

ENVIRONMENTAL SCOPING ASSESSMENT

PROPOSED MONTE CRISTO COMMUNITY MARKET ON ERF 1807, CORNER OF MONTE CRISTO ROAD AND MATSHTSHI STREET, WINDHOEK

AUGUST 2020



CONSULTANT:

MATRIX CONSULTING SERVICES
P.O. Box 25824 Windhoek
Tel: +264-61-224197
Fax: +264-61-212165

PROPONENT:

City of Windhoek
PO Box 59, Windhoek
Tel:+264 (61) 308106
Fax:+264 (61) 308107



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Appendix A	Environmental management plan
Appendix B	Background Information Document
Appendix C	Drawings
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List of Abbreviations

EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EMA	Environmental Management Act
EMS	Environmental Management System
ESA	Environmental Scoping Assessment
I&Aps	Interested and Affected Parties
PPPPs	Projects, Plans, Programmes and Policies



PROJECT DETAILS

TEAM MEMBERS

NAME	POSITION	COMPANY
C. Ailonga	Environmental Specialist	Matrix Consulting Services
M. Shippiki	Hydrogeologist	Matrix Consulting Services
F. Kangombe	Ecologist	Matrix Consulting Services - A

CLIENT:**CITY OF WINDHOEK****PO Box 20261, Windhoek****Tel:+264 (61) 308106****Fax:+264 (61) 308107****ENVIRONMENTAL
CONSULTANT**

Matrix Consulting Services

Chris Ailonga (MSc Env Sci, Wits)

EIA Specialist

P.O. Box 25824 Windhoek

Tel: +264-61 224197

Fax: +264-61 212165

REPORT STATUS:**FINAL**

1. BACKGROUND AND INTRODUCTION

The City of Windhoek is proposing to develop a community market, on erf 1807 at the corner of Monte Christo Road and Matshitshi street in Windhoek, Khomas Region. The proposed development is aimed at providing a community market for the Havana Settlement. This specific market is planned for residents who resides in the Havana Settlement. The community market will be formalised to accomodate trading stalls for the locals.

Matrix Consulting Services, an independent consultant, has been appointed by Ongos Valley Development(Pty) Ltd to undertake an Environmental Impact Assessment (EIA) on the development of the Monte Christo Community Market, on behalf of the City of Windhoek.

An assessment will be undertaken to determine the potential impact of the development on the environment and to determine all safety, health and social impacts associated with the proposed development activities. The project location is indicated on the map.

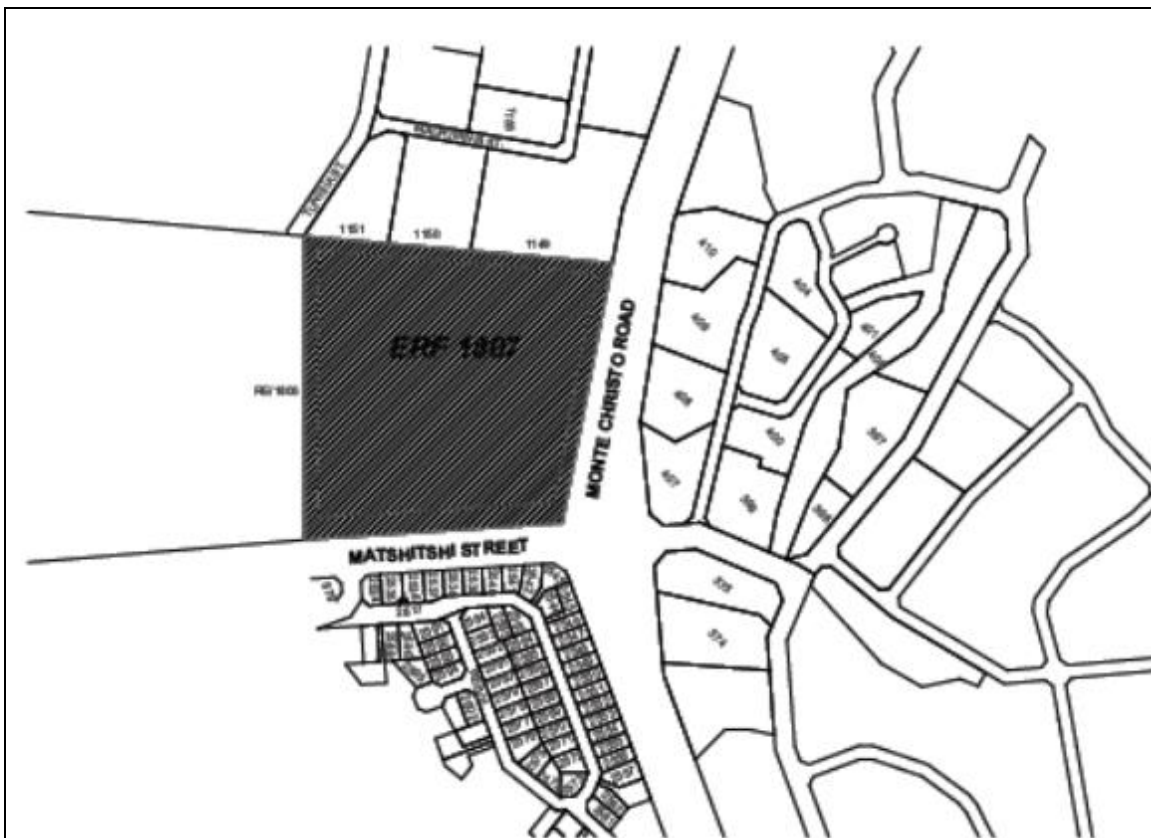


Figure 1. Location Map

The environmental assessment will be conducted as per Namibia's Environmental Assessment Policy and the Environmental Management Act No.7 of 2007 and its regulations of 2012 .

The proposed area is planned for the community market, however it is illegally occupied at the moment with illegal houses and vendor stalls. The owners of the illegal houtholds will be relocated to the new Havana Relocation Township, while

the vendors will ideally be accommodated in the new Monte Christo Community Market.

2. TERMS OF REFERENCE

City of Windhoek has commissioned an Environmental Impact Assessment (**EIA**) for the proposed Monte Christo Community Market. The proposed township is one of the strategic projects that the city of Windhoek has engaged to provide a community market in the informal settlements. This initiative is meant to contribute to economic development in the area. The Community market is located at erf 1807, corner of Monte Christo Road and Matshitshi road (-22.510471° S, 17.020676° E).

This study will enable decision makers to make an informed decision regarding the development and make sure it does not have significant impacts and that they are mitigated. The environmental impact assessment was conducted to comply with the Environmental Assessment Policy (1995) and the Environmental Management Act (2007) and its regulations of 2012.

3. PROJECT INFORMATION

3.1 Project Rationale

The City of Windhoek plans to develop the community market on erf 1807. The need for the project relate to the strategic plans of the City of Windhoek to provide basic services and improve economic development in all informal settlements in its area of jurisdiction.

The proposed market will house several open stands and a few stalls. Toilets will also be provided in the market to improve the cleanliness of the market, and prevent diseases like Hepatitis.

The proposed development of the site is desirable from the perspective of availability and proximity of engineering bulk services, compatibility with adjacent projects, accessibility, size and locality. The proposed development will also create employment, both during the construction and operational phase.

The City of Windhoek is currently experiencing a problem of illegal occupation of the land earmarked for the Community market. The illegal squatters will be relocated to the Havana Relocation Township, while the vendors are planned to be accommodated in the new Monte Christo Community Market.

Other Potential spin-offs from the development of Havana Relocation Township:

- ❖ Potential revenue generation from the rental of stands by City of Windhoek.
- ❖ Creation of job opportunities during construction and operational phase. It is estimated that the new jobs will improve the livelihoods of the workers and their families. Given that the unemployment rate of 31% in the region, this in itself is regarded as a significant benefit to the socio-economic situation in the region (2011, Population and Housing Census, Khomas Region).
- ❖ Provision community facilities.
- ❖ Impact on health and safety by providing a market with improved sanitation.
- ❖ Change the sense of the place of the area from an undeveloped townland to a community market.
- ❖ Increase in economic opportunities in the area.
- ❖ General enhancement of the quality of life in the Khomas Region and the surrounding area, should the project be economically viable.

