ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT
PROJECT REPORT

FOR

THE PROPOSED CONSTRUCTION OF ATHI WATER SERVICES BOARD & NAIROBI CITY WATER & SEWERAGE COMPANY OPERATIONS BUILDING AT MUTHAIGA, NAIROBI COUNTY

PROJECT PROPONENT:

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JANUARY 2018
CERTIFICATION

This Environmental Impact Assessment project report for the proposed construction of Athi Water Services Board & Nairobi City Water & Sewerage Company Operations Building at Muthaiga, Nairobi County was conducted and the report prepared by KenfaceEnconsults (Africa) Ltd. The registered expert is Peter M. Muriuki. The expert registration detail and signature are as follows:

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<td>Peter Maina Muriuki</td>
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</tr>
</tbody>
</table>

Proponent:
Athi Water Services Board

Name....................................................................................................................

Designation............................................................................................................

Signature..............................................................................................................

Date/ Stamp.............................................................................................................
## CONTENTS

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>EXECUTIVE SUMMARY</strong></td>
<td>a</td>
</tr>
<tr>
<td>1</td>
<td><strong>INTRODUCTION</strong></td>
<td>1-1</td>
</tr>
<tr>
<td>1.1</td>
<td>Background</td>
<td>1-1</td>
</tr>
<tr>
<td>1.2</td>
<td>Project Location</td>
<td>1-1</td>
</tr>
<tr>
<td>1.3</td>
<td>Purpose of carrying out the Environmental Impact Assessment (EIA)</td>
<td>1-2</td>
</tr>
<tr>
<td>1.3.1</td>
<td>Justification for preparation of the EIA Project Report</td>
<td>1-2</td>
</tr>
<tr>
<td>1.3.2</td>
<td>Objectives of the EIA</td>
<td>1-2</td>
</tr>
<tr>
<td>1.4</td>
<td>Methodology</td>
<td>1-3</td>
</tr>
<tr>
<td>1.4.1</td>
<td>Approaches to undertaking the ESIA</td>
<td>1-3</td>
</tr>
<tr>
<td>1.4.2</td>
<td>Desktop Study</td>
<td>1-3</td>
</tr>
<tr>
<td>1.4.3</td>
<td>Field investigations</td>
<td>1-3</td>
</tr>
<tr>
<td>1.4.4</td>
<td>Public consultations</td>
<td>1-3</td>
</tr>
<tr>
<td>1.5</td>
<td>Study team</td>
<td>1-4</td>
</tr>
<tr>
<td>1.6</td>
<td>Structure of the EIA Report</td>
<td>1-4</td>
</tr>
<tr>
<td>2</td>
<td><strong>POLICY, LEGAL AND REGULATORY FRAMEWORK</strong></td>
<td>2-1</td>
</tr>
<tr>
<td>2.1</td>
<td>Kenya’s Policy Framework</td>
<td>2-1</td>
</tr>
<tr>
<td>2.2</td>
<td>Kenya’s Legal Framework</td>
<td>2-2</td>
</tr>
<tr>
<td>2.2.2</td>
<td>The Environmental Management &amp; Coordination Act (EMCA), 2015</td>
<td>2-3</td>
</tr>
<tr>
<td>2.2.12</td>
<td>The Traffic Act, Cap 203</td>
<td>2-10</td>
</tr>
<tr>
<td>2.2.13</td>
<td>Building Code of 1971</td>
<td>2-10</td>
</tr>
<tr>
<td>2.3</td>
<td>Kenya’s Administrative/ Institutional Framework</td>
<td>2-11</td>
</tr>
<tr>
<td>2.3.1</td>
<td>The National Environmental Council (NEC)</td>
<td>2-11</td>
</tr>
<tr>
<td>2.3.2</td>
<td>The National Environmental Management Authority (NEMA)Commitees</td>
<td>2-11</td>
</tr>
<tr>
<td>2.3.3</td>
<td>County Environmental Committees</td>
<td>2-11</td>
</tr>
<tr>
<td>2.4</td>
<td>World Bank Operational Policies</td>
<td>2-12</td>
</tr>
<tr>
<td>2.4.1</td>
<td>Operational Policy (OP) 4.01: Environmental Assessment, 2001</td>
<td>2-12</td>
</tr>
<tr>
<td>2.5</td>
<td>International Laws and Treaties</td>
<td>2-13</td>
</tr>
<tr>
<td>2.5.1</td>
<td>The 1985 Vienna Convention for the protection of the Ozone Layer</td>
<td>2-13</td>
</tr>
<tr>
<td>2.5.2</td>
<td>The 1987 Montreal Protocol on Substances that Deplete the Ozone Layer</td>
<td>2-13</td>
</tr>
<tr>
<td>2.5.3</td>
<td>The United Nations Convention on Climate Change (“1992 UNFCCC”)</td>
<td>2-14</td>
</tr>
<tr>
<td>2.5.4</td>
<td>The Kyoto protocol</td>
<td>2-14</td>
</tr>
<tr>
<td>3</td>
<td><strong>DESCRIPTION OF THE PROJECT ENVIRONMENT</strong></td>
<td>3-1</td>
</tr>
<tr>
<td>3.1</td>
<td>Introduction</td>
<td>3-1</td>
</tr>
<tr>
<td>3.2</td>
<td>Physical and Biological Environment of the Project Area</td>
<td>3-1</td>
</tr>
<tr>
<td>3.2.1</td>
<td>Physical Environment</td>
<td>3-1</td>
</tr>
<tr>
<td>(a)</td>
<td>Climate</td>
<td>3-1</td>
</tr>
</tbody>
</table>
(i) Rainfall 3-1  
(ii) Climatic Seasons 3-1  
(iii) Temperature 3-1  
(b) Soils 3-2  
(c) Geology 3-2  
(d) Topography 3-2  
(e) Hydrology and Drainage 3-2  
(f) Sunshine and Solar Radiation 3-2  
(g) Smog 3-2

3.2.2 Biological Environment 3-3

3.3 Socio-economic Environment 3-4  
3.3.1 Businesses within the area 3-4  
3.3.2 Road network 3-4  
3.3.3 Energy/ Electricity 3-5  
3.3.4 Water Supply 3-5  
3.3.5 Sewer Systems 3-5  
3.3.6 Storm water/run off 3-5  
3.3.7 Solid waste 3-5

4  PROJECT DESCRIPTION 4-1

4.1 General Project Description 4-1

4.2 Description of the project components 4-1  
4.2.1 Construction Materials 4-2  
4.2.2 Water requirements 4-2  
4.2.3 Sewage connection 4-2  
4.2.4 Solid waste 4-2  
4.2.5 Electricity requirements 4-2  
4.2.6 Car Parking 4-3  
4.2.7 Check point/security 4-3  
4.2.8 Project Cost 4-3

4.3 Construction phase 4-3  
4.3.1 Excavation and foundation work 4-3  
4.3.2 Material handling and storage 4-3  
4.3.3 Masonry, concrete work and related activities 4-4  
4.3.4 Structural steel work 4-4  
4.3.5 Roofing works 4-4  
4.3.6 Electrical works 4-4  
4.3.7 Tree planting 4-4  
4.3.8 Drainage 4-4  
4.3.9 Biodigester 4-5  
4.3.10 Timing of construction works 4-5

4.4 Operation phase 4-5  
4.4.1 Occupancy 4-5  
4.4.2 Cleaning 4-5  
4.4.3 General repairs and maintenance 4-5

4.5 Decommissioning phase 4-5

4.6 Construction Approvals 4-6

5  ANALYSIS OF ALTERNATIVES TO THE PROJECT 5-1

5.1 Project versus "No project"Alternative 5-1  
5.1.1 Alternative 1 5-1  
5.1.2 Alternative 2 5-1
5.1.3 Analysis of alternatives 1 and 2

5.2 Location Alternative

5.3 Alternative construction materials and technology

6 PUBLIC AND STAKEHOLDER CONSULTATIONS

6.1 General

6.1.1 Objectives of the public consultation

6.2 Applicable Laws, Regulations and Policies to Public Engagement

6.3 Actual Consultations

6.3.1 Stakeholder consultations

6.3.2 Public meeting

6.3.3 Muthaiga North Residents Association (MNRA) Meeting

6.4 Grievance Redress Mechanism

6.4.1 Complaints Procedure

6.4.2 Procedure

   (a) General complaints

   (b) Grievance Complaint Log

6.4.3 Responding to a Complaint

6.4.4 Monitoring Complaints

7 ASSESSMENT OF POTENTIAL IMPACTS AND MITIGATION MEASURES

7.1 Definition and Classification of Environmental and social Impacts

7.1.1 Impact Significance

7.1.2 Impact Matrix

7.2 Pre-construction Phase

7.2.1 Associated activities

7.2.2 Positive impacts during pre-construction phase

   (a) Public consultations

   (b) Landscape design

7.2.3 Negative impacts during pre-construction phase

   (a) Transportation of materials to project site

   (b) Storm Water Management

   (c) Visual Intrusion

7.3 Construction Phase

7.3.1 Associated Activities

7.3.2 Positive Impacts during Construction phase

   (a) Employment opportunities

   (b) Landscaping

   (c) Increased revenue to suppliers of construction materials and utilities

7.3.3 Negative impacts during construction phase

   (a) Pollution

   (i) Air pollution

   (ii) Noise pollution

   (iii) Solid and liquid waste pollution

   (b) Increased water use

   (c) Energy requirements

   (d) Occupational Health and Safety Hazards

   (e) Use and storage of hazardous materials

   (f) Fire risks/management

   (g) Traffic Congestion / road wear and tear
(h) Impacts of earth and other construction material sourcing 7-10
(i) Influx of workers from within and outside the project area 7-10
(j) Increase in HIV/AIDS prevalence and other diseases 7-11

7.4 Operation Phase 7-11
7.4.1 Associated Activities 7-11
7.4.2 Positive Impacts during Operation Phase 7-11
   (a) Employment opportunities 7-11
   (b) Landscaping 7-11
   (c) Increased revenue to suppliers of construction materials and utilities 7-12
   (d) Increased revenue to the Nairobi City County 7-12
   (e) Provision of quality offices and business space 7-12
   (f) Saving on rental fees by AWSB 7-12
   (g) Effective disaster response by NCWSC 7-12
   (h) Optimal Land use 7-12
7.4.3 Negative impacts during operation phase 7-12
   (a) Increase in water demand for various uses 7-12
   (b) Pollution 7-12
   (i) Air pollution 7-12
   (ii) Noise pollution 7-13
   (iii) Solid waste pollution 7-13
   (iv) Liquid waste pollution 7-13
   (c) Energy Requirements 7-13
   (d) Fire Management 7-13
   (e) Traffic congestion 7-14
   (f) Oil spills from vehicles in the parking area 7-14
   (g) Occupational Health and Safety Hazards 7-14

7.5 Decommissioning Phase 7-15
   (a) Associated Activities 7-15
   (b) Noise Pollution 7-15
   (c) Air/dust Pollution 7-15
   (d) Liquid Wastes 7-15
   (e) Landscape design 7-16
   (f) Solid Waste Material 7-16
   (g) Social Impacts 7-16
   (h) Occupational Health and Safety Hazards 7-16

8 ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP) 8-1
8.1 Auditing of the ESMP 8-1
8.1.1 Responsibilities 8-1
   (a) The project manager / Athi water aservices Board environmental specialist 8-1
   (b) Supervising Consultant 8-1
   (c) The Contractor 8-2
   (d) The Local Administration 8-2
   (e) NEMA 8-2

9 CONCLUSIONS & RECOMMENDATIONS 9-1

10 APPENDICES 10-1
LIST OF TABLES

Table 4-1: Key components and facilities of the project.......................................................... 4-1
Table 4-2: Project cost.................................................................................................................. 4-3
Table 6-1: List of key stakeholders interviewed ......................................................................... 6-4
Table 6-2: Key issues raised by stakeholders during public consultations ................................. 6-5
Table 6-3: Summary of deliberations during the public meeting ............................................... 6-6
Table 6-4: Sample Grievance Log.............................................................................................. 6-8
Table 7-1: Impact Matrix............................................................................................................. 7-2
Table 8-1: Environmental Management & Monitoring plan for site preparation, construction and demolition phase ........................................................................................................ 8-1

LIST OF FIGURES

Figure 1-1: Site neighbourhood analysis .................................................................................. 1-2
Figure 3-1: a map showing site and neighbouring premises and Karura Forest ....................... 3-3
Figure 3-2: a photo showing part of site structures ................................................................... 3-4
Figure 3-3: a photo showing an entry to neighbouring Rock City and adjacent Karura Forest 3-4
EXECUTIVE SUMMARY

Introduction

This document is an Environmental and Social Impact Assessment (ESIA) Project Report for the proposed construction of Athi Water Services Board (AWSB) & Nairobi City Water & Sewerage Company (NCWSC) Operations Building at Muthaiga, Nairobi County.

The proposed project will be financed under the Water and Sanitation Services Improvement Project Additional Financing (WaSSIP AF) which is a program funded by the World Bank.

The Environmental Management and Coordination Act (EMCA) 2015, require that an environmental and Social Impact Assessment be undertaken for projects of such nature. In adherence to this requirement, AWSB has therefore prepared this Environmental and Social Impact Assessment (ESIA) Project Report prior to its implementation as per the National Environment Management Authority (NEMA) requirements. The ESIA has also been undertaken in compliance with the World Bank Operational Policies more specifically O.P 4.01 on Environmental Assessments.

Legal, Regulatory, Administrative/Institutional Framework

Kenya has over 77 statutes, which relate to environmental concerns. Most of these statutes are sector specific, covering issues such as land use, occupational health and safety, water quality, wildlife, public health; soil erosion; air quality, etc.

Laws/regulations that are relevant to the proposed office building development include:

- The Environmental Management & Coordination Act (EMCA), 2015;
  - Environmental (Impact Assessment & Audit) Regulations, 2003;
  - Environmental Management & Coordination (Waste Management) Regulations, 2006;
  - Environmental Management & Coordination (Water Quality) Regulations, 2006;
  - Environmental Management & Coordination, Conservation of Biological Diversity (BD) Regulations, 2006;
  - Environmental Management & Coordination (Fossil Fuel Emission Control) Regulations, 2006;
  - Environmental Management & Coordination (Controlled Substances) Regulations, 2007;
  - Environmental Management & Coordination (Noise & Excessive Vibration Pollution) Regulations, 2009;
  - Standards & Enforcement;
- The Water Act, 2016;
- The Public Health Act, 1986;
- The Energy Act, 2006;
- The Physical Planning Act, Cap 286 of 1996;
- The Traffic Act, Cap 203;
- Public Roads & Roads of Access, Cap 399;
- The Occupational Safety & Health Act, 2007;
  - Factories & Other Places of Work (Fire Risk Reduction Rules) 2007;
  - Factories & Other Places of Work (Hazardous Substances Rules) 2007;
  - Factories & Other Places of Work (Noise Prevention & Control Rules) 2005;
  - Factories & Other Places of Work (Safety & Health Committee Rules) 2004;
  - Factories & Other Places of Work (Medical Examination Rules) 2005;
  - Building Operations & Works of Engineering Construction Rules;
- Work Injury & Benefits Act, 2007;
- The Employment Act, 2007; and
- World Bank Operational Policies.
The project

The construction of AWSB and NCWSC Operations Building will involve the following:

- Construction of new AWSB Office Building in Nairobi, total Floor Area 2,510m², consisting of Ground Floor (1,230m²), First Floor (1,040m²) and Terrace Floor (240m²). This includes associated mechanical and electrical installations, civil works and parking spaces.
- Construction of separate Disaster Response Center for Nairobi City Water and Sewerage Company (NCWSC) where mobile water treatment facility, water bowser, collapsible tanks and response vehicle will be stationed. The Disaster response Center will have an area of approximately 1500m² inclusive of Generator house, car parks and other site services.

The proposed project is anticipated to take approximately 6 months and will be completed by end of 2018.

The project is estimated to cost KShs 284,295,278.00.

Description of the Project Environment

Nairobi, the capital city of Kenya, has a population of 3,138,369. Approximately 8.1% of the Country’s population lives in Nairobi. According to the 2009 population census, Kenya’s total population is 38,610,097. The city is spread over an area of approximately 695.1 km² and comprises of eight constituencies varying in size from 10.71 km² (Starehe/Central) to 223.16 km² (Lang’ata/Kibera).

Administratively, the site is located in Muthaiga, Muthaiga Location of the Nairobi City County.

Rainfall type in Nairobi area is Bimodal. The average annual rainfall in Nairobi is about 900m, but the actual amount in any one year may vary from less than 500 mm to more than 1500 mm. There are two rainy seasons, from mid-March to the end of May (the so-called “Long Rains”), and from mid-October to mid-December (the “Short Rains”).

The seasonal changes in temperature are noticeable throughout the year, with the warmest months being from January to April before the main rainy season. It also tends to warm up again in October. The coolest months are between June and August.

The maximum temperature is 30 °C, while the minimum temperature is 15 °C, and the mean annual temperature of 24 °C.

Soils within Nairobi area are varied, ranging from deep well-formed red soils in the North West to relatively shallow sodic alkaline soils in the south east. The valley bottoms are characterised by fluvisols developed on layered alluvial deposits, making them very variable for construction purposes.

The geology of Nairobi area is dominated by volcanic rocks derived from volcanic activity associated with formation of the Rift Valley. These volcanic rocks are a thick succession of alkaline lavas and associated tuffs, the oldest of which is the Kapiti phonolite which lies directly on rocks of the Basement Complex, the oldest rocks in the East Africa region. The lavas thin out in an easterly direction.

The Topography of Nairobi fairly subdued, with elevations generally falling to the east. The area is characterized by extensive faulting, running in a north-south direction and conforming to the rift system. Faulting is of Pliocene age. The volcanic rocks of Nairobi area thicken rapidly westwards towards the edge of the Rift Valley, where the maximum thickness is represented by the Ngong Hills.

The main drainage towards the east is consequent upon the regional slope of the volcanic rocks emanating from the volcanoes of the Aberdare Mountains to the north of Nairobi. The Rift Valley...
margin to the west of Nairobi is a watershed. Beyond this margin, drainage is westerly into the Rift Valley.

Nairobi experiences a total of about 2,500 hours of bright sunshine per annum, which is equivalent to an annual mean of approximately 6.8 hours of sunshine per day. July and August are characterized by cloudiness and during these months the average daily sunshine in Nairobi is 4 hours.

Water supply during all phases of the development will be supplied by NCWSC. Therefore before commencement of construction, the proponent will apply to the NCWSC for water connection.

Water storage tanks will be provided to increase water capacity at the project site to the required amount. It is from these storage tanks that plumbing to the roof tanks will be undertaken if desired.

The waste water and sewage from the proposed building will be directed to a bio-digester to be put up within the proposed site. This is because there is no existing sewerage system within the area. AWSB will reuse the treated water for watering of lawns.

Solid waste management will consist of dustbins stored in an enclosed area to be protected from rain. The waste will then be collected by a NEMA licensed contractor for further disposal. This contractor will be identified by the proponent at the commencement of construction.

The proponent will make a formal application to Kenya Power for electricity connection.

A check point will be provided at the main entry and at entry and exit points to the parking. Twenty-four hour security checks will be provided at these points.

**Analysis of Alternatives to the Project**

Two possible options are available for the proposed office building development as follows:

- Alternative 1 which would involve erecting the office building;
- Alternative 2, based on utilising the existing system as it is without undertaking any new works (do nothing)

The table below gives a comparison of the two alternatives considered above.

<table>
<thead>
<tr>
<th>Alternative</th>
<th>1 (Project)</th>
<th>2 (No Action)</th>
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<tbody>
<tr>
<td>Cost</td>
<td>Expensive (-)</td>
<td>Continue Leasing (-)</td>
</tr>
<tr>
<td>Time</td>
<td>Quicker (+)</td>
<td>None needed (+)</td>
</tr>
<tr>
<td>Use of natural resources</td>
<td>Minimal (+)</td>
<td>Minimal (+)</td>
</tr>
<tr>
<td>Vegetation clearing</td>
<td>None needed (+)</td>
<td>None (+)</td>
</tr>
<tr>
<td>Creation of more office space</td>
<td>Substantial (+)</td>
<td>None (-)</td>
</tr>
<tr>
<td>Impact Analysis</td>
<td>(+) =4; (-) = 1</td>
<td>(+) =3 ; (-) = 2</td>
</tr>
</tbody>
</table>

Key: + = positive impacts; - = negative impacts

The No Action option (option 2) is not desirable due to the significant importance of increased office space for AWSB and a disaster response centre for NCWSC. These opportunities are considered more significant hence the choice of Alternative 1 for this project.

The No Project Option is the least preferred due to the following factors:

- No employment opportunities will be created for thousands of Kenyans who will work in the development area.
- No office space provided to alleviate the shortage.
- There will be no disaster response centre for NCWSC.
Public and Stakeholder Consultations

Public consultation is useful for gathering environmental data, understanding likely impacts, determining community and individual preferences, selecting project alternatives and designing viable and sustainable mitigation and compensation plans.

Typically, the Agenda for consultations was:

- Presentation of the proposed project;
- Obtaining from the respondents their environmental and socio-economic concerns, and perceptions as well as suggestions/comments regarding the proposed project.

More specifically, consultations were carried out with key stakeholders within Nairobi City County including:
- The local administration;
- Nairobi City County;
- Nairobi Water and Sewerage Company (NCWSC);
- Kenya Power.

Questionnaires were also administered within the neighbourhood and a public meeting held on the proposed site on 2nd October 2017 with the officials of Muthaiga North residents association.

The issues raised are presented in chapter 6 of this report.

Assessment of Potential Impacts & proposed Mitigation Measures

The purpose of undertaking the ESIA for the project is to improve decision making and to ensure that the project progresses in a sustainable manner. The EIA identifies ways of improving the project environmentally and socially by preventing, minimising, mitigating, or compensating for adverse impacts. These measures will help to avoid potentially costly remedial measures.

The project activities have been sub-divided into four key areas of activity comprising:

- Pre-construction/preparatory stage;
- Construction;
- Operation;
- Decommissioning.

<table>
<thead>
<tr>
<th>Environmental Impacts</th>
<th>Pre-construction/ Preparatory stage</th>
<th>Potential Interaction/ Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport of materials to project site</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Public consultations to get community feedback</td>
<td>++</td>
<td></td>
</tr>
<tr>
<td>Visual intrusion</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Landscape design</td>
<td>++</td>
<td></td>
</tr>
<tr>
<td><strong>Construction</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employment opportunities</td>
<td>++</td>
<td></td>
</tr>
<tr>
<td>Increased revenue to suppliers of construction materials and utilities.</td>
<td>++</td>
<td></td>
</tr>
<tr>
<td>Air/dust pollution</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Increased water use</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>Noise pollution</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Energy requirements</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Solid wastes</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Liquid wastes</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Occupational health &amp; safety hazards</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Use and storage of hazardous materials</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Landscaping</td>
<td>++</td>
<td></td>
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<tr>
<td>Fire risks/ management</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Traffic congestion road wear and tear</td>
<td>-</td>
<td></td>
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</tbody>
</table>
Environmental Impacts | Potential Interaction/ Impact
---|---
**Operation**
Provision of quality office space | ++
Saving on rental fees by AWSB | ++
Effective disaster response by NCWSC | ++
Employment opportunities | ++
Increased revenue to suppliers of utilities | ++
Increased revenue to Nairobi City County | ++
Optimal Land use | ++
Usage of water | --
Water pollution | -
Landscaping | ++
Noise | -
Energy requirements | -
Solid wastes | -
Liquid wastes | -
Fire management | -
Traffic congestion | -
Oil spills at the car parking area | -
Occupational health & safety hazards | -

**Decommissioning**
Noise pollution | -
Air/dust pollution | -
Liquid wastes | -
Solid wastes | -
Landscape design | -
Social impacts | -
Solid waste material e.g. bricks, blocks, tents, glass, metals | -
Occupational health & safety hazards | -

+ = Positive interaction or impact; - = Negative interaction or impact
++ = Strong Positive interaction or impact; -- = Strong Negative interaction or impact

Environmental and Social Management Plan (ESMP)

The Environmental and Social Management Plan (ESMP) is prepared to show how site specific concerns and mitigation measures are addressed through the phases of the Project. To ensure that the negative environmental impacts can be controlled and mitigated effectively, a stringent and scientific management and monitoring plan has been prepared.

At completion of construction, ownership of the building will be transferred to AWSB who will be responsible for implementation of environmental management measures associated with operation of the development.

The supervising consultant shall conduct regular audits to ensure that the system for implementation of the ESMP is operating effectively. The audit shall check that a procedure is in place to ensure that:

- The ESMP being used is the up-to-date version;
- Variations to the ESMP, non-compliance and corrective actions are documented;
- Appropriate environmental training of personnel is undertaken;
- Emergency procedures are in place and effectively communicated to personnel;
- A register of major incidents (spills, injuries, complaints, legal transgressions, spot fines and penalties etc) is in place as well as other documentation mentioned in the ESMP;
- Ensure that appropriate corrective and preventive action is taken by the Contractor once instructions have been issued.

In order to ensure the sound development and effective implementation of the ESMP, it will be necessary to identify and define the responsibilities and authority of the various persons and organisations who will be involved in the project. The following entities should be involved in the implementation of this ESMP:
The project manager / Athi Water Services Board
Contractor;
Supervising Consultant;
The local administration;
NEMA.

Conclusions & Recommendations

This document is an ESIA Project Report for the proposed office building development at Muthaiga, Nairobi County. The development entails the construction of a building for office space and a disaster response center.

The proposed project will have numerous positive impacts including creation of employment; quality and modern office spaces for AWSB and improved infrastructure, improved disaster response by NCWSC, increase in revenue for NCWSC, Kenya Power and other utility providers among others as outlined in the report.
1 INTRODUCTION

1.1 Background

This document is an Environmental and Social Impact Assessment (ESIA) Project Report for the proposed construction of Athi Water Services Board (AWSB) & Nairobi City Water & Sewerage Company (NCWSC) Operations Building at Muthaiga, Nairobi County. The construction of AWSB and NCWSC Operations Building will involve the following:

- Construction of new AWSB Office Building in Nairobi, total Floor Area 2,510m², consisting of Ground Floor (1,230m²), First Floor (1,040m²) and Terrace Floor (240m²). This includes associated mechanical and electrical installations, civil works and parking spaces.
- Construction of separate Disaster Response Center for Nairobi City Water and Sewerage Company (NCWSC) where mobile water treatment facility, water bowsers, collapsible tanks and response vehicle will be stationed. The Disaster response Center will have an area of approximately 1500m² inclusive of Generator house, car parks and other site services.

The proposed project will be financed under the Water and Sanitation Services Improvement Project Additional Financing (WaSSIP AF) which is a program funded by the World Bank.

The Environmental Management and Coordination Act (EMCA) 2015, require that an environmental and Social Impact Assessment be undertaken for projects of such nature. In adherence to this requirement, AWSB has therefore prepared this Environmental and Social Impact Assessment (ESIA) Project Report prior to its implementation as per the National Environment Management Authority (NEMA) requirements. The ESIA has also been undertaken in compliance with the World Bank Operational Policies more specifically O.P 4.01 on Environmental Assessments.

1.2 Project Location

The proposed site for the office building is at Muthaiga, Nairobi County, neighbouring Lunar Park, Rock city and Karura forest. The site can be accessed through Kiambu road. Currently, a portion of the site is occupied by NCWSC staff; there is also a big underground water tank belonging to NCWSC. Figure 1-1 below shows the site location:
1.3 Purpose of carrying out the Environmental Impact Assessment (EIA)

1.3.1 Justification for preparation of the EIA Project Report

The need to undertake an Environmental Impact Assessment for the project emanates from the following observations, among others:

Under Environment Management Coordination Act (EMCA), 2015 and the Environmental Impact Assessment and Audit Regulations of June, 2003 an EIA study is necessary and a fully detailed Project Report is to be compiled and submitted to NEMA for approval before commencing with any proposed developments.

The basis is that the proposed project constitutes several activities, which would generate considerable changes and significant effects to the environment including land, atmospheric resources and human environment. Thus, the ESIA Project Report is designed to establish, in advance, some appropriate level of environmental management measures for synchronization with project activities from the planning to implementation stages.

1.3.2 Objectives of the ESIA

The Environmental and Social Impact Assessment (ESIA) aims to achieve the following objectives:

- To identify and assess the potential environmental and social impacts of the proposed project;
- To identify and recommend measures for mitigation of potential adverse impacts;
- To verify compliance with environmental regulations and industry standards;
- To generate baseline data for monitoring and evaluation of how well the mitigation measures are being implemented during the project cycle;
- To recommend cost effective measures to be implemented to mitigate against expected impacts;
• To prepare an Environmental Impact Assessment Project Report compliant with the Environmental Management and Coordination Act (1999) and World Bank Safeguard Policies and detailing findings and recommendations.

This Project Report, therefore, details the positive and negative effects of the development on the project environment and recommends appropriate environmental and social measures to minimise any undesirable effects resulting from the project.

1.4 Methodology

1.4.1 Approaches to undertaking the ESIA

This ESIA Project Report has been prepared in accordance with the Environmental (Impact Assessment and Audit) Regulations of 2003 and EMCA (Act 8, 1999, amended in 2015). The study methodology comprised the following activities:

• Desktop study;
• Field investigations;
• Public consultations

1.4.2 Desktop Study

The desktop study involved:

• Initial meetings with project architects and engineers to discuss the proposed project, including activity options under consideration;
• Preparation of a checklist that consisted of a simple catalogue of environmental factors, which were compared with the activities to be performed;
• Collection and review of baseline data, maps, reports and other relevant information on the existing environmental and social conditions of the project area;
• Review of existing legislation, regulation and policies relevant to the proposed project;
• Review of proposed project engineering designs and construction inputs, including anticipated technical processes.

1.4.3 Field investigations

Field investigations involved:

• Site walks within the project area and the neighbouring areas that are within the zone influenced by the project;
• Taking photographs of significant aspects to assist in describing the baseline environmental and social conditions of the project area and its influence zone;
• Interviews with representatives of relevant key regulatory authorities within the project area and interested and affected parties mainly within the project influence zone.

The aim of the field investigations was to verify information and data collected during the desktop study and to collect any new information that may have been important in the assessment of impacts and design of mitigation measures.

1.4.4 Public consultations

Public consultations are critical in conducting an effective ESIA. The Kenyan EIA Regulations of 2003 recommend that Athi Water Services Board seeks the views of persons who may be affected by the project. Public consultations held in September – October 2017 consisted of use of the questionnaires and extensive interviews with stakeholders (the local community, the neighbours, the proponent and the government among others).
1.5 **Study team**

This ESIA was undertaken on a multi-disciplinary basis to ensure that all information was captured and collated. The team that participated in the study included:

- Environmentalist/Lead Expert;
- Associate Expert;
- Technical Coordinator;
- Sociologist.

1.6 **Structure of the EIA Report**

This report has been prepared under the following chapters:

**Executive Summary:** This chapter presents a summary of the significant findings and recommended actions, with an emphasis on expected impacts and management measures.

**Chapter 1:** *Introduction:* This chapter gives description of the project proponent profile, type of project proposed, history, location, background, reasons for the ESIA, study team and the ESIA report format.

**Chapter 2:** Policy, **Legal and Regulatory Framework:** This chapter outlines the Environmental requirements from Kenya and World Bank Policies on Environmental and Social Assessment Procedures (ESAP) relevant to this project.

**Chapter 3:** *Description of the Project Environment:* This chapter gives description of the environmental setting of the proposed project and surrounding areas, e.g., climate, soils, geology, vegetation, fauna, land use, human populations, socio-economics, cultural heritage.

**Chapter 4:** *Project Description & Justification:* This chapter gives a description of the status of the project in the project cycle, details of the proposed project, alternative options, designs and implementation strategies.

**Chapter 5:** *Analysis of Alternatives to the Project:* This chapter gives a description and analysis of the alternatives to the project.

**Chapter 6:** *Public and Stakeholder Consultation:* This chapter gives a description of the objectives, methods used and summary of results of the public consultation activities undertaken during the EIA.

**Chapter 7:** *Assessment of Potential Impacts and Mitigation Measures:* This chapter presents the analysis of beneficial and adverse impacts of the project on the biophysical and human (social, cultural and economic) environments. The analysis covers anticipated impacts during the construction, operation phases and decommissioning phases and also describes the enhancement and mitigation measures proposed to enhance benefits or prevent, minimize, mitigate or compensate for adverse impacts as well as the estimated cost of mitigation.

**Chapter 8:** *Environmental and Social Management and Monitoring Plans:* This chapter presents the proposed Environmental and Social Management Plans prepared for the project.
Chapter 9: **Conclusions and Recommendations**: The conclusion briefly presents the environmental and social acceptability of the project, taking into account the impacts and recommended measures identified during the assessment process.
2 POLICY, LEGAL AND REGULATORY FRAMEWORK

2.1 Kenya's Policy Framework

2.1.1 Environmental policy

Sessional Paper No. 6 of 1999 on Environment and Development, since adoption by parliament in 1999 has been in use and had influenced the formation of EMCA in 1999, but has since been surpassed by time and is therefore under revision to comprehensively cover areas that were previously left out to augment it.

The revised draft of the National Environmental Policy, dated April 2012, sets out important provisions relating to the management of ecosystems and the sustainable use of natural resources, and recognises that natural systems are under intense pressure from human activities particularly for critical ecosystems including forests, grasslands and arid and semi-arid lands. The objectives of the Policy include developing an integrated approach to Environmental Management, strengthening the Legal and Institutional Framework for Effective Coordination, promoting Environmental Management Tools.

Relevance

The project shall implement the ESMP to mitigate the impacts resulting during the construction and operational phases of the project; this will ensure that the natural environments are not destabilised by the subsequent project activities.

2.1.2 Land policy

First principles, as stated in a discussion of the literature in the policy, reflect a reaction to the emphasis over the last 50 years on individual ownership of land. It adopts the position that individual tenure and customary tenure should co-exist and benefit from equal guarantees of tenure security.

It reflects, especially in its discussion of the need for constitutional change, a conviction of the need for land reform, stressing that the current distribution of land is inequitable and arguing that the constitution should not protect private property rights that have been acquired in "an illegitimate manner."

In chapter 2, land policy is linked to constitutional reforms; regulation of property rights is vested in the government by the Constitution with powers to regulate how private land is used in order to protect the public interest. The Government exercises these powers through compulsory acquisition and development control. Compulsory acquisition is the power of the State to takeover land owned privately for a public purpose. However, the Government must make prompt payment of compensation.

Chapter 4 of the land policy under Environmental Management Principles, The National Land Policy provides for the policy actions for addressing the environmental problems such as the degradation of natural resources, soil erosion, and pollution.

For the management of the urban environment it provides guidelines to prohibit the discharge of untreated waste into water sources by industries and local authorities; it also recommends appropriate waste management systems and procedures, including waste and water treatment, reuse and recycling.

The policy goes further to advocate for environmental assessment and audit as a land management tool to ensure environmental impact assessments and audits are carried out on all land developments that may degrade the environment and take appropriate actions to correct the situation. Public participation has been indicated as key in the monitoring and protection of the environment.
Chapter 4 further advocates for the Implementation of the polluter pays principle which ensures that polluters meet the cost of cleaning up the pollution they cause, and encourage industries to use cleaner production technologies.

Chapter 6 under land issues requiring special intervention asserts that “Land rights of minority communities shall be protected through a law to be passed specifically to secure their rights as individuals and groups and recognition of their resource management systems to ensure sustainability.” It further states that, “Land rights of vulnerable groups (namely subsistence farmers, pastoralists, hunters and gatherers, agricultural labourers, unskilled workers, unemployed youth, persons with disabilities, persons living with HIV and AIDS, orphans, slum and street dwellers and the aged) shall be addressed by creating a system for identifying, monitoring and assessment, resettling them, facilitating their participation in decision making over land and land based resources, and protecting their land rights”.

Relevance

The project proponent shall implement the ESMP to ensure that the environment within Muthaiga and adjacent areas is not polluted by the subsequent activities during construction and operational phases. Health and safety measures will have to be maintained with the proximity to the Kiambu road.

2.2 Kenya’s Legal Framework

2.2.1 The constitution of Kenya

In the Constitution of Kenya, 2010 Part II (Environment and Natural Resources), (I) the State clearly undertakes to carry out the following:

- Ensure sustainable exploitation, utilization, management and conservation of the environment and natural resources, and ensure the equitable sharing of the accruing benefits;
- Work to achieve and maintain a tree cover of at least ten per cent of the land area of Kenya;
- Protect and enhance intellectual property in, and indigenous knowledge of, biodiversity and the genetic resources of the communities;
- Encourage public participation in the management, protection and conservation of the environment;
- Protect genetic resources and biological diversity;
- Establish systems of environmental impact assessment, environmental audit and monitoring of the environment;
- Eliminate processes and activities that are likely to endanger the environment; and
- Utilize the environment and natural resources for the benefit of the people of Kenya.

(II) “Every person has a duty to cooperate with State organs and other persons to protect and conserve the environment and ensure ecologically sustainable development and use of natural resources.”Chapter 5 on Land and Environment emphasizes on the following:

- Land use and management shall by law benefit local communities
- Community land is protected from encroachment by State.
- Rivers, forests and water bodies shall be protected by law.
- Equitable access to land.
- All lawful land rights are secured; only someone who has stolen land needs to worry.
- County governments will manage land in trust of the people in accordance with the Proposed Constitution.
Relevance

The constitution of Kenya provides for sound management and sustainable development of all of Kenya’s Projects, both public and private investments. It also calls for the duty given to the Project proponent to cooperate with State organs and other persons to protect and conserve the environment as mentioned in Part II.

2.2.2 The Environmental Management & Coordination Act (EMCA), 2015

Environmental Management and Co-ordination (Amendment) Act 2015, provides a legal and institutional framework for the management of the environmental related matters. It is the framework law on environment. The initial EMCA which was enacted on the 14th of January 1999 commenced in January 2002. Topmost in the administration of EMCA is National Environment Council (NEC), which formulates policies, set goals, and promotes environmental protection programmes. The implementing organ is National Environment Management Authority (NEMA). EMCA comprises of the parts covering all aspects of the environment.

The Second Schedule to the Act specifies the projects for which an EIA and EA must be carried out. In this Schedule, the proposed Project falls under Item 2 Medium Risk projects (d) Urban Development (d) shopping centers, commercial centers and complexes, business premises, shops and stores not exceeding ten thousand square meters. According to Section 68 of the Act, all projects listed in the Second Schedule of the Act must undertake an environmental audit, keep accurate records and make annual reports to NEMA or as NEMA may, in writing, require. The Environmental (Impact Assessment and Audit) Regulations, 2003, provide the basis for procedures for carrying out EIAs and EAs.

The Constitution and EMCA therefore obligates the project’s Executing Agency and Contractor to work in a clean environment and not to contravene the right of any person within its zone of influence, to this entitlement. EMCA has provided for the development of several subsidiary legislations and guidelines which govern environmental management and are relevant to the project implementation.

Relevance

EMCA 2015 amendments and its subsidiary regulations will form the main statutory instruments which will guide the implementation of the project so that any likely adverse impacts that could be caused by the project are promptly mitigated as recommended in this study.

(a) Environmental Impact Assessment and Audit Regulations 2003

The Environmental Impact Assessment and Audit Regulations state in Regulation 3 that “the Regulations should apply to all policies, plans, programmes, projects and activities specified in Part IV, Part V and the Second Schedule of the Act. Part II of the Regulations indicates the procedures to be taken during preparation, submission and approval of the project report (This report)

Relevance

Regulation 4(1) further states that:

‘‘…no Proponent shall implement a project:

(a) Likely to have a negative environmental impact; or
(b) For which an environmental impact assessment is required under the Act or these Regulations, unless an environmental impact assessment has been concluded and approved in accordance with these Regulations…’’
(b) **The Environmental Management and Co-ordination (Water Quality) Regulations, 2006**

These Regulations were published in the Kenya Gazette Supplement No. 68, Legislative Supplement No. 36, and Legal Notice No. 120 of 29th September, 2006. The Regulations provide for sustainable management of water resources including prevention of water pollution and protection of water sources (lakes, rivers, streams, springs, wells and other water sources). It is an offence under Regulation No. 4 (2), for any person to throw or cause to flow into or near a water resource any liquid, solid or gaseous substance or deposit any such substance in or near it, as to cause pollution. Regulation No. 11 further makes it an offence for any person to discharge or apply any poison, toxic, noxious or obstructing matter, radioactive waste or other pollutants or permit the dumping or discharge of such matter into the aquatic environment unless such discharge, poison, toxic, noxious or obstructing matter, radioactive waste or pollutant complies with the standards for effluent discharge into the environment.

**Relevance**

During the construction and maintenance phases, the proposed project will discharge waste water which must comply with the standards specified in this regulation.

(c) **The Environmental Management and Co-ordination (Waste Management) Regulations, 2006**

These Regulations were published in the Kenya Gazette Supplement No. 69, Legislative Supplement No. 37, and Legal Notice No. 121 of 29th September, 2006. The regulations provide details on management (handling, storage, transportation, treatment and disposal) of various waste streams including:

- domestic waste;
- industrial waste;
- hazardous and toxic waste;
- pesticides and toxic substances;
- biomedical wastes; and
- Radioactive waste.

Regulation No. 4 (1) makes it an offence for any person to dispose of any waste on a public highway, street, road, recreational area or in any public place except in a designated waste receptacle.

Regulation 5 (1) provides categories of cleaner production methods that should be adopted by waste generators in order to minimize the amount of waste generated and they include:

(i) **Improvement of production process through**

- Conserving raw materials and energy;
- Eliminating the use of toxic raw materials and wastes;
- Reducing toxic emissions and wastes.

(ii) **Monitoring the product cycle from beginning to end by**

- Identifying and eliminating potential negative impacts of the product;
- Enabling the recovery and re-use of the product where possible, and
- Reclamation and recycling and
- Incorporating environmental concerns in the design and disposal of a product.

Regulation 6 requires waste generators to segregate waste by separating hazardous waste from non-hazardous waste for appropriate disposal. Regulation 15 prohibits any
industry from discharging or disposing of any untreated waste in any state into the
environment. Regulation 17 (1) makes it an offence for any person to engage in any
activity likely to generate any hazardous waste without a valid Environmental Impact
Assessment license issued by NEMA.

Relevance

The proposed office building project therefore goes in line with the requirements of the
guidelines in the regulations.

(d) The Environmental Management and Coordination Act (Noise and Excessive
Vibration Pollution) (Control) Regulations, 2009

These regulations were published as legal Notice No. 61 being a subsidiary legislation
to the Environmental Management and Co-ordination Act, 1999. The regulations
provide information on the following:

i. Prohibition of excessive noise and vibration;
ii. Provisions relating to noise from certain sources;
iii. Provisions relating to licensing procedures for certain activities with a potential of
emitting excessive noise and/or vibrations and
iv. Noise and excessive vibrations mapping.

According to regulation 3 (1), no person shall make or cause to be made any loud,
unreasonable, unnecessary or unusual noise which annoys, disturbs, injures or
endangers the comfort, repose, health or safety of others and the environment.
Regulation 4 prohibits any person to (a) make or cause to be made excessive vibrations
which annoy, disturb, injure or endanger the comfort, repose, health or safety of others
and the environment; or (b) cause to be made excessive vibrations which exceed 0.5
centimetres per second beyond any source property boundary or 30 metres from any
moving source.

Regulation 5 further makes it an offence for any person to make, continue or cause to
be made or continued any noise in excess of the noise levels set in the First Schedule
to these Regulations, unless such noise is reasonably necessary to the preservation of
life, health, safety or property.

Regulation 12 (1) makes it an offence for any person to operate a motor vehicle which-
(a) produces any loud and unusual sound; and (b) exceeds 84 dB(A) when accelerating.
According to sub-regulation 2 of this regulation, No person shall at any time sound the
horn or other warning device of a vehicle except when necessary to prevent an accident
or an incident. Regulation 13 (1) provides that except for the purposes specified in sub-
Regulation (2) there under, no person shall operate construction equipment (including
but not limited to any pile driver, steam shovel, pneumatic hammer, derrick or steam or
electric hoist) or perform any outside construction or repair work so as to emit noise in
excess of the permissible levels as set out in the Second Schedule to these Regulations

Regulation 19 (1) prohibits any person to carry out activities relating to fireworks,
demolitions, firing ranges or specific heavy industry without a valid permit issued by the
Authority. According to sub-regulation 4, such permit shall be valid for a period not
exceeding three months.

Relevance

The contractor/sub contractor for civil works will be required to ensure compliance with
the above regulations in order to promote a healthy and safe working environment
throughout the construction phase. This shall include regular inspection and
maintenance of equipment and prohibition of unnecessary hooting of vehicles.
2.2.3 The Public Health Act (Cap. 242)

This is an Act of Parliament to make provision for securing and maintaining health. Section 115 of this act prohibits causing nuisance or other condition liable to be injurious or dangerous to health. Section 118 provides a list of nuisances which includes any noxious matter, or waste water, flowing or discharged from any premises, wherever situated, into any public street, or into the gutter or side channel of any watercourse, irrigation channel or bed thereof not approved for the reception of such discharge.

The Public Health (Drainage and Latrine) Rules

Rule 85 provides that every owner or occupier of every workshop, workplace or other premises where persons are employed shall provide proper and sufficient latrines for use by employees.

Rule 87 requires every contractor, builder or other person employing workmen for the demolition, construction, reconstruction or alteration of any building or other work in any way connected with building to provide in an approved position sufficient and convenient temporary latrines for use by such workmen. Rule 91 provides that no person shall construct a latrine in connection with a building other than a water closet or a urinal, where any part of the site of such building is within 200 feet of a sewer belonging to the local authority which is at a suitable level, and where there is sufficient water supply.

Relevance

The proposed office building therefore goes in line with the requirements of the guidelines in the regulations.

2.2.4 The Penal Code (Cap. 63)

Section 191 of the Penal Code makes it an offence for any person or institution that voluntarily corrupts, or foils water for public springs or reservoirs rendering it less fit for its ordinary use. Similarly, section 192 of the same act prohibits making the atmosphere in any place to make it noxious to health of persons/institution in dwellings or business premises in the neighbourhood or those passing along a public way.

Relevance

The main contractor for civil works and the project proponent will be required to ensure strict adherence to the Environmental Management Plan throughout the project cycle in order to mitigate against any possible negative impacts associated with dust, noise and effluent discharge. This code is also applicable during the operation phase of the project.

2.2.5 Physical Planning Act

This is the main Act that governs land planning and all proposed developments must be approved by the respective local authority and certificate of compliance issued accordingly.

Under the Act, the director of physical planning advises the commissioner of lands on land alienation issues that fall under Government Lands Act and Trust Land Act. The director also advises the commissioner of lands and local authorities on land use, sub-division and or amalgamation of land; prepares regional and local physical development plans.

At the district level, the district physical planning liaison committee comprises heads of the various departments and is chaired by the District Commissioner. One of the major functions of the liaison committee is to determine development applications for change of user or sub-division of land that could have significant impact on adjacent land and or breach registered conditions in a given title deed; and also industrial location which could have negative impact on the environment and adjoining land.
The director is required to publish the regional physical development plan and also notify the local authority within whose jurisdiction the plan is to be affected.

Section 36 states that if in connection with a development application a local authority is of the opinion that proposals for industrial location, dumping sites, sewerage treatment, quarries or any other development activity will have injurious impact on the environment, the applicant shall be required to submit together with the application an environmental impact assessment report.

Section 30(1) requires a developer in any local authority to be granted development permission by the respective local authority, failure to which heavy fines will ensue; and the land registrar shall decline to register such a document. No sub-division of private land shall take place within a local authority unless the sub-division is in accordance with the requirements of an approved local physical development plan.

**Relevance**

Athi Water Services Board will be required to present the updated development plans to the County Physical Planning Officer in charge of Nairobi County for approval. It is however notable that this act is under review to align it with the new constitution. Some of its provisions like the local authorities are no longer applicable having been abolished in the new constitution.

**2.2.6 The Energy Act, 2006**

This is an Act of Parliament passed to amend and consolidate the law relating to energy; to provide for the establishment, powers and functions of the Energy Regulatory Commission and the Rural Electrification Authority; and for connected purposes. The provisions of the Act apply to every person or body of persons importing, exporting, generating, transmitting, distributing, supplying or using electrical energy, petroleum products, various forms of energy, and all works or apparatus for any or all of these purposes.

**Relevance**

The project proponent, has to ensure that electrical installation works will only be carried out by an electrician or electrical contractor licensed by the Energy Regulatory Commission, and this should be adhered to by the project management.

**2.2.7 Water Act 2016**

The Water Act 2002 was amended in the year 2016 to align to the Kenyan Constitution 2010,. Section 76 states that no person shall discharge any trade effluent from any trade premises into sewers of a licensee without the consent of the licensee upon application indicating the nature and composition of the effluent, maximum quantity anticipated, flow rate of the effluent and any other information deemed necessary. The consent shall be issued on conditions including the payment rates for the discharge as may be provided under section 77 of the same Act.

**Relevance**

This Act will be relevant during construction of the project whereby the contractor will be required from time to time ensure that Project activities do not pollute water resources in the project area. The Contractor will also be required to comply with the effluent discharge requirements during construction of the project.

**2.2.8 The County Governments Act 2012**

The local government act was repealed after the final announcement of all the results of thefirst elections held under the Constitution as per the County Governments Act of 2012. Undersection 134 subsection (1), The Local Government Act is repealed upon the final announcement of all the results of the first elections held under the Constitution. It further states in section 134, subsection (2) reads “All issues that may arise as a consequence of the repeal under subsection (1) shall be dealt with and discharged by the body responsible for matters relating to transition”.

ESIA for AWSB & NCWSC Operations Building 2-7

JANUARY 2018
The project will according to the County Government act of 2012 ensure that the project activities conform to the regulation that shall be passed. (section 135 (1) The Cabinet Secretary may make regulations for the better carrying out of the purposes and provisions of this Act and such Regulations may be made in respect of all county governments and further units of decentralization generally or for any class of county governments and further units of decentralization) comply to the set regulations and by laws.

**Relevance**

This is the primary law governing the development of counties and thereby will be key during implementation of the project. All organs established under this law should be consulted and approvals sought from the relevant authorities in relation to the County Government of the City of Nairobi.

### 2.2.9 Employment Act

This is an Act of parliament that applies to all employees employed by any employer under a contract of service. The Act came into operation in June 2008. Employment of children in the following forms is prohibited in the following sections of the Act:

53. (1) notwithstanding any provision of any written law, no person shall employ a child in any activity that constitutes worst form of child labour.

56. (1) No person shall employ a child who has not attained the age of thirteen years whether gainfully or otherwise in any undertaking.

(2) A child of between thirteen years of age and sixteen years of age may be employed to perform light work which is

(a) Not likely to be harmful to the child’s health or development; and

(b) Not such as to prejudice the child’s attendance at school, his participation in vocational orientation or training programmes approved by Minister or his capacity to benefit from the instructions received.

**Relevance**

Athi Water Services Board and the contractor will need to understand the requirements of the Act during employment. Equal opportunity should be given to all both men and women so as to ensure equity.

### 2.2.10 Work Injury Benefits Act (WIBA)

It is an act of Parliament to provide for compensation to workers for injuries suffered in the course of their employment. It outlines the following:

- Employer’s liability for compensation for death or incapacity resulting from accident;
- Compensation in fatal cases;
- Compensation in case of permanent partial incapacity;
- Compensation in case of temporary incapacity;
- Persons entitled to compensation and methods of calculating the earnings;
- No compensation shall be payable under this Act in respect of any incapacity or death resulting from a deliberate self-injury;
- Notice of an accident, causing injury to a workman, of such a nature as would entitle him for compensation shall be given in the prescribed form to the director.

**Relevance**

The contractor will need to abide by all the provisions of WIBA.
2.2.11 The Occupational Safety and Health Act, 2007

This is an Act of Parliament to provide for the safety, health and welfare of all workers and all persons lawfully present at workplaces, to provide for the establishment of the National Council for Occupational Safety and Health and for connected purposes. It applies to all workplaces where any person is at work, whether temporarily or permanently.

The purpose of this Act is to:

- Secure the safety, health and welfare of persons at work;
- Protect persons other than persons at work against safety and health arising out of, or in connection with the activities of persons at work.


The scope of OSHA 2007 has been expanded to cover all workplaces including offices, schools, academic institutions, factories, and plantations. It establishes codes of practices to be approved and issued by the Directorate of Occupational Safety and Health Services (DOSHS) for practical guidance of the various provisions of the Act.

Other parameters within the Act include:

- Duties of employers, owners or occupiers of workplace;
- Establishment of safety and health committees;
- Annual safety and health audit of workplaces;
- Safety and Health obligations for persons who may come to premises for work and are not employees of that particular workplace;
- Reporting of any accident, dangerous occurrence or occupational poisoning caused in the workplace to the area Occupational Health and Safety Office. These incidents should be entered in the General Register. In case of a fatal accident, information to the area Safety and Health Office should be within 24 hrs and a written notice to the same within 7 days;
- The duties of manufactures, designers, importers and suppliers to ensure that all articles and substances for use at workplace are safe and will not cause injury to health and the environment;
- Duties of self employed persons;
- Duties of employed persons;
- Prohibition of interference or misuse of any appliance, convenience or any other facility provided to secure Safety, Health and Welfare at work by any person (occupier, self employed person or employed);
- The administration of the Act is the responsibility of a Director and other appointed and gazetted officials (Occupational Health and Safety Officers);
- The establishment of National Council for Occupational Safety and Health to assist the Director to discharge his duties and those that may be required by the Minister;
- The registration of all workplaces by the Director DOHSS forming the basis of his work statistics;
- Machinery safety to include:
  - Safe use of machinery, plant and equipment;
  - Prime makers and transmission machines;
  - The maintenance, construction of fencing safeguards;
  - The statutory requirements of various machines, plant and equipment (hoists and lifts, chains and ropes, cranes, steam receivers and containers, air receivers, cylinders for compressed liquefied and dissolved gases and refrigeration plants);
- Chemical safety including:
  - Handling, transportation and disposal of chemicals and other hazardous substances;
- Importance of Materials Safety Data Sheets (MSDS);
- Labelling and marking of chemical substances;
- Classification of hazardous chemicals and substances;
- Establishment and adoption of exposure limits on hazardous substances in a workplace;
- Control of air pollution, noise and vibrations;
- Redeployment on medical advice.

- Health, safety and welfare special provision including:
  - Permit to Work systems;
  - Work processes that are likely to harm persons below eighteen (18) years;
  - Supervision of apprentices and indentured learners;
  - Training and supervision of inexperienced workers;
  - Medical surveillance.

- Penalties, offences and legal proceedings including:
  - The upward adjustments of all fines imposed in the event of failure to comply with provisions of the Act;
  - The need to investigate and prosecute the real offender otherwise all those who fail to comply with any provisions of this Act that have been legally imposed on him/her shall be prosecuted.

Relevance

The contractor and Athi Water Services Board will be required to comply with all the provisions of the Act throughout the project cycle.

2.2.12 The Traffic Act, Cap 203

This Act consolidates the law relating to traffic on roads. Key sections include registration and licensing of vehicles; driving licenses; driving and other offences relating to the use of vehicles on roads; regulation of traffic; accidents; offences by drivers of vehicles other than motor vehicles and other road users; and miscellaneous provisions as to roads, among others.

Relevance

Vehicles will be used to transport workers and equipment during the entire project life, and their registration and licensing will be required to follow the above Act. Besides, the main contractor for the civil works will have to ensure that the project activities and delivery of construction materials do not interfere with the smooth flow of traffic along Kiambu road.

2.2.13 Building Code of 1971

The Building Code prohibits developers from (1) connecting to the various public services without permit and (2) obstructing public services, for example, by building on top of a sewer line. It also guides on the sizes and nature of the rooms of the proposed buildings. The approval by the Local Authorities means the design has addressed all these issues successfully.

Relevance

The proponent shall ensure that the building code is followed by checking the locations of the various public services e.g. sewer lines & water lines.
2.3 Kenya's Administrative/ Institutional Framework

2.3.1 The National Environmental Council (NEC)

The National Environmental Council (the Council) is responsible for formulation of national policies, goals, and objectives, and the determination of policies and priorities for environmental protection.

Relevance

Athi Water Services Board should ensure that the project abides by the set goals and objectives of the council.

2.3.2 The National Environmental Management Authority (NEMA) Committees

The responsibility of the National Environmental Management Authority (NEMA) is to administer EMCA by exercising general supervision and co-ordination over all matters relating to the environment, and to be the principal instrument of government in the implementation of all policies relating to the environment.

The Authority gives licenses to any development project once it reviews environmental impact assessment reports prepared (this report) so as to assess the possible impacts of the proposed project as well as give mitigation measures to ensure protection and sustainability of the environment and the development.

(a) Standards and Enforcement Review Committee (SERC)

EMCA provides for the establishment and enforcement of environmental quality standards to be set by a technical committee of NEMA known as the Standards and Enforcement Review Committee (SERC).

(b) Public Complaints Committee

EMCA has also established a Public Complaints Committee, which provides the administrative mechanism for addressing environmental harm. The Committee has the mandate to investigate complaints relating to environmental damage and degradation.

The members of the Public Complaints Committee include representatives from the Law Society of Kenya, NGOs and the business community.

Relevance

Athi Water Services Board should address all issues arising from the project in accordance with the above committees. The proponent will submit the relevant environmental impact reports to NEMA offices in Nairobi.

2.3.3 County Environmental Committees

The County and Sub County Environmental Committees contribute to decentralised environmental management and enable the participation of local communities. These environmental committees consist of the following:

- Representatives from all the line ministries;
- Representatives from local authorities within the County/ Sub counties;
- Two farmers / pastoral representatives;
- Two representatives from NGOs involved in environmental management in the County/Sub counties;
- A representative of each regional development authority in the province/district.
Relevance

The committees are empowered to discuss the environmental issues affecting their area of jurisdiction. Within Nairobi City County; Athi Water Services Board will therefore be required under the Act to liaise with the Nairobi City County Environmental Committee during the life of the project.

2.4 World Bank Operational Policies

2.4.1 Operational Policy (OP) 4.01: Environmental Assessment, 2001

This policy requires Environmental Assessment (EA) of projects proposed for Bank financing to help ensure that they are environmentally sound and sustainable, and thus to improve decision making. The EA is a process whose breadth, depth, and type of analysis depend on the nature, scale, and potential environmental impact of the proposed investment. The EA process takes into account the natural environment (air, water, and land); human health and safety; social aspects (involuntary resettlement, indigenous peoples, and cultural property) and trans-boundary and global environmental aspects. Operational Policy 4.01 further requires that the EA report must be disclosed as a separate and stand-alone document by the Government of Kenya and the World Bank.

The disclosure should be both in Kenya where it can be accessed by the general public and local communities and at the InfoShop of the World Bank and the date for disclosure must precede the date for appraisal of the project.

The World Bank assigns a project to one of three project categories, as defined below:

a. **Category “A” Projects**
   An EIA is always required for projects that are in this category. Impacts are expected to be ‘adverse, sensitive, irreversible and diverse with attributes such as pollutant discharges large enough to cause degradation of air, water, or soil; large-scale physical disturbance of the site or surroundings; extraction, consumption or conversion of substantial amounts of forests and other natural resources; measurable modification of hydrological cycles; use of hazardous materials in more than incidental quantities; and involuntary displacement of people and other significant social disturbances.

b. **Category “B” Projects**
   Although an EIA is not always required, some environmental analysis is necessary. Category B projects have impacts that are ‘less significant, not as sensitive, numerous, major or diverse. Few, if any, impacts are irreversible, and remedial measures can be more easily designed.’ Typical projects include rehabilitation, maintenance, or upgrades, rather than new construction.

c. **Category “C” Projects**
   No EIA or other analysis is required. Category C projects result in negligible or minimal direct disturbance of the physical environment. Typical projects include education, family planning, health, and human resource development.

   The proposed project has been assigned a Category A.

2.4.2 **World Bank Policy OP 4.12 (Involuntary Resettlement)**

The World Bank policy on involuntary resettlement emphasizes that any development project should avoid or minimize involuntary resettlement and where this is not feasible, it should compensate for lost assets at full replacement cost and assist the displaced persons in improving or at least restoring their livelihoods and standards of living in real terms relative to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher.
The World Bank OP 4.12, Annex A (Paragraphs 17-31), describes the scope (level of detail) and the elements that a resettlement plan should include.

**WB OP 4.12. (6a)** demands that the resettlement plan includes measures to ensure that displaced persons are (i) informed about their options and rights, (ii) consulted on, offered choices among others and provided with technically and economically feasible resettlement alternatives, and (iii) provided prompt and effective compensation at full replacement costs; **WB OP 4.12 (8)** requires that particular attention should be paid to the needs of vulnerable groups among those displaced such as those below the poverty line, landless, elderly; women and children and indigenous peoples and ethnic minorities;

**WB OP4.12 (12a)** states that for households depending on land for their livelihoods preference should be given to land based solutions; however, payment of cash compensation for lost assets may be appropriate where livelihoods are land-based but the land taken for the project is a small fraction (less than 20%) of the affected asset and the residual is economically viable;

**WB OP4.12 Para (6 b & c)** state that in case of physical relocation, displaced persons should be (i) provided with assistance (such as moving allowances) during relocation; and (ii) provided with residential housing, or housing sites, or, as required, agricultural sites for which a combination of productive potential, location advantages, and other factors is at least equivalent to the advantages of the old site.

**Land acquisition in relation to the WB policy**

Land for the proposed project is currently being used by Nairobi City Water and Sewerage Company and belongs to Nairobi City County hence there is no compensation required. **OP 4.12 is not triggered in this case.**

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### 2.5 International Laws and Treaties

Kenya has ratified a number of Multilateral Environmental Agreements (MEAs) and consequently has duties under those agreements. The most relevant MEAs to this study are:

**2.5.1 The 1985 Vienna Convention for the protection of the Ozone Layer**

The Vienna Convention for the Protection of the Ozone Layer, 1985 was adopted after consensus was reached on 22nd March 1985. The overall objective of the Vienna Convention is to protect human health and the environment against the effects of ozone depletion. As a framework convention, it does not establish any specific controls on ozone depleting substances. Instead, it establishes a general obligation upon the parties to protect the ozone layer (article 2) and emphasizes the need for international cooperation.

**Relevance**

Athi Water Services Board will be required to install air conditioning systems that do not use Ozone depleting substances in order to comply with the above convention.

**2.5.2 The 1987 Montreal Protocol on Substances that Deplete the Ozone Layer**

The Montreal Protocol on Substances that Deplete the Ozone Layer is a significant milestone in international environmental law. It establishes firm targets for reducing and eventually eliminating consumption and production of a range of ozone depleting substances. These substances are enumerated in Annexes A-E to the Protocol and are to be phased out within the schedule given in article 2A-2I.
Relevance

Should the proponent, Athi Water Services Board install air conditioning system that uses HCFCs they should document a phase out programme as per the schedule stipulated in the Protocol on substance that deplete the Ozone Layer.

2.5.3 The United Nations Convention on Climate Change (“1992 UNFCCC”)

The objective of the 1992 UNFCCC is to tackle the negative effects of climate change. The Conventions’ stated aim is to stabilize greenhouse gas concentrations at a level that allows ecosystems to adapt naturally to climate change so that food production is not threatened, while enabling economic development to proceed in a sustainable manner (article 2).

Relevance

Athi Water Services Board should observe the above convention in all its operations throughout the project cycle.

2.5.4 The Kyoto protocol

The Kyoto Protocol was adopted in December 1997 at the Third Conference of the Parties held in Kyoto. The Kyoto Protocol requires stronger commitments from Annex 1 parties to achieve quantified emission reductions within a specific timeframe. These commitments cover the six greenhouse gases listed in Annex A of the Kyoto Protocol (Carbon dioxide, Methane, Nitrous oxide, Hydrochlorocarbons, Perfluorocarbons and Sulphur hexafluoride). Each Annex1 party particular 'quantified emission reduction target' is listed in Annex B.

Relevance

Athi Water Services Board and contractor will be required to carry out regular inspection and maintenance of construction equipment in order to reduce the levels of greenhouse gas emissions into the atmosphere.
3 DESCRIPTION OF THE PROJECT ENVIRONMENT

3.1 Introduction

Nairobi, the capital city of Kenya, has a population of 3,138,369. Approximately 8.1% of the Country’s population lives in Nairobi. According to the 2009 population census, Kenya’s total population is 38,610,097. The city is spread over an area of approximately 695.1 km² and comprises of eight constituencies varying in size from 10.71 km² (Starehe/Central) to 223.16 km² (Lang’ata/Kibera).

Administratively, the site is located in Muthaiga Sub-Location, Muthaiga Sub-County of the Nairobi City County.

The proposed site for the office Building Development is located in Muthaiga along Kiambu road, City Council of Nairobi. The major establishments and businesses bordering the site include the Lunar Park, Rock City and Karura forest.

3.2 Physical and Biological Environment of the Project Area

3.2.1 Physical Environment

(a) Climate

The project site is at Muthaiga, 5 minutes drive from the Nairobi City Centre, which enjoys a double (bi-modal) seasonal rainfall pattern, the wetter and cooler part of Nairobi i.e the Kikuyu plateau as opposed to the Athi Plains in the east that are drier and hotter with high to moderate rainfall from April to May and November to December.

(i) Rainfall

Rainfall type is Bimodal. The average annual rainfall in Nairobi is about 900m, but the actual amount in any one year may vary from less than 500 mm to more than 1500 mm. There are two rainy seasons, from mid-March to the end of May (the so-called "Long Rains"), and from mid-October to mid-December (the "Short Rains").

(ii) Climatic Seasons

The main seasons have been identified as follows: a season known as the long rains, in late-April, to early June. The relatively cool season, from late-June to October with much less rain. There is a second rainy season, the short rains, for a few weeks in November - December, followed by a dry season of hot weather roughly from mid-December to March.

(iii) Temperature

The seasonal changes in temperature are noticeable throughout the year, with the warmest months being from January to April before the main rainy season. It also tends to warm up again in October. The coolest months are between June and August.

The maximum temperature is 30°C, while the minimum temperature is 15°C, and the mean annual temperature of 24°C.
(b) Soils

Soils within Nairobi area are varied, ranging from deep well-formed red soils in the North West to relatively shallow sodic alkaline soils in the south east. The valley bottoms are characterised by fluvisols developed on layered alluvial deposits, making them very variable for construction purposes.

(c) Geology

The geology of Nairobi area is dominated by volcanic rocks derived from volcanic activity associated with formation of the Rift Valley. These volcanic rocks are a thick succession of alkaline lavas and associated tuffs, the oldest of which is the Kapiti phonolite which lies directly on rocks of the Basement Complex, the oldest rocks in the East Africa region. The lavas thin out in an easterly direction.

The site area is underlain by the Nairobi Trachyte that is separated from the Nairobi Phonolite by a narrow agglomeratic tuff. The Nairobi Phonolite is itself underlain by the Athi Series, which is a sequence of sediments of volcanic origin deposited in a lacustrine environment. The upper portion of the Upper Athi Series forms the most significant source of groundwater in Nairobi area as a whole. The Athi Series lie atop the Kapiti Phonolite.

(d) Topography

This is fairly subdued, with elevations generally falling to the east. The area is characterized by extensive faulting, running in a north-south direction and conforming to the rift system. Faulting is of Pliocene age. The volcanic rocks of Nairobi area thicken rapidly westwards towards the edge of the Rift Valley, where the maximum thickness is represented by the Ngong Hills.

(e) Hydrology and Drainage

The main drainage towards the east is consequent upon the regional slope of the volcanic rocks emanating from the volcanoes of the Aberdare Mountains to the north of Nairobi. The Rift Valley margin to the west of Nairobi is a watershed. Beyond this margin, drainage is westerly into the Rift Valley.

The main drainage direction in Nairobi is easterly from the high settings of the Ngong hills west of Karen. Most of the rivers draining the west Nairobi Area have semi-mature drainage patterns. Water within the area is from two principal sources - surface and sub-surface. The project area falls within Nairobi River Sub-catchment with the major rivers being Nairobi, Gitaru, Gitahuru, Karura, Ruirwaka, and Gatharaini. These rivers are within Athi River catchment area. However, there are no rivers traversing the proposed project site.

(f) Sunshine and Solar Radiation

Nairobi experiences a total of about 2,500 hours of bright sunshine per annum, which is equivalent to an annual mean of approximately 6.8 hours of sunshine per day. July and August are characterized by cloudiness and during these months the average daily sunshine in Nairobi is 4 hours.

Often there are several days in succession when the sun fails to penetrate the thick stratocumulus cover, although on other days the cloud cover does break for a short period. There is about 30% more sunshine in the afternoon than in the morning, and it follows that westerly exposures receive more insulation than easterly ones.

(g) Smog

Smog is common during the rainy season. And this is mostly associated with the development of towering cumulus and cumulonimbus clouds.
3.2.2 Biological Environment

The proposed site and surrounding areas have upmarket compounds with houses, gardens and some trees. The proposed site some trees and grassy patches. Key nearby physical features include the indigenous Karura forest. The boundary between the project site and Karura Forest is the existing Kiambu Road which is a tarmac road (as shown in figure 3-1 below). Karura Forest was gazetted in 1932 and is managed by the Kenya Forest Service in conjunction with the Friends of Karura Forest Community Forest Association.

Karura Forest is 1,041 ha (2,570 acre) consisting of three parts separated by Limuru and Kiambu roads. The large middle portion is ca. 710 ha (1,750 acres); the Sigria salient to the west is ca. 250 ha (620 acres). The portion to the east of Kiambu road has been allocated to special national priorities. As of mid-2016, 36% of the forest contains indigenous upland forest tree species. The forest is home to some 200 species of bird as well as suni, Harveys Duiker, bushbucks, bush pigs, genets, civets, honey badgers, bush babies, porcupines, Syke's monkeys, bush squirrels, hares, fruit bats, and various reptiles and butterflies. Karura now has over 50 km of trails for visitors to walk, run or bike.

Wildlife in the forest include Monkeys species (including recently re-introduced Colobus Monkeys), bush baby, bushbuck, bush pig, porcupine, duiker, genet, dikdik, African civet and East African epauletted fruit bat.

Plant species typical to the forest include Olea europaea (var. africana), Croton megalocarpus, Warburgiaugandensis, Brachyleanahuillensis and the Uvaridendonisatum.

![Figure 3-1: a map showing site and neighbouring premises and Karura Forest](image-url)
3.3 **Socio-economic Environment**

A public meeting was held on site on 3rd October 2017 with the residents association of Muthaiga North Residents Association (MNRA) and MNRA held their own follow up meeting on 4th October 2017 where the residents were informed of the deliberations of the 3rd October 2017 meeting. During the meeting, all the participants endorsed the proposed project and there were no objections to the development of office building. The deliberations of the meetings are as shown in Appendix 5.

3.3.1 **Businesses within the area**

The nature of businesses around the proposed project area includes hotels, restaurants, eateries and shops. The major notable premises include Lunar Park, Rock City, Alpha automobile Ltd and residential area under Muthaiga North Residents Association.

3.3.2 **Road network**

The project site is served by major roads within the city. The site can be accessed through Thika road, off Kiambu road.
Commercial activities in the capital city and the entire Nairobi Commercial and Administrative center provide employment to thousands of residents in this area and its environs and improve per capita of the country.

3.3.3 Energy/ Electricity

The entire project area is well serviced with the mains electricity power supplied by Kenya Power. Major installations are also fitted with generators to supplement the mains electricity.

3.3.4 Water Supply

The entire project site is served with piped water from the Nairobi City Water and Sewerage Company (NWSC). The water supplied to the area is adequate and will accommodate the proposed development.

3.3.5 Sewer Systems

All waste water generated within the project site mainly from the cleaning and waste black water from the sanitary facilities are directed into a bio-digester to be put up within the proposed site. This is because there is no existing sewerage system within the area. AWSB will reuse the treated water for watering of lawns.

3.3.6 Storm water/run off

Storm water from a construction site can be a major cause of water pollution. Pollution in storm water can include:

- Soil
- Sand
- Construction debris: (cement, woodchips, metal scraps)
- Chemicals: (paint, fuel, lubricants and oil)

A storm water drainage system will be put in place.

3.3.7 Solid waste

Solid waste management in the entire City of Nairobi is managed by private companies contracted by the City County of Nairobi and Licensed by NEMA. After collection, the wastes are then disposed off in Dandora dumpsite which is an approved dumping site. It was suggested during the public meeting that MNRA will introduce the licensed waste handler to AWSB to ensure seamless collection of waste within the area.
4 PROJECT DESCRIPTION

4.1 General Project Description

The project involves the construction of an office building at Muthaiga, Nairobi County. The plot is owned by Nairobi City Water and Sewerage Company. The land use zone with the site is commercial cum residential.

The motivation for the establishment of the proposed project is the existing demand for quality and modern office facilities by Athi water Services Board. The project is also intended to provide several employment and business opportunities in addition to the several positive impacts.

4.2 Description of the project components

The office development shall consist of ground floor, 1st floor and terrace floor. The building shall encompass the following key components and facilities:

Table 4-1: Key components and facilities of the project

<table>
<thead>
<tr>
<th>Floor</th>
<th>Key facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground</td>
<td>Procurement department</td>
</tr>
<tr>
<td></td>
<td>Internal audit and Risk management department</td>
</tr>
<tr>
<td></td>
<td>Bulk store</td>
</tr>
<tr>
<td></td>
<td>Filling room</td>
</tr>
<tr>
<td></td>
<td>Planning and engineering department</td>
</tr>
<tr>
<td></td>
<td>Monitoring office</td>
</tr>
<tr>
<td></td>
<td>Finance &amp; Strategy division</td>
</tr>
<tr>
<td></td>
<td>Kitchen</td>
</tr>
<tr>
<td></td>
<td>Washrooms: Ladies and Gents</td>
</tr>
<tr>
<td></td>
<td>Lift lobby</td>
</tr>
<tr>
<td></td>
<td>Cashier office</td>
</tr>
<tr>
<td>1st floor</td>
<td>Chairman’s office</td>
</tr>
<tr>
<td></td>
<td>Reception lounge</td>
</tr>
<tr>
<td></td>
<td>Personal assistance office</td>
</tr>
<tr>
<td></td>
<td>Executive secretary</td>
</tr>
<tr>
<td></td>
<td>Server room</td>
</tr>
<tr>
<td></td>
<td>ICT department</td>
</tr>
<tr>
<td></td>
<td>Registry</td>
</tr>
<tr>
<td></td>
<td>HR and administration</td>
</tr>
<tr>
<td></td>
<td>Common room</td>
</tr>
<tr>
<td></td>
<td>Board room</td>
</tr>
<tr>
<td></td>
<td>Lift lobby</td>
</tr>
<tr>
<td></td>
<td>Staircases</td>
</tr>
<tr>
<td></td>
<td>Passage areas</td>
</tr>
<tr>
<td>Terrace</td>
<td>Kitchen</td>
</tr>
<tr>
<td></td>
<td>Planter</td>
</tr>
<tr>
<td></td>
<td>File duct</td>
</tr>
<tr>
<td></td>
<td>ICT duct</td>
</tr>
<tr>
<td></td>
<td>Electric duct</td>
</tr>
<tr>
<td></td>
<td>Cleaners room</td>
</tr>
<tr>
<td></td>
<td>Washrooms: Ladies and Gents</td>
</tr>
<tr>
<td>Other areas</td>
<td>Parking lot for 30 cars</td>
</tr>
</tbody>
</table>
### Floor

<table>
<thead>
<tr>
<th>Key facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Security check points</td>
</tr>
<tr>
<td>Bio-digester</td>
</tr>
<tr>
<td>Landscaping</td>
</tr>
<tr>
<td>Road works finished in pcc paving blocks</td>
</tr>
<tr>
<td>Stormwater drainage</td>
</tr>
<tr>
<td>Sewer drainage</td>
</tr>
</tbody>
</table>

An Artistic impression of the proposed development and the drawings are presented in Appendix 1 of this report.

#### 4.2.1 Construction Materials

Building materials will be transported to the project site from their extraction, manufacture, or storage sites using transport trucks. The trucks for transportation should not exceed weight limits. The trucks will be new and/or well serviced to be environmentally friendly. The building materials to be used in construction of the project will be sourced from local sources i.e already existing licensed quarries and hardware shops within the project area. Greater emphasis will be laid on procurement of building materials from within the local area, which will make both economic and environmental sense as it will reduce negative impacts of transportation of the materials to the project site through reduced distance of travel by the materials transport vehicles.

#### 4.2.2 Water requirements

Water supply during all phases of the development will be supplied by NCWSC. Therefore before commencement of construction, the proponent will apply to the NCWSC for water connection. This means therefore that no application will be made to Water Resources Management Authority (WRMA) since water for construction will be sourced from existing NCWSC infrastructure.

Water storage tanks will be provided to increase water capacity at the project site to the required amount. It is from these storage tanks that plumbing to the roof tanks will be undertaken if desired.

#### 4.2.3 Sewage connection

The waste water and sewage from the proposed building will be directed to a bio-digester to be put up within the proposed site. This is because there is no existing sewerage system within the area.

#### 4.2.4 Solid waste

Solid waste management will consist of dustbins stored in an enclosed area to be protected from rain. The waste will then be collected by a NEMA licensed contractor for further disposal. This contractor will be identified by the proponent at the commencement of construction.

It is recommended that the Proponent separate different types of solid waste at source to make recycling and re-use easier. Waste containers, for example can be provided for glass, plastic, tins/metal, paper and biodegradable materials and the receptacle for each different type of waste can be of a different colour and label to encourage and make recycling easier and efficient.

#### 4.2.5 Electricity requirements

The proponent will make a formal application to Kenya Power for electricity connection.
4.2.6 Car Parking

There will be a parking space for workers and visitors. A minimum of 30 parking slots has been provided for in the contract.

4.2.7 Check point/security

A check point will be provided at the main entry and at entry and exit points to the parking. Twenty-four hour security checks will be provided at these points.

4.2.8 Project Cost

The project is estimated to cost KShs 284,295,278.00. The breakdown is as shown in Table 4-2 below:

<table>
<thead>
<tr>
<th>Bill</th>
<th>Description</th>
<th>Amount (Kshs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Particular preliminaries</td>
<td>4,000,000.00</td>
</tr>
<tr>
<td>2</td>
<td>General preliminaries</td>
<td>4,000,000.00</td>
</tr>
<tr>
<td>3</td>
<td>Office block (main works)</td>
<td>122,884,683.00</td>
</tr>
<tr>
<td>4</td>
<td>Gate house</td>
<td>3,106,888.00</td>
</tr>
<tr>
<td>5</td>
<td>External works</td>
<td>23,363,988.00</td>
</tr>
<tr>
<td>6</td>
<td>Provisional sums</td>
<td>30,500,000.00</td>
</tr>
<tr>
<td>7</td>
<td>Electrical installations</td>
<td>48,256,523.00</td>
</tr>
<tr>
<td>8</td>
<td>Mechanical installations</td>
<td>33,654,852.00</td>
</tr>
<tr>
<td>9</td>
<td>5% Contingency</td>
<td>13,488,346.00</td>
</tr>
<tr>
<td>10</td>
<td>ESMP implementation costs</td>
<td>1,040,000.00</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td><strong>284,295,278.00</strong></td>
</tr>
</tbody>
</table>

4.3 Construction phase

4.3.1 Excavation and foundation work

Excavations for column bases/lift shafts will generally be red soil or fill material up to approximately 1.5.0m deep from existing ground level. The structure shall be founded on either in soft rock or hard rock to the approval of the Structural Engineer. During excavation works, the contractor may encounter archaeological sites. If this happens, the contractor should develop and implement a chance find procedure which must incorporate liaison with the National Museum of Kenya. A sample chance find procedure is as shown in Appendix 7.

4.3.2 Material handling and storage

Building materials such as rough stones, ballast, sand and steel will be stored on site but delivered of these materials to the site will only be done whenever they are needed for construction purposes.

Construction materials and equipment, if not handled with care, can be hazardous to the environment and cause injuries to the workers. For a safe working environment during the construction phase, the following measures shall be put in place:

- Stockpiles be removed as soon as practicable and materials be positioned in such a way that waterways are not impacted.
- The trucks transporting pre-mixed aggregate and asphalt binder be covered, especially during rainy and windy periods.
• Potential water pollutants, for example chemicals, solvents and paint should be stored with extra caution such that they do not cause runoff pollution. They should be stored according to manufacturers’ guidelines.
• Impervious material should be placed in areas where toxic liquids are to be opened and stored to protect the soil and prevent groundwater pollution.
• Construction workers take appropriate precaution by use of protective clothing during construction activities.
• No materials should be stored in unstable or high-risk areas, such as a hilly place and near river beds.
• Deliveries be planned to keep the amount of materials on site to a minimum and any material stockpiles must be stable and well secured to avoid collapse and possible injury to workers or visitors at the site.

4.3.3 **Masonry, concrete work and related activities**

The construction of the building walls, foundations, floors, drainage systems, among other components of the project involves a lot of masonry work and related activities. General masonry and related activities include dressing, concrete mixing, plastering, slab construction, construction of foundations, and erection of building walls, curing of fresh concrete surfaces and mixing of concrete and cement.

4.3.4 **Structural steel work**

The buildings will be reinforced with structural steel for stability. Structural steel works involve steel cutting, welding and erection. The workers carrying out this activity shall be required to wear appropriate personal protective equipment, such as helmets, safety boots, goggles and hand cloves.

4.3.5 **Roofing works**

Roofs and terraces shall be flat roofed finished in APP waterproofing membrane on waterproofing screeds and covered with interlocking concrete tiles. Reinforced concrete slabs and steel structures are to be used as per the Engineers’ detail with waterproofing to be laid to follow manufacturers’ specification.

4.3.6 **Electrical works**

Electrical Installations including electrical wiring and conduiting/trunking for lighting and power installations, light fittings, fire alarm system, security lighting, landscape/garden lighting, trunking/conduiting for telephone and security installations, power distribution, switchgear and lightning protection etc shall be undertaken by qualified and duly registered persons.

4.3.7 **Tree planting**

To improve the aesthetic value or visual quality of the site once construction ceases, the proponent will carry out landscaping. This will include establishment of trees, flower gardens and grass lawns and will involve replenishment of the topsoil. It is noteworthy that the proponent will use plant species that are available locally preferably indigenous ones for landscaping.

4.3.8 **Drainage**

Installation of pipe-work for water supply and distribution will be carried out within the buildings and associated facilities. In addition, pipe-work will be done on the waste water management system from the premises to the sewer system and for drainage of storm water from the rooftop into the natural drainage system. Plumbing activities will include metal and plastic cutting, the use of adhesives, metal grinding and wall drilling among others.
4.3.9 Biodigester

A biodigester will be installed on site which will be used in the management of liquid waste. Recycling will be done and recycled water will be used for watering of lawns.

4.3.10 Timing of construction works

The proposed project is anticipated to be complete by end of 2018.

4.4 Operation phase

4.4.1 Occupancy

The entire building shall be housing offices for Athi Water Services Board.

4.4.2 Cleaning

Cleaners who would be hired by the proponent will be responsible for cleaning of the offices and other parts of the premises such as the lift lobby among other areas. Cleaning operations will involve the use of substantial amounts of water, disinfectants and detergents.

4.4.3 General repairs and maintenance

The units and associated facilities will be repaired and maintained regularly during the operational phase of the project. Such activities will include repair of building walls and floors, repairs and maintenance of electrical gadgets and equipment, repairs of leaking water pipes among others.

AWSB will also contract companies servicing biodigesters to ensure that the biodigester is well maintained and working as intended. There will be periodic checking and maintenance of the drainage system to ensure that runoff from the parking lot and roof are properly channelled. No impact is anticipated on Karura forest as the forest is across Kiambu road.

4.5 Decommissioning phase

While it is a NEMA requirement that all projects be looked at in terms of the complete Project Life Cycle (i.e. Commissioning, Operation and Decommissioning), it is envisaged that the proposed development will be decommissioned after many decades of operation and the decommissioning conditions and guidelines will be sought from NEMA, then.

During decommissioning of the proposed project, in which case the development would have to be demolished and land put to alternative use, different measures will be taken into account. These include:

- Decommissioning will produce a lot of solid waste, which will be reused for other construction works or if not reusable, disposed of appropriately by a licensed waste disposal contractor.
- All equipment including electrical installations, furniture, finishing fixtures partitions, pipework and sinks (obtained from the existing facilities) among others will be dismantled and removed from the site on decommissioning of the project. If the equipment is in good condition, priority will be given to its reuse in other projects. This will be achieved through resale of the equipment to other building owners or contractors or donation to schools, churches and charitable institutions.
Once all the waste resulting from demolition and dismantling works is removed from the site, the site will be restored through replenishment of the top soil and reinstatement of the site to its original state. It is recommended that a separate EIA report be carried out in case of decommissioning of the proposed project.

4.6 Construction Approvals

The architectural plans for the proposed development were submitted to the Department of Physical Planning of the Nairobi City County for approval. A copy of the correspondences with the Nairobi City County is attached in Appendix 2 of the report.
5 ANALYSIS OF ALTERNATIVES TO THE PROJECT

5.1 Project versus “No project”Alternative

Two possible options are available for the proposed commercial building development as follows:

- Alternative 1 which would involve erecting the commercial building;
- Alternative 2, based on utilising the existing system as it is without undertaking any new works (do nothing)

5.1.1 Alternative 1

This would involve erecting the proposed commercial building based on the latest technology and the best practice principles of environmental management and health and safety considerations.

5.1.2 Alternative 2

This option is based on leaving the site as it is without undertaking any new works. The proposed site for the office building development has layed bare for many years, with no activity taking place.

5.1.3 Analysis of alternatives 1 and 2

The table below gives a comparison of the two alternatives considered above.

<table>
<thead>
<tr>
<th>Alternative</th>
<th>1 (Project)</th>
<th>2 (No Action)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>Expensive (-)</td>
<td>Continue Leasing (-)</td>
</tr>
<tr>
<td>Time</td>
<td>Quicker (+)</td>
<td>None needed (+)</td>
</tr>
<tr>
<td>Use of natural resources</td>
<td>Minimal (+)</td>
<td>Minimal (+)</td>
</tr>
<tr>
<td>Vegetation clearing</td>
<td>None needed (+)</td>
<td>None (+)</td>
</tr>
<tr>
<td>Creation of more office space</td>
<td>Substantial (+)</td>
<td>None (-)</td>
</tr>
<tr>
<td><strong>Impact Analysis</strong></td>
<td>(+) = 4; (-) = 1</td>
<td>(+) = 3; (-) = 2</td>
</tr>
</tbody>
</table>

Key: + = positive impacts; - = negative impacts

The No Action option (option 2) is not desirable due to the significant importance of increased office space for AWSB and a disaster response centre for NCWSC. These opportunities are considered more significant hence the choice of Alternative 1 for this project.

The No Project Option is the least preferred due to the following factors:

- No employment opportunities will be created for thousands of Kenyans who will work in the development area.
- No office space provided to alleviate the shortage.
- There will be no disaster response centre for NCWSC.
5.2 Location Alternative

Relocation option to a different site is an option available for the project implementation. Other alternative sites i.e at Kasarani and at Hill tank were looked at but the two sites were not favourable because Kasarani is not easily accessible and there is restriction of high rise buildings near Hill tank. At present therefore, AWSB does not have any other alternative site. This means that AWSB has to look for the land. Looking for the land to accommodate the scale and size of the project and completing official transaction on land may take many years and there is no guarantee that the land would be available. The developer will more time on design and approvals since design and planning has to be according to site conditions. Project design and planning before the stage of implementation will cost the developer thousands of Kenya shillings. Whatever has been done and paid to date will be counted as a loss to the developer. Assuming the project will be given a positive response by the relevant authorities including NEMA, this project would have been delayed for about two years before implementation. This would also lead to a situation like No Project Alternative option. In consideration of the above concerns and assessment of the current proposed site, relocation of the project is not a viable option.

5.3 Alternative construction materials and technology

The proposed development will be constructed using modern, locally and internationally accepted materials to achieve public health, safety, security and environmental aesthetic requirements. Equipment that save energy and water will be given first priority without compromising on cost or availability factors. The concrete pillars and walls will be made using locally sourced stones, cement, sand (washed and clean), metal bars and fittings that meet the Kenya Bureau of Standards requirements. Beautiful and durable reinforced concrete roofs with tiles finishing will be used because they are good in heat insulation as compared to the iron sheet roofs, and afford more security.

Heavy use of timber during construction is discouraged because of destruction of forests. The exotic species would be preferred to indigenous species in the construction where need will arise. However, this construction methods and technologies to be used will require very little timber.
6 PUBLIC AND STAKEHOLDER CONSULTATIONS

6.1 General

Public consultation is useful for gathering environmental data, understanding likely impacts, determining community and individual preferences, selecting project alternatives and designing viable and sustainable mitigation and compensation plans.

Public consultation in the EIA process is undertaken during the project design, implementation and initial operation. The aim is to disseminate information to interested and affected parties (stakeholders), solicit their views and consult on sensitive issues.

6.1.1 Objectives of the public consultation

The overall goal of the consultation process is to disseminate project information and to incorporate the views of the project beneficiaries in the design of the mitigation measures and environmental management plan.

The specific aims of the consultation process are to:

- Improve project design and, thereby minimise conflicts and delays in implementation;
- Increase long term project sustainability and ownership;
- Reduce problems of institutional coordination.

An important element in the process of environmental impact assessment is consulting with stakeholders to gather the information needed to complete the assessment.

The main objectives of consultations are to:

- Provide clear and accurate information about the project to the stakeholders;
- Obtain the main concerns and perceptions of the population and their representatives regarding the project;
- Obtain opinions and suggestions directly from the affected communities on their preferred mitigation measures;
- Identify local leaders with whom further dialogue can be continued in subsequent stages of the project.

6.2 Applicable Laws, Regulations and Policies to Public Engagement

The Environmental Management and Coordination Act (2015) as well as the Environmental Impact Assessment and Audit Regulations (2003) set out the minimum requirements for stakeholder consultation and engagement. Further details of the legal and regulatory requirements that apply to the project are provided in Chapter 2 of this report.

6.3 Actual Consultations

Both the key stakeholders and the neighbouring communities were interviewed by use of questionnaires and public meetings. From the stakeholder comments, significant impacts were defined, not necessarily in order of importance, as being those which:

- Are subject to legislative control;
- Relate to protected areas or to historically and culturally important areas;
- Are of public concern and importance;
- Are determined as such by technically competent specialists;
- Trigger subsequent secondary impacts;
- Elevate the risk to life threatening circumstances; and
- Affect sensitive environmental factors and parameters.

### 6.3.1 Stakeholder consultations

Key informant interviews were held with several stakeholders within Nairobi. Typically, the Agenda for consultations was:

- Presentation of the proposed project;
- Obtaining from the respondents their environmental and socio-economic concerns, and perceptions as well as suggestions/comments regarding the proposed project.

A summary of the discussions are as shown in Table 6-1 below.

**Table 6-1: List of key stakeholders interviewed**

<table>
<thead>
<tr>
<th>No</th>
<th>Date</th>
<th>Name</th>
<th>Institution /Establishment / Business represented</th>
<th>Contacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>21.05.2014</td>
<td>Mr. Nicholas Karia</td>
<td>Chairman, Muthaiga westerd Court</td>
<td>0708860255</td>
</tr>
<tr>
<td>2</td>
<td>28.07.2017</td>
<td>Mr. Lawrence Mwangi</td>
<td>Department of Environment, Nairobi City County Government</td>
<td>0728322636</td>
</tr>
<tr>
<td>3</td>
<td>28.07.2017</td>
<td>Mr. Raphael Kazungu</td>
<td>Department of Physical Planning, Nairobi City County Government</td>
<td>0731653973</td>
</tr>
<tr>
<td>4</td>
<td>27.07.2017</td>
<td>Mr. Titus N. Matangi</td>
<td>Public Health officer, Nairobi City County government</td>
<td>0722600784</td>
</tr>
<tr>
<td>5</td>
<td>24.08.2017</td>
<td>Msafiri P. Wambua</td>
<td>Environment and Compliance co-ordinator, Nairobi Water and Sewerage Company (NCWSC)</td>
<td>0725847441</td>
</tr>
<tr>
<td>6</td>
<td>23.08.2017</td>
<td>Mr. Wilfred Koech</td>
<td>Safety, Health and Environment Manager, Kenya Power</td>
<td>0722690119</td>
</tr>
<tr>
<td>7</td>
<td>25.1.2018</td>
<td>S. K Muriithi</td>
<td>Kenya Forest Service</td>
<td>0722352175</td>
</tr>
<tr>
<td>7</td>
<td>1.09.2017</td>
<td>Enock K. Cheruitot</td>
<td>Alpha automobile Ltd</td>
<td>0721849457</td>
</tr>
</tbody>
</table>

The filled questionnaires are attached to this report in Appendix 4.

The issues raised are presented in the table below:
Table 6-2: Key issues raised by stakeholders during public consultations

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Key issues raised</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. Nicholas Karia, Chairman, Muthaiga westerd Court</td>
<td>• Have no objection of the development.</td>
</tr>
</tbody>
</table>
| Mr. Lawrence MwangiDepartment of Environment, Nairobi City County           | • The proponent should have all licences required from Nairobi County Government before commencing the project  
• Dispose off all waste and debris from construction work as per NEMA requirements  
• Adhere to the environmental mitigation plan in the project |
| Mr. Raphael Kazungu, Department of Physical Planning, Nairobi City County   | • Observe zoning rules and guidelines                                               |
| Mr.Titus N. Matungi, Public Health officer, Nairobi City County             | • Approval plans by the Nairobi City County Government should be obtained  
• During decommissioning after completion, an occupation certificate should be obtained  
• Before any works stand a site toilet should be provided after its siting and grant of site toilet permit |
| Mr. Wilfred Koech, Environment and Compliance Manager, Kenya Power          | • During construction proper care should be taken to ensure safety of power infrastructure  
• Construction should be done away from the live power line and request for relocation can be done incase they are within the plot  
• The proponent should ensure proper landscaping using appropriate tree species  
• Watering to suppress dust during construction  
• Ensure occupational safety and health principles are adhered to  
• Ensure transport safety precautions are put in place |
| Msafiri P.Wambua, Environment and Compliance co-ordinator, Nairobi Water and Sewerage Company (NCWSC) | • Ensure that you open an account of Nairobi Water and Sewerage Company (NCWSC) during the construction period  
• Connect to the existing sewer line to manage waste water during and after construction  
• Don’t interfere with the entire water and sewerage infrastructure without permission |
| S. K Muriithi, Kenya Forest Service                                          | • Had no objection for the project to be constructed as it is outside the forest land  
• They hoped that AWSB will bring services closer to the stakeholders  
• Suggested that AWSB contact Muthaiga North Residents Association since there is low housing density in the area. |
| Enock K. Cheruitot Manager Alpha automobile Ltd                              | • Welcomed the project hence no objection of the development                         |
6.3.2 Public meeting

A Public inclusion meeting was held within the project area on 3rd October 2017 with the residents of Muthaiga North Residents Association (MNRA) as from 12.00midday. The agenda of the meeting was to inform the association of the proposed development and to seek their no objection. The summary of the discussions is presented in Table 6-3.

Table 6-3: Summary of deliberations during the public meeting

<table>
<thead>
<tr>
<th>No.</th>
<th>Issue</th>
<th>Response</th>
</tr>
</thead>
</table>
| 1.  | **Access on Kiambu Road/Traffic Management** | - The meeting wanted to know whether AWSB can consider accessing the building through Kiambu Road to reduce pressure on Coffee Garde Drive  
    - Before construction commences, it was agreed that a fence will be erected at the existing barrier point within Coffee Garden Drive so as to man the entry and exit of vehicles. This will include construction of a guard house and toilet for guard use at this point.  
    - The current staff numbers and AWSB is 60 and projected to raise to a maximum of 80 including staff from NCWSC and approximately 50% of the staff will be driving. The office is purely for administrative purposes and no commercial services/activities will be rendered here. Hence, incremental traffic flow will be minimal and against MNRA flow. The few NCWSC emergency response trucks will be idle most of the times and will only be used occasionally. The operations will run from Monday to Friday from about 7.00am to 5.30pm with no major activities over the weekend. The total expected traffic flow per day is 50 cars.  
    - All parties agreed that the main access road should remain where it is along Coffee Garden Drive and AWSB will look into possibilities of expanding the existing gate. AWSB and NCWSC will have their own internal access/exit arrangements. |
| 2.  | **Waste management**                      | - An environmental management and monitoring plan (EMMP) has been developed to guide and address all environmental related concerns during the construction phase. The contractor with supervision from AWSB environmental team will ensure the site is fenced off from the water reservoir area and that no water pollution or contamination occurs. During operation, a NEMA licensed waste handler will be contracted by AWSB to handle all solid wastes from the office block and dispose appropriately as guided by the solid waste regulations, 2006. |

This was a concern raised by MNRA in terms of solid and liquid waste considering that there is a water reservoir tank for drinking water on site.
<table>
<thead>
<tr>
<th>No.</th>
<th>Issue</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>• A bio-digester will be installed on site to treat liquid effluent of which the recycled water will be reused for landscaping. In this case, liquid effluent is not expected to contaminate water at the reservoir and that the reservoir tank is completely sealed thus, no seepage of effluent in to the tank is expected.</td>
</tr>
<tr>
<td>3.</td>
<td>Security</td>
<td>The following security measures will be put in place;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Two private security teams will be hired, one each for AWSB and NCWSC available on site on 24 hours.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Fencing will be done and may include heavy duty chain link, masonry wall or electric fence.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• A high must flood light will be installed within the compound to light the road.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• A fence will be erected at the existing barrier point within Coffee Garden Drive to act as a deterrent from matatus and trucks. This will include construction of a guard house and toilet for guard use at this point.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Any food to be sold to workers will be served within the AWSB premises and not on the road to avoid cropping up of kiosks within the vicinity. During operation phase, AWSB will seek services of caterers to further deter kiosk operators.</td>
</tr>
<tr>
<td>4.</td>
<td>Construction period</td>
<td>They were informed that the procurement process for the contractor is almost complete and the contractor is expected on site in November to be constructed for a period of 12 to 18 months. There will be a temporary access road from Sharks Palace during construction period to be used by construction equipment and personnel.</td>
</tr>
<tr>
<td>5.</td>
<td>Membership to MNRA</td>
<td>AWSB was in agreement with the proposal as this will enable proper bonding and full exploitation of any opportunities and projects that may lead to mutual benefits.</td>
</tr>
<tr>
<td>6.</td>
<td>Vegetation of the site</td>
<td>Felling of existing trees will be avoided as much as practically possible. Landscaping will also be undertaken.</td>
</tr>
</tbody>
</table>

The attendance list and minutes of meeting is presented in Appendix 5.
6.3.3 **Muthaiga North Residents Association (MNRA) Meeting**

Following the public meeting held on site on 3rd October 2017, Muthaiga North Residents Association (MNRA) held a follow up meeting with their residents on 4th October 2017 were informed of the deliberations of the 3rd October 2017 meeting. During the meeting, all the participants endorsed the proposed project and there were no objections to the development of office building.

The attendance list of the meeting is presented in Appendix 6.

6.4 **Grievance Redress Mechanism**

Grievance redress mechanisms (GRM) includes instruments, methods, and processes by which a resolution to a grievance is sought and provided. The grievances may be received from both the contractor's employees and the local communities. The processes is as shown in the sections below.

6.4.1 **Complaints Procedure**

The purpose and scope of the complaints procedure is to ensure all complaints from workers and local residents are dealt with appropriately with corrective actions being implemented and the complainant being informed of the outcome.

The Resident Engineer and or sociologist will be responsible for collating written complaints and co-coordinating responses to all complaints.

6.4.2 **Procedure**

(a) **General complaints**

Both verbal and written complaints are to be entered by the community liaison officer/sociologist into a Grievance Complaint Log. The person receiving a complaint shall ensure that the Grievance Complaint Log is completed. The form shall then be forwarded to the Resident Engineer who will assign it a number. The Resident Engineer shall ensure that all actions are made to close out the complaint.

(b) **Grievance Complaint Log**

Ensures that each complaint has an individual number and that tracking and recording actions are carried out. It also records who is responsible for an individual complaint and records dates for the following actions:

- Date the complaint was reported;
- Information on proposed corrective action sent to complainant (if appropriate);
- The date the complaint was closed out; and
- Date response sent to complainant.

A sample grievance log is as shown below:

<table>
<thead>
<tr>
<th>Ref</th>
<th>Name of complainant</th>
<th>Nature of Grievance</th>
<th>Date Registered</th>
<th>Action Taken</th>
<th>Resolved</th>
<th>Unresolved</th>
<th>Next steps</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

ESIA for AWSB & NCWSC Operations Building 6-8 JANUARY 2018
6.4.3 Responding to a Complaint

All complaints shall be responded to in writing, though a verbal response will be provided as well if this is more appropriate in the circumstances (e.g., where the complainant cannot read). All complaints must be responded to within two weeks of being received, even if the response is just a summary of what is planned and when it is likely to be implemented. Further correspondence should be given once the complaint is closed out.

6.4.4 Monitoring Complaints

The Resident Engineer will be responsible for providing AWSB with a Monthly report detailing the level of complaints and any outstanding issues to be addressed. Monthly reports will include analysis of the type of complaints, levels of complaints and action taken to reduce complaints. The Resident Engineer shall file all documentation related to complaints in a file in his office.
7 ASSESSMENT OF POTENTIAL IMPACTS AND MITIGATION MEASURES

7.1 Definition and Classification of Environmental and social Impacts

The purpose of the Environmental and Social Impact Assessment (ESIA) of the project is to improve decision making and to ensure that the project progresses in a sustainable manner. The ESIA identifies ways of improving the project environmentally and socially by preventing, minimising, mitigating, or compensating for adverse impacts. These measures will help to avoid potentially costly remedial measures.

An environmental impact is any change to the existing condition of the environment caused by human activity or an external influence. Impacts may be:

- Positive (beneficial) or negative (adverse);
- Direct or indirect, long-term or short-term in duration, and wide-spread or local in the extent of their effect.

Impacts are termed cumulative when they add incrementally to existing impacts. In the case of the AWSB &NCWSC Operations building, potential environmental impacts would arise during the construction and the operations phases of the project and at both stages positive and negative impacts would occur.

7.1.1 Impact Significance

The purpose of this ESIA project report is to identify the significant impacts related to the project or activity under consideration and then to determine the appropriate means to avoid or mitigate those which are negative.

Significant impacts are defined, not necessarily in order of importance, as being those which:

- Are subject to legislative control;
- Relate to protected areas or to historically and culturally important areas;
- Are of public concern and importance;
- Are determined as such by technically competent specialists;
- Trigger subsequent secondary impacts;
- Elevate the risk to life threatening circumstances;
- Affect sensitive environmental factors and parameters.

7.1.2 Impact Matrix

An impact matrix is a simple but effective tool for identifying the possible impacts of project activities on the environment and this has been done for the proposed AWSB &NCWSC Operations building.

Here, the activities proposed to be carried out during the construction and post-construction or operational phases are arrayed against a selection of environmental factors that are deemed relevant to the site, or which may be affected indirectly as a result of project activities.

The project activities have been sub-divided into four key areas of activity comprising:

- Pre-construction/ preparatory stage;
- Construction;
- Operation;
- Decommissioning.
Table 7-1: Impact Matrix

<table>
<thead>
<tr>
<th>Environmental Impacts</th>
<th>Potential Interaction/ Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre-construction/ Preparatory stage</strong></td>
<td></td>
</tr>
<tr>
<td>Transport of materials to project site</td>
<td>-</td>
</tr>
<tr>
<td>Public consultations to get community feedback</td>
<td>++</td>
</tr>
<tr>
<td>Visual intrusion</td>
<td>-</td>
</tr>
<tr>
<td>Landscape design</td>
<td>++</td>
</tr>
<tr>
<td><strong>Construction</strong></td>
<td></td>
</tr>
<tr>
<td>Employment opportunities</td>
<td>++</td>
</tr>
<tr>
<td>Increased revenue to suppliers of construction materials and utilities.</td>
<td>++</td>
</tr>
<tr>
<td>Air/dust pollution</td>
<td>-</td>
</tr>
<tr>
<td>Increased water use</td>
<td>-</td>
</tr>
<tr>
<td>Noise pollution</td>
<td>-</td>
</tr>
<tr>
<td>Energy requirements</td>
<td>-</td>
</tr>
<tr>
<td>Solid wastes</td>
<td>-</td>
</tr>
<tr>
<td>Liquid wastes</td>
<td>-</td>
</tr>
<tr>
<td>Occupational health &amp; safety hazards</td>
<td>-</td>
</tr>
<tr>
<td>Use and storage of hazardous materials</td>
<td>-</td>
</tr>
<tr>
<td>Landscaping</td>
<td>++</td>
</tr>
<tr>
<td>Fire risks/ management</td>
<td>-</td>
</tr>
<tr>
<td>Traffic congestion road wear and tear</td>
<td>-</td>
</tr>
<tr>
<td><strong>Operation</strong></td>
<td></td>
</tr>
<tr>
<td>Provision of quality office space</td>
<td>++</td>
</tr>
<tr>
<td>Saving on rental fees by AWSB</td>
<td>++</td>
</tr>
<tr>
<td>Effective disaster response by NCWSC</td>
<td>++</td>
</tr>
<tr>
<td>Employment opportunities</td>
<td>++</td>
</tr>
<tr>
<td>Increased revenue to suppliers of utilities</td>
<td>++</td>
</tr>
<tr>
<td>Increased revenue to Nairobi City County</td>
<td>++</td>
</tr>
<tr>
<td>Optimal Land use</td>
<td>++</td>
</tr>
<tr>
<td>Usage of water</td>
<td>-</td>
</tr>
<tr>
<td>Water pollution</td>
<td>-</td>
</tr>
<tr>
<td>Landscaping</td>
<td>++</td>
</tr>
<tr>
<td>Noise</td>
<td>-</td>
</tr>
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+=Positive interaction or impact; -=Negative interaction or impact
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7.2 Pre-construction Phase

7.2.1 Associated activities

This stage involves the design, planning and pre-construction activities of the project. Key activities to be considered include:

- Transportation of materials to project site;
- Public consultations;
- Storm water management;
- Visual intrusion;
- Landscape design.

7.2.2 Positive impacts during pre-construction phase

(a) Public consultations

Prior to any development, a proponent is required to conduct public consultations and obtain feedback from the community on their views concerning the proposed project. Through this activity the proponent gets to know more on the views of the community about the proposed development and therefore incorporates appropriate measures inorder to be inline with the needs of the community before implementation of the project.

(b) Landscape design

The overall design of the proposed project will determine the level of environmental impact.

Mitigation measures include:

- Consider leaving the environment as natural as possible;
- Design around existing landmarks, e.g. trees.

7.2.3 Negative impacts during pre-construction phase

(a) Transportation of materials to project site

Building materials, such as stones, wood, metal, sand and gravel will be sourced off site. This may result in pollution from the off-loading exercises and also during transportation of the materials if they are not well packed.

Mitigation measures include:

- Use well maintained and regularly serviced vehicles, to reduce air and noise pollution;
- Combine transport of more than one material to reduce number of trips made;
- Pack the materials safely before transportation to avoid spills and falls from transportation lorries;
- Design a common off-loading zone to avoid adverse impacts in many areas
- Transportation of materials should be undertaken during off-peak hours i.e between 10am to 3pm to avoid worsening the existing traffic congestion within Kiambu Road and its sorroundings.

(b) Storm Water Management

The project area is on a flat land and hence conducive for the proposed developments. The area consists of residential structures with no sensitive receptors. However, storm water if not well managed during pre-construction may result in collection of pools of water, which may interfere with construction of foundations of the structures.
Mitigation measures include:

- Take into account the topography of the area, existing drainage patterns, and health hazards from stagnant water, such as malaria, and include properly sized drainage in the designs.

(c) Visual Intrusion

Any new development interferes with the visual aesthetics of the environment, and stands out from the natural environment.

Mitigation measures include:

- Reduce the visual intrusion of the structures through appropriate architectural techniques, e.g. colours, height, etc.

7.3 Construction Phase

7.3.1 Associated Activities

It is expected that the greatest environmental impacts will occur in this stage of the project. Key activities to be considered include:

- Employment opportunities;
- Landscaping;
- Increased revenue to suppliers of construction materials and utilities;
- Air/dust pollution;
- Increased water use;
- Noise pollution;
- Energy requirements;
- Solid wastes;
- Liquid wastes;
- Occupational health and safety hazards;
- Use and storage of hazardous materials;
- Fire risks/management;
- Vegetation clearing;
- Traffic congestion, road wear and tear;
- Impact of over-sourcing construction materials from the earth’s surface.

7.3.2 Positive Impacts during Construction phase

(a) Employment opportunities

This will be of benefit to the construction workers, planners, supervisors and project managers who will be employed during the construction phase.

(b) Landscaping

This will be done after the construction activity is complete in order to complement the trees within the compound.

(c) Increased revenue to suppliers of construction materials and utilities

This will be an opportunity for the suppliers of construction materials and other utility suppliers to create market and sell their goods. In turn this will boost their profit margin, which is an advantage to their businesses. Companies such as Kenya Power will gain revenue from supply
of electricity for construction activities. Other small businesses will also be pulled by the construction activities, such as small eating cafes.

7.3.3 Negative impacts during construction phase

(a) Pollution

(i) Air pollution

This may arise from dust emissions and other pollutants that may find their way into the air. In order to control exhaust emissions the following measures shall be implemented during construction.

- Vehicle idling time shall be minimized
- Alternatively fuelled construction equipment shall be used where feasible
- Equipment shall be properly tuned and maintained
- Water dusty surfaces at least once a day during dry season.

(ii) Noise pollution

This will arise from stone breaking and various construction processes that may lead to noise emission. Noise pollution may be a nuisance to neighbours and persons passing by the site.

The project proponent shall put in place several measures that will mitigate noise pollution during the construction phase. The following noise-suppression techniques will be employed to minimise the impact of temporary construction noise at the project site.

- Install portable barriers to shield compressors and other small stationary equipment where necessary.
- Use quiet equipment (i.e. equipment designed with noise control elements).
- Install sound barriers for pile driving activity.
- Limit pick up trucks and other small equipment to a minimum idling time and observe a common-sense approach to vehicle use, and encourage workers to shut off vehicle engines whenever possible.
- Adhere to standard working hours (7:00 to 19:00), avoid use of any equipment during nighttime.

(iii) Solid and liquid waste pollution

This will result from the wrappings of construction materials and other solid waste that may be found scattered around due to improper waste management. Liquid wastes from domestic waste water can result in pollution around the site.

Mitigation measures include:

- The contractor must ensure that all forms of waste are managed and controlled from escaping from within the construction site;
- Install adequate stormwater drainage including open inverted block draina (IBD) channels and culverts
- The contractor must ensure that the person/company collecting waste is licenced by NEMA and the County Government of Nairobi (CGN) to collect and correctly dispose of waste;
- The contractor must ensure that the workers are dressed in proper Personal Protective Equipment (PPE) and gear so as to protect them from the hazardous effects of noise and air pollution.

Additional recommendations for minimization of solid waste during construction of the project include:-
Use of durable, long-lasting materials that will not need to be replaced as often, thereby reducing the amount of construction waste generated over time.

Provision of facilities for proper handling and storage of construction materials to reduce the amount of waste caused by damage or exposure to the elements.

Purchase of perishable construction materials such as paints incrementally to ensure reduced spoilage of unused materials.

Use of building materials that have minimal packaging to avoid the generation of excessive packaging waste.

Use of construction materials containing recycled content when possible and in accordance with accepted standards.

(b) Increased water use

High water demand during construction will result from activities such as the mixing of construction materials, for cooling of machines, and other activities that may require water during construction.

Mitigation measures include:

- The contractor should ensure that water is sourced from a sustainable source during the entire construction period. This will involve formal application for water connection with NCWSC.
- The contractor should invent ways of recycling waste water and using it for other purposes during construction, such as dust attenuation, so as to cut the volumes of water used per day.

(c) Energy requirements

It is anticipated that the energy requirements during construction and operation will increase. The use of energy during construction will provide additional revenue to KPLC.

Mitigation measures include:

- Utilize manual tools where possible;
- Ensure equipment is well and regularly maintained to minimize energy use;
- Prudent use of energy to reduce energy requirements.

(d) Occupational Health and Safety Hazards

Occupational Health and Safety hazards such as falling objects, open pits, discarded sharp objects, and dust may all be a health risk to construction workers. Risk of accidents and incidents will be heightened during the construction activities as construction workers will be in direct contact with heavy machinery and equipment.

Health, safety and security are important aspects through all the stages of the proposed project. Excavation activities associated with the project works may lead to health and safety hazards attributed to:

- **Unidentified or misidentified utilities**: Workers may be exposed to hazards such as electric shock, suffocation, or explosions if they unexpectedly come in contact with utility lines;
- **Hazardous atmospheres**: Workers may be exposed to hazards such as suffocation, chemical exposure, or explosions, if they enter excavations with hazardous atmospheres;
- **Structural instability**: Structures may become unstable if excavation occurs below the base of a building or equipment pad foundations, or below retaining wall footings. This may be fatal to the workers;
- **Water accumulation**: Water accumulation in excavations can cause sloughing of excavation sidewalls, resulting in unsafe conditions for those entering the excavation, particularly if the use of electrical equipment is required;
• **Falls:** Workers or passers-by may accidentally fall into open, unprotected excavations, or vehicles may accidentally be driven into uncovered or inadequately barricaded pits.

Mitigation measures include:

• The Contractor should ensure registration of the site as a workplaces by the Director, Directorate of Occupational Health and Safety (DOHSS) forming the basis of work statistics;

• The Contractor should keep the records of all workplace related incidents and accidents and records of all cases of incompliance with the ESMP.

• The Contractor should ensure provision of appropriate Personal Protective Equipment (PPE) for staff such as:
  
  o Earmuffs for ear protection;
  o Helmets for head protection;
  o Dust masks for dust protection for all project works;
  o Goggles with good visibility for eye protection;
  o Overalls and dust coats to protect the skin;
  o High-visibility retroreflective fluorescent yellow-green, fluorescent orange-red/fluorescent red jackets with 360° visibility;
  o Safety shoes for protection of the feet;
  o Gloves of different types according to specific works in relation to:
    - Puncture resistance;
    - Sharps resistance;
    - Cut resistance;
    - Flexibility;
    - Abrasion resistance;
    - Grip.

• The supervising consultant should ensure that the contractor complies with all standard and legally required health and safety regulations as set out by the Occupational Safety and Health Act (Part XI: Section 96) as pertains to construction activities;

• The Contractor should provide a standard First Aid Kit on site. Recommendations for Employees exceeding fifty (50) [as per the first Aid Rules section 2 (c)] and Fourth Schedule of the Factories (Building Operations and Works of Engineering Construction) Rules 1984 part III regarding contents of First Aid Boxes that should comprise the following:
  
  o Copy of first aid leaflet (L.D. 250/1) issued by the Labour Department specified in Section 2 (b) and (c) of the First Aid Rules of 1977 of the OSHA Act;
  o Not less than 24 of small sterilized unmedicated dressings for injured fingers;
  o Not less than 12 of large sterilized unmedicated dressings for injured hands or feet;
  o Not less than 12 of large sterilized unmedicated dressings for injured parts;
  o Not less than 36 of adhesive wound dressings of a suitable type and assorted sizes;
  o Not less than 8 of triangular bandages of unbleached calico (longest side of which measures not less than 130cm and each of the other sides not less than 91cm);
  o Sufficient supply of adhesive plaster;
  o Sufficient supply of absorbent sterilized cotton wool (in 14 gram packets);
  o Sufficient supply of factory eye drops, BPC;
  o Not less than 8 sterilized eye pads in separate seal packets;
  o A rubber or pressure bandage;
  o Sufficient supply of safety pins.

• All works, which may pose a hazard to humans and domestic animals are to be protected, fenced, demarcated or cordoned off as instructed by the supervising consultant. If appropriate, symbol warning signs must be erected;

• For fire and safety the Contractor, should ensure the following:
  
  o Place portable fire extinguishers at suitable locations, according to the activities in
the construction programme in conformity with the Factories and other places of work (Fire Risk Reduction) Rules, 2007 comprising of the following types:

- Water extinguishers for Class A fires of ordinary combustible materials such as paper, wood, cardboard and most plastics;
- Carbon dioxide extinguishers for extinguishing of Class B and C fires ([Class B: flammable/combustible liquids such as gasoline, kerosene, grease and oil. Class C: Electrical equipment such as appliances, wiring, circuit breakers and outlets]);
- Dry powder extinguishers for extinguishing of Class A, B and C fires.

- Maintaining of a Material Safety Data Sheet (MSDS) from the manufacturer of flammable gases and flammable combustible liquids indicating their flammable ranges in % per volume;
- Development of fire emergency procedures and pinning them up in a place where all workers can access them;
- Training all staff on fire safety policy and procedures;
- Allocating a fire assembly point;
- Clearly marking fire exits within the site;
- Ensuring safety warnings are prominently displayed on site, such as “No smoking”, “No naked flames”;
- Provide and enforce the use of Personal Protective Equipment (PPE);
- Maintain an incident/accident register, in accordance with the Occupational Safety and Health Act 2007 and report incidences to the Directorate of Occupational Health and Safety Services (DOHSS).

- The supervising consultant should ensure that the Contractor is instructed in the use of all materials that may have negative environmental (including health) effects;
- The supervising consultant should ensure that if any material or substance is used that is at any point in the future deemed to be deleterious to health, then it must be replaced with an acceptable alternative;
- The Contractor has to adhere to safety regulations outlined in the Local Government Adoptive by-laws, Building Order 1968 (Building Code) and the Building Operations and Works of Engineering Construction (The Occupational Safety and Health Act 2007);
- The Contractor should ensure the following:
  - Appropriate training for machine handling;
  - Provision of 2-way communication radios for site personnel to avoid shouting at work sites;
  - Establishment of a shift system for site personnel, to avoid effects of vibrations on staff health as a result of long exposure times to construction machinery emitting vibrations.
- The contractor must ensure that all equipment is safely stored in its respective storage areas after use;
- The contractor must ensure that workers are not allowed to use equipment before receiving instructions;
- The contractor must ensure that all construction workers vacate the premises before closure on a daily basis.

(e) Use and storage of hazardous materials

Some of the chemicals used for construction, such as paints for finishing, contain substances that may be harmful to human health and hazardous to the environment.

Mitigation measures include:

- Contractor should ensure that employees on site are aware of proper procedures for dealing with spills and leaks;
- In case of spillage, the Contractor should isolate the source of the spill and contain the spillage using sandbags, sawdust, absorbent material, and/or other approved materials;
- All vehicles and equipment should be kept in good working order, serviced regularly and stored in an approved area;
• Storage of all chemicals should be within a bunded area;
• All chemicals in storage should be clearly labelled, detailing the nature and quantity of chemicals within individual containers;
• Chemical storage area should be kept secured, and access regulated.
• Use well maintained and regularly serviced vehicles, to reduce air and noise pollution;
• Combine transport of more than one material to reduce number of trips made;
• Pack the materials safely before transportation to avoid spills and falls from transportation lorries;
• Design a common off-loading zone to avoid adverse impacts in many areas
• Transportation of materials should be undertaken during off-peak hours i.e between 10am to 3pm to avoid worsening the existing traffic congestion within Kiambu Road and its surroundings.

(f) Fire risks/management

Fire risks during construction arise due to hot works and use of chemicals and or due to electric works being undertaken on site.

Mitigation measures:

• Place portable fire extinguishers at suitable locations, according to the activities in the construction programme in conformity with the Factories and other places of work (Fire Risk Reduction) Rules, 2007 comprising of the following types:
  o Water extinguishers for Class A fires of ordinary combustible materials such as paper, wood, cardboard and most plastics;
  o Carbon dioxide extinguishers for extinguishing of Class B and C fires [(Class B: flammable/combustible liquids such as gasoline, kerosene, grease and oil. Class C: Electrical equipment such as appliances, wiring, circuit breakers and outlets)];
  o Dry powder extinguishers for extinguishing of Class A, B and C fires.

• Maintaining of a Material Safety Data Sheet (MSDS) from the manufacturer of flammable gases and flammable combustible liquids indicating their flammable ranges in % per volume;
• Development of fire emergency procedures and pinning them up in a place where all workers can access them;
• Training all staff on fire safety policy and procedures;
• Allocating a fire assembly point;
• Clearly marking fire exits within the site;
• Ensuring safety warnings are prominently displayed on site, such as “No smoking”, “No naked flames”;
• Provide and enforce the use of Personal Protective Equipment (PPE);
• Maintain an incident/accident register, in accordance with the Occupational Safety and Health Act 2007 and report incidences to the Directorate of Occupational Health and Safety Services (DOHSS).

(g) Traffic Congestion / road wear and tear

The proposed project will have a potential of increasing pressure on existing infrastructure such as roads. This would be due to increased numbers of human and vehicle traffic along the Kiambu road. Besides, heavy trucks that will be transporting construction materials to and from the site may cause wear and tear of the roads and depending on the weight of the materials.

Mitigation measures include:

• The contractor shall clearly communicate the construction schedule to the project stakeholders.
• The contractor must ensure that there is a rear access area to the site for the heavy vehicles so as to reduce traffic congestion at the main access;
• The contractor must ensure that the trucks carrying construction materials to the site are in good condition and no material falls on the road as the truck moves around both on-site and off-site;
• The Contractor should provide temporary road signs or notices to indicate on-going works;
• The Contractor, together with the supervising consultant, should plan itineraries for site traffic on a daily basis and avoid peak traffic periods;
• The Contractor should effect traffic controls to avoid congestion and truck accidents on the roads;
• The supervising consultant and Contractor should choose routes with less traffic in order to save on time for transportation of materials;
• The Contractor should ensure due regard by the driver of traffic regulations and insistence upon courtesy at all times to other road users. The site should have a traffic management plan; this is a visual layout of the site that shows structures, roads, site storage, compound, pedestrian routes etc;
• The Contractor should ensure that the trucks park only in designated parking areas;
• The Contractor should ensure that the trucks do not block pedestrian and traffic routes;
• The Contractor should ensure that the truck drivers adhere to and obey the speed limits;
• The Contractor must also ensure that there are designated loading/unloading areas both on-site and off-site.

(h) Impacts of earth and other construction material sourcing

It is anticipated that earth materials needed for construction (e.g. sand, aggregate) will be obtained from quarry and mining operations. Conscious or unwitting purchase of these materials from unlicensed operations indirectly supports, encourages and promotes environmental degradation at the illegal quarry sites and causes medium to long-term negative impacts at source.

Natural resource depletion may occur through activities such as quarrying, mining and timber logging, if not rationally undertaken.

Mitigation measures include:

• The tender documents should specify required standards and certification for procurement of all materials and appliances;
• The sources of all construction materials should be from approved sources; for example, hardstone for building should be obtained from bona fide commercial quarries (with active NEMA license);
• The contractor should ensure that he sources construction materials sustainably;
• The contractor should ensure that the storage area for materials is good so as to avoid spoils e.g. rotting of timber products and hence need for replacements of the waste.

(i) Influx of workers from within and outside the project area

There will be increase of immigrant workers looking for jobs during the construction phase. This will lead to increase in population which will create more pressure on the existing social utilities in the project area. The influx of immigrant workers may also lead to unplanned settlements as the workers compete for the limited resources.

Mitigation measures include:

• The contractor shall hire local staff as much as practically possible;
• Adoption of the contractor code of conduct. A sample is provided in Appendix 7;
• Sensitization of the workers on the local cultures and beliefs to ensure there is harmony in the project area;
• AWSB should set up of a Grievance Redress Mechanism (GRM) for managing inquiries and complaints from the community.
7.4 Operation Phase

7.4.1 Associated Activities

Key activities to be considered include:

- Employment opportunities;
- Landscaping;
- Increased revenue to suppliers of utilities;
- Increased revenue to Nairobi City County;
- Provision of quality offices and business space;
- Saving on rental fees by AWSB;
- Effective disaster response by NCWSC;
- Usage of water;
- Water pollution;
- Noise pollution;
- Energy requirements;
- Solid wastes;
- Liquid wastes;
- Fire management;
- Traffic congestion;
- Oil spills at the car parking area;
- Occupational health and safety.

7.4.2 Positive Impacts during Operation Phase

(a) Employment opportunities

This will be of benefit to direct employees within the premises including permanent staff as well as support staff and sub-contracted staff.

(b) Landscaping

This will be carried out regularly to ensure that the aesthetics of the site is maintained at a high quality.
(c) Increased revenue to suppliers of construction materials and utilities

This will be an opportunity for utility suppliers to create a market and sell their goods. In turn this will boost their profit margin, which is an advantage to their businesses. Companies providing utilities such as water, electricity, data, cleaning services, consumer goods and waste disposal will gain revenue from their activities.

(d) Increased revenue to the Nairobi City County

There will be positive gain for the revenue system arising from the processing of the building plans to the proposed commercial development to the City County of Nairobi. This is in addition to the annual rates to be paid to the County.

(e) Provision of quality offices and business space

Being a planned project Central Business District, various organizations within the city will get affordable and quality offices. This has a direct impact of greatly reducing regular travel to far areas looking for offices since they are readily available within the city centre.

(f) Saving on rental fees by AWSB

AWSB is currently renting office space in Africa-Re Centre, Upperhill. AWSB is renting two floors to accommodate all its employees. With the construction of the building, AWSB will save on rental fees and use this water for other developmental needs.

(g) Effective disaster response by NCWSC

With the construction of disaster response centre, NCWSC will effectively respond to any emerging disaster in a timely fashion.

(h) Optimal Land use

Land is a scarce resource in Kenya and construction of the proposed project will ensure optimal use of land to the great benefit of the country and its people. Development of the underutilized land for offices complements economic activities within the City of Nairobi that already has high demand for business space.

7.4.3 Negative impacts during operation phase

(a) Increase in water demand for various uses

It has been noted that the area is served by water connections from Nairobi City Water & Sewerage Company (NCWSC). The proposed establishment will increase the water demand within the project site and eventually throughout the entire City.

Mitigation measures include:

- The management of the office building should ensure that ways of recycling waste water are explored for use, which will in turn reduce the water consumption rates;
- The management should explore alternatives for harvesting rainwater, which can be stored and used later, which will then reduce pressure on water demand;
- The management should ensure that they maintain water consumption records inorder to monitor its use.

(b) Pollution

(i) Air pollution

This may arise from vehicles, generators and other engines around the office, and during periodic deep cleaning and dusting activities.
(ii) **Noise pollution**

This will be generated from operational generators in case of power failure, human activities, and nearby traffic.

(iii) **Solid waste pollution**

This could result from the wrappings and papers and other solid waste that may be found scattered around due to improper waste management. If the bio-digester is not properly managed during operation, the area may become smelly and the waste that comes out of the bio-digester may not be properly treated which may lead to contamination and nuisance.

(iv) **Liquid waste pollution**

Liquid wastes from domestic waste water can result in pollution within the site if not well managed.

Mitigation measures include:

- The management of the building should ensure that the generator is regularly monitored for noise emissions to ensure that the noise emitted is within the designated levels and will not be of any form of nuisance to the office occupants and neighbours;
- The management of the building should ensure that solid waste is collected in a centrally placed area and the person responsible for collecting the waste is licenced by NEMA and the Nairobi City County to collect and dispose of waste;
- AWSB should ensure that the bio-digester is regularly serviced;
- The management should ensure that there is adequate traffic management to reduce vehicle congestion around the site which may in turn lead to air pollution from vehicle exhaust systems and noise pollution.

(c) **Energy Requirements**

It is anticipated that the energy requirements during operation will be significant.

Mitigation measures include:

- Utilize energy-efficient equipment such as solar panels and mechanical energy where possible;
- Utilize timers to ensure lights are automatically switched off when not in use;
- Ensure equipment is well and regularly maintained to minimize energy use;
- Prudent use of energy to reduce energy requirements.

(d) **Fire Management**

Fire risks during operation arise predominantly due to electrical works.

Mitigation measures:

- Place portable fire extinguishers at suitable locations, according to the activities during operation, in conformity with the Factories and other Places of Work (Fire Risk Reduction) Rules, 2007 comprising of the following types:
  - Water extinguishers for Class A fires of ordinary combustible materials such as paper, wood, cardboard and most plastics;
  - Carbon dioxide extinguishers for extinguishing of Class B and C fires [(Class B: flammable/combustible liquids such as gasoline, kerosene, grease and oil. Class C: Electrical equipment such as appliances, wiring, circuit breakers and outlets)];
  - Dry powder extinguishers for extinguishing of Class A, B and C fires.
• Development of fire emergency procedures and pinning them up in a place where all workers can access them;
• Training all staff on fire safety policy and procedures;
• Allocating a fire assembly point;
• Clearly marking fire exits within the office park;
• Ensuring safety warnings are prominently displayed, such as “No smoking”, “No naked flames”;
• Provide and enforce the use of Personal Protective Equipment (PPE);
• Maintain an incident/accident register, in accordance with the Occupational Safety and Health Act 2007 and report incidences to the Directorate of Occupational Health and Safety Services (DOHSS).

(e) Traffic congestion

It is proposed that the site will be accessible through Kiambu road. This is expected to contribute to increased traffic, especially during peak hours.

Mitigation measures include:

• The management team should seek relevant advice from the Ministry of Roads on the creation of an access entrance so as to reduce traffic congestion on the main highway;
• The management should assign personnel to be in charge of traffic within the building in order to avoid traffic congestion within the office parking areas and at the point of access to the building.

(f) Oil spills from vehicles in the parking area

Oil spills from the car parking area may emanate from leaking tanks of the parked vehicles, which may be detrimental to human health if not disposed of in the right manner.

Mitigation measures

• The management team should ensure that all run-off from the surfaces, including the parking area, are directed to assigned drainages, which should be fitted with interceptors to separate waste oil spills from the other waste water. This waste oil can then be separated for safe disposal.

(g) Occupational Health and Safety Hazards

Risk of accidents and incidents are prevalent throughout the operation phase of the project. The staff therefore needs health and safety training in order to be familiar with the steps to take in case of an emergency.

Mitigation measures include:

• The management team should ensure registration of all workplaces by the Directorate of Occupational Health and Safety Services (DOHSS) forming the basis of work statistics;
• The management team should provide a standard First Aid Kit on site. Recommendations for Employees exceeding fifty (50) as per the first Aid Rules section 2 (c);
• All works which may pose a hazard to personnel are to be protected, fenced, demarcated or cordoned off as instructed by the management team. If appropriate, symbol warning signs must be erected;
• For fire and safety, the management team, should ensure the following:
  o Place portable fire extinguishers at suitable locations in conformity to Factories and other places of work (Fire Risk Reduction) Rules, 2007 comprising of the following types:
  o Water extinguishers for Class A fires of ordinary combustible materials such as
paper, wood, cardboard and most plastics;
- Carbon dioxide extinguishers for extinguishing of Class B and C fires (Class B: flammable/combustible liquids such as gasoline, kerosene, grease and oil. Class C: Electrical equipment such as appliances, wiring, circuit breakers and outlets);
- Dry powder extinguishers for extinguishing of Class A, B and C fires.
- Development of fire emergency procedures and pinning-up in a place where all workers can access them;
- Training all staff on fire safety policy and procedures;
- Allocating a fire assembly point;
- Clearly marking fire exits within the site;
- Ensure safety warnings are prominently displayed on site, such as “No smoking”, “No naked flames”;
- Maintain an incident/accident register, in accordance with the Occupational Safety and Health Act 2007 and report incidences to DOHSS.

7.5 Decommissioning Phase

(a) Associated Activities

In the event that the commercial building is decommissioned, the primary activity is expected to be demolition and rehabilitation of the site. The following key activities should be considered:

- Noise pollution;
- Air/dust pollution;
- Liquid waste;
- Landscape design;
- Solid waste material;
- Social impacts;
- Occupational health & safety hazards.

(b) Noise Pollution

Activities likely to produce noise during decommissioning include cutting and demolition of structures.

Mitigation measures include:

- Schedule noisy activities during the day time period;
- Use silencers on machines where possible;
- Ensure machinery is well maintained to reduce noise emitted.

(c) Air/dust Pollution

This is expected to result from demolishing of structures in the AWSB & NCWSC operations building.

Mitigation measures include:

- Practice dust management techniques, including watering down dust;
- Set up dust barriers/ screens at strategic locations;
- Provide and enforce the appropriate use of Personal Protective Equipment (PPE) against dust.

(d) Liquid Wastes

These are likely to arise from cleaning and rinsing activities.
Mitigation measures include:

- Prudent use of water to reduce liquid waste volumes;
- Adhere to EMCA 2006 water quality regulations;
- Adhere to WRMA 2007 guidelines for effluent discharge into surface water resources;
- Ensure that sewage system is functional during the demolition process, to prevent pollution of nearby underground and surface water sources;
- Proper demolition of the sewage system to prevent pollution by contents into the environment and ground water, after completion of the demolition process.

(e) **Landscape design**

Decommissioning of the proposed project will be expected to result in minimal environmental/visual impact. If anything, the site will be expected to be left better than it was found.

Mitigation measures include:

- Consider leaving the environment as natural as possible as or better than before.

(f) **Solid Waste Material**

It is expected that large amounts of solid waste material arising during demolition will include stone, wood, glass, metal, paper, plastic, equipment, vegetation, etc. The proper disposal of these materials is critical.

Mitigation measures include:

- Disposal of solid waste in compliance with EMCA 2006 waste management regulations;
- Segregation of waste to encourage reuse and recycling;
- Ensuring that the contracted waste collector is registered with NEMA & City County of Nairobi to collect and dispose wastes.

(g) **Social Impacts**

During operation of the building, a variety of small business enterprises will be attracted to the area by the development, including cafes, fruit vendors, and petty traders, among others. These businesses will be lost/adversely affected during decommissioning of the office block. Some employees in the office block may also be rendered jobless.

Mitigation measures include:

- Provide early notice to all affected parties concerning decommissioning of the development;
- Dismissal procedures should be compliant with the Employment Act, 2007.

(h) **Occupational Health and Safety Hazards**

Occupational Health and Safety hazards such as falling objects, open pits, discarded sharp objects, and dust may all be a health risk to demolition workers. Risk of accidents and incidents will be heightened during the construction activities as construction workers will be in direct contact with heavy machinery and equipment.

Health, safety and security are important aspects through all the stages of the proposed project. Demolition activities associated with the project works may lead to health and safety hazards attributed to:

- **Unidentified or misidentified utilities**: Workers may be exposed to hazards such as electric shock, suffocation, or explosions if they unexpectedly come in contact with utility lines;
• **Hazardous atmospheres:** Workers may be exposed to hazards such as suffocation, chemical exposure, or explosions, if they enter excavations with hazardous atmospheres;

• **Structural instability:** Structures may become unstable if excavation occurs below the base of a building or equipment pad foundations, or below retaining wall footings. This may be fatal to the workers;

• **Water accumulation:** Water accumulation in excavations can cause sloughing of excavation sidewalls, resulting in unsafe conditions for those entering the excavation, particularly if the use of electrical equipment is required;

• **Falls:** Workers or passers-by may accidentally fall into open, unprotected excavations, or vehicles may accidentally be driven into uncovered or inadequately barricaded pits.

Mitigation measures include:

• The Contractor should ensure provision of appropriate Personal Protective Equipment (PPE) for staff such as:
  - Earmuffs for ear protection;
  - Helmets for head protection;
  - Dust masks for dust protection for all project works;
  - Goggles with good visibility for eye protection;
  - Overalls and dust coats to protect the skin;
  - High-visibility retroreflective fluorescent yellow-green, fluorescent orange-red/fluorescent red jackets with 360° visibility;
  - Safety Shoes for protection of the feet;
  - Gloves of different types according to specific works in relation to:
    - Puncture resistance;
    - Sharps resistance;
    - Cut resistance;
    - Flexibility;
    - Abrasion resistance;
    - Grip.

• The supervising consultant should ensure that the contractor complies with all standard and legally required health and safety regulations as set out by the Occupational Safety and Health Act (Part XI: Section 96) as pertains to demolition activities;

• The Contractor should provide a standard First Aid Kit on site. Recommendations for Employees exceeding fifty (50) [as per the first Aid Rules section 2 (c)] and Fourth Schedule of the Factories (Building Operations and Works of Engineering Construction) Rules 1984 part III regarding contents of First Aid Boxes that should comprise the following:
  - Copy of first aid leaflet (L.D. 250/1) issued by the Labour Department specified in Section 2 (b) and (c) of the First Aid Rules of 1977 of the OSHA Act;
  - Not less than 24 of small sterilized unmedicated dressings for injured fingers;
  - Not less than 12 of large sterilized unmedicated dressings for injured hands or feet;
  - Not less than 12 of large sterilized unmedicated dressings for injured parts;
  - Not less than 36 of adhesive wound dressings of a suitable type and assorted sizes;
  - Not less than 8 of triangular bandages of unbleached calico (longest side of which measures not less than 130 cm and each of the other sides not less than 91 cm);
  - Sufficient supply of adhesive plaster;
  - Sufficient supply of absorbent sterilized cotton wool (in 14 gram packets);
  - Sufficient supply of factory eye drops, BPC;
  - Not less than 8 sterilized eye pads in separate seal packets;
  - A rubber or pressure bandage;
  - Sufficient supply of safety pins.
All works, which may pose a hazard to humans and domestic animals are to be protected, fenced, demarcated or cordoned off as instructed by the supervising consultant. If appropriate, symbol warning signs must be erected;

For fire and safety the Contractor, should ensure the following:

  o Place portable fire extinguishers at suitable locations, according to the activities in the construction programme in conformity with the Factories and other places of work (Fire Risk Reduction) Rules, 2007 comprising of the following types:
  o Water extinguishers for Class A fires of ordinary combustible materials such as paper, wood, cardboard and most plastics;
  o Carbon dioxide extinguishers for extinguishing of Class B and C fires [(Class B: flammable/combustible liquids such as gasoline, kerosene, grease and oil. Class C: Electrical equipment such as appliances, wiring, circuit breakers and outlets)];
  o Dry powder extinguishers for extinguishing of Class A, B and C fires.
  o Maintaining of a Material Safety Data Sheet (MSDS) from the manufacturer for flammable gases and flammable combustible liquids indicating their flammable ranges in % per volume;
  o Development of fire emergency procedures and pinning them up in a place where all workers can access them;
  o Training all staff on fire safety policy and procedures;
  o Allocating a fire assembly point;
  o Clearly marking fire exits within the site;
  o Ensuring safety warnings are prominently displayed on site, such as “No smoking”, “No naked flames”;
  o Provide and enforce the use of Personal Protective Equipment (PPE);
  o Maintain an incident/accident register, in accordance with the Occupational Safety and Health Act 2007 and report incidences to the Directorate of Occupational Health and Safety Services (DOHSS).

The supervising consultant should ensure that the Contractor is instructed in the use of all materials that may have negative environmental (including health) effects;

The supervising consultant should ensure that if any material or substance is used that is at any point in the future deemed to be deleterious to health, then it must be replaced with an acceptable alternative;

The Contractor has to adhere to safety regulations outlined in the Local Government Adoptive by-laws, Building Order 1968 (Building Code) and the Building Operations and Works of Engineering Construction (The Occupational Safety and Health Act 2007);

The Contractor should ensure the following:

  o Appropriate training for Machine handling;
  o Provision of 2-way communication radios for site personnel to avoid shouting at work sites;
  o Establishment of a shift system for site personnel, to avoid effects of vibrations on staff health as a result of long exposure times to construction machinery emitting vibrations.

The contractor must ensure that all equipment is safely stored in its respective storage areas after use;

The contractor must ensure that workers are not allowed to use equipment before receiving instructions;

The contractor must ensure that all demolition workers vacate the premises before closure on a daily basis.

o
ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

The Environmental and Social Management Plan (ESMP) is prepared to show how site specific concerns and mitigation measures are addressed through the phases of the Project. To ensure that the negative environmental impacts can be controlled and mitigated effectively, a stringent and scientific management and monitoring plan has been prepared.

At completion of construction, ownership of the building will be transferred to Athi Water Services Board who will be responsible for implementation of environmental management measures associated with operation of the development.

8.1 Auditing of the ESMP

The supervising consultant shall conduct regular audits to ensure that the system for implementation of the ESMP is operating effectively. The audit shall check that a procedure is in place to ensure that:

- The ESMP being used is the up-to-date version;
- Variations to the ESMP, non-compliance and corrective actions are documented;
- Appropriate environmental training of personnel is undertaken;
- Emergency procedures are in place and effectively communicated to personnel;
- A register of major incidents (spills, injuries, complaints, legal transgressions, spot fines and penalties etc) is in place as well as other documentation mentioned in the ESMP;
- Ensure that appropriate corrective and preventive action is taken by the Contractor once instructions have been issued.

8.1.1 Responsibilities

In order to ensure the sound development and effective implementation of the ESMP, it will be necessary to identify and define the responsibilities and authority of the various persons and organisations who will be involved in the project. The following entities should be involved in the implementation of this ESMP:

- The project manager / Athi Water Services Board environmental specialist;
- Contractor;
- Supervising consultant;
- The local administration;
- NEMA.

(a) The project manager / Athi water services Board environmental specialist

It will be the responsibility of Athi Water Services Board to oversee or appoint a qualified and competent team to oversee the construction and operation phases of the proposed commercial building.

(b) Supervising Consultant

The supervising consultant will be required to oversee the construction programme and construction activities performed by the Contractor, in compliance with the ESMP.

The project management should co-ordinate all aspects of the environment during project implementation and operations. This should include following the construction to monitor, review and verify the implementation of the project’s ESMP.
(c) **The Contractor**

The contractor should be required to comply with the requirements of the ESIA, the ESMP within this report and other relevant legislations.

(d) **The Local Administration**

The relevant local administrators should be called upon, when required during project implementation, to provide the necessary advisory services and support to the project implementers.

(e) **NEMA**

The responsibility of the National Environment Management Authority (NEMA) is to exercise general supervision and co-ordination over all matters relating to the environment and to be the principal instrument of government in the implementation of all policies relating to the environment.

The table below outlines ways in which environmental aspects can be managed and monitored during the implementation of the project.

