MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

State Department for Housing and Urban Development

KENYA INFORMAL SETTLEMENT IMPROVEMENT PROJECT
(KISIP 2)

CONSULTANCY SERVICES FOR INFRASTRUCTURE UPGRADING PLANS, DETAILED ENGINEERING DESIGNS AND PREPARATION OF PROCUREMENT DOCUMENTS AND CONSTRUCTION SUPERVISION OF INFRASTRUCTURE IMPROVEMENT WORKS IN SELECTED INFORMAL SETTLEMENTS IN THE COUNTIES OF HOMA BAY, NYAMIRA, UASIN GISHU AND NANDI, CONTRACT NUMBER: KE-MOTI-298201-CS-QCBS

ENVIRONMENT AND SOCIAL IMPACT ASSESSMENT REPORT (ESIA) COMPREHENSIVE PROJECT REPORT (CPR) FOR INFRASTRUCTURE UPGRADING OF KK SEGERO & KASARANI INFORMAL SETTLEMENTS LOCATED IN UASIN GISHU COUNTY

NOVEMBER 2023

G A CONSULTANTS LTD
CONSULTING ENGINEERS AND PROJECT MANAGERS

NHC Lang'ata Commercial Centre,
Junction of Kungu Karumba/Southern Bypass, Nairobi
P. O. Box 2670 – 00100, Nairobi, Kenya
Tel: +254 20 312931 / +254 733 721855
E-mail: info@gaconsultants.co.ke/
gaconsultants2013@gmail.com

Niche
Environment Consultants LIMITED

Muthaiga Office Suites
Second Floor RM 14
P.O. Box 18075-00500 NAIROBI,
KENYA
Tel: 0723736245/0721686959
/0729766004
Email: info@nichenvironment.co.ke

NEMA Report Submission Details

Prepared By

Signed …….. Date…….

GODWIN LIDAHULISAKWA
LEAD EXPERTNEMA REG NO. 2492

Checked by

Signed ……Date…….
ENG ELISHA AKETCH
FOR: TEAM LEADER.
G A CONSULTANTS LIMITED, KENYA IN ASSOCIATION WITH NICHE ENVIRONMENT CONSULTANTS.

Client

Signed …….. Date…….
COUNTY EXECUTIVE COMMITTEE MEMBER (CEC) INFRASTRUCTURE AND ROADS

LIST OF ABBREVIATIONS

AFD	French Agency for Development
BOD	Biological Oxygen Demand
CIDP	County Integrated Development Plan
CLO	Community Liaison Officer
CSOs	Civil Society Organization
CDF	Constituency Development Fund
CPCT	County Project coordination team
dB	Decibels
EHS	Environment Health and Safety
EIA	Environmental Impact Assessment
ESAAP	Environment and Social Audit Action Plan
ESIA	Environmental and Social Impact Assessment
EMCA	Environmental Management & Coordination Act
ESMF	Environmental and Social Management Framework
ESMP	Environment and Social Management Plan
ESMMP	Environmental and Social Management and Monitoring Plan
GDP	Gross Domestic Product
GRM	Grievance Redress Mechanism
HSP	Healthy and Safety Plan
HIV	Human Immune Deficiency Virus
ICDP	Integrated Development Plan
IEC	Information Education and Communication
ILO	International Labour Organization
IFC	International Finance Agency
KeNHA	Kenya National Highways Authority
KISIP	Kenya Informal Settlements Improvement Project
KURA	Kenya Urban Roads Authority
KeRRA	Kenya Rural Roads Authority
LMP	Labour Management Plan
MCA	Member of County Assembly
MLPWHUD	Ministry of Lands, Public Works, Housing and Urban Development
NEMA	National Environment Management Authority
NEP	National Environment Policy
NGO	Non-Governmental Organization
NPCT	National Project coordination team
OSHA	Occupational Health and Safety Act
OP	Operations Policy
PAP	Project Affected Person
PLWD	Persons Living with Disability
PPEs	Personal Protective Equipment
RAP	Resettlement Action Plan
RMLF	Roads Maintenance Levy Fund
RPF	Resettlement Policy Framework
SEA	Sexual Exploitation and Abuse
SH	Sexual Harassment
SFM	Significance following Mitigation
SDGs	Sustainable Development Goals

SEC	Settlement Executive Committee
STD	Sexually Transmitted Diseases
SUP	Social Upgrading Project
SR	Significant Rating
WF	Wight Factor
WB	World Bank
WIBA	Workplace Injuries and Benefits Act
WRMA	Water Resources Management Authority
USD	United States Dollars

TABLE OF CONTENTS

LIST OF ABBREVIATIONS II

E. EXECUTIVE SUMMARY 1

E.1 Project Information 1
E.2 Prioritized Interventions 1
E.3 Legal Framework and Policy Provisions 8
E.4 Public and Institutional Participation 8
E.5 Potential Project Impacts 9
E.5.1 Positive Impacts during Construction Stage 10
E.6 Environment and Social Assessment Finding 10

CHAPTER 1: INTRODUCTION 2

1.1 General Information 2
1.2 Scope of the ESIA Study 3
1.3 Objectives of the EIA study 3
1.4 Project Relevance and Justification 4
1.5 ESIA Assessment Methodology 5
1.5.1 Environment and Social Scoping 7
1.5.2 Desk Reviews 7
1.5.3 Field Assessment 7
1.5.4 Stakeholder Consultations 7
1.5.5 Social Infrastructure Mapping 8
1.5.6 Secondary Socio Economic Data 8

CHAPTER 2: PROJECT DESCRIPTION 1

2.1 Project Context 1
2.2 Existing Status of infrastructure in KK, Segero and Kasarani Informal Settlement 3
2.2.1 Roads and Footpath 3
2.2.2 Drainage Infrastructures 3
2.2.3 Solid Wastes Management 3
2.2.4 Sewerage Infrastructure 4
2.2.5 Water Supply 4
2.2.6 Lighting and Electric Network 5
2.3 Projects prioritization during the focused Group Discussions (FGD) and Public meetings 5
2.3.1 KK, Segero and Kasarani Informal Settlement: 5
2.4 Prioritized interventions 6
2.5 Design interventions to improve infrastructure resilience. 12
2.6 Construction Materials 13
2.7 Project Cost 14

CHAPTER 3: ANALYSIS OF ALTERNATIVES 1

3.1 Project Alternatives 1
3.2 KISIP Investments Identification 1
3.3 Project Option Alternatives 2
3.4 Land Requirement 4
3.5 Chosen Alternatives from KISIP Menu 5
3.6 No Project Alternative 5

CHAPTER 4: BASELINE INFORMATION OF TARGET SETTLEMENTS 1

4.1 General Information 1
4.2 Physical Environment 1
4.2.1 Climate 1
4.2.2 Topography 1
4.2.3 Soils and Geology 1
4.2.4 Hydrology 2
4.3 Biological Environment 2
4.3.1 Vegetation and Flora 2
4.4 Target Settlements Assessment 3
4.4.1 KK, Segero and Kasarani Informal Settlement in Eldoret Town 3
4.5 Socio Economic Profile 6
4.5.1 Ownership/Tenancy 6
4.5.2 Accessibility 6
4.5.3 Demographic Profile of Households 7
4.5.4 Economic Profile of Households 8
4.5.5 Structures/Unit Details 10
4.5.6 Water Sanitation and Hygiene 11
4.5.7 Services 14
4.5.8 Energy 16
4.5.9 Transport 17
4.5.10 Mode of Communication 17
4.5.11 Health 18
4.5.12 Education 19
4.5.13 Community Facilities 21
4.5.14 Disasters Experienced in the Settlement 21
4.5.15 Priority Sectors 21
4.6 Climate Change Impacts in Informal Settlements 22

CHAPTER 5: POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK 1

5.1 Introduction 1
5.2 Policy Provision 1
Constitution of Kenya 2010 1
Kenya Vision 2030 1
National Environment Policy (NEP) 1
HIV and AIDS Policy 2009 1
Gender Policy 2011 1
The Sustainable Development Goals (SDGs) 1
Kenya National Youth Policy 2006 1
Eviction Guidelines 2017 1
5.3 Kenyan Legislations 2
EMCA 1999 Cap 385 2
The Environmental (Impact Assessment and Audit) Regulations, 2003 2
Environmental Management and Coordination (Water Quality) Regulations, 2006 2
(Waste Management Regulations, 2006 2
Conservation of Biological Diversity and Resources, Access to Genetic Resources and Benefit Sharing) Regulations, 2006 2
Noise and Excessive Vibration Pollution (Control) Regulations, 2009 3
(Wetlands, River Banks, Lake Shores and Sea Shore Management) Regulations, 2009 3
The Environmental Management and Coordination (Air Quality Regulations 2014) 3

Water Act 2016 3
County Government Act No. 17 of 2012 3
Physical Planning Act 1996 (286) 3
The Urban Areas and Cities Act 2011 3
Occupational Health and Safety Act (OSHA 2007) 4
The Public Health Act (Cap.242) 4
5.4 Institutional Structure Arrangement 4
5.5 World Bank Policies 5

CHAPTER 6: PUBLIC AND STAKEHOLDER CONSULTATIONS 6

6.1 Introduction 6
6.2 Legal and Policy Provisions for Stakeholder Consultations 6
6.2.1 EMCA 1999 through the Legal Notice No. 101: The Environmental (Impact, Audit and Strategic Assessment) Regulations, 2003 6
6.2.2 World Bank Group (WBG) Environmental Assessment Policy (OP 4.01) 7
6.3 Schedule of Stakeholder Consultations 7
6.4 Inclusion of Outcomes of Stakeholder Engagement in the Design of the Project 9
6.4.1 Employment Opportunities for the Public 9
6.5 Public Disclosure of ESIA, and Annual Monitoring Reports 9
6.6 Construction, Operation and Decommissioning Phase Consultations 10
6.7 Community Relations in Construction Phase 10
6.7.1 Construction Contractor's Role in Community Liaison 11
6.7.2 Community Relations in Operational Phase 11
6.7.3 Decommissioning 11
6.8 Grievance Redress Management Plan 11

CHAPTER 7: ENVIRONMENTAL AND SOCIAL IMPACTSASSESSMENT AND MITIGATION MEASURES ... 11

7.1 Anticipated Project Positive Impacts 11
7.2 Risks on Biophysical Environment during construction 12
7.2.1 Impacts on Water Resources 13
7.2.2 Impacts on Soil Resources 13
7.2.3 Biophysical Environment Risk Mitigation Measures 14
7.3 Workers, Community Health and Safety Risks 14
7.3.1 Excessive noise and vibrations 15
7.3.2 Air Pollution and Dust Generation. 15
7.3.3 Risk of Accidents at Work Sites 15
7.3.4 Environment Health and Safety Risk Mitigation Measures 16
7.4 Traffic Management Plan 17
7.5 Social Risks 19
7.5.1 Loss of Temporal Assets and Disruption of Sources of Livelihood 19
7.5.2 Disruption of Public Utilities 20
7.5.3 Labour Influx Effects 20
7.5.4 Human Right and Gender Inclusivity 20
7.5.5 Increase in prevalence of communicable diseases 20
7.5.6 Social Risks Mitigation Measures 21
7.6 Labour Management During Construction Stage 22
7.7 Specific Project Risks during Operation 24

CHAPTER 8: ENVIRONMENT AND SOCIAL MANAGEMENT AND MONITORING PLAN 1

8.1 Management Plan Principles 1

8.2 SPECIFIC MANAGEMENT ISSUES 1
8.2.1 Management Responsibilities 1
8.2.2 Environmental Management Guidelines 2
8.2.3 Environmental Education and Awareness Rising 2
8.2.4 Decommissioning Process 2
8.3 DECOMMISSIONING FLOW CHART 14

CHAPTER 9: CONCLUSION 1

9.1 Conclusion 1

List of Tables

Table E- 1: Project Scope of Works 1
Table E- 2: Schedule of Public Consultation 9
Table 1- 1: Schedule of Public Consultation 2
Table 1- 2:: Environment and Social Impact Rating Criteria 6
Table 1- 1: Schedule of Public Consultation 8
Table 2- 1: Status of Road and Foot Path in KK, Segero and Kasarani Informal Settlement 3
Table 2- 2: Status of Drainage Infrastructures in KK, Segero and Kasarani Informal Settlements 3
Table 2- 3: Solid Waste Management in KK, Segero and Kasarani Settlement 4
Table 2- 4: Sewerage Infrastructure 4
Table 2- 5: Water Supply Situation 5
Table 2- 6: Lighting and Electric Network 5
Table 2- 9: Design interventions to improve infrastructure resilience 12
Table 2- 10: Alternative 1 – Type – LVII (LVSR) 13
Table 2- 11: Alternative 2 – Type 7 (RDM Part III) 13
Table 2- 12:Project Cost 14
Table 3- 1: Scoring of Priority Interventions in the Settlements 5
Table 4- 1: Target Settlements 1
Table 4- 2: Age and Marital Status 8
Table 4- 3*: Materials* 11
Table 4- 4*: Priority matrix for sectors* 21
Table 4- 5 *Opportunities and Constraints* 22
Table 5- 1: Policy Framework 1
Table 5- 2: Acts of Parliament 2
Table 5- 3: Institutions Assessment 4
Table 5- 4: Analysis of potential triggers to World Bank Safeguards Policies 5
Table 6- 1: Schedule of Public Consultation 7
Table 6- 2: Detailed Issues Discussed during Public Consultations 8
Table 6- 3: Stakeholder Consultations during Project Construction and Operation Phase 10
Table 7- 3: Impacts on Water Resources 13
Table 7- 4: Impacts on Soil Resources 13
Table 7- 5: Mitigation of Biophysical Environment Impacts 14
Table 7- 6: Impacts on Workers, Community Health and Safety 16
Table 7- 7: Mitigation Measure to Workers, Community Health and Safety Risks 16
Table 7- 8: Traffic Management Plan 18
Table 7- 9: Impacts on Social Setting 21
Table 7- 10: Mitigation of Social Impacts 21
Table 7- 13 Operation Impacts and Mitigation for Roads and Drainage Projects 24
Table 7- 14 Operation Impacts and Mitigation for Flood Lights Projects 24
Table 8- 1: Construction Phase: Environmental and Social Management and Monitoring Plan 4
Table 8- 1: Operational Phase: Environmental and Social Management and Monitoring Plan 13
Table 8- 3: Decommissioning Flow Chart 14

List of Figures

Figure E- 1: Map of Kasarani Settlement 3
Figure 2- 1: Satellite Image of Informal Segero Settlement 1
Figure 2- 1: Satellite Image of KK Informal Settlement 2
Figure 2- 1: Satellite Image of Kasarani Informal Settlement 2
Figure 2- 4: KK Layout Plan 7
Figure 4.1: Ownership/Tenancy 6
Figure 4.2: Accessibility 7
Figure 4.3: Gender 7
Figure 4.4: Educational Levels 8
Figure 4.5: Employment and Occupation 9
Figure 4.6: Income Level 9
Figure 4.7: Expenditure on Food and Clothing 10
Figure 4.8: Household Size 10
Figure 4.9: Nature of Structures 11
Figure 4.10: Source of Water 12
Figure 4.11: Monthly Cost of Piped Water 12
Figure 4.12: Bathroom Access 13
Figure 4.13: Bathrooms Location 13
Figure 4.14: Toilet Facilities 14
Figure 4.15: Garbage Disposal 14
Figure 4.16: Rating of Solid Waste Management 15
Figure 4.17: Recommendations on Waste Management 16
Figure 4.18: Monthly Cost of Electricity 16
Figure 4.19: Cooking Energy 17
Figure 4.20: Transport Services 17
Figure 4.21: Communication Services 18
Figure 4.22: Health Facilities 18
Figure 4.23: Distance to Nearest Health Facility 19
Figure 4.24: Preferred Health Facility 19
Figure 4.25: Prevalent Diseases 19
Figure 4.26, ECDE Centers 20
Figure 4.27:Secondary Schools 20

List Of Annexes

Annex 1: Environment and Social Screening Matrix
Annex 2: Public Participation Minutes and List of participants
Annex 3: Chance find procedures

EXECUTIVE SUMMARY

E. EXECUTIVE SUMMARY

E.1 Project Information

The Government of Kenya (GoK) through the the Ministry of Lands, Public Works, Housing and Urban Development, is implementing the Kenya Informal Settlements Improvement Project II (KISIP II) in select counties. The infrastructure upgrade plan (Infrastructure Improvement) under KISIP II will include roads and drainage, secure lighting, Water and Sanitation and social amenities upgrading works at an estimated implementation cost of KES. 2.85 billion. This will be funded by a credit from the World Bank (WB) through International Development Association (IDA) and Agence Française de Dévelopement (AFD). The target settlements in Uasin Gishu County are 8nr including Maili Nne, Segero, Shauri, KK, Kasarani, Mwanzo and Ngomongo are financed by IDA.

The socio- economic studies, feasibility studies, and the conceptual designs have been completed under the same consultancy. This Report therefore presents findings of Environmental and Social Assessment undertaken for the Proposed Projects, the report presents potential environment and social risks that are likely to be triggered by the Project, appropriate mitigation measures have also been provided in this assessment. **This report specifically addresses KK, Segero and Kasarani Informal Settlement in Langas, Eldoret Town Uasin Gishu County.**

E.2 Prioritized Interventions

The Project scope for each informal settlement in Langas is as presented in the Project Design Report is summarized in table E.1 below.

Table E- 1: Project Scope of Works

Settlement	Scope of Works
	Proposed: - Construction of 1671.87m of R1 001, 392.91m of R2 001, 259.64m of R2 002 , 318.06m of R2 003, 177.98 m of R2 004, 231.28m of R2 005 and 387.56m of R2 006 together with the accompanying storm water drainage systems, and 1 No. High Mast Light.

Design Summary for Kasarani Settlement

PROPOSED	CODE ON MAP	DESCRIPTION	QTY
R1 Roads	R1 001	6m carriage way, drainage and footpath on both side of the carriage way.	1671.87
R2 Roads	R2 001	5.5m carriage way, drainage and footpath on one side of the carriage way.	392.91
	R2 002	5.5m carriage way, drainage and footpath on one side of the carriage way.	259.64
	R2 003	5.5m carriage way, drainage and footpath on one side of the carriage way.	318.06
	R2 004	5.5m carriage way, drainage and footpath on one side of the carriage way.	177.98

	R2 005	5.5m carriage way, drainage and footpath on one side of the carriage way.	231.28
	R2 003	5.5m carriage way, drainage and footpath on one side of the carriage way.	387.56
Total Road			**3,440 m**
Total Footpath and Drainage Length			**5,112 m**

A map of target Settlement is presented in figure E.1 below

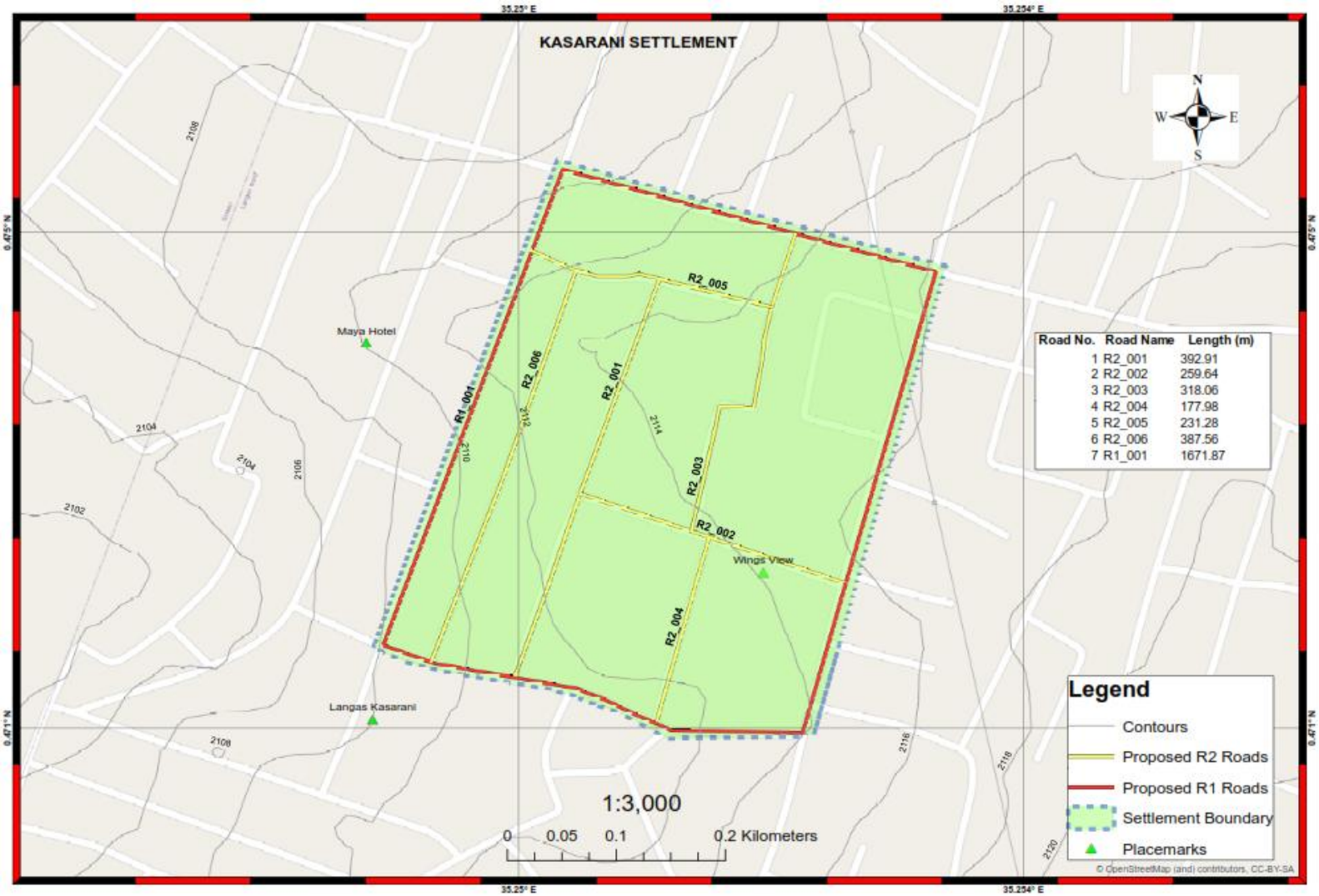


Figure E- 1: Map of Kasarani Settlement

Proposed: - Construction of 1034.45m of R1 001, 417.89m of R2 001, 439.36m of R2 002 and 183.69m of R2 003, together with the accompanying storm water drainage systems, and 1 No. High Mast Light.

Design Summary for KK Settlement

PROPOSED	CODE ON MAP	DESCRIPTION	QTY
R1 Roads	R1 001	6m carriage way, drainage and footpath on both side of the carriage way.	1,035 m
R2 Roads	R2 001	5.5m carriage way, drainage and footpath on one side of the carriage way.	460.91 m
	R2 002	5.5m carriage way, drainage and footpath on one side of the carriage way.	482.38 m
	R2 003	5.5m carriage way, drainage and footpath on one side of the carriage way.	226.71 m
Street lighting along all the proposed roads	8 m high poles, along the proposed roads, with 28 luminaires, 2 Control Pillars and 2,076 m main cable		
Ablution Block at KK Market	1 No. 5-door toilet ablution block		
Total Road			**2,205 m**
Total Footpath and Drainage Length			**3,240 m**
Total Street lighting			**70 poles**

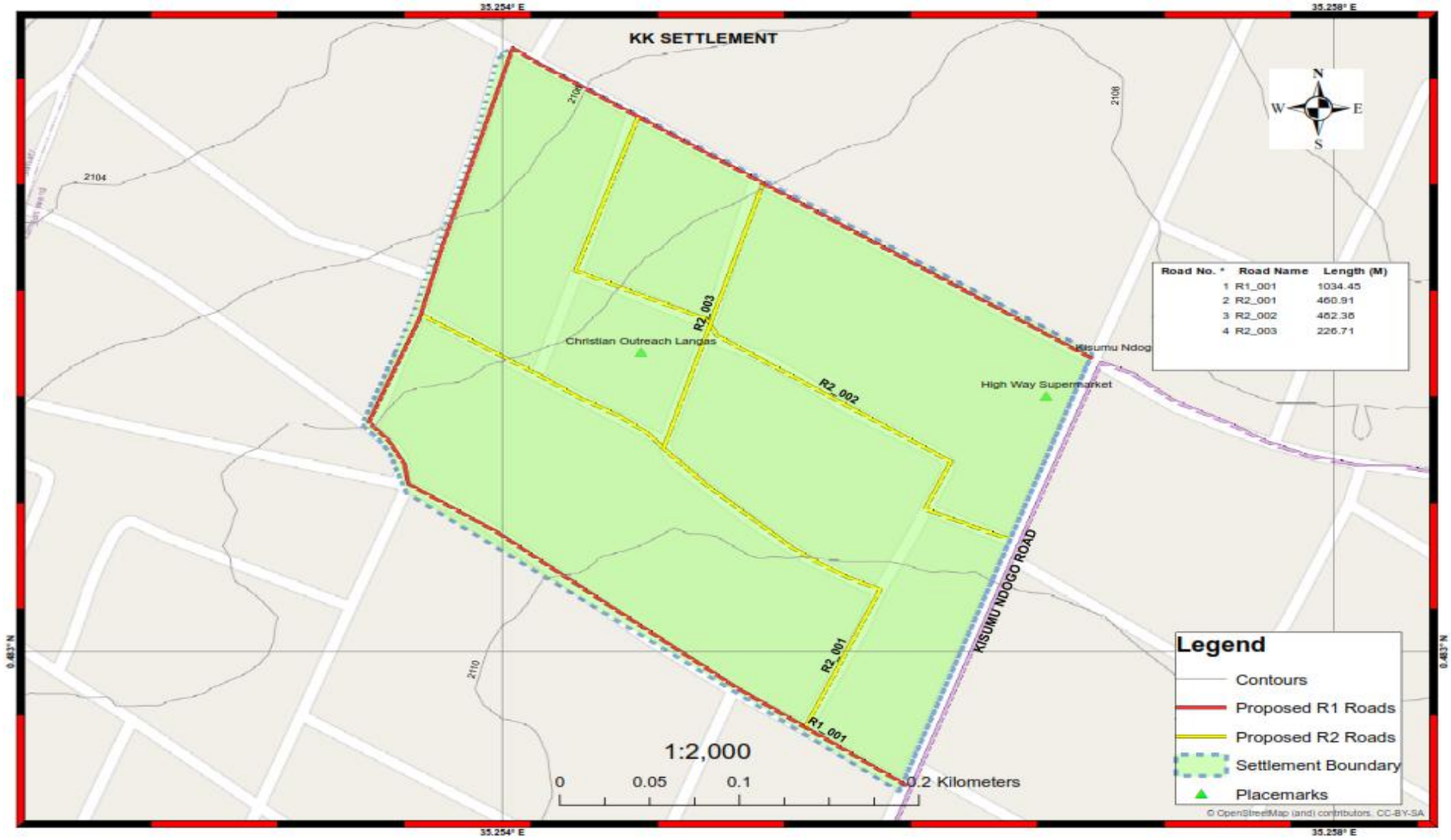


Figure E- 2: Map of KK Settlement

Proposed: - Construction of 1168m of R1 001, 414.15m of R2 001, 217.66m of R2 002, 159.06m of R2 003, 226.69m of R2 004 and 180.37m of R2 005 together with the accompanying storm water drainage systems, and 1 No. High Mast Light.

Design Summary for Segero Settlement

PROPOSED	CODE ON MAP	DESCRIPTION	QTY
R1 Roads	R1 001	6m carriage way, drainage and footpath on both side of the carriage way.	1,168 m
R1 Roads	R2 001	5.5m carriage way, drainage and footpath on one side of the carriage way.	414.15 m
	R2 002	5.5m carriage way, drainage and footpath on one side of the carriage way.	217.66 m
	R2 003	5.5m carriage way, drainage and footpath on one side of the carriage way.	159.06 m
	R2 004	5.5m carriage way, drainage and footpath on one side of the carriage way.	226.69 m
	R2 005	5.5m carriage way, drainage and footpath on one side of the carriage way.	180.37 m
Street lighting along all the proposed roads	8 m high poles, along the proposed roads, with 28 luminaires, 2 Control Pillars and 2,366 m main cable		
Total Road			**2,366 m**
Total Footpath and Drainage Length			**3,534 m**
Total Street lighting			**80 poles**

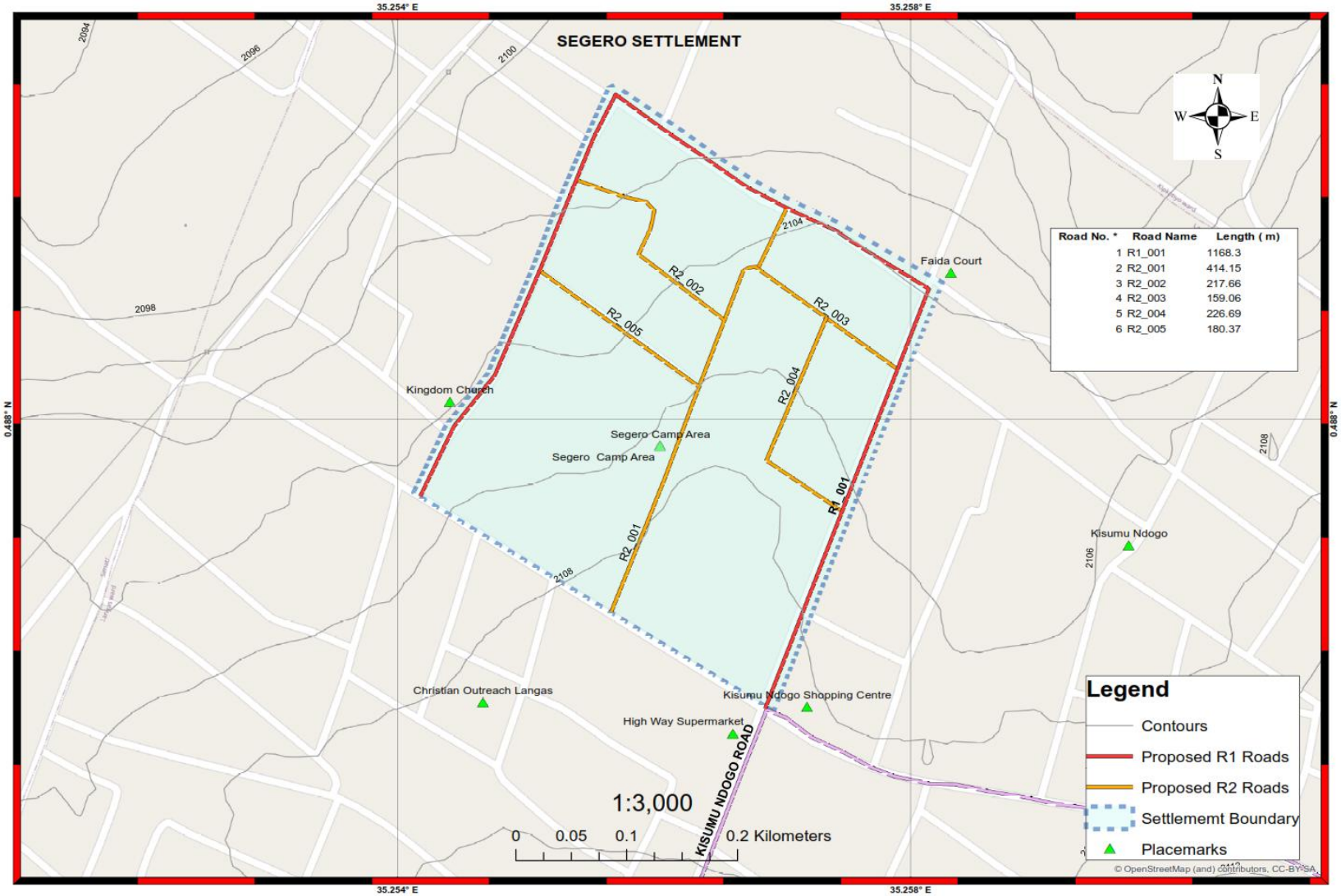


Figure E- 3: Map of Segero Settlement

E.3 Legal Framework and Policy Provisions

The ESIA study preparation was guided by both national and international legal and policy instruments aimed at ensuring compliance with Environmental and Social Safeguards of the Kenyan Government and the World Bank. A summary of the instruments is presented box E-1 below;

Box E-1: Legal and Policy Instruments

National Policies and Laws

1. Kenyan Constitution 2010
2. Kenya Vision 2030
3. Sustainable Development Goals
4. Gender Policy 2011
5. HIV and AIDS policy 2009
6. Kenya National Youth Policy 2006
7. Environmental Management and Coordination Act (EMCA),2015 and subsequent regulations
8. Water Act 2016 and subsequent regulations.
9. County Government Act no 17 of 2012
10. Urban Cities Act of 2011
11. Physical Planning Act 1996 (286)
12. Occupational Health and Safety Act (OSHA 2007)
13. The Public Health Act (Cap.242)
14. Workplace Injuries and Benefits Act 2007

International Instruments

1. Environmental Management and Social Framework (EMSF) revised October 2014
2. Resettlement Policy Framework (RPF) revised October 2014
3. World Bank OP 4.01 on Environment Assessment
4. World Bank OP 4.12 on Involuntary Resettlement
5. World Bank OP 4.11 on Physical Cultural Resources
6. World Bank Access to Information Policy 2015
7. World Bank Group Environment Health and Safety Guidelines on Water and Sanitation

E.4 Public and Institutional Participation

The assessment involved consultations with relevant stakeholders in the settlement. The aim of stakeholder consultations was to give a platform for information sharing and opinion gathering in relation to the proposed Project. Consultations were done in form of public meetings. The issues were than analyzed and presented to design team for finalization of Project designs and planning on how best to implement the Project. The main meetings were held within the month of September and the attendance of the meetings was from diverse sectors of the society as summarized in table E-2 below

Table E- 2: Schedule of Public Consultation

Date	Settlement	Stakeholder Consulted	Meeting Attendance
11th September 2023	KK, Segero and Kasarani Informal Settlement	Settlement Executive Committee members (SEC) for KK, Segero and Kasarani Informal Settlement , county government officials, Area M.C.A and members of the community	Total 243 Male 143 Female 100

In Summary, issues discussed is presented in **Box E-2**below

Box E-2: Summary of Issues discussed in Public Consultations

- **KISIP CPCT introducing the project (specific details, donor, client, scope, duration - the** leadership explained the project in details to the people and asked them to embrace it.
- **State of Infrastructure** – The residents emphasized poor state of Infrastructure in the settlements including Roads, Drainage, Solid Waste, Security, water and Sewerage.
- **Labour issues**; Local unskilled and skilled labour should be sourced from the local communities as much as possible
- **CPCT ESS discuss positive and negative impacts of the prioritized projects** – the issue of project affected persons was discussed here, the service disruptions during project implementation phase was also an issue.
- **Health and Safety;** Issues of occupational health and safety during construction period were emphasized, the community confirmed that they have an active first aid and public health and sanitation group and requested for involvement in the project during construction.

