REPUBLIC OF KENYA



ENVIRONMENTAL & SOCIAL IMPACT ASSESSMENT (ESIA) FOR THE PROPOSED OFFICE BLOCK DEVELOPMENT ON PLOT F.R. No. 320/173, NYALI, LINKS ROAD, MOMBASA COUNTY.



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CONSULTANT

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CONSULTING LTD

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This document has been prepared in accordance with the Environmental Management and Coordination Act 2015 and Environmental Impact Assessment and Audit Regulations, 2013 AfDB OS.

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DISCLAIMER:

This Environmental Impact Assessment Comprehensive Project Report is based on literature review and findings from field assessment. It is however, subject to conditions in the Environmental Management and Coordination Act 2015 Environmental Impact Assessment and Audit Regulations, 2013 ISS, 2019

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LIST OF ACRONYMS

AfDB	African Development Bank
CWWDA	Coast Water Works Development Agency
CESMP	Construction Environmental and Social Management Plan
COC	Code of Conduct
CPR	Comprehensive Project Report
EHS	Environment Health and Safety
ESIA	Environmental and Social Impact Assessment
ESMMP	Environment and Social Management and Monitoring Plan
GBV	Gender Based Violence
LRCC	Locational Resettlement Compensation Committee
MOWASCO	Mombasa Water and Sanitation Company
NEMA	National Environment Management Authority
OS	Operation Safeguards
OSHA	Occupational Safety and Health Act
PAPs	Project Affected Persons
PPEs	Personal Protective Equipment
SDGs	Sustainable Development Goals
SEA	Sexual Exploitation and Abuse
STD	Sexually Transmitted Diseases
VCT	Voluntary Counselling and Testing
WIBA	Workplace Injuries and Benefits Act

EXECUTIVE SUMMARY

E-1 Project Information

Overview of the Project

This project entails the construction of a contemporary office development spanning four storeys (ground floor plus three additional floors) at plot F.R. No. 320/173 off Links Road, Nyali in Mombasa County. Its primary objective is to meet the demand for office space by erecting a multi-storey building.

Key features of the project include:

- Location: Situated at plot F.R. No. 320/173 off Links Road, Nyali, Mombasa County, providing convenient access to major transportation routes and amenities. The Grid reference for the site is, Latitude 4° 02' 46.4" S, and Longitude 39° 41' 43.6" E, provide precise geographical reference.
- Building Design: The office development will showcase modern architecture and design principles, reflecting functionality, aesthetics, and sustainability.
- Storey Configuration: The building will comprise a ground floor and three additional storeys, maximizing vertical space utilization for office purposes.
- Office Space Provision: With the construction of this building, the project aims to address the shortage of office space in the area by offering ample floor space across multiple levels.
- Commercial Potential: The development may serve as a lucrative investment opportunity, catering to the growing demand for office premises in the region.
- Community Impact: The project could contribute positively to the local economy by generating employment opportunities during construction and potentially attracting businesses to the area upon completion.

E1-1 Project Goals:

The primary goal of the office development project at plot F.R. No. 320/173 off Links Road, Nyali, in Mombasa County is to address the demand for office space in the area

by constructing a contemporary multi-storey building. This project aims to fulfill the following overarching objectives:

- 1. **Meeting Demand for Office Space:** The project seeks to provide sufficient and modern office facilities to meet the increasing demand from businesses, organizations, and government agencies in Mombasa County.
- 2. Enhancing Urban Infrastructure: By erecting a four-storey office building with modern architectural design and amenities, the project aims to contribute to the enhancement of urban infrastructure in Nyali, Mombasa.
- 3. **Promoting Economic Growth:** The development of the office complex is expected to stimulate economic growth in the region by attracting businesses, creating employment opportunities, and generating revenue.
- 4. **Improving Community Services:** Through the provision of contemporary office facilities, the project intends to enhance the efficiency and effectiveness of service delivery, particularly in the water supply and sanitation sector.

E1-2 Specific Objectives:

In addition to the overarching goals, the project has specific objectives tailored to its intended use by the Coast Water Works Development Agency:

- Addressing Organizational Needs: The office building aims to provide suitable and functional office space to accommodate the administrative, operational, and customer service requirements of the Coast Water Works Development Agency Improving Service Delivery: By centralizing operations in a modern office environment, the project seeks to streamline processes, enhance communication, improving work environment and staff productivity, and improve service delivery to customers and stakeholders in the water supply and sanitation sector.
- Ensuring Sustainability: The construction of the office building incorporates sustainable design principles and practices to minimize environmental impact, optimize resource utilization, and promote energy efficiency.

- Enhancing Brand Image: The contemporary architecture and strategic location of the office complex aim to enhance the visibility and brand image of the Coast Water Works Development Agency, positioning it as a prime water and sanitation infrastructure development agency.
- 4. Facilitating Growth and Expansion: The ample floor space provided by the multi-storey building allows for future growth and expansion of the agency operations, catering to evolving needs and increasing demand for water and sanitation infrastructure development in the Coast Region..

E.1-3 Components

The actual design components of the project include: -

- Office space
- Services equipment areas include, generator, switch, voltage stabilizer, pump rooms.
- Spacious washrooms with sensor operated urinals, taps, soap dispensers and lights.
- Naturally lit and mechanically ventilated washrooms
- Fully functional roof to act as a staff breakout facility
- Grand and spacious reception area with adequate natural lighting and ventilation
- Security/control room separate from entry/gate house.
- Plant areas for air conditioning and telecommunication equipment provided on the roof.
- Security design allows for unmanned systems i.e. access control, CCTV, pneumatic bollards, intelligent cameras etc.
- Water features and landscaping provided for aesthetics and to reflect the feel and life of the building.

E1-2 Main Activities

Activities for the proposed project will include the following: -

- Demolition of permanent structures and a water tank,
- Removal of old storage containers
- Construction of a Four-storey office space with surface level parking,
- Civil works for the storm and foul water drainage

E.1-4 Alternatives to the Project

No-Project Alternative: The no-action/project alternative provides a baseline for environmental impact assessments by comparing the impact of implementing the proposed action against the impact of not taking that action. In the case of the CWWDA Office block, choosing the "no project" alternative means maintaining the current condition and not proceeding with construction. While this option may seem environmentally favorable, it has significant drawbacks, including economic stagnation, underutilization of local skills and resources, increased poverty and crime due to job shortages, and limitations in water administrative services. These impacts highlight the socio-economic consequences of not pursuing the proposed project.

Relocation Option: Relocating the project is considered an alternative to mitigate environmental and social impacts. However, it is not feasible due to existing approvals, costs, and strategic site selection. The current site aligns with agency objectives and infrastructure, making relocation impractical at this stage. This alternative emphasizes the practical constraints and financial burdens associated with seeking an alternative location for the project.

Waste Water/Sewage Management Alternative: Various technologies such as constructed wetlands, sewage treatment plants, and connection to municipal sewage systems are alternatives for waste water management. The preferred option is connecting to the Mombasa Water Supply and Sanitation Company's system, ensuring effective sewage treatment and environmental compliance.

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Demolition Alternatives:

- No-Action Alternative: Maintaining the status quo, while environmentally favorable, hinders development and service delivery.
- Relocation Option: Not feasible due to the demolition nature and existing approvals.
- Renovation and Extension: Considered but may not fully realize project potential and safety.
- Demolition Methods: Various methods like top-down, wrecking ball, implosion, and others are evaluated, with non-explosive methods being the most efficient and environmentally friendly.
- Waste Removal: Conventional lorries are preferred for waste disposal, ensuring minimal pollution and efficient removal.

Alternatives to Achieving Green Building:

- Use of Renewable Energy: Adoption of solar and wind energy for water heating and lighting.
- Water Harvesting and Re-Use: Implementing water treatment systems, rainwater harvesting, and efficient water use practices.
- Vegetation Integration: Establishing vegetation for groundwater replenishment, temperature regulation, and aesthetic enhancement.
- Natural Lighting and Ventilation: Strategic design elements for maximizing natural light and airflow, reducing energy consumption, and creating a healthier workspace.

These alternatives highlight the considerations and trade-offs involved in environmental impact assessments and sustainable development planning for the CWWDA Office block project

E-2 Project site and the Major Environmental and Social Stakes/Challanges

The CWWDA Office block development project is situated in a strategically chosen location within Mombasa County, known for its coastal beauty and economic

significance. The project site is carefully selected to align with the agency's objectives, accessibility, and existing infrastructure. It is characterized by its proximity to key urban centers, transportation networks, and water resources, making it a prime location for administrative functions related to water management.

The major environmental stakes/challenges of the project site and its influence area revolve around preserving the coastal ecosystem, managing water resources sustainably, and mitigating potential pollution risks. Mombasa County boasts of a rich biodiversity, including mangrove forests, marine habitats, and unique flora and fauna. The project's environmental footprint must consider the conservation of these valued environments while ensuring responsible land use practices.

Socially, the project site's influence area includes diverse communities, economic activities, and cultural heritage sites. Challenges such as urban sprawl, infrastructure development pressures, and social inequalities may impact the project's social dynamics. Understanding the valued environmental and social compounds (VEC) is crucial in assessing the baseline conditions and trends without the project context.

Landcover and construction sites maps provide valuable insights into the existing land use patterns, natural features, and potential development areas. These maps help identify areas of environmental sensitivity, such as wetlands, water bodies, and protected habitats. They also highlight existing construction activities, infrastructure networks, and land zoning regulations, guiding the project's environmental and social impact assessments.

In the without-project-context (baseline conditions and trends), the VEC encompass the interconnected web of ecosystems, community livelihoods, cultural heritage, and economic activities that define the project site's identity. Preserving and enhancing these VEC elements are fundamental in ensuring sustainable development practices, minimizing negative impacts, and maximizing positive outcomes for both the environment and society.

E-3 Policy, Legal and Administrative Framework

The main legislation that governs environmental management in Kenya is the Environmental Management & Coordination (Amended) Act of 2015 typically referred to

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as EMCA. EMCA calls for environmental impact assessment (EIA) (under Section 58) to guide the implementation of environmentally sound decisions and empowers stakeholders to participate in sustainable management of the natural resources. Part V from Sections 42 – 57 deals with Protection and Conservation of the Environment while Part VI deals with Integrated Environmental Impact Assessment. Projects likely to cause environmental impacts require that an environmental and social impact assessment study to be carried out. It is under this provision that the current study has been undertaken because Legal Notice No, 32 and 34 of April 19, 2019 places the proposed interventions under the Medium-Risk Category requiring the preparation of a comprehensive project report.

The other relevant legislation applied during this assessment are the regulations borne of EMCA Cap 387 namely the Environmental Impact Assessment and Audit Regulations (Amendment)2019, the Environmental Management and Co-ordination (Water Quality) Regulations 2006, the Environmental Management Co-ordination Act (Wetlands, River Banks, Lake Shore and Sea Shoe Management) Regulations 2009; the Environmental Management Coordination (Noise and Excessive Vibration Pollution Control) Regulations 2009; and the Environmental Management and Co-ordination (Conservation of Biological Diversity Resource Access to Genetic Resource and Benefit Sharing I) Regulations2006, (Legal Notice 61), Air quality Regulations 2013 among others.

The other sectorial legislation applicable to this project includes the Constitution of Kenya 2010, Constitution of Kenya 2010, Kenya Vision 2030, National Environment Policy (NEP) 2013, National Climate Change Response Strategy, 2010, The National Environment Policy, 2013, Kenya National Youth Policy 2006, The National Environmental Sanitation and Hygiene Policy-July 2007, The Physical and Land Use Planning Act, 2019, Land Act, 2012, Water Act, 2016, Water Rules 2007, County Government Act No. 17 of 2012, Occupational Health and Safety Act (OSHA 2007), The Public Health Act (CAP.242), Employment Act, HIV and AIDS Prevention and Control Act 2011, Sexual Offences Act 2006, Child Rights Act (Amendment Bill) 2014, Work Injury Benefits Act (WIBA), Labour Relations Act 2012, National Gender and Equality Commission Act 2011, Public Participation Bill of 2016.

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The assessment has also made reference to AfDB's Operation Safeguards. The OS include;

Policy	Triggered by	Discussions
	the	
	project	
OS 1: Environmental and	Yes	The project components will trigger EA
Social Assessment.		safeguards and is Category 2 since its site
		specific with moderate interaction with the
		physical, biological and social setting within
		the immediate surroundings
OS 2: Involuntary	No	The Office block will be constructed within
Resettlement: Land		the compound of Mombasa Water Company
Acquisition, Population		in which consent of land use has been
Displacement and		utilized
Compensation.		
OS 3: Biodiversity and	No	Project activities have no direct linkage to
Ecosystem Services.		biological diversity and ecosystem services
		OS 1 shall be applied in isolated minor
		cases of biodiversity and ecosystem
		services.
OS 4: Pollution Prevention	Yes	The project shall utilize raw materials both
and Control, Greenhouse		during construction and operation phase
Gases, Hazardous		that could result to pollution of biophysical
Materials and Resource		environment if not handled appropriately.
Efficiency.		Project activities shall not result to
		significant amount of greenhouse gases,
		EMSP has proposed measures of ensuring
		that any greenhouse gas produced is
		collected and flared appropriately.
		The project design has ensured that the

		both cl	ean				
		water	and	sewer	flows	through	the
		distribu	ution li	nes by	gravity ł	nence red	ucing
		the nee	ed for p	oumping	J.		
OS 5: Labour Conditions,	yes	The F	Project	shall	involve	workers	both
Health and Safety.		during	constr	uction a	nd operation	ation phas	ses of
		the pro	oject.	This po	licy read	together	with
		OSHA	200	7 and	d IFC	Perform	nance
		Standa	ards 2	2 on	Labour	and Wo	orking
		Conditi	ions sł	nall form	integral	instrume	nts to
		be use	ed in e	nsuring	that hea	alth, safety	/ and
		working	g con	ditions	of both	workers	and
		commu	unity is	maintai	ned.		

The roles and responsibilities of the project implementation entity (PIE), implementing agencies and other stakeholders is highlighted in the table below;

Table E2-2: Roles and Responsibilities

Nos	Name of	Role of Institution
	Institution	

Nos	Name of Institution	Role of Institution
1.	Coast Water	Central agency responsible for holding all information
	Works	on the ESIA.
	Development	Mobilization of financial resources from Government/
	Agency	County Governments for resettlement and
		compensation purposes of the approved ESIA.
		• Responsible for contracting the works, supervising
		and managing the contractor, under the project
		• Responsible for day-to-day coordination and
		implementation of the project.
		Oversee the contractor's work
		• Ensure the grievance committees are established
		and working.
		Monitor the ESMP implementation.
2.	NEMA	 Provide approval of the ESIA report
		• Review and provide a NEMA license for the ESMP.
		• Be part of the SCRCC and participate in the
		resolution of grievances.
		• Escalate unsolvable grievances to the tribunal.
3.	Contractor	Implementing the project
		• To ensure strict compliance environmental
		specifications of this ESMP
4.	Supervision	• Ensure that the proposed ESMP is up to date and is
	Consultant	being used by the contractor.
		• Periodic audits of the ESMP will have to be done to
		ensure that its performance is as expected.

E-4 Project Impact

The assessment of project Impacts was basedan on analysis of the proposed project components and existing environmental conditions. The impacts arising during each of the phases of the proposed development namely construction, op, eration and decommissioning, can be categorized into:

- Impacts on biophysical environment;
- Health and safety impacts; and
- Social-economic impacts

The impacts are highlighted below for both the Moderate and Major impacts during the three phases;

Table E4-1: Significance Rating Matrix

Significance				
	LIKELIHOOD			
	Probable	Highly Probable	Definite	

Table E4-2: Significance Colour Scale

Negative Ratings	
Negligible	
Minor	
Moderate	
Major	

Sections E-4.1 to E-4.4 below provides a summary of the project impacts both positive and negative discussed in this Report.

E-.4.2 Positive Impacts during Construction Phase

The project is envisaged to have more impacts that are positive after completion of the civil works and commissioning.

A summary of anticipated positive impacts of the project include:

1. Job Creation: During the construction phase, the project will generate employment opportunities for local residents, including skilled and unskilled

laborers, engineers, and project managers. This influx of employment can stimulate economic activity in the area.

- Skill Development: The construction phase provides an opportunity for workers to gain valuable skills and experience in various aspects of construction, which can enhance their employability and contribute to their personal and professional development.
- Local Business Opportunities: Construction projects often require materials and services sourced locally, providing opportunities for local businesses to supply goods and services, thereby supporting the local economy.
- 4. Infrastructure Improvement: Construction activities may involve the upgrading or construction of infrastructure such as roads, utilities, and drainage systems, which can benefit the surrounding community and improve overall accessibility and quality of life.

E-.4.3 Positive Impacts during Operation Phase

- Job Opportunities: Once the office block is operational, it will create job opportunities for office staff, maintenance personnel, security personnel, cleaners, and other support staff, contributing to sustained employment in the area.
- Business Growth: The presence of modern office facilities can attract businesses and investors to the area, fostering economic growth and development. This can lead to increased demand for goods and services, benefiting local businesses and entrepreneurs.
- Community Services: The office block may offer services or amenities to the local community, such as meeting spaces, recreational facilities, or retail outlets, enhancing the quality of life for residents in the surrounding area.
- 4. Social Interaction: The operation phase provides opportunities for social interaction and networking among workers, tenants, and visitors to the office block, fostering a sense of community and collaboration.

E-.4.4 Positive Impacts during Decommission Phase

1. Environmental Remediation: During the decommissioning phase, proper disposal of materials and demolition of structures can facilitate environmental

remediation of the site, restoring it to its natural state or preparing it for future development.

- Resource Recovery: Materials from demolished structures can be salvaged and recycled, minimizing waste and reducing the environmental impact of the decommissioning process.
- 3. **Site Redevelopment**: The decommissioning phase may pave the way for site redevelopment or repurposing, creating new opportunities for economic growth and revitalization in the area.
- 4. Community Engagement: The decommissioning phase provides an opportunity for community engagement and consultation regarding the future use of the site, ensuring that the redevelopment aligns with the needs and preferences of local residents.

E.4.5 Negative Impacts

Major Impacts:

- 1. Dust pollution levels projected to exceed safe limits by 30% during demolition
- 2. Traffic anticipated 50% increase in traffic congestion during the construction phase.

Moderate Impacts:

- 1. Air pollution PM10 levels to exceed standards by 20% during construction
- 2. Solid waste- 50 tonnes of construction waste generated and properly disposed of
- 3. Water resources there will be a 30% increase in water usage during peak construction.
- 4. Oil and chemical spill Potential of oil sills at workshops and garage.
- 5. Labor influx of 200 workers to be employed during peak construction period

Minor Impacts:

- 1. Impact on soil resources Minor soil erosion and compaction in 10% of the construction area.
- 2. Noise pollution to reach 70 decibels during peak construction hours.
- 3. Vegetation clearance of about 721 Square meters of glass cover to be excavated and approximately 18 trees, shrubs, and flowers to be cleared

E-5: Highlights of Stakeholder Consultations

Environmental Impact Assessment / Audit Regulations 2019 and AfDB OS 2013 require that in the process of conducting Scoping, Environmental Impact Assessment, the proponent shall in consultation with the Authority herein referred to as the National Environment Management Authority (NEMA); seek the views of persons who may be affected by the project.

Table E5-1: Public participation meeting schedule

No.	Date		Venue	Location	No.	of
					Participants	
1.	23 rd	March	Mombasa water	Nyali	23	
	2024					

The following stakeholders were present in the meetings;

- Coast water
- Area chiefs
- Area assistant chiefs
- Village Elders
- Area ResidentTable E5-2 below presents a summary of the outcome from the 3 No. public participation meetings that were held;

Table E5-2: Summary of Comments and Responses from the PublicSensitization Meetings

Comments				Response				
Residents	expressed	worry	about	Consultants	assured	residents	that	а
potential tra	affic congest	ion duri	ng the	comprehensiv	ve traffic	manageme	ent p	lan

construction phase and increased traffic	would be implemented during construction
once the office block is operational.	to minimize congestion. They also
	committed to exploring alternative
	transportation options for workers to reduce
	traffic.
Many residents raised concerns about	Consultants acknowledged the concerns
noise and dust pollution generated by	about noise and dust pollution and
construction activities, affecting their	committed to implementing measures such
quality of life.	as noise barriers, dust control, and
	scheduling noisy activities during off-peak
	hours to mitigate these impacts.
Residents voiced concerns about the	Consultants assured residents that
environmental impact of the project,	environmental impact assessments would
including disturbance to natural habitats	be conducted, and measures would be
and ecosystems.	taken to minimize disturbance to natural
	habitats and ecosystems. They committed
	to implementing erosion control measures
	and preserving green spaces where
	possible.
Some residents were worried about	Consultants emphasized their commitment
disruption to their daily lives, including	to open communication and engagement
increased noise and disturbance from	with the community throughout the project.
operational activities.	They assured residents that their concerns
	would be addressed promptly and that
	efforts would be made to minimize
	disruption to their daily lives.

The main key informants targeted in the consultations were both Government and private Institutions operating within the project area. Listening to stakeholder concerns and feedback is a valuable source of information that can improve project design and

outcomes and help in identifying any impacts. The KII are yet to be interviewed but consultations are underway.

E-6 Environmental and Social Management Plan

An ESMP has been developed whose pursuit can greatly improve the overall net effect of the project. This report observes that the bulk of adverse impacts will manifest at the Construction stage in which case, the core effort in mitigation will be concentrated in the contract for construction. The contract for construction should bear clauses binding the Contractor to implement impact mitigation as part of the civil works.

E-7 Findings

The project is anticipated to yield substantial positive impacts, encompassing advancements in health, air quality, employment opportunities, economic growth, technology and knowledge transfer, alongside effective mitigation of associated adverse effects. However, it is acknowledged that project activities may entail, albeit on a minor scale, traffic disruptions, accident risks, dust emissions, waste generation, and increased noise and vibration. The study recommends various measures for minimizing negative impacts, encompassing the alleviation of social repercussions, noise control, waste management, reduction of soil erosion, and prevention of accidents and health hazards, with monitoring recognized as a crucial process for safeguarding the project area's environment by detecting changes and trends primarily induced by construction activities.

E-8 Conclusion

The proposed project aligns with environmental, legal, and social standards. The potential significant environmental impacts outlined can be effectively mitigated through the proposed measures, and it remains the duty of the proponent and all stakeholders to ensure the diligent implementation of these measures. This concerted effort will contribute to the reduction of environmental threats to acceptable levels.

E 9 Recommendations

The Bid documents prepared for the project incorporate the Environment, Social, Health, and Safety Provisions discussed under Chapter 7 (Environment and Social Impact Assessment and Mitigation Measures).

The proponent should be given all the available support to implement the project.

- Necessary permits should be issued by the licensing authority so that the work can commence.
- All mitigation measures need to be specified in tender and contract documents and must be included in the engineering drawings, specifications and bills of quantities.
- Diligence on the part of the contractor and proper supervision by the project Engineer during construction and the initial operation phase is crucial for mitigating impacts.
- Periodic environmental and social monitoring is required by the project Proponent to ensure that mitigation measures have been implemented to prevent or avert any negative impacts of the project.
- The Contractor will be required to prepare a Construction Environment & Social Management Plan (CESMP) which shall be approved by the proponent before the beginning of works;
- The proponent should set up a proper and applicable Grievance Redress Mechanism (GRM) for the project to deal with grievances and issues on the project.
- Contractor will be required to commit to implementing the Environment, Social Health and Safety (ESHS) Provisions by developing site-specific (ESHS) plans.
- At project implementation stage, the Contractor to report to the project management team comprising of the Consultant and the project proponent on a monthly basis on how ESHS provision detailed in this ESIA are addressed at each project Site.
- On completion, CWWDA to commission an independent Consultant to undertake an initial Environment, Social, Health and Safety Audit as required by and Environmental (Impact Assessment and Audit) (amendment) Regulations, 2019. The audit will identify nonconformities which the Contractor together with CWWDA

will address through the defect's liability period of the project. This audit will also form basis of annual project self-audits by CWWDA.

E-4.5: Negative Impacts and Mitigation Measure during the Pre-Construction PhaseAssociated Impacts

Associated	Likelihood	Significance	Impacts on	Management
Impact		Color Scale		Actions
Soil Erosion	Highly	Moderate	Biophysical	Implement
	probable		environment	erosion control
				measures
				Conduct a
				thorough
				environmental
				impact
				assessment to
				identify sensitive
				habitats and
				implement
				measures to
				protect them,
				such as
				establishing
				exclusion zones
				or wildlife
				corridors.

Disruption of	Probable	Moderate	Socio-	٠	Communicate
Daily Life			economic		with local
					stakeholders,
					including
					residents and
					businesses, to
					inform them
					about the project
					timeline,
					potential
					disruptions, and
					mitigation
					measures.
Noise and	Highly	Moderate	Biophysical	•	Implement noise
Dust Pollution	probable		environment		and dust control
					measures such
					as using sound
					barriers,
					scheduling noisy
					activities during
					off-peak hours,
					and spraying
					water to
					suppress dust.

E-4.6 Negative Impacts and Mitigation Measures during Project Construction Period

Associated	Likelihood	Significance	Impacts on	Management
Impacts		Color Scale		Actions
Vegetation	Highly	Moderate	Biophysical	Re-plant the
Clearing	Probable		environment	indigenous

Associated	Likelihood	Significance	Impacts on	Management
Impacts		Color Scale		Actions
				vegetation as
				much as
				practicably
				possible once
				work is
				completed.
				Limit vegetation
				clearance unless
				where
				unavoidable
				circumstances
				appear
				Contain
				excavated soils
				so that they will
				not find their way
				into nearby water
				sources;
				Cement mixing
				should be done in
				a designated area
				away at a safe
				distance from
				storm water
				drains;
				Spilled cement or
				concrete should
				be collected and
				disposed away

Associated	Likelihood	Significance	Impacts on	Management
Impacts		Color Scale		Actions
				from natural water
				ways or storm
				water drainage;
				Sensitize workers
				and enable them
				to properly handle
				concrete spillages
				or waste cement;
				 Re-vegetation of
				exposed areas
				around the site
				should be carried
				out rapidly in
				order to mitigate
				against soil
				erosion through
				surface water
				runoff and wind
				erosion.
Impact on Soil	Probable	Moderate	Biophysical	Earthworks
Resources			environment	should be
				controlled so that
				land that is not
				required for the
				project works is
				not disturbed;
				Wherever
				possible,
				earthworks
Associated	Likelihood	Significance	Impacts on	Management
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Impacts		Color Scale		Actions
				should be carried
				out during the dry
				season to prevent
				soil from be
				Residents will
				decommission pit
				latrines, which are
				expensive to
				construct, and
				unsustainable
				due to short fill-up
				duration 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

Associated	Likelihood	Significance	Impacts on	Management
Impacts		Color Scale		Actions
				grass to reduce
				erosion and take
				care of stability
				problems of
				project trenches
				once reinstated.
				Areas cleared for
				improving sight
				distance should
				be planted with
				grass to reduce
				erosion;
Air Quality	Definite	Moderate	Biophysical	Maintain
Pollution			environment	construction
				equipment at high
				operational
				conditions such
				as to control
				emissions into the
				air.
				Earth moving be
				done under dump
				conditions as
				much as possible
				to prevent
				emission of dust
				into the air,
				Similarly, piled
				materials (sand

Associated	Likelihood	Significance	Impacts on	Management
Impacts		Color Scale		Actions
				and aggregate)
				should be
				maintained dump
				to prevent dust
				emissions,
				 Notify the
				immediate
				neighborhoods on
				the potential
				odours during the
				excavations.
				Use of sprinklers
				to regularly water
				construction site,
				this suppresses
				the dust menace
				at construction
				sites
				People working in
				the sites with dust
				emissions to use
				dust masks to
				prevent
				respiratory
				infections.
Excessive	Probable	Minor	Biophysical	Avoid night time
Vibration and			environment	construction when
Noise Pollution				noise is loudest;
				Conduct periodic

Associated	Likelihood	Significance	Impacts on	Management
Impacts		Color Scale		Actions
				noise measuring
				and monitoring to
				determine levels
				and extent of
				harmful noise;
				Clearly label the
				high noise areas;
				Provide personal
				protective
				equipment (PPE)
				including masks,
				goggles, scarfs,
				boots and
				overalls among
				other protective
				clothing to
				persons operating
				within or visit
				identified high
				noise areas.
				In order to meet
				noise level
				requirements, the
				equipment should
				be equipped with
				standard noise
				attenuation
				features.
				Machines that

Associated	Likelihood	Significance	Impacts on	Management
Impacts		Color Scale		Actions
				exceed
				acceptable noise
				limits should be
				equipped with
				silencers or
				lagging materials
				or specially
				designed acoustic
				enclosures;
				Inform local
				residents when
				construction
				activities are likely
				to generate
				excessive noise
				in order to
				minimize
				disruption to local
				residents through
				posters along
				construction sites.
				Sensitize truck
				drivers to avoid
				hooting especially
				when passing
				through sensitive
				areas such as
				churches,
				residential areas

Associated	Likelihood	Significance	Impacts on	Management
Impacts		Color Scale		Actions
				and hospitals
Risks of solid	Probable	Minor	Biophysical	The contractor
waste			environment	shall develop a
mismanagement				comprehensive
leading to pollution				waste
				management plan
				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
				Recycling of

Associated	Likelihood	Significance	Impacts on	Management
Impacts		Color Scale		Actions
				construction
				material shall be
				practiced where
				feasible e.g.,
				containers and
				cartons
				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
				Any chemical or
				fuel spills shall be
				cleaned up
				immediately. The
				spilt liquid and
				clean-up material

Associated	Likelihood	Significance	Impacts on	Management
Impacts		Color Scale		Actions
				shall be removed,
				treated and
				transported to an
				appropriate site
				licensed for its
				disposal.
				A safety and
				emergency
				response plan will
				need to be
				developed for all
				operations with
				emphasis on the
				protection of the
				environment prior
				to start up.
Impact on water	Probable	Minor	Biophysical	No grey water
Resources			environment	runoff or
				uncontrolled
				discharges from
				the site/working
				areas (including
				wash-down
				areas) to adjacent
				Rivers shall be
				permitted.
				Water containing
				such pollutants as
				cement, concrete,

Associated	Likelihood	Significance	Impacts on	Management
Impacts		Color Scale		Actions
				lime, chemicals,
				and fuels shall be
				discharged into a
				conservancy tank
				for removal from
				the site where
				applicable.
				The Contractor
				shall also prevent
				runoff loaded with
				sediment and
				other suspended
				materials from the
				site/working areas
				from discharging
				to Rivers.
				 Works that are
				likely to generate
				silt-laden runoff
				(e.g., earthworks
				and excavations)
				will be undertaken
				preferentially
				during the drier
				months of the
				year; November
				to April;
				Site compounds
				and stockpiles will

Associated	Likelihood	Significance	Impacts on	Management
Impacts		Color Scale		Actions
				be located away
				from the rivers.
Risks of solid	Probable		Biophysical	Preferably to be
waste			environment	located on land
mismanageme				already cleared
nt leading to				wherever
pollution				possible.
				Communities
				shall be involved
				in the site location
				to avoid conflict
				The need to be
				more than 20
				meters from water
				courses and in a
				position that will
				facilitate the
				prevention of
				storm-water
				runoff from the
				site from entering
				the watercourse
				Contouring of
				spoil site to
				approximate
				natural
				topography and
				drainage and/or

Associated	Likelihood	Significance	Impacts on	Management
Impacts		Color Scale		Actions
				reduce erosion
				impacts on the
				site
				The Contractor
				shall ensure that
				the placement of
				spoil is done in
				such a manner to
				minimize the
				spread of
				materials and the
				impact on
				surrounding
				vegetation and
				that no materials
				'creep' into'no-go
				'areas
Labor Influx	Definite	Moderate	Socio-	Effective
Impacts			economic	community
				engagement and
				strong grievance
				mechanisms on
				matters related to
				labor.
				Effective
				contractual
				obligations for the
				contractor to
				adhere to the

Associated	Likelihood	Significance	Impacts on	Management
Impacts		Color Scale		Actions
				mitigation of risks
				against labor
				influx, the
				contractor should
				engage a local
				community liaison
				person as
				provided for in
				chapter 6.
				Proper records of
				the labor force on
				site while
				avoiding child and
				forced labor.
				Comply with
				provisions of
				WIBA 2007.
				Develop and
				implement a
				children
				Protection
				Strategy, this
				strategy will
				ensure that no
				child under the
				legal age of 18
				years in
				employed in the
				Project.
	1		1	

Associated	Likelihood	Significance	Impacts on	Management
Impacts		Color Scale		Actions
				The contractor
				should give
				priority to the
				local people in the
				project area for
				employment
				opportunities.
Human Rights	Probable	Minor	Socio-	Mainstream
and Gender			economic	Gender Inclusivity
Inclusivity				in the 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
				labor hire,
				emphasizing the
				requirement of
				hiring women,
				youth, and people
				with disability.

Associated	Likelihood	Significance	Impacts on		Management
Impacts		Color Scale			Actions
				٠	Protecting Human
					Risk Areas
					Associated with,
					Disadvantaged
					Groups,
					Interfering with
					Participation
					Rights, and
					interfering with
					Labor Rights.
Child	Probable	Minor	Socio-	٠	The Contractor
protection			economic		will develop and
					implement a
					Children's
					Protection
					Strategy that will
					ensure minors are
					protected against
					negative impacts
					associated with
					the Project
					including SEA.
				٠	All staff of the
					contractor must
					sign, committing
					themselves to
					protecting
					children, which
					clearly defines

Associated	Likelihood	Significance	Impacts on	Management
Impacts		Color Scale		Actions
				what is and is not
				acceptable
				behavior.
				Children under
				the age of 18
				years should be
				hired on-site as
				provided by Child
				Rights Act
				(Amendment Bill)
				2014.
				Wherever
				possible, ensure
				that another adult
				is present when
				working in the
				proximity of
				children.
				Not invite
				unaccompanied
				children to
				workers' home,
				unless they are at
				immediate risk of
				injury or in
				physical danger.
				Refrain from
				physical
				punishment or

Associated	Likelihood	Significance	Impacts on	Management
Impacts		Color Scale		Actions
				discipline of
				children.
				Refrain from
				hiring children for
				domestic or other
				labor, which is
				inappropriate
				given their age, or
				developmental
				stage, which
				interferes with
				their time
				available for
				education and
				recreational
				activities, or
				which places
				them at significant
				risk of injury.
				 Comply with all
				relevant local
				legislation,
				including labor
				laws about child
				labor specifically
				provisions of
				Kenya's
				Employment Act
				Cap 226 of 2007

Associated	Likelihood	Significance	Impacts on	Management
Impacts		Color Scale		Actions
				Part VII on the
				protection of
				children against
				exploitation.
Sexual	Probable	Minor	Socio-	Develop and
Exploitation			economic	implement a SEA
and Abuse				action plan with
(SEA)				an Accountability
				and Response
				Framework as
				part of the C-
				ESMP. The SEA
				action plan will
				follow guidance
				on AfDB gender
				strategy
				The SEA action
				plan will include
				how the project
				will ensure
				necessary steps
				are in place for:
				Prevention of
				SEA: including
				COCs and
				ongoing
				sensitization of
				staff on
				responsibilities

Associated	Likelihood	Significance	Impacts on	Management
Impacts		Color Scale		Actions
				related to the
				COC and
				consequences of
				non-compliance;
				project-level IEC
				materials.
				Response to
				SEA: including
				survivor-centered
				coordinated multi-
				sectoral referral
				and assistance to
				complainants
				according to
				standard
				operating
				procedures; staff
				reporting
				mechanisms;
				written
				procedures
				related to case
				oversight,
				investigation, and
				disciplinary
				procedures at the
				project level,
				including
				confidential data

Associated	Likelihood	Significance	Impacts on	Management
Impacts		Color Scale		Actions
				management.
				 Engagement with
				the community:
				including the
				development of
				confidential
				community-based
				complaints
				mechanisms
				discrete from the
				standard GRM;
				mainstreaming of
				Sexual
				Exploitation and
				Abuse (SEA)
				awareness-
				raising in all
				community
				engagement
				activities;
				community-level
				IEC materials;
				regular
				community
				outreach to
				women and girls
				about social risks
				and their SEA-
				related rights.

As	sociated	Likelihood	Significance	Impacts on		Management
Imp	pacts		Color Scale			Actions
•	Disruption of	Probable	Minor	Socio-	٠	Notify all the
	amenities,			economic		services providers
	access roads,					
	services lines					
	and					
	driveways)					
	causing					
	inconvenience					
	s to the					
	community					
•	Risks of	Probable	Minor	Health and	٠	Provide
	Accidents,			safety		construction
	Injuries or					workers with
	death of					personal
	workers or					protective gear
	community					(gloves, gum
	member					boots, overalls
						and helmets),
					٠	Provide
						temporary toilets
						and bathrooms
						for the
						construction
						workers at the
						work sites
					•	Provide onsite
						first aid kit
						accessible by the
						workers on need,

As	sociated	Likelihood	Significance	Impacts on		Management
Im	pacts		Color Scale			Actions
					•	Isolate the site for
						access by the
						local communities
						during the
						construction for
						their safety and
						health
					•	Contractor to
						provide a Healthy
						and Safety Plan
						prior to the
						commencement
						of works to be
						approved by the
						resident engineer.
•	Hazards of fire	Probable	minor	Health and	•	Follow
	outbreak, oil			safety		specifications of
	and chemical					the Occupational
	spills.					Health and Safety
						Act, EMCA1999
						and others in the
						development and
						operation of
						stores.
•	Risk to health	Probable	Minor	Health and	٠	The Contractor
	and safety of			safety		shall keep noise
	community					level within
	and workers					acceptable limits
						and construction

Associated	Likelihood	Significance	Impacts on	Management
Impacts		Color Scale		Actions
				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.

Associated	Likelihood	Significance	Impact on		Management
Impacts					Actions
Increased	Highly	Major	Bio-physical	٠	Encouraging
Traffic	probable		environment		alternative
					transportation
					methods such as
					carpooling or
					public transit,
					implementing
					traffic
					management
					strategies, and
					providing
					adequate parking
					facilities.
Resource	Definite	Moderate	Bio-physical	٠	Implementing
Consumption			environment		energy-efficient
					and water-saving
					technologies,
					promoting
					recycling and
					waste reduction
					initiatives, and
					educating
					occupants about
					sustainable
					practices.
Community	Definite	Moderate	Bio-physical	٠	Communicating
Disruption			environment		with residents

E-4 .8 Project Negative Impacts and Mitigation Measures during Operation Phase

Associated	Likelihood	Significance	Impact on	Management
Impacts				Actions
				about upcoming
				activities,
				minimizing noise
				and disturbance
				through
				scheduling and
				noise mitigation
				measures, and
				addressing
				community
				concerns
				promptly.

Table E-4.9: Negative Impacts and Proposed Mitigation Measures duringDecommissioning Phase

Associated	Likelihood	Significance	Impact on	Management
Impacts				Actions
Loss of Jobs and Income	Definite	Major	Socio- economic	 Notify the employees in advance of the project closure date and adequately compensate them. Dismissal procedures to

Associated	Likelihood	Significance	Impact on	Management
Impacts				Actions
				be compliant
				Employment
				Act, 2007.
				Provide
				counseling
				and
				alternative
				skills for
				alternative
				activities.
				Employers
				should find
				alternative
				means of
				livelihood for
				the staff who
				were
				employed at
				to operate the
				new
				interventions.
				Customers
				are to be
				notified in
				advance of
				the proposed
				decommission

Associated	Likelihood	Significance	Impact on	Management
Impacts				Actions
				ing.
Noise Pollution	Probable	Minor	Biophysical environment	 Schedule noisy activities during the day. Use silencers on machines where possible. Ensure machinery is well maintained to reduce the noise emitted.
Solid Waste Material	Probable	Minor	Biophysical environment	 Disposal of solid waste in compliance with EMCA 2006 Waste Management Regulations. Segregation of waste to encourage reuse and

Associated	Likelihood	Significance	Impact on	Management
Impacts				Actions
				recycling. • Ensuring that the contracted waste collector is registered with NEMA to collect and dispose of wastes.
Occupational Health and Safety	Probable	Minor	Health and Safety	 Conduct training on health and safety procedures for the workers before the commenceme nt of demolition. Proper plans were made before demolition to contain the raw sewage and other

Associated	Likelihood	Significance	Impact on	Management
Impacts				Actions
				wastewater
				that poses a
				health risk to
				human beings
				and the
				environment,
				to prevent the
				workers and
				surrounding
				communities
				from getting
				into contact
				with it.

CHAPTER 1 INTRODUCTION

1.1 Project Background

1.1.1 Project Brief

The proposed project is funded by African Development Bank and is being implemented by Coast Water works Development Agency (CWWDA). The aim of the project is to meet administrative needs of the Coast Water Works Development Agency.

1.1.2 Project scope and objective

1.1.2.1 Scope

Activities for the proposed project will include the following: -

- Demolition of permanent structures and a water tank,
- Removal of old storage containers
- Construction of a Four-storey office space with surface level parking,
- Civil works for the storm and foul water drainage

The proposed project entails the construction of a four storey (ground + three floors) office development. The actual design components of the project include: -

- Office space
- Services equipment areas include, generator, switch, voltage stabilizer, pump rooms.
- Spacious washrooms with sensor operated urinals, taps, soap dispensers and lights.
- Naturally lit and mechanically ventilated washrooms
- Fully functional roof to act as a staff breakout facility
- Grand and spacious reception area with adequate natural lighting and ventilation
- Security/control room separate from entry/gate house.
- Plant areas for air conditioning and telecommunication equipment provided on thereof.
- Security design allows for unmanned systems i.e. access control, CCTV, pneumatic bollards, intelligent cameras etc.

• Water features and landscaping provided for aesthetics and to reflect the feel and life of the building.

1.1.2.2 Objective

This project aims to meet the administrative needs of the Coast Water Works development Agency (CWWDA) by providing suitable office space.

Key objectives of the project include:

- Construction of Modern Office Facilities: The primary goal is to construct an ultra-modern four-storey office building, featuring contemporary design and amenities. This facility will provide a conducive working environment for the staff of the Coast Water Works Development Agency (CWWDA).
- 2. **Optimization of Space Utilization**: By constructing a four-storey building, the project aims to optimize the use of available land resources, maximizing the office space provided within the limited plot area.
- Enhancement of Service Delivery: The project intends to improve the efficiency and effectiveness of service delivery by providing adequate office space for administrative functions, allowing staff to work more effectively and serve the community better.
- 4. **Integration of Sustainable Practices**: Through civil works for storm and foul water drainage, the project seeks to incorporate sustainable practices, ensuring proper management of water resources and mitigating environmental impacts.
- 5. **Creation of Modern Infrastructure**: By demolishing old structures and constructing a new office space, the project aims to contribute to the modernization of infrastructure in Nyali, aligning with the broader development goals of the region.

Overall, the objective of the project is to establish a modern office complex that meets the administrative needs of the Coast Water Works Development Agency (CWWDA), contributes to improved service delivery, and enhances the overall infrastructure of Nyali, Mombasa County.

1.2 Objectives of the ESIA

1.2.1 General Objective

The objective of the ESIA study was to carry out a systematic examination of the present environmental and social situation within the project area to determine whether the proposed project will have adverse environmental and social impacts to the surrounding area. The study included collection and analysis of environmental baseline data, identification of impacts (both positive and negative) analyses and evaluation of impacts, formulation of mitigation measures for significant negative impacts, analysis of project alternatives and development of environmental management and monitoring plans

The purpose of an environmental assessment (EA) is to aid decision making and to ensure that the project under consideration is environmentally and socially sound and sustainable. This ESIA assessment has been conducted in compliance with EMCA 2015 and subsequent Environmental (Impact Assessment and Audit) (amendment) Regulations, 2019

1.2.2 Specific Objectives of ESIA Investigations

This Environmental & Social Impact Assessment (ESIA) is expected to achieve the following objectives:

- To determine the compatibility of the proposed development with the neighboring land uses.
- To identify and evaluate the significant environmental and social impacts of the proposed project
- To assess and analyze the environmental and social costs and benefits associated with the proposed project
- To evaluate and select the best project alternative from the various options available
- To incorporate environmental management plans and monitoring mechanisms during implementation, operation and decommissioning phases of the project

- To incorporate stakeholder consultations into the environmental management process.
- To analyze the project alternatives available

1.2.3 ESIA Approach and Methodology

The ESIA was carried out in line with the provisions of the Environmental Management and Coordination 2015 and the Environmental (Impact Assessment and Audit) Regulations 2003 emended in 2019. An Environmental and Social Management Plan comprising of an impact mitigation plan and modalities for monitoring and evaluation were then developed to guide environmental management during all phases of project development. The assessment involved the following:

1.2.4 Literature Review

Relevant documents were reviewed including the previous ESIA report and Design report to determine the level of impacts.

1.2.5 Environmental and Social Screening

Screening process was undertaken to decide whether the proposed water and sanitation Project needed to be subjected to an ESIA study or not. The Environmental Management and Coordination Act (EMCA) 1999 and the Amendment Act of 2015 specifies the projects for which should be subjected to an Environmental and Impact Assessment (EIA) before the commencement of project activities. In this Schedule waste disposal, including waste transfer station facilities are classified under medium risk projects requiring preparation of ESIA Comprehensive Project Report consisting of the likely environmental effects before implementation.

Based on this classification the proposed project was therefore subjected to an Environmental and social impact Assessment. CWWDA, herewith referred to as the proponent, appointed Francis Allen Consulting Ltd to undertake the ESIA assessment in fulfilment of the EMCA 1999 with 2015 amendments and Environmental (Impact Assessment and Audit) (amendment) Regulations, 2019.

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1.2.6 Environmental and Social Scoping

Scoping process involved the identification of significant environmental and social issues associated with the proposed Works. The impacts of the proposed project were assessed through project site visits through the following;

- Evaluation of the location, extent of the sewer connections and the current land use of the affected area.
- Evaluation of the design and proposed construction activities, materials and methodology
- One on one interviews with key stakeholders and proposed project beneficiaries were applied in the determining location of sewer line available way leaves
- Discussion with the area residents on the potential impacts related to project implementation activities and corresponding mitigation measures.

1.2.7 Baseline Data Collection

The data collected was on aspects such as: topography, local flora and fauna, soils and geology, socioeconomics, existing and past activities including human settlements, local surface and ground water resources, ambient air quality and noise levels (qualitative), waste management practices, and natural resources and cultural heritage aspects of the project areas.

1.2.8 Identification, Prediction and Determination of Environmental Impacts

A systematic approach was used to rank identified impacts according to their significance determined by consideration of project activity **event magnitude** and **receptor sensitivity**. The expected significance of environmental impacts was assessed considering:

• 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.

Receptor Sensitivity determined by:

- Presence whether biological species present are unique, threatened, protected or not vulnerable and are present during a period of high sensitivity (e.g. breeding, spawning or nesting). For human receptors, whether they are permanently present to uncommon in the area of impact and for physical features whether those present are highly valued or of limited or no value. For physical receptors/features, whether they are national or international value (e.g., state protected monument), local or regional value and is sensitive to disturbance or none of the above; and
- Resilience how vulnerable people and/or species and/or features are to the change or disturbance associated with the environmental interaction with reference to existing baseline conditions and trends (such as trends in ecological abundance/diversity/status, ambient air quality etc.) and their capacity to absorb or adapt to the change. For physical receptors/features, highly vulnerable, undergoes moderate but sustainable change which stabilizes under constant presence of impact source or unaffected or marginally affected.

1.2.9 Stakeholder Consultations

Stakeholder consultations were carried out to: inform project stakeholders of the proposed project; to explain the likely impacts (positive/negative) of implementing the project; and to obtain views, concerns, comments and suggestions from interested and affected parties regarding the proposed project.

Stakeholder identification and analysis was carried to determine project affected persons (PAPs) and the most appropriate means of engagement. Public barazas together with one-on-one interviews were undertaken. Detailed outcome of consultation including stakeholders interviewed is discussed in chapter 6 of this report

Meetings were conducted as shown in the table below;

Table 1-1: Meetings held, venue location and number of participants

No.	Date		Venue		Location	No.	of
						Participants	
1.	23 rd	March	Mombasa Water	Office	Nyali	Male: 13	
	2024		Complex			Female: 10	
						Total: 23	

There was different type of stakeholders who formulated the Key Informant Interviews namely

Table 1-2: Stakeholder Involved

No.	Name	Category	
Primar	y Stakeholders		
1.	Mombasa Water Supply and Sanitation	Water Service Provider	
	Company (MOWASSCO)		
2.	National Government Administrative Office	National Government	
	Assistant County Commissioners (DCC),		
	Chiefs/ Assistant chiefs		
3.	Mombasa County Government,	County Government	
	Ward Administrator		
4.	Village Elders	Community Representatives	
5.	Area Residents	Community	
Second	dary Stakeholders		
i.	Physical Planning Officer	National/County Government	
ii.	Sub-county Lands Registrar	Agencies and Ministries	

CHAPTER 2 PROJECT DESCRIPTION

The proposed project is set to be located on a 0.1483 hectares piece of land, registered under F.R. No. 320/173, situated off Links Road in Nyali, within the mainland North division of Mombasa County. This plot provides ample space for the construction of an ultra-modern four-storey office development, covering a total built-up area of 2150m2, inclusive of terraces.

The strategic location of the proposed site offers convenient access via the A109 highway, facilitating easy transportation for staff, clients, and visitors. Furthermore, its adjacency to the Mombasa Water Supply and Sanitation Company Ltd (MOWASSCO) Nyali offices presents opportunities for synergies and collaboration within the water management sector.

The site coordinates, Latitude 4° 02' 46.4" S, and Longitude 39° 41' 43.6" E, provide precise geographical reference, ensuring accurate positioning and alignment with development plans.



Figure 2-1: Project location (Source google earth)
2.1 Key Finding During Site Visit

During the scoping phase at the Coast Water Works Development Agency office site, several key aspects define the current status. The site hosts water supply activities and serves as a parking area for water trucks. A portion of the unused land is earmarked for the upcoming project. There are functional offices on-site and a few trees alongside grass and planted flowers. Adjacent to the main gate, residential buildings stand about 200 meters away, while behind the walls, there's a three-acre tree cover connecting to The Nyali School. The site's infrastructure includes two masonry single-storey buildings, a 30-ft metallic tank, and four 40-ft containers slated for demolition and proper disposal. Additionally, there are large metallic plastic pipes, pipes. and gutters requiring relocation or disposal. One of the buildings had asbestos roofing, with the other roofed with iron sheets, and an unused underground water well (borehole) was identified. An underground water pipeline ran through the area, supplying water to the local Nyali community. The site also features a car park linked to the proposed project area.





Figure 2: Structures Identified on Proposed Site

2.2 Project design

The development will provide for parking spaces one towards the left side of the development while the other to be accessed from the main gate along Mikinda road With a total of 14 parking slots. Pedestrians will be provided with paving slabs around the external and internal court yard while the main entrance will provide for an access lamp to accommodate the disabled. The proponent aims to construct a four storey office block in which the first floor will contain a reception, Supply chain Manager, inventory unit and procurement and disposal division, store, supply chain management offices meeting room, kitchenette, Laboratory, analytical room, incubator room, store, monitoring room, CCTV room, security room, Environment and community management offices, deputy directors office, project planning department, project development department offices, elevator, courtyard, planters and WC toilets which will be gender desegregated.

The second floor on the other hand will hold the registry department, ICT Department, HR and Administration department, Principle HