APs	INTERESTED AND AFFECTED PARTIES
NBD	THE NAMIBIA BIODIVERSITY DATABASE
NHC	NAMIBIAN HEALTH CARE
NORED	NORTHERN REGIONAL ELECTRICITY DISTRIBUTOR
pm	POST MERIDIEM / AFTER MIDDAY
SME	SMALL-AND-MEDIUM-SIZED ENTERPRISE
TRRP	TREE REMOVAL AND REPLACEMENT PLAN
TB	TUBERCULOSIS
URPB	URBAN AND REGIONAL PLANNING BOARD
WMP	WASTE MANAGEMENT PLAN
UNIT SYMBOL:	UNIT DESCRIPTION:
0°	DEGREES CELSIUS
E	EAST
ha	HECTARES
Km	KILOMETRE
m	METER
mm	MILLIMETRE
S	SOUTH
m ²	SQUARE METERS
%	PERCENTAGE

1 APPOINTMENT

Oshakati Town Council, in partnership with the Development Workshop of Namibia (DWN), appointed Urban Dynamics to obtain Environmental Clearance for

TOWNSHIP ESTABLISHMENT AT ONAWA OSHAKATI IN THE OSHANA REGION.

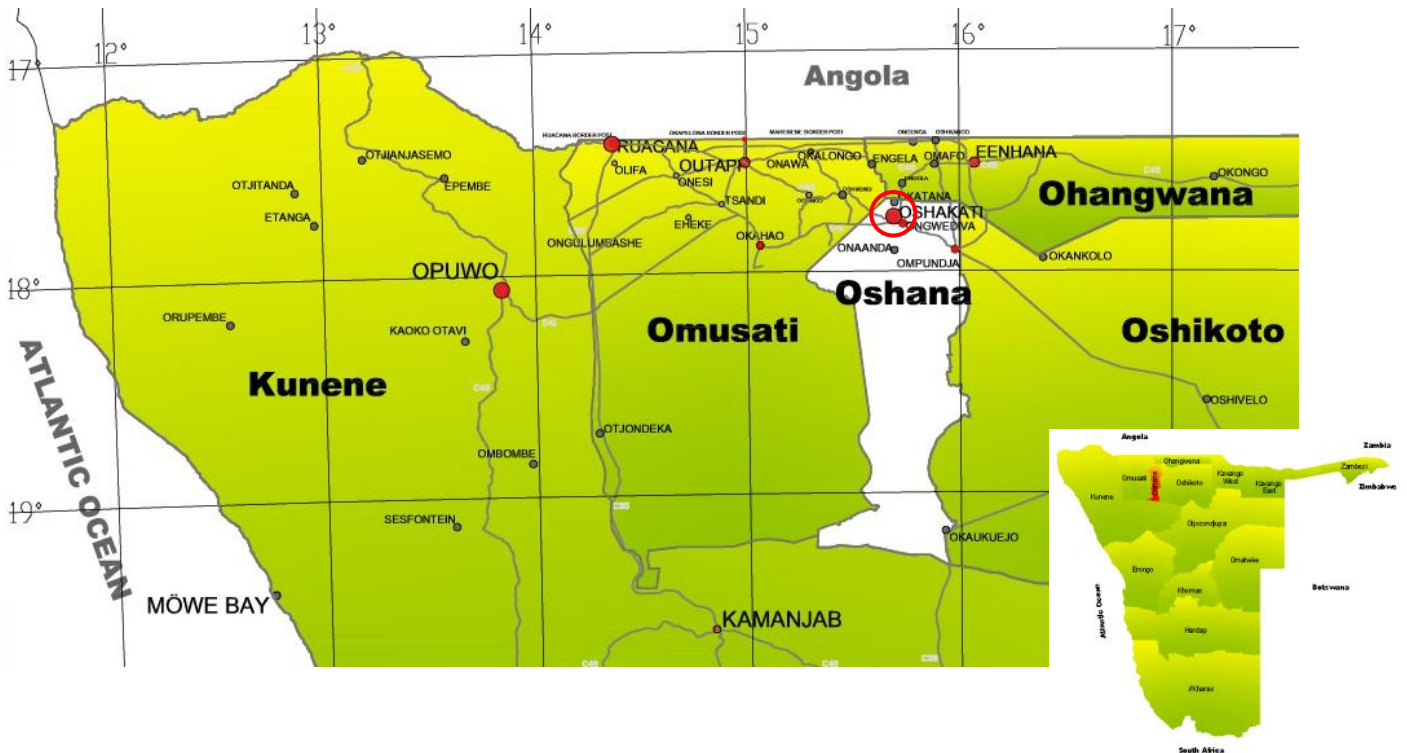
The relevant documentation are included in support of our application to the Environmental Commissioner; please refer to the appendices attached hereto.

2 BACKGROUND

Development Workshop of Namibia (DWN) currently assists the Oshakati Town Council with providing low-cost erven via a high-density residential township that caters to Onawa's ultra-low-income residents.

As a result, DWN appointed Urban Dynamics Africa to plan and obtain Environmental Clearance to establish a new township at Onawa, within the Oshakati Town and Townlands No. 880 in the Oshana Region.

Figure 1: The Locality of Oshakati



For the purpose of obtaining approval from the Ministry of Urban and Rural Development through the Urban and Regional Planning Board, an Environmental Clearance Certificate must first be obtained from the Ministry of Environment, Forestry and Tourism.

3 PURPOSE OF THE REPORT

In terms of the Environmental Management Act (Act, 7 of 2007) Regulations, township establishment is not listed. Although Section 27 of the Act lists land use and transformation of an area within which activities may be listed, the honourable Minister chose not to list township establishment as one such activity.

However, Urban Dynamics acknowledges that township establishment may, in some cases, have unacceptable environmental impacts. Impacts are generally limited since it is mainly done to extend existing urban areas by way of laying out new erven on Townlands already earmarked for urban development. To ensure that there are no unacceptable or unmitigated environmental and social impacts, Urban Dynamics provides the Environmental Commissioner (EC) with a baseline report, which will enable him to screen the project and determine whether a clearance certificate can be issued, or a full assessment is required. Find attached a copy of the meeting minutes with the Environmental Commissioner wherein this modus operandi was agreed upon (**Appendix "D"**).

4 NATURE OF THE ACTIVITY

The purpose of the application is to obtain approval from the Ministry of Environment, Forestry and Tourism in terms of The Environmental Management Act (Act 7 of 2007),

SECTION 8: WATER RESOURCE DEVELOPMENTS

- 8.8 Construction and other activities in watercourses within flood lines; and
- 8.9 Construction and other activities within a catchment area;

SECTION 10: INFRASTRUCTURE

- 10.1 The construction of-
 - (b) public roads;
- 10.2 Route determination of roads and design of associate physical infrastructure where-
 - (a) public road;

SECTION 11: OTHER ACTIVITIES

- 11.2 Construction of cemeteries, camping, leisure and recreation sites.

This report documents the baseline information necessary to enable the EC to screen this project and issue an Environmental Clearance Certificate in **Section 33 of the Environmental Management Act (Act 7 of 2007)**. It deals with the nature of the project, identifies the potential impacts that may be expected and the mitigation measures which will be implemented to deal with the impacts.

5 LEGISLATION

The following table provides the legislative framework against which the application should be assessed:

STATUTE	PROVISIONS	PROJECT IMPLICATIONS
<p>THE CONSTITUTION OF THE REPUBLIC OF NAMIBIA, 1990:</p>	<p>The state shall actively promote and maintain the welfare of the people by adopting, inter-alia, policies aimed at the following:</p> <p>(i) <i>management of ecosystems, essential ecological processes and biological diversity of Namibia and utilisation of living natural resources on a sustainable basis for the benefit of all.</i></p>	<p>Ensure that the ecological integrity of the ecosystems of the area is protected.</p>
<p>ENVIRONMENTAL MANAGEMENT:</p>	<p>Environmental Management Act No.7 of 2007:</p> <p>EIA Regulation (EIAR) GN 57/2007 (GG 3212):</p> <p>In terms of Sections, 10.1(a), 10.1(b), 10.2(a), and 10.2(c) for environmental clearance for the construction of oil, water, gas and petrochemical and other bulk supply pipelines, the construction of public roads and the construction of a road with more than one lane of traffic in both directions.</p> <p>In terms of Sections 8.8, 8.10 and 8.11, for construction and other activities in watercourses within flood lines, the reclamation of land from below or above the high water and the alteration of natural wetlands are listed activities.</p> <p>Prescribes the procedures to be followed for authorisation of the project (i.e. Environmental clearance certificate).</p>	<p>Evaluate if the alignment of the street will impact the social and natural environment.</p> <p>Determine if the risk of flooding of the erven is at acceptable levels.</p> <p>Determine if the proposed limited infill would impact the function of the watercourse or cause flooding elsewhere.</p> <p>Determine how wastewater pipelines in the riverbed should be designed, constructed and maintained to prevent groundwater and other pollution.</p>

<p>WATER AND RESOURCES MANAGEMENT:</p>	<p>The Water Act No. 54 of 1956 and Water Resources and Management Act No.27 of 2007 Section 92:</p> <p>Section 92 (1), A person may not engage in any construction work or activity that causes or is likely to cause, the natural flow conditions of water in to or from a watercourse to be modified, unless the Minister has granted prior written approval for the work or activity to be carried out.</p> <p>Section 100 (e) consult with the regional Council or local authority in determining the geographic extent of flood plain areas in its region or local authority, as the case may be, and assist any such councils in regulating the development and use of land within floodplain areas</p> <p>Section 100 (f) prescribe measures for control and management of storm and flood risk within local authority areas.</p> <p>Section 101 (b) development on the banks of any wetland or dam; and</p> <p>Section 101 (c) the removal of rocks, sand or gravel or any other material from a watercourse.</p>	<p>Assess the potential risk that the planned activities may have on both the watercourse on the one hand and future occupants of the land on the other.</p>
<p>THE PUBLIC HEALTH AND HEALTH AND SAFETY REGULATIONS:</p>	<p>The Public Health Act 36 of 1919 as amended and the Health and Safety Regulations:</p> <p>These acts control the existence of nuisances such as litter that can cause a threat to the environment and public health.</p>	<p>Prevent activities that can have an impact on the health and safety of the public.</p>
<p>COMPENSATION OF STRUCTURES OR FIELDS</p>	<p>Cabinet Compensation Policy Guidelines for Communal land:</p> <p>Providing compensation to individuals regarding relocating people, removing fruit trees, or developing Mahango fields within communal land.</p>	<p>Assess to what extent the proposed policy complies with the plan's provision to ensure the rights of individuals within communal land.</p>

6 METHODOLOGY

The following section discusses the methodology used by Urban Dynamics Africa (UDA) in assessing the site in terms of its strengths, weaknesses, opportunities and threats, and then formulate a planning approach to prepare a layout that harnesses the strengths, accommodates the weaknesses, utilise the opportunities and avoid the threats identified. These also include the natural and social environment within which the project is set.

6.1 SITE INFORMATION AND TOPOGRAPHY

Urban Dynamics undertook site visits in 2021 to identify the existing structures, infrastructure, topography, land uses, and how the settlement is currently functioning. The Development Workshop of Namibia appointed a registered land surveyor to survey the site in 2021 to obtain an accurate topographical base map and aerial survey images.

6.2 NATURAL RECEIVING ENVIRONMENT

The Urban Dynamics team conducted an environmental screening for the affected area in 2021. The team used orthophoto analysis, a site visit, literature surveys and extensive experience in the region.

Data sources used include:

- Atlas of Namibia (Mendelsohn et. al, 2002);
- The Tree Atlas of Namibia (Curtis & Mannheimer, 2005); and
- Northern Regions. Flood Risk Management Plan 2011 (MoRLGHR, 2011).

6.3 PUBLIC CONSULTATION

Urban Dynamics launched a public consultation campaign to ensure that any person interested in the project will have an opportunity to register as a stakeholder. Newspaper notices were placed in two separate newspapers simultaneously for two successive weeks, and a notice of intent was placed at the site. The advertisements which were placed are attached as **Appendix "C.1"**. Representatives of Urban Dynamics, the Oshakati Town Council, and Development Workshop of Namibia (DWN) held a community meeting on the 9th of February 2022 at Onawa.

Figure 2: Community Meeting



7 DESCRIPTION OF THE SITE

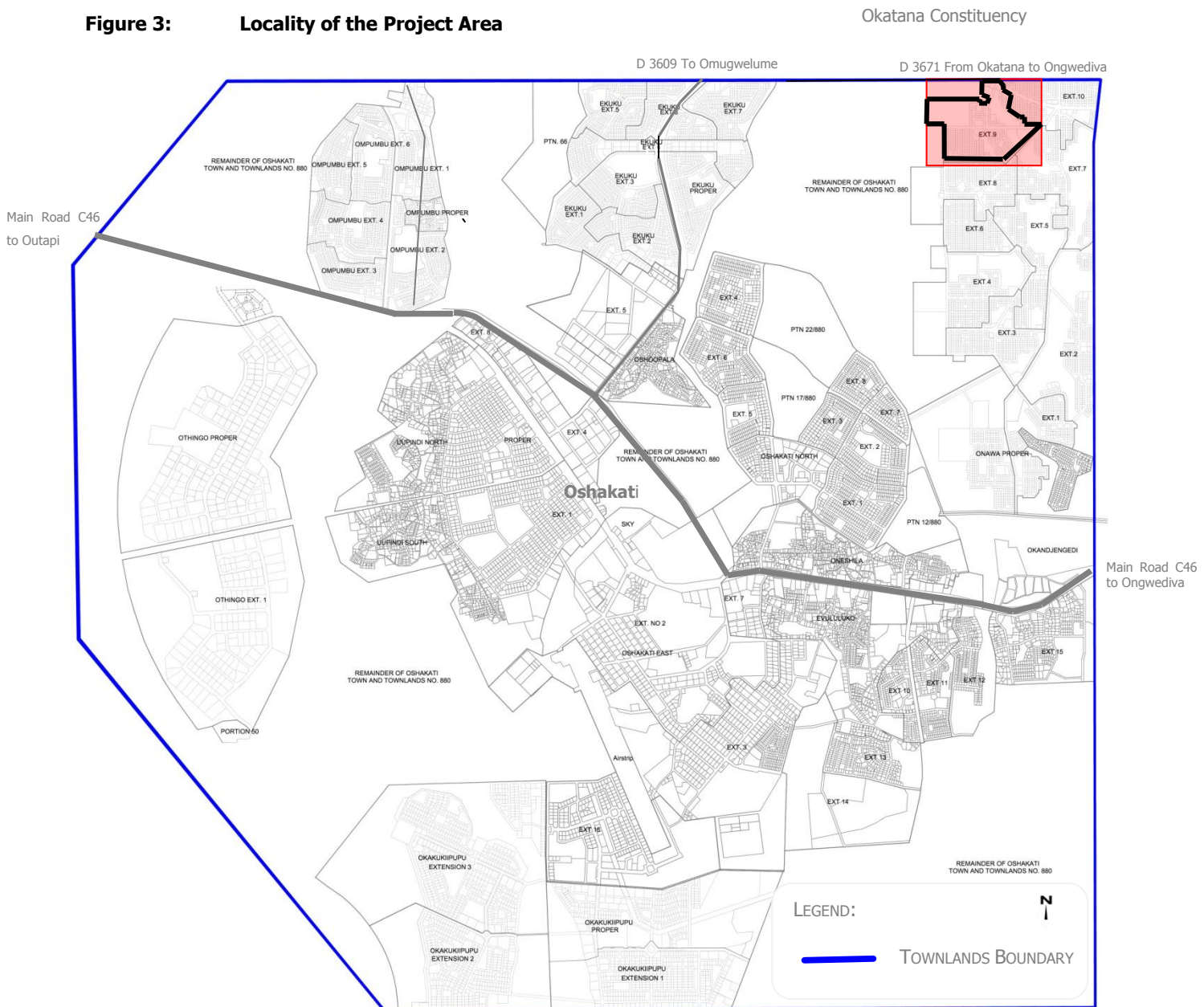
This section provides a planning description of the proposed project site relative to the surrounding urban areas, existing use and settlement, services and other infrastructure, topography, and other site features.