**Details of stakeholder consultations are presented in Chapter 6 of this Report.*

E.5 Potential Project Impacts

The Project impacts during the assessment were generated based on the analysis of the proposed Project activities in relation to the Project area environment. The impacts arising during each of the phases of the proposed development namely; construction, operation and decommissioning, were categorized into:

- Impacts on Biophysical Environment
- Impacts related to Health and Safety
- Impacts related Social-Economic Setting

Section E.5.1 to E.5.7 below provides a summary of the Project impacts both positive and negative discussed in this Report.

E.5.1 Positive Impacts during Construction Stage

The Project is envisaged to have more positive impacts after completion of the civil works and commissioning. The main anticipated positive impact during construction phase is Creation of Employment and Business Opportunities for the local communities in the Project Areas

E.6 Environment and Social Assessment Finding

The Main Findings from the assessment described in the Report for proposed KISIP intervention in target KK, Segero and Kasarani Informal Settlements in Uasin Gishu County, Eldoret Town, Langas area are summarized below.

E.6.1: Environment Impact findings

(i) The environment and social screening identified that the KISIP Projects are classified as ***Category B.*** This implies that the Projects will have less adverse impacts to natural and human environment; the impacts are easily reversible through appropriate mitigation measures provided in this assessment.

(i) The Environmental and Social Impact Assessment undertaken for the projects indicate that the investment will result in low impact on biological environment; however, the Projects triggers World Bank Operation Policy (OP) 4.01 on Environmental Assessment and (OP) 4.12 on Involuntary Resettlement. Chance Find Procedures will be applied to all works contracts as provided for by (OP) 4.11 on Physical Cultural Resources.

(ii) The Projects will have no impact on land; this is because the planned investments in the informal settlements will be implemented within road reserves, water and sewerage wayleaves and open public grounds. These spaces are provided for in the respective settlements' Physical Development Plans (PDPs)
However, the ARAP report prepared for KK, Segero and Kasarani Informal Settlement detailed the below summarized to be impacts related to Project impacts to people's assets and sources of livelihood

- ✓ 98 project Affected Persons. Affected by infrastructure upgrading in the three Settlements. All of these are PAPs have affected structures, where a small number is fully affected mainly temporary business sheds, the rest of the structures are just partially affected.
- ✓ The total budgetary requirements for implementation of the ARAP is provided as Kshs 2,255,00.00 (Two Million, Two Hundred and Twenty-five Thousand, shillings only).

(iii) However, there are inevitable cases of encroachment on some sections of the way leave and road reserve in the settlements therefore OP 4.12 will be triggered. Cases of resettlement are limited to temporal structures, as majority of the roads were already cleared by the county Government.

(iv) Provisional Budget of Kenya Shillings two hundred thousand is required for implementation of mitigation measures of potential negative environmental impacts identified in the report. A separate budget is provided for RAP implementation.

MAIN REPORT

CHAPTER 1: INTRODUCTION

1.1 General Information

The Government of Kenya (GoK) through the the Ministry of Lands, Public Works, Housing and Urban Development, is implementing the Kenya Informal Settlements Improvement Project II (KISIP II) in select counties. The infrastructure upgrade plan (Infrastructure Improvement) under KISIP II will include roads and drainage, secure lighting, Water and Sanitation and social amenities upgrading works at an estimated implementation cost of KES. 2.85 billion. This will be funded by a credit from the World Bank (WB) through International Development Association (IDA) and Agence Française de Dévelopement (AFD). The target settlements in Uasin Gishu County are 8nr including Maili Nne, Segero, Shauri, KK, Kasarani, Mwanzo and Ngomongo are financed by IDA.

The socio- economic studies, feasibility studies, and the conceptual designs have been completed under the same consultancy. This Report therefore presents findings of Environmental and Social Assessment undertaken for the Proposed Projects, the report presents potential environment and social risks that are likely to be triggered by the Project, appropriate mitigation measures have also been provided in this assessment. The project has the following four components as indicated in **Table 1-1** below:

Table 1- 1: Schedule of Public Consultation

#	Component	Interventions
1	Component 1: Integrated settlement upgrading.	This component includes a combination of land tenure regularization and investments in infrastructure services.
2	Component 2: Socio-economic inclusion planning.	This component entails development of community-led plans based on socio-economic surveys, as well as linking identified vulnerable populations to existing safety net programs.
3	Component 3: Institutional capacity development for slum upgrading	This includes a set of activities designed to strengthen the capacity of Counties and National government institutions carry out slum upgrading and prevention.
4	Component 4: Program management and coordination	This component supports project management and coordination activities of both national and county governments - including fiduciary (financial management and procurement), environmental and social safeguards compliance, monitoring and evaluation, communication and community development.

This ESIA has been prepared for the proposed infrastructure upgrading of KK, Segero and Kasarani informal settlements *inLangas, Eldoret, Uasin Gishu County.*

1.2 Scope of the ESIA Study

The NEMA regulations requires that all new projects, programs or activities be subjected to an environmental and social impact assessment at the planning stages of the proposed undertaking to ensure that significant impacts on the environment are taken into consideration during the design, construction, operation and decommissioning of the Project.

The scope of this ESIA study covered:

(i) Literature Review of relevant reports related to the Project.
(ii) A summarized Project Description and an overview of baseline environmental information of the Project area
(iii) Institutional and public consultation through public meetings, interviews and administration of questionnaires with a view of gathering and in cooperating Project concerns into design of the Project
(iv) Analyzed the environmental and social costs and benefits associated with the proposed project thorough analysis of alternatives
(v) Reviewed relevant environmental legislation and polices that are triggered by the Project and ensure compliance
(vi) Assed and evaluated environmental and social impacts that may arise as a consequence of implementing the project based on the engineering design.
(vii) Proposed mitigation measures for the impacts that may arise.
(viii) Developed Environmental and Social Management and Monitoring Plan (ESMP) for the project.

1.3 Objectives of the EIA study

This ESIA assessment has been conducted in compliance with the Environmental Impact Assessment Regulation as outlined under the Gazette Notice No. 56 of 2003 of the Environmental Management and Coordination Act (EMCA), 2015 well as the World Bank OP 4.01 on Environmental Assessment. The Environmental & Social Impact Assessment (ESIA) is expected to achieve the following objectives discussed in box 1-1 below

Box 1-1: EIA Objectives

- To identify all potential significant environmental and social impacts of the proposed Project and recommend measures for mitigation.
- To assess and predict the potential impacts during site preparation, construction and operational phases of the Project.
- To ensure compliance with environmental regulations.
- To generate baseline data for monitoring and evaluation of how well the mitigation measures will be implemented during the Project cycle.
- To allow for public participation as well as stakeholder Consultations.
- To develop an Environmental and Social Management Plan to mitigate the identified impacts so as to ensure sustainability of the proposed Projects.
- To recommend cost effective measures to be implemented to mitigate against the expected impacts.

1.4 Project Relevance and Justification

The decision to prioritize KK, Segero and Kasarani Informal Settlement, as a focal point within the KISIP II (Kenya Informal Settlement Improvement Project Phase II) likely stems from a comprehensive evaluation of numerous factors. These considerations encompass social, economic, environmental, and developmental dimensions. Below are the discernible decisions and project justifications that underpin this choice:

1. **In-Depth Needs Assessment**: The selection of KK, Segero and Kasarani Informal Settlement was based on the findings that the settlement is grappling with significant deficits in terms of infrastructure, housing, basic services, and overall quality of life. This was revealed through an in-depth needs assessment exercise that was conducted.
2. **Population Vulnerability**: priority was attributed to the vulnerability of its residents. Informal settlements frequently house marginalized and economically disadvantaged populations. Addressing the challenges faced by these vulnerable groups is in line with KISIP II's social objectives.
3. **Tailored Environmental and Social Analysis**: The Environmental and Social Impact Assessment (ESIA) process would have scrutinized distinctive characteristics. This analysis could have identified the settlement's unique environmental vulnerabilities, social dynamics, and specific infrastructure deficiencies.
4. **Integration with National Goals**: The selection aligns with broader national development goals. Improving informal settlements supports overarching strategies for poverty alleviation, equitable urbanization, and enhanced living conditions.
5. **Community Engagement and Involvement**: Community engagement efforts likely influenced the decision-making process. Collaborating with local residents can unveil settlement-specific needs and help tailor interventions to align with community priorities.
6. **Infrastructure and Service Accessibility**: The feasibility of implementing infrastructure enhancements and basic services that would have been a consideration. The settlement's existing infrastructure and its potential for improvement likely shaped the decision.
7. **Local Government and Stakeholder Collaboration**: The support of local government and key stakeholders is pivotal for project success. The decision to target KK, Segero and Kasarani could be influenced by the backing of local authorities and stakeholders, indicating a conducive environment for implementation.
8. **Equity and Social Justice**: Lakeview's selection may reflect a commitment to addressing disparities within the city. KISIP II's aspiration to uplift marginalized communities is consistent with broader aspirations of social justice and inclusivity.
9. **Learning and Replicability Potential**: The choice of Lakeview might be informed by its potential to be a learning experience for future projects. Insights garnered from Lakeview's development could be invaluable in guiding similar endeavors in other settlements.

To recap, the decision to center on the KK, Segero and Kasarani Informal Settlement within the scope of KISIP II is grounded in a blend of factors. These factors encompass the settlement's unique challenges, alignment with national development objectives, social and

environmental considerations, and the opportunity for meaningful impact. The ESIA process would have further honed this decision-making process by highlighting specific site-specific challenges and guiding the formulation of effective interventions to address them.

The construction project proposed within the informal settlement seeks to address critical infrastructural needs while adhering to the Environmental Management and Coordination (Environmental Impact Assessment and Audits) Regulations 2003 and their amendment regulations in 2019.

1.5 ESIA Assessment Methodology

The ESIA study was carried out based on desk review, field assessments and consultations with relevant County and National Government institutions as summarized below;

(i) Definition and Classification of Environmental and Social Impacts

An environmental or social 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 Project, potential environmental impacts would arise during the construction and operation phases of the Project and at both stages positive and negative impacts would occur.

For each issue, the analysis is based on its nature, the predicted impact, extent, duration, intensity and probability, and the stakeholders and/or values affected. In accordance with best practice, the analysis includes issues relating to the Project's environmental and social sustainability. Appropriate Impact Rating has been presented for the situation without mitigation.

(ii) Impact Scoring and Rating Criteria

The potential impacts associated with the proposed development in the informal settlements have been preliminary assessed as presented in the matrix below. Precautionary principle was used to establish the significance of impacts and their management and mitigation i.e. where there is uncertainty or insufficient information, the Environmentalist opted to err on the side of caution.

Table 1- 2:: Environment and Social Impact Rating Criteria

Extent		Duration		Intensity		Probability		Weighting Factor (WF)		Significance Rating (SR)		Mitigation efficiency		Significance following Mitigation (SFM)	
Foot print	1	Short term	1	Low	1	Probable	1	Low	1	Low	0-19	High	0,2	High	0-19
Site	2	Short to medium	2			Possible	2	Low to Medium	2	Low to Medium	20-30	Medium to High	0,4	Medium to High	20-30
Regional	3	Medium term	3	Medium	3	Likely	3	medium	3	medium	40-59	medium	0,6	medium	40-59
National	4	Long term	4			Highly likely	4	Medium to high	4	Medium to high	60-79	Low to medium	0,8	Low to medium	60-79
International	5	Permanent	5	High	5	High	5	High	5	High	80-100	low	1,0	low	80-100

Notes:[1]

Definition of Terms in the Table

Extent: An area of influence covered by the impact. In this sense, if the action produces a much-localized effect within the space, it is considered that the impact is low (1). If, however, the effect does not support a precise location within the project environment, having a pervasive influence beyond the project footprint, the impact will be at location level (3) or could be County (5)

Timing: Refers to the moment of occurrence, the time lag between the onset of action and effect on the appearance of the corresponding factor. We consider five categories according to this time period is zero, up to 1 year (short term), or more than two years, which are called respectively medium term (3), long-term (4), and permanent (5).

Intensity: refers to the degree of impact on the factor, in the specific area in which it operates, ranked from low (1) to high (5).

Probability: Refers to the likelihood of the impact occurring during the project implementation, this is also ranked as Probable (1) to highly probable

Approach to Impact Mitigation and Management

The Assessment includes a description of the measures envisaged to prevent, reduce and where possible offset any significant adverse impacts on the environment. The identification of such measures is an interactive process which needs to be undertaken in parallel with the design to aid the incorporation of measures into the design during Project development. Early adoption of appropriate mitigation will help reduce significant environmental impacts

[1]Environment and Social Impact Rating Developed by ESIA team for KISIP Projects in Nairobi and Uasin GishuCounty July 2014

to a practicable minimum.

1.5.1 Environment and Social Scoping

The scoping process involved identification of significant environmental and social issues associated with the proposed Works. ESIA Scoping was achieved through reviews of the secondary Documents and available data supported with field evaluations.

The process enabled the assessment team determine the Project potential risks to Biophysical, Social, Health and Safety of the receptor environment around the proposed Project site. The impacts were determined to less significant and also the geographic scope of the impact was also determined to be less expansive, details of the impacts are discussed in chapter 7 and 8 of this report

1.5.2 Desk Reviews

A desktop review was conducted prior to site visit. Documents reviewed are illustrated in Box 1-2 below

Box 1-2: Literature Review Documents

(i) Environmental Management and Coordination Act (EMCA)1999 Cap 395
(ii) Project Appraisal Document PAD for KISIP -2
(iii) Environmental Management and Social Framework (EMSF) – KISIP 2 - 2019
(iv) Resettlement Policy Framework (RPF) KISIP 2 - 2019
(v) Project Draft Conceptual Design Report (GA October 2023)
(vi) Project Draft Socio Economic Survey Report (GA October 2023)

1.5.3 Field Assessment

The physical evaluation of the Project area was carried out within the month of October 2023 with specific focus on the environmental and social issues. The environmental issues assessed include,

(i) Biophysical environment (air, water, land)
(ii) Human health and safety
(iii) Traffic Management on Site
(iv) Social issues, including;
- ✓ Labor Influx Management,
- ✓ HIV and other Communicable Diseases Management.
- ✓ Gender and Youth Inclusivity and Empowerment,
- ✓ Human Right Protection and Grievance Redress Mechanism:

1.5.4 Stakeholder Consultations

The assessment involved consultations with relevant stakeholders in KK, Segero and Kasarani informal settlements in Langas, Eldoret. The aim of stakeholder consultations was to give a platform for information sharing and opinion gathering in relation to the proposed Project. Consultations were done in form of public meetings and key informant interviews. The issues were than analyzed and presented to design team for finalization of Project designs and planning on how best to implement the Project. The main meetings were held within the month of October; attendance of the meetings was from diverse sectors of the society as summarized in table 1-1 below

Table 1- 1: Schedule of Public Consultation

Date	Settlement	Stakeholder Consulted	Meeting Attendance
11th October 2023	KK, Segero and Kasarani Informal Settlement	Settlement Executive Committee members (SEC) for KK, Segero and Kasarani Informal Settlement , county government officials, Area M.C.A and members of the community	Total 243 Male 143 Female 100

**Details of stakeholder consultations are presented in Chapter 6 of this Report. Also a detailed Community Consultation Report was prepared as a separate Report to this Assessment.*

1.5.5 Social Infrastructure Mapping

Social mapping was undertaken while doing the community survey using full participation from the local administration and community. The focus of the process was to help in the depiction of location boundaries, roads, drainage systems, schools, drinking water facilities, source of drinking water, community infrastructure, etc. It focused on the spatial dimension of the people's realities as expressed in their background information. This process done to help in charting the various aspects related to land use and command areas, water bodies, rivers, drainage and health **A detailed Socio Economic Survey Report is presented as a separate report to this Project*

1.5.6 Secondary Socio Economic Data

This information was largely drawn from the Kenya National Bureau of Statistic, The Kenya Population and Housing Census VII on Population and Household Distribution by Socio Economic Characteristic, August 2019, Uasin Gishu County Integrated Development Plan (CDIP) 2018 -2022 and findings from field survey undertaken during Environmental and Social Impact Assessment (ESIA) process within the month of October 2023.

CHAPTER 2: PROJECT DESCRIPTION

2.1 Project Context

This chapter presents Project Interventions in the target Informal Settlements of Uasin Gishu County, Environment and social screening was therefore based on Projects discussed under this chapter. The infrastructure Project are discussed in the below listed context

(i) Existing status of infrastructure within the target informal settlements observed during field visits.
(ii) Projects prioritization during the focused Group Discussions (FGD) undertaken during community consultations

Figure 2.1 to 2.2 below presents satellite images of KK, Segero and Kasarani Informal Settlements in Uasin Gishu County.

Figure 2- 1: Satellite Image of Informal Segero Settlement

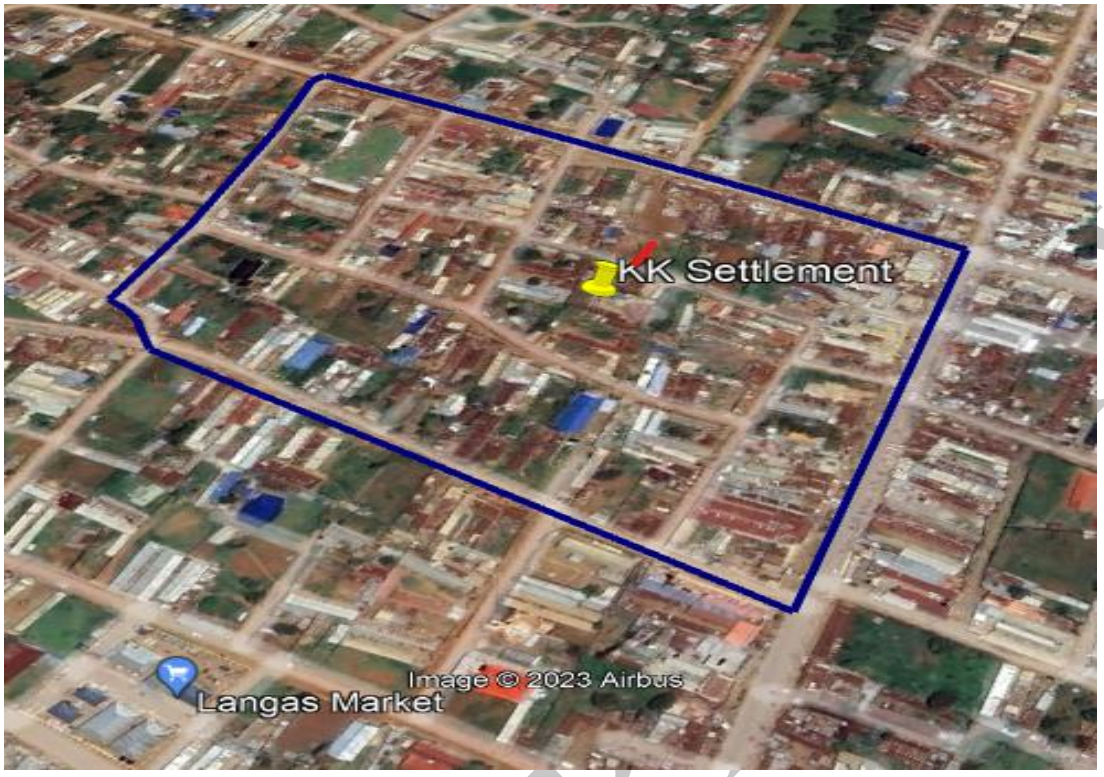


Figure 2- 1: Satellite Image of KK Informal Settlement

Figure 2- 1: Satellite Image of Kasarani Informal Settlement

2.2 Existing Status of infrastructure in KK, Segero and Kasarani Informal Settlement

2.2.1 Roads and Footpath

Based on the field survey within the three Informal Settlements the status of the road access was recorded to be very poor as the main road used to access the Kasarani settlement is tarmacked with clear road network and drainage, but lack footpaths. The same cannot be said of the remaining settlements who interior access are narrow murram roads and incomplete paving blocks with potholes and with unclear networks. The roads are impassable during rainy season due to mud and overflow of small drains within the settlement.

Table 2- 1: Status of Road and Foot Path in KK, Segero and Kasarani Informal Settlement

Settlement	Access Road	Status of Access Road	Interior Settlement Roads	Characteristic of Road Network
KK	Eldoret- Kisumu	Bitumen Surface	Earthen	Unclear Network
Segero	Eldoret- Kisumu	Bitumen Surface/Cabros	Earthen	Clear murram road
Kasarani	Eldoret- Kisumu	Bitumen Surface	Earthen	Clear murram road

2.2.2 Drainage Infrastructures

Storm Water Drainage as observed in KK, Segero and Kasarani settlement was generally a haphazard network of open drains, characterized by overflow and in some cases. Existing status of drainage pattern is presented in table 2-2 below.

Table 2- 2: Status of Drainage Infrastructures in KK, Segero and Kasarani Informal Settlements

Settlement	Drainage Network	General Slope	Alternative Drainage
KK	Unclear network	Generally flat land with gentle slope	None
Segero	Clear network, clogged due to small size	Generally flat land with gentle slope	None
Kasarani	Clear network, clogged due to small size	Generally flat land with gentle slope	None

2.2.3 Solid Wastes Management

The solid waste management as observed was characterized by dumping of waste along the roads. There is structured way of garbage collection. The table 2-3 below depicts a summary of the conditions of Solid Waste Management on the ground, within the three settlements:

Table 2- 3: Solid Waste Management in KK, Segero and Kasarani Settlement

Settlement	Designated Garbage Collection Points	Alternative Dumping Ground
KK	Few	Youth groups collect and deposit to the county dump site collection
Segero	Few	None, Done by county along the roads
Kasarani	None	Youth groups collect and deposit to the county dumpsite collection

2.2.4 Sewerage Infrastructure

Settlements within the town are connected to functional sewer lines, as is seen in a large section of Uasin Gishu County in general. In some places Locals have dug up septic tanks for household use and others have pit latrines. These are not however, frequently seen within the settlements. A few individuals have their own flush system toilets, which are connected to their own septic tanks. A summary of these conditions is as table 2-4 below:

Table 2- 4: Sewerage Infrastructure

Settlement	Sewer Line Connection	Septic Tanks Available	Ablution Blocks Available	Pit Latrines Available	Additional Observations
KK	Yes partially	Yes	None	✓	Several households with flush system toilets
Segero	Yes partially	Yes	None	✓	Several households with flush system toilets
Kasarani	None	Yes	None	✓	Several households with flush system toilets

2.2.5 Water Supply

KK, Segero and Kasarani informal Settlement have access to county supplied water by ELDOWAS. However, it was observed within the settlements that the water is not sufficient neither is it access by all the households within the settlement, leaving some residents stranded, they have to either buy water from vendors or seek alternative methods. Water supply situation is indicated in Table 2-5 below

Table 2- 5: Water Supply Situation

Settlement	City County Supply	Access to City County Supply	Presence of Water Vendors	Illegal Connections
KK	Yes	Poor		None
Segero	Yes	Fair		None
Kasarani	Yes	Poor		None

2.2.6 Lighting and Electric Network

Socio-economic study undertaken as part of this assignment, found that Majority of residents in the settlements have access to connections, through the main grid while, unfortunately, some households find the connection fees a hindrance to Kenya Power Supply. The settlements have dispersed supply of street lighting from the County Government, however due to poor maintenance most of them are non-functional. Lighting and electricity Network is indicated in **Table 2-6** below

Table 2- 6: Lighting and Electric Network

Settlement	Kenya Power Connections	Illegal Networks	Street Lighting	Light Masts/Flood Lighting
KK	✓	✓	None	Yes but insufficient
Segero	✓	✓	Poor	Yes but insufficient y
Kasarani	✓	✓	poor	Yes but insufficient

2.3 Projects prioritization during the focused Group Discussions (FGD) and Public meetings

2.3.1 KK, Segero and Kasarani Informal Settlement:

Table 2-11 below presents a summary of Project prioritization presented by Community following Community Consultation Forums.

Table 2- 11: KK, Segero and Kasarani Informal Infrastructural Prioritization

PRIORITY 1	**PRIORITY 2**	**FGD Meetings**
Roads	Street Lighting/Flood masts	Roads
Sewerage	Sewerage	Solid Waste Management
Solid Waste Management	Water Supply	Flood masts/Street Lighting
Street Lighting	Solid Waste Management	Storm Water Drainage
Storm Water Drainage	Storm Water Drainage	Sewerage
	Electricity	Water Supply
	Open Spaces	

2.4 Prioritized interventions

Based upon the priorities defined previously by communities; our discussions with the County Government; our analysis of the existing situation; as well as interrelations between infrastructure components, we now propose in this chapter the direction to our design works as well as the key issues to be addressed during the next design phase.

The Conceptual Design for the informal settlements shall focus on the following priorities:

1. **Roads and drainage**: upgrade of the road network (main access roads and the interior network) in the target informal settlements to bitumen standards, and construction of storm water drains.
2. **Street lighting and Supply of Electrical Power**: Implementation of flood masts within the settlement. Adequate consideration shall be given to more sustainable measures of ensuring good lighting and durable street lights, as well as implementation of renewable sources of electricity like solar powered lights.
3. **Sewerage**: Evaluating the need to reinforce the existing network and improving household connections.

The Project scope for each informal settlement in Langas Eldoret as presented in the Project Design Report is summarized in table 2.13 below while layout plans are presented in the next page.

Proposed: - Construction of 1034.45m of R1 001, 417.89m of R2 001, 439.36m of R2 002 and 183.69m of R2 003, together with the accompanying storm water drainage systems, and 1 No. High Mast Light.

Table 2- 12: Design Summary for KK Settlement

PROPOSED	CODE ON MAP	DESCRIPTION	QTY
R1 Roads	R1 001	6m carriage way, drainage and footpath on both side of the carriage way.	1,035 m
R2 Roads	R2 001	5.5m carriage way, drainage and footpath on one side of the carriage way.	460.91 m
	R2 002	5.5m carriage way, drainage and footpath on one side of the carriage way.	482.38 m
	R2 003	5.5m carriage way, drainage and footpath on one side of the carriage way.	226.71 m
Street lighting along all the proposed roads	8 m high poles, along the proposed roads, with 28 luminaires, 2 Control Pillars and 2,076 m main cable		
Ablution Block at KK Market	1 No. 5-door toilet ablution block		
Total Road			**2,205 m**
Total Footpath and Drainage Length			**3,240 m**
Total Street lighting			**70 poles**

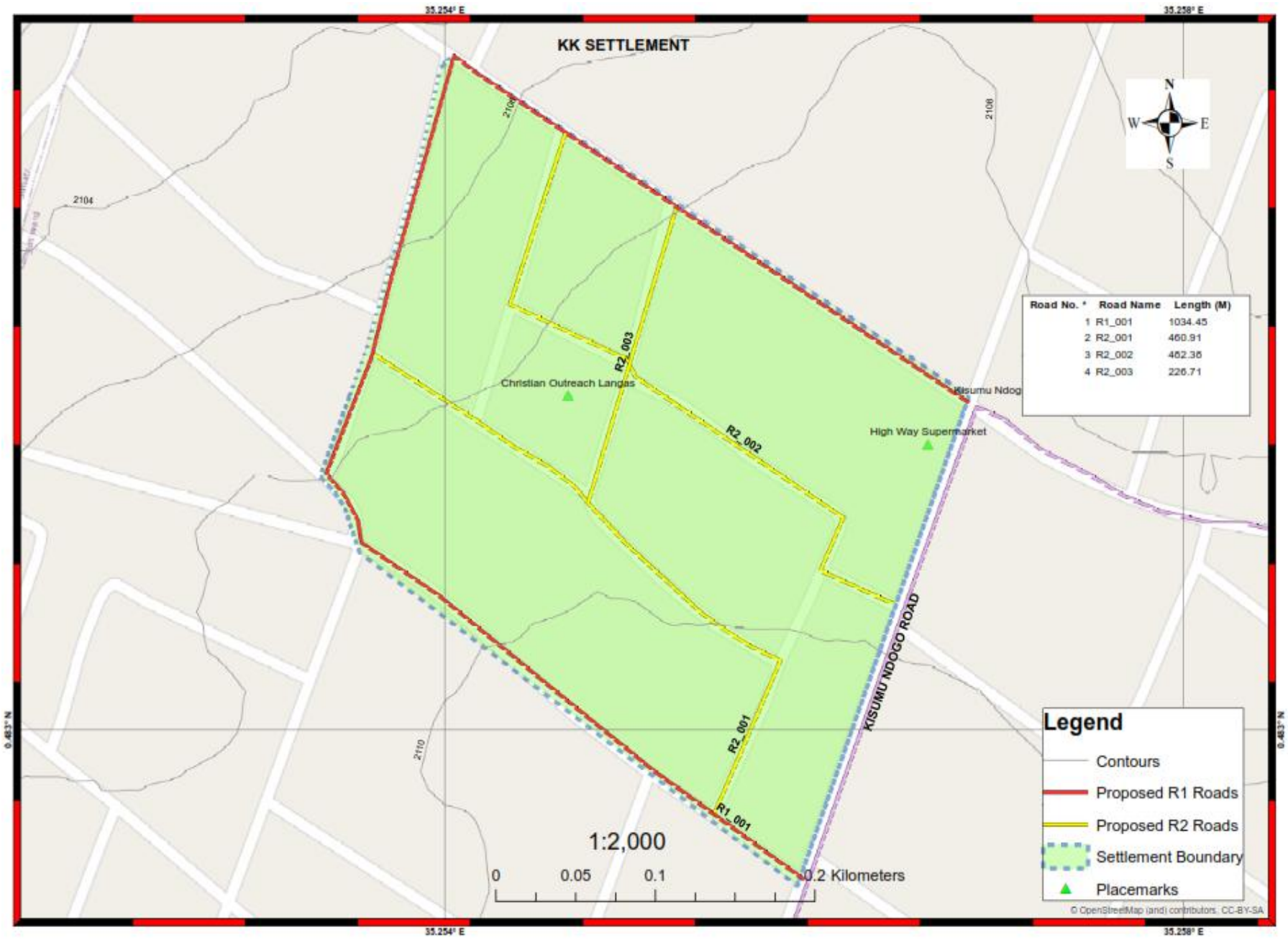


Figure 2- 4: KK Layout Plan

Proposed: - Construction of 1168m of R1 001, 414.15m of R2 001, 217.66m of R2 002, 159.06m of R2 003, 226.69m of R2 004 and 180.37m of R2 005 together with the accompanying storm water drainage systems, and 1 No. High Mast Light.

Table 2- 13: Design Summary for Segero Settlement

PROPOSED	CODE ON MAP	DESCRIPTION	QTY
R1 Roads	R1 001	6m carriage way, drainage and footpath on both side of the carriage way.	1,168 m
R1 Roads	R2 001	5.5m carriage way, drainage and footpath on one side of the carriage way.	414.15 m
	R2 002	5.5m carriage way, drainage and footpath on one side of the carriage way.	217.66 m
	R2 003	5.5m carriage way, drainage and footpath on one side of the carriage way.	159.06 m
	R2 004	5.5m carriage way, drainage and footpath on one side of the carriage way.	226.69 m
	R2 005	5.5m carriage way, drainage and footpath on one side of the carriage way.	180.37 m
Street lighting along all the proposed roads	8 m high poles, along the proposed roads, with 28 luminaires, 2 Control Pillars and 2,366 m main cable		
Total Road			**2,366 m**
Total Footpath and Drainage Length			**3,534 m**
Total Street lighting			**80 poles**

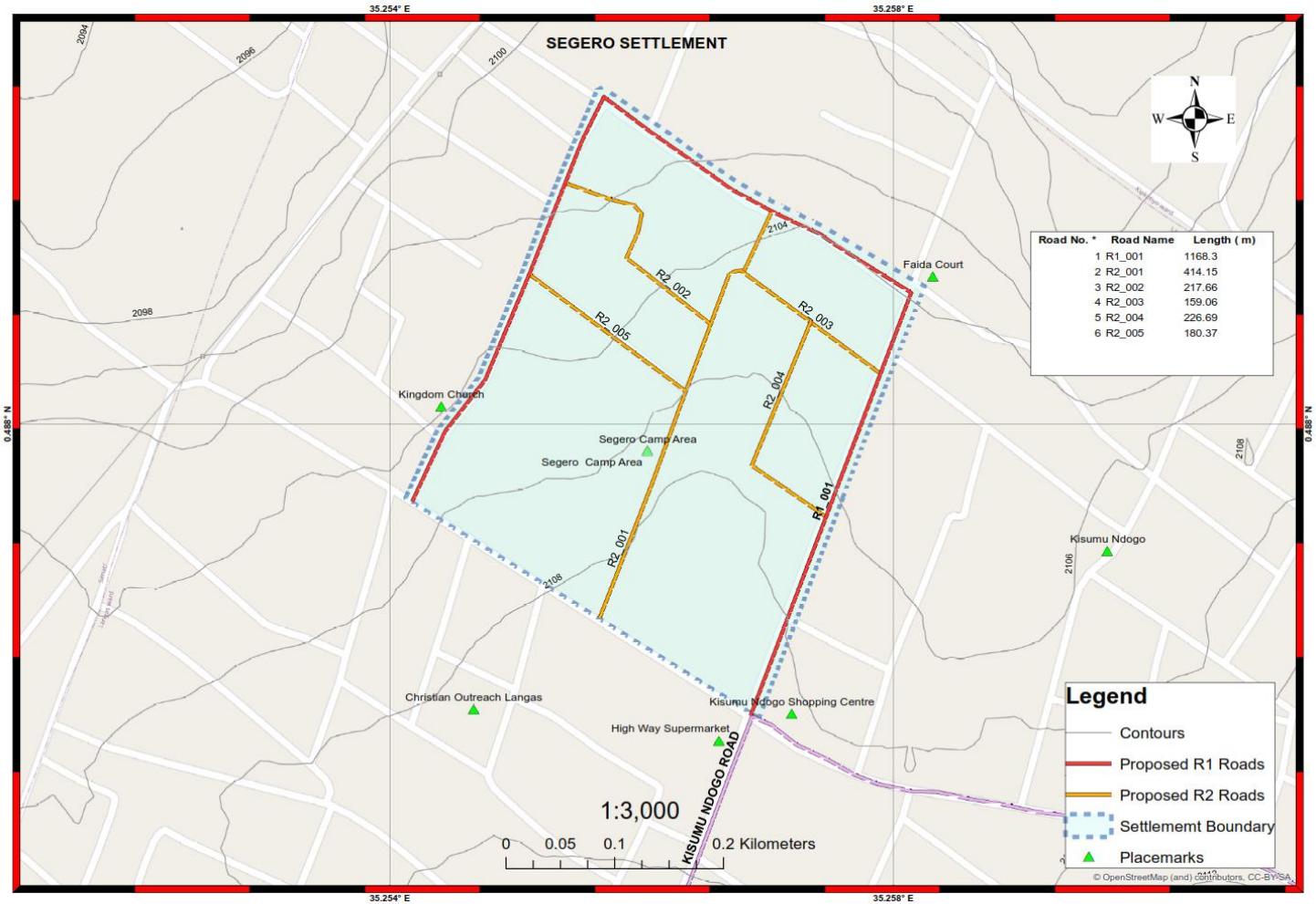


Figure 2- 5: Segero Layout Plan

Proposed: - Construction of 1671.87m of R1 001, 392.91m of R2 001, 259.64m of R2 002, 318.06m of R2 003, 177.98 m of R2 004, 231.28m of R2 005 and 387.56m of R2 006 together with the accompanying storm water drainage systems, and 1 No. High Mast Light.

Table 2- 14: Design Summary for Kasarani Settlement

PROPOSED	CODE ON MAP	DESCRIPTION	QTY
R1 Roads	R1 001	6m carriage way, drainage and footpath on both side of the carriage way.	1671.87
R2 Roads	R2 001	5.5m carriage way, drainage and footpath on one side of the carriage way.	392.91
	R2 002	5.5m carriage way, drainage and footpath on one side of the carriage way.	259.64
	R2 003	5.5m carriage way, drainage and footpath on one side of the carriage way.	318.06
	R2 004	5.5m carriage way, drainage and footpath on one side of the carriage way.	177.98
	R2 005	5.5m carriage way, drainage and footpath on one side of the carriage way.	231.28
	R2 003	5.5m carriage way, drainage and footpath on one side of the carriage way.	387.56
Total Road			**3,440 m**
Total Footpath and Drainage Length			**5,112 m**

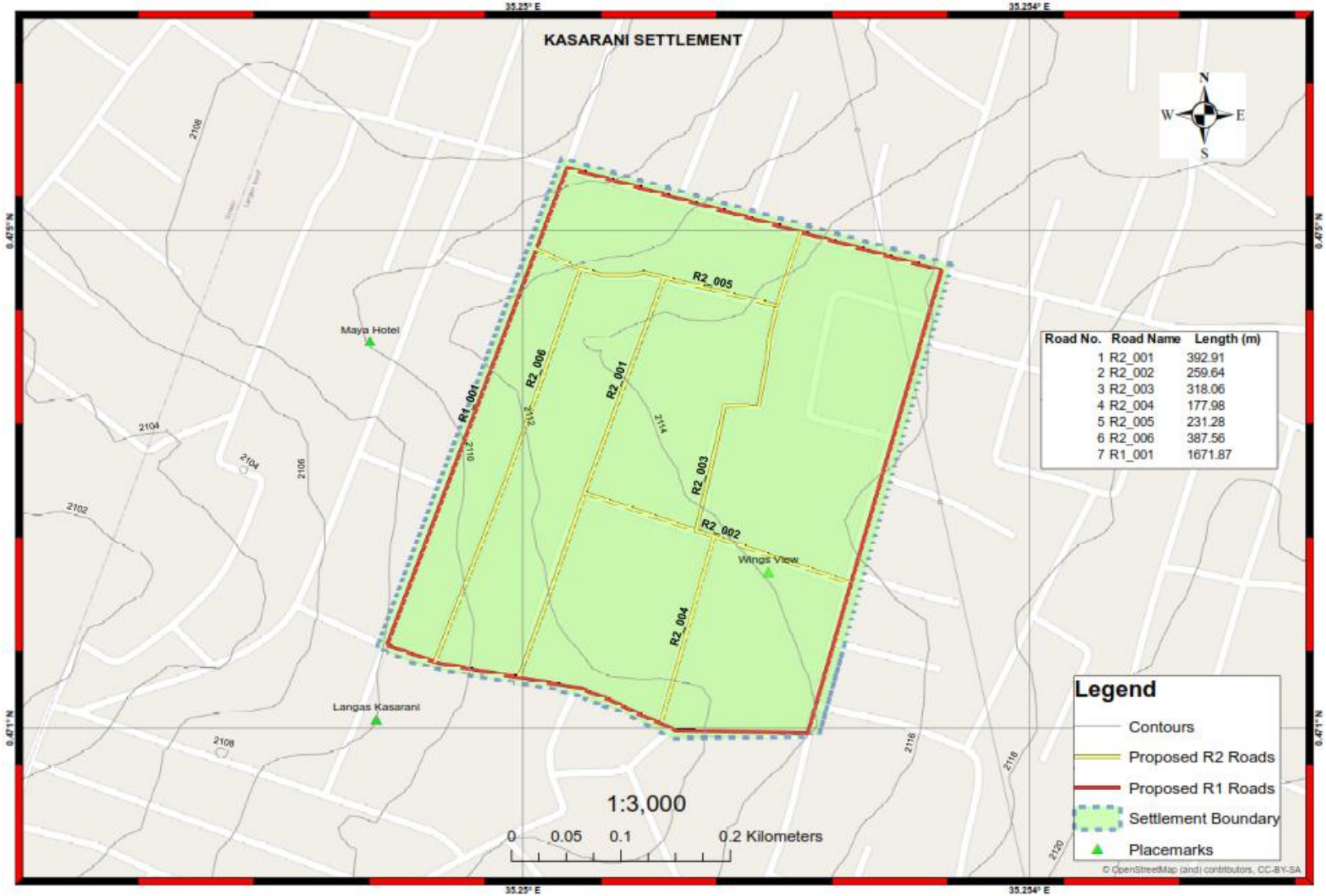


Figure 2- 6: Kasarani Layout Plan

2.5 Design interventions to improve infrastructure resilience.

Table 2-9 below presents Design interventions to improve infrastructure resilience.

Table 2- 9: Design interventions to improve infrastructure resilience

No.	Climate Change Influence	Design intervention
1.	Mitigation efforts towards the reduction of carbon emission during construction	The pavement structure of the roads is designed to use locally available construction materials e.g. gravel, hand packed stones and quarry dust, river sand etc. This reduces the carbon emission by the vehicles since the materials transportation and haulage distances are reduced.
2.	Mitigation efforts towards the reduction of carbon emission during use upon commissioning	The roads design is akin to the 15 minute neighborhood model by Carlos Moreno which is an urban planning concept where neighborhoods provide residents with the basic things they need — shops, schools, parks, leisure options, health care — within a 15-minute radius by foot or bike, usually referred to as active mobility. The roads are designed with cyclist and pedestrian paths to reduce dependency on vehicles thus creates a mono active mobility where people tend to walk more than they drive. This ultimately reduces the carbon emission as they use less motorized transport system. It also promotes social inclusion and interaction thereby improving their overall well-being as per Jeremy Bentham's utilitarianism model.
3.	Flooding	Sizing of the drains and culverts to accommodate the design storm for the entire upstream catchment area has been done to accommodate both extreme situations and mild cases through provision of relief gates hence a faster evacuation of flood waters out of the settlements. In settlements that are likely experience flooding, the finished road level (FRL) is designed above the adjacent ground level. Providing tree covers by planting trees and permeable hand packed stones absorbs part of the water runoff hence reducing flooding. Check walls are placed within the drainage channel to trap solids and debris for efficient flood water flow.
4.	Urban greening for aesthetics and reduction of urban heat island (UHI)	Green urban spaces, provide a wide range of benefits for people and the planet. They provide vital space for physical and mental wellbeing and a very important habitat for nature, including for birds and pollinators. Green space helps reduce air, water and noise pollution, provides protection from flooding, droughts and heat waves among others. This has been integrated in the design to bring nature back to the settlements through; ➢ Planting of trees ➢ Planting grass ➢ Use of colored paving blocks interspersed with green grass at the joints, hence projecting a green view on

		birds eye.
5.	Mitigation efforts towards Greenhouse gases emission by motor vehicles	UasinGishu County KISIP Team has promised to introduce sustainable practices in the transport and mobility for example, use of electric vehicles for inter commute and capacity building in climate proofing through continuous mainstream of the facility.

2.6 Construction Materials

Locally available Construction Materials

The designs identified locally available materials sources and through laboratory testing, and categorised their technical suitability. The design also realized the suitable sources of other construction materials such as aggregates, sand and construction water, and adopted the approach of specifying the required quality such materials.

Pavement structure

The pavement structure design was in light of the findings of the traffic study, subgrade strength, and type and strength characteristics of locally available construction materials.
Based on projected traffic loading and subgrade strength, the following traffic structures have been proposed.

Table 2- 10: Alternative 1 – Type – LVII (LVSR)

Vehicular Carriage way + Shoulders			Pedestrian Foot paths
1		50 mm thick Surfacing - A.C 0/20	60 mm thick paving blocks
2		150 mm thick Hand Packed Stone base course	150 mm thick Hand Packed Stone base course
3		125 mm thick sub-base - Cement Improved Gravel Sub-base (4% cement maximum)	125 mm thick sub-base - Cement Improved Gravel Sub-base (4% cement maximum)
4		Improved subgrade to minimum class S3	Improved subgrade to minimum class S3

Table 2- 11: Alternative 2 – Type 7 (RDM Part III)

Vehicular Carriage way + Shoulders			Pedestrian Foot paths
1		50 mm thick Surfacing - A.C Type II (instead of SD recommended in RDM Part III).	60 mm thick paving blocks
2		125 mm GCS class C (0/40)	150 mm thick Hand Packed Stone base course
3		100 mm thick sub-base - Cement Improved Gravel Sub-base (4% cement maximum)	125 mm thick sub-base - Cement Improved Gravel Sub-base (4% cement maximum)
4		Improved subgrade to minimum class S3	Improved subgrade to minimum class S3

Alternative 1 recommended:

- Hand Packed Stone is labour intensive and technology easily mastered by semiskilled labour and will offer employment to locals.
- Can be trafficked immediately after laying.

2.7 Project Cost

The project cost for works in Segero KK and Kasarani as presented in the design report is presented in table below

Table 2- 12:Project Cost

	Roads, footpaths, drainage	security lighting	SUB-TOTAL 1	dayworks	bill 1	bill 28	CONTRACT 2 TOTALS
segero	103,726,990.36	11,086,526	114,813,516.36	549,536.47	6,902,287.37	1,927,032.75	124,192,372.96
KK	124,044,518.06	8379874.8	132,424,392.86	633,828.11	7,961,007.06	2,222,614.12	143,241,842.15
kasarani	183,156,100.86	0	183,156,100.86	876,647.29	11,010,864.24	3,074,096.30	198,117,708.68

CHAPTER 3: ANALYSIS OF ALTERNATIVES

3.1 Project Alternatives

This chapter describes and examines the various alternatives considered during the design of the Project. The consideration of alternatives is one of the proactive sides of environmental and social assessment required to enhance Project design. This is achieved through examining options instead of only focusing on the more defensive task of reducing adverse impacts of a single design option.

Analysis of Project Alternatives requires comparison of feasible alternatives for the proposed Project in terms of: Project site, Project technology, Potential Environmental and Social Impacts, capital and recurrent costs, suitability under local conditions, and acceptability by neighboring land users.

The sub chapter below presents the considerations that were analyzed in determining feasible alternatives for the proposed Project as listed below.

(i) Settlement size and density: larger and denser settlements chosen receive priority to ensure that as many people as possible benefit from the investments.
(ii) Scale of potential displacement of residents: physical upgrading of the settlement should not entail large-scale displacement (and, thereby, relocation) of residents.
(iii) Land tenure status: a settlement must be located on land that is owned by the government planned under Component 2 and PDP or LPDP issued.
(iv) Location: a settlement cannot be located on a hazardous site or in an environmentally fragile area.
(v) Proximity to trunk infrastructure: to maximize settlement coverage within a limited budget and to ensure that participating settlements receive connections to the main infrastructure networks and maintenance systems, in the initial years of project implementation settlements that are in close proximity to core trunk infrastructure on the main road was a consideration.
(vi) Sustainability of the proposed rehabilitation is ensured through community's willingness to participate and remain engaged in the program.

3.2 KISIP Investments Identification

In the case of KISIP, identification and selection of investments, was a reflection of the community felt needs, as guided by given the following principles:

(i) The service should be selected from the agreed investment menu.
(ii) The investment should be a priority specified in the Physical Development Plan (PDP) of the County.
(iii) The chosen infrastructure investments should be economically justifiable.
(iv) Arrangements for operations and maintenance must be sound and give confidence

that service delivery will be sustainable.

(v) Environmental and social impacts of infrastructure investments are positive.

(vi) Budget and per hectare cost must be within agreed limits.

3.3 Project Option Alternatives

The Project option as described in the ESIA is recommended as it will achieve significant improvements in lives of people working and living in informal settlements.

i) Roads and Footpath Alternatives

The proposed project will be constructed using modern, locally and internationally accepted materials to achieve public health, safety, security and environmental aesthetic requirements. The roadworks will be made using locally sourced materials that meet the Kenya Bureau of Standards requirements.

The alternative technologies available include the conventional concrete roads, prefabricated concrete panels, Tarmacked roads or even improved marram roads. These may not be desirable from a cost and durability perspective.

On the part of foot paths, can have an alternative of marram road, tarmacked or use of cabros.

The technology to be adopted i.e. tarmacked roads and cabros for footpaths will be the most economical and one sensitive to the environment. The other options will be expensive and environmental degrading due to material to be utilised and dust generation during the time of use.

ii) Lighting and electric Alternatives

<u>High mast lights alternatives</u>

The poles for high mast lights are often much taller than flood lights. The larger the area that you want to illuminate, the higher up your lights will need to be mounted (if you want to keep the total amount of poles to a minimum). Therefore, high mast lights are often the go-to option when illuminating large areas. It is commonly used to illuminate large areas from a very high mounting height, typically on poles ranging in height from 50ft to 150ft and are mounted to those poles via Fixed Rings or Lowering Devices. High mast lights are the ideal option when you want to illuminate a large area with less poles. LED high mast lights are currently the most cost effective and efficient way of providing even and controlled illumination of large outdoor areas due to the high mounting height and multiple luminaire configuration. This option has been adopted to illuminate the settlement of Kipkaren. However, they are prone to vandalism in the project areas within Eldoret.

Flood light Alternatives

Flood lighting is also used for exterior lighting and is typically mounted on poles or buildings to provide directional illumination to a variety of areas. The fixtures on flood lights can be mounted at a variety of angles, distributing the light accordingly.

Flood Lighting Applications: This type of lighting is often used to provide light to areas for security, vehicle & pedestrian use, as well as used for sports activities and other large areas in need of targeted outdoor illumination.

Flood lights typically have a mounting height of approximately 15ft-35ft, however, in several applications they can have a pole height greater than the typical max (although rarely reaching the height of high mast lighting). A closer distance will not need a long-range narrow beam, so a wider flood beam will be best. To illuminate an area at a further distance, a narrower, farther-reaching beam is necessary. This option has not been utilized due to the limitation of the area to be illuminated.

Power source alternatives;

Solar powered alternative

The high mast lights and the flood lights need power sources to light up a night. The option of solar power will require solars and batteries for storage of power during the day and be used up at night. The initial cost is high but operation wise, it is sustainable as you are utilizing the renewable energy. It is however prone wear and tear as the time goes by. In addition, they are prone to vandalism. This is the reason why the option was not chosen.

Electricity Grid alternative

This option involves connecting the street lighting to electricity from the grid. This option was chosen because of the already existing power sources within the project areas.

Hybrid system alternative

This alternative involves connecting the streetlights to the Kenyan grid together with solar power alternative. This alternative has a backing in that it utilizes also the renewable energies and also the system can work when there is power blackout in the settlement. However, the alternative was not adopted due to vandalism of solar and their batteries that will render the system un-functional.

iii) Alternative on material and design

Certainly, there are several alternative technologies that can be considered for the design and construction of roads, drainage systems, floodlights, sewer lines, and water pipelines. These technologies often prioritize efficiency, sustainability, and cost-effectiveness. Here are some alternatives to traditional methods:

1. **Road Construction:**
    - **Recycled Materials:** Using recycled materials like reclaimed asphalt pavement (RAP) and recycled concrete aggregate (RCA) can reduce the demand for virgin materials and lower costs.
    - **Porous Pavements:** Porous asphalt or concrete allows water to pass through, reducing runoff and aiding in groundwater recharge.
    - **Geo synthetics:** Geo synthetic materials like geotextiles and geo grids can enhance road stability, reduce erosion, and increase lifespan.
    - **Warm Mix Asphalt:** This technology allows asphalt to be produced and placed at lower temperatures, reducing energy consumption and emissions.
    - **Ues of virgin materials for construction of the roads;** this option uses the required materials from their processed form. They are durable and makes the road last long.
2. **Drainage Systems:**
    - **Bio retention Cells:** Also known as rain gardens, these landscaped areas collect and treat storm water naturally, promoting filtration and reducing the burden on traditional drainage systems.
    - **Permeable Pavement:** Permeable surfaces like permeable concrete or interlocking permeable pavers allow water to infiltrate, reducing runoff and erosion.
3. **Floodlights:**
    - **Materials for poles:** Utilising concrete poles for the lood mast or using Aluminium materials. Also using Iron is an option. Aluminium was chesen due to its light nature. Iron material is prone to rust and vandalism.

3.4 Land Requirement

The projects have been designed to only utilize the road reserves as designated on the Physical Development Plans (PDPs) developed by KISIP Component 2 for the targeted settlements. No private land will be acquired for the project. This has significantly minimized displacement of populations and livelihoods as a result of the Project and the need to carry out resettlement. A separate RAP has been prepared for the Project components which have

an impact to people's assets and sources of livelihood.

3.5 Chosen Alternatives from KISIP Menu

The Project designs were prepared for each of the infrastructure priorities identified by the communities in the settlement during the socio-economic assessment and priority validation forums organized by the design consultants. Factors that determined the choice and design of the infrastructure were based on:

(i) Defining technical, social and environmental feasibility.
(ii) Detailing design standards for each infrastructure component.
(iii) Estimating quantities.
(iv) Preparing unit cost rates and a feasibility design cost estimate.
(v) Evaluating O&M issues and potential costs.
(vi) Revising the scope of the infrastructure components if required.

Table 3-1 below presents the scoring of priority interventions in the settlements

Table 3- 1: Scoring of Priority Interventions in the Settlements

PRIORITY 1	PRIORITY 2	FGD Meetings
Roads	Street Lighting/Flood masts	Roads
Sewerage	Sewerage	Solid Waste Management
Solid Waste Management	Water Supply	Flood masts/Street Lighting
Street Lighting	Solid Waste Management	Storm Water Drainage
Storm Water Drainage	Storm Water Drainage	Sewerage
	Electricity	Water Supply
	Open Spaces	

**Source: County Public Participation October 2023*

3.6 No Project Alternative

The No Project Option in respect to the proposed Project implies that the status quo is maintained. The no Project option is the least preferred option from the socio-economic and partly environmental perspective due to the following factors:

(i) The will be no improved accessibility and mobility within the settlements.
(ii) The will be no improved drainage system within the settlements.
(iii) The will be no improved Health and Sanitation within the settlements.
(iv) There will be no improved living standard/well-being, employment and local economy in the target settlements.
(v) The will be no creation of employment both during construction and operation phases of the projects.
(vi) The will be no increased Land Value within the settlements.
(vii) The will be no improved Access to Social Services within the settlements.

From the analysis above, it becomes apparent that the No Project alternative is not

preferred by the community.

CHAPTER 4: BASELINE INFORMATION OF TARGET SETTLEMENTS

4.1 General Information

The Project target upgrading of infrastructure in KK, Segero and Kasarani informal settlement in Langas, Eldoret town, the target settlements are summarized in table 4-1 below.

Table 4- 1: Target Settlements

Location in Uasin Gishu County	Settlement
Kapseret	KK, Segero, Kasarani

The identified Informal Settlements are located within Uasin Gishu County; the County is one of the eight counties in North Rift Region. The County extends between longitudes 340 50' east and 350 37' east and latitudes 00 03' South and 00 55' North. Uasin Gishu County covers a total surface area of 3,345.2 km2.

The County shares common borders with Trans Nzoia County to the North, Elgeyo Marakwet County to the East, Baringo County to the Southeast, Kericho County to the South, Nandi County to the Southwest and Kakamega County to the Northwest.

4.2 Physical Environment

4.2.1 Climate

The County receives a high and reliable rainfall with an average annual rainfall ranging from 624.9 mm - 1560.4mm. This occurs between the months of March and September with distinct peak in May and August. The areas with relatively higher rainfall are found in Ainabkoi, Kapseret and Kesses whereas Turbo, Moiben and Soy receiver relatively lower amounts of rainfall. The dry spells start in November and end in February. The annual temperatures in the County range between 7^{o}C and 29^{o}C. The rainfall and temperatures in the county are conducive for both agriculture and farming.

4.2.2 Topography

Uasin Gishu County divided into two topographical features: the upper highlands and lower highlands with Eldoret (2,085m) forming the boundary between the regions. The altitudes fall gently from 2,700 m above sea level at Timboroa in the East to about 1500m above sea level at Kipkaren. The topography is higher in the East and declines towards the western borders.

4.2.3 Soils and Geology

The geology of Uasin Gishu is dominated by tertiary Volcanic rock. The soils represent a wide range of profile characteristics drainage condition have delivered an array of soils from high

to low agricultural potential. these are the red loam, red clay, brown loam, and brown clay soils. Differences in e.g. parent material, color, porosity or age. Some of the characteristics and their distributions are:

- The red loam soils are found mainly in the northern parts of the county in Turbo, Moi's Bridge and lower Moiben.
- The red clay soils occur around soy, Upper Moiben and Nandi Boarders.
- The brown clay soils occur in upper areas of Lesso.

4.2.4 Hydrology

The County in within the L. Victoria water catchment and and endowed by several rivers which include R. Moiben, R. Sergoit, R.Kipkaren, R.Chepkoilel and R. Sosiani which drain into L. Victoria. These rivers provide water for livestock, farming and domestic use.
In summary, hydrology in Uasin Gishu County is integral to its agricultural activities and overall development. Adequate water resources management is essential to ensure a sustainable and prosperous future for the county's residents. The county government, in collaboration with various stakeholders, works to address the challenges and harness the potential of its hydrological resources.

4.3 Biological Environment

4.3.1 Vegetation and Flora

Uasin Gishu County, located in the Rift Valley region of Kenya, features a diverse range of vegetation and flora due to its varied topography and climatic conditions. Here are some of the key aspects of the vegetation and flora in Uasin Gishu County:

(i) **Grasslands and Savannahs:**

The county's landscape is characterized by extensive grasslands and savannahs. These open grassy areas are home to a variety of grass species and provide important grazing land for livestock.

(ii) **Farming Areas:**

Uasin Gishu County is known as the "Home of Champions" due to its rich agricultural activities. The fertile soils support the cultivation of crops such as maize, wheat, sugarcane, and vegetables, which contribute to the agricultural landscape.

(iii) **Forest Reserves:**

The county is home to several forest reserves, including the Kaptagat Forest, which is part of the Cherangani Hills. These forests are important for biodiversity conservation and act as water catchment areas.

(iv) **Riparian Vegetation:**

Vegetation along rivers and streams in Uasin Gishu County includes various trees and shrubs adapted to wetland conditions. This riparian vegetation is crucial for maintaining water quality and preventing soil erosion.

(v) **Acacia Woodlands and Bamboo Groves:**

Acacia trees are common in the county, contributing to the savannah landscape. These trees provide shade and serve as habitat for various wildlife species. In addition, some areas in Uasin Gishu County have bamboo groves. Bamboo is a versatile plant used for various purposes, including construction and crafts.

(vi) **Wetlands and Swamps:**

Uasin Gishu County has wetland areas that support unique flora and fauna. These wetlands are important for water filtration and are breeding grounds for some bird species.

(vii) **Indigenous and Exotic Trees:**

Both indigenous and exotic tree species can be found in the county. Eucalyptus trees, for example, are often planted for commercial purposes and timber production.

The County's diverse vegetation and flora are not only important for the region's ecology but also for supporting agriculture, wildlife, and tourism. Conservation measures and sustainable land management practices are essential to protect and preserve the natural beauty and resources of the county.

4.4 Target Settlements Assessment

KISIP targets upgrading of infrastructure and other works in KK, Segero and Kasarani Informal settlement in Eldoret Town. Detailed assessment of the settlement is presented in sub chapters below.

4.4.1 KK, Segero and Kasarani Informal Settlement in Eldoret Town

KK, Segero and Kasarani Informal Settlements are located in Eldoret Town, Uasin Gishu County. They can be accessed off Eldoret-Kisumu Road, and off Kipkenyo Road behind Rivatex. The approximate total geographic span is 41.44 Ha, and a total population of 127,167 people (KISIP).

These settlements are divided into different plot sizes per household, with the average being 50 by 100 ft of land allocated by Uasin Gishu County. Some of the residents of have land tittle deeds while others lack proper land ownership documents. The type of houses of houses constructed within the settlement are a mixture of permanent houses (with masonry walling) and semi-permanent houses (mud houses and mabati structures).

(i) Environment and Social Screening KK, Segero and Kasarani Informal Settlement

The area is located within human settlement in Langas area, Eldoret town with very limited vegetation cover due to the settlement being within an urban center. The main economic activity within the settlement is commercial business and some small scale domestic farming.

These settlements have poor drainage systems therefore runoff water follows the natural drainage system and small drains that are clogged bringing issues of stagnation of waste waters. In some parts, the County Government has done a drainage system which helps various household during the heavy rains. They face serious challenge of blockage due to anthropogenic activities which result into flooding of the settlement during rain seasons. Also, Solid waste management systems are not well developed hence waste is often damped by the roadside.

Photo plate below illustrated environmental situation in the three Informal Settlements

<table>
<tr><td>  </td><td>  </td></tr>
<tr><td>Solid waste dumped by the road side in Segero</td><td>Main road in KK</td></tr>
<tr><td> 
</td><td>  </td></tr>
<tr><td>A boda boda stage in Kasarani</td><td>A photo showing how the opening of roads</td></tr>
</table>

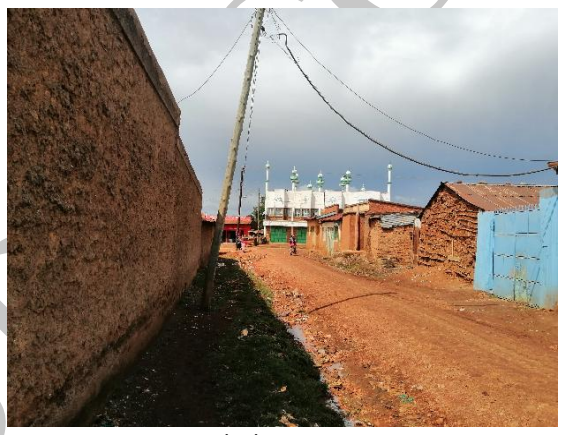
(ii) Existing Infrastructure in KK, Segero and Kasarani Informal Settlement in Eldoret town

The common type of sewerage disposal infrastructure is use of pit latrine and flush toilets shared per plot this is because the area does not have a sewer system. Most of the structures within the settlements are made of quarry stones with cement wall, cement screed floor and galvanized corrugated iron sheet roof, a small number of houses are made of mud walls and iron sheet roofs. Electricity is readily available in the area.

There is water connection to the area done by Eldoret water and Sanitation Company (ELDOWAS) although residents complain of inadequate water supply reason being the small size of the mainline. Majority of roads in the area are of marrum standards being maintained by the county government of Uasin Gishu.

Existing Infrastructure in KK, Segero and Kasarani Informal Settlement

Earth road, showing a high mast lighting



Some structures with the Kasarani

(iii) Social and Public Amenities in KK, Segero and Kasarani Informal Settlement

The area is served by a number of public facilities which include but not limited to Masjid Majmaul Khairaat, Rock Mirror School, Mark Model High school among many other schools, PAG Church also amongst many churches as presented in photos 3-11 below

Social and Public Facilities in the Informal Settlements

PAG Church

Masjid Majmaul Khairaat.

Mark Model High School

A church and an academy

4.5 Socio Economic Profile

The majority of the residents within the settlement are tenants accounting for 72% of the residents in the informal settlement while 16% indicated that they are plot owners and another 12% are structure owners

4.5.1 Ownership/Tenancy

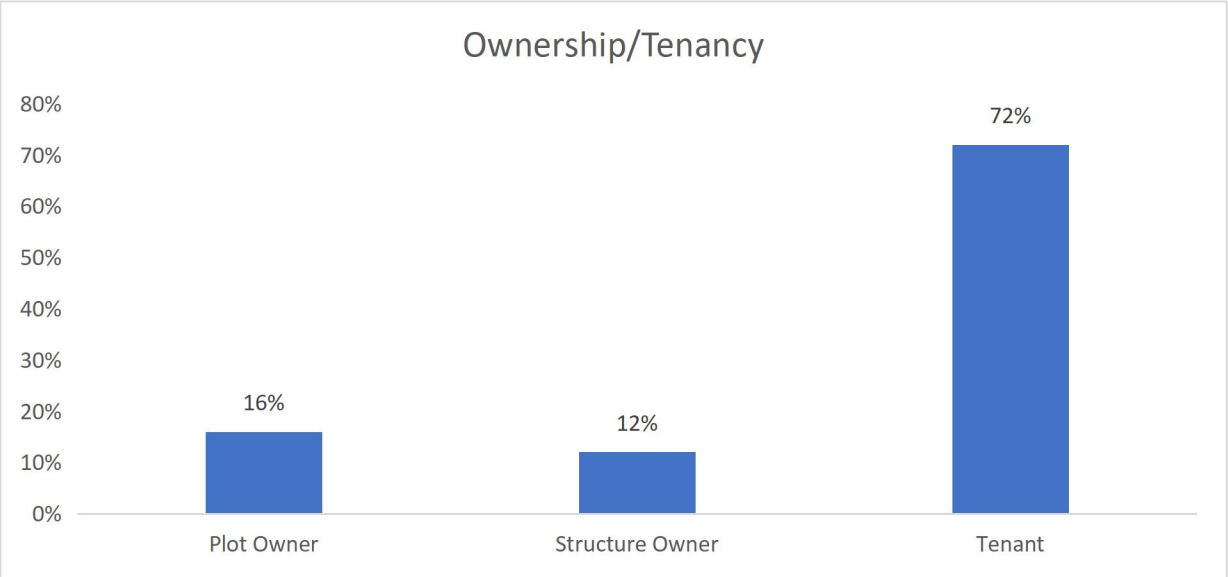


Figure 4.1: Ownership/Tenancy

4.5.2 Accessibility

There are well-graded murram roads within the settlement that ease maneuverability and form almost a perfect grid.

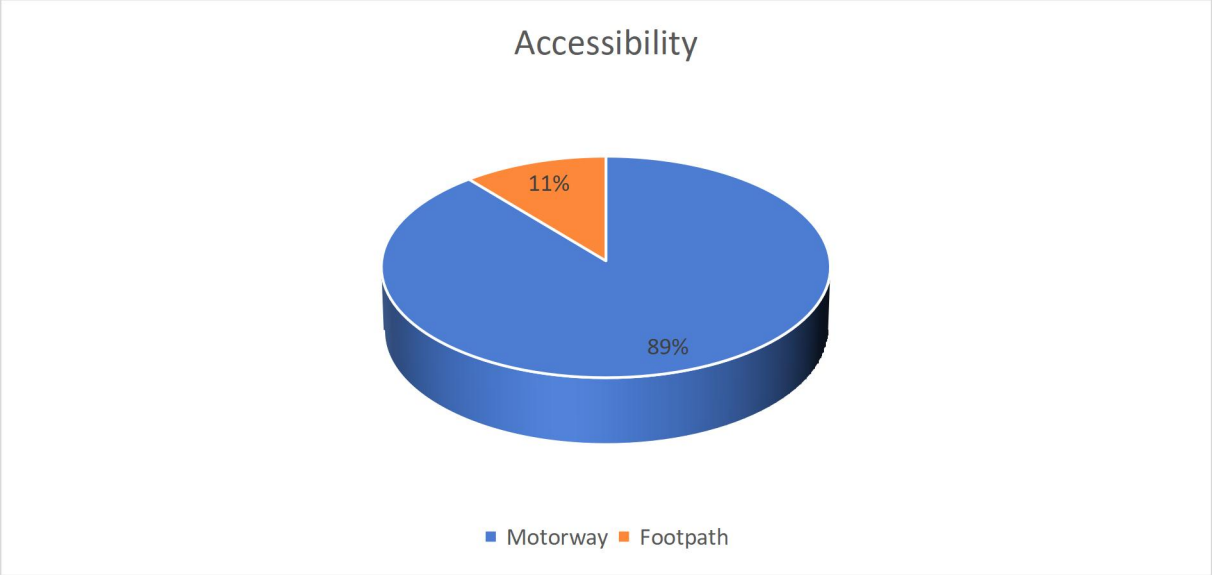


Figure 4.2: Accessibility

Figure 4.2 indicates that 11% of structures within the Kasarani settlement are accessible by walking while 89% have accessible motorways that vehicles can pass through.

4.5.3 Demographic Profile of Households

Age, Gender, and Marital Status

The survey showed that the population of the settlement has slightly more females than males, as indicated in Figure 4.3

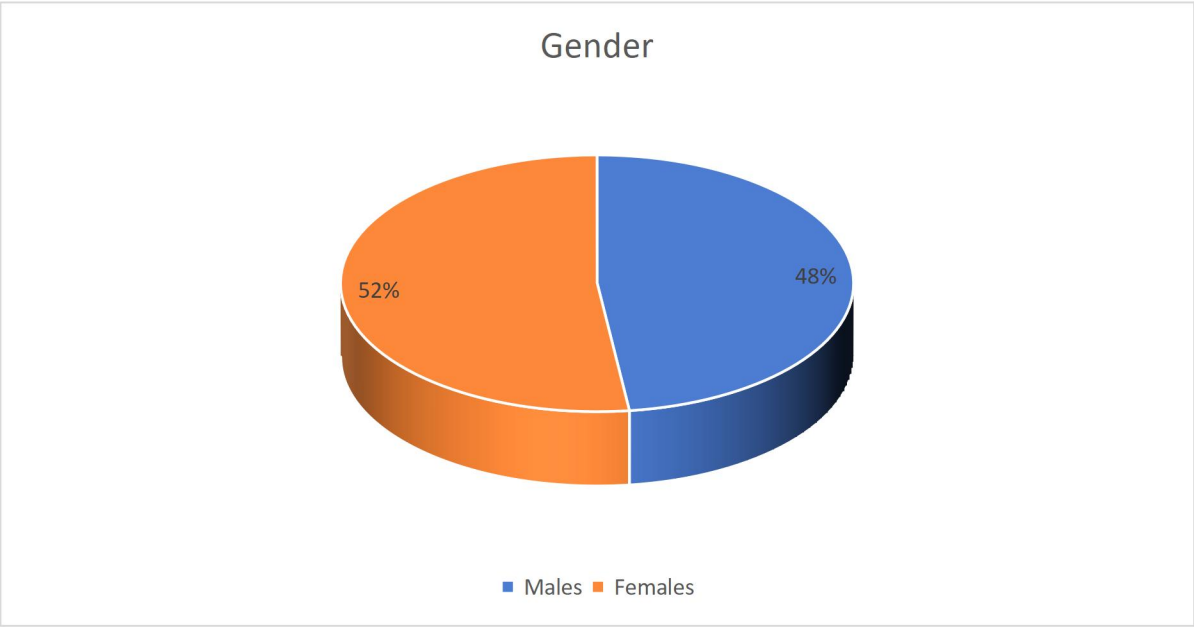


Figure 4.3: Gender

The survey revealed that the gender distribution in Kasarani settlement is relatively balanced, with 52% of the population identified as females and 48% as males.

Table 4- 2: Age and Marital Status

Age	Married	Widowed	Singles	Total
20-24	0.00%	0.00%	6.00%	6.00%
25-29	6.00%	0.00%	8.00%	14.00%
30-34	7.00%	0.00%	4.00%	11.00%
35-39	12.00%	0.00%	3.00%	15.00%
40-44	9.00%	0.00%	0.00%	9.00%
45-49	11.00%	0.00%	0.00%	11.00%
50-54	12.00%	4.00%	0.00%	16.00%
55-59	7.00%	0.00%	0.00%	7.00%
60+	5.00%	6.00%	0.00%	11.00%
Total	**69.00%**	**10.00%**	**21.00%**	**100.00%**

According to the findings of the survey, the youths aged 20-34, comprise a significant portion, accounting for approximately 31% of the population, the middle age of 35-54 years old are 51% and older persons are 17%. Regarding marital status, 69% are married, 21% are single and 10% are widowed all of whom are Kenyan citizens and none were disabled.

Education Levels

During the survey, the educational levels of residents were sought and the results are presented in Figure 4.4 below.

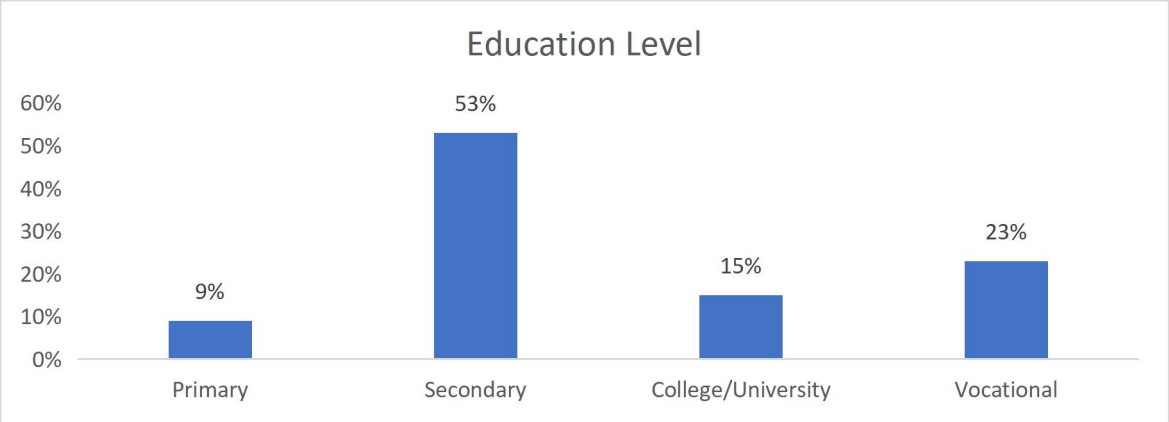


Figure 4.4: Educational Levels

From figure 4.5, we see that an overwhelming majority of 53% residents have a secondary education, 23% have vocational training and 15% are tertiary education graduates while 9% have primary education.

4.5.4 Economic Profile of Households

Economic profiles of households are determined by individual members' occupation and level of income, and in the survey, this was established and results are given below.

Employment

With the level of education being high, the household members within the settlement were asked about their employment, and the result is posted in Figure 4.5.

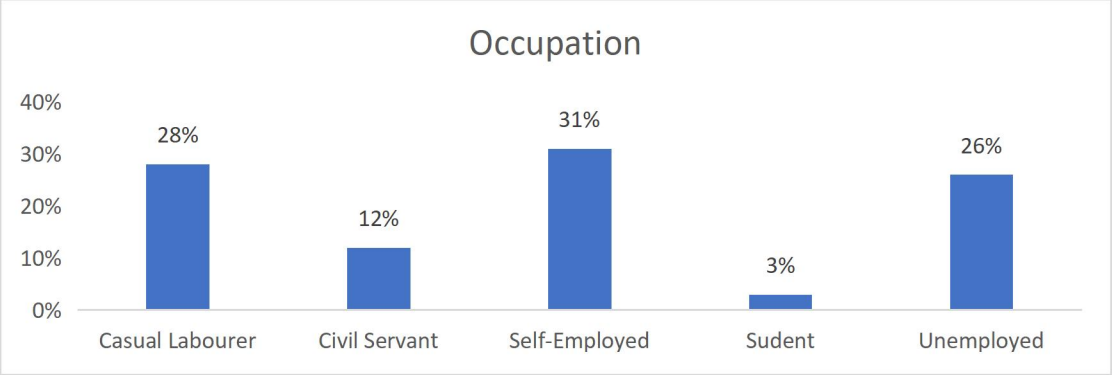


Figure 4.5: Employment and Occupation

Majority of Kasarani residents are self-employed individuals or casual labourers. From Figure 4.6, 31% of Kasarani residents are self-employed, 28% are casual labourers, 26% are unemployed, 12% are civil servants, and casual labourers, as well as students, are each 3%.

Income Levels

Residents were asked to state their monthly income and figure 4.6 has the responses.

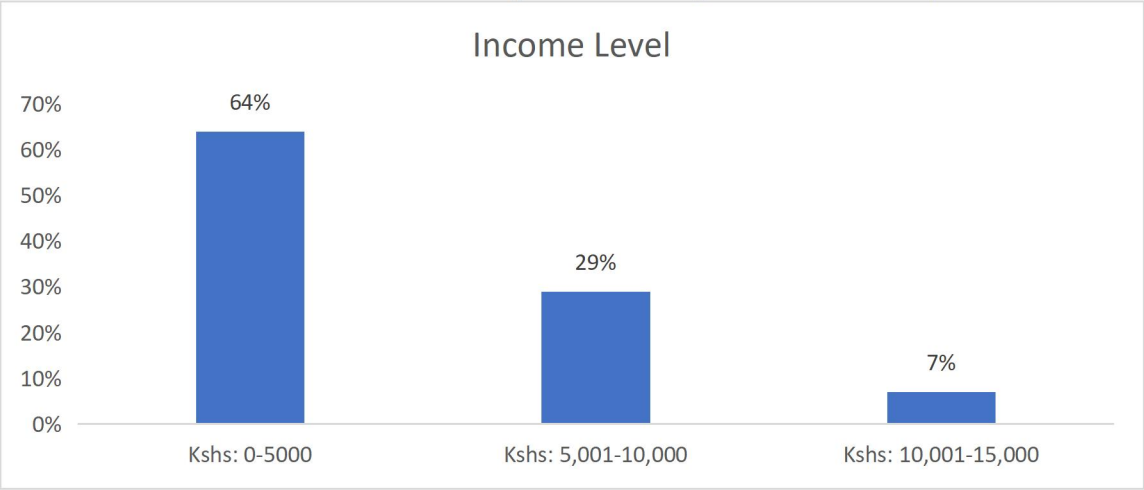


Figure 4.6: *Income Level*

Figure 4.7, indicates that 64% have a monthly income of Kshs: 0-5000, 29% earn Kshs: 5,001-10,000 and 7% have an income of Kshs: 10,001-15,000

Expenditure on Food and Clothing

When asked to state what they spent on both food and clothing and the results posted in figure 4.7.

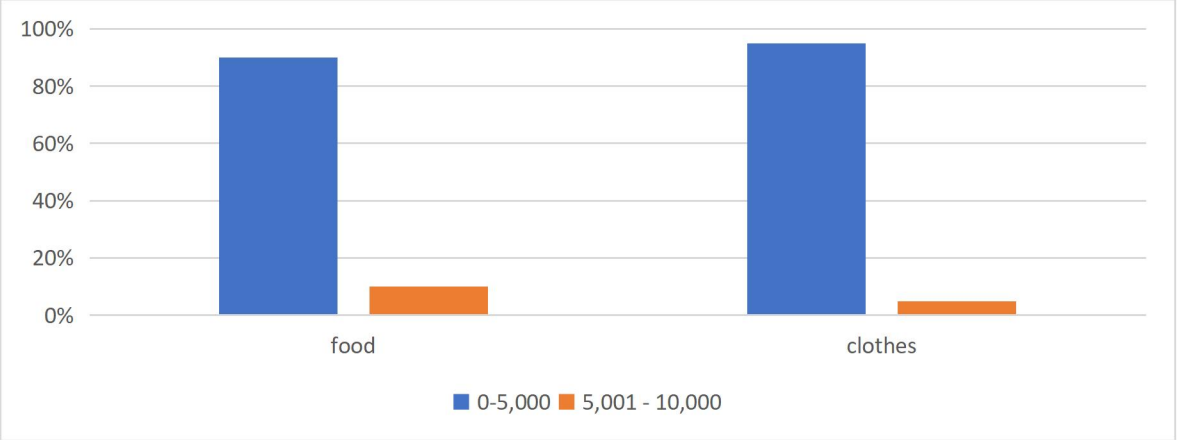


Figure 4.7: Expenditure on Food and Clothing

Expenditure on food and clothes for most residents is Kshs: 5000 or less. It is indicated in Figure 4.7 above that 95% of residents spend Kshs: 0–5000 on clothing and 90% spend the same amount on food. It is also indicated that 5% and 10% spend Kshs: 5001–10,000 on clothing and food respectively.

4.5.5 Structures/Unit Details

Kasarani settlement has a nucleated settlement pattern with a scattered structure.

Household Size

During the socio-economic survey, respondents were asked to indicate how many people they live with in the same household and results posted in figure 4.8.

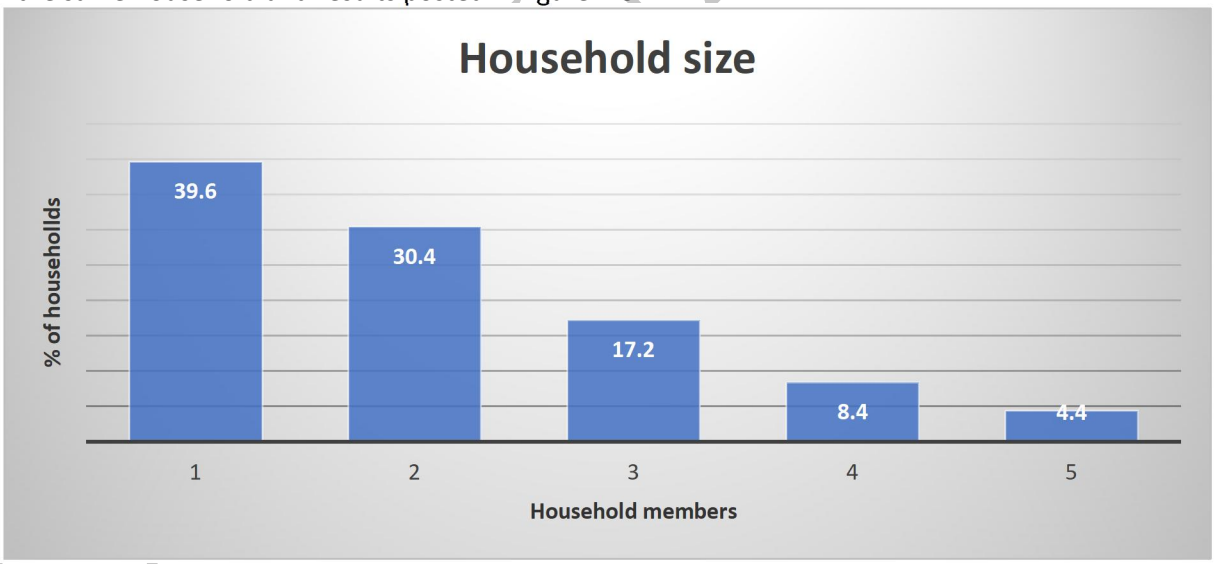


Figure 4.8: Household Size

The majority of the households as indicated in Figure 4.9 which is 39.6%, are inhabited by two people which could be a couple without children. The number of households with more than two people was 60.4% with 3 persons being the greatest of them at 30.4% followed by 3 people in a household at 17.2%.

Nature of Structure, Its wall, floor, and roof

During the survey, residents were asked what type of structure they occupied, and the results are indicated in Figure 4.9.

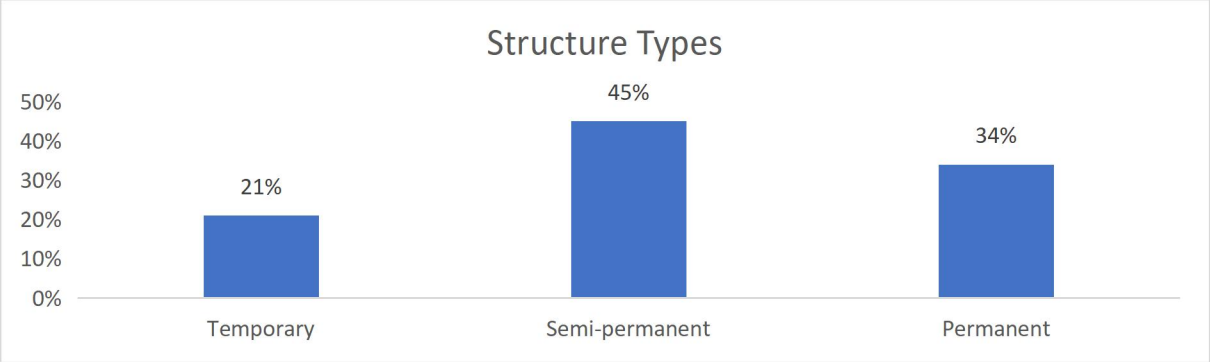


Figure 4.9: Nature of Structures

The socio-economic survey revealed that 45% of the structures within the settlement are semi-permanent, 34% are permanent, and the remaining 21% are temporary structures. The semi-permanent structures in the area are inclusive of the iron sheet and earth structures. Residents were then asked to describe structures in terms of materials used to make walls, floors, and roofs, with the results posted in Table 4.3

.

Table 4- 3*: Materials*

Part of the Structure	Material	Structures
Wall	Stones	65%
	Iron Sheets	10%
	Earth	25%
Floor	Cement	80%
	Earth	5%
	Tiles	15%
Roof	Tiles	0%
	Iron Sheets	100%
	Wood	0%

The settlement's roof is entirely made of iron sheets. The walls are mainly made of stones (65%) but some are made of iron sheets (10%) and wood (25%). The floors are predominantly cement (80%) with 15% and 5% having tiles and earth respectively as shown in Table 4.3 above.

4.5.6 Water Sanitation and Hygiene

Water Sources, Quality and Cost

The investigation on sanitation and hygiene in this study involved establishing the source and quality of water as well as its cost. The source of water in the settlement is posted in figure 4.10.

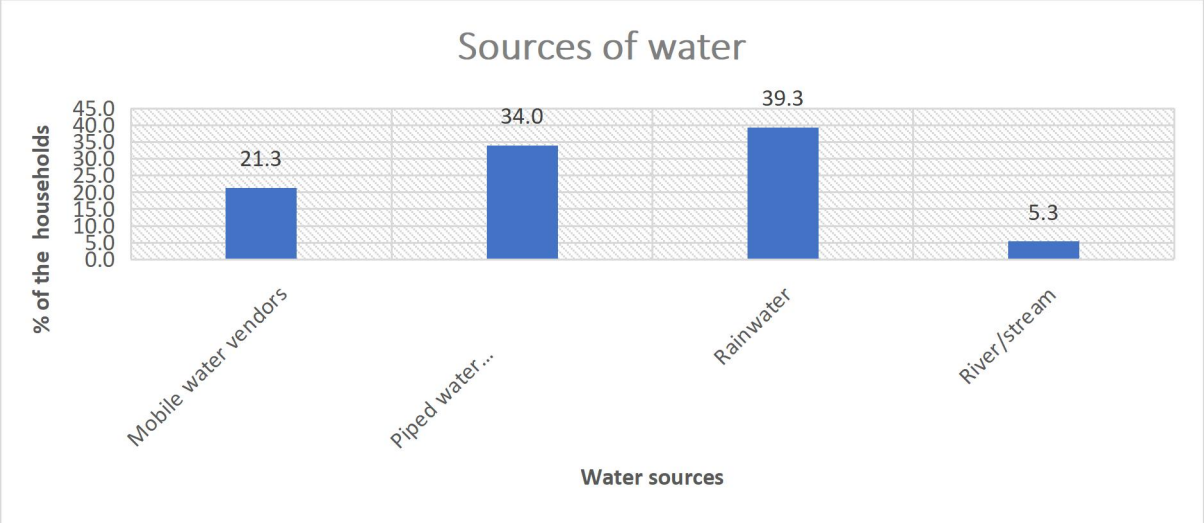


Figure 4.10: Source of Water

Residents of Kasarani mainly depend on rain water and piped water connected to structures which account for 39.3% and 34% respectively as shown in figure 4.11. However, piped water gives them a great alternative. In of terms of the quality of the water, 89.3% said it is fresh and 10.7% said the water is salty. Those who depend on piped water to respective structures were asked what they spend monthly, and the results are posted in Figure 4.11.

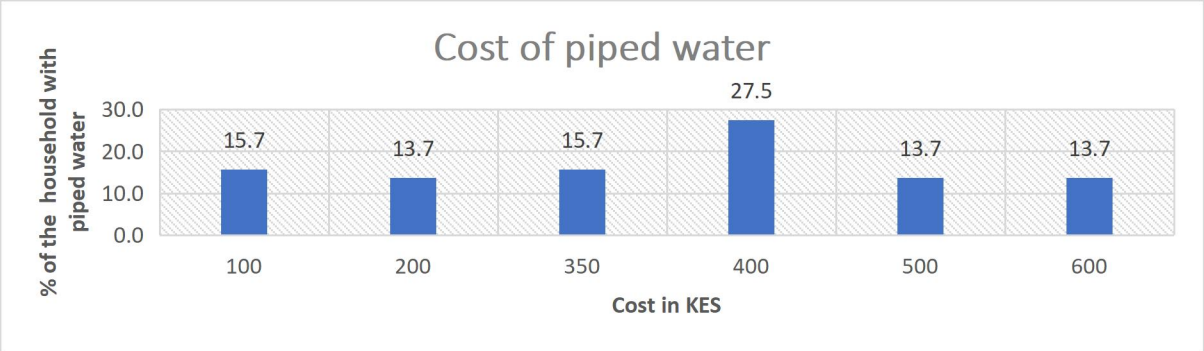


Figure 4.11: Monthly Cost of Piped Water

Most residents with piped water spend KES 400 per month. According to figure 4.12, 15.7% of residents spend KES 100 and KES 350%. 13.7% spend KES 200, KES 500 and KES 600 monthly on water.

Bathroom Access and Cost

Residents were then asked if they have access to bathroom facilities and they all responded affirmatively as posted in Figure 4.12.

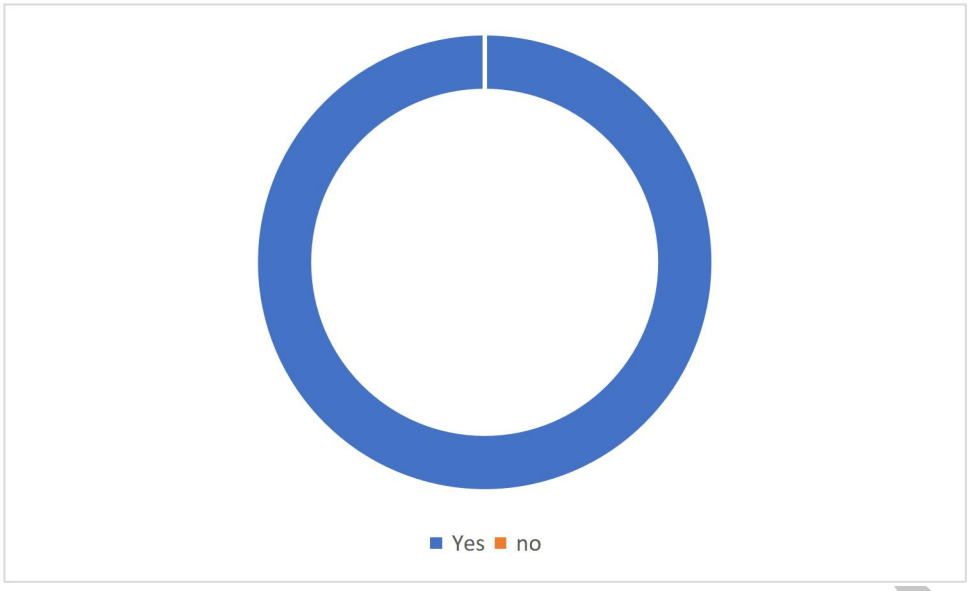


Figure 4.12: Bathroom Access

It is indicative that all residents have access to bathrooms. On where the facilities are located, residents' and answers posted in figure 4.13 below.

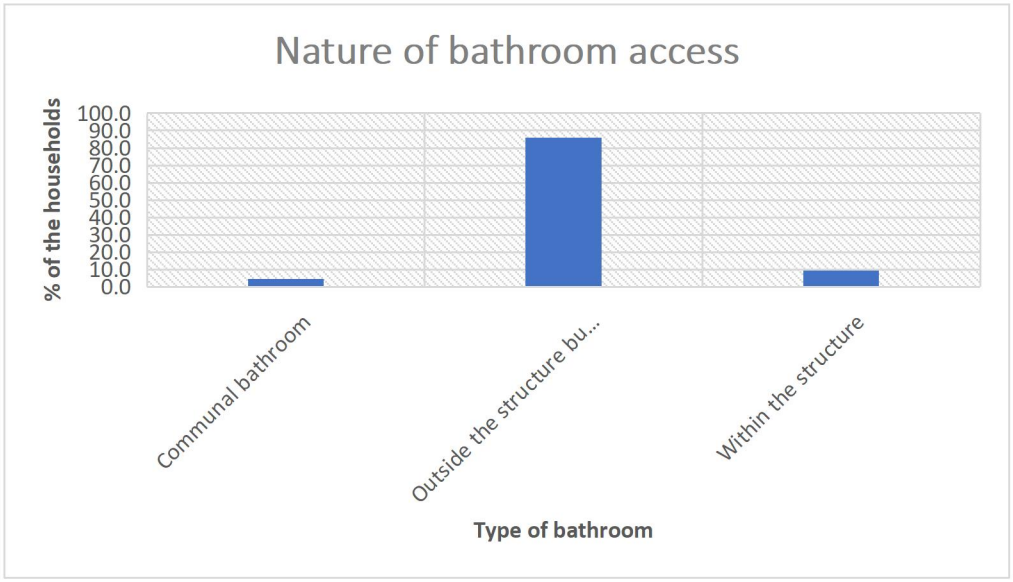


Figure 4.13: Bathrooms Location

A majority of 86% of respondents as indicated in figure 4.14 have bathroom facilities outside the structures for residents only, 4.7% access communal facilities and 9.3% have bathrooms within the structure.

Access to Toilet Facilities

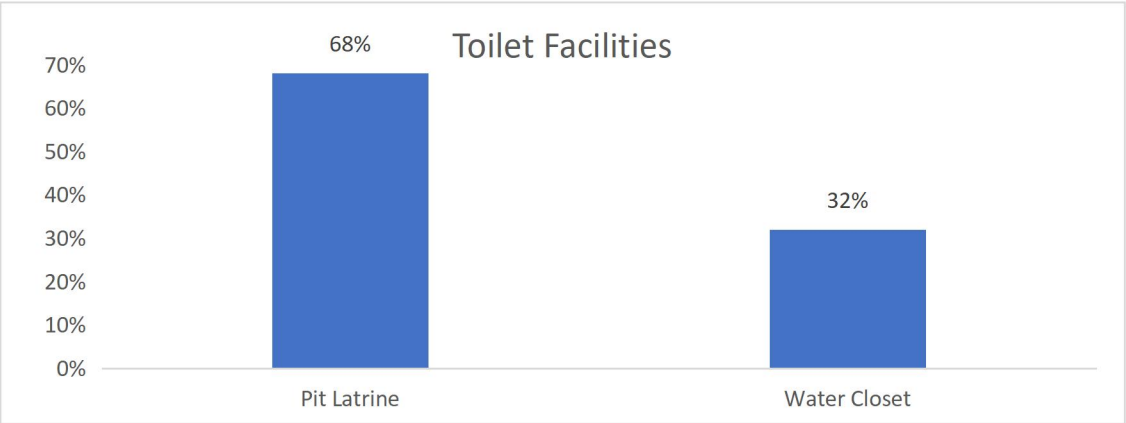


Figure 4.14: Toilet Facilities

Most residents have access to pit latrines as toilet facilities in the settlement. It is indicated in figure 4.15 above that 68% access pit latrines and 32% use water closet.

4.5.7 Services

Solid Waste

Residents were asked how they dispose of solid waste and gave the responses posted in Figure 4.16.

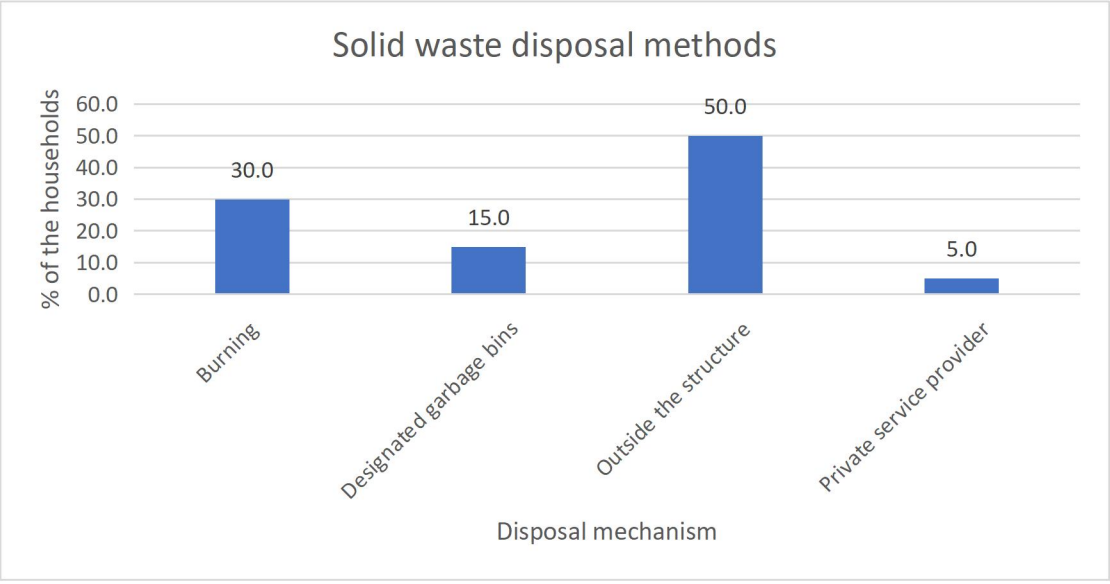


Figure 4.15: Garbage Disposal

From figure 4.15, it is shown that 15% of households dispose garbage in designated garbage bins, 30% dispose by burning, 50% dispose outside the structure and 5% dispose through private service providers. There is indiscriminate dumping done in areas with buildings under construction, open pit latrines, along the access roads, and even on open waste water drains, leading to clogging of the drains. Solid waste dumped is mainly composed of household refuse, which includes organic waste, plastics and glass. Before disposal, garbage is stored within the household where there is some low level of sorting. However, there is no composting and re-using of garbage generated as a practice within the settlement. Otherwise, there is limited waste management service because much of garbage is indiscriminately disposed or burnt. This is indicative of the poor waste management system.

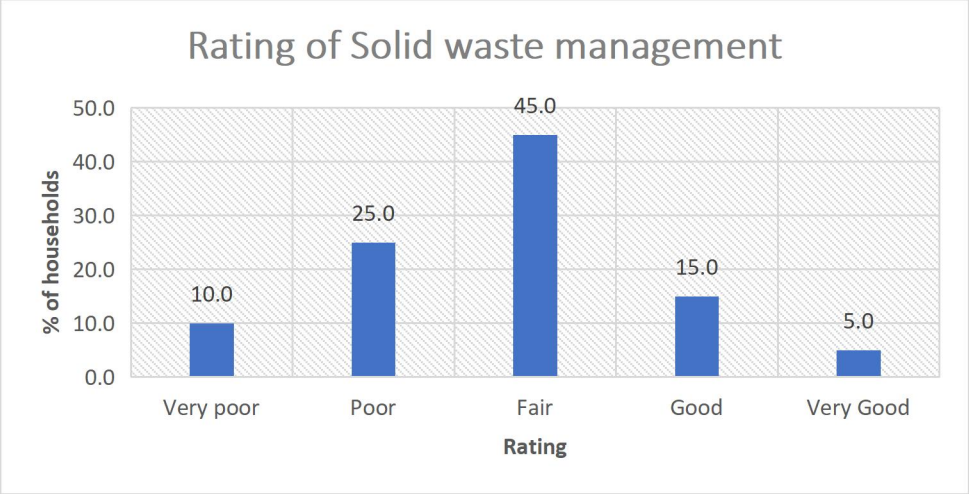


Figure 4.16: Rating of Solid Waste Management

With the residents' rate solid waste management being very poor, poor, fair, good and very good with a percentage of 10%, 25%, 45%, 15% and 5% respectively which is indicative of limited garbage handling beyond dumping. When asked if they would be willing to pay if provided with solid waste management services, residents' responses were as given in figure 4.17.

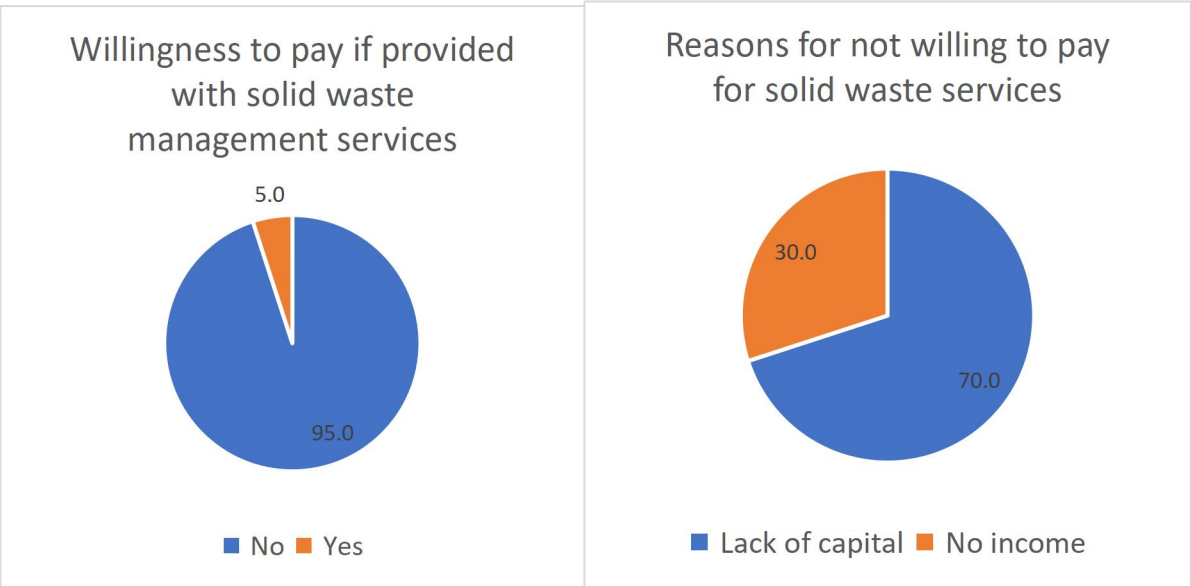


Figure 4.18: Residents willingness to pay for Waste Management Services

Overwhelmingly, 95% of the residents suggested unwillingness to pay for solid waste. 70% of them pointed reason as lack of capital while the other 30% claimed they don't have income. 5% were willing to pay for solid waste.

Recommendations on Waste Management

Residents were asked how they would like solid waste management to be improved, and the response was as posted in figure 4.18.

Figure 4.17: Recommendations on Waste Management

For effective waste management in Kasarani, these are suggestions of residents:

- There is need of more garbage collectors as noted by 10%
- There is need of more garbage bins according to 65%
- More garbage bags according to 25%

4.5.8 Energy

Lighting Energy

The main source of lighting energy in the settlement is electricity, as confirmed by all 100% of the residents. When asked what they spend monthly on electricity, the responses were varied as follows:

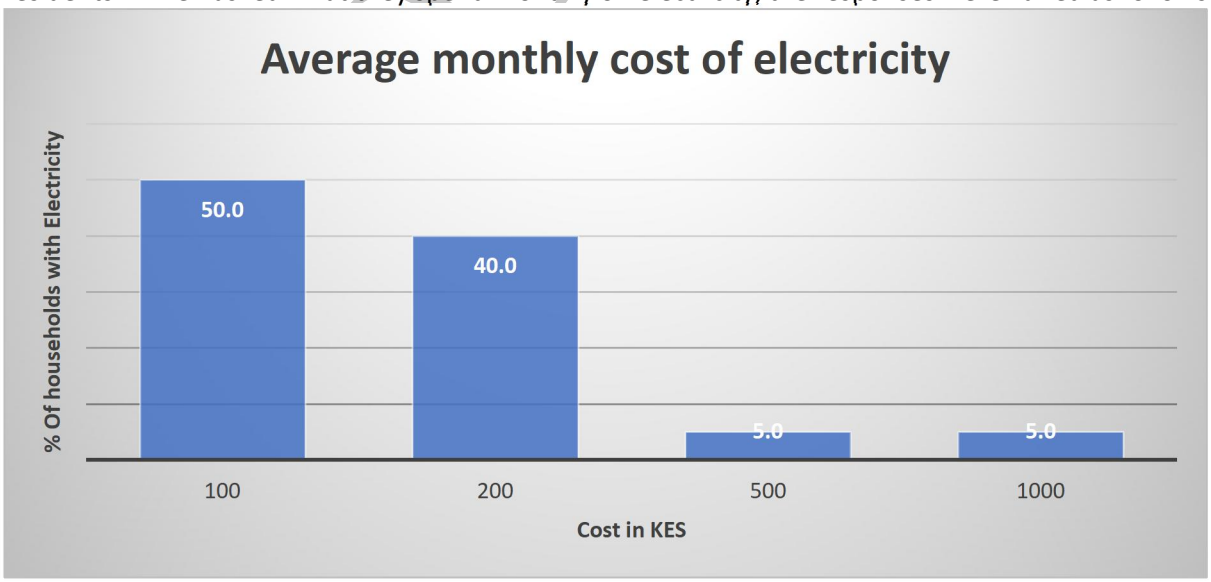


Figure 4.18: *Monthly Cost of Electricity*

The 100% of respondents of Kasarani settlement depend on electricity with the majority 50% of 100% spending KES 100. Those spending KES 200, 500 and 1000 are 40%, 5% and 5% respectively.

Cooking Energy

Residents were asked to state the main source of cooking energy and gave responses in Figure 4.19.

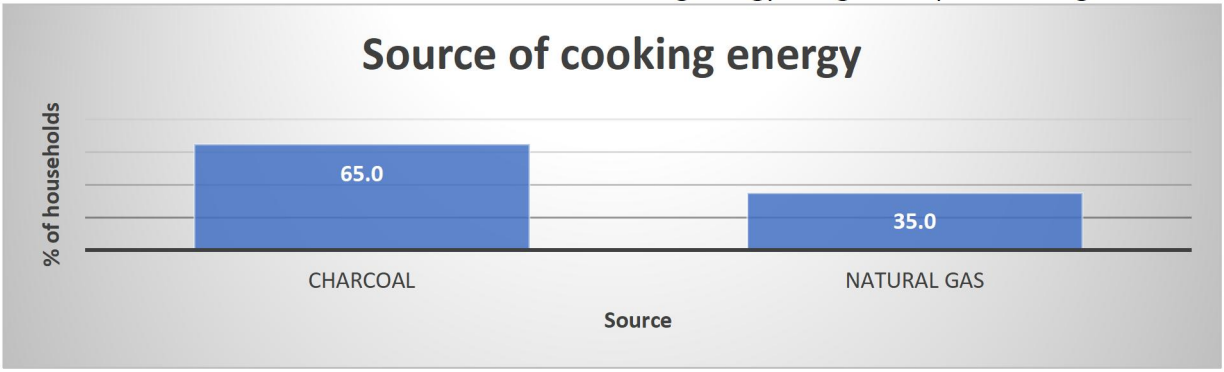


Figure 4.19: Cooking Energy

When it comes to energy for cooking, 70% of residents depend on charcoal while 30% depend on natural gas for cooking.

4.5.9 Transport

On transportation, residents were asked the most common mode used, and responses are posted in Figure 4.20 below.

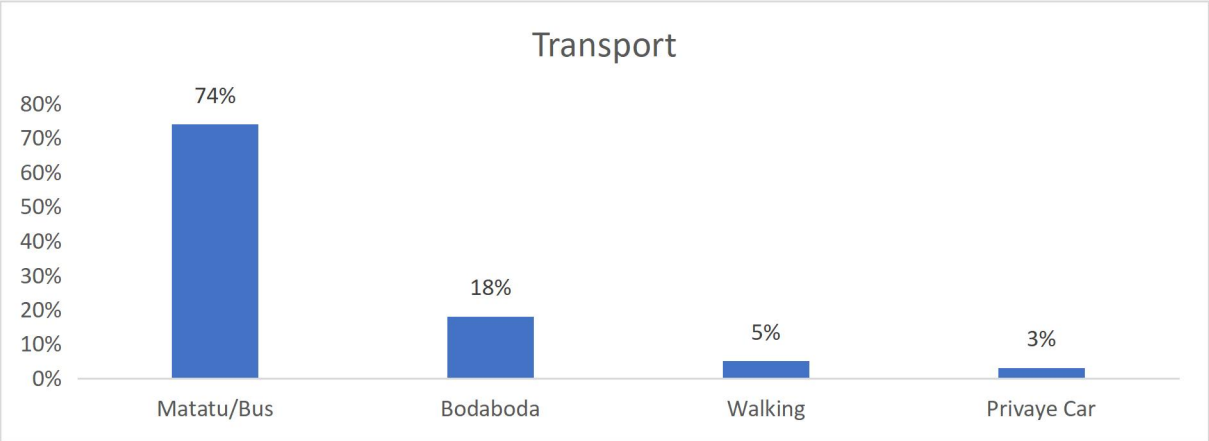


Figure 4.20: Transport Services

Majorly, as indicated in figure 4.22, residents mostly use matatu/buses (74%), Bodaboda (18%), walking (5%) and private car (3%), in that order.

4.5.10 Mode of Communication

Residents primarily use mobile phones for communication. When asked for the preferred network provider, their response was overwhelmingly 90% one mobile network which is Safaricom and 10%preferred airtel.

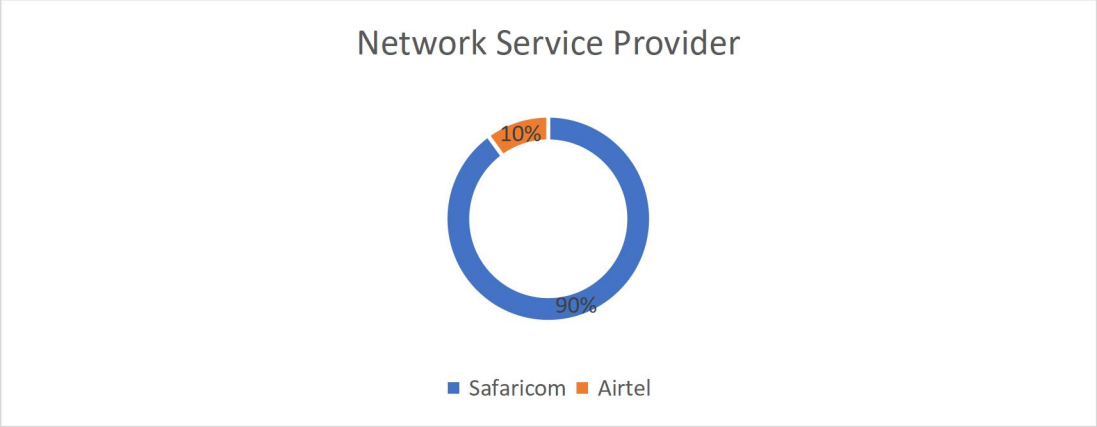


Figure 4.21: Communication Services

4.5.11 Health

The respondents overall receive medical treatment from health facilities as indicated in figure 4.24

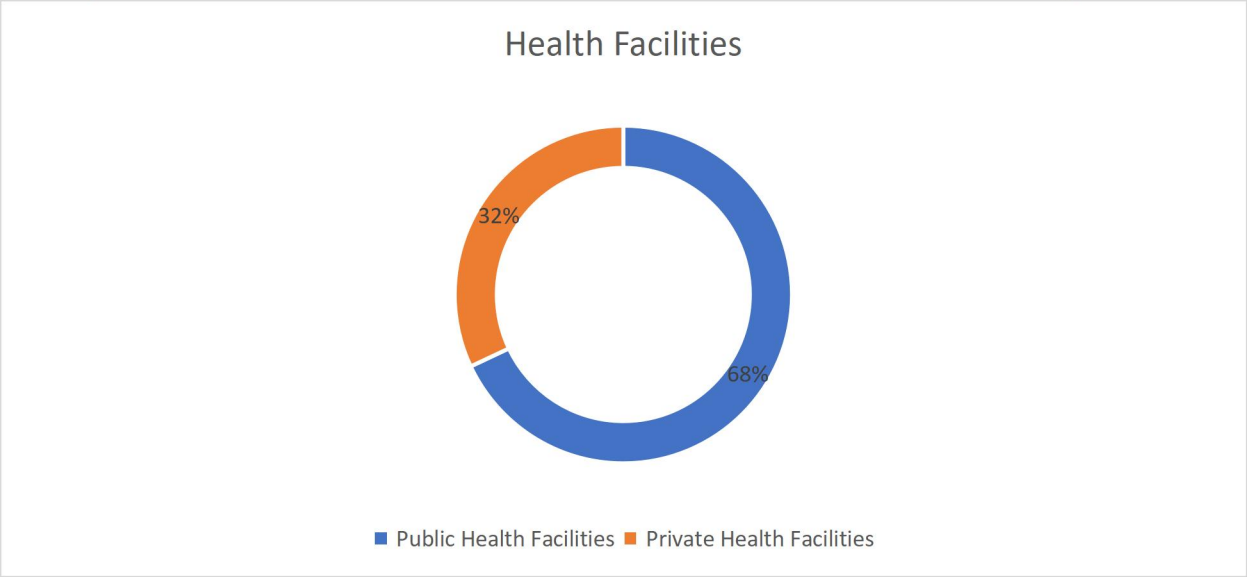


Figure 4.22: *Health Facilities*

Figure 4.22 indicates that 68% of residents visit public health facilities and 32% visit private facilities like pharmacies. Residents were the required to state the nearest health facilities and responses indicate in the Figure 4.23 below.

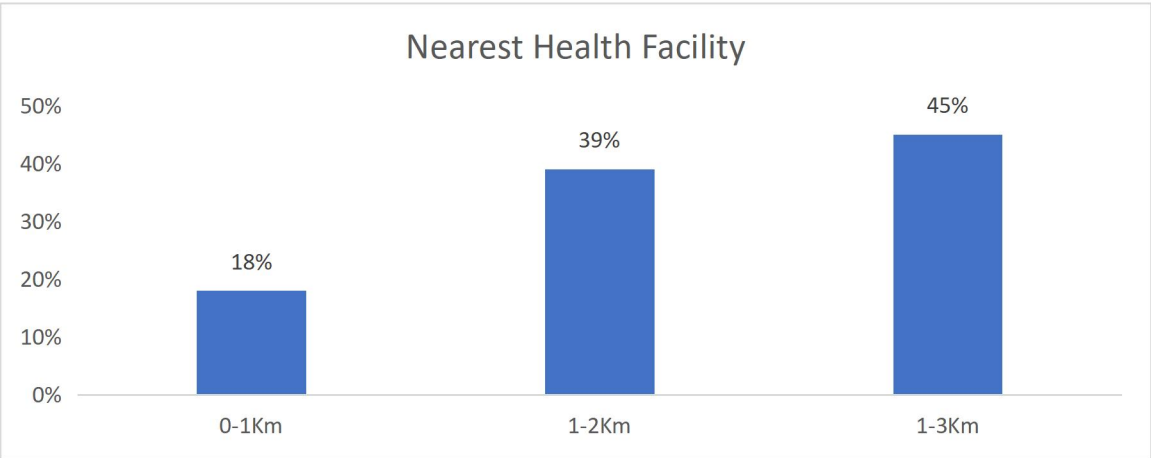


Figure 4.23: *Distance to Nearest Health Facility*

Majority (45%) of the residents have any of the facilities 2-3 kilometres away from the settlement. Those having nearest health facility 1-2km account for 39% and 18% are 0-1Km away. The residents were required to name the nearest health facilities and their responses in figure 4.24.

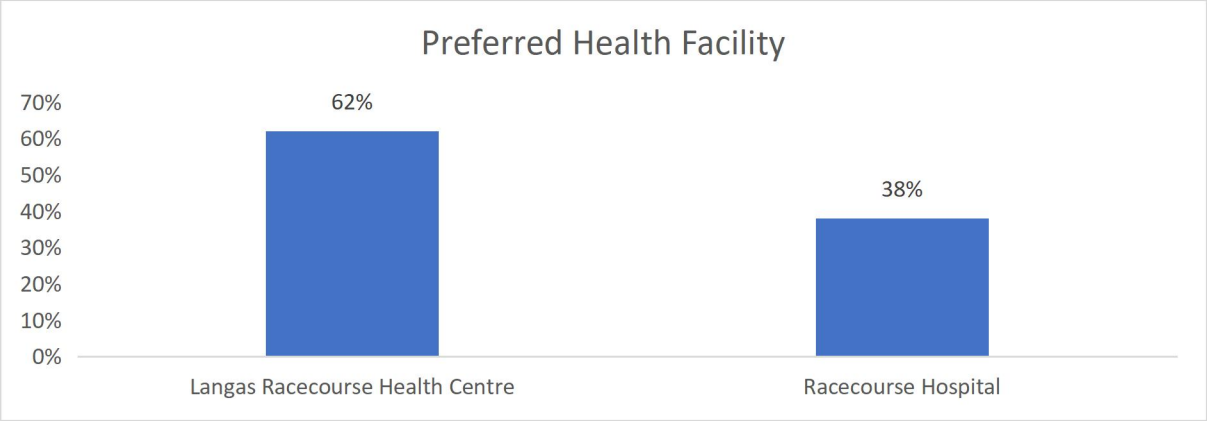


Figure 4.24: *Preferred Health Facility*

Majority (62%) who were using the public health facilities were referring Langas Racecourse Health Centre as indicated in figure 4.25 while Racecourse Hospital (38%) is most preferred private facility. Finally, residents were to name prevalent diseases in the period of 4 previous months which were stated as indicated in figure 4.25.

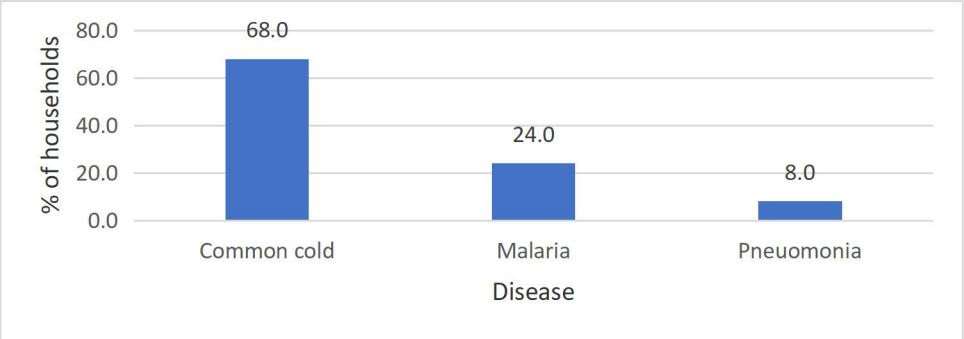


Figure 4.25: *Prevalent Diseases*

From fig.4.27, the most common ailment is the common cold, with 68% of respondents indicating that they have experienced it. Malaria is the second most prevalent, affecting 24% of residents. Additionally, 8% have suffered from pneumonia during this period. These health conditions reflect some of the prevalent diseases in the area and underscore the importance of accessible healthcare services for timely diagnosis and treatment.

4.5.12 Education

Educational services were investigated in from ECDE to tertiary institutions

ECDE

Residents were asked to state the distance of the nearest ECDE Centre and results posted in figure 4.28

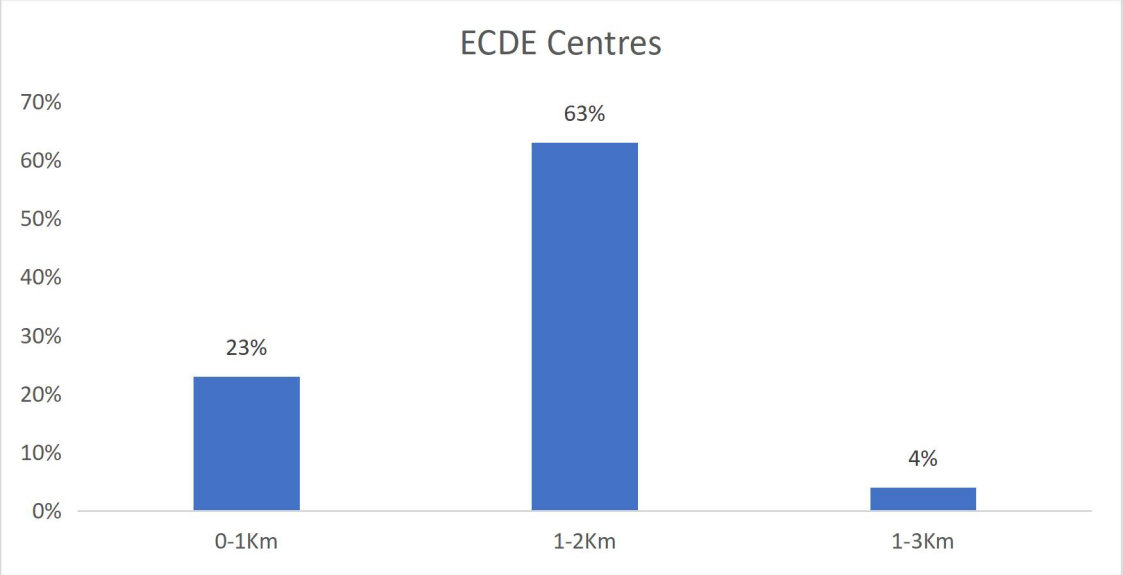


Figure 4.26, ECDE Centers

ECDE schools are within proximity to the settlement are as indicated in figure 4.28. Specifically, 63% of the residents stated that the nearest ECDE is more than 1km away and 23% noted they are about 0.5-1Km to nearest ECDE. The remaining residents (4%) stated that the ECDE centres are over 2km away. The ECDE is provided at Green Park Academy and Kapkanduyo Primary school amongst others.

Primary Schools

Residents were asked to state the distance of the nearest primary schools and affirmatively agreed they are equidistance with ECDE centers from respective households. In this regard, residents have only Green Park Academy a private institution while public ones include, Kapkanduyo Primary School and Langas Primary School.

Secondary Schools

Residents were asked to state the distance of the nearest secondary schools. The response that results posted in Figure 4.29

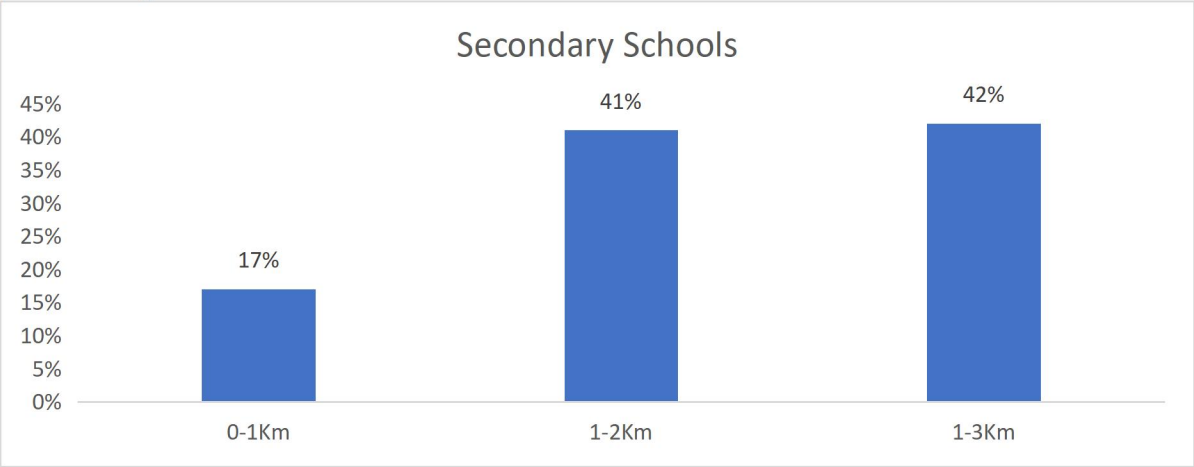


Figure 4.27:*Secondary Schools*

Unlike ECDE and primary schools, most secondary schools are more than 2 km away from the households and are outside the settlement. Secondary schools mentioned are St. Elizabeth Girls Secondary School and Great Rift Secondary School both of which are private institutions.

Tertiary Institutions
When asked about tertiary institutions, all the respondents stated that most tertiary institutions were located outside the settlement.

4.5.13 Community Facilities
There exist empty spaces within the settlement mostly used by children as playgrounds.

4.5.14 Disasters Experienced in the Settlement
Residents were requested to name three most recent disasters of which their response was as none had been experienced in the stated period

4.5.15 Priority Sectors
The priority matrix in table 4.8 below shows the sectors that require immediate attention in Kasarani.

Table 4- 4*: Priority matrix for sectors*

SECTOR	SUB-SECTOR	CHALLENGE	PRIORITY
Physical Infrastructure	Solid waste management	Inadequate provision of garbage bins. Inadequate collection services. Indiscriminate dumping	Very urgent
	Transport	Inconsistent road widths. Earth roads flood during rainy seasons and emit dust during dry seasons.	Very urgent
	Water	Inadequate provision of piped water.	Very urgent
Social Infrastructure	Social hall	Unavailable	Urgent
	Library	Unavailable	Urgent
	Playgrounds	No designated space	Urgent
	Green spaces	Inadequate recreational green public spaces	Low urgency
Education	Primary, secondary, and tertiary	Inadequate facilities	Very urgent

4.8 Synthesis of Emerging Issues: Opportunities and Constraints

Table 4- 5 *Opportunities and Constraints*

OPPORTUNITIES	CONSTRAINTS
Fertile land for agriculture	High costs of inputs
Adequate roadway leave size for upgrading	Irregular road sizes of minor access ways
Availability of youthful labour	Need more adequate employment opportunities.

4.6 Climate Change Impacts in Informal Settlements

The National Climate Change Response Strategy (2010)2 provides that that climate change is one of the greatest challenges facing humanity this century. In Kenya, this phenomenon is already unmistakable and intensifying at an alarming rate as is evident from countrywide temperature increases and rainfall irregularity and intensification

The strategy points out many ways to which climate change impact settlements directly or indirectly through extreme climate conditions such as high wind, heavy rainfall, heat and cold can result in a wide range of scenarios such as tropical storms, floods, landslides, droughts and sea-level rise. Climatic catastrophes displace populations and cause sudden deaths, which in turn can lead to conflicts and civil unrest.

Therefore in order to mitigate climate change impacts above, the strategy advocates implementation of climate change adaptation strategies among them; proper planning of urban settlements which takes into consideration the expected high growth rate of urban population due to climate-induced migration from rural areas to urban centres. This will require urban planners and real-estate industry players to accordingly implement proper and adequate housing structures, waste disposal as well as piped water infrastructure. This is the mandate resonates with KISIP development objective which is to improve access to basic services and land tenure security of residents in participating urban informal settlements and strengthen institutional capacity for slum upgrading in Kenya.

As presented in the Climate Risk Profile Uasin Gishu County3 prepared by Ministry of Agriculture, Livestock and Fisheries (MoALF) in 2018, the county has a relatively low vulnerability index (0.419) to climate change (GoK, 2013) yet it continues to suffer extreme weather events like drought and floods. Though climate models have shown that floods are likely to occur every three years. Recent news reports in the last three consecutive years (2013, 2014, 2015, and 2016) have shown devastating floods in different regions in the county. For instance, in 2013, floods killed eight people in Uasin Gishu2 , in 2014, and destroyed property, roads and buildings including the Uasin Gishu District Hospital , and more than 30 families displaced in Kimumu estate in 2016. Table 2-9 of this report presents detailed measures of design provisions in an effort to achieve resilience to climate change

2 National Climate Change Response Strategy, Government of Kenya. April 2010,

[33] Climate Risk Profile Uasin Gishu County 2018

CHAPTER 5: POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK

5.1 Introduction

The prioritized Investment under KISIP will be implemented under several Laws, By-laws, Regulations and Acts of Parliament, as well as Policy Documents and. This section is therefore aimed at assessing the existing policies and legislative framework, economic tools and enforcement mechanisms for the management of infrastructure projects at different stages.

5.2 Policy Provision

The proposed investments will be implemented within provisions of various government policies as summarized in table 5-1 below; detailed review of the policies will be presented in the ESIA report.

Table 5- 1: Policy Framework

No	Policy	Applicability
1	Constitution of Kenya 2010	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	Kenya Vision 2030	Kenya Vision 2030 is the current national development blueprint for period 2008 to 2030. The Project will directly contribute towards achievement of objectives of vision under the environment and social pillar through provision of the planned water investments under the master plan.
3	National Environment Policy (NEP)	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. During construction and operation phases ESMMP will be implemented, this will ensure that the ecosystems are not destabilized by the subsequent Project activities.
4	HIV and AIDS Policy 2009	The Policy will be complied with during implementation of the Project, the Contract will in cooperate in tender document and implement HIV awareness initiatives during construction of the Project.
5	Gender Policy 2011	This policy will be referred to during Project implementation especially during hiring of staff to be involved in the project, procuring of suppliers and sub consultants and sub-contractors to the project
6	The Sustainable Development Goals (SDGs)	The concept of the SDGs was born at the United Nations Conference on Sustainable Development, Rio+20, in 2012. The objective was to produce a set of universally applicable goals that balances the three dimensions of sustainable development: environmental, social, and economic. The Investments will therefore contribute towards achieving this goal through the proposed water distribution network project
7	Kenya National Youth Policy 2006	The National Youth Policy 2006 aims at ensuring that the youth play their role, alongside adults in the development of the country. The National Youth Policy visualizes a society where youth have an equal opportunity as other citizens to realize their fullest potential, KISIP Projects will provide direct employment to the youth as required by the policy.
8	Eviction Guidelines	The Government shall ensure that evictions only occur in exceptional circumstances. Evictions require full justification given their potential

	2017	extremely negative impact on a wide range of international recognized human rights. Under KISIP no evictions are anticipated, RAP will be prepared and appropriate compensation and livelihood restoration provided to PAPs

5.3 Kenyan Legislations

The proposed investments will be implemented within provisions of various Acts of parliament as summarized in table 5-2 below; detailed review of the Acts will be presented in the ESIA report.

Table 5- 2: Acts of Parliament

No	Policy	Applicability
1	EMCA 1999 Cap 385	The Act provides for the establishment of a legal and institutional framework for the management of the environment, this is achieved through various regulations. For KISIP projects the below listed EMCA regulations will be applicable. (i) EMCA (Waste Management) Regulations, 2006 Legal Notice No. 121; (ii) EMCA (Water Quality) Regulations, 2006 Legal Notice No. 120; (iii) EMCA (Noise and Excessive Vibration Pollution) (Control) Regulations, 2009 Legal Notice No. 61; (iv) EMCA (Air Quality Regulations 2014)
	The Environmental (Impact Assessment and Audit) Regulations, 2003	The regulation provides a framework under which Environment and Social Impact Assessment for the Project will be prepared, Regulation 4(1) further states that: (a) ''…no Proponent shall implement a project: 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…''
	Environmental Management and Coordination (Water Quality) Regulations, 2006	Regulation 9 of these regulations provides for water quality monitoring. It states that the "Authority in consultation with the relevant lead agency, shall maintain water quality monitoring for sources of domestic water at least twice every calendar year and such monitoring records shall be in the prescribed form as set out in the second schedule to these regulations". Domestic Water Quality Standards to be Complied to by the Contractor are provided as ***annex 5 to this report***
	(Waste Management Regulations, 2006	Regulation 4 (1) states that "no person shall dispose of any waste on a public highway, street, road, recreational area or in any place except in a designated receptacle". Regulation 4 (2) further states that "a waste generator shall collect, segregate and dispose such waste in the manner provided for under these regulations". The proponent will use provisions of this regulation to ensure that waste is handled, stored, transported and disposed as per this regulation.
	Conservation of Biological Diversity and Resources, Access to Genetic Resources and Benefit Sharing) Regulations,	This legislation aims at enhancing preservation of biodiversity and safeguarding of endangered and rare plant and animal species within any human activity area. Section 4 of the legislation expressly prohibits any activity which may have adverse effects on any ecosystem, lead to introduction of alien species in a given area or result in unsustainable utilization of available ecosystem resources.

	2006	
	Noise and Excessive Vibration Pollution (Control) Regulations, 2009	The contractor 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 by vehicles. The regulations provide for a maximum of 60dcl during the day and 35 dcl during the night for a construction site.
	(Wetlands, River Banks, Lake Shores and Sea Shore Management) Regulations, 2009	This is a supplementary legislation to EMCA with particular emphasis on management of wetland and wetland resources, river banks, lake shores and Sea shores. Sections 4 and 5 of Part II as well as sections 16, 17, 18 of part III of the legislation provide guidelines for conservation and sustainable use and conservation of the said environmental components, and enhance them where necessary when carrying out any activity therein.
	The Environmental Management and Coordination (Air Quality Regulations 2014)	These regulations provide a framework for Management of plant and equipment emissions of hydrocarbons on site. The regulations require that all plant and equipment on site should be well serviced to manufacturers specifications to avoid air pollution, the regulation also require monitoring of baseline air quality within construction site and implementation of correction action where the standards are not complied to. Water spray will be used at all times when working in dry areas to avoid risks associated with dust menace.
2	Land Act 2012	It is the substantive law governing land in Kenya and provides legal regime over administration of public and private lands. It also provides for the acquisition of land for public benefit. The government has the powers under this Act to acquire land for projects, which are intended to benefit the general public. The projects requiring resettlement are under the provision of this Act. KISP will trigger minor disturbance to people's assets and sources of livelihood, a RAP will be prepared.
2	Water Act 2016	The Water Act 2002 was amended in the year 2016 to align to the Kenyan Constitution 2010, the Act vest the responsibility of developing water and Sanitation infrastructure (sewerage and water supply) to ELDOWAS. This implies that during implementation of Water and Sewerage Project adequate collaboration between KISIP implementing unit and ELDOWAS will be required.
3	County Government Act No. 17 of 2012	The proposed Projects will be implemented within Uasin Gishu County Government informal settlements. Part II of the Act empowers the county government to be in charge of function described in Article 186 of the constitution, (county roads, water and Sanitation, Health). The Projects once complete will be handed over to County Government for operation and maintenance.
4	Physical Planning Act 1996 (286)	Section 29 of the said Act empowers the local Authorities (now county governments) to reserve and maintain all land planned for open spaces, parks, urban forests and green belts as well as land assigned for public social amenities. KISIP projects will be implemented with Part Development Plans (PDP) developed by the County Governments through the support of Component 2 of KISIP Project which deals with planning and land tenure.
5	The Urban Areas and Cities Act 2011	This law passed in 2011 provides legal basis for classification of urban areas (City) when the population exceeds 500,000; a municipality when it exceeds 250,000; and a town when it exceeds 10,000) and requires the city and municipality to formulate County Integrated Development Plan (Article

		36 of the Act). KISIP Projects are within Uasin Gishu County CIDP 2018 - 2022
6	Occupational Health and Safety Act (OSHA 2007)	The Act provides EHS guidelines which shall be followed by both the contractor and supervising consultant during implementation of the project to avoid injuries and even loss of life to workers and neighboring community.
7	The Public Health Act (Cap.242)	The Act provides guideline to the contractor on how he shall manage all wastes (Liquid and Solid Wastes) emanating from the project in a way not to cause nuisance to the community, this Act during construction shall be read alongside the waste management regulations of EMCA 2015 for utmost compliance.

5.4 Institutional Structure Arrangement

The proposed investments will be implemented in liaison with various government institutions mandated to provide various services to the public under various Acts of parliament. Relevant government institutions and their role is presented in table 5-3 below.

Table 5- 3: Institutions Assessment

No	Policy	Applicability
1	MoLPW&UD	Ministry of Lands, Public Works, Housing and Urban Development (MoLPW&UD), is the government ministry responsible for policy formations and implementation in matters related to Infrastructure, Housing and Urban development. The ministry has established KISIP implementing unit which is responsible for planning and implementing KISIP Project across the county. KISIP is headed by a National Coordinator who is support by various team of experts in the field of: Engineers, Surveys, Procurement, Sociology, Environment, Monitoring and evaluation.
2	County Government of Uasin Gishu	The County Government assists KISIP implementing unit to implement the Project, County Governments has also established a County Government KISIP implementation unit. The role of developing and approving of the infrastructure upgrading plans is the function of the County Government through the assistance of KISIP National.
3	ELDOWAS	Eldoret Water and Sewerage Company (ELDOWAS) is the Water Service Provider (WSP) wholly owned by Uasin Gishu County, the (WSP) assists in developing water and sewerage designs as well as operating water and sewerage infrastructure after Project completion.
4	Kenya Power	This is a government company charged with responsibility of distribution and managing electric power with the city. During implementation of the Project Kenya Power will be consulted regularly in areas where power installations require relocation.
5	WRMA	Water Resources Management Authority (WRMA) is a government parastatal under the Ministry of Water mandated to manage water resources including rivers. WRMA will be consulted regularly in situations where river crossing will be required
6	KURA	Kenya Urban Roads Authority is a government parastatal under Ministry of Roads & Transport, (MoR&T). KURA will be consulted regularly where KISIP investments require road crossing
7	NEMA	National Environment Management Authority (NEMA) is a government parastatal under Ministry of Environment mandated to Manage Environment. NEMA will be responsible to approve and license the projects and conduct inspections during project implementation to ensure compliance to

		provisions of Environment license.

5.5 World Bank Policies

The assessment adopted the standard guideline of the World Bank Safeguard policies in environmental and social screening for the project. The project was therefore checked against the below listed safeguards policies and discussed below in table 5-4

Table 5- 4: Analysis of potential triggers to World Bank Safeguards Policies

World Bank Operation Policy	Applicability to the Project
Environmental Assessment OP 4.01	This policy is triggered due to proposed KISIP project interaction with natural and human environment. Also KISIP Projects have been categorized as B which implies that the project impacts are less adverse but require Environment Assessment which defines appropriate mitigation measures.
Involuntary Resettlement OP 4.12	The proposed KISIP project will result to minor impacts to people's assets and sources of livelihood due to population density in the informal settlements. RAP be prepared and implemented prior to commencement of proposed works.
World Bank World Bank Access to Information Policy 2015	The ESIA will be prepared with meaningful stakeholder engagement with the aim of complying with the provision of the policy which requires; Maximizing access to information, setting out a clear list of exceptions, Safeguarding the deliberative process and Providing clear procedures for making information available.
World Bank Group Environment, General Health and Safety Guidelines	The ESIA will be prepared within provisions of general Health and Safety Guidelines
World Bank Group Environment Health and Safety Guidelines on Water and Sanitation	The ESIA will be prepared within provisions of water and sanitation Health and Safety Guidelines

CHAPTER 6: PUBLIC AND STAKEHOLDER CONSULTATIONS

6.1 Introduction

The assessment involved consultations with relevant stakeholders in target settlement within Uasin Gishu County. The aim of stakeholder consultations was to give a platform for information sharing and opinion gathering in relation to the proposed Project. Consultations were done in form of public meetings and key informant interviews. The issues were than analysed and presented to design team for finalization of Project designs and planning on how best to implement the Project. The main meeting was on 11th September 2023; attendance of the meetings was from diverse sectors of the society.

6.2 Legal and Policy Provisions for Stakeholder Consultations

6.2.1 EMCA 1999 through the Legal Notice No. 101: The Environmental (Impact, Audit and Strategic Assessment) Regulations, 2003

The principle Act of Parliament is the Environmental Management and Coordination Act (EMCA) 1999 amended in 2015 and the subsequent Regulation, the Environmental Impact Assessment and Audit Regulations 2003

The regulation requires that during the process of conducting Scoping, Environmental Impact Assessment the Proponent shall in consultation with the Authority here in referred to National Environment Management Authority (NEMA); seek the views of persons who may be affected by the Project. In seeking the views of the public, after the approval of the scoping report, of the proposed project by the Authority, the proponent shall publicize the project and its anticipated effects and benefits by;

- Posting posters in strategic public places in the vicinity of the site of the proposed project informing the affected parties and communities of the proposed project;
- Publishing a notice on the proposed project for two successive weeks in a newspaper that has a nation-wide circulation;
- Making an announcement of the notice in both official and local languages in a radio with a nation-wide coverage for at least once a week for two consecutive weeks.
- Hold at least three public meetings with the affected parties and communities to explain the project and its effects, and to receive their oral or written comments; ensure that appropriate notices are sent out at least one week prior to the meetings and that the venue and times of the meetings are convenient for the affected communities and the other concerned parties; and
- Ensure, in consultation with the Authority that a suitably qualified co-coordinator is appointed to receive and record both oral and written comments and any translations thereof received during all public meetings for onward transmission to the Authority.

6.2.2 World Bank Group (WBG) Environmental Assessment Policy (OP 4.01)

The **World Bank Group's Environmental Assessment Policy (OP 4.01, January 1999)** requires that project-affected groups and local non-governmental organizations (NGOs) be consulted during the impact assessments process about the project's potential environmental and social impacts.

The purpose of this consultation is to take local views into account in designing the environmental and social management plans as well as in project design. For complex projects where the environmental impacts and risks are high, the policy requires public consultation at least twice: first, shortly after Environmental Screening and before the terms of reference for the EIA are finalized and secondly, once a draft EIA Report is prepared. Consultation during project execution is also required. Section 5 summarizes the consultation program for the EIAs, and confirms that the project meets and indeed exceeds these requirements.

6.3 Schedule of Stakeholder Consultations

The assessment involved consultations with relevant stakeholders' KK, Segero and Kasarani informal settlement in Eldoret Town. The aim of stakeholder consultations was to give a platform for information sharing and opinion gathering in relation to the proposed Project. Consultations were done in form of public meetings and key informant interviews. The issues were than analyzed and presented to design team for finalization of Project designs and planning on how best to implement the Project. The main meetings were held within the month of September 2023; attendance of the meetings was from diverse sectors of the society as summarized in table 6-1 below

Table 6- 1: Schedule of Public Consultation

Date	Settlement	Stakeholder Consulted	Meeting Attendance
11th September 2023	KK, Segero and Kasarani Informal Settlement	Settlement Executive Committee members (SEC) for KK, Segero and Kasarani Informal Settlement , county government officials, Area M.C.A and members of the community	Total 243 Male 140 Female 103

Detailed Review of Issues discussed during public Participation forums is presented in **table 6-2 below.**

Table 6- 2: Detailed Issues Discussed during Public Consultations

NO	ISSUE	RESPONSE
1	Residents wanted to know what would happen to services like water and electricity during construction.	The team informed residents that during the construction period the water pipes and sewerage should be taken care and be replaced in case of any damages. And also requested for way levees to be provided in case of any connection need to be done to be in future.
2	RAP Impacts and eligibility criteria for compensation	The engineering design and survey will maximize on the available space within the settlement, however residents with property on the reserves which are likely to be affected will be identified and their property documented for compensation through a RAP prepared as a separate report to this Project.
3	Project commencement dates.	They were informed that construction works will start immediately once all the initial processes have been finalized including but not limited to NEMA license, RAP, final engineering designs and a suitable contractor appointed
4	Labour and Workforce from the Settlements	EIA team informed residents that during construction the contractor will source some responsible youth from the area as casuals to supplement his permanent staff. Residents with relevant skills and training can also present their certificates through the SEC to be considered for employment opportunities if need arises
5	Residents wanted to know the Projects that KISIP is intending to implement within their settlement.	The team informed the community that KISIP deal with overall infrastructural improvement within informal settlements. Projects to be undertaken include; Road improvement to bitumen Standards, Drainage improvement, Footpath, Provision of clean water and security lights installation. They were further informed that the Projects will be implemented subject to communality's priorities.
6	Residents wanted to know the if they can qualify to get contracts to implement some of the infrastructural developments	The team informed residents that component three of KISIP involve preparation of RAP, EIA Engineering design and tender documents. The tender documents will be used by the client to recruit a suitable contractor to implement the project. Every contractor with suitable experience is legible since the tender will be advertised publically and all procurement procedures adhered to. Residents who have the capacity were advised to be on the lookout for the adverts so that they apply.
7	Residents wanted to know more about KISIP and how	The team informed residents that KISIP (Kenya Informal Settlement Improvement Project) is a world bank funded

	it is funded.	project. The funds are channeled through the Ministry of Lands, Housing and Urban Development. The objective is to improve living conditions in informal settlements selected across the country. It has four components, first component focuses on institutional strengthening and capacity building, second component supports tenure security, third component is to invest in infrastructure which is the component currently underway in this phase and the fourth component is planning for urban growth
8	Need for training	It was reported that there was need to train road users before and after the completion of the projects both the motorbikes riders and vehicle and to erect road signage and bumps to avoid speeding motor bikes and vehicles.

6.4 Inclusion of Outcomes of Stakeholder Engagement in the Design of the Project

6.4.1 Employment Opportunities for the Public

The Stakeholder Engagement identified the need to provide employment opportunities to the local community members during project implementation period as the main concern from the community.

The project will provide employment opportunities for the estimated number of people in the fields of Casual Laborers, Skilled Staff like Plant Operators/Drivers, Managerial Staff. The opportunities will be shared equally throughout the Project Areas and as provided by Gender Policy 2011.

6.5 Public Disclosure of ESIA, and Annual Monitoring Reports

This ESIA provides for the below listed provisions with regards to Public disclosure

(i) In accordance with EMCA 2015 and World Bank OP 4.01, the Project Proponent in this case MoLPW&UD will ensure that the Results of Public Consultations including ESIA area disclosed on Judiciary website.
(ii) The Reports will also be made available at Chiefs' Offices/ MCA's Office in the affected Settlements in Eldoret town for ease of access by the project interested parties at location level and Project site office,
(iii) The Reports and information will also be disclosed at the ESIA Stage by NEMA and during the sector ail ESIA review by NEMA.
(iv) At completion of the Project civil works EIA/EA Audit Regulations of 2003 requires the project proponent to undertake a closeout audit after completion of the project and also undertake and initial Environment Audit (EA) immediately after commissioning of the project in the 1st year, these audits are essential in determining the performance of the project in addressing issues related to environment and social safeguards, gaps identified are corrected through implementation of recommendation of the Environment and Social Audit Action Plan (ESAAP).

6.6 Construction, Operation and Decommissioning Phase Consultations

Stakeholder groups that may be affected by and/or interested in the implementation of the Project, as well as proposed communication methods and media for each group, have been identified and are presented in **Table 6-3** below.

Table 6- 3: Stakeholder Consultations during Project Construction and Operation Phase

Stakeholder/s	Type of communication	Responsibility	Timing
External Stakeholders			
Local administration representatives Chiefs and Ward Representatives	Public meetings and monthly project progress updates	Contractor/MoLPW&UD	Throughout project implementation phase
Interested NGOs and other civil societies	Local media (newspapers) ESIA, published on MoLPW&UD website.	Contractor / MoLPW&UD	Throughout the implementation of the Project
Relevant National Government and County Government Authorities for example: KeNHA & KURA	Official correspondence and meetings, progress reports Permitting procedures	Contractor / MoLPW&UD	During project design, construction and implementation
Kenya National Museums due to chance find clause of OP 4.11 on physical cultural resources	Official correspondence and meetings Permitting procedures	Contractor / MoLPW&UD	During project Construction phase
Internal Stakeholders			
Employees (Contractor,)	Notice boards, email, Grievance Redress Mechanism, meetings	Contractor	Throughout project implementation phase
Casual workers and temporary staff	Notice boards, email, Grievance Redress Mechanism,	Contractor	Throughout project implementation phase

6.7 Community Relations in Construction Phase

This section set outs the proposed objectives, mechanisms and responsibilities for liaison with Project beneficiaries during the construction phase. It identifies the approach to, and frequency of, consultation with Project beneficiaries.

The primary responsibility for liaison will be borne by the contractor who will develop own plan and more detailed proposals for community liaison. This will build on the approach outlined in this section. All potential contractors will be required to draw up this plan as part of the tender process.

The objectives of the Community Relations Programme will be to:

(i) Provide local residents with regular information on the progress of work.
(ii) Inform the project/contractor of any community related issues that may impact construction.

(iii) Monitor implementation of mitigation measures and the impact of construction via direct monitoring and feedback from Project area.
(iv) Identify any significant new issues that may arise during the construction period; and
(v) Manage any complaints against the project/contractors and local residents (i.e., provide a grievance mechanism).

6.7.1 Construction Contractor's Role in Community Liaison

The Contractor will be required to adhere to the requirements of the Environmental and Social Management and Monitoring Plan (ESMMP) that sets out how the contractor will meet and monitor the mitigation measures recommended by the Plan.

The role and responsibilities of the Contractors Community liaison include:

(i) Provide primary interface between project and affected or interested persons;
(ii) Coordinate and implement required pre-construction activities, namely;
(iii) Produce management plans for community relations, construction camps and transport train staff with community relations responsibilities; and
(iv) implement induction training workshops for all construction staff;
(v) Assist in local recruitment process; and
(vi) Ensure on-going communication with project and affected or interested persons

6.7.2 Community Relations in Operational Phase

The objective of the Community Relations Programme in this Phase will be to:

(i) maintain constructive relationships between local residents to assist in the operation of the facilities;
(ii) maintain awareness of safety issues among local residents in the project areas;
(iii) ensure compliance with land use constraints among land owners in the project areas;

6.7.3 Decommissioning

In the event of decommissioning of the Project, liaison will continue to take place between MoLPW&UD with Project Affected or Interested Persons prior to de-commissioning. This role will complement work carried out by the proponent and social investment team to reduce the negative impact of the project decommissioning.

6.8 Grievance Redress Management Plan

This ESIA provides for a Grievance redress mechanisms (GRM) includes instruments, methods, and processes by which a resolution to a grievance is sought and provided. The processes are as shown in the sections below.

CHAPTER 7: ENVIRONMENTAL AND SOCIAL IMPACTSASSESSMENT AND MITIGATION MEASURES

7.1 Anticipated Project Positive Impacts

The Project will result in both direct and indirect benefits to the residents of KK, Segero and Kasarani informal settlements in Eldoret as summarized below;

Benefits of Roads and Drainage Projects

(i) Creation of employment to people living within the informal settlements through improved access.
(ii) Improved living standard of people within the settlement through improved road infrastructure
(iii) Providing a linkage of the settlement to other parts of the city.
(iv) Provides alternative route to access the settlement, could be used during disaster times example by ambulances and fire engines.
(v) Enhanced access to social amenities like schools and health facilities within he settlement.
(vi) Improved road side drainage hence reduced risks of flooding.
(vii) The Project will improve the living standard and well-being of the local economy through provision of road and street lighting within the settlements.

Benefits of Flood Lights

(i) The flood lights will lead to Improved Security within the settlement due to provision of floods within the settlement.
(ii) Improving the roads and street lighting infrastructure within the settlement will result to development of associate social services for example health facilities, learning institutions and recreational centre's which will eventually benefit the community.

7.2 Risks on Biophysical Environment during construction

The preliminary ESIA identified that the project will have less adverse risks to bio physical environment. The Projects will involve improvement of access roads, drainage, Water Supply, Sewerage and installation of security lighting system in the informal settlements.

These activities will not be out of character with the existing environment baseline situation identified in the informal settlements. Biophysical attributes discussed under this sub chapter will include;

(i) Impacts on Water Resources
(ii) Impacts on Soil Resources

Tables 7-2 to 7-5 below similar negative impacts that are applicable to all the project activities including road and drainage, Water and Sewerage and Flood lights. The assessment under section 7.9 presents specific project Impacts per each category of project activities during operation

7.2.1 Impacts on Water Resources

The assessment identified that the main water resources within the settlements are shallow wells and piped water, also drain channels drain water directly into the nearby streams. Therefore, the assessment also identified that less significance impacts are anticipated on Water resource as discussed in **Table 7-3.**

Table 7- 3: Impacts on Water Resources

Impact Sources	Terrestrial and aquatic Ecosystem Pollution by effluents caused by construction activities and water losses through over abstraction, infiltration and evaporation		**Mitigation Efficiency**	**High**
Nature of impact	• Reduced availability of safe domestic water, water wastage, infiltration, and evaporation • pollution of existing water resources including aquifers by construction effluents • Increase water borne related illness due to consumption of unsafe water			
Reversibility of impact	Yes			
Mitigation	As summarized in table 7-4 below			
Affected stakeholders /areas	Aquatic and terrestrial ecosystems			
Magnitude	*Extent*	Site – 2		
	Intensity	Medium-3		
	Duration	Medium term-3		
	Probability	Likely – 3		
Significance	**Weighting**	(Extent+ Intensity +Duration + Probability)x WF(2+3+3+3) x1=11 (Low)		Low

7.2.2 Impacts on Soil Resources

The impacts that are likely to be triggered by the project activities in the settlements include;

(i) Soil contamination caused by oils and fuel leaks from construction equipment
(ii) Soil Erosion and mud slides due to clearing of vegetation cover and trenching activities.

The assessment also identified that less significance impacts are anticipated on Soil resource as discussed **in table 7-4** below.

Table 7- 4: Impacts on Soil Resources

Impact Sources	Construction activities which could lead to soil compacting and interference with soil structure hence making top soils loose and susceptible to agents of erosion.	**Mitigation Efficiency**	**High**
Nature of impact	• Movement of plant and equipment could result to soil compacting which inhibits soil aeration leading to death of soil micro-organisms. • Soil contamination caused by oils and fuel leaks from construction equipment's leading to Oil Acidity increase • Soil Erosion due to clearing of vegetation cover and trenching activities which results to death of soil microorganism and reduced soil productivity		
Reversibility of impact	Yes		
Mitigation	As discussed in table 7-5 below		

Affected stakeholders /areas	Terrestrial ecosystems		
Magnitude	*Extent*	Site – 2	
	Intensity	Medium-3	
	Duration	Medium term-3	
	Probability	Likely – 3	
Significance	**Weighting**	(Extent+ Intensity +Duration + Probability)x WF(2+3+3+3) x1=11 (Low)	Low

7.2.3 Biophysical Environment Risk Mitigation Measures

The preliminary Environment and Social Screening report proposes the below listed mitigation measures to identified biophysical environment setting as summarized in table 7-5 below.

Table 7- 5: Mitigation of Biophysical Environment Impacts

Impacts	Proposed Mitigation Measures
Destruction of Vegetation in the Project Areas	• Site Clearance and Construction activities will be limited to available reserves within the settlements, Projects will be implemented within existing reserves and wayleaves minimize destruction to vegetation cover • Reinstatement of the project sites to their original state to be carried out once construction works are completed to allow growth of vegetation. • Replant eco-friendly grass and trees along the projects after completion of the civil works.
Contamination of Surface Water Sources by Effluents from Construction Plant and Equipment	• Ensure Construction Equipment is well maintained and serviced according to manufacturers' specifications to prevent oil leaks. • Cleaning / repair of Construction Plant and Equipment to be carried out at designated yards • Contractor to have designated storage areas for oils, fuels etc. that is protected from rain water and away from nearby surface water courses
Soil Erosion resulting to loss of top soil	• The risk of Soil Erosion will be lowered through provision of soil Erosion prevention structures i.e. gabions in areas susceptible to Soil Erosion
Solid Wastes Generation from Construction Activities	• Construction wastes (residual earth, debris and scrap materials) to be collected at designated points and Contractor to dispose to designated Solid Waste Dumping Sites approved by the Uasin Gishu County Government • Contractor's Camps and Construction Sites to have designated waste collection points, • Environmental Management, Health and Safety Training Programmes to be conducted for Contractor's Staff to create awareness on proper solid wastes management

7.3 Workers, Community Health and Safety Risks

Workers, Community Health and Safety risks are often triggered by project activities during project construction phase. These risks often affect both workers on site as well as general community in close proximity to the work site.

Management of these risks is required to be as provided for by the Occupational Health and Safety Act (OSHA 2007) and World Bank Environment Health and Safety Guidelines discussed

in chapter 3 of this assessment.

This assessment identified potential Environment, Health and Safety in the below listed context.

(i) Excessive noise and vibrations
(ii) Air Pollution and Dust Generation.
(iii) Risk of Accidents at Work Sites

7.3.1 Excessive noise and vibrations

This risk often affects both workers on site and community at large, common sources noise and excessive vibrations are as a result of use of un-serviced plant and equipment as well as activities associated with blasting and rock breaking. As required by OSHA 2007 and EMCA 2015 Noise and Excessive Vibration 2009 as well as World Bank EHS Guidelines.

Table 7-6 presents Environment, Health and Safety Impact Identification and Ranking assessment while **table 7-7** presents a summary of mitigation of potential EHS risks.

7.3.2 Air Pollution and Dust Generation.

The risk of air pollution often affects both workers on site and community at large, common sources air pollution include use of un serviced plant and equipment which emit hydro carbons through equipment exhaust system. Poor workmanship example failure to use water sprays during dry season could also result to air pollution.

As required by OSHA 2007 and EMCA 2015 (Air Quality Regulations 2014) as well as World Bank EHS Guidelines.

Table 7-6 presents Environment, Health and Safety Impact Identification and Ranking assessment while **table 7-7** presents a summary of mitigation of potential EHS risks.

7.3.3 Risk of Accidents at Work Sites

The risk of accidents at worksites often affects both workers on site and community at large, these risks at times can be fatal as they could lead to death or permanent disability of victims. The risks are commonly caused by failure to observe safety requirements as provided for by as required by OSHA 2007 and the World Bank EHS Guidelines

Table 7-6 presents Environment, Health and Safety Impact Identification and Ranking assessment while **table 7-7** presents a summary of mitigation of potential EHS risks.

Table 7- 6: Impacts on Workers, Community Health and Safety

Impact Sources	**Failure to comply to provisions of OSHA 2007 and World Bank EHS Guidelines**		**Mitigation Efficiency**	**High**
Nature of impact	- noise and excessive vibrations due to un-serviced plant and equipment and Activities associated with blasting and rock breaking - Open trenches within the settlement which pose health hazards to workers and community. - Failure to use required correct signage and safety marshal on site - Un-serviced plant and equipment which emit hydro carbons through equipment exhaust system. - Poor workmanship & failure to use water sprays during dry season could also result to air pollution. - Failure to observe safe work environment requirements like use of PPEs, Warning Taps, site labelling. - Hearing impairment and respiratory related illness - Can cause death or permanent disability of victims			
Reversibility of impact	Yes			
Affected stakeholders /areas	Workers and Community			
Magnitude	*Extent*	Site – 2		
	Intensity	Medium-5		
	Duration	Medium term-4		
	Probability	Likely – 4		
Significance	**Weighting**	(Extent+ Intensity +Duration + Probability)x WF(2+5+4+4) x4=60 (Medium to High)		Medium to high

7.3.4 Environment Health and Safety Risk Mitigation Measures

The Environment and Social Screening report proposes the below listed mitigation measures to identified workers, Community Health and Safety risks as summarized in **table 7-7** below.

Table 7- 7: Mitigation Measure to Workers, Community Health and Safety Risks

Impact	**Proposed Mitigation Measures**
Noise and Excessive Vibrations.	• Contractor will comply with provisions of EMCA 2015 (Noise and Excessive Vibrations Regulations of 2009) • The Contractor will keep noise level within acceptable limits (60 Decibels during the day and 35 Decibels during the night) and construction activities shall, where possible, be confined to normal working hours in the residential areas • Hospitals and other noise sensitive areas such as schools shall be notified by the Contractor at least 5 days before construction is due to commence in their vicinity
Air Pollution and Dust Generation.	• The contractor will comply to the provisions of EMCA 2015 (Air Quality Regulations 2014) • Workers shall be trained on management of air pollution from vehicles and machinery. All construction machinery shall be maintained and serviced in accordance with the contractor's specifications • Water sprays shall be used on all earthworks areas within 200 metres of human settlement especially during the dry season.
Risk of Accidents at Work Sites	• Contractor to provide a Healthy and Safety Plan prior to the commencement of works to be approved by the Supervising Engineer. • Provide Personal Protective Equipment including gloves, gum boots, overalls

Impact	Proposed Mitigation Measures
	and helmets to workers. Use of PPE to be enforced by the Supervising Engineer. • Fully stocked First Aid Kits to be provided within the Sites, Camps and in all Project Vehicles
Risk of Traffic Accidents along the Pipeline Route	• Strict use of warning signage and tapes where the trenches are open and at other active construction sites • Contractor to Employ and train Road Safety Marshalls who will be responsible for management of traffic on site • Contractor to provide a Traffic Management Plan during construction to be approved by the Supervising Engineer

7.4 Traffic Management Plan

On average, each year, about 7 workers die as a result of accidents involving vehicles or mobile plant on construction sites. A further 93 are seriously injured[4]. OSHA 2007 provides for site traffic organization so that vehicles and pedestrians using site routes can move around safety. The routes need to be suitable for the persons or vehicles using them, in suitable positions and sufficient in number and size.

The term 'vehicles' includes: cars, vans, lorries, low-loaders and mobile plant such as excavators, lift trucks and site dumpers etc. Construction site vehicle incidents can and should be prevented by the effective management of transport operations throughout the construction process.

This ESIA provides for the below listed key management principles that will be complied by the Contractor when dealing with traffic on Site during the construction of the identified infrastructure Project in the Informal Settlements with the understanding that the Works will be constructed within Informal Settlements which are densely populated and roads encroached.

(i) Keeping Pedestrians and Vehicles Apart
(ii) Minimizing vehicles movement
(iii) People on Site
(iv) Turing of Vehicles
(v) Visibility
(vi) Signs and Instructions.

Table 7-8 below provides details on how traffic will be managed on site under the above discussed principles

[4]http://www.hse.gov.uk/construction/safetytopics/vehiclestrafficmanagement.htm

Table 7- 8: Traffic Management Plan

TRAFFIC MANAGEMENT PLAN
Keeping Pedestrians and Vehicles Apart on Site
- **Entrances and exits-** provide separate entry and exit gateways for pedestrians and vehicles; - **Walkways-** provide firm, level, well-drained pedestrian walkways that take a direct route where possible; - **Crossings**- where walkways cross roadways, provide a clearly signed and lit crossing point where drivers and pedestrians can see each other clearly; - **Visibility-** make sure drivers driving out onto public roads can see both ways along the footway before they move on to it; - **Obstructions**– do not block walkways so that pedestrians have to step onto the vehicle route; and - **Barriers**- think about installing a barrier between the roadway and walkway
Minimizing vehicles movement
- Limit the number of vehicles on site - Provide car and van parking for the workforce and visitors away from the work area; - Control entry to the work area; and - Plan storage areas so that delivery vehicles do not have to cross the site.
People on Site

- Contractor will take steps to make sure that all workers are fit and competent to operate the vehicles, machines and attachments they use on site by, for example:
  - checks when recruiting drivers/operators or hiring contractors;
  - training drivers and operators;
  - managing the activities of visiting drivers
- Accidents can also occur when untrained or inexperienced workers drive construction vehicles without authority.
- Access to vehicles will be managed and people alerted to the risk

Turning of Vehicles

The need for vehicles to reverse will be avoided where possible as reversing is a major cause of fatal accidents.
  - One-way systems will be adopted by the contractor as this can reduce the risk, especially in storage areas.
  - A turning circle could be installed so that vehicles can turn without reversing

Visibility

If vehicles reverse in areas where pedestrians cannot be excluded the risk is elevated and visibility becomes a vital consideration.
This ESIA provides for:
  - **Aids for drivers-** mirrors, CCTV cameras or reversing alarms that can help drivers can see movement all-round the vehicle;
  - **Signallers**- who can be appointed to control manoeuvres and who are trained in the task;
  - **Lighting**- so that drivers and pedestrians on shared routes can see each other easily. Lighting may be needed after sunset or in bad weather;
  - **Clothing**- pedestrians on site should wear high-visibility clothing.

Signs and Instructions
- Make sure that all drivers and pedestrians know and understand the routes and traffic rules on site. Use standard road signs where appropriate including the Heavy Vehicles turning sign - Provide induction training for drivers, workers and visitors and send instructions out to visitors before their visit

7.5 Social Risks

The Project activities as described in the report have the potential of triggering various social risks both at both Project construction phase and operation phase.

This assessment has identified potential social risks associated with the Project as listed below

(i) Loss of Temporal Assets and disruption of sources of Livelihood
(ii) Disruption of Public Utilities like cables, access culverts,
(iii) Labour Influx and sexual offences including minor abuse
(iv) Human Rights and gender inclusivity
(v) Increased Transmission of communicable diseases including HIV/AIDS
(vi) Increased Crime and Insecurity

7.5.1 Loss of Temporal Assets and Disruption of Sources of Livelihood

This impact is likely to be triggered during Project construction phase, this assessment identified that proposed road reserves, water and sewerage wayleaves in the informal settlement are encroached by either extension of residential and or business structures.

These structures will be demolished to provide required space for implementation of the Project as illustrated in sample photos below. This implies that OP 4.12 will be triggered by the Project and therefore a detailed RAP will be prepared.

Photo Plate 7-1: Sample Encroachment

Encroachment on temporary business sheds within the settlement

However, the ARAP report prepared for KK, Segero and Kasarani Informal Settleemnt detailed the below summarized to be impacts related to Project impacts to people's assets and sources of livelihood

- ✓ 98 project Affected Persons. Affected by infrastructure upgrading in the three Settlements. All of these are PAPs have affected structures, where a small number is fully affected mainly temporary business sheds, the rest of the structures are just partially affected.

- ✓ The total budgetary requirements for implementation of the ARAP is provided as Kshs 2,255,00.00 (Two Million, Two Hundred and Twenty-five Thousand, shillings only).

7.5.2 Disruption of Public Utilities

This impact is likely to be triggered during Project construction phase whereby contractors often damage infrastructure installations such as access culverts to homes, drainage channels, communication cables, power line and water lines. Disruptions of public utility infrastructure often trigger grievances from the users if not promptly mitigated.

Table 7-9 provides Social Impact Identification and ranking while table 7-10 presents possible mitigation measures of the identified social risks

7.5.3 Labour Influx Effects

This impact is triggered during Project construction phase due to the Project attracting various categories of workers from local, national and international markets. This therefore leads to concentration of people in one area drawn from diverse social and cultural background often results to a number of issues as listed below;

(i) Strain on various resources (example water, sewerage and accommodation services)
(ii) Grievances from local community members over job opportunities.
(iii) Sexual Offences
(iv) Teenage Pregnancies

Table 7-9 provides Social Impact Identification and ranking that includes labour influx management while Table 7-10 presents possible mitigation measures of the identified social risks

7.5.4 Human Right and Gender Inclusivity

This impact is triggered during Project construction phase due to the potential of the contractor failure to comply with the following provisions;

(i) Gender Inclusivity requirements in hiring of workers and entire Project Management as required by Gender Policy 2011 and 2/3 gender rule.
(ii) failure to protect Human Risk Areas Associated with, Disadvantaged Groups, interfering with Participation Rights, and interfering with Labour Rights

Table 7-9 provides Social Impact Identification and ranking that includes Human rights and gender inclusivity management while table 7-10 presents possible mitigation measures of the identified social risks.

7.5.5 Increase in prevalence of communicable diseases

This impact is triggered during Project construction phase due to the Project attracting various categories of workers from local, national and international markets. This therefore leads to concentration of people in one area drawn from diverse social and cultural background often results to people engaging in risky sexual activities.

Table 7-9 below provide Social Impact Identification and ranking that includes HIV/AIDS

management while table 7-10 presents possible mitigation measures of the identified social risks

Table 7- 9: Impacts on Social Setting

Impact Sources	**Project Impacts to peoples assets and sources of livelihood and concentration of people with diverse cultural and social background in one location**		**Mitigation Efficiency**	**High**
Nature of impact	(i) Loss land Assets and Sources of Livelihood including trees and crops (ii) Disruption of Public Utilities like cables, access culverts, (iii) Labour Influx and sexual offences including minor abuse (iv) Human Rights and gender inclusivity (v) Increased Transmission of communicable diseases including HIV/AIDS and other communicable diseases			
Reversibility of impact	Yes			
Mitigation Measures	As detailed in table 7-10 below			
Affected stakeholders	Workers and Community			
Magnitude	*Extent*	Site – 2		
	Intensity	Medium-5		
	Duration	Medium term-4		
	Probability	Likely – 4		
Significance	**Weighting**	(Extent+ Intensity +Duration + Probability)x WF(2+3+3+3) x1=11 (Low)		Low

7.5.6 Social Risks Mitigation Measures

The Environment and Social Screening report proposes the below listed mitigation measures to identified Social risks as summarized in **Table 7-10** below.

Table 7- 10: Mitigation of Social Impacts

Impacts	**Proposed Mitigation Measures**
Loss of Temporal Assets and Sources of Livelihood	• Prepare a detailed Resettlement Action Plan (RAP) report which documents the nature and magnitude of project impact to people's assets and sources of livelihood, the report should also propose adequate compensation and livelihood restoration measures to affected Project Persons.
Disruption of Public Utilities	• Contractor to carry out piloting to locate services such as pipes and cables along the Pipeline Route before commencing excavation works. • The relevant Services Providers and Agencies to be notified prior to commencement of Works so that any relocation works can be carried out before the Pipeline Construction Works begin. • Length of excavation to be restricted to sections that can be reinstated within the shortest period possible to minimize time of disruption of services
Increased Transmission of HIV/AIDS	• HIV/AIDS Awareness Program to be instituted and implemented as part of the Contractor's Health and Safety Management Plan to be enforced by the Supervising. This will involve periodic HIV/AIDS Awareness Workshops for Contractor's Staff • Access to Contractor's Workforce Camps by outsiders to be controlled • Contractor to provide standard quality condoms to personnel on site
Labour Influx and sexual offences	• Effective community engagement and strong grievance mechanisms on

Impacts	Proposed Mitigation Measures
	matters related to labour. • Effective contractual obligations for the contractor to adhere to the mitigation of risks against labour influx • Proper records of labour force on site while avoiding child and forced labour • Fair treatment, non-discrimination, and equal opportunity of workers. • Comply to provisions of WIBA 2007 and IFC PS 2 on labour and Working Conditions, and ILO Conventions 87, 98, 29,105,138,182,100,111 • Develop and implement a children Protection Strategy
Human Rights and gender inclusivity	• Mainstream Gender Inclusivity in hiring of workers and entire Project Management as required by Gender Policy 2011 and 2/3 gender rule. • Protecting Human Risk areas Associated with, Disadvantaged Groups, Interfering with Participation Rights, and interfering with Labour Rights
Increased Crime and Insecurity	• Contractor and Supervision Team to liaise regularly with the Local Administration and Police Service to address any security and crime arising during project implementation. • Contractor to provide 24 hours security to Workforce Camps, Yards, Stores and to the Supervising Team's Offices

7.6 Labour Management During Construction Stage

This ESIA provides that implementation stage the contractor will prepare a Labor Management Plan (LMP) that includes mandatory requirement to procure all unskilled (and as much as possible, semi-skilled) labor as well as locally available materials from the local community while ensuring equal pay for equal work for men, women and people with disability. Measures listed below will be implemented:

- The contractors will reduce labor influx by tapping into the local workforce. Depending on the size and the skill level of the local workforce, a share of the workers required for the project may be recruited locally. This may be easier for unskilled workmen. Specialized workmen may be hired from elsewhere. Local workers may also be trained especially if they are required for the operation of the project.
- The contractor will ensure effective community engagement and strong grievance mechanisms on matters related to labor with a discrete mechanism for safely and confidentially reporting issues of SEA and GBV at the community level triggered by the Sub Project
- Effective contractual obligations for the contractor to adhere to the mitigation of risks against labor influx, the contractor should engage a local community liaison person
- The contractor will ensure proper records of labor force on site while avoiding child and forced labor
- The works contractor should be required, under its contract, to prepare and enforce a No Sexual Harassment and Non-Discrimination Policy, in accordance with national law as well as to the World Bank Code of Conduct guidelines where applicable.
- The contractor will ensure comply to provisions of Work Place Injuries and Benefits Act (WIBA) 2007
- The contractor will develop and implement a children Protection Strategy, this strategy will ensure that no child under the legal age of 18years is employed to the Project.
- The contractor will ensure SEA is addressed in all employment contracts and a COC is signed by all workers;

- The contractors will develop training and sensitization of workers on SEA and ensure specific signage on SEA zero tolerance in all work sites;

7.7 Specific Project Risks during Operation

This sub chapter discusses specific Project risks associated with the Projects during operation phase as summarized below.

Table 7- 13 Operation Impacts and Mitigation for Roads and Drainage Projects

Impact	Proposed mitigation measure
Increased Accidents associated with motor cycles over speeding within the settlement due to good roads	• Appropriate signage should be put up on the roads to warn drivers especially in areas where there are children or people crossing the road to reduce accidents • The County Government to enlighten motorist and cyclist on importance of obeying traffic rules especially in residential areas. • The County Government to enlighten residents and school children on the importance of adhering to provisions of road safety rules • Regular inspection and maintenances of the road by County Government of Nairobi to ensure the speed control parameters and signage are in good condition. • Regular crackdown, arrest and prosecution of motorists and cyclist who disobey road safety directions.
Pollution from fossil fuels from vehicles	• Encourage locals to use fuel efficient vehicles and other types such as those that run on electricity • Encourage people do drive less and learn to use public means of transport and bicycles
Flooding due to poor drainage channels	• Maintenance of the drainage channels to ensure that there is no blockage of the channels
Loss of business associated with poor road condition during operation phase	• Regular maintenance and repair of the road by County Government, this should be through regular road marking, sealing of pot holes, ensure road signage is in place among other operations

Table 7- 14 Operation Impacts and Mitigation for Flood Lights Projects

impact	Mitigation measure
Risk of electrocution	• Ensuring that all the wires are appropriately insulated and are safe from causing harm to humans Creation of awareness to the locals to avoid getting into contact with dangerous electrical current
May cause eye problem when there is bad lighting	• Ensure that the lighting system is proper to avoid flipping that can result to eye problems for people

CHAPTER 8: ENVIRONMENT AND SOCIAL MANAGEMENT AND MONITORING PLAN

8.1 Management Plan Principles

This Project is geared towards enhancing social and economic benefits to the people living in the Project area who will directly improving infrastructure in the settlements.

However; the project should also observe environmental protection requirements in accordance to the established laws and regulations to ensure sustainability. To realize this goal, acceptability by a majority of the beneficiaries and minimal effects to the physical environment will require to be integrated in the Project through constant consultations, evaluations and review of the design aspects throughout the Project coverage. Among the factors that need to be considered in this particular project implementation will include:

(i) The contractor will hire qualified community liaison officers who will be act as an inter-phase between the contractor and community. The community liaison person will be responsible for implementing components of the Stakeholder engagement requirements which require continuous engagement of the community.
(ii) Enhance integration of environmental, social and economic functions in the project implementation.
(iii) Consider preventive measures towards possible social and economic disruptions that may arise from the project implementation in accordance with the laid down guidelines.
(iv) The contractors and other players in the project activities be prevailed upon to implement the EMP through a sustained supervision and continuous consultations.

8.2 Specific Management Issues

8.2.1 Management Responsibilities

In order to implement the management plan, it is recommended that a supervisor is identified to oversee environment and management aspects during construction of the project. The supervisor would also be expected to co-ordinate and monitor environmental management during construction and provide monitoring schedules during operations.

The contractor will be required to submit, under due consideration of the ESMMP as part of the ESIA the below listed management plans.

Project Specific Sub Plans to be developed by the Contractor

- ✓ Occupational health and safety plan
- ✓ Traffic management plan
- ✓ Public health and safety management plan
- ✓ The provisions for the worker's grievance mechanism
- ✓ Environmental and social monitoring plan (with further detail to the outline of monitoring indicators as presented in the ESMMP) below.

8.2.2 Environmental Management Guidelines

Upon completion and commissioning the Project, it will be necessary to establish appropriate operational guidelines on environmental conservation and social linkages to enable the operations' management identify critical environmental and social issues and institute appropriate actions towards minimizing associated conflicts.

Basically, the guidelines should cover among other areas

- ✓ Environmental management progammes
- ✓ Standard Operation Procedures (SOP) Environment, Health and Safety
- ✓ Compliance monitoring schedule provided in the ESMMP
- ✓ Initial and Self Environmental audit schedules as required by EIA/EA Regulation of 2003
- ✓ Continued stakeholder engagement as discussed in chapter 6 of this assessment.

8.2.3 Environmental Education and Awareness Rising

The Uasin Gishu County Government field staff and the other beneficiaries will understand the basic environmental principles associated with the projects. In this regard, therefore, the following steps will to be considered:

Environmental Education and Awareness Rising

- ✓ Creation of liaisons on all matters related to environment management of the facilities once commissioned
- ✓ Encourage contribution of improvement ideas from the beneficiaries on specific issues related to the management of the facilities
- ✓ Establish initiatives that would instil a sense of ownership of the facilities and related components to all beneficiaries,

8.2.4 Decommissioning Process

Due to the long-term life of the intervention facilities and related components, a decommissioning audit will be undertaken at least 1 year before the process for any of the components commences, following a notice to decommission. The decommissioning process will be guided by a comprehensive decommissioning plan developed through the decommissioning audit process. However, the following features will be decommissioned upon completion of the works:

- Contractor's camp and installations that will be removed without compromising on the safety and general welfare of the immediate residents. Special care to be given to associated wastes and dust emitted in the process,
- Materials stores that will comprise fresh materials and used items. Each category will be moved safely out of site ensuring minimal or no impacts to the related environment and social setting,
- Wastes and debris holding sites will be cleared with maximum re-use of the debris either

on surfacing the passageways or other grounds such as schools and church compounds.

Table 8- 1: Construction Phase: Environmental and Social Management and Monitoring Plan

Activity	Associated Impacts	Impact Levels	Management Actions	Target Areas& Responsibilities	Monitoring Indicator	Budget
Seeking approvals from NEMA for ESIA, approval of campsite by Directorate of Occupational Health and Safety (DOSH)	Delay in implementation of the Project due to objections and stop orders	Low	▪ The Contractor shall ensure that all pertinent permits, certificates and licences have been obtained prior to any activities commencing on site and are strictly enforced/ adhered to; ▪ The Contractor shall maintain a database of all pertinent permits and licences required for the contract as a whole and for pertinent activities for the duration of the contract	All the Project components Responsibility MoLPW&UD & Contractor	• Number of approvals / permits issued	~KShs.20,000
construction campsites	Environmental degradation risks	Medium	▪ Isolate through fencing the camp sites from access by the public for their safety ▪ Preferably to be located on land already cleared land wherever possible ▪ The Contractor's Camp layout shall take into account availability of access for deliveries and services and any future works	Campsites Responsibility Contractor(s)	• Number of public outcry due to accidents	~KShs. 30,000
Access to campsites and construction sites	Environmental degradation risks	Medium	▪ Utilize to the extent possible the existing public roads to avoid social and economic disruption ▪ Ensure road safety measures for the construction vehicles to the extent possible by observing all traffic regulations	Access Roads Responsibility Contractor(s)	• Cases of private land required • Accidents occurrence incidences	No direct cost associated
Environmental and Social Training and Awareness	Risks of Environmental and Social degradation risks and occupational health and safety related accidents	Medium	▪ The Contractor and sub-contractors shall be aware of the environmental requirements and constraints on construction activities contained in the provisions of the ESMMP ▪ The Contractor will be required to provide for the appropriate Environmental Training and Awareness as described in this ESMMP in his costs and programming ▪ An initial environmental awareness training session shall be held prior to any work commencing on site, with the target audience	All Workers Responsibility Contractor(s)	• Number of Trainings Held • Availability of Training reports • Attendance list of participants during the trainings	KShs. 20,000

Activity	Associated Impacts	Impact Levels	Management Actions	Target Areas& Responsibilities	Monitoring Indicator	Budget
			being all project		sessions	
HIV/AIDS awareness and prevention campaign	Risks of Increased HIV and Aids transmission in the area	Medium	▪ The Contractor shall institute HIV/AIDS awareness and prevention campaign amongst his workers for the duration of the contract, contracting an implementing organisation, with preference for an organisation already working on this issue in the Project area; ▪ The campaign shall include the training of facilitators within the workers, information posters in more frequented areas in the campsite and public areas, availability of promotional material (T-shirts and caps), availability of condoms (free), and theatre groups	All Workers <u>Responsibility</u> Contractor(s)	• Number of Trainings Held • Availability of Training reports • Attendance list of participants during the training sessions	KShs. 25,000
Local Labour / Employment	Delay in Project implementation due to opposition from aggrieved community members	Medium	▪ Wherever possible, the Contractor shall use local labour, and women must be encouraged to be involved in construction work ▪ The contractor shall ensure compliance to the gender balance as required by the 2/3 gender rule	All the Project Lots <u>Responsibility</u> Contractor	• Number of workforce employed from the local community • Number of female employed	No direct costs associated
Setting out and clearance of project routes and site	Delay in project implementation due to opposition from PAPs	High	▪ Implementation of Resettlement Action Plan (RAP) recommendations before commencement of civil works ▪ In the event that the contractor requires additional land, the contractor will apply the provisions of the RAP. ▪ if the respective land setting is not reflected in the RAP, to comply with WB OP 4.12; prior to the acquisition of any additional land, the contractor shall submit the respective plan for compensation and this plan has to be approved by the relevant	All the settlements <u>Responsibility</u> MoLPW&UD– Implement RAP Contractor – extra compensation on site	• Numbers of satisfied PAPS • Extend of route opened to the contractor	refer to RAP report

Activity	Associated Impacts	Impact Levels	Management Actions	Target Areas& Responsibilities	Monitoring Indicator	Budget
			authorities as well as by the PEA.			
Earth moving and excavations (Vegetation clearance, channeling and site preparations)	Vegetation Cover destruction	Low to medium	▪ Construction activities will be limited to Project sites / routes which already exist therefore limited destruction to vegetation cover, ▪ Compensatory planting of trees i.e. plant at least twice the number of trees	All work areas Responsibility Contractor(s)	• Soil erosion extend and intensity on site	No direct cost
	Impacts on Water Resources - water pollution	Low to medium	• No grey water runoff or uncontrolled discharges from the site/working areas (including wash down areas) to adjacent storm water shall be permitted; • Water containing such pollutants as cements, concrete, lime, chemicals and fuels shall be discharged into a conservancy tank for removal from site where applicable • The Contractor shall also prevent runoff loaded with sediment and other suspended materials from the site/working areas from discharging to storm water channels	All work areas Responsibility Contractor(s)	• Water quality flowing through storm	No direct cost
	Siltation and Sedimentation Control	low	• Any work along storm water channels will be isolated to prevent silt propagating downstream; • Debris and other material will be prevented from entering Storm water channels; contamination by other pollutants); • Sand/silt traps should be used so as to prevent silt and any other sediments from getting into storm water channels • Site compounds and stockpiles will be located away from shallow wells and storm water channels	civil works areas Responsibility Contractor(s)	• Silt load in storm water channels	No direct cost
	Soil Erosion Impacts	low	• Earthworks should be controlled so that land that is not required for the Project works is not disturbed;	civil works areas Responsibility	• Extend of soil erosion on site	No direct cost

Activity	Associated Impacts	Impact Levels	Management Actions	Target Areas& Responsibilities	Monitoring Indicator	Budget
			• Wherever possible, earthworks should be carried out during the dry season to prevent soil from being washed away by the rain. • Excavated materials and excess earth should be kept at appropriate sites approved by the Supervising Engineer. • The contractor should adhere to specified cut and fill gradients and planting embankments with shrubs and grass to reduce erosion	Contractor(s)		
Site Activities	Risk of Accidents at Work Sites	High	▪ Contractor to provide a Healthy and Safety Plan (HSP) prior to the commencement of works to be approved by the Supervising Engineer. ▪ Provide Personal Protective Equipment (PPE) including gloves, gum boots, overalls and helmets to workers. Use of PPE to be enforced by the Supervising Engineer. ▪ Fully stocked First Aid Kits to be provided within the Sites, Camps and in all Project Vehicles ▪ Strict use of warning signage and tapes where the trenches are open and at other active construction sites ▪ Contractor to Employ and train Road Safety Marshalls who will be responsible for management of traffic on site	civil works areas Responsibility Contractor(s) Supervision	• Number of fatalities and accidents recorded in the incidence book	KShs.30,000
	Solid Wastes impacts	High	▪ The contractor shall develop a comprehensive Waste Management Plan (WMP) prior to commencement of works ▪ Properly labelled and strategically placed waste disposal containers shall be provided at all places of work ▪ Litter bins should have secured lids to prevent animals and birds from scavenging ▪ All personnel shall be instructed to dispose of all waste in a proper manner	civil works areas Responsibility Contractor(s) Supervision	• Quantity of solid Wastes Generated and appropriately disposed	KShs.25,000

Activity	Associated Impacts	Impact Levels	Management Actions	Target Areas& Responsibilities	Monitoring Indicator	Budget
			▪ Recycling of construction material shall be practiced where feasible e.g. containers and cartons ▪ Earth spoils shall be disposed of in pre identified sites			
	Liquid Wastes Impacts	High	▪ Water containing pollutants such as concrete or chemicals should be directed to a conservancy tank for removal from the site where applicable ▪ Potential pollutants of any kind and form shall be kept, stored and used in such a manner that any escape can be contained ▪ In case of any form of pollution the contractor should notify the Resident Engineer (RE) ▪ Wash areas shall be placed and constructed in such a manner so as to ensure that the surrounding areas including groundwater are not polluted ▪ No grey water runoff or uncontrolled discharges from the site or working areas to any adjacent Storm water channels .	civil works areas Responsibility Contractor(s) Supervision	• Quantity of liquid Wastes Generated and appropriately disposed	KShs.25,000
	Sanitation issues resulting from both solid and liquid wastes on site Risks associated with water borne diseases exposed to community and workforce	High	▪ The Contractor shall -laws relating to public health and sanitation ▪ All temporary/ portable toilets or pit latrines shall be secured to the ground to the satisfaction of the RE to prevent them from toppling over ▪ A wash basin with adequate clean water and soap shall be provided alongside each toilet. Staff shall be encouraged to wash their hands after use of the toilet, in order to minimise the spread of possible disease	All work areas Responsibility Contractor(s) Supervision	Incidence of reported cases of water related diseases among the workforce and neighbor community	No direct cost associated
	Fuels, Oils and other hydro-carbons	High	▪ The contractor shall ensure that the machines and equipment are in good condition when on site. ▪ Ensure proper handling of lubricants, fuels and	civil works areas Responsibility	• Quantity of waste fuels and oils	KShs.25,000

Activity	Associated Impacts	Impact Levels	Management Actions	Target Areas& Responsibilities	Monitoring Indicator	Budget
			solvents while maintaining the plant and equipment. ▪ Any chemical or fuel spills shall be cleaned up immediately. The spilt liquid and clean-up material shall be removed, treated and transported to an appropriate site licensed for its disposal.	Contractor(s) Supervision	appropriate ly disposed	
	Storage of fuel oils, lubricants, chemicals and flammable materials Hazards of fire outbreak, oil and chemical spills.	High	▪ Follow specifications of the Occupational Health and Safety Act 2007, EMCA 2015 and others in the development and operation of stores.	All work areas Responsibility Contractor(s) Supervision	Incidence of reported cases of fuel leaks and fire incidences	No direct cost associated
	Noise and Vibration control from plant and equipment Risk to health and safety of community and workers	High	▪ The Contractor shall keep noise level within acceptable limits and construction activities shall, where possible, be confined to normal working hours in the residential areas ▪ hospitals and other noise sensitive areas shall be notified by the Contractor at least 5 days before construction is due to commence in their vicinity ▪ Any complaints received by the Contractor regarding noise will be recorded and communicated to the RE ▪ The Contractor must adhere to Noise Prevention and Control Rules of April 2005	civil works areas and access roads Responsibility Contractor(s) Supervision engineer	Reported complaints from neighbor community and institutions	No direct cost associated
	Air Quality Control Air pollution causing respiratory disorders to human	High	▪ Workers shall be trained on management of air pollution from vehicles and machinery. All construction machinery shall be maintained and serviced in accordance with the contractor's specifications ▪ The removal of vegetation shall be avoided until such time as clearance is required and exposed surfaces shall be re-vegetated or stabilised as soon	All work areas Responsibility Contractor(s) Supervision	Cases of respiratory complication at nearby health centre	No direct costs (integrated in the works costs)

Activity	Associated Impacts	Impact Levels	Management Actions	Target Areas& Responsibilities	Monitoring Indicator	Budget
			as practically possible ▪ The contractor shall not carry out dust generating activities (excavation, handling and transport of soils) during times of strong winds ▪ Vehicles delivering soil materials shall be covered to reduce spills and windblown dust ▪ Water sprays shall be used on all earthworks areas within 200metres of human settlement.			
Traffic management on site	Risks of Accidents, Injuries or death of workers or community member	high	▪ Strict use of warning signage and tapes where the trenches are open and active sites ▪ Employ and train road safety Marshalls who will be responsible for management of traffic on site ▪ Contractor to provide a traffic management plan during construction to be approved by the resident engineer	civil works areas and access roads <u>Responsibility</u> Contractor(s) Supervision engineer	Accidents occurrence incidences	No direct cost
Materials sourcing, from burrow pits and quarries delivery and storage	Environmental and Safety risks associated with burrowing and opening up of new quarry sites	Medium to High	• Ensure that appropriate authorization to use the proposed borrows pits and quarries has been obtained before commencing, • This should be achieved through preparation of specific Environment and Social Impact Assessment for identified quarries and burrow pits to inspected and approved by NEMA. • Carry out inspection of each of the site's soil stability before excavation; • Borrow pits and quarries shall be located more than 20 meters from watercourses in a position that will facilitate the prevention of storm water runoff from the site from entering the watercourse; • The Contractor shall give a 14 day notice to nearby communities of his intention to begin excavation in the borrow pits or quarries;	Burrow Pits and Quarry Site <u>Responsibility</u> Contractor(s) Supervision	• Environmental Status of reinstated burrow pits • Complains from the community on burrow pits and material transportation	Cost to be identified once the burrow areas are determined
	Labour Influx to Project	Medium to High	• The contractor awarded the Project will develop a labour Management Plan (LMP) in	Project Corridor	• Number of grievances	No direct cost

Activity	Associated Impacts	Impact Levels	Management Actions	Target Areas& Responsibilities	Monitoring Indicator	Budget
	settlements		consultation with local leaders. • The contractor will ensure effective community engagement and strong grievance mechanisms on matters related to labour • Effective contractual obligations for the contractor to adhere to the mitigation of risks against labour influx, the contractor should engage a local community liaison person. • The contractor will ensure proper records of labour force on site while avoiding child and forced labour • The contractor will ensure comply to provisions of Work Place Injuries and Benefits Act (WIBA) 2007	Responsibility Contractor(s) Supervision	recorded by disgruntled works force and community	
	Gender Inclusivity in Project activities	Low	• The contractor will mainstream Gender Inclusivity in hiring of workers and entire Project Management as required by Gender Policy 2011 and 2/3 Gender Rule. • The existing community structures headed by location chiefs should be involved in local labour hire, emphasize the requirement of hiring women, youth and people with disability and VMGs • Protecting Human Risk areas Associated with, Disadvantaged Groups, Interfering with Participation Rights and interfering with Labour Rights	Project Corridor Responsibility Contractor(s) Supervision	• women and Men employed by the Project	No direct cost
	Children abuse impacts	High	• The contractor will develop and implement a Children Protection Strategy that will ensures minors are protected against negative impacts associated by the Project. • All staff of the contractor must sign, committing themselves towards protecting children, which clearly defines what is and is not acceptable	Project Corridor Responsibility Contractor(s) Supervision	Number of cases reported involving abuse of children	No direct cost

Activity	Associated Impacts	Impact Levels	Management Actions	Target Areas& Responsibilities	Monitoring Indicator	Budget
			behaviour • Children under the age of 18years should be hired on site as provided by Child Rights Act (Amendment Bill) 2014			
	Increase of communicable diseases including HIV and Aids	High	• HIV/AIDS Awareness Program and other communicable diseases to be instituted and implemented as part of the Contractor's Health and Safety Management Plan to be enforced by the Supervising Engineer. • This will involve periodic HIV/AIDS and other communicable diseases Awareness Workshops for Contractor's Staff • Access to Contractor's Workforce Camps by outsiders to be controlled • Contractor to provide standard quality condoms to personnel on site	All Workers Responsibility Contractor(s)	• Number of Trainings Held • Availability of Training reports • Attendance list of participants during the training sessions	Budgeted above in row(5) on page 8.5
Contractor de-mobilization and site reinstatement	Associated risks of environmental degradation	Medium	▪ The site is to be cleared of all construction materials, including litter prior to hand over ▪ Fences, barriers and demarcations associated with the construction phase must be removed from the site ▪ Fences, barriers and demarcations associated with the construction phase must be removed from the site ▪ Rehabilitation Activities of Environmental Cases identified must continue throughout the defect liability period	All work areas Responsibility Contractor(s) Supervision	Closeout audit report findings	No direct anticipated
Total Estimated Cost for ESMMP					**EMP**	**Khs 200,000.00**

Table 8- 1: Operational Phase: Environmental and Social Management and Monitoring Plan

Roads and Drainage

No.	Issue	Action required	Responsibility	Provisional Budget
1	Loss of business associated with poor road condition during operation phase	• Develop a capacity building plan or program for road maintenance team who are mandated to operate and maintain the road • Regular maintenance and repair of the road by County Government, this should be through regular road marking, sealing of pot holes, ensure road signage is in place among other operations	Uasin Gishu County Government	To be established at operation phase and included in the operation of the Projects
2	Loss of business associated with breakdown of flood lights	• Develop a capacity building plan or program for flood lights maintenance team who are mandated to operate and maintain the flood lights • Regular maintenance of the flood lights by County Government, this should be through regular replacement of bulbs	Uasin Gishu County Government	To be established at operation phase and included in the operation of the Projects
2	Increased Accidents associated with motor cycles over speeding within the settlement due to good roads	• Develop a capacity building plan or program on road safety campaign that targets road users. • The County Government to enlighten motorist and cyclist on importance of obeying traffic rules especially in residential areas. • The County Government to enlighten residents and school children on the importance of adhering to provisions of road safety rules • Regular inspection and maintenances of the road by County Government of Uasin Gishu to ensure the speed control parameters and signage are in good condition. • Regular crackdown, arrest and prosecution of motorists and cyclist who disobey road safety directions.	Uasin Gishu County Government	To be established at operation phase and included in the operation of the Projects

8.3 Decommissioning Flow Chart

The project has been designed to operate effectively for over 20years. In the event that the infrastructure will be required to be overhauled, then the following steps should be considered in order to undertake the procedure in a structured manner with minimum impact to both human and natural environment.

Table 8- 3: Decommissioning Flow Chart

	Action	Actor
Step 1	**Initiation** Development of an Objective Worksheet and checklist incorporating references, legal, stakeholder engagement and policies Undertake decommissioning audit	**Proponent**
Step 2	**Prepare Road Map for Decommissioning Design** Conduct design review to validate elements of the design and ensure design features are incorporated in the decommissioning design. Public consultations	**Proponent**
Step 3	**Prepare and Award Contract** Prepare a contract that incorporates validated project information and award to a contractor as per the Procurement rules.	**Proponent**
Step 4	**Execute Decommission Works** Implement design elements and criteria on the Project in accordance with specifications and drawings. Inspect during decommissioning and at Project completion to ensure that all design elements are implemented according to design specifications.	**Contractor**
Step 5	**Non-Conformance, Corrective/Preventive Action** Determine root cause Propose corrective measures Propose future preventive measures	**Proponent**

CHAPTER 9: CONCLUSION

9.1 Conclusion

Key findings of the Environment and Social Impact assessment of the proposed KISIP investments in KK, Segero and Kasarani Informal Settlement in Eldoret Town are as follows:

(i) The Project has an overall positive impact on the informal settlements as it will improve the living conditions of people living and working in the informal settlements, through improving accessibility, drainage, waste, and security.

(ii) The Project does not have significant and potentially irreversible negative impacts on the environment and people. The few identified negative impacts associated with construction Projects can easily be mitigated, and an Environmental and Social Impact Management Plan has been prepared as part of this report, whose implementation will be monitored to ensure compliance and protection of the environment. A monitoring plan to ensure this happens has also been developed.

(iii) The Project will not lead to displacement of people as the roads are designed to follow the designated road reserves on the physical development plans (PDPs). However, there are encroachments on the road reserves mostly of temporal structures for informal traders. A RAP has been prepared to mitigate against this to ensure that their livelihoods are not negatively impacted upon.

However, the ARAP report prepared for KK, Segero and Kasarani Informal Settleemnt detailed the below summarized to be impacts related to Project impacts to people's assets and sources of livelihood

- ✓ 98 project Affected Persons. Affected by infrastructure upgrading in the three Settlements. All of these are PAPs have affected structures, where a small number is fully affected mainly temporary business sheds, the rest of the structures are just partially affected.
- ✓ The total budgetary requirements for implementation of the ARAP is provided as Kshs 2,255,00.00 (Two Million, Two Hundred and Twenty-five Thousand, shillings only).

(iv) The EMP should be fully implemented and should form part of the contract with the selected contractors who will undertake the works. The implementation of the EMP should be monitored in accordance with the monitoring plan in this report. The Resident engineer should supervise and report on the implementation regularly as provided.

(v) The RAP will be fully implemented before the commencement of the Project civil works

(vi) Provisional Budget of Kenya Shilling two hundred thousand should be included in the bidding documents for implementation of mitigation measures of potential negative impacts.

ANNEXES

ANNEX 1 ENVIRONMENT AND SOCIAL SCREENING MATRIX

Annex 1: Environment and Social Screening Matrix

Criteria	Yes/No	Comments	Other GoK/ WB Policies applicable	Recommended scale of Environmental Assessment
Part A: Triggers to EMCA				
Applicability of Second Schedule of EMCA	Yes (all settlements)	Project activities fall within provisions of EMCA schedule 2	Applicable as discussed in chapter (4)	As discussed in sub chapter (7.4, 7.5 and 7.6) below
Part B: Details of Site location	**Yes/No**	**Description**	**GoK/ WB Policies applicable**	**Proposed Mitigations or Enhancements**
Site of ecological importance as described in environment screening checklist	No (all settlements)	Sites located within human urban settlements	Applicable as discussed in chapter (4)	As discussed in sub chapter (7.4) below
Are there vulnerable or endangered species (terrestrial or aquatic) in the area?	No (all settlements)	Sites located within human urban settlements	Applicable as discussed in chapter (4)	As discussed in sub chapter (7.4) below
Are there natural habitats in the site? Or in its proximity	No (all settlements)	Sites located within human urban settlements	Applicable as discussed in chapter (4)	As discussed in sub chapter (7.4) below
If there are natural habitats, are they fragile, unique, limited in size? Are these world heritage / Ramsar sites	No (all settlements)	Sites located within human urban settlements	Applicable as discussed in chapter (4)	As discussed in sub chapter (7.4) below
Are there wetlands, areas of saturated soils (permanent or temporary), or evidence of ponding (cracks, high clay content in soils, dead vegetation, water marks)?	No (all settlements)	Sites located within human urban settlements	Applicable as discussed in chapter (4)	As discussed in sub chapter (7.4, 7.5 and 7.6) below
Is the site already degraded (low groundwater, poor soil quality)?	No (all settlements)	Sites located within human urban settlements	Applicable as discussed in chapter (4)	As discussed in sub chapter (7.4) below
Are there steep slopes in the proximity of the investment site?	No (all settlements)	Sites located within human urban settlements	Applicable as discussed in chapter (4)	As discussed in sub chapter (7.4) below
Do people live on the proposed site?	Yes (all settlements)	Sites located within human urban settlements	Applicable as discussed in chapter (4)	As discussed in sub chapter (7.4) below
List existing land uses (ranching, farming)?	All Settlements	Human Urban Settlement	N/A	N/A
Is there existing site access (roads)?	All Settlements	Human Urban Settlement	N/A	N/A
Is the site vulnerable to natural hazards (in floodplain, near volcano, on seismic fault, near coastline in hurricane zone)?	No (all settlements)	Sites located within human urban settlements	Applicable as discussed in chapter (4)	As discussed in sub chapter (7.4) below
Are there land title conflicts?	No (all settlements)	No conflict – KISIP component 2 has addressed land tenure	N/A	N/A

Criteria	Yes/No	Comments	Other GoK/ WB Policies applicable	Recommended scale of Environmental Assessment
		issues		
Are there known archaeological, historical or other cultural property? Are any of these world heritage/ UNESCO designated etc.	No (all settlements)	Sites located within human urban settlements no archeological site identified	Applicable as discussed in chapter (4)	As discussed in sub chapter (7.4) below
Do indigenous peoples live on or near the site?	No (all settlements)	No indigenous people identified on site	Applicable as discussed in chapter (4)	As discussed in sub chapter (7.4) below
Part C: Analysis of likely physical Impacts				
(i) Scope of proposed activities				
Will the investment generate an increase in solid wastes or machine wastes (oil, etc.)?	Yes (All settlements)	Wastes from construction activities including plant and equipment and materials on site	Applicable as discussed in chapter (4)	As discussed in sub chapter (7.4 and 7.5) below
(ii) Water Resource Impacts				
Could the investment result in a modification of groundwater levels by altering flows, paving surfaces or increasing water extraction?	No (All settlements)	Nature of anticipated project activities are small and less adverse to ground water resources	Applicable as discussed in chapter (4)	As discussed in sub chapter (7.4 and 7.5) below
Could it affect groundwater quality?	No (All settlements)	Nature of anticipated project activities small and less adverse to ground water resources	Applicable as discussed in chapter (4)	As discussed in sub chapter (7.4 and 7.5) below
Could it affect quality (through sediment, wastewater, storm discharge or solid waste) of nearby surface waters (lake, rivers, streams)?	yes(All settlements)	This impact is anticipated during construction (siltation, increase in turbidity), however this impact can be mitigated as discussed in 4.4 and 4.5 below.	Applicable as discussed in chapter (4)	As discussed in sub chapter (7.4 and 7.5) below
Will it affect water quantity in nearby water bodies (lake, river, stream)?	yes(All settlements)	During construction, the contract will be expected to abstract water for construction activities from nearby water	Applicable as discussed in chapter (4)	As discussed in sub chapter (7.4 and 7.5) below

Criteria	Yes/No	Comments	Other GoK/ WB Policies applicable	Recommended scale of Environmental Assessment
		resources, the contractor will be required to obtain water abstraction permits from sub regional WRMA offices.		
Are there nearby potable water sources that need to be protected?	No (All settlements)	Settlements located in humans' settlements with no natural habitat	Applicable as discussed in chapter (4)	As discussed in sub chapter (7.4 and 7.5) below
(iii) Ecosystem Impacts				
Could the investment affect natural habitats or areas of high ecological value?	No (All settlements)	Settlements located in humans' settlements with no natural habitat.	Applicable as discussed in chapter (4)	As discussed in sub chapter (7.4 and 7.5) below
Could it affect natural characteristics of adjacent or nearby sites?	No (All settlements)	Settlements located in humans' settlements with no natural habitat,	Applicable as discussed in chapter (4)	As discussed in sub chapter (7.4 and 7.5) below
Could it affect wildlife or natural vegetation?	No (All settlements)	No game parks and reserves in the settlements	Applicable as discussed in chapter (4)	As discussed in sub chapter (7.4 and 7.5) below
(iv) Drainage Impacts				
Will the investment in storm water drainage affect existing drainage patterns?	Yes (All settlements)	The settlements have challenges in storm water as discussed in chapter 2, investing in storm water drainage will resolve the problem. However, during construction minor impacts on existing storm water drainage will be experienced	Applicable as discussed in chapter (4)	As discussed in sub chapter (7.4 and 7.5) below
Will it cause standing water, which could cause public health risks?	yes (All settlements)	Storm water drainage will help drain stagnant water	Applicable as discussed in chapter (4)	As discussed in sub chapter (7.4 and 7.5) below

Criteria	Yes/No	Comments	Other GoK/ WB Policies applicable	Recommended scale of Environmental Assessment
		existing in the settlements However, during construction minor impacts on existing storm water drainage will be experienced		
Will erosion result in sediment discharge to nearby water bodies?	Yes (all settlement)	However less significant erosion which can be mitigated	Applicable as discussed in chapter (4)	As discussed in sub chapter (7.4 and 7.5) below
Will surface drainage patterns be affected in borrow pits and quarries?	Yes (All settlements)	Project activities will not directly lead to burrow pits and quarries within the settlement, however on the areas where burrow pits will be opened, drainage patterns of likely to be impacted.	Applicable as discussed in chapter (4)	As discussed in sub chapter (7.4 and 7.5) below
Will infiltration patterns be affected?	No (All settlements)	The settlement pattern is dense, less impact is anticipated on infiltration patterns	Applicable as discussed in chapter (4)	As discussed in sub chapter (7.4 and 7.5) below
Socio-economic impacts				
Will the project entail resettlement of population?	No (All settlements)	No persons will be physical resettled, however, the project will trigger partial impacts to structures encroaching into road reserves, business and other sources of livelihood encroaching on the reserve will be affected	Applicable as discussed in chapter (4))	As discussed in sub chapter (7.4 and 7.5) below

Criteria	Yes/No	Comments	Other GoK/ WB Policies applicable	Recommended scale of Environmental Assessment
Will the project affect indigenous peoples?	No (all settlements)	No indigenous people identified on site	Applicable as discussed in chapter (4)	As discussed in sub chapter (7.4) below
Will it limit access to natural resources to local populations?	No (all settlements)	No natural resources were identified with the target settlements	Applicable as discussed in chapter (4)	As discussed in sub chapter (7.4) below
Will it have an impact on land use?	Yes (all settlements)	Once upgrading of infrastructure in the settlements is completed, the land use in the settlements will improve with better housing, attraction of other social amenities such as schools, hospitals, shops.	Applicable as discussed in chapter (4)	As discussed in sub chapter (7.6) below
Will it induce further encroachment of nearby areas?	No (all settlements)	The projects will in fact help to clear road reserves and water / sewerage wayleaves in the settlement which are encroached	Applicable as discussed in chapter (4)	As discussed in sub chapter (7.6) below
Will it cause any health impacts?	No (all settlements)	Minor construction activities related impacts will be mitigated as discussed in sub chapter 4.5 below	Applicable as discussed in chapter (4)	As discussed in sub chapter (7.5) below
Will it disturb nearby communities during construction?	Yes (all settlements)	Minor disturbance during construction which can be mitigated	Applicable as discussed in chapter (4)	As discussed in sub chapter (7.5) below
Could cultural resources be affected?	No (all settlements)	No cultural resources were identified	Applicable as discussed in chapter (4)	As discussed in sub chapter (7.5) below
Could it affect nearby properties?	Yes (all settlements)	Less significant impacts to people's assets and sources of livelihood as discussed above which	Applicable as discussed in chapter (4)	As discussed in sub chapter (7.5) below

Criteria	Yes/No	Comments	Other GoK/ WB Policies applicable	Recommended scale of Environmental Assessment
		will be appropriately compensated as presented in the RAP assessments for the Project		

ANNEX 2 PUBLIC PARTICIPATION MINUTES AND LIST OF PARTICIPANTS

COUNTY GOVERNMENT OF UASIN GISHU

KENYA INFORMAL SETTLEMENT IMPROVEMENT PROJECT (KISIP2).

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA) AND RESSETTLEMENT ACTION PLAN (RAP)

MINUTES OF MEETING HELD ON 11TH SEPTEMBER ,2023 AT ACK, ST. ANDREW CHURCH AT 10.08AM FOR KK, SEGERO AND KASARANI

ATTENDANCE LIST

1. Ms. Nelly Jerotich - Co-odinator CPCT
2. HON Francis Muya - Area Mca
3. Mr. Yego……. - Ward Admin
4. Ms. Abigael Kibet - Environmental Safe Guard Officer
5. Mr. Bethwel Kipleting -Environmental Safe Guard Officer
6. Mr.Frederick Nyabando - Social Safe guard Officer
7. Ms. Sally Sang -Social Safe Guard Officers
8. SEC members
9. Grievance Members
10. Village Elders
11. Community attached lists

Agenda

1. Opening Prayer
2. Introduction of members
3. NG/CG staff giving introductory remarks
4. KISIP CPCT introducing the project (specific details, donor, client, scope, duration etc)
5. CPCT ESS discuss positive and negative impacts of the prioritized projects
6. CPCT ESS discuss the RAP process
7. Plenary Session
8. Way Forward
9. A.O.B
10. Closing prayer

Refer to the attendance list.

Min	Discussions	Action
1.0	The meeting was opened with a word of prayer led by Paster Ferdinard Njoroge	
2.0	The Area MCA thanked the community for attending the meeting in big numbers. He informed them that World bank projects has conditions and every step should be followed to achieve the goals. He then introduced each settlement and the village elders who had attended, the officers working in his office and faith based organization that were present both Christians and Muslims He then invited Fredrick Nyabando to introduce the County team and continue with the programme Mr. Fredrick Nyabando led the introduction of the County Officers and the Ward Administrator. He also introduced the elected SEC and Grievance committee in each settlement and he invited the ward administrator and invited Chairmen to introduce their teams. The Ward administrator thanked the community for attending the public participation, he informed them that it was a requirement for any community work to have public participation and also there was need to support projects that brings development in the settlements	
3.0	County Co-ordinator Madam Nelly informed the community that the main aim of the meeting is to have public participation on the Environmental and Social Impact Assessment and Resettlement Action Plan that will be part of projects requirements and need to be discussed.	
4.0	The County Co-ordinator informed the community, that the project was funded by World Bank under the programme Kenya Informal Settlement Improvement Project (KISIP) working with County Government of Uasin Gishu to improve livelihood the settlements within the County (scope of the work and duration)……	
5.0	**Negative impacts** Mr. Bernard Ndubi- Kasarani requested to know what measures will be	

	taken, when services will be affected. He reported that water connection was done in very shallow lines. He encouraged those who have not connected water or sewerage to do to avoid damages of the roads. Mr. Kebenei Albert – Kasarani informed the meeting that the settlement has a plan and every member or person living there needs to support the projects because it was bringing development and improvement of standard in the area. He recommended that during the project implementation the drainages and flow of waters to be channelled to correct place. Mr. Simion Njuguna -Kasarani requested that during the construction, the contractor to give early signal of roads closer, put on roads signage, and give alternative roads to be used. Mr Osca Sila - Segero requested that the drains within the Segero settlement to be worked on to avoid flowing to the houses. David Koech- Segero requested that drainages and access to buildings to be provide to avoid accidents and also to cover the drains. For sewerage lines to be covered to avoid health hazards to communities. Mr. Peter Nyakundi - Segero requested if the employment be given to residents for them to earn a living. He also requested that watering of roads be done in regular basis to avoid dust and also to providing speed limits and signage to avoid accidents. Mr James Muchweya reported that during the construction period the water pipes and sewerage should be taken care and be replaced in case of any damages. And also requested for way levees to be provided in case of any connection need to be done to be in future. Mr. David Ombuja- Kasarani reported that there was need to train road users before and after the completion of the projects both the motorbikes riders and vehicle and to erect road signage and bumps to avoid speeding motor bikes and vehicles. Village elder Segero requested that during the construction, the contractor to give early signal of roads closer, put on roads signage, and give alternative roads to be used. He further requested that the area youths, women and PLWDs be given priority during the construction period.	

	He also insisted that the watering of dust be given priorities to avoid creating diseases to the beneficiaries **Positive impacts** Ms Grace Njeri reported that improvement of the roads and lights will improve their business because they will be working 24 hours and also accessing to house hold. She reported that the names and the areas will change from bad names to good names, the place will be clean. Mr. Jane Mutai- PWDs reported that it was hard for them to access to main roads due to bad roads. She said that the PWDs will be happy to move with their wheel chairs. Mr. Samwel Wanyeki reported that the value of the plots and rent will increase and this makes the statues of the living change. Mr. George Omwega reported that on the provision of installing lights and good roads, their will reduce crime in the area. Mr. Kebenei reported that county will increase their revenue, on licence and rates due to value of plots and having permanent building. Mr. Waithaka Chair SEC Kasarani reported that after completion of projects developments will improve, cost of living will change and business will be done in 24houres. Paster Fedinand reported that, the church members have been suffering due to muddy roads and most have been missing fellowships. He supported the projects because the rods will be accessible Community Health Volunteers reported that their work will be easier to pick sick persons in settlements with the ambulances because of good roads	
6.0	The social safeguard officer, read the names of the affected persons It was noted majority of the affected are kiosks/vibanda who sales with their small stall and they always remove the structures after the business. Chair GRM - Segero requested that the road map be provided to check if any person affected are within the road reserves After discussion they agreed 1. that they will look for alternative during the construction by	

	renting houses/ shops. 2. They were willing to move in case there was any encroachment 3. They requested to be employed during construction period The community agreed to work on the PAPs that were identified.	
7.0	The community thanked the word bank and county for their support on the improvement of their settlement and requested to be supported in other projects They agreed to support the programme before and after the completion of the projects. They recommended tree planting, grass and beautification be done within the settlement. Drainages to be covered for safety and road pumps to be provided. The during the project implementation the ELDOWAS company, Kenya Power and any other service providers to work with the county during the project implementation. Mr. Arrok Matundura requested county survey to mark the road length to be worked on David Ombaja reported that there was need before and after construction of the roads, training to be done on school children, colleges, women and community on HIV and AIDs to protect the community. He also commented on sensitization be done continually for community, to have health person. Joseph Njuguna- KK requested to know what measures will be taken on tin case of cracks on building during construction. . Madam Nelly replied, that measures will be taken care before any damage is done Mr. Osca Sila requested to know what measures have been take during the el-nino rains especially on drainages. Area MCA reported that the machines are in ground doing cleaning in drainage to make flow of water easy	
8.0	That the project is supported fully by the community and will support all the process they thanked the World Bank, County Government and the National government for choosing their settlement.	
9.0	The SEC chairman thanked the community for attending the public	

	participation and the team appointed were ready to support county. The area MCA reported that he thanked the community for participating in discussion because the ideas were important in projects development. He reported that there was need to do sensitization to community on HIV/Aids. He also reported that all service providers will need to have meeting with community to see how the impacts will be resolved He informed the meeting that His Excellency Governor was supporting the projects.	
		Info
10.0	Mr. Nyabando thanked the community for attending the meeting and supporting during the discussing he then invited the Pastor to close with the word of payers.	
	The meeting was closed with a word of prayer by Francis at 4.43pm	**Info**

PHOTO PLATE

	
Residents of KK, Segero and Kasarani following the proceedings of the meeting.	SEC Chairperson addressing the meeting

	
A resident raising his concerns.	Leaders following the meeting proceedings

ANNEX 3 CHANCE FIND PROCEDURES

CHANCE FIND PROCEDURES

KENYA INFORMAL SETTLEMENTS IMPROVEMENT

ENVIRONMENT AND SOCIAL IMPACT ASSESSMENT (ESIA) REPORT

Policy and Legal Provision

World Bank OP 4.11 on Physical Cultural Resource and National Museums and Heritage Act 2006 laws of Kenya provides for; *'if you believe that you may have encountered any archaeological materials or any material national importance stop work in the area and follow the procedure box below'*

Chance Find Procedures

(i) All construction activity in the vicinity of the remains is to cease immediately.
(ii) The Supervising engineer or Environment Officer shall contact Kenya National Museums Immediately

Public relations:
E-mail: publicrelations@museums.or.ke
Director General: -
Email: dg@museums.or.ke
Fax: +254 -20-3741424
Tel: +254-20-8164134/35/36

(iii) The find location will be recorded and all remains will be left in place.
(iv) Potential significance of the remains will be assessed and mitigative options will be identified.
(v) If the significance of the remains is judged to be sufficient to warrant further action and they cannot be avoided, then the Director of Kenya National Museums will determine the appropriate course of action
(vi) In the case of human remains, if the remains are assessed to be archaeological, then Director of Kenya National Museums will determine how to handle them.
(vii) Options could include avoidance or respectful removal and reburial.
(viii) If human remains are encountered and they are not archaeological, then Uasin Gishu County Government will be contacted immediately for appropriate reburial.

ANNEX 4 LEAD EXPERT 2023 LICENSE

FORM 7 (r.15(2))

nema
mazingira yetu | uhai wetu | wajibu wetu

NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY(NEMA)

THE ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION ACT

ENVIRONMENTAL IMPACT ASSESSMENT/AUDIT (EIA/EA) PRACTICING LICENSE

License No : NEMA/EIA/ERPL/18651
Application Reference No: NEMA/EIA/EL/24565

M/S **Godwin Lidahuli Sakwa**
(individual or firm) of address
P.O. Box 18075 - 00500 NAIROBI

is licensed to practice in the capacity of a (Lead Expert/Associate Expert/Firm of Experts) **Lead Expert General**

registration number **2492**

in accordance with the provision of the Environmental Management and Coordination Act Cap 387.

Issued Date: 1/23/2023

Expiry Date: **12/31/2023**

Signature.....

(Seal)
Director General
The National Environment Management Authority

P.T.O.

ISO 9001:2015 Certified