4. Monte Christo Community Market Activities

4.1 Current land-use of the Area

The proposed site is previously disturbed, with signs previous illegal occupation.



Current state of site



4.2 Proposed land-use of the Monte Christo Community Market.

The proposed development is aimed at providing the informal settlement with a community market. The proposed development will offer affordable stands for vendors in the area.

The development will consist of:

- 85 Open stands
- 20 stalls
- 8 Kapana stands & Eating stand
- Woodseller stand
- Ablution block
- Offices
- Refuse yard
- Taxi Rank

The proposed layout of the Monte Christo Community Market is illustrated in the drawing below.

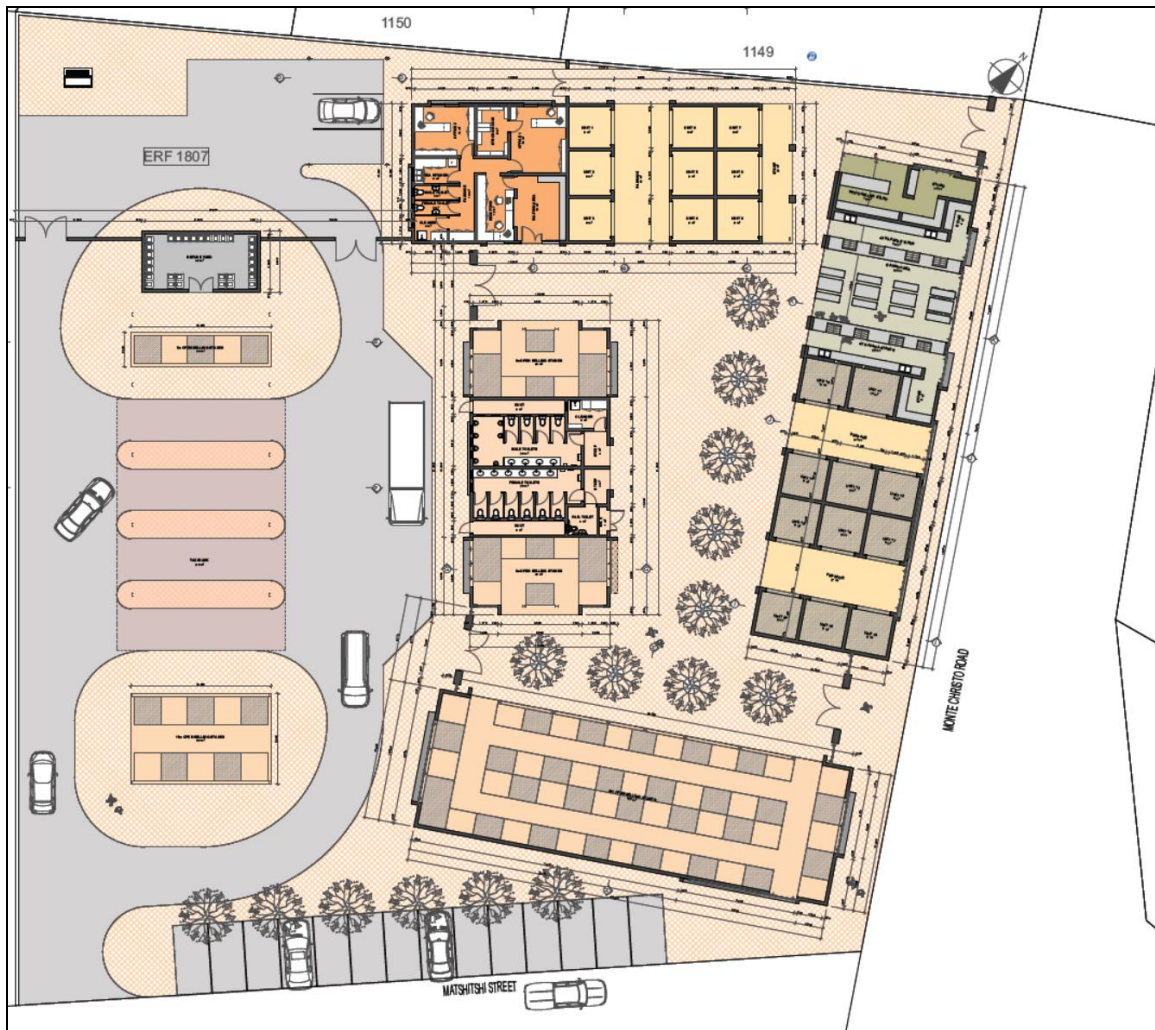


Figure 2: Proposed Monte Christo Community Market

4.2.1 Construction Activities

- Transporting relevant building material and equipment.
- Installation of associated electrical supply cables.
- Installation of associated water pipelines.
- Installation of associated sewer lines.
- Installation of stormwater management system

4.2.2 Operational Activities

- Operation and maintenance of the Community Market.

4.2.3 Housing

No contractors are allowed to camp on site during all phases of the project.

4.2.4 Access Road

The site will be accessed using Monte Christo road and Matshitshi Street.

4.2.5 Waste Management

All waste generated at the site will be collected in plastic or steel drums and removed from site and disposed at Kupferberg Landfill. Hazardous waste will be collected and stored separately, and disposed off at an appropriate hazardous waste cell at Kupferberg landfill.

Mobile toilets will be used by the contractors during the construction phase respectively. The waste must be disposed off at Gammams Waste Water Treatment Works.

4.2.6 Site Rehabilitation

After the construction is complete, the site will be cleared of all chemical and hydrocarbon spills, pipe cuttings, electrical cuttings etc. Excavations for bulk services will need to be covered and levelled properly.

5. ENVIRONMENTAL STUDY REQUIREMENTS

According to the Environmental Management Act no. 7 of 2007 the proponent requires an environmental clearance certificate from the Ministry of Environment and Tourism (Department of Environmental Affairs) to undertake the development of the Community Market.

The environmental clearance certificate issuance means that the Ministry of Environment and Tourism is satisfied that the activity in question will not have an unduly negative impact on the environment. It may set conditions for the activity to prevent or to minimise harmful impacts on the environment.

6. DESCRIPTION OF ALTERNATIVES

6.1 No-Go Alternative

The no-development alternative is the option of not going ahead with the development of Monte Christo Community Market. The no-go alternative will keep the site in its current state. This alternative is undesirable in terms of the current state of the erf 1807. The site is occupied illegally, and other parts of the erven is used by illegal vendors. The current setup poses security and health risks. Should the site remain in this state, the possibility and threat of illegal land invasions and squatters settling on the site will persist. The new market will have controlled access and ablution blocks like all the other community markets of the City of Windhoek.

The current squatters on erf 1807 will be relocated to the new Havana Relocation Township to pave way for the new Monte Christo Community

Market. Should the proposed activity not take place, the informal settlement could be deprived of developing a well managed community market. The proposed activity could yield positive results that could provide an alternative organised community market. The No-go option will not be a viable alternative at this stage.

6.2 Site Alternative

Erf 1807 belongs to the City of Windhoek , and is earmarked for the community market. The planned community market will accommodate the current illegal vendors currently operating on the same erven. The area has become an important trading centre for the area. The new organised community market will provide a better form of a community market that has less health, safety and traffic impacts. There are engineering services capacity to support the proposed Havana Relocation Township, thus the site is ideally suited for this type of development.

The area holds no ecological and conservation values, and the best option chosen is to develop with strict consideration of environmental aspects. Mitigation measures on impacts likely to be caused by the activity are incorporated in the planning and execution of the activity. The development of the community market will have minimal impacts on the environment. The environmental footprint of this activity is expected to be minimal.

7. SCOPE OF THE EIA

The scope of the EIA aims at identifying and evaluating potential environmental impacts emanating from the proposed development of Community Market on erf 1807. Relevant data have been compiled by making use of secondary sources and from project site visits. Potential environmental impacts and associated social impacts are identified and addressed in this report.

The environmental impact assessment report aims to address the following:

- a) Identification of potential positive and negative environmental impacts.
- b) Provide sufficient information to determine if the proposed project will result in significant adverse impacts.
- c) Identification of “hotspots” which should be avoided where possible due to the significance of impacts.
- d) Evaluation of the nature and extent of potential environmental impacts.
- e) Identify a range of management actions which could mitigate the potential adverse impacts to required levels.

- f) Provide sufficient information to the Ministry of Environment to make an informed decision regarding the proposed project.
- g) Present and incorporate comments made by stakeholders.

8. METHODOLOGY

The following methods were used to investigate the potential impacts on the social and natural environment that could arise from the development of the Monte Christo Community Market:

- a) Information about the site and its surroundings was obtained from existing secondary information and site visits.
- b) Interested and affected Parties (I&APs) were consulted and their views, comments and opinions are presented in this report.

9. STATUTORY REQUIREMENTS

9.1 National Legislative Requirements

The EIA process is undertaken in terms of Namibia's Environmental Management act no. 7 of 2007 and the Environmental Assessment Policy of 1995, which stipulates activities that may have significant impacts on the environment. Listed activities require the authorisation from the Ministry of Environment and Tourism (DEA). Section 32 of the Environmental Management Act requires that an application for an environmental clearance certificate be made for the listed activities. The following environmental legislations are relevant to this project:

➤ *The Namibian Constitution*

The Namibian Constitution has a section on principles of state policy. These principles cannot be enforced by the courts in the same way as other sections of the Constitution. But they are intended to guide the Government in making laws which can be enforced.

The Constitution clearly indicates that the state shall actively promote and maintain the welfare of the people by adopting policies aimed at management of ecosystems, essential ecological processes and biological diversity of Namibia for the benefit of all Namibians, both present and future.

➤ *Environmental Management Act No.7 of 2007*

This Act provides a list of projects requiring an Environmental Assessment. It aims to promote the sustainable management of the environment and the use of natural resources and to provide for a process of assessment and

control of activities which may have significant effects on the environment; and to provide for incidental matters.

The Act defines the term “*environment*” as an interconnected system of natural and human-made elements such as land, water and air; all living organisms and matter arising from nature, cultural, historical, artistic, economic and social heritage and values.

The Environmental Management Act has three main purposes:

- (a) to make sure that people consider the impact of activities on the environment carefully and in good time.
- (b) to make sure that all interested or affected people have a chance to participate in environmental assessments
- (c) to make sure that the findings of environmental assessments are considered before any decisions are made about activities which might affect the environment

Line Ministry: Ministry of Environment and Tourism

(Contact: Dr. Freddy Sikabongo, Tel: 061-284 2715, e-mail: freddy@met.na)



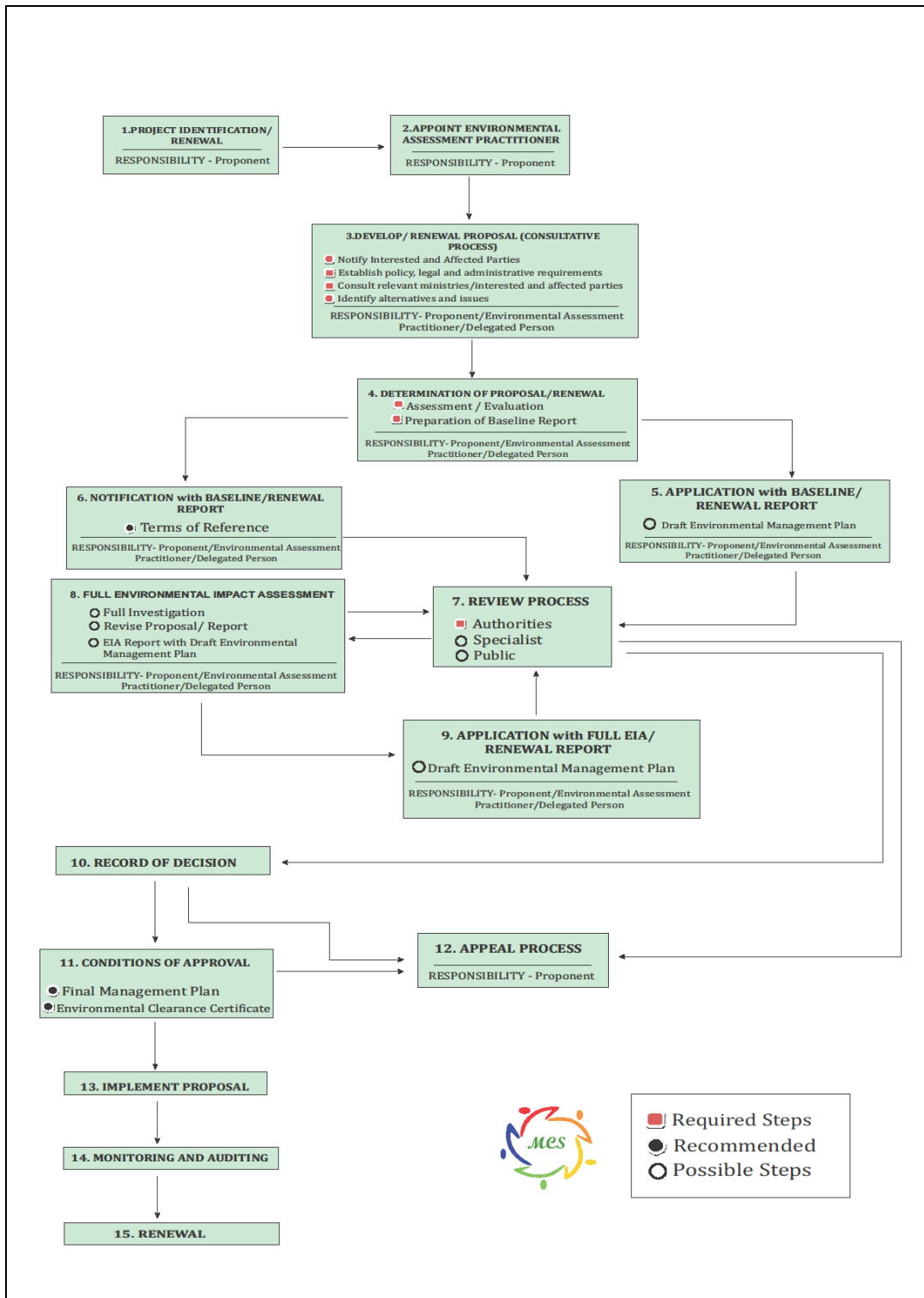


Figure 3. Environmental Assessment Procedure of Namibia

➤ **Atmosphere Pollution Prevention Ordinance (1976)**

This Ordinance generally provides for the prevention of the pollution of the atmosphere. Part IV of this ordinance deals with dust control. The Ordinance is clear in requiring that any person carrying out an industrial process which is liable to cause a nuisance to persons residing in the vicinity or to cause dust pollution to the atmosphere, shall take the prescribed steps or, where

no steps have been prescribed, to adopt the best practicable means for preventing such dust from becoming dispersed and causing a nuisance.

Line Ministry: Ministry of Environment and Tourism

(Contact: Dr. Freddy Sikabongo, Tel: 061-284 2715, e-mail: freddy@met.na)

➤ ***Water Resources Management Act of Namibia (2004)***

This act repealed the existing South African Water Act No.54 of 1956 which was used by Namibia. This Act ensures that Namibia's water resources are managed, developed, protected, conserved and used in ways which are consistent with fundamental principles depicted in section 3 of this Act. Part IX regulates the control and protection of groundwater resources. Part XI, titled Water Pollution Control, regulates discharge of effluent by permit. Thus developers are required to efficiently plan for sewage disposal.

Line Ministry: Ministry of Agriculture, Water Affairs and Forestry

(Contact: Ms Elizabeth Amagola, Tel: 061-208 7719)

➤ ***Water Act No.54 of 1956***

This Act provides for Constitutional demands including pollution prevention, ecological and resource conservation and sustainable utilisation. In terms of this Act, all water resources are the property of the State and the EIA process is used as a fundamental management tool.

A water resource includes a watercourse, surface water, estuary or aquifer, and, where relevant, its bed and banks. A watercourse means a river or spring; a natural channel in which water flows regularly or intermittently; a wetland lake or dam, into which or from which water flows; and any collection of water that the Minister may declare to be a watercourse. Permits are required in terms of the Act for the undertaking of the following activities relevant to the proposed project:

- ✓ Discharge of waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit in terms of Section 21 (f); and
- ✓ Disposal of waste in a manner that may detrimentally impact on a water resource in terms of Section 21 (g).

Line Ministry: Ministry of Agriculture, Water Affairs and Forestry

(Contact: Ms Elizabeth Amagola, Tel: 061-208 7719)

➤ ***The Draft Wetland Policy (1993)***

Requires that any wetlands and its associated hydrological functions form a part, to be managed in such a way that their biodiversity, vital ecological

functions and life support systems are protected for the benefit of present and future generations.

Line Ministry: Ministry of Environment and Tourism

(Contact: Dr. Freddy Sikabongo, Tel: 061-284 2715, e-mail: freddy@met.na)

➤ ***Environmental Assessment Policy of Namibia (1995)***

Environmental Assessments (EA's) seek to ensure that the environmental consequences of development projects and policies are considered, understood and incorporated into the planning process, and that the term ENVIRONMENT (in the context of IEM and EA's) is broadly interpreted to include biophysical, social, economic, cultural, historical and political components.

All listed policies, programmes and projects, whether initiated by the government or the private sector, should be subjected to the established EA procedure as set out in Figure 2.

Line Ministry: Ministry of Environment and Tourism

(Contact: Dr. Freddy Sikabongo, Tel: 061-284 2715, e-mail: freddy@met.na)

➤ ***Forestry Act (No.12 of 2001)***

This Act makes provision for the protection of various plant species. Harvesting permits are required from the Directorate of Forestry to clear certain protected vegetation species from the site.

Line Ministry: Ministry of Agriculture, Water Affairs and Forestry

(Contact: Andries Uugwanga, Tel: 062-501925)

➤ ***Townships and Division of Land Amendment Act (No.28 of 1992)***

Article (l) of this Act stipulates that "Whenever any area of land constitutes, by reason of its situation, a portion of an approved township, or adjoins an approved township, the Executive Committee may, by proclamation notice in the Gazette and after consultation with the Board, extend the boundaries of the township to include such an area".

Line Ministry: Ministry of Urban and Rural Development

(Contact: Tel: 061-297 2911)

➤ ***Sewerage and Drainage Regulations(amendments)Local authorities act, section 23 (1992).***

The regulations makes provision for proper construction of pipelines in drainage lines. The regulations also stipulate the prevention of pollution and environmental damage caused by improper construction of sewerage and water pipelines in drainage lines.

Line Ministry: Ministry of Regional and Local Government, Housing and Rural Development

(Contact: Tel: 061-297 2911)

➤ ***Soil Conservation Act (No.76 of 1969).***

The Act advocates for the Prevention and combating of soil erosion, conservation, improvement and manner of use of soil and vegetation, and protection of water resources.

(Contact: Dr. Freddy Sikabongo, Tel: 061-284 2715, e-mail: freddy@met.na)

➤ ***Draft Pollution Control and Waste Management Bill***

The proposed project of Monte Christo Community Market, only applies to Parts 2 and 7 of the Bill.

Part 2 stipulates that no person shall discharge or cause to be discharge any pollutant to the air from a process except under and in accordance with the provisions of an air pollution licence issued under section 23. It further provides for procedures to be followed in licence application, fees to be paid and required terms of conditions for air pollution licences.

Part 7 states that any person who sells, stores, transports or uses any hazardous substances or products containing hazardous substances shall notify the competent authority, in accordance with sub-section (2), of the presence and quantity of those substances.

➤ ***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.

Line Ministry: Ministry of Health and Social Services

➤ ***Public Health Act 36 of 1919 and Subsequent Amendments***

The Act, with emphasis to Section 119 prohibits the presence of nuisance on any land occupied. The term nuisance for the purpose of this EIA is specifically relevant specified, where relevant in Section 122 as follows:

- ✓ any dwelling or premises which is or are of such construction as to be injurious or dangerous to health or which is or are liable to favour the spread of any infectious disease;
- ✓ any area of land kept or permitted to remain in such a state as to be offensive, or liable to cause any infectious, communicable or preventable disease or injury or danger to health; or

- ✓ any other condition whatever which is offensive, injurious or dangerous to health.

Potential impacts associated with the development of HAVANA RELOCATION project are expected to include dust, air quality impacts, noise nuisance and smoke emissions.

Line Ministry: Ministry of Health and Social Services

➤ **National Heritage Act (No.76 of 1969).**

The Act calls for the protection and conservation of heritage resources and artefacts. Should any archaeological material, e.g. old weapons, coins, graves, bones found during the construction, work should stop immediately and the National Heritage Council of Namibia must be informed as soon as possible. The Heritage Council will then decide to clear the area or decide to conserve the site or material.

(Contact: Rev. Salomon April, Tel: 061-244375, National Heritage Council of Namibia)

9.2 International Conventions and Regulations

Article 144 of the Namibian Constitution states that “the general rules of public international law and international agreements binding upon Namibia form part of the law of Namibia.” This means that all the international agreements that Namibia signed become part of the law of our country. These laws and/or agreements are:

- ✓ Convention on Biological Diversity, 1992;
- ✓ United Nations Framework Convention on Climate Change, 1992;
- ✓ Kyoto Protocol on the Framework Convention on Climate Change, 1998;
- ✓ Stockholm Convention of Persistent Organic Pollutants, 2001.

9.3 Municipal By-laws (City of Windhoek)

➤ **Groundwater Protection Regulations**

The EIA process or procedure provides for the institutionalization of decision making regarding the potential impact development activities will have on the receiving natural, social and cultural environment. Further, the process makes provision for the identification and listing of types of activities that would be required to follow the process before any authorisation will be given.

(Contact: Mr. Olavi Makuti, Tel: 061-290 3518, e-mail: olm@windhoekcc.org.na)

➤ **Environmental Structure Plan and Policy**

The Environmental Structural Plan & Policy provides sufficient information for those making decisions regarding a particular development so that proper environmental evaluation can be conducted, which is appropriate to the scale of the proposed project and the risks to the environment which it may pose.

It establishes where there are potential and real problem environmental areas, such as land degradation, pollution, indiscriminate resource use etc. The Environmental Structural Plan is the baseline upon which the policy is established.

(Contact: Mr. Olavi Makuti, Tel: 061-290 3518, e-mail: olm@windhoekcc.org.na)

➤ ***Windhoek Town Planning Scheme (2005)***

The Town Planning Scheme enables the comprehensive management of all property and related public sector functions across the city. The guidelines on the Conservation of Natural Resources should be addressed in this project.

(Contact: Mr. Olavi Makuti, Tel: 061-290 3518, e-mail: olm@windhoekcc.org.na)

➤ ***Policy for the Distribution and Future Usage of Public Open Spaces in Windhoek (2000)***

The policy provides guidelines for the establishment of open spaces and green corridors along drainage lines and sensitive environmental areas. The policy advocates for the provision of land for the explicit development of open spaces.

(Contact: Mr. Olavi Makuti, Tel: 061-290 3518, e-mail: olm@windhoekcc.org.na)

10. GENERAL ENVIRONMENT OF THE STUDY AREA

This section lists the most important environmental characteristics of the study area and provides a statement on the potential environmental impacts on each.

10.1 Location and Land Use

The proposed Community Market (-22.510471° S, 17.020676° E) is located on erf 1807, at the corner of Matshitshi road and Monte Christo Road. See Figure 1.

10.2 Topography and Surface Water

The landscape of the Monte Christo Community Market is classified as being in the Khomas Hochland Plateau region, which is characterized by rolling hills in the west with many summit heights equivalent reflecting older land surfaces.

The township development lies in the Aretaragas River catchment. Drainage is well developed and runoff takes place through small streams (rivers) running through the site. This streams eventually join the Aretaragas River course, flowing towards the north into the Swakop River. Care should be taken to avoid contamination of these surface water bodies in the area, especially during rainy seasons.

10.3 Climate (Mandelsohn et al, 2003)

Table 1. Climate Data

Classification of climate:	Sub-tropical area
Average rainfall:	Rainfall in the area is averaged to be between 300-350 mm per year.
Variation in rainfall:	Variation in rainfall is averaged to be 30-40 % per year.
Average evaporation:	Evaporation in the area is averaged to be between 2100-2240 mm per year.
Precipitation:	The highest summer rains are experienced in February.
Water Deficit:	Water deficit in the area is averaged to be between 1700- 1900mm per year.
Temperatures:	Temperatures in the area are averaged to be between 18- 20 °C per year.
Wind direction:	Wind directions in the area are predominantly easterly winds.

10.4 Geology of the Area

The project location has a very thin soil cover (less than 35cm), however this differs in the in the rivers and tributaries. The general geology or rock formations underlying the township development consists mainly of mica rich schist and quartz rich schist (quartzite), containing quartz veins. All of the intersected rock formations belong to the Kuiseb formation of the Damara Sequence. The schist has an abundance of layers (schistosity) consisting of quartz rich and mica rich layers. Some major Amphibolite intrusions are also present in the area.

The overall complex geology of the Windhoek area is a result of numerous folding and faulting episodes, including thrusting and rifting, to which the area has been subjected. Metasedimentary rocks of the Swakop Group, which is part of the Damara Sequence, constitute the Windhoek Aquifer.

10.5 Hydrogeological Characteristics

A number of north-southerly striking faults and joints found in Windhoek form the major underground water conduits of the Windhoek Aquifer and hence determine the conditions of the aquifer. Secondary porosity giving rise to high aquifer transmissivity is best developed in faults with post-hydrothermal alteration brecciation in quartzitic environments. Moreover, the host rock fracturing along fault planes results in better development of secondary porosity in quartzite compared to schistose terrain such that the aquifer reaches its

maximum potential in this type of setting. The sedimentary formations of the study area strike in an east-north-easterly direction and dip 25-30° to the north-northwest.

The micaceous schist found in the area, is prone to plastic deformation rather than brittle, fracturing, exhibiting significantly lower secondary porosity and permeability. Groundwater flow would be mostly through secondary porosity along fractures, faults and other geological structures present within the underlying formations in the area.

On the other hand, the more competent quartzite is subject to brittle deformation and thus exhibits relatively high secondary porosity and permeability due to jointing. The joints of the quartzite show evidence of fluid flow by carbonate and quartz infill and iron staining.

Groundwater flow from the site is expected to flow south-west, towards the Goreangab Dam. According to the City of Windhoek, Namwater, Department of Water Affairs (DWA) and MCS database there are no boreholes present within a 1km radius of the project location. Groundwater table in the area is expected to be about 5m below ground level (mbgl).

Groundwater belongs to the government of the Republic of Namibia; hence the area does fall within the Windhoek-Gobabis Subterranean Water Control Area, of Government Notice 189 of 6 February 1970. This means that Government controls groundwater usage in this area.

The area is outside the mapped area considered in the Vulnerability Study of the Windhoek Aquifer (City of Windhoek, 2000) , However due to the presence of a highly sensitive faults present in the area, it should be regarded as a sensitive area. These geological features might form preferential pathways to the underlying aquifer.

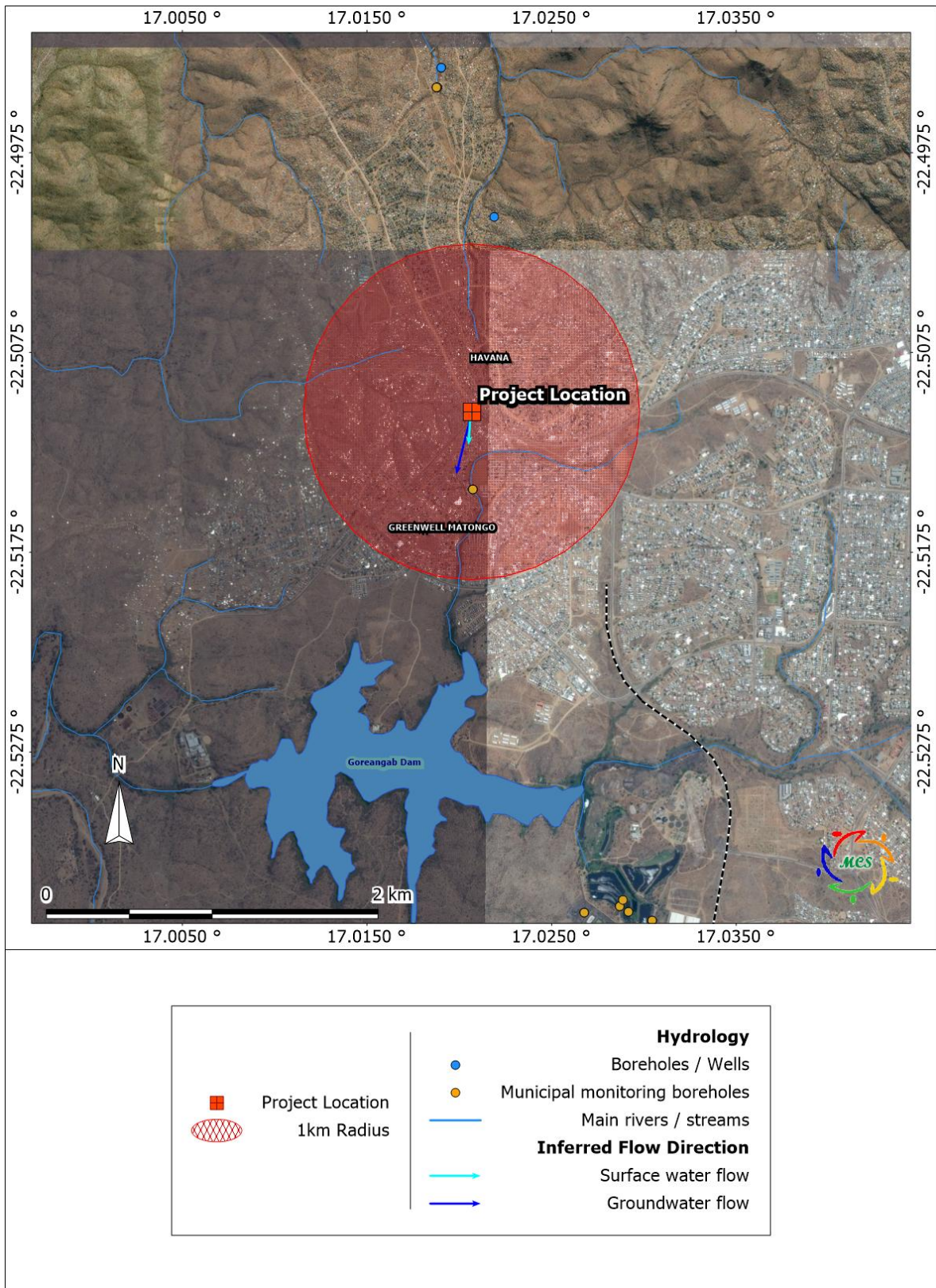


Figure 4. Hydrogeological map

10.6 General Ecology

There is no vegetation on this site, besides the scattered acacia and prosopis trees left at erf 1807. This is due to the urban set-up of the area. No red-listed species were encountered during the survey. It is strongly recommended that the remaining trees in the area should rather be factored into the development

as far as possible, as they can be used for shade and can contribute positively to the general aesthetics of the proposed development. Invasive species were also encountered at the site, which is a sign of disturbance. Deducing from the Atlas of Namibia, the proposed site is within the area that is known to have >500 plant species (Mandelsohn et al, 2003).

With regards to fauna, it is estimated that at least 71 to 80 reptile, 8 to 11 amphibian, 61 to 75 mammal (e.g. Baboons) and 201 to 230 bird species (breeding residents e.g. Guinea fowl) are known to or are expected to occur in the project area of which only a very few proportion are endemics. However, there were very few birds observed at the study area, because of current movements in the highly populated neighbouring informal settlement.

11. SOCIO-ECONOMIC ASPECTS

This section provides an overview of socio-economic characteristics of the study area. It provides regional and local information on the, economic activities, population dynamics, vulnerability, and social services currently available in the area.

11.1 Regional Information

The proposed Monte Christo Community Market project will be situated in the Khomas Region of Namibia. The total current population is estimated to be 250,262 (126,648 males and 123,613 females) (NPC, 2001). Ninety-four percent of the population of the Khomas Region over 15 years of age are literate. The estimated unemployment rate in Khomas region is 29%, whilst it is 35 to 40% in Windhoek. The population density in Khomas region is relatively high at 6.8 persons per km², compared to the national average of 2 persons per km².

The life expectancy in Khomas region is 56 years in females and 54 years in males. The Human Poverty Index in Khomas region is 17.09, meaning almost a quarter of all people living in Khomas are poverty stricken.

11.2 Windhoek

11.2.1 Economic Activities

The City of Windhoek is the capital city of Namibia and is often referred to as the cleanest city in Africa. The city is the hub for all economic activities in the Khomas Region and is linked to Namibia's air, rail and road network, making it well situated to service Zambia, Zimbabwe, Botswana, Southern Angola and South Africa.

The Monte Christo Community Market will contribute towards economic development in informal areas of Windhoek. The market will provide a well organised trading opportunity for vendors in the informal areas.

11.2.2. Employment (Job Opportunities)

Unemployment still hampers most of the developing world and Windhoek is not an exception. The proposed project is likely to increase the job opportunities in Windhoek. The construction phase of the project will provide job opportunities, of which 80% are expected to be unskilled and semi-skilled people and can be sourced from the unemployed labour force of Windhoek (unemployment rate is 35 to 40% in Windhoek).

Even before projects produce profits from the rental of stands, they produce a related benefit for the surrounding communities and the city at large, which is job creation. The construction process will involve engineers, construction firms, equipment vendors, and utilities. Money will be spent locally for piping, construction, and operational personnel, contractors, providing additional economic benefits to the community through increased employment and local sales.

Some of the services in the operational phase will be outsourced e.g. maintenance of bulk services, waste removal etc. The outsourcing of these services will strengthen existing business operating in the area and provide employment to people.

11.2.3 Livelihoods

Economic activities in Windhoek and the surrounding areas are limited and livelihoods are heavily dependent on the business sector and salaries of civil servants. The livelihoods of the locals are likely to be positively impacted therefore predicted to be better than before the development of the township project in the area.

11.2.4 Tourism

Windhoek is the major tourism gateway to the rest of Namibia. The city itself also attracts a lot of tourists from all over the world, due to its range of attractions in and around the city; and the rich cultural diversity found in the capital.

This tourist city is renowned for being one of the cleanest in the world, therefore the Monte Christo Community Market will provide a community market that could attract tourists to the informal settlements.

Excessive waste, dust, noise, vibrations and appalling air quality can have negative impacts on the tourism industry in the area, as it can become a nuisance to tourists.

11.2.5 In - Migration

Due to enhanced employment opportunities that could be created by the envisaged project, some in-migration of job seekers to Windhoek can be expected. Depending on the amount of in-migration, local areas may start

experiencing overcrowdings, over use of infrastructure, local conflicts, increase of goods prices due to increased demand etc.

11. 2.6 HIV & Prostitution

Namibia has a high incidence of HIV/AIDS, which has a strong and adverse socio-economic impact on livelihoods of people in the region. The HIV prevalence rate for the age group 15 to 49 is estimated at 21.3% for Namibia (UNDP, 2005).

The spending power of locals working on this project are likely to increase, and this might be a perfect opportunity for sex workers to explore. Migrant labourers from other regions and expatriates are normally vulnerable and may use the services rendered by the sex workers.

Should the HIV prevalence increase, the following consequential issues could arise:

- ✓ Reduced workforce in the Khomas Region.
- ✓ Diversion of income expenditure to medical care.
- ✓ Increase in orphans and household headed by children.
- ✓ Increase in pregnancy related mortality.
- ✓ The current rate of 3,129 people per doctor could increase.

11. 2.7 Infrastructure & Increased Traffic

The traffic in the area would be expected to increase slightly and it might contribute to heavy traffic during peak hours and a higher number of car accidents. Infrastructure like roads will be affected due to increased traffic and heavy-duty cargo trucks accessing the site from Monte Christo road and Matshitshi Street.

12. STAKEHOLDER PARTICIPATION

Consultation with the public forms an integral component of an EIA investigation and enables I&APs e.g. neighbouring landowners, local authorities, environmental groups, civic associations and communities, to comment on the potential environmental impacts associated with the proposed development and to identify additional issues which they feel should be addressed in the EIA. The primary aims of public participation were:

- ❖ To initiate participation of Interested and affected parties (I&APs), e.g. local authorities and communities.
- ❖ To inform I&APs and key stakeholders about the proposed development.
- ❖ To identify issues and concerns of key stakeholders and I&APs with regards to the proposed development.
- ❖ To provide information to enable informed decision making
- ❖ To develop a communication structure with stakeholder and I&APs
- ❖ To promote transparency of the project
- ❖ To ensure the public and stakeholders comments are considered for the development.
- ❖ To provide answers to I&APs queries
- ❖ To encourage shared responsibility and sense of ownership.

Decision-making authorities were consulted throughout from the outset of the study, and have been engaged throughout the project process. Consultation with the department of Environmental Affairs (MET) included the environmental assessment procedure and application procedure.

Public Consultation Meetings were with the affected communities on various occasions. The main issues that came from this exercise was the need to accommodate affected illegal traders in the area and invaders of the Community Market area.

It was resolved that traders be accommodated in the proposed Community Market. The affected households will be accommodated the new Havana Relocation Township. No environmental issues were raised during the consultation, besides the need to provide basic municipal services. The following table indicates the interested and affected parties of the project.

Table 2. Stakeholders/I&APS

Affected Households - Monte Christo Road (incl. Informal market)				
MRP.NO	Name and Surname	Contact Details	ERF.NO	Comments
1	Martin lipumbu	814007781	906-B	move back
2	Tabita .N. Kronelius	813654143		
3	Rauna .T. Ndipwashimwe	812774120	907-B	move back
4	Matheus .S. Ndakolute	813128396	908-B	move back
5			909-B	move back
6			910-B	move back
7	Jonas .N. Shifidi	812216477		
8	Abed Shuumbwa	814002055		
9			911-B	move back
10				
11				
12	Daniel .M. Shiingidwa	818393724		
13	Fridrick Ekandjo	817557056		
14	Martha Sakaria	812923104		
15	Abniel .T. Haukongo	815518767		
16	Simeon Nghiyangelwa	816600736		
17	Lukas Stefanus	813446314		House with business
18	Justus .F.N. Nghiteke	818426112		House with business
19	Aina Hamutenya	812853425		
20	Moses Sakaria	812075797		
21	Paulus Haipinge	816361975		
22	Phillimon .S. Wileinge	814372587		
23	Olavi Nashima	812911411		
24	Andreas .B. Nepela	814639891		
25	Klaudia .H. Muzile	816036559		
26	Diina Kuume	812168582		
27	Jekonia Gottlieb	817161836		House with business
28	Filipus .E. Petrus	813715419		House with business
29	Seboloni Erastus	812375420		
30	Titus .N. Elifas	812537683		
31	Andreas Josef	812818880		House with business
32	Laimmy Mungongolo	812335654		
33				
34	Salomo Mundondonga	817903634		
35	Martha .N. Shihenuka	812983725		
36				
37	Absai Elago	812866992		House with business
38	Olivia Shihepo	813367228	821-B	move back
39	Ester .H. Nandjembo	816728767		
40	Martha Nambahu	813258104		
41			822-B	move back
42	Johanna Nandjembo	813147454		
43	Helena .M. Nakagumbo	812532191	823-B	move back
44				
45	Hilma .L. Shivute	812810812	824-B	move back
46			825-B	move back
47			826-B	move back
48				
49	Silas .P. Nghoshi	812961480		
50				

51	Michael Shemunketa	815829969		
52	Herman .N. Paulus	812205625		
53	Mathias Shixuleni	812024741		
54				
55	Julia .P. Mandume	814043135		
56	Theresia Ugwanga	817944529		
57	Eliaser .E. Uupindi	813442757		
58	Drotea .N. Shipopyeni	812254188		
59	Isaskar Kafo	814562229		
60	Rauha .M. Shipopyeni	812301662		
61				
62	Lyonga Munyana	817028355		
63	Kleopas Mupetami	812332933		
64	Tobias Shikongo	817447291		
65	Isak Shituleni	812191536		
66	Ashipala .N. Malima	814198124		
67	Sem Nangombe	812691015		
68	Victori .N. Nangombe	812323889	744-B	move back
69	Taapopi Angula	814179795	743-B	move back
70	Immanuel Aluteni	813459776		
71	Kiliana .N. Alweendo	812779203		House with business
72	Frieda .M. Sakeus	812525010		
73	Hileni Iileka	812793116		
74			742-B	move back
75	Abraham .A. Kendjele	813193496		
76				
77	Penomukulili .N. Muhaluka	812454335		church
78	Erastus .N. Namhongo	817394905		
79	Rachel .N. Hamukoto	813326580		
80			737-B	move back
81			736-B	move back
82	Luise Namholo	813265490		House with business
83			735-B	move back- church
84			734-B	move back
85			732-B	move back
86	Lucas .N. Mikael	813300686		House with business
87	Felico .N. Nguitwasa	814751412		
88	Selma Nghipunya	812012272		
89				
90	James .T. Niinkoti	812097351		
91	Petrina .N. Thomas	816119201		
92				House with business
93	Eino .N. Mbango	813920720		
94	Lukas Indombo	818963404		
95	Job .I. Lukas	812445853		
96	Lamek Johannes	812775818		
97	Fillemon Festus	813983722		House with business
98	Aina Intamba	812126833		
99	Job Katjinangara	815628028		
100	France Nangolo	816533285		
101	Festus .A. Andreas	812282814		House with business
102	Martha .T. Shitaleni	813034241		
103	Shekuza Bonifatius	812989229		
104	Abisai .S. Abisai	814627922		House with business
105	Lauha .M. Ambambi	814377757		House with business

106	Junias Negumbo	812999409		
107	Ruben Shigwedha	812985126		House with business
108				
109	Josefina .N. Shipingana	816449761		
110	Silvanus Hamon	811479084		House with business
111	Wilbard .U. Iipinga	816394795		
112	Ester Tomas	812975114		
113	Taimi .N.N. Shaanika	813300416		
114	Nestory .N. Shatjohamba	813066092		
115	Sakeus Nendongo	812727747		
116	Amenenge .N. Ashipala	812524055		
117	Jona .H. Kalombo	814482812		
118				
119	Tuurkie Kaluwa	818631572		
120	Janus .S. Haufiku	812935874		
121	Suama .N. Ipaadhi	812200533		
122				House with business
123				
124	Gustav Hengari	812105889		
125	Bens Kazengurura	816734920		
126	Gajus .M. Kauapirura	812602480		
127	Simon .S. Karemba	812041275		
128	Jesaja Ngurungunda	813451538		
129	Tjiratjiza Murema	812897350		
130	Isaak Mungendje	818096744		
131	Salom .S. Amweenye	818472683		
132	Hafeni .N. Kautwima	812895123		
133	Petrus Frans	813949121		House with business
134	Jackson Tjazirapi	812601716		
135	Titus .N. Johannes	818115166		
136	Presly Tjirimuje	814465090		
137	Engenesia Katjingsia	813080961		
138	Brigitte Katjivikua	812125669		
139	Naomi Kaengombe	812605101		
140	Timotheus .A. Shiikwa	812804864		House with business
141	Selma Toivo	816235540		
142	Phillip .S. Namalemo	812975076		House with business
143	Johannes Kanyolo	812210955		
144				House with business
145	Benhard .K. Uugwanga	812264506		House with business
146	Naemi Awala	812505032		
147				House with business
148	Anna .N.N. Amunime	812049007		Business
149	Simeon Mpuka	812309940		
150	Petrus .N.M.E. Nghiyalwa	812689775		
151				House with business
152	Erastus .D.K. Ashipala	812009823		
153				House with business
154	Tomas Hamukoto	814421331		
155	Simon .N. Heita	813521573		House with business
156	Josef Sheehama	812491912		House with business
157	Simion .H. Haukuti	813446440		House with business
158	Aguste .O. Iipinga	817148566		
159	Maria .M. Paulus	814252684		
160	Petrus Johannes	816603144		
161	Viktoria .N. Mongongo	817536233		House with business

162	Frieda Shilongo	813731073		
163	Johannes Angula	816132430		
164	Rosaria Shimbode	817301955		House with business
165	Daniel .N. Mokaxwa	812375501		
166	Tomas .N. Ipinge	812484484		House with business
167	Daniel .H. Shinongodo	818730229		
168	Nakakalepo Amutenya	812301977		House with business
169	Tobias Karukuma	813359728		
170				
171	Stella .U. Tjihuno	814053958		
172	Tobias Ndyimba	814844863		
173				
174	Hilen .N. Veijo	814715563		
175	Petrus .S. Haufiku	814566935		
176	Samuel Nakalila	812852700	741-B	move back
177	Frans Shilepa	818285848		
178	Albertina .T. Shikongo	812201416		House with business
179	Elize .E. Hamunyela	813991942		House with business
180	Loide .A. Katsimine	818289982		
181	Frieda Moses	818997687		
182	Teopolina .N. Kashimbode	812804872		House with business
183	Twiindileni .N. Kashopola	812424858		House with business
184	Josef .V. Hanyemweshitya	814235205		House with business
185	Viktoria .S. Iiyambo	817893118		House with business
186	Simon .A. Iiyambo	813791436		House with business
187	Stefanus .U. Sheya	813553418		House with business
188	David .J. Kamati	812739877		
189				House with business
190				House with business
191				House with business
192				House with business
193				
194				
195				
196				House with business
197				House with business
198	Timotheus Hangula	812881089		
199	Petrus .T. Shigwedha	813048544		
200				
201	Lyosina Kalembe	813930730		
202	Beata Ndove	817558025		
203	Aili .J. Haindongo	812309884		
204	Josua .T. Ndove	816612115		
205	Abrahah .S. Sheelekeni	813003257		
206	Tuyenikelao Vaendjele	818429809		
207	Sakeus .M. Imene	812332200		House with business
208	Fransina .M. Jashon	812371822		
209	Michael .A. Kalola	812772495		
210	Thomas .M. Nuleipo	812730375		House with business
211				House with business
212	Wilbard .U. Hango	812717107		House with business
213	Salom Lukas	813071530		House with business
214	David Sheendelwako	816328728		
215	Lukas .K. Kaluwapa	816548488		House with business
216	Matias .S. Kaluwapa	816548488		House with business
217				House with business

13. ENVIRONMENTAL IMPACT EVALUATION

The Environmental Impact Assessment sets out potential positive and negative environmental impacts associated with the proposed Monte Christo Community Market Development. The following assessment methodology will be used to examine each impact identified, see Table 3:

Table 3. Impact Evaluation Criterion (DEAT 2006)

Criteria	Rating (Severity)	
Impact Type	+VE	Positive
	0	No Impact
	-VE	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

13.1 Construction Activities of the Monte Christo Community Market.

13.1.1 Dust Pollution and Air Quality

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

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

Impact Evaluation:

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Dust & Air Quality	-VE	2	1	2	1	M	L

13.1.2 Noise Impact

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

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

Impact
Evaluation:

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

13.1.3 Safety and Security

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

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

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

Impact
Evaluation:

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

13.1.4 Contamination of Groundwater

Groundwater quality could be impacted through oil leakages, lubricants and grease from the equipment and machinery utilised during the construction of Monte Christo Community Market.

Care must be taken to avoid contamination of soil and groundwater. Use drip trays when doing maintenance on machinery. Maintenance should be done on dedicated areas with linings or concrete floor. The risk can be lowered further through proper training of staff.

All spills must be cleaned up immediately. Excavations should be backfilled and sealed with appropriate material, if it is not to be used further.

Impact Evaluation:

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Groundwater	-VE	2	2	2	2	M	L

13.1.5 Contamination of Surface Water

Contamination of surface water might occur through oil leakages, lubricants and grease from the equipment and machinery during the construction of Monte Christo Community Market. Oil spills may form a film on water surfaces in the nearby streams causing physical damage to water-borne organisms.

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

Impact Evaluation:

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

13.1.6 Generation of Waste

This can be in a form of rubble, cement bags, pipe and electrical wire cuttings. Contaminated soil due to oil leakages, lubricants and grease from the construction equipment and machinery may also be generated during the construction phase.

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

Impact Evaluation:

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

13.1.7 Traffic

The Monte Christo Community Market construction activities are expected to have a minor impact on the movement of traffic along Monte Christo road and Matshitshi Street. No diversion of traffic or closure of roads are expected.

Speed limit warning signs must be erected to minimise accidents. Heavy-duty vehicles and machinery must be tagged with reflective signs or tapes to maximise visibility and avoid accidents.

Impact Evaluation:

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Traffic	-VE	2	1	4	3	M	L

13.1.8 Fires and Explosions

There should be sufficient water available for fire fighting purposes. Ensure that all fire-fighting devices are in good working order and they 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 fire fighting equipment by the contractor.

Impact Evaluation:

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

13.1.9 Nuisance Pollution

Aesthetics and inconvenience caused to persons in surrounding areas. The construction activities would be visible from the Monte Christo road section, thus the contractor should maintain tidiness on site at all times. Take cognition when parking vehicles and placing equipment.

Impact Evaluation:

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

13.1.10 Erosion and Sedimentation

Vegetation clearance and creation of impermeable surfaces could result in erosion in areas across Monte Christo Community Market. The clearance of vegetation will further reduce the capacity of the land surface to slow down the flow of surface water, thus decreasing infiltration, and increasing both the quantity and velocity of surface water runoff. The particles in suspension will be transported towards the north-west and could increase the sedimentation in the Aretaragas river tributary flowing in the northern direction.

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

Impact Evaluation:

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

13.1.10 Ecological Impacts

The proposed Monte Christo Community Market is an already disturbed area, with no conservation worthy vegetation and fauna. The trees larger than 150mm in girth should be left intact, and incorporated in the development. Land will be cleared, leaving the bigger trees to maintain the vegetation within the area. The impacts on fauna and flora are expected to be minimal. Disturbance of areas outside the designated working zone is not allowed.

Impact Evaluation:

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

13.1.11 Heritage Impacts

There were no heritage artefacts encountered during the site visit. Should any archaeological material, e.g. old weapons, coins, bones found during the construction, work should stop immediately and the National Heritage Council of Namibia must be informed as soon as possible. The Heritage Council will then decide to clear the area or decide to conserve the site or material.

Impact Evaluation:

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Heritage	-VE	1	1	4	1	L	L

Summary of all potential impacts expected during the construction phase of the Monte Christo Community Market:

In general, impacts are expected to be low to medium, mostly short lived and site specific. Mitigation options recommended in the Environmental Management Plan (EMP) will guide and ensure that the impacts during the construction activities are minimised.

The contractor on site should be made aware of the content and environmental requirements of this report through proper induction training.

13.2 Operational Activities of the Monte Christo Community Market

13.2.1 Dust Pollution and Air Quality

Vehicles that will be accessing Monte Christo Community Market 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 of Monte Christo Community Market procedures have to be designed to enable environmental protection .

Impact
Evaluation:

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Dust & Air Quality	-VE	2	1	2	1	M	L

13.2.2 Noise Impact

Noise pollution already exists around the site in the form of noise generated from vehicles frequenting the existing roads. Noise pollution due to this project in the operational phase is expected to be mainly from generators or pumps, road maintenance machinery during maintenance.

Ensure that generator engines are fitted with mufflers. Operators working in close proximity to the generators should be equipped with ear protection equipment, when noise becomes an issue. Observation of on-site noise levels by the Manager or Supervisor of the Maintenance Department.

Impact
Evaluation:

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Noise	-VE	1	3	4	4	M	L

13.2.3 Contamination of Groundwater and Surface Water

Spillages might also occur during maintenance of the sewer system. This could have negative impacts on surface and groundwater especially in cases of large sewer spills.

Potential health impact on groundwater users do exist. Potential impact on the natural environment from possible polluted groundwater also exists. The area is subjected to north-northwest structures, which might act as preferential pathways for any contaminants entering the saturated zone. Proper containment should be used in cases of maintenance to avoid any possible leakages.

Impact
Evaluation:

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Groundwater contamination	-VE	2	3	3	3	M	L

13.2.5 Generation of Waste

Waste in the form of solid waste from the market will be generated and kept at the refuse yard before they are removed. Waste will be removed and disposed off at Kupferberg Landfill by City of Windhoek Waste Removal Contractors e.g. Rent-a-Drum, Kleen Tek etc.

Impact Evaluation:

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

13.2.6 Failure of Reticulation Pipelines

Potential release of sewage, storm-water, water, into the environment environment due to pipeline/system failure. As a result, the spillage could be released into the environment and could potentially be a health hazard to surface and groundwater.

Proper reticulation pipelines and drainage systems should be installed. Regular inspection should be conducted.

Impact Evaluation:

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

13.2.7 Ecological Impacts

No impacts are expected as the proposed Monte Christo Community Market in the operational phase. Vegetation in open spaces should not be disturbed or removed during the operational phase. Minimise the area of disturbance by restricting movement to the designated working areas during Maintenance.

Impact Evaluation:

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

13.2.8 Traffic

Traffic around the Monte Christo Community Market should be monitored, to avoid traffic congestion in the area. Speed limits and road signs as set out by City of Windhoek Traffic Department should be adhered to in order to minimise accidents. It is advisable that traffic lights be installed at the four-way junction to ease traffic flow around the new community market.

Impact Evaluation:

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Traffic	-VE	1	3	4	4	M	L

13.2.9 Safety and Security

A number of health and safety threats exist during operational activities of Monte Christo Community Market. Individuals in the community can suffer from noise from maintenance activities around the proposed township.



Accidents on roads as a result of increased traffic and deteriorated road conditions.

The contractors are advised to ensure that proper personal protective gear and first aid kits are available, at all times. Workers should also be properly trained in first aid and safety awareness.

Impact Evaluation:

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Safety and Security	-VE	1	3	6	3	M	L

Summary of all potential impacts expected during the operations of the Monte Christo Community Market:

In general, impacts are expected to be low, short lived and site to local specific. An Environmental Management Plan (EMP) will ensure that the impacts during the operational activities are minimised and includes measures to reduce all impacts identified.

The contractor should be made aware of the content and environmental requirements of this report through proper induction training.

14. CUMULATIVE IMPACTS

These are impacts on the environment, which results from the incremental impacts of the Monte Christo Community Market when added to other past, present, and reasonably foreseeable future actions regardless of what person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. In relation to an activity, it means the impact of an activity that in itself may not be significant, but may 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 development of Monte Christo Community Market includes, noise emissions and traffic impacts. These impacts could become significant. 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	-VE	1	3	4	3	M	L

15. ENVIRONMENTAL MANAGEMENT PLAN

The Environmental Management Plan (EMP) provides management options to ensure impacts of the proposed Monte Christo Community Market are minimised. An EMP is an environmental management tool used to ensure that undue or reasonably avoidable adverse impacts of the Monte Christo Community Market project are prevented, and the positive benefits of the project are enhanced.

The objectives of the EMP are:

- ✓ to include all components of the Monte Christo Community Market project;
- ✓ to prescribe the best practicable control methods to lessen the environmental impacts associated with the community market project;
- ✓ to monitor and audit the performance of the project personnel in applying such controls; and
- ✓ to ensure that appropriate environmental training is provided to responsible project personnel.

The EMP acts as a stand-alone document, which can be used during the various phases of the proposed project. All contractors taking part in the bulk services construction activities should be made aware of the contents of the EMP. An EMP for the construction and operational phases of Monte Christo Community Market project is attached as Appendix A.

16. CONCLUSIONS

All known environmental and social risks can be minimised and managed through implementing preventative measures and sound management systems. It is recommended that environmental performance be monitored regularly to ensure compliance and that corrective measures be taken if necessary. It is also recommended that this information be made available to the surrounding communities on a regular basis.

In general, the Monte Christo Community Market project would pose limited environmental risks, provided the EMP for the activity is used properly during planning, construction and operational phase. The Environmental Management Plan should be used as an on-site tool during all phases of the Havana Relocation township project. Parties responsible for non-conformances of the EMP will be held responsible for any rehabilitation that may need to be undertaken.

Should the Monte Christo Community Market project be modified or extended to a different area, it is recommended that a different EIA be done for the probable new location.

Matrix Consulting Services



Chris Ailonga (MSc Env Sci, Wits)
Principal Environmental Scientist
August 2020



17. REFERENCES

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