7.1 LOCATION OF THE SITES

The proposed development is located on Portion A of the Remainder of Oshakati Town and Townlands No. 880. The project falls within the Oshana Region under Registration Division A.

The portion is south of the D 3671 Okatana to Ongwediva Road, at $-17.750149\text{ S}, 15.729584\text{ E}$. A locality plan is attached as **Appendix "B"**.

Figure 3: Locality of the Project Area



7.2 OWNERSHIP, SIZE, AND SHAPE OF THE PORTION

The Oshakati Town Council is the registered owner of the site. According to the Oshakati Town Planning Scheme, the proposed development portion zoning is “Undetermined”.

The project site measures approximately 33.7 ha in extent. **Figure 4** illustrates the shape of the portion. **Table 1** provides the portion’s size and zoning.

Table 1: Portion Size

PORTION	AREA (HA)	ZONING
Portion A	33,7	Undetermined

Figure 4: Shape of the Portion








7.3 LAND USE ACTIVITIES

Figure 5: Land use Activities



The site includes eleven (11) homesteads with muhango fields and nine (9) temporary structures, which include cuca shops and one (1) cemetery. Road tracks run through the site, and open areas are used for animal grazing.

LEGEND:

-  HOMESTEADS WITH MUHANGO FIELDS
-  CEMETERY
-  STRUCTURES
-  PORTION BOUNDARY
-  TOWNLANDS BOUNDARY



The owners of the homestead, field and permanent structure know that they are located within the Oshakati Townlands and will be impacted by future development. Though, homesteads at the site need to be accommodated in the layout to minimise residents' resettlement and compensation payouts by the Town Council.

7.4 ACCESS AND UTILITY SERVICES

7.4.1 Road Access:

The site currently accesses District Road 3671 from Okatana to Ongwediva.

7.4.2 Water Connection:

NamWater and the Rural Water Supply Division of the Ministry of Agriculture, Water and Lands supply bulk water to the Oshakati. The town's water reticulated network supplies water to formal residents and businesses. Informal areas get water through communal taps.

7.4.3 Electrical Supply:

The development site is to be supplied from Oshakati's reticulated network through the nearby NamPower network.

7.4.4 Sewerage:

A sewerage reticulation network and pump station serve the formal Oshakati. The informal settlement areas make use of septic tanks and pit latrines.

7.4.5 Communication:

The town has accessibility to selected services, including television, radio, newspaper, telephone, and cell phone.

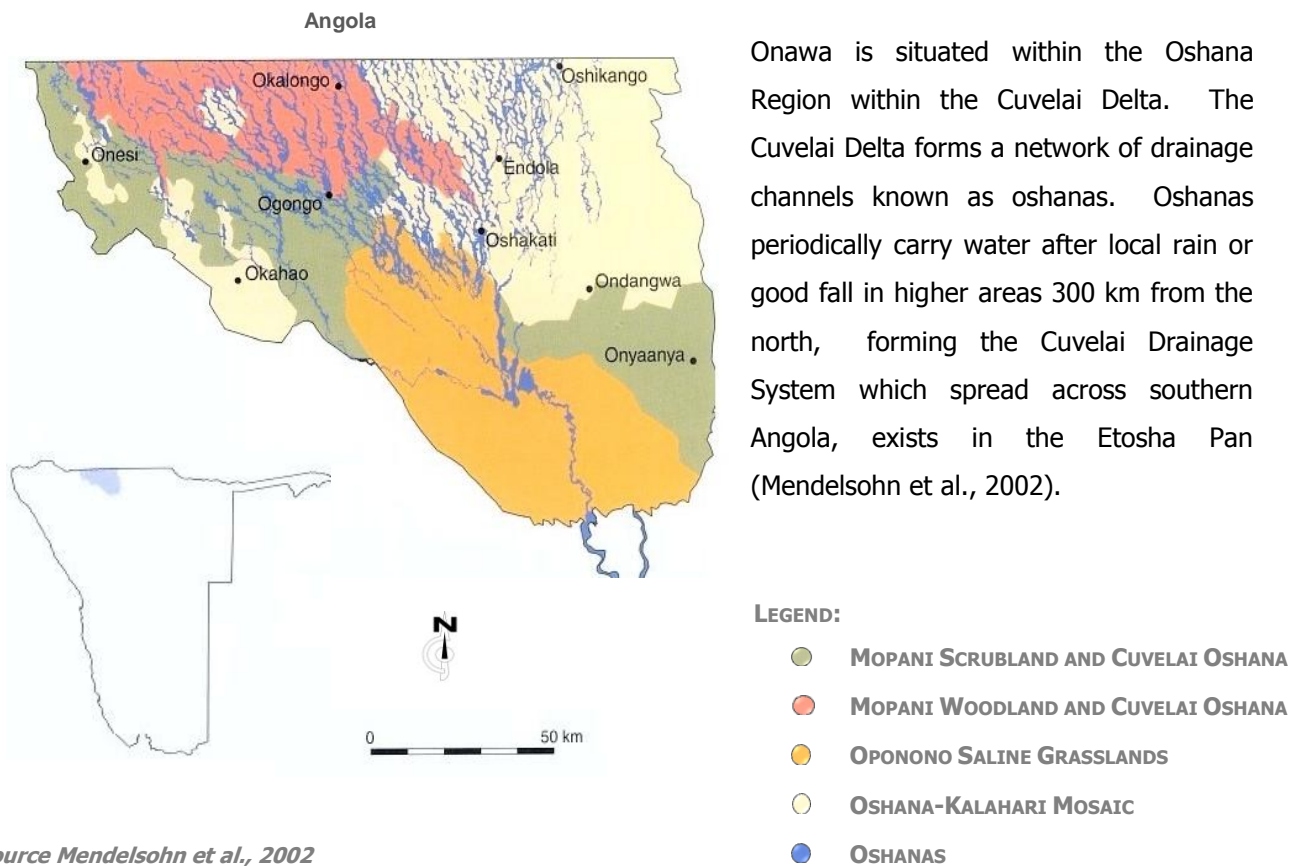
7.5 CULTURAL RESOURCES

The site includes an informal cemetery, and no other items of historical value were found or could be identified within the development site boundaries.

7.6 ENVIRONMENTAL CHARACTERISTICS AND TOPOGRAPHY

7.6.1 Natural Environment:

Figure 6: Vegetation within the Cuvelai Delta



Oshana is situated within the Oshana Region within the Cuvelai Delta. The Cuvelai Delta forms a network of drainage channels known as oshanas. Oshanas periodically carry water after local rain or good fall in higher areas 300 km from the north, forming the Cuvelai Drainage System which spread across southern Angola, exists in the Etosha Pan (Mendelsohn et al., 2002).

Source Mendelsohn et al., 2002

7.6.2 Topography and Flooding:

The site’s topography is characterised by a flat downward slope of a 1 m rise per 440 m and slopes from east to north-west and south-west, with the highest point being 1095 m above sea level and the lowest is 1094 m.

The development of the project site should consider the oshanas / watercourses during the planning phase to prevent flooding during the rainy season.

Figure 7: 1095 m Flood line on the site

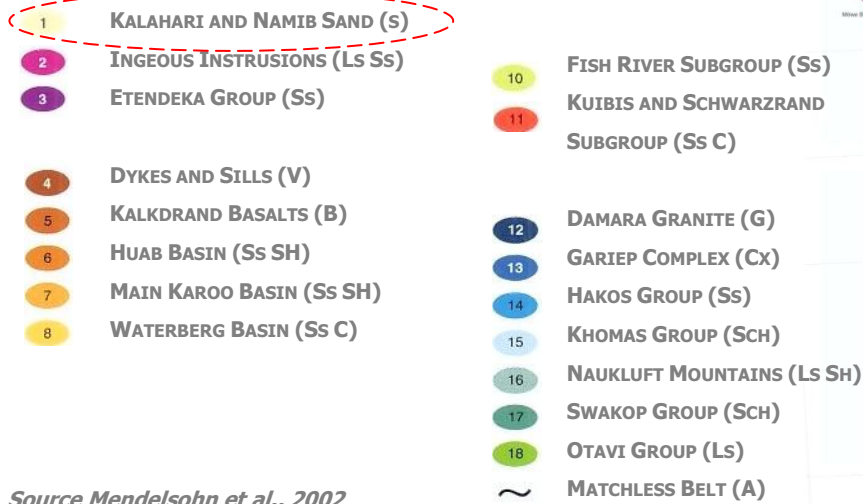


7.6.3 Soil Conditions:

Surface soils across the region are sand-dominated, with some areas covered by the Otavi Group. **Figure 8** indicates that Onawa is situated within the Kalahari and Namib Sand area of Namibia (Mendelsohn et al., 2002). The image below shows the sandy soil surface at the site.

Figure 8: Soil Types in Namibia

LEGEND:



Source Mendelsohn et al., 2002

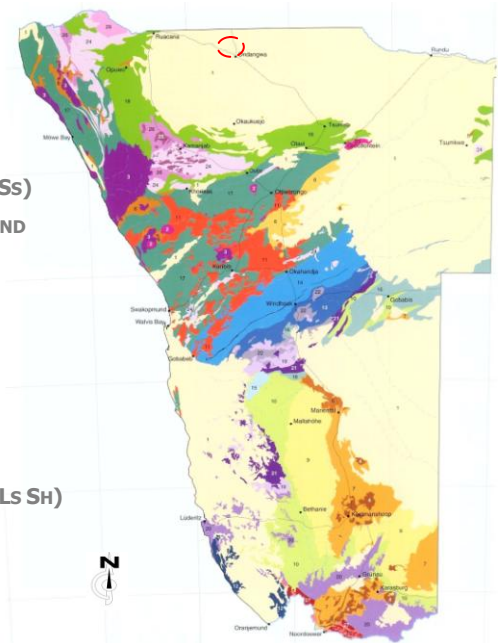


Figure 9: Soil Conditions at the Site



7.6.4 Vegetation Conditions:

Onawa's vegetation consists of the Oshana-Kalahari Mosaic (Mendelsohn et al., 2002). Trees on the site include Makalani Palm Trees (*Hyphaene petersiana*), Jackalberry Trees (*Diospyros mespiliformis*) and the Manketti Trees (*Schinziophyton Reatanenii*), i.e.

Figure 10: Fruit Trees



Figure 11: Distribution of Vegetation



As indicated in **Figures 10 and 11**, large trees, shrubs, and grass vegetation form clusters on the site. Due to overgrazing, land clearance for mahangu fields and wood harvesting, the development site has low green vegetation biomass.

During the site's planning- and construction phases, emphasis should be placed on protecting fruit- and large trees.

LEGEND:

- LARGE TREES
- MEDIUM SIZE TREES
- SHRUBS
- MAKALANI PALME TREES

Figure 12: Clusters of Vegetation



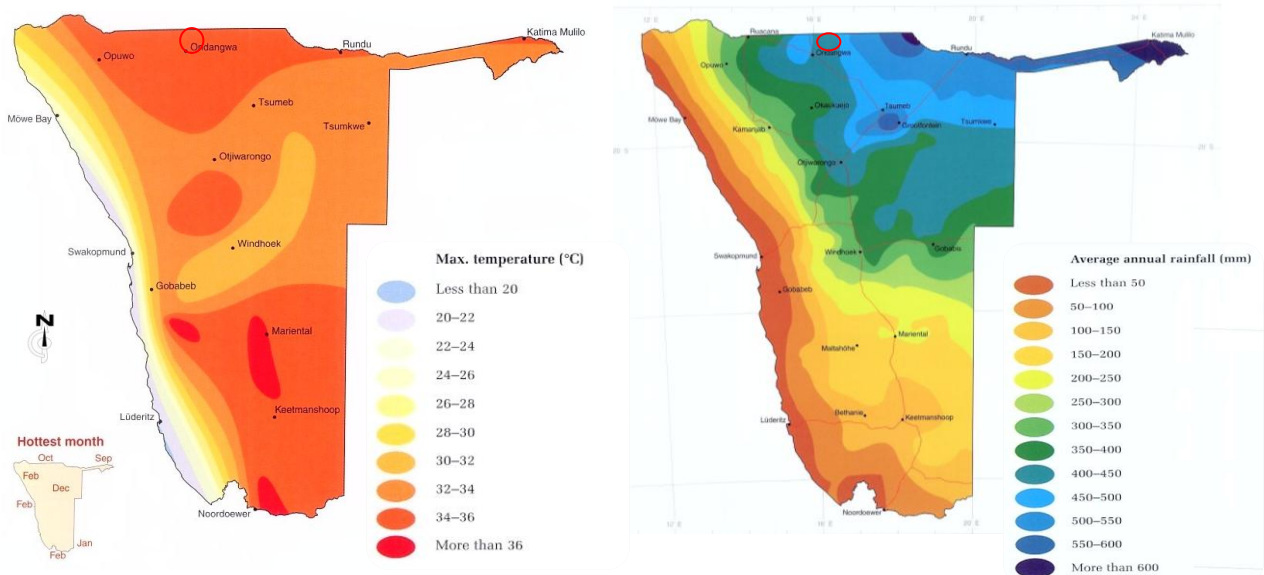
7.6.5 Habitats on Site:

Due to the habitat alteration, the area is ecologically degraded, no longer pristine, and not fully functional at the ecosystem level. It may be best described as an impacted ecosystem and is not a natural environment.

7.6.6 Climate, Wind Directions, and Rainfall:

Namibia is a hot and dry country, and due to low levels of humidity in the air, the country experiences low levels of cloud cover and rain and extremely high rates of evaporation. The average monthly temperature at Onawa ranges from 17°C in July to 36°C in December. The fewest hours of sunshine experienced per day is about 7 hours in January when there is a lot of cloud cover, and the area also receives the most rain. From May to September, Oshakati has about 10 hours of sunlight each day.

Figure 13: Namibia Climate



Source Mendelsohn et al., 2002

Most rain-bearing clouds are fed into the country by north-easterly winds and blocked by dry air from the south and the west (Mendelsohn et al., 2002). As such, the South and Western parts of the country receive less rainfall than the central and northern parts of the country. The average monthly humidity at midday ranges from 50% in March to 17% in September. Approximately 99% of the annual rainfalls are from October to April, with January receiving the most precipitation. The average yearly rainfall across the north-central regions increases from west to east, less than 300mm and not more than 550mm (Mendelsohn et al., 2002).

Winds in Onawa are infrequent, as the area experiences wind calm about 57% of the time. Winds mostly blow from the east and seldom reach speeds exceeding 10 km per hour. The windiest months are from January to April.

7.7 STATUS OF PROTECTED AREA

The site itself has no protected status. However, the oshanas/watercourses, fruit-, large trees, and clusters of trees are environmentally sensitive areas within the development site and should be considered.

7.8 SUMMARY OF THE HABITATION ON SITE

Due to land clearance for farming, overgrazing and wood harvesting, extensive habitat alteration occurred. The site is ecologically impacted, no longer pristine and not fully functional at the ecosystem level. It may be best described as an impacted ecosystem and is not a natural environment.

Key environmentally relevant features show that:

- ❖ The development site is at -17.750149 S, 15.729584 E south of the D 3671 District Road from Okatana to Ongwadeva.
- ❖ Activities on the site include eleven (11) homesteads with muhango fields and nine (9) temporary structures, which include cuca shops and one (1) cemetery. Road tracks run through the site, and open areas are used for animal grazing;
- ❖ The site has road tracks running through it, and the open areas are used for animal grazing;
- ❖ Onawa is situated in the Oshana Region, which is located in the Cuvelai Delta. Oshanas/watercourses flow through parts of the site, and part of the site is impacted by seasonal flooding.
- ❖ Vegetation surrounding the development site consists of the Oshana-Kalahari Mosaic;
- ❖ No significant low-level vegetation remains in the area but scattered larger trees, and no large wild mammals are resident within the development site;
- ❖ Large trees on the site include Makalani Palm Trees (*Hyphaene petersiana*), Jackalberry Trees (*Diospyros mespiliformis*) and the Manketti Trees (*Schinziophyton Reatanenii*);
- ❖ The site includes an informal cemetery. No other items of historical value were found or could be identified within the development site boundaries.

The screening process showed no significant biodiversity-related issues for the current development, and no aspects require further investigation. The layout should consider the oshanas /watercourses, homesteads, and large trees in the area, and where necessary, apply for permits for the removal of protected trees. Thus it is recommended that the development proceeds without further assessment, as provided for under articles 33 and 34 of the Environmental Management Act.

7.9 SUMMARY OF THE PLANNING CONSTRAINTS

As indicated on **Figure 14**, planning constraints on the site include 11 homesteads, 9 temporary structures, muhango fields, large trees, oshanas/watercourses and the informal cemetery.

Figure 14: Planning Constraints



8 THE PROJECT TOWNSHIP

The client intends to establish a new township within a portion of Oshakati Town and Townlands No. 880. The townships will consist of mixed-use neighbourhoods, meeting the rising demand for housing and business plots within Onawa and the Oshikoto Region.

8.1 LAYOUT DETAIL

The proposed layout alters the portion's current zoning from Undetermined to include Residential-, General Residential-, Institutional-, (which includes a formal cemetery), Business, land use, and Public Open Space. The erven shapes and sizes are illustrated in **Figure 15**.

Figure 15: The Proposed Layout



Table 2: Erf Sizes and Zonings

ZONING	Erf #	Total Size m ²	Ave Size m ²	%
Residential	293	107 328.2	366	32%
General Residential	14	30 246	2 160	9%
Business	7	6 049	864	2%
Institutional	2	7 585	3 793	2%
Public Open Space	14	98 842	7 060	29%
Re/Str		87 217		26%
TOTAL	330	337 268		100%

LEGEND:

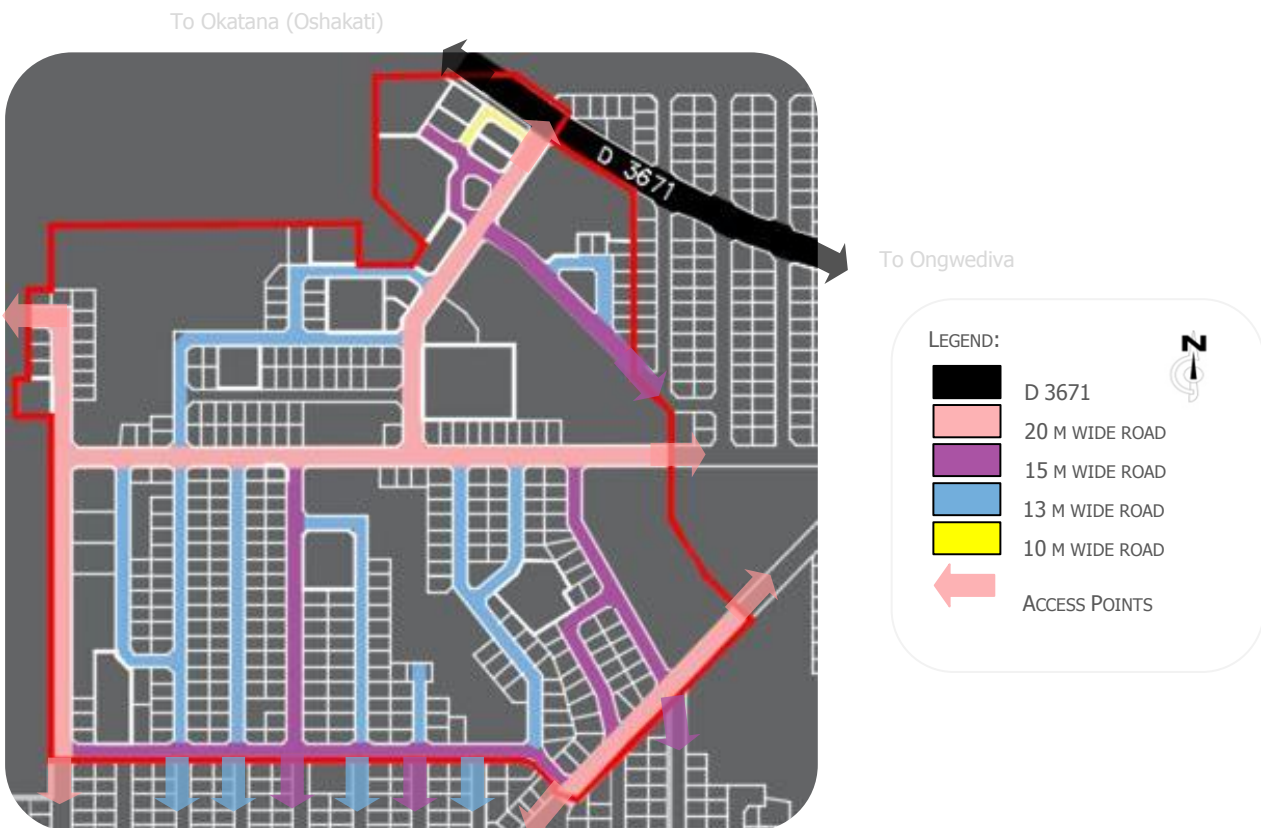
- RESIDENTIAL
- GENERAL RESIDENTIAL
- BUSINESS
- INSTITUTIONAL
- PUBLIC OPEN SPACE
- PORTION BOUNDARY
- TOWNS BOUNDARY

8.2 THE STREET LAYOUT

The layout has 15 (fifteen) entry points, of which one (1) access point links to an already existing 20 m Distributor Road (D3671).

The layout has various types of roads: 10 m collector road (yellow), 13 m distributor roads (light blue) connect with 15 m distributor roads (purple) which leads into the 20 m distributor roads (pink) to assure adequate flow in the area.

Figure 16: Street Layout



8.2.1 Provision for Drainage:

Stormwater drainage should be designed, and culverts need to be used to accommodate the water flow.

9 POTENTIAL IMPACTS

During the course of preparing the Onawa layout, the team continuously assessed the potential positive and negative impacts of the project. Attempts have been made to enhance and strengthen positive impacts and mitigate and weaken the effects of negative impacts in all cases. The planners made several alterations to the plan until they were satisfied that the layout had been refined to the point where it limits risks, mitigates negative impacts and enhances positive impacts to as great an extent as possible. The following section explores each of these impacts in detail, describing and exploring the various ideas integrated into the layout and assessing alternatives where they seem viable.

The section also explores positive impacts that are not fully addressed by the layout. Many influences may be transitory in nature (for example, occurring only during the project's construction phase) or unavoidable given the site constraints and the need for maximising long-term benefits overall. These impacts and strategies for dealing with them are discussed here, but given that this document is an application for environmental clearance, the measures dealing with their mitigation/enhancement are dealt with in detail in the EMP.

9.1 SUMMARY OF POTENTIAL IMPACTS

The planning of the layout, together with the upgrading of bulk infrastructure and alignment of roads, has the potential to cause environmental and social impacts. The following is a list of potential impacts identified through the scoping process:

9.1.1 Benefits of the Project:

- Provision for serviced erven;
- Formalisation of the existing cemetery;
- Stimulation of economic development and providing new employment opportunities during construction; and
- Stimulation of the health and wellness of the Oshakati, Onawa, Okatana and the Oshana Region.

9.1.2 Potential Negative Impacts during Construction:

- Impact of removal of vegetation from the site;
- Impact of dust;
- Impact of noise;
- Impact on traffic flow;
- Impact on the health and safety of workers; and
- Impact of waste.

9.1.3 Potential Negative Impacts during Operations:

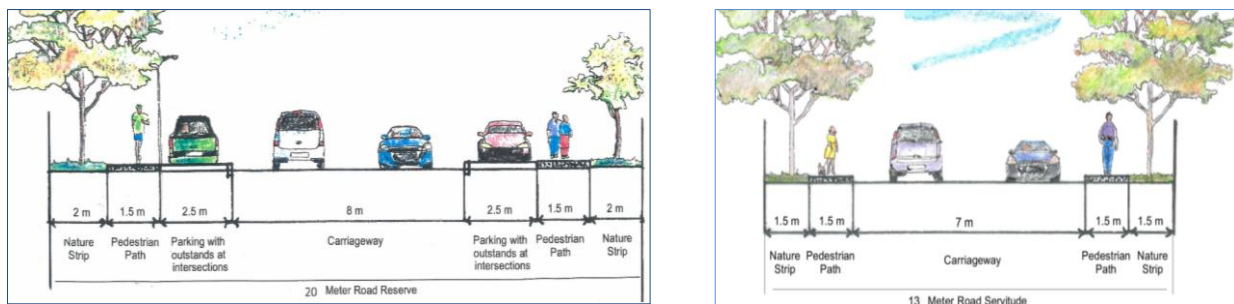
- Potential flooding; and
- Impact of waste during operation.

9.2 POTENTIAL IMPACTS

9.2.1 Project Benefits:

- **Provide for serviced erven.** The communities will now have access to adequately planned erven with specified erf boundaries. This will lead to residents having formal and permanent occupation of land and security of tenure. The layout process creates a formal development framework to prevent uncontrolled settlement growth and address the current uncontrolled developments.
- **Formalisation of existing cemetery.** The informal cemetery will be formalised through the establishment of the new township, and the site will be extended to include an area of land that is not impacted by flooding for future graves.
- **Stimulate employment creation and local economic development.** The development will lead to employment creation during the construction and operation phases. By providing for additional business erven, the project will render services within the formal economy of Onawa, employ staff, contribute to rates and taxes and spend money within the same economy.
- **Stimulate health and wellness within the Onawa Townlands.** The layout provides much-needed service connections that are safe and in line with the layout. It will also create properly aligned roads which will ease traffic circulation within the township. Clearly defined routes will allow for the provision of pedestrian infrastructure, creating a safe walking environment.

Figure 17: Provision for Pedestrians



As mentioned before, the extended cemetery will provide an area of land less impacted by flooding.

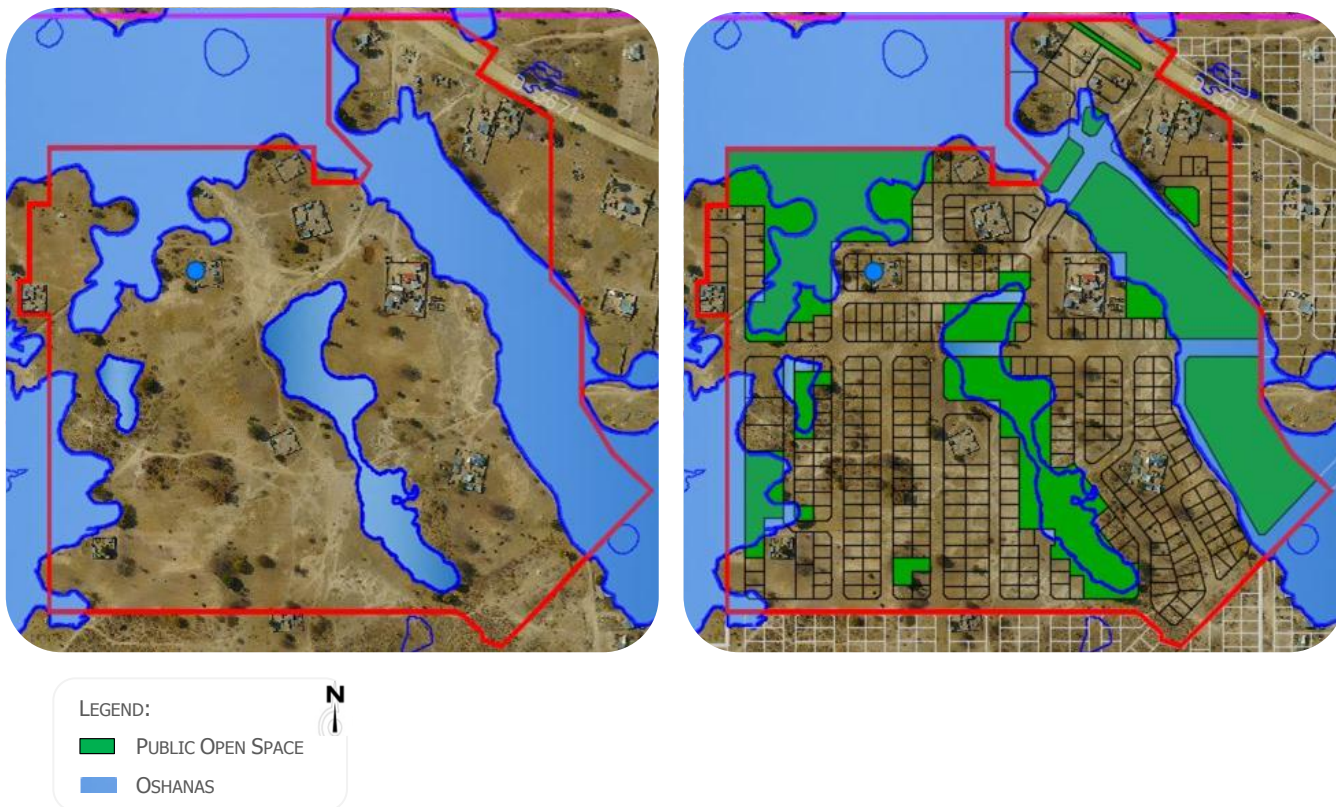
9.2.2 Negative Impacts during Construction:

- **Impact of the removal of trees from the site.** Construction activities will impact one large tree and some medium-size trees on the site. The planner prepared the layout in such a way as to minimise the removal of large trees. However, some trees will be removed as a result of the construction of the roads.
- **Impact on traffic flow during construction.** Construction vehicles would need to haul the excavated soil to a disposal site and provide building material and other supplies (i.e. fuel etc.) to the construction site, most of which could be delivered by truck. Construction vehicles are most likely to pass near erven and disrupt traffic flow (although the exact access routes to the site are yet to be defined).
- **Impact of dust.** The movement of construction vehicles on bare soil will cause excessive dust, exposing the community and workers to dust pollution and affecting their health. Preventative measures should be put in place to prevent excessive dust.
- **Impact of potential construction noise.** Construction machinery creates substantial noise, and this will impact the surrounding community. Constant noise can cause stress and health impacts on nearby residents.
- **Impact of construction waste.** Solid waste is the expected significant source of waste at the construction site. If no waste management plan is in place to address general and hazardous waste disposal, it can lead to water and soil pollution on the site and/or within the water areas.
- **Impact on the health and safety of workers and nearby residents.** Construction activities always have potential risks for workers and nearby residents. Inadequate site management measures can expose workers and residents living near the site to hazardous chemicals, dust, and noise. A lack of notices and signs within the area where deep excavation work is done can put the lives of residents and workers in danger.

9.2.3 Potential Negative Impacts during Operations:

- **Impact of flooding.** The development will include the water areas. The planner prepared the layout to accommodate low-lying areas within public open space, and the alignment of roads is done in such a way as to buffer water areas from erven.

Figure 18: Accommodating Flood areas



- **Impact of operational waste.** Solid household waste is the expected source of waste in the township. Suppose the Town Council has no Waste Management Plan (WMP) or Waste Removal Plan (WRP) to address general and hazardous waste disposal at the development site. It can lead to soil pollution on the site and/or within the water areas.

9.3 DEALING WITH RESIDUAL IMPACTS

9.3.1 Residual Social Impacts:

Residual social impacts through this project could be elaborated on as follows:

All the homesteads are accommodated within the layout as general residential or business erven, one temporary structure, and the mahangu fields will have to be relocated or recompensed. The owners of the structure and fields are aware that they are within the townlands and will need to make way for future development. In all the cases where

structures and fields will be removed, the owners will be compensated as per the Cabinet Compensation Policy Guidelines for Communal land provisions by the Oshakati Town Council.

Figure 19: Including Homesteads



9.3.2 Residual Environmental Impacts:











Residual environmental impacts through this project could be elaborated on as follows:


- The development project will create dust and noise during the construction phase. This will be limited; methods to limit it is contained in the Environmental Management Plan (EMP).
- The project development will have an impact on traffic during the construction phase.

To minimise the increase in transportation during the construction phase, mitigation measures to manage the vehicles on the construction site when services are included in the EMP provisions.

- As mentioned before, solid waste is the expected source of waste at the construction site. Mitigation methods are contained in the EMP regarding a WMP for the construction site.

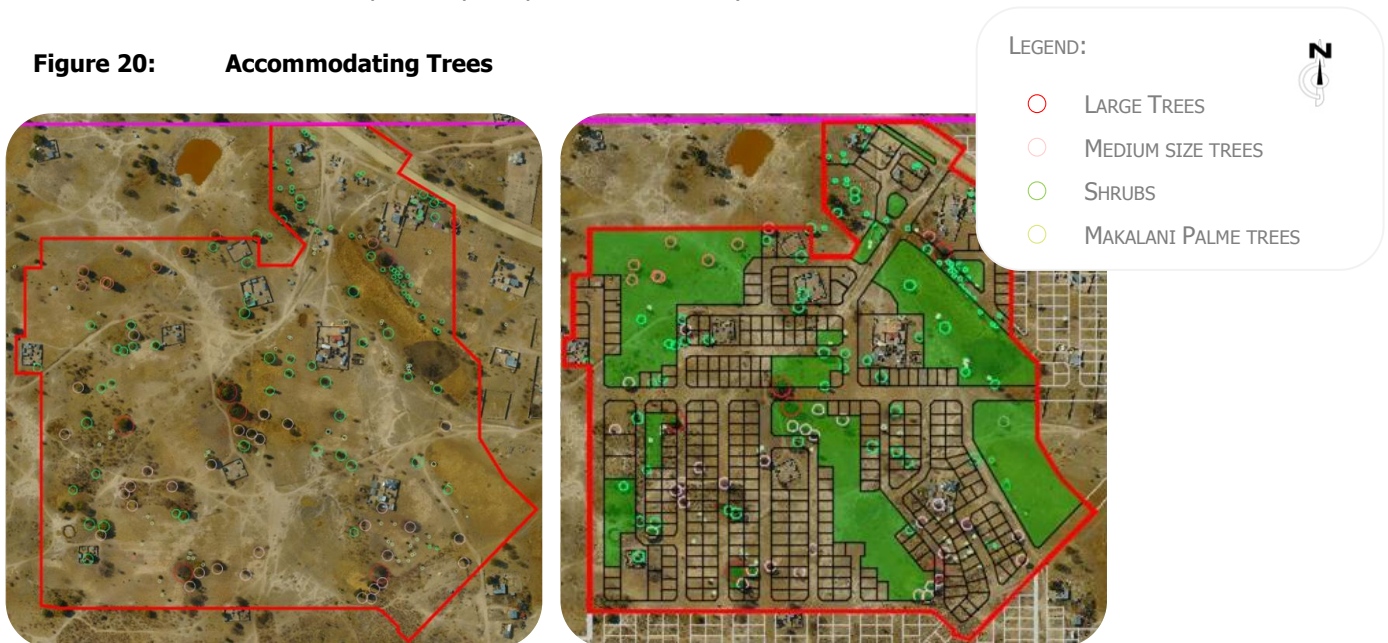
LEGEND:

-  HOMESTEADS WITH FIELDS
-  STRUCTURES
-  HOMESTEADS WITHIN THE LAYOUT
-  BUSINESS ERVEN
-  GENERAL RESIDENTIAL ERVEN
-  RESIDENTIAL ERVEN
-  CEMETERY
-  PORTION BOUNDARY
-  TOWNLANDS BOUNDARY
-  CADASTRAL BOUNDARIES



- During the construction phase, there will be a potential impact on the workers' health and safety due to their work environment. This will be limited, and methods to restrict it are contained in the EMP.
- Accommodating the trees within the development site: The planner prepared the layout in such a way as to minimise the impact the construction of roads will have on the removal of trees. Trees are accommodated within individual erven, road reserves and on public open space within the layout.

Figure 20: Accommodating Trees



Not all trees can be protected within the layout; thus, before construction commences, a Tree Management Plan (TMP) should be compiled to address the replacement of these trees.

- Existing structures and muhango fields will be affected by the planning of the new layout. The structures and mahangu field are affected by the proposed roads. In the case where the mahangu field exists, the owner will be compensated as per the provisions in the Cabinet Compensation Policy Guidelines for Communal Land.
- Solid household waste is the expected source of waste in the new township. Mitigation methods are contained in the EMP regarding the removal of waste within Onawa.

10 SUMMARY AND APPLICATION

10.1 PROJECT IMPACTS, AVOIDANCE MEASURES AND RESIDUAL IMPACTS

POTENTIAL IMPACT:	MEASURES:			RESIDUAL IMPACTS:
	AVOIDANCE:	MITIGATION:	ENHANCEMENT:	
<i>Stimulate local economic development and create employment opportunities:</i>			<p>During the development phase, the construction company will render services within the formal economy, employ staff, pay rates and taxes and spend money within the same economy.</p> <p>Emphasis should be placed on the requirement and employment of local people.</p>	
<i>Providing serviced residential erven:</i>			<p>The project will lead to formal and permanent land occupation, tenure security, access to capital and partaking in the economy, and ultimately to wealth creation in the operational phase.</p>	
<i>STIMULATE THE HEALTH AND WELLNESS OF THE COMMUNITY:</i>			<p>THE DEVELOPMENT:</p> <p>Provide that all services will be on the higher road reserves.</p> <p>Provide a closed system sewer system, which will prevent pollution during flooding.</p> <p>Provide for pedestrian infrastructure.</p>	

POTENTIAL IMPACT:	MEASURES:			RESIDUAL IMPACTS:
	AVOIDANCE:	MITIGATION:	ENHANCEMENT:	
POTENTIAL REMOVAL OF EXISTING TREES:	Avoid the removal of existing trees.	<p>The EMP mitigation measures for protecting large trees on the site include:</p> <ul style="list-style-type: none"> • Trees should be accommodated within individual erven or the road reserves. • A Tree Management plan needs to be compiled before the development comments. <p>The timeline for the potential impact is short term, and the responsibility lies with the planner and contractor.</p>		<i>The planner could not accommodate all the trees on the site. Therefore, measures are included in the EMP.</i>
POTENTIAL DUST AND NOISE ON THE CONSTRUCTION SITE:	Avoid dust and noise during the construction phase.	<p>The EMP mitigation measures for</p> <p>Dust:</p> <ul style="list-style-type: none"> • No removal of vegetation or soil on the site except where necessary during the construction phase. <p>Noise:</p> <ul style="list-style-type: none"> • Construction work will be restricted between 07h00 and 18h00. <p>The timeline for the potential impact is short-term, and the responsibility lies with the contractor and the Oshakati Town Council.</p>		<i>Not all the dust and noise can be prevented.</i>

<p>POTENTIAL IN AN INCREASE IN TRAFFIC DURING THE CONSTRUCTION PHASE:</p>	<p>Avoid uncontrolled increase in traffic during the construction phase.</p>	<p>The EMP mitigation measures for traffic at the site include:</p> <ul style="list-style-type: none"> • Traffic during the construction phase will be restricted between 07h00 and 18h00. <p>The timeline for the potential impact is short-term, and the responsibility lies with the contractor and the Oshakati Town Council.</p>		<p><i>An increase in traffic can be managed, although the increase in traffic will still have a potential impact on residents.</i></p>
<p>HEALTH AND SAFETY OF WORKERS:</p>	<p>Avoid health and safety impacts on workers during the construction phase.</p>	<p>The EMP mitigation measures for the health and safety of workers at the site include:</p> <ul style="list-style-type: none"> • Construction practices and safety procedures need to be applied. <p>The timeline for the potential impact is short-term, and the responsibility lies with the contractor.</p>		<p><i>Not all the health and safety aspects of the workers can be prevented.</i></p>
<p>FLOODING:</p>	<p>Avoid flood risk.</p>	<p>The planner accommodated all the potential flood areas within public open space.</p> <p>Management of the public open space needs to include maintenance of the public space during the operational phase.</p> <p>The potential impact timeline is long-term, and the responsibility lies with the Oshakati Town Council.</p>		<p><i>Not all impacts as a result of flooding can be prevented.</i></p>
<p>WASTE MANAGEMENT:</p>	<p>Avoid pollution as a result of no waste management.</p>	<p>The EMP mitigation measures for the waste on the construction site and during operations include:</p> <ul style="list-style-type: none"> • During the construction phase, a waste management plan should be used on the site. 		<p><i>Not all pollution can be prevented</i></p>

		<ul style="list-style-type: none"> The townships need to be included in the Oshakati Town Councils' waste management system or program during the operational phase. <p>The potential impact timeline is short-term during construction and long-term during operations.</p> <p>The responsibility lies with the contractor and the Oshakati Town Council.</p>		

11 APPLICATION FOR ENVIRONMENTAL CLEARANCE

Given these baseline investigation findings, no future environmental impacts were identified due to creating the street portions or the construction activities within the Onawa development area.

It is recommended that the development proceeds without the need for further assessment, as provided for under articles 33 and 34 of the Environmental Management Act. The Application Form 1 for an Environmental Clearance Certificate as per Section 32 is attached as **Annexure "1"** to this Scoping Report.