Table 8-1 sets out the potential impacts associated with construction of the proposed operational building, along with the management and mitigation measures, responsibility for implementation and the estimated costs and duration of implementation.
<table>
<thead>
<tr>
<th>No.</th>
<th>ITEM</th>
<th>ANTICIPATED IMPACT</th>
<th>MANAGEMENT AND MITIGATION</th>
<th>MONITORING ITEM</th>
<th>RESPONSIBLE PARTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Legal Compliance (Apply to all Phases)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A1</td>
<td>Compliance with all laws and regulations governing proposed operation</td>
<td>N/A</td>
<td>1. Prepare a legal register and ensure compliance with all laws and regulations</td>
<td>Legal Register</td>
<td>all phases</td>
</tr>
<tr>
<td>A2</td>
<td>Solid waste management</td>
<td>N/A</td>
<td>1. Comply with EMCA Waste Management Regulations 2006</td>
<td>Records on waste transportation should indicate NEMA licensed waste transporters</td>
<td>all phases</td>
</tr>
<tr>
<td>A3</td>
<td>Water quality</td>
<td>N/A</td>
<td>1. Comply with EMCA Water Quality Regulations 2006</td>
<td>Records on Quarterly effluent discharge monitoring reports.</td>
<td>all phases</td>
</tr>
<tr>
<td>A4</td>
<td>Building regulations</td>
<td>N/A</td>
<td>1. Comply with the Zoning requirements for the City County of Nairobi 2. Building code</td>
<td>Approval of building Plans before construction</td>
<td>all phases</td>
</tr>
<tr>
<td>A5</td>
<td>Noise</td>
<td>N/A</td>
<td>1. Comply with OSHA Noise Prevention and Control Rules 2. Comply with EMCA Noise and Excessive Vibration Pollution Regulations 2007</td>
<td>Records of noise levels taken by the contractor from time to time;</td>
<td>all phases</td>
</tr>
<tr>
<td></td>
<td>Site preparation phase</td>
<td></td>
<td></td>
<td></td>
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<td>---</td>
<td>------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B1</td>
<td>Transportation of materials to project site</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Traffic congestion due to breakdown of the transportation vehicles or too many trips done by the vehicles.</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Use well maintained and regularly serviced vehicles</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vehicle maintenance records</td>
<td>√</td>
<td>None</td>
<td>During Demolition of temporary structures and site preparation phase.</td>
<td></td>
</tr>
<tr>
<td>B2</td>
<td>Pollution from the off-loading exercises and also during transportation of the materials if they are not well packed.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pack the materials safely before transportation to avoid spills and falls</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N/A</td>
<td>√</td>
<td>None</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B3</td>
<td>Visual intrusion</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Interference with visual aesthetics of the environment</td>
<td></td>
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<tr>
<td></td>
<td>Reduce the visual intrusion of the structures through appropriate architectural techniques.</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>General inspection at the site.</td>
<td>√</td>
<td>√</td>
<td>None</td>
<td>Throughout the project cycle</td>
</tr>
<tr>
<td>B4</td>
<td>Landscape design</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Poor landscape due to excavations and other processes of construction causing environmental degradation.</td>
<td></td>
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<tr>
<td></td>
<td>Consider leaving the environment as natural as possible; Design around existing landmarks.</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>General inspection at the site.</td>
<td>√</td>
<td>None</td>
<td>Throughout the project cycle</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Construction Phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1</td>
<td>Pollution (Air, noise, solid waste, liquid waste)</td>
</tr>
<tr>
<td></td>
<td>Environmental degradation due to pollution from construction wastes.</td>
</tr>
</tbody>
</table>
|   | - Contractor must ensure all forms of waste are managed and controlled from escaping from within the construction site;  
  • Contractor must ensure that the person/company collecting wastes is licensed by NEMA and the City County of Nairobi (CCN) to collect and correctly dispose of waste;  
  • Contractor must ensure that the workers are dressed in suitable Personal Protective Equipment (PPE) so as to protect themselves from the hazardous effects of noise and air pollution |
|   | Environmental status during site visit. | √ | 50,000 | Weekly |
| C2 | Energy requirements |
|   | High energy requirements may result to misuse of energy producing resources. |
|   | - Utilize manual tools where possible;  
  • Ensure equipment is well and regularly maintained to minimize energy use;  
  • Prudent use of energy to reduce energy requirements. |
<p>|   | Power bills from KPLC. Records on fuel consumption for the vehicles and emergency generator on site if any. | √ | None | Throughout the project cycle. |
| C3 | Occupational health and safety hazards |
|   | Risks of accidents and injuries at the workplace if the contractor fails to observe health and safety at the site. |
|   | Contractor to adhere to all the requirements applicable to a workplace as stated out in OSHA 2007. |
|   | Accident Incidence register | √ | 100,000 | Throughout the project cycle. |</p>
<table>
<thead>
<tr>
<th>C4</th>
<th>Use and storage of hazardous materials</th>
<th>Poor handling of such substances may be harmful to human health and hazardous to the environment. Conduct training on proper handling of hazardous substances at the workplace. Ensure Safety Data Sheets are placed next to the substances.</th>
<th>Material Safety Data Sheets availability at the workplace.</th>
<th>✓</th>
<th>50,000</th>
<th>Throughout Construction phase.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C5</td>
<td>Fire risks/management</td>
<td>Fire risks during construction arise due to hot works and use of chemicals. Additionally, with the abundance of grass in the area, the risk of fire is normally high during the dry seasons. Place portable fire extinguishers at suitable location and according to the activities in the operation programme in conformity with the Factories and Other Places of Work (Fire Risk Reduction) Rules 2007; Development of fire emergency procedures and putting them up in a place where all workers can access them; Training all staff on fire safety policy and procedures; Allocating a fire assembly point; Clearly marked fire exits within the office park which should have been included in the designs; Ensuring safety warnings are prominently displayed such as &quot;No Smoking&quot;, &quot;No Naked Flames&quot;; Provide and enforce the use of Personal Protective Equipment (PPE); Maintain an accident/incident register, in accordance with the Occupational Safety and Health Act 2007 and report incidences to the Directorate of Occupational Health and Safety Services (DOHSS). Records on Fire Drills conducted on site. Availability of Fire safety procedures displayed at strategic points on site.</td>
<td>✓</td>
<td>150,000</td>
<td>Weekly</td>
<td></td>
</tr>
<tr>
<td>C6</td>
<td>Loss of habitat for some species through vegetation clearance</td>
<td>The site is covered with grasslands that harbour various biota, hence clearing the vegetation will result in loss of habitat for this biota. Contractor should ensure the recovery of exposed soils with grass and other ground cover as soon as possible; Contractor should ensure installation of temporary bunds for exposed soil and redirection of flows from heavy runoff areas that threaten to erode or result in substantial turbid surface runoff to adjacent water bodies; Contractor should ensure monitoring of areas of exposed soil during periods of heavy rainfall to ensure that any incidents of soil erosion are quickly controlled; Contractor should ensure construction related impacts such as erosion and cut slope destabilization should be addressed through landscaping and grassing, carting away and proper disposal of construction wastes; Contractor should ensure that recommended compaction of spoil areas is undertaken and effective drainage of spoil sites in order to avoid land instability in form of soil subsidence, slip and mass movement; Contractor should ensure landscaping of completed site; Areas compacted by vehicles during site preparation and construction should be scarified (ripped) by the Contractor in order to allow penetration of plant roots and re-growth of natural vegetation. Environmental status during site visit.</td>
<td>✓</td>
<td>20,000</td>
<td>Throughout Construction phase.</td>
<td></td>
</tr>
<tr>
<td>Column</td>
<td>Category</td>
<td>Notes</td>
<td>Mitigation Measures</td>
<td></td>
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<tr>
<td><strong>C7</strong></td>
<td>Traffic Congestion / road wear and tear</td>
<td>Heavy trucks that will be transporting construction materials to and from the site may cause wear and tear of the roads</td>
<td>Contractor must ensure that there is a backside access area to the site for the heavy vehicles so as to reduce traffic congestion at the main access; Contractor must ensure trucks carrying construction materials are in good condition and no materials fall on the road as truck moves to and from the site; Contractor should provide temporary road signs or notices to indicate on-going works; Contractor, together with supervising consultant, should plan itineraries for site traffic on a daily basis and avoid peak traffic periods; Contractor should effect traffic controls to avoid congestion and truck accidents on roads; The supervising consultant and Contractor should choose routes with less traffic in order to save on time for transportation of materials; Contractor should ensure due regard of driver to traffic regulations and insistence upon courtesy at all times to other road users. The site should have a traffic management plan, which is a visual layout of the site showing structures, roads, site storage, compound, pedestrian routes, etc; Contractor should ensure the trucks park only in designated parking areas; Contractor should ensure that the truck drivers adhere to and obey the speed limits; Contractor must also ensure that there are designated loading/unloading areas both on site and off site.</td>
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<td>Traffic status at the time of site visit ✓ None Throughout Construction phase.</td>
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<tr>
<td><strong>C8</strong></td>
<td>Impacts of earth and other construction material sourcing (e.g. illegal quarrying)</td>
<td>Natural resource depletion may occur through activities such as quarrying, mining and timber logging, if not rationally undertaken</td>
<td>The tender documents should specify required standards and certification for procurement of all materials and appliances; The sources of all construction materials should be from approved sources; for example, hardstone for building should be obtained from bona fide commercial quarries; The contractor should ensure that he sources construction materials sustainably; The contractor should ensure that the storage area for materials is good so as to avoid spoils e.g. rotting of timber products and hence need for replacements of the waste.</td>
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<td></td>
<td></td>
<td></td>
<td>Records on purchase of construction materials. ✓ None</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>C9</strong></td>
<td>Influx of workers from within and outside the project area</td>
<td>Worker influx may lead to increase in population which will create more pressure on the existing social utilities in the project area. The influx of immigrant workers may also lead to unplanned settlements as the workers compete for the limited resources.</td>
<td>The contractor shall hire local staff as much as practically possible; Adoption of the contractor code of conduct; Sensitization of the workers on the local cultures and beliefs to ensure there is harmony in the project area; AWSB should set up of a Grievance Redress Mechanism (GRM) for managing inquiries and complaints from the community.</td>
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<td></td>
<td></td>
<td></td>
<td>Record of employees especially unskilled staff employed by the contractor ✓ 20,000 Monthly</td>
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</tbody>
</table>
| C10 | Increase in HIV/AIDS prevalence and other diseases | Increase in HIV prevalence and other related diseases | The Contractor should ensure that prevention and management of HIV and STIs occurrences as a result of social interaction between immigrant workers and local populations is conducted through:  
• Education and sensitization of workers and the local communities on HIV and STIs including provision of condoms to the project team and the public;  
• The contractor has to institute HIV/AIDS awareness and prevention campaign amongst workers for the duration of the contract e.g. erect and maintain HIV/AIDS information posters at prominent locations as specified by the Resident Engineer;  
• The contractor has to ensure that staff are made aware of the risks of contracting or spreading sexually transmitted diseases. | Health awareness campaigns | ✓ | 100,000 | Throughout construction period |
| D1 | Pollution (Air, noise, solid waste, liquid waste) | Environmental degradation due to pollution from construction wastes. | Management should ensure that the stand-by generator is regularly monitored for noise emissions to ensure noise emitted is within the specified limits and will not be of any form of nuisance to the office occupants and neighbours;  
• Management should ensure that solid waste is collected in a centrally placed area and the person responsible for collecting the waste is licenced by NEMA and the City Council of Nairobi (CCN) to collect and dispose waste;  
• Management should ensure that there is adequate traffic management to reduce vehicle congestion around the site which may in turn lead to air pollution from vehicle exhaust systems and noise pollution. | Environmental status during site visit. Availability of a traffic Marshal | ✓ | 100,000 annually | Throughout the project cycle. |
| D2 | Energy requirements | High energy requirements may result to misuse of energy producing resources. | Utilize energy-efficient equipment mechanical energy, where possible;  
• Utilize manual tools where possible;  
• Utilize timers to ensure lights are automatically switched off when not in use;  
• Ensure equipment is well and regularly maintained to minimize energy use;  
• Prudent use of energy to reduce energy requirements. | Power bills from Kenya Power | ✓ | None | Throughout the project cycle. |
| D3 | Fire management | Fire risks during construction arise due to hot works and use of chemicals. Additionally, with the abundance of grass in the area, the risk of fire is high during the dry seasons. | Place portable fire extinguishers at suitable location and according to the activities in the operation programme in conformity with the Factories and Other Places of Work (Fire Risk Reduction) Rules 2007;  
• Development of fire emergency procedures and pinning them up in a place where all workers can access them;  
• Training all staff on fire safety policy and procedures;  
• Allocating a fire assembly point;  
• Clearly marking fire exits within the office park;  
• Ensuring safety warnings are prominently displayed such as “No Smoking”, “No Naked Flames”;  
• Provide and enforce the use of Personal Protective Equipment (PPE);  
• Maintain an accident/incident register, in accordance with the Occupational Safety and Health Act 2007 and report incidences to the Directorate of Occupational Health and Safety Services (DOHSS). | Records on Fire Drills conducted on site. Availability of Fire safety procedures placed at strategic points on site. | ✓ | 200,000 | Throughout the project cycle. |
<table>
<thead>
<tr>
<th></th>
<th>D4: Traffic congestion</th>
<th>Inconveniences caused to other road users due to traffic congestion.</th>
<th>The management should assign personnel to be in charge of traffic within the office park in order to avoid traffic congestion within the office park.</th>
<th>Traffic status at the time of site visit</th>
<th>✓</th>
<th>150,000 annually</th>
<th>Throughout the project cycle.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>D5: Oil spills from vehicles in parking area</td>
<td>Oil spills from the car parking area may generate from leaking tanks of the parked vehicles, which may be detrimental to soils and ground water if not disposed of in the right manner. Vehicle servicing on site should be restricted.</td>
<td>Management team should ensure that all run-off from the surfaces including the parking area are directed to assigned drainages which should be fitted with interceptors to separate waste oil spills from the other waste water. This waste oil can then be separated for safe disposal.</td>
<td>Records on any major oil spills on site. Status of the storm water run off points</td>
<td>None</td>
<td>✓</td>
<td>50,000</td>
</tr>
<tr>
<td></td>
<td>D6: Occupational health and safety</td>
<td>Health and safety risks from physical injury from slipping, falling and handling equipment; fire; inhalation of gas, oil or paint fumes and dust; handling hazardous material.</td>
<td>1. Assessment of HSE mitigation measures and recording of any matters arising as per Legal Notice No. 40 the Factories (Building Operations and Works of Engineering Construction) rules 1984</td>
<td>General register for entering a certificate of registration and records of accidents and incidences; Certificate of registration of contractors camp as a workplace</td>
<td>✓</td>
<td>None</td>
<td>Throughout the project cycle.</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>2. Develop a site safety action plan detailing safety equipment to be used, emergency procedures, a certified first aider, restrictions on sites, frequency and personnel responsible for safety inspections and controls</td>
<td>Existence of comprehensive Safety action plan; and check whether its being implemented</td>
<td></td>
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<tr>
<td></td>
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<td></td>
<td>3. All workmen should be provided with personal protective equipment (PPE) according to OSHA.</td>
<td>Records of PPE issue and renewal; If work is in progress, check whether PPE is used as required</td>
<td>✓</td>
<td>50,000</td>
<td>Throughout the project cycle.</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>4. These should be regular site reporting on health, safety and environment (HSE) issues by an appointed HSE representative of the contractor</td>
<td>Records of HSE issues raised and minutes of HSE meetings</td>
<td>✓</td>
<td>None</td>
<td>Throughout the project cycle.</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>5. Daily site inspections should be done to ensure safe work practices are adhered to</td>
<td>Records of daily site inspections by HSE manager of the contractor</td>
<td>✓</td>
<td>None</td>
<td>Throughout the project cycle.</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>6. All injuries that occur on site must be recorded in the accident register, and corrective actions for their prevention be instituted as appropriate</td>
<td>Check site register of accidents and first aid administration records</td>
<td>✓</td>
<td>None</td>
<td>Throughout the project cycle.</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>7. Site personnel should be encouraged to report “near-miss incidents” in order to avoid potential problems and increase safety awareness</td>
<td>A record of near mess incidents by the contractors HSE manager</td>
<td>✓</td>
<td>None</td>
<td>Throughout the project cycle.</td>
</tr>
<tr>
<td>E</td>
<td>Decommissioning phase of construction site</td>
<td></td>
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<tr>
<td>E1</td>
<td>Noise Pollution</td>
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<tr>
<td>Noise disturbances to the neighbourhood</td>
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<tr>
<td>• Schedule noisy activities during the day time period;</td>
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<td>• Use silencers on machines where possible;</td>
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<tr>
<td>• Ensure machinery is well maintained to reduce noise emitted.</td>
<td></td>
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<tr>
<td>Records on noise monitoring schedules carried on site.</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consultations to neighbours.</td>
<td>✓</td>
<td>✓</td>
<td>None</td>
<td>Weekly</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| E2 | Air dust pollution |
| Air pollution may cause respiratory infections to the workers and may spill to the neighbourhood. |
| • Practice dust management techniques, including watering down open areas (car park) or surroundings or plant grass on the open areas. |
| • Set up dust barriers/screens at strategic locations; |
| • Provide and enforce the appropriate use of Personal Protective Equipment (PPE) against dust. |
| Environmental status during site visit. |
| Consultations to neighbours | ✓ | ✓ | None | Weekly |

| E3 | Effluent and Liquid wastes |
| contamination of environment resulting in bad odours which is a source of nuisance to the neighbours and pedestrians and clients |
| • Prudent use of water to reduce liquid waste volumes; |
| • Adhere to EMCA 2006 water quality regulations; |
| • Adhere to WRMA 2007 guidelines for effluent discharge into surface water resources; |
| • Ensure sewage system is functional during the demolition process, to prevent pollution of nearby underground and surface water sources; |
| • Proper demolition of the sewage system to prevent pollution by contents into the environment and ground water, after completion of the demolition process. |
| Environmental status during site visit. |
| Effluent monitoring records done on a quarterly basis. | ✓ | ✓ | None | Quarterly |

| E4 | Solid waste material |
| Risk of accidents and incidents from poorly disposed pieces of glass metals and plastics may form breeding areas for disease carrying vectors. |
| • Disposal of solid waste in compliance with EMCA 2006 waste management regulations; |
| • Segregation of waste to encourage reuse and recycling; |
| • Ensuring that the contracted waste collector is registered with NEMA and the City County of Nairobi (CCN) to collect and dispose wastes. |
| Environmental status during site visit. |
| Records on waste transporters used on site. | ✓ | ✓ | None | Weekly |

| E5 | Social impacts |
| Upcoming businesses will be lost/adversely during decommissioning of the office block. |
| There will be loss of jobs to the workers within the development. |
| • Provide early notice to all affected parties concerning the development; |
| • Dismissal procedures of workers should be compliant with the Employment Act 2007. |
| Limited public consultations to the neighbours around the project site concerning the demolition exercise. | ✓ | ✓ | None | During decommissioning phase |

The cost will be determined in consultation with the relevant authorities.
| Occupational health and safety hazards | Risk of accidents and incidents | • Contractor should ensure registration of all workplaces by the Director, DOHSS;  
• Contractor should ensure provision of appropriate Personal Protective Equipment (PPE);  
• The supervising consultant should ensure that the contractor complies with all standard and legally required health and safety regulations;  
• Contractor should provide standard First Aid Kit on site;  
• All works which may pose a hazard to humans and domestic animals are to be protected, fenced, demarcated or cordoned off as instructed by the supervising consultant. If appropriate, symbol warning signs must be erected;  
• Contractor should adhere to safety regulations outlined in the Local Government Adoptive by-laws, Building Order 1988 (Building Code) and the Building Operations and Works of Engineering Construction;  
• Contractor must ensure all equipment is safely stored in its respective storage areas after use;  
• Contractor must ensure workers are not allowed to use equipment before receiving instructions;  
• Contractor must ensure that all demolition workers vacate the premises before closure on a daily basis. | Records on health and safety promotion programmes available on site. | ✓ | ✓ | The cost will be determined in consultation with Department of Occupational Health and Safety of the Ministry of Labour During decommissioning phase. | 1,040,000 |
<table>
<thead>
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<tr>
<td>TOTAL ESMP COST</td>
<td></td>
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<td>1,040,000</td>
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</table>
CONCLUSIONS & RECOMMENDATIONS

This document is an Environmental and Social Impact Assessment (ESIA) Project Report for the proposed AWSB & NCWSC Operations building. The development entails the construction of office building and a disaster response center.

The proposed project will have numerous positive impacts including creation of employment; quality and modern office spaces for AWSB, improved infrastructure, improved disaster response by NCWSC among others as outlined in the report.

The negative environmental impacts that will result from establishment of the project include increased pressure on infrastructure; air pollution, generation of wastes among others which however can be mitigated. AWSB, who is the proponent for the proposed project shall be committed to putting in place several measures to mitigate the negative environmental, safety, health and social impacts associated with the development cycle of the proposed building.

It is recommended that in addition to this commitment, the proponent shall focus on implementing the measures outlined in the ESMP as well as adhering to all relevant national and international environmental, health and safety standards, policies and regulations that govern establishment and operation of such a project. It is also recommended that the positive impacts that emanate from such activities shall be maximised as much as possible. It is expected that these measures will go a long way in ensuring the best possible environmental compliance and performance standards.

The project is estimated to cost KShs 284,295,278.00 and is anticipated to be complete by end of 2018.
10 APPENDICES

i. Appendix 1: Building plans
ii. Appendix 2: Correspondence with Nairobi City County on Land ownership and approval
iii. Appendix 3: Chance find procedure
iv. Appendix 4: Filled Questionnaires
v. Appendix 5: Minutes of public meeting and attendance list
vi. Appendix 6: Attendance sheet of MNRA meeting
vii. Appendix 7: Sample of Contractor's code of conduct
APPENDIX 1: BUILDING PLAN
1st FLOOR PLAN
L[104]
1:100
- All conduits must be laid before plastering.
- Conflicts must be clarified before work begins.
- All mechanical work must be coordinated with electrical and any other services with the express approval of the Architect or S.E.
- No chases will be allowed in the slabs for the pipes. Sleeves will be used for all conduits.
- A 150mm concrete surround is required for all conduits.
- Drains passing beneath buildings and driveways to be encased in 500mm concrete.
- All service ducts to be accessible from all floors.
- All dimensions are shown in mm unless otherwise specified.
- All specifications are to be complied with and followed.
- The contractor must check and verify all dimensions on site before starting work.
- All ironwork must be checked and verified by the Architect before proceeding.
- All steel must be galvanized and painted at the factory.
- All slabs at ground level to be poured over 1000 gauge polythene sheeting on 50mm stone dust, on hardcore.
- All soils on cut embankments to be stabilized. The slope not to exceed 1:3.
- Sheet metal to be used as temporary sheeting on 50mm stone dust, on hardcore.
- All black cotton soils to be removed from below all buildings and all paved surfaces to be clear of black cotton soil to a distance of 3m outside the perimeter.
- All soils on cut embankments to be stabilized. The slope not to exceed 1:3.
- Sheet metal to be used as temporary sheeting on 50mm stone dust, on hardcore.
- All black cotton soils to be removed from below all buildings and all paved surfaces to be clear of black cotton soil to a distance of 3m outside the perimeter.

**NOTES**

- All dimensions are shown in mm unless otherwise specified.
- All specifications are to be complied with and followed.
- The contractor must check and verify all dimensions on site before starting work.
- All ironwork must be checked and verified by the Architect before proceeding.
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- All black cotton soils to be removed from below all buildings and all paved surfaces to be clear of black cotton soil to a distance of 3m outside the perimeter.

**REVISIONS**

- As Shown

**ELEVATIONS**

- ELEVATION 1-150 SCALE 1:100
- ELEVATION 1-150 SCALE 1:100

**PROJECTS**

- PROPOSED OPERATIONAL BUILDING FOR ATHW WATER SERVICES BOARD ON PLOT 68, MIRRO COUNTY

**Client**

- ATHW WATER SERVICES BOARD, P.O. BOX 4320-0060, MARIBA, KENYA

**Architect**

- Aakil Consultants, Architects and Urban Designers

**Architects and Urban Designers**

- Architects and Urban Designers

**Website**

- www.aaki.co.ke

**Email**

- info@aaki.co.ke

**Date**

- MARCH 2017
All conduits must be laid before plastering.

Conflicts must be clarified before work begins.

All mechanical work must be coordinated with electrical and any other services.

All testing of pipes must be completed before plastering.

Minimum slope in the drain to be 1%.

The storm water pipe to comply with BS 556.

All inspection chambers covers and framing shall be cast iron to comply with BS 556.

All underground foul and waste drain pipes shall be upvc to comply with BS 556.

SVP denotes soil vent pipe to be provided at the head of the drainage system.

All service ducts to accessible from all floors.

All plumbing and drainage to comply with city council specifications.

MECHANICAL

COMMENCEMENT

The contractor must check and verify all dimensions on site before the commencement of any work.

The main contractor is responsible for the completion and acceptance of the contract and shall be permitted to continue.

Drawings are not to be scaled. Only figured dimensions to be used.

All dimensions are shown in mm unless otherwise specified.

Structural

Depth of the foundation to be determined on site to S.E's approval.

Paved surfaces.

Buildings to be clear of black cotton soil to a distance equal to the width of the building.

All framed surfaces to be poxened for termite control.

All slabs at ground level to be poured over 1000 gauge polythene sheet.

Concrete to be laid in bed of 3 inches of 1:6 concrete.

Minimum 4 inch slab to be provided at ground level.

Minimum 2 inch slab to be provided at roof level.

Minimum 1.5 inch slab to be provided at first floor.

Concrete to be compacted with vibrating plate before packing.

Architects and Urban Designers

K.Muraya

Architect's signature

Date: 07/03/2017

Drawn: 07/03/2017

Scale: 1:60

Sheets: 3 of 10

Architects and Urban Designers

Asahi Consultants

Architects and Urban Designers

K.Muraya

Architect's signature

Date: 07/03/2017

Drawn: 07/03/2017

Scale: 1:60

Sheets: 3 of 10
APPENDIX 2: CORRESPONDENCE WITH NAIROBI CITY COUNTY ON LAND OWNERSHIP AND APPROVAL
OFFICE OF THE GOVERNOR
COUNTY SECRETARY AND HEAD OF COUNTY PUBLIC SERVICE

Our Ref: LS/06/20/09/RM/zmr

20th September, 2017

The Chief Executive Officer
Athi Water Services Board
P.O. Box 45283-00100
Nairobi

RE: PROPOSED CONSTRUCTION OF AWSB AND NCWSC OPERATIONS BUILDING REQUEST FOR APPROVAL FOR CONSTRUCTION OF OFFICE BUILDING


Please note records at the Nairobi City Water & Sewerage Company (NCWSC) indicate the company paid a sum of Kenya Shillings Thirty Million only (Kshs. 30,000,000) to Joreth Limited, a private entity, as ordered by consent in the Decree issued by the High Court of Kenya on 23rd October, 2002 in the Civil Suit No. 873 of 2002. The precise details of the transaction(s) may be obtained from NCWSC.

We are therefore of the view the subject land is County Land and further that the NCWSC and AWSB may be allowed to construct the above office building as requested. You may submit your proposal to the County Chief Officer for Urban Planning for the necessary consideration and advice.

Further, please note vide our letter ref. no. LS/006/001368/RM/mk dated 28th June, 2017 (copy attached) we requested M/s Kamwere & Associates, Private Surveyors who surveyed the subject land, to surrender the original Deed Plan for the land to
the County Government to enable registration of the same in favour of the County Government.
By a copy of this letter the County Chief Officers for Urban Planning and Environment, Water & Energy have been advised accordingly.

S.G. MWANGI - LS (K)
FOR: COUNTY SECRETARY
APPENDIX 3: CHANCE FIND PROCEDURE
CHANCE FIND PROCEDURE

OBJECTIVE
To provide guideline to consultants during civil works, in case cultural heritages object or objects are discovered. It should be incorporated into the EMP and civil works contracts.

SCOPE
From: Commencement of civil works
To: Completion of civil works

RESPONSIBILITIES
• Contractor
• Project Manager
• Project Engineer

THE PROCEDURE
i. If the Contractor discovers archeological sites, historical sites, remains and objects, including graveyards and/or individual graves during excavation or construction, the Contractor shall:

• Stop the construction activities in the area of the chance find;
• Delineate the discovered site or area;
• Secure the site to prevent any damage or loss of removable objects.
• In cases of removable antiquities or sensitive remains, a night guard shall be arranged until the responsible local authorities or the Ministry of State for National Heritage and Culture take over;
• Notify the supervisory Project Environmental Officer and Project Engineer who in turn will notify the responsible local authorities and the Ministry of State for National Heritage and Culture immediately (within 24 hours or less);

ii. Responsible local authorities and the Ministry of State for National Heritage and Culture would then be in charge of protecting and preserving the site before deciding on subsequent appropriate procedures. This would require a preliminary evaluation of the findings to be performed by the archaeologists of the National Museums of Kenya. The significance and importance of the findings should be assessed according to the various criteria relevant to cultural heritage, namely the aesthetic, historic, scientific or research, social and economic values.

iii. Decisions on how to handle the findings shall be taken by the responsible authorities and the Ministry of State for National Heritage and Culture. This could include changes in the layout (such as when finding irremovable remains of cultural or archeological importance) conservation, preservation, restoration and salvage.

iv. Implementation for the authority decision concerning the management of the finding shall be communicated in writing by relevant local authorities.

v. Construction work may resume only after permission is given from the responsible local authorities or the Ministry of State for National Heritage and Culture concerning safeguard of the heritage.

MEASUREMENT
The effectiveness of this procedure will be shown by the level of deviation.
ENVIRONMENT IMPACT ASSESSMENT FOR PROPOSED ATHI WATER SERVICES BOARD OFFICE BUILDING IN KARURA, MUTHAIGA NORTH SUB-COUNTY, NAIROBI COUNTY

Stakeholders Participation Questionnaire

To whom it may Concern,

Athi Water Services Board is proposing to construct office building, which will comprise of ground floor (1,230m²), first floor (1,040m²) and terrace floor (240m²). The Environmental (Impact Assessment and Audit) Regulations (2003) require that all projects listed in the Second Schedule of the Environmental Management and Co-ordination Act must undertake and EIA and submit the report to the National Environment Management Authority (NEMA). As an import part of this exercise, consultations are held with members of the immediate community, and interested & affected parties in order to obtain their views regarding the proposed project.

1. Details of the Respondent

<table>
<thead>
<tr>
<th>Name</th>
<th>Id No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>NICOLAUS KARIA</td>
<td>13451766</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mobile No:</th>
<th>Date:</th>
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</thead>
<tbody>
<tr>
<td>0708860755</td>
<td>26/11/2017</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Position/Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHAIRMAN - WEST END COURT</td>
</tr>
</tbody>
</table>

2. We kindly request you to provide your comments on any issue of concern or your recommendations that should be considered as of the proposed office building for Athi Water Services Board.

WE HAVE NO OBSESSION

________________________________________
SIGNATURE

-End-
ENVIRONMENT IMPACT ASSESSMENT FOR PROPOSED ATHI WATER SERVICES BOARD OFFICE BUILDING IN KARURA, MUTHAIGA NORTH SUB-COUNTY, NAIROBI COUNTY

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1. Details of the Respondent

<table>
<thead>
<tr>
<th>Name</th>
<th>ID No.</th>
<th>Date</th>
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</thead>
<tbody>
<tr>
<td>TITUS N. MATINZI</td>
<td>0689445</td>
<td>27/7/2017</td>
</tr>
</tbody>
</table>

2. We kindly request you to provide your comments on any issue of concern or your recommendations that should be considered as of the proposed office building for Athi Water Services Board.

1. Approved plans by the NCCG should be obtained.
2. Before inauguration after completion, an Operation Certificate should be obtained.
3. Before any work is started, a site toilet should be provided after the sitting and grant of a site toilet permit.

SIGNATURE

-PUBLIC HEALTH DEPARTMENT
-HEALTH INSPECTORATE C.O.N.
-DEVELOPMENT CONTROL

Date: 27/7/2017
Sign:........
ENVIRONMENT IMPACT ASSESSMENT FOR PROPOSED ATHI WATER SERVICES BOARD OFFICE BUILDING IN KARURA, MUTHAIGA NORTH SUB-COUNTY, NAIROBI COUNTY

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1. Details of the Respondent

<table>
<thead>
<tr>
<th>Name</th>
<th>ID No.</th>
<th>Mobile No.</th>
<th>Position/Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>[REDACTED NAME]</td>
<td>[REDACTED ID]</td>
<td>[REDACTED MOBILE NO.]</td>
<td>Nairobi County Urban Planning Department</td>
</tr>
</tbody>
</table>

2. We kindly request you to provide your comments on any issue of concern or your recommendations that should be considered as of the proposed office building for Athi Water Services Board.

To achieve zoning, density and guidelines what changes Apollo block in Muthaiga

\[\text{Embedded rectangular box with signature fields}\]

SIGNATURE

-End-

[REDACTED RECEIVED STAMP]
ENVIRONMENT IMPACT ASSESSMENT FOR PROPOSED ATHI WATER SERVICES BOARD OFFICE BUILDING IN KARURA, MUTHAIGA NORTH SUB-COUNTY, NAIROBI COUNTY

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1. Details of the Respondent

<table>
<thead>
<tr>
<th>Name</th>
<th>Lawrence Mutungi</th>
<th>ID No.</th>
<th>23932504</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile No.</td>
<td>0728322636</td>
<td>Date</td>
<td>27/07/17</td>
</tr>
<tr>
<td>Position/Organization</td>
<td>Nairobi City County</td>
<td></td>
<td>Deputy Director Env</td>
</tr>
</tbody>
</table>

2. We kindly request you to provide your comments on any issue of concern or your recommendations that should be considered as of the proposed office building for Athi Water Services Board.

1. Undertake to have all licences required from Nairobi County Government
2. Properly dispose of all waste & debris arising from the construction works
3. Adherence to the environmental mitigation plan as provided for in the EIA document

SIGNATURE

-End-

28 Jul 2017
ENVIRONMENT IMPACT ASSESSMENT FOR PROPOSED ATHI WATER SERVICES BOARD OFFICE BUILDING IN KARURA, MUTHAIGA NORTH SUB-COUNTY, NAIROBI COUNTY

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<tr>
<th>Name</th>
<th>ID No.</th>
<th>Date</th>
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</thead>
<tbody>
<tr>
<td>Wilfred Koech</td>
<td>13071404</td>
<td>28/01/2017</td>
</tr>
<tr>
<td>Mobile No:</td>
<td>0722670119</td>
<td></td>
</tr>
<tr>
<td>Position/Organization</td>
<td></td>
<td>Kenya Water</td>
</tr>
</tbody>
</table>

2. We kindly request you to provide your comments on any issue of concern or your recommendations that should be considered as of the proposed office building for Athi Water Services Board.

- During construction, proper measures need to be taken to ensure safety. Perimeter infrastructure, construction should be done away from the live power line and request for relocation can be made in case there are within the plot.
- The component should be installed, proper land safety and appropriate tree species.
- No entry to nearby court.
- Ensure OHSMS safety and health principles are adhered to.
- Ensures personal safety. The caution are not in place.

SIGNATURE

THE KENYA POWER AND ILLUMINATION COMPANY LTD.
P.O. Box 30099, NAIROBI.
ENVIRONMENT IMPACT ASSESSMENT FOR PROPOSED ATHI WATER SERVICES BOARD OFFICE BUILDING IN KARURA, MUTHAIGA NORTH SUB-COUNTY, NAIROBI COUNTY

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<th>ID No.</th>
<th>12962376</th>
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<tbody>
<tr>
<td>Mobile No.</td>
<td></td>
<td>0725847441</td>
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<tr>
<td>Date</td>
<td></td>
<td>24/8/2017</td>
</tr>
<tr>
<td>Position/Organization</td>
<td></td>
<td>Environment Coordinator WCWSU</td>
</tr>
</tbody>
</table>

2. We kindly request you to provide your comments on any issue of concern or your recommendations that should be considered as of the proposed office building for Athi Water Services Board.

The construction work will utilise water from NWSC. Ensure that during construction you open an account and take delivery of the water. This is a reserved area hence we expect that you connect to the sewerage system to manage your wastewater during and after construction. Also, ensure that you deal with the existing water and sewerage infrastructure.

SIGNATURE

[Signature]

-Water Resources and Sewerage Co Ltd-

[Stamp] 24 Aug 2017

-Manager, Environment & Compliance Manager-

P.O. BOX 306546 - 00100, NAIROBI
ENVIRONMENT IMPACT ASSESSMENT FOR PROPOSED ATHI WATER SERVICES BOARD OFFICE BUILDING IN KARURA, MUTHAIGA NORTH SUB-COUNTY, NAIROBI COUNTY

Stakeholders Participation Questionnaire

To whom it may Concern,

Athi Water Services Board is proposing to construct office building, which will comprise of ground floor (1,230m²), first floor (1,040m²) and terrace floor (240m²). The Environmental (Impact Assessment and Audit) Regulations (2003) require that all projects listed in the Second Schedule of the Environmental Management and Co-ordination Act must undertake and EIA and submit the report to the National Environment Management Authority (NEMA). As an import part of this exercise, consultations are held with members of the immediate community, and interested & affected parties in order to obtain their views regarding the proposed project.

1. Details of the Respondent

<table>
<thead>
<tr>
<th>Name</th>
<th>Footer K. Cthirwqy LTD</th>
<th>ID No.</th>
<th>23214279</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile No:</td>
<td>0721849459</td>
<td>Date:</td>
<td>11092017</td>
</tr>
<tr>
<td>Position /Organization</td>
<td>Alpha Automobile LTD</td>
<td></td>
<td></td>
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</tbody>
</table>

2. We kindly request you to provide your comments on any issue of concern or your recommendations that should be considered as of the proposed office building for Athi Water Services Board.

This is a good move towards the right direction as I believe this will lead to efficient operation of day to day activities towards a better & regular supply of water to us.

SIGNATURE

ALPHA AUTOMOBILE LTD
P.O. BOX 14312, 00506, NAIROBI
TEL: 020 8640336

-End-

11092017
APPENDIX 5: MINUTES OF PUBLIC MEETING AND ATTENDANCE SHEET
MINUTES OF PUBLIC PARTICIPATION MEETING HELD AT THE SITE FOR THE PROPOSED ATHI WATER OPERATIONS BUILDING AT MUTHAIGA NORTH, NAIROBI, ON 02-10-17 FROM 12.00HRS TO 13.30HRS

Present

Muthaiga North Residential Association (MNRA)
1. Mathara Mwangi - Chairman (MNRA)
2. Lynnette Njogu - Treasurer (MNRA)
3. Nicholas Karia - member
4. Joe Noor - member
5. Job Njiri - member
6. Wilson Kinywa - member

Kenface Enconsults (A) Ltd
1. Peter Muriuki
2. Marceline Motaroki
3. Irene Mutahi

Athi Water Service Board (AWSB)
1. Eng. Joshua W. Ichangi
2. Eunice Jemutai

Aaki Consultants
1. Douglas Mugo
2. Charles Mwangi

The signed attendance sheet is attached.

Agenda
i. Public participation and consultation on the proposed construction of the Athi water service Board Operation Building; and
ii. Seeking a no-objection to construct the building within Muthaiga North area

Introduction

Four teams representing Athi Water Service Board (AWSB), Kenface Enconsults (Africa) Limited (The ESIA Experts), Aaki Consultants (the architects) and Muthaiga North Residents Association (MNRA) met and surveyed the site including the proposed access and alternative access (entry/exit) points. This was followed by a brief meeting on site.
The Chairman, MNRA Mr. Mathara Mwangi welcomed all members to the meeting and he introduced his team comprising of several court chairmen and MNRA treasurer. He also acknowledged the presence of the other teams.

AWSB explained that the propped building will consist of an office block with two floors i.e. ground floor, 1st floor and a terrace. A parking space will also be constructed for Nairobi City Water and Sewerage Company (NCWSC) which will act as a disaster response center. Water bowsers, collapsible tanks among other emergency equipment will be stored here.

The meeting was informed that the land is public and it belongs to Nairobi City County. It was acquired in the 90's during the construction of the 3rd Nairobi water supply project.

Issues raised

1. Access on Kiambu Road

The AWSB and the architects’ teams explained that AWSB is proposing to construct the office block because of the existing space challenges at Africa-Re Centre Upperhill where the board is currently leasing office space. The current staff numbers is 60 and projected to raise to a maximum of 80 including staff from NCWSCand approximately 50% of the staff will be driving. The office is purely for administrative purposes and no commercial services/ activities will be rendered here. Hence, incremental traffic flow will be minimal and against MNRA flow. The few NCWSCemergency response trucks will be idle most of the times and will only be used occasionally. The operations will run from Monday to Friday from about 7.00am to 5.30pm with no major activities over the weekend. The total expected traffic flow per day is 50 cars.

For these reasons, all the parties agreed that the main access road should remain where it is along Coffee Garden Drive and AWSB will look into possibilities of expanding the existing gate.AWSB and NCWSCwill have their own internal access/exit arrangements.

2. Waste management

This was a concern raised by MNRA considering that there is a water reservoir tank for drinking water on site and solid waste is a major concern in many construction sites and offices.

Kenface and AWSB teams explained that an environmental management and monitoring plan (EMMP) has been developed to guide and address all environmental related concerns during the construction phase. The contractor with supervision from AWSB
environmental team will ensure the site is fenced off from the water reservoir area and that no water pollution or contamination occurs. During operation, a NEMA licensed waste handler will be contracted by AWSB to handle all solid wastes from the office block and dispose appropriately as guided by the solid waste regulations, 2006.

The meeting was also informed that a bio-digester will be installed on site to treat liquid effluent of which the recycled water will be reused for landscaping. In this case, liquid effluent is not expected to contaminate water at the reservoir and that the reservoir tank is completely sealed thus, no seepage of effluent in to the tank is expected.

3. Security

The MNRA team wanted to know how AWSB will handle several security concerns as a result of the new activities. MNRA noted that there have been cases of theft within the area and that the association has been trying to seal all loopholes within the area. The team had several requests to AWSB that can be implemented as part of their corporate social responsibility (CSR) policy. The AWSB team explained that the following security measures will be put in place:

a) Currently officers from Kenya Police secure the site at night
b) Two private security teams will be hired, one each for AWSB and NCWSC available on site on 24 hours.
c) Although fencing wasn’t in the original scope, MNRA pointed its importance and AWSB agreed to include it in their appraised scope which may include heavy duty chain link, masonry wall or electric fence.
d) A floodlight is in the design and will be installed within the compound to light the road. MNRA was confident that this will serve to minimize muggings of residents including school children along the currently unlit road. MNRA proposed that the lighting should be a high mast flood light.
e) Erect a fence as a deterrent for matatus and trucks at the existing barrier point within Coffee Garden Drive. This will include construction of a guard house and toilet for guard use at this point. It was proposed that this should be done at the initial stages of the project. AWSB through AAKi consultants will design the guard house while MNRA will provide the design of the fence. However, MNRA will liaise with KURA, the Nairobi City County and any other relevant authorities to ensure the designs are approved.
f) Any food to be sold to workers will be served within the AWSB premises and not on the road to avoid cropping up of kiosks within the vicinity. This can be a potential security threat and nuisance. During operation phase, AWSB will seek services of caterers to further deter kiosk operators.
4. Construction period

The MNRA sought to know when the project will start and the expected construction period. They were informed that the procurement process for the contractor is almost complete and the contractor is expected on site in November. The meeting was informed that the building will be constructed for a period of 12 to 18 months. There will be a temporary access road from Sharks Palace during construction period to be used by construction equipment and personnel.

5. Membership to MNRA

The chairman proposed that AWSB be incorporated as a member of the residents association and AWSB was in agreement with the proposal. This will be done as soon as possible to enable proper bonding and full exploitation of any opportunities and projects that may lead to mutual benefits.

Conclusions

- Since the proposed site is near Karura forest, it was suggested that the building to incorporate a lot of greening and to avoid felling of trees. This will ensure the area does not look like a concrete jungle.
- The chairman thanked all for attending and keeping time and for their valuable contributions. He expressed hope that the new neighbour will contribute positively to the welfare of the neighbours including CSR projects.
- AWSB guaranteed that their team is experienced enough and will be able to handle and address all the issues raised.
- The ESIA consultants pledged to have the minutes done by close of business 2nd October and share with AWSB and MNRA on 3rd October before their full court meeting same day in the evening. They also requested MNRA to sign the questionnaires provided as soon as possible to enable completion of the ESIA report.

There being no other business, the meeting was adjourned at 1.30 p.m
Signed by the parties

1. For AWSB
   Name: Ennie C Chebetich
   Position: Environmental Officer
   Sign: [Signature]

2. For MNRA
   Name: [Name]
   Position: [Position]
   Sign: [Signature] 072420238

3. For ESIA consultants
   Name: Peter Mwunuki
   Position: Lead Expert
   Sign: [Signature]
<table>
<thead>
<tr>
<th>NO</th>
<th>NAME</th>
<th>POSITION /BUSINESS REPRESENTED</th>
<th>CONTACTS</th>
<th>SIGNATURE</th>
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<tbody>
<tr>
<td>1</td>
<td>Nick Hamilton</td>
<td>MNRA</td>
<td>0722528361</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Joe Noor</td>
<td>MNRA</td>
<td>0734880238</td>
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<tr>
<td>3</td>
<td>Lyndel Njobu</td>
<td>MNRA</td>
<td>070163312</td>
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<td>4</td>
<td>Job Njiru</td>
<td>AAI CONSULTANTS</td>
<td>0715554444</td>
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<tr>
<td>5</td>
<td>Charles Machingi</td>
<td>AAI CONSULTANTS</td>
<td>0722857197</td>
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<tr>
<td>6</td>
<td>Wilson Kiyinga</td>
<td>AAI CONSULTANTS</td>
<td>0728817612</td>
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<tr>
<td>7</td>
<td>Douglas Mugo</td>
<td>AAI CONSULTANTS</td>
<td>0725573359</td>
<td></td>
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<tr>
<td>8</td>
<td>Martin Muriuki</td>
<td>AAI CONSULTANTS (Chairman)</td>
<td>0722420238</td>
<td></td>
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<tr>
<td>9</td>
<td>Kuniy Samuel</td>
<td>AAI CONSULTANTS (Office)</td>
<td>0721721220</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Eng Joshua W.</td>
<td>AAI CONSULTANTS (Senior Engineer)</td>
<td>0721606958</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>MARGOLINE MOTAROK</td>
<td>KENFACE CONSULTANTS</td>
<td>0725945184</td>
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</tr>
<tr>
<td>12</td>
<td>Peter Munyani</td>
<td>KENFACE CONSULTANTS</td>
<td>0721451258</td>
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<tr>
<td>13</td>
<td>Irene Mutahi</td>
<td>KENFACE CONSULTANTS</td>
<td>0721712860</td>
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</tbody>
</table>
APPENDIX 6: ATTENDANCE SHEET OF MNRA MEETING
To whom it may Concern,

Athi Water Services Board is proposing to construct office building, which will comprise of ground floor (1,230m²), first floor (1,040m²) and terrace floor (240m²). The Environmental (Impact Assessment and Audit) Regulations (2003) require that all projects listed in the Second Schedule of the Environmental Management and Co-ordination Act must undertake and EIA and submit the report to the National Environment Management Authority (NEMA). As an import part of this exercise, consultations are held with members of the immediate community, and interested affected parties in order to obtain their views regarding the proposed project.

1. Details of the Respondent

<table>
<thead>
<tr>
<th>Name</th>
<th>ID No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>John Mathaihia Mwangi</td>
<td>5784175</td>
</tr>
<tr>
<td>Mobile No:</td>
<td>084175</td>
</tr>
<tr>
<td>Date:</td>
<td>3/10/2017</td>
</tr>
<tr>
<td>Position/Organization</td>
<td>Muthaiga North Residents Association, Chair.</td>
</tr>
</tbody>
</table>

2. We kindly request you to provide your comments on any issue of concern or your recommendations that should be considered as of the proposed office building for Athi Water Services Board.

1. Caroline Karia (Secretary MNRA) 08110
2. Lynette Ngunu (Treasurer MNRA) 03/10/2017
3. Wilson Kanya - Limau Court
4. Nicholas Karia (Chairman, Western Court)
5. Jos Njiru (Chairman, Central Park)
6. Joe Nderu (Member, West End Park)
7. Yusuf Omar (Chairman, Muthaiga Dam)
8. Kindly note the Resident comments are incorporated in the minutes attached.

Signature

MUTHAIGA NORTH RESIDENTS ASSOCIATION
P.O. Box 52251-00200, NAIROBI
ENVIRONMENT AND SOCIAL IMPACT ASSESSMENT FOR THE PROPOSED ATHI WATER SERVICES BOARD OFFICE BUILDING IN KARURA, MUTHAIGA NORTH SUB-COUNTY, NAIROBI COUNTY

Stakeholders Participation Questionnaire

To whom it may concern,

Athi Water Services Board is proposing to construct office building which will comprise of ground floor (1,230m²), first floor (1,040m²) and terrace floor (240m²). The Environmental (Impact Assessment and Audit) Regulations (2003) requires that all projects listed in the second schedule of the Environmental Management and Co-ordination Act must undertake an Environmental and Social Impact Assessment and submit the report to the National Environment Management Authority (NEMA). As an important part of this exercise, consultations are held with members of the immediate community, interested and affected parties in order to obtain their views regarding the proposed project.

1. Details of the respondent

<table>
<thead>
<tr>
<th>Name</th>
<th>S. K. Muriuki</th>
<th>ID No: 0189233</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile No:</td>
<td>0722 721775</td>
<td>Date 25-01-2018</td>
</tr>
<tr>
<td>Position/Organization</td>
<td>Kenya Forestry Service</td>
<td></td>
</tr>
</tbody>
</table>

2. We kindly request you to provide comments on any issue of concern and your recommendations that should be considered for the proposed office building of Athi Water Services Board.

After being explained the plan where the project will be located we have no objection to the project. We hope that the Water Services Board will bring the service close to the Stakeholders, the Kenya Forest service being one of them.

 endeavored to consult the Muthaiga North Residents association to hence this is low housing density area.

Signature: [Signature]

Stamp: KENYA FORESTRY SERVICE. NO

RECEIPT NO: 25 JAN 2018
APPENDIX 7: SAMPLE CONTRACTOR’S CODE OF CONDUCT
CONTENTS

1. INTRODUCTION ................................................................................................................. 2
2. Core Values .......................................................................................................................... 2
3. Compliance Program and Guidelines .................................................................................. 3
   3.1. Construction Business Standards ..................................................................................... 3
4. Accident and Injury Prevention .......................................................................................... 3
5. Equal Employment Opportunity and Other Employment Laws ....................................... 4
   6.1. Gender based violence, sexual harassment and Child Abuse/Exploitation Code of Conduct ...... 4
6. Environment ....................................................................................................................... 4
7. Government Contracting ..................................................................................................... 5
   7.1. Doing Business with the Government .............................................................................. 5
8. Procedures ........................................................................................................................... 5
   8.1. Getting Help ................................................................................................................... 5
   8.2. Discipline ...................................................................................................................... 5
9. IMPLEMENTATION OF CODE OF CONDUCT .................................................................. 5
   9.1. Method of delivering the code ....................................................................................... 6
10. Monitoring the implementation of the Code ...................................................................... 6
11. Breaches of the Code of Conduct ...................................................................................... 6
12. Code of Conduct Certification .......................................................................................... 7
13. Declaration by the Managing Director ............................................................................... 7
Annex 4 to Particular Conditions of Contract ........................................................................ 15
Employer’s Child Protection Code of Conduct ....................................................................... 15
Annex 5 ................................................................................................................................... 17
Contractors Limited ................................................................................................................ 17
Environmental, Health and Safety Policy .................................................................................. 17
Code of Conduct

1. Introduction
The Code of Conduct consists of two sections: Core Values, and Compliance Program and Guidelines. Our Core Values are part of our heritage and are fundamental to who we are as an organization. These Core Values are the basis for our decision-making. The Compliance Program and Guidelines address some specific areas of concern, either due to the Company emphasis or legal requirements. This code of conduct outline below therefore meets the legal and contract requirements for the proposed project of the

2. Core Values
The following nine Core Values represent the foundation of our Code of Conduct. Although achieving these high standards may be difficult, we nonetheless aspire to uphold them as we live our lives and conduct our business:

Core Values represent who we are and provide, without question, the standard of behavior by which we conduct business, how we treat one another, how we deal with our customers, how we respond to our stakeholders, and how we hold one another and ourselves accountable.

**Safety**
- The safety of our employees, our stakeholders, and the general public is our responsibility.
- Plan safety into every aspect of our work and relentlessly execute our plan.
- Drive for continuous improvement to create and sustain a zero-incident culture

**Honesty**
- Be truthful, accurate, and straightforward.
- Be candid and non-deceptive in communication and conduct.

**Integrity**
- Maintain consistency between our beliefs and our behavior—walk our talk!
- Have the courage to contend boldly for that which is right and reject firmly that which is wrong.

**Fairness**
- Endeavor to be reasonable, open-minded, impartial, even-handed, and non-discriminatory in all of our dealings.
- Genuinely partner and actively collaborate within and outside the Company.
- Maintain, without deviation, an attitude of sincerity, tolerance, consideration, and assistance toward others, regardless of position.

**Accountability**
- Accept responsibility for our own actions or inactions and for those whom we supervise.
- Take prompt, constructive steps to correct mistake and defects.
- Promote teamwork by holding one another accountable—of rejecting behaviors inconsistent with this Code of Conduct.

**Consideration of Others**
- Practice the principles of the Golden Rule.
- Respect the dignity, rights, safety, and personal property of others.
- Be open to the ideas and the opinions of others.
- Exercise patience and remain positive under all circumstances.
- Ensure that those whom you supervise are not put in compromising situations.

**Pursuit of Excellence**
Code of Conduct

- Consistently apply diligence, perseverance, attention to detail, and good work habits to ensure high-quality projects, and products and excellent customer service.
- Build capabilities through continuous learning, coaching, mentoring, and teaching.
- Never accept complacency or indifference.
- Remain flexible and open to possibilities.

Reliability
- Only make realistic commitments and follow through on the commitments you make.
- Be prompt and responsive in business dealings within and outside the Company.

Citizenship
- Comply with all governmental laws, rules, and regulations.
- Show consideration for the safety and the welfare of everyone, including our natural environment.
- Respond to the impact our work has on the natural by consistently evaluating and improving our efforts so that our projects and processes work in harmony with the environment.
- Cultivate an organization that actively encourages us to be the best of who we are and continuously strive to make a difference in our communities and the world.

3. Compliance Program and Guidelines

3.1. Construction Business Standards
The way each of us conducts the Company’s business influences how other people (customers, subcontractors, suppliers, the public, and regulators) perceive us.
Some of the standards that we as a Company subscribe to include the following:
- We insist on fair treatment of subcontractor and supplier quotations. Prior to bid, all quotations the Company receives are considered confidential, proprietary, and for internal use only.
- Each customer comes to us with a different expertise in construction and contracting. For example, each employee who provides quotes to customers has a responsibility to ensure that quotes and any subsequent construction work meet the customer’s needs expressed at bid time.

4. Accident and Injury Prevention
The Company is committed to the prevention of accidents and injury to its employees and the general public.
- Supervisors are responsible for safe work procedures/checklists within the scope of their authority in accordance with applicable laws and regulations and those contained in the Company’s health and safety policy.
- All employees are responsible for following instructions and safe work procedures established to protect them, like those contained in the Company’s Safety policy and OSHA Act 2007.
- All employees are responsible for complying with the requirements of the Company’s Substance Abuse Policy. The Company strictly forbids the abuse of drugs and alcohol.
- All employees are responsible for following the processes and the instructions in the safe work Safety Manual and other safe Work Methods Statements prepared to carry out a particular task in a construction site
- The Company will cooperatively participate with regulatory agencies conducting inspections and investigations on all sites

All employees are required to report workplace injuries, incidents, near-misses and any unsafe work conditions. Questions that arise should be referred to your on-site safety representative or immediate your supervisor.
5. Equal Employment Opportunity and Other Employment Laws

- Employees will comply with all, state, and local equal employment opportunity laws.
- The Company will employ persons and make employment-related decisions without regard to an individual’s race, color, religion, sex, age, creed, ancestry, marital status, sexual orientation, gender identity, disability, medical condition, genetic information, or any other characteristic protected by law.
- The Company is committed to compliance with the Kenya’s persons with disabilities PWDs Act and will make reasonable accommodations for qualified individuals with known disabilities. This policy governs all aspects of employment, including selection, job assignment, compensation, discipline, termination, and access to benefits and training.
- It is the Company’s responsibility to provide all employees with a workplace free of harassment, intimidation, coercion, and retaliation.

6.1. Gender based violence, sexual harassment and Child Abuse/Exploitation Code of Conduct

Contractor employees, officers, and directors are responsible for conducting themselves so that their actions are not considered sexually harassing, demeaning, or intimidating in any way. They are obliged to create and maintain an environment which prevents gender based violence (GBV) and child abuse/exploitation (CAE) issues, and where the unacceptability of GBV and actions against children are clearly communicated to all those engaged on the project, as called for in the Company’s Gender based Violence and Sexual Harassment code of conduct. Under the Kenyan law (Sexual Offences Act 2006), sexual harassment is generally defined as either:

1. Unwelcome sex-based conduct that is so severe and pervasive that it creates an intimidating, hostile, or offensive work environment

OR

2. Sex-based conduct by a supervisor or manager that tangibly affects an employee’s job—for example, imposition of discipline, or loss of pay or benefits.

Sexual harassment can occur in a variety of forms. It may include:

(i) Unwelcome sexual advances;
(ii) Requests for sexual favors;

AND/OR

3. Verbal remarks or physical contact or conduct of an intimate or sexual nature, such as uninvited touching or sexually suggestive comments, that interfere with another person’s work performance or that create an intimidating, hostile, or offensive working environment.

4. The Company has zero tolerance for discrimination or harassment of any kind, and employees will be subject to disciplinary action, including termination, for violations.

5. The Company will not tolerate retaliation against anyone who in good faith raises a concern or reports a violation.

6. Environment

Caring for the environment and sustainability issues increasingly permeate all Company work initiatives and practices as increasingly society expresses a clear demand for more environmentally sustainable practices. We believe that ethical behavior extends to our responsibility in protecting the environment. The Company therefore complies with all applicable environmental laws, ordinances, and regulations and will cooperatively participate with regulatory agencies conducting inspections and/or investigations.
Code of Conduct

- The Company will conduct its business in accordance with EHS policies (Safety, Health, Environmental, and other laws and regulations which includes but not limited to: OSHA Act 2007, EIA 2003, and EMCA 1999.
- All employees are responsible for following environmental health and safety instructions in the performance of their duties.

7. Government Contracting
7.1. Doing Business with the Government
A large portion of the Company’s business involves contracts with public agencies. We must conduct our business to avoid even the appearance of impropriety.
All employees are responsible for learning and following the rules of the agencies with which they are working.
- Never seek or accept confidential bid information.
- Know and follow anti-kickback rules, including restrictions on gifts by those seeking business from the government and from government contractors.
- Conform strictly to the contract’s quality, quantity, and testing requirements.
- Charging and allocation of costs including time and overhead, provision of any cost and pricing data, and billing must always be accurate, complete, and in full compliance with the rules and regulations.
- Be truthful, accurate, current, and complete in all representations and certifications.
- Know the customer’s rules and regulations

8. Procedures
8.1. Getting Help
All directors, officers, and employees have a responsibility to read, understand, and follow our Code of Conduct. Remember, this is only the starting point. Our Code does not attempt to address every situation you might encounter in your job.
So where do you turn for help?
Your first resource is your immediate supervisor to answer your questions or contact a Company resource who can. But, if you feel your situation would make it impossible or uncomfortable to approach your immediate supervisor, you should go to your next level of management, the site Supervisor, or Company’s Human Resources manager.
8.2. Discipline
All employees are expected to read, understand, and comply with our Code of Conduct. Violations of law, this Code, and other Company policies and procedures can lead to disciplinary action up to and including termination. Supervisors, managers, and officers can also be subject to discipline if they condone, permit, or have knowledge of illegal, unethical, or other improper conduct and do not take appropriate action. The Company will not tolerate retaliation against anyone who, in good faith, uses the reports or raises questions regarding potentially illegal, unethical or improper conduct.

9. Implementation of the Code of Conduct
The implementation of a code of conduct will involve communication of policies and guidelines to all staff and workers, by providing any necessary training to ensure they understand the code. The code will be practiced and promoted by management to lead the way for staff and workers.
The code of conduct will be one of the conditions of employment. A staff or a worker shall be required to sign and commit himself or herself to comply with the code.

9.1. Method of delivering the code
   1. Induction package

   Induction training is a chance for existing employees/workers and new employees to review and understand expectations and requirements. The contractor through her representatives and or health and safety team shall perform induction training to all workers. This will happen when the work starts and when any new employee or a worker comes to work on site. Along with a code of conduct, the induction package may include a training and information on applicable work Environment health and safety, or any other information that the contractor wish to deliver to new employees or workers.

   2. One-on-one training

   A Company representative - such as the Foreman, Headman, site supervisor, HR staff member or trainer - could work through the code of conduct and other requirements and expectations with existing employees or workers during the site meetings which include morning toolbox talks before start of work.

   3. Employee handbook

   A printed version of Company’s employee handbook that will be left in a communal area such as a site office room will provide staff or workers easy access to the code of conduct when required.

   4. Notice boards

   A summary version of the full code of conduct can act as a reminder to staff. Different parts of the code can be highlighted in different parts of the site office - for example, signs can be erected in the store about cleanliness, safe access of materials and respect for others.

10. Monitoring the implementation of the Code
   1. Understanding the code

   Feedback will be sought from the employees/workers to ensure that they understand the code of conduct and what is expected of them. If they don't fully understand some areas, appropriate training will be provided. For example:
   - Physically showing them designated smoking areas
   - Verbally give an example of how to handle or talk to one another
   - Practically show them how to carry out safety procedures, work procedures and or use of Personal protective equipment etc.

   2. Reviewing staff and workers understanding of the code

   Review of staff and workers understanding of Company’s Code of Conduct by requiring them to complete a survey or questionnaire will be done. The questions will focus on any new sections and particular areas of the code that workers may not fully understand. The surveys will identify areas of the code that staff may need further training or may be unclear and need to be reviewed. Follow up on the survey to ensure that all staff understand what is expected of them. When they are happy with the new code, they will then sign a document to say that they accept to comply.


   To minimize conflict if any employee or laborer violates the code, each of them will be asked to sign a document to say that they agree to abide by the code of conduct. This will form grounds to take a disciplinary action. In case of violations:

   Code of conduct or safety violation notice(s) shall be issued to any employee, subcontractor, or anyone on the jobsite violating the provisions of the Code, the safety rules or regulations by Responsible Person.
Code of Conduct

(i) Any violation of this Code or safety rules can result in suspension or immediate termination.
(ii) Any employee receiving three (3) written general violations within a six (6) month period shall be terminated.
(iii) Issuance of a safety violation notice for failure to use fall protection, appropriate PPE provided, or for failure to report a job injury (at the time of the injury) may result in immediate termination, in accordance with health and safety company policy.

12.0 Code of Conduct Certification

As the Contractor’s employee and as applicable to my work responsibilities:
(i) I will deal fairly and ethically with my employer and on behalf in all matters and will at all times proactively promote ethical behavior.
(ii) I will not (a) take for myself personally any opportunities that are discovered through the use of the Contractor’s property, information, or position; (b) use the Contractor’s property, information, or position for personal gain.
(iii) I will protect Contractors’s assets and promote their efficient and legitimate business use.
(iv) Without exception, I will comply with all applicable laws, rules, and regulations provided
(v) I will promptly report any illegal or unethical conduct to Contractors’s management or other appropriate authorities.

I have read the Contractors Code of Conduct and do certify that:
• I understand the Contractors Code of Conduct.
• I understand that I have a responsibility to ask questions, seek guidance, and report suspected violations of the Code.
• To the best of my knowledge, I am in compliance with the Contractors Code of Conduct.
• I understand that the Company reserves the right to change, rescind, and add to the Contractors Code of Conduct at its sole and absolute discretion and may do so at any time in writing or otherwise.

Employee Signature ………………………………………..Date……………………………
Name…………………………………………………………………………………………
Job Location/Specification/Designation……………………………..
Witness signature……………………………………………………………
Witness Name……………………………………………………………

13. Declaration by the Managing Director

I _______________________________ hereby certify that the above code of conduct represents who we are as a Company. I shall ensure that the practical and professional conduct of our employees and staff are in line with the provisions of this Code of Conduct and that each of them shall be required to individually sign it and ensure compliance. I confirm as a Managing Director that I shall remain in good standing and respect of this Code of Conduct.
Signed by: ____________________________________________

Title: Managing Director.
Contractors Ltd.

Date: 13th October 2017

Contractors employees are obliged to create and maintain an environment which prevents gender based violence (GBV) and child abuse/exploitation (CAE) issues, and where the unacceptability of GBV and actions against children are clearly communicated to all those engaged on the project. In order to prevent GBV and CAE, the following core principles and minimum standards of behavior will apply to all employees without exception:

1. GBV or CAE constitutes acts of gross misconduct and are therefore grounds for sanctions, penalties and/or termination of employment. All forms of GBV and CAE including grooming are unacceptable be it on the work site, the work site surroundings, or at worker’s camps. Prosecution of those who commit GBV or CAE will be pursued.

2. Treat women and children (persons under the age of 18) with respect regardless of race, color, language, religion, political or other opinion, national, ethnic or social origin, property, disability, birth or other status.

3. Do not use language or behavior towards women or children that is inappropriate, harassing, abusive, sexually provocative, demeaning or culturally inappropriate.

4. Sexual activity with children under 18—including through digital media—is prohibited. Mistaken belief regarding the age of a child and consent from the child is not a defense.

5. Exchange of money, employment, goods, or services for sex, including sexual favors or other forms of humiliating, degrading or exploitative behavior is prohibited.

6. Sexual interactions between contractor’s and consultant’s employees at any level and member of the communities surrounding the work place that are not agreed to with full consent by all parties involved in the sexual act are prohibited. This includes relationships involving the withholding, promise of actual provision of benefit (monetary or non-monetary) to community members in exchange for sex – such sexual activity is considered “non-consensual” within the scope of this Code.

7. Where an employee develops concerns or suspicions regarding acts of GBV or CAE by a fellow worker, whether in the same contracting firm or not, he or she must report such concerns in accordance with Standard Reporting Procedures.

8. All employees are required to attend an induction training course prior to commencing work on site to ensure they are familiar with the GBV and CAE Code of Conduct.

9. All employees must attend a mandatory training course once a month for the duration of the contract starting from the first induction training prior to commencement of work to reinforce the understanding of the institutional GBV and CAE Code of Conduct.

10. All employees will be required to sign an individual Code of Conduct confirming their agreement to support GBV and CAE activities.

I do hereby acknowledge that I have read the foregoing Code of Conduct, do agree to comply with the standards contained therein and understand my roles and responsibilities to prevent and respond to GBV and CAE. I understand that any action inconsistent with this Code of Conduct or failure to take action mandated by this Code of Conduct may result in disciplinary action.

FOR THE COMPANY

Signed by: ________________________________

Title: Managing Director             Date: 13th October 2017

Managers at all levels play an important role in creating and maintaining an environment which prevents GBV and prevents CAE. They need to support and promote the implementation of the Company and Individual Codes of Conduct. To that end, they must adhere to the Manager’s Codes of Conduct. This commits them to support and developing systems which maintain a GBV-free and child safe work environment. These responsibilities include but are not limited to:

Mobilization
1. Establish a GBV and CAE Compliance Team (GCCT) from the contractor’s and consultant’s staff to write an Action Plan that will implement the GBV and CAE Codes of Conduct.
2. The Action Plan shall, as a minimum, include the
   a. Standard Reporting Procedure to report GBV and CAE issues through the project Grievance Response Mechanism (GRM);
   b. Accountability Measures which will be taken against perpetrators; and,
   c. Response Protocol applicable to GBV survivors/survivors and perpetrators.
3. Coordinate and monitor the development of the Action Plan and submit for review before mobilization
4. Update the Action Plan to reflect feedback and ensure the Action Plan is carried out in its entirety.
5. Provide appropriate resources and training opportunities for capacity building so members of the GCCT feel confident in performing their duties. Participation in the GCCT will be recognized in employee’s scope of work and performance evaluations.
6. Ensure that contractor, consultant and client staff are familiar with the proposed project GRM and that they can use it to anonymously report concerns over GBV and CAE.
7. Hold quarterly update meetings with the GCCT to discuss ways to strengthen resources and GBV and CAE support for employees and community members.

Training
1. All managers are required to attend an induction manager training course prior to commencing work on site to ensure that they are familiar with their roles and responsibilities in upholding the GBV and CAE Codes of Conduct. This training will be separate from the induction training course required of all employees and will provide managers with the necessary understanding and technical support needed to begin to develop the Action Plan for addressing GBV and CAE issues.
2. Provide time during work hours to ensure that direct reports attend the mandatory project facilitated induction GBV and CAE training required of all employees prior to commencing work on site.
3. Ensure that direct reports attend the monthly mandatory training course required of all employees to combat increased risk of GBV and CAE during civil works.
4. Managers are required to attend and assist with the facilitated monthly training courses for all employees. Managers will be required to introduce the trainings and announce the self-evaluations.
5. Collect satisfaction surveys to evaluate training experiences and provide advice on improving the effectiveness of training.

Prevention
1. All managers and employees shall receive a clear written statement of the company’s requirements with regards to preventing GBV and CAE in addition to the training.
2. Managers must verbally and in writing explain the company and individual codes of conduct to all direct reports.
3. All managers and employees are to sign the individual ‘Code of Conduct for GBV and CAE’, including acknowledgment that they have read and agree with the code of conduct.
4. To ensure maximum effectiveness of the Codes of Conduct, managers are required to prominently display the Company and Individual Codes of Conduct in clear view in public areas of the work space. Examples of areas include site office, rest and lobby areas of sites.
5. All posted and distributed copies of the Company and Individual Codes of Conduct should be translated into the appropriate language of use in the work site areas (e.g. Kiswahili).
6. Managers will encourage employees to notify the GRM of any acts of threats or violence to women or children they have witnessed or received, or have been told that another person has witnessed or received, or any breaches of this code of conduct.
7. Managers should also promote internal sensitization initiatives (e.g. workshops, campaigns, on-site demonstrations etc.) throughout the entire duration of their appointment.
8. Managers must provide support and resources to the GCCT to create and disseminate the internal sensitization initiatives through the Awareness-raising strategy under the Action Plan.

Response
1. Managers will be required to provide input, final decisions and sign off on the Standard Reporting Procedures and Response Protocol developed by the GCCT as part of the Action Plan.
2. Once signed off, managers will uphold the Accountability Measures set forth in the Action Plan to maintain the confidentiality of all employees who report or (allegedly) perpetrate incidences of GBV and CAE (unless a breach of confidentiality is required to protect persons or property from serious harm or where required by law).
3. If a manager develops concerns or suspicions regarding any form of GBV or CAE by one of his/her direct reports, or by an employee working for another contractor on the same work site, s/he shall immediately refer the case to the competent authorities (Police) and, at the same time, report the case to the GRM and the GCCT for internal processing according to the established reporting and accountability measures. Always respecting the survivor’s choices if a survivor has been identified.
4. Once a sanction has been determined, the relevant manager(s) is/are expected to be personally responsible for ensuring that the measure is effectively enforced, within a maximum timeframe of 14 days from the date on which the decision was made.
5. Managers failing to comply with such provision can be in turn subject to disciplinary measures, to be determined and enacted by the company’s CEO, Managing Director or equivalent highest-ranking manager.
Those measures may include:
   a. Informal warning
   b. Formal warning
   c. Additional Training
   d. Loss of up to one week’s salary.
   e. Suspension of employment (without payment of salary), for a minimum period of 1 month up to a maximum of 6 months.

   Termination of employment.
6. Ultimately, failure to effectively respond to GBV and CAE cases on the work site by the contractor’s managers or CEO may provide grounds for legal actions by authorities.
I do hereby acknowledge that I have read the foregoing Code of Conduct, do agree to comply with the standards contained therein and understand my roles and responsibilities to prevent and respond to GBV and CAE. I understand that any action inconsistent with this Code of Conduct or failure to take action mandated by this Code of Conduct may result in disciplinary action.

FOR THE EMPLOYER

Signed by: ____________________________

Title: Managing Director

Date: 13th October 2017.

I, ______________________________, acknowledge that preventing gender based violence (GBV) and child abuse/exploitation (CAE) are important. GBV or CAE activities constitute acts of gross misconduct and are therefore grounds for sanctions, penalties or even termination of employment. All forms of GBV or CAE are unacceptable be it on the work site, the work site surroundings, or at workers camps. Prosecution of those who commit GBV or CAE will be pursued as appropriate.

I agree that while working on the proposed project, I will:

- Consent to police background check.
- Treat women and children (persons under the age of 18) with respect regardless of race, color, language, religion, political or other opinion, national, ethnic or social origin, property, disability, birth or other status.
- Not use language or behavior towards women or children that is inappropriate, harassing, abusive, sexually provocative, demeaning or culturally inappropriate.
- Not participate in sexual activity with children—including grooming or through digital media. Mistaken belief regarding the age of a child and consent from the child is not a defense.
- Not exchange money, employment, goods, or services for sex, including sexual favors or other forms of humiliating, degrading or exploitative behavior.
- Not have sexual interactions with members of the communities surrounding the work place and worker’s camps that are not agreed to with full consent by all parties involved in the sexual act. This includes relationships involving the withholding, promise of actual provision of benefit (monetary or non-monetary) to community members in exchange for sex—such sexual activity is considered “non-consensual” within the scope of this Code.
- Attend training courses related to HIV/AIDS, GBV and CAE as requested by my employer.
- Report to the ‘GBV and CAE Compliance Team’ any situation where I may have concerns or suspicions regarding acts of GBV or against children by a fellow worker, whether in my company or not, or any breaches of this code of conduct.

With regard to children under the age of 18:

- Wherever possible, ensure that another adult is present when working in the proximity of children.
- Not invite unaccompanied children into my home, unless they are at immediate risk of injury or in physical danger.
- Not sleep close to unsupervised children unless absolutely necessary, in which case I must obtain my supervisor's permission, and ensure that another adult is present if possible.
- Use any computers, mobile phones, or video and digital cameras appropriately, and never to exploit or harass children or to access child pornography through any medium
- Refrain from physical punishment or discipline of children.
- Refrain from hiring children for domestic or other labor which is inappropriate given their age or developmental stage, which interferes with their time available for education and recreational activities, or which places them at significant risk of injury.
- Comply with all relevant local legislation, including labor laws in relation to child labor.
**Code of Conduct**

**Use of children's images for work related purposes**

When photographing or filming a child for work related purposes, I must:

- Before photographing or filming a child, assess and endeavor to comply with local traditions or restrictions for reproducing personal images.
- Before photographing or filming a child, obtain informed consent from the child and a parent or guardian of the child. As part of this I must explain how the photograph or film will be used.
- Ensure photographs, films, videos and DVDs present children in a dignified and respectful manner and not in a vulnerable or submissive manner. Children should be adequately clothed and not in poses that could be seen as sexually suggestive.
- Ensure images are honest representations of the context and the facts.
- Ensure file labels do not reveal identifying information about a child when sending images electronically.

I understand that the onus is on me to use common sense and avoid actions or behaviors that could be construed as GBV or CAE or breach this code of conduct.

I acknowledge that I have read and understand this Code of Conduct, and have been explained the implications with regard to sanctions ongoing employment should I not comply.

Signed by ____________________

Title: ________________________

Date: _________________________
Annex 4 to Particular Conditions of Contract

Employer’s Child Protection Code of Conduct

To Be Signed by All Employees, Sub-contractors, Sub-consultants, and Any Personnel thereof

I………………………………… agree that in the course of my association with Contractors, I have been sensitized and in accordance with the Employer’s Child Rights Protection Policy and/or National law on Child Protection, I must/shall:

- Treat children with respect regardless of age, race, color, gender, language, religion, political or other opinion, national, ethnic or social origin, property, disability, relationship, birth or other status;
- Not inappropriately touch or use language or behavior towards children that is inappropriate, harassing, abusive, sexually provocative, demeaning or culturally inappropriate;
- Not engage children under the age of 18 in any form of sexual intercourse or sexual activity, including encouraging or paying for sexual services or acts;
- Wherever possible, ensure that another adult is present when working in the proximity of children;
- Not invite unaccompanied children into my place of residence or any other secluded place, unless they are at immediate risk of injury or in physical danger;
- Not sleep close to unsupervised children unless absolutely necessary, in which case I must obtain my supervisor’s permission, and ensure that another adult is present if possible;
- Use any computers, mobile phones, video cameras, cameras or social media appropriately, and never to exploit or harass children or access child exploitation material through any medium;
- Not use physical punishment on children;
- Not hire children for domestic or other labor which is inappropriate given their age or developmental stage, which interferes with their time available for education and recreational activities, or which places them at significant risk of injury or moral decadence;
- Comply with all relevant local and applicable international legislation, including national child protection laws and labor laws in relation to child labor;
- Immediately report concerns or allegations of child exploitation and abuse and policy non-compliance in accordance with appropriate procedures;
- Immediately disclose all charges, convictions and other outcomes of an offence, which occurred before or occurs during my association with the Employer that relate to child exploitation and abuse.
- When photographing or filming a child or using children’s images for work-related purposes, I must:
  - Assess and endeavor to comply with local traditions or restrictions for reproducing personal images before photographing or filming a child;
  - Obtain informed consent from the child and parent or guardian of the child before photographing or filming a child. As part of this I must explain how the photograph or film will be used;
  - Ensure photographs, films, videos and DVDs present children in a dignified and respectful manner and not in a vulnerable or submissive manner. Children should be adequately clothed and not in poses that could be seen as sexually suggestive;
  - Ensure images are honest representations of the context and the facts;
  - Ensure file labels, meta data or text descriptions do not reveal identifying information about a child when sending images electronically or publishing images in any form;
Code of Conduct

- I understand that the onus is on me, as a person associated with the Employer, to use common sense and avoid actions or behaviors that could be construed as child exploitation and abuses.

Signed: ____________________________________________

Employee’s Name          Employee’s Designation

Date:______________________________

Witness:

Signed: ____________________________________________

Employer’s Representative’s Name  Representative’s Designation

Date and stamp: ________________________________
Annex 5
Contractors Limited
Environmental, Health and Safety Policy

I. OBJECTIVE

The Safety Policy of Contractors Limited is designed to comply with the Standards of the Occupational Safety and Health Act 2007, and to endeavor to maintain a safe and injury/illness free workplace. A copy of the (OSHA) Occupational Safety and Health Act is available for all employees use and reference. These Standards shall be available in the home office at all times and will be sent to the job site on request.

Compliance with the following Safety Policy and all items contained therein is mandatory for all employees of the company. The authorization and responsibility for enforcement has been given primarily to the Responsible Person. The Other Responsible Person(s) share in this responsibility as well.

II. POLICY

It is company policy that accident prevention be a prime concern of all employees. This includes the safety and wellbeing of our employees, subcontractors, and customers, as well as the prevention of wasteful, inefficient operations, and damage to property environment and equipment.

III. APPLICABILITY

This Safety Policy applies to all employees of Contractors, regardless of position within the company. The Safety Rules contained herein apply to all subcontractors and anyone who is on a company project site. Every employee is expected to comply with the Safety Policy, as well as OSHA Health and Safety Standards and other laws.

IV. IMPLEMENTATION

This Safety Policy supports six fundamental means of maximum employee involvement:

(a). Management commitment to safety.

(b). Weekly tool box safety meetings at all jobsites.

(c). Effective job safety training for all categories of all categories of employees.

(d). Job hazard analysis provided to all employees.

(e). Audio and/or visual safety presentations given at jobsites by Responsible Person

(f). Various incentive awards for exemplary safety performance.
The Responsible Persons will meet at least once a month to evaluate all areas of safety and make recommendations to the company president.

V. ADMINISTRATION

The Safety Policy will be carried out according to guidelines established and published in this and other related procedures. Specific instructions and assistance will be provided by Responsible Person as requested. Each supervisor will be responsible for meeting all of the requirements of the Safety Policy, and for maintaining an effective accident prevention effort within his or her area of responsibility. Each supervisor must also ensure that all accidents are thoroughly investigated and reported to Responsible Person(s) on the same day of the occurrence.

VI. REPORTING OF INJURIES

All employees will be held accountable for filling out a “Notice of Injury Form” immediately after an injury occurs, even if medical treatment is not required. (Notice must be made at or near the time of the injury and on the same day of the injury.) Employees must report the injury to their supervisor/lead man/foreman/superintendent/project manager, etc. A casual mentioning of the injury will not be sufficient. Employees must let their supervisor know:

(a). How they think they hurt themselves.
(b). What they were doing at the time.
(c). Who they were working with at the time.
(d). When and where it happened.
(e). Other pertinent information that will aid in the investigation of the incident.

Failure to report an injury immediately (meaning at or near the time of the injury and on the same day of the injury) is a violation of the Safety Policy, and may result in immediate termination, in accordance with company policy.

VII. NOTIFICATIONS

A. In Case of Serious Injury or Death

After the injured has been taken to the hospital, the leadman/foreman/supervisor shall notify the main office and Responsible Person(s) as soon as possible. Statements from witnesses shall be taken. Statements are to be signed by witnesses and should include the time and date. Photographs of the area where the incident occurred and any other relevant items are to be taken. Responsible Person will assist in the investigation. The completed accident report form will be sent to the main office.

B. In Case of Inspection by OSHA Inspector

The leadman/foreman/supervisor must notify Responsible Person(s) that an OSHA Inspector is on the jobsite. It is the responsibility of all employees to make the inspector’s visit on the jobsite as pleasant and timely as possible.
Code of Conduct

VIII. BASIC SAFETY RULES

A. Compliance with applicable state, county, city, client, and company safety rules and regulations is a condition of employment.

B. All injuries, regardless of how minor, must be reported to your supervisor and the Safety Office immediately. An employee who fails to fill out a "Notice Of Injury Form" and send it to the Safety Office can be issued a safety violation notice and may be subject to termination, in accordance with company policy. In the event of an accident involving personal injury or damage to property, all persons involved in any way will be required to submit to drug testing.

C. Hard hats will be worn by all employees on the project site at all times. The bill of the hard hat will be worn in front at all times. Alterations or modifications of the hat or liner are prohibited. Crane operators, when in an enclosed cab, have the option of not wearing a hard hat due to the possible obstruction of view.

D. Safety glasses will be worn as the minimum-required eye protection at all times. Additional eye and face protection such as mono-goggles and face shields are required for such operations as grinding, jack hammering, utilizing compressed air or handling chemicals, acids and caustics. Burning goggles for cutting, burning or brazing and welding hoods for welding, etc., are required.

X. Work place violence, stalking, sexual harassment, armed assault, verbal harassment, physical assault, engaging in actions intended to frighten, coerce, or induce duress and destruction of property is prohibited in the work place.

6. Clothing must provide adequate protection to the body. Shirts must have at least a tee sleeve. Shirts with sleeves and long pants will be worn at all times. No shorts are to be worn on projects. All employees, except welders and burners, must tuck shirt tails inside trousers. Burners and welders will not be permitted to wear polyester or nylon clothing. Sturdy work boots with rigid, slip resistant soles are required.

G. All personnel will be required to attend safety meetings as stipulated by project requirements in order to meet OSHA Safety Standards.

H. Firearms, alcoholic beverages or illegal drugs are not allowed on company property or in company vehicles at any time. When drugs are prescribed by a physician, the Responsible Person must be informed. The use or possession of illegal drugs or alcoholic beverages on the jobsite will result in immediate termination.

I. Housekeeping shall be an integral part of every job. Supervisors/foremen/leadmen and employees are responsible for keeping their work areas clean and hazard-free. Clean up is required when a job is finished at the end of the day.

J. Burning and cutting equipment shall be checked daily before used. Flash back arresters shall be installed at the regulators on both oxygen and LP bottles. All gas shall be shut off and hoses disconnected from bottles and manifolds at the end of the work day. Caps shall be replaced on bottles when gauges are removed. When gauges are removed and caps replaced, the oxygen and LP bottles shall be separated into storage areas no less than 20 feet apart with a “No Fire or
Smoking" sign posted and a fire extinguisher readily available. Makeshift field repairs will not be allowed.

K. Drinking water containers are to be used for drinking water and ice only. Tampering with or placing items such as drinks in the water cooler will result in immediate termination. The "common drinking cup" is not allowed. Only disposable cups will be used.

L. All tools whether company or personal, must be in good working condition.

Defective tools will not be used. Examples of defective tools include chisels with mushroomed heads, hammers with loose or split handles, guards missing on saws or grinders, wheelbarrows etc.

M. All extension cords, drop cords, and electrical tools shall be checked, properly grounded with ground fault interrupters (GFI’s), and color-coded by a designated competent person each month. This shall be part of the assured grounding program.

Cords and equipment that do not meet requirements shall be immediately tagged and removed from service until repairs have been made.

N. “Horseplay" on the jobsite is strictly prohibited. Running on the jobsite is allowed only in extreme emergencies.

O. Glass containers or bottles of any kind are not permitted on jobsites or in company vehicles.

P. The jobsite speed limit is 20KMPH. No employee is permitted to ride in the bed of a truck standing up or sitting on the outside edges of a truck. Employees must be sitting down inside the truck or truck bed when the vehicle is in motion. Riding as a passenger on equipment is prohibited unless the equipment has the safe capacity for transporting personnel.

Q. Adequate precautions must be taken to protect employees and equipment from hot work such as welding or burning. Fire extinguishing equipment shall be no further than 50 feet away from all hot work. Used fire extinguishers must be returned to (Responsible Person) to be recharged immediately. Use of welding blinds is required in high traffic areas.

R. All scaffolding and work platforms must be built and maintained in accordance with OSHA specifications. All ladders must be in safe condition without broken rungs or split side rails. Damaged ladders shall be removed from service. Ladders shall be secured at the top and bottom and extend three (3) feet past the working surface. Metal ladders around electrical work are prohibited. A step ladder shall never be used as an extension ladder. A step ladder must only be used when fully opened with braces locked.

S. Crowfoot connections on air hoses shall be wired to prevent accidental disconnection. Compressed air shall not be used to dust off hands, face or clothing.

U. All floor openings or excavations shall be barricaded on all sides to ensure employees are aware of the hazards. Floor holes shall be covered, with the covers secured and clearly marked.

V. Warning signs, barricades, and tags will be used to the fullest extent and shall be obeyed.

**Fall Protection Requirements**
1. Full body harnesses and lanyards shall be worn and secured any time there is a fall hazard of more than six (6) feet.

2. Lifelines shall be erected to provide fall protection where work is required in areas where permanent protection is not in place. Horizontal lifelines shall be a minimum of 2-inch diameter wire rope. Vertical lifelines shall be 3/4 inch manila rope or equivalent and shall be used in conjunction with an approved rope grab.

3. Structural steel erectors are required to "hook up" with full body harness and lanyard.

4. Employees using lanyards to access the work or position themselves on a wall or column, etc., must use an additional safety lanyard for fall protection.

5. Man lifts must be used properly. As soon as an employee enters an articulating boom lift and before the lift is started, the employee must put on the harness and attach the lanyard to the lift. Employees are not required to wear harnesses on scissor lifts.

Scaffold Tag System

1. Green tags are to be placed on 100 percent complete scaffolds with all braces, locks and hand, mid, and toe rails in place before use.

2. Yellow tags indicate incomplete scaffolds. If scaffold is missing a hand, mid, or toe board, it must have a yellow tag and employees on it must be tied off at all times.

3. Red tags indicate scaffolds that are in the process of either being erected or disassembled. These scaffolds are not to be used at any time.

4. Scaffold tags should be placed in a highly visible location on the scaffolds for all employees to see.

X. ENFORCEMENT OF SAFETY POLICY

Safety violation notice(s) shall be issued to any employee, subcontractor, or anyone on the jobsite violating the safety rules or regulations by Responsible Person.

A. Any violation of safety rules can result in suspension or immediate termination.

B. Any employee receiving three (3) written general violations within a six (6) month period shall be terminated.

C. Issuance of a safety violation notice for failure to use fall protection or other PPEs provided or for failure to report a job injury (at the time of the injury) may result in immediate termination, in accordance with company policy. It is understood that Contractors Limited is not restricting itself to the above rules and regulations. Additional rules and regulations as dictated by the job will be issued and posted as needed.
ATTACHMENT A

JOB SAFETY CHECKLIST

The following Job Safety Checklist has been condensed and edited from the Occupational Safety and Health Act, OSHA 2007.

A. Safety Rules
- Hard hats and safety glasses worn
- Shirts with sleeves worn.
- Work shoes worn.
- Subcontractors’ personnel hold safety meetings as indicated by project requirements in accordance with OSHA Safety Standards.
- Work areas safe and clean.
- Safety mono-goggles/face shields worn when circumstances warrant.
- Electrical cords and equipment properly grounded with GFI's in place and checked by a competent person.
- No use of alcoholic beverages or controlled substances.
- Subcontractors provide fall protection for their employees in accordance with OSHA Safety Standards.
- All scaffolds built to specifications as established by OSHA.
- Excavation/trenches sloped or shored as established by OSHA.
- Drug testing of employees involved in accident(s) resulting in personal injury or property damage.

B. Recordkeeping
- OSHA poster "Safety and Health Protection on the Job" posted.
- Hard hat sign posted in a conspicuous manner.
- Weekly safety meeting sign-in logs maintained in a folder with a copy forwarded to the main office weekly.

C. Housekeeping and Sanitation
- General neatness.
- Regular disposal of trash.
- Passageways, driveways, and walkways clear.
- Adequate lighting.
- Oil and grease removed.
- Waste containers provided and used. Adequate supply of drinking water.
- Sanitary facilities adequate and clean.
- Adequate ventilation.

D. First Aid
- First aid stations with supplies and equipment.
Code of Conduct

- The expiration dates of supplies checked monthly.
- Expired supplies discarded.
- Trained first aid personnel.
- Injuries promptly and properly reported.

E. Personal Protective Equipment
- Hard hats.
- Hearing protection.
- Eye and face protection.
- Respiratory protection.
- Fall protection.

F. Fire Protection
- Fire extinguishers charged and identified.
- A No Smoking @ signs posted.
- Flammable and combustible material storage area.
- Fuel containers labeled.

G. Hand and Power Tools
- Tools inspected.
- Power tools properly guarded.
- Safety guards in place.

H. Welding & Cutting
- Compressed gas cylinders secured in vertical position.
- Hoses inspected.
- Cylinders, caps, valves, couplings, regulators, and hoses free of oil and grease.
- Caps on cylinders in storage in place.
- Flash back arresters in place.
- Welding screens in place.

I. Electrical
- All portable tools and cords properly grounded [Ground Fault Interrupters (GFI=s) properly installed.
- Daily visual inspection of caps, ends and cords for deformed or missing pins, insulation damage and internal damage.
- Tests of cords, tools and equipment for continuity and correct attachment of the equipment grounding connector (GFI) to the proper terminal made every month and:
  1. Prior to first use.
  2. Prior to return to service after repairs.
  3. Prior to return to service after incident that may have caused damage to cord or equipment.
- Cords and equipment not meeting requirements immediately tagged and removed from service until repairs have been made.
J. Ladders
- Inspected at regular intervals.
- No broken or missing rungs or steps.
- No broken or split side rail.
- Extend at least 36 inches above landing and be secured.
- Side rails of 2 x 4 up to 16 feet, or 3 x 6 over 16 feet.

K. Scaffolding
- Inspected at regular intervals.
- Footings are a sound ridge and capable of carrying maximum intended load.
- Tied into building vertically and horizontally at 14 foot intervals.
- Properly cross-braced.
- Proper guardrails and toe boards.
- Scaffold planks capable of supporting at least four (4) times the maximum intended load.
- No unstable objects such as concrete blocks, boxes, etc., used as scaffold foundations.
- Use of OSHA Scaffold Tagging Program

M. Material Hoists
- Inspected at regular intervals.
- Operating rules posted at operators station.
- "No Rider" signs prominently posted at all stations.
- All entrances properly protected.
- All entrance bars and gates painted with diagonal contrasting stripes.
- Experienced operators.
- Current crane certification inspection sticker and papers on the rig

N. Motor Vehicles
- Lights, brakes, tires, horn, etc., inspected at regular intervals.
- No overloaded vehicles.
- Trash trucks have covers.
- No riding on the edge of pickup truck beds.
- No riding on concrete trucks, loaders, backhoes, etc.
- Functioning back-up alarms on loaders, tractors, backhoes, etc.
- Fire extinguishers installed and readily available.
- Seat belts worn at all times.

O. Material Storage and Handling
- Material at least two (2) feet from edge of excavation site.
- Proper temperature and moisture levels for safe storage of materials to prevent deterioration or volatile hazards within the storage area.
- Inventory maintained and inspected frequently.
• Proper protective gear worn when handling chemicals.

P. Concrete, Concrete Forms and Shoring
• Full body harnesses as positioning devices for employees tying rebar greater than (6) feet above adjacent working surface have
• Automatic shut-off switches on trowel machines.
• No riding on concrete buckets or flying forms.
• All forms properly shored.
• Single post shores braced horizontally.

Q. Use of Cranes and Derrick

Prohibition of the use of cranes or derricks to hoist employees on a personal platform except in the situation where no safe alternative is possible

ATTACHMENT B

SAFETY EQUIPMENT CHECKLIST
The following is a list of Safety Equipment that should be on the job, if required, or available from the Responsible person at all times. Equipment should be checked at intervals in accordance with the applicable OSHA Safety Standards by the Supervisor to ensure that all required equipment is present and in good condition.

• Safety goggles, shields, and glasses.
Code of Conduct

• Hearing protection.
• Respirators.
• Hard hats.
• Fire extinguishers (properly charged).
• First aid kit (check list inside kit).
• Stretcher or stroke litter (tool room).
• Welding masks and goggles.
• Storage racks for compressed gases.
• Guards on all power tools.
• Trash barrels.
• OSHA forms posted.
• Company "Safety Policy" packet posted.
• Company "Hazardous Communication Program" packet posted.
• Emergency vehicle (vehicle designated to carry injured to hospital) condition

ATTACHMENT C

EMPLOYEE ACKNOWLEDGMENT

I state that I have attended the safety orientation, and have read and received a copy of Contractors Limited safety rules and regulations. I further state that I understand these rules and acknowledge that compliance with the safety rules and regulations is a condition of employment. If I violate the safety rules or fail to report an injury to my supervisor immediately, I understand
that I am subject to termination, in accordance with company policy.

________________________________________

EMPLOYEE SIGNATURE

________________________________________

DATE

________________________________________

Responsible Person

SIGNATURE

________________________________________

DATE____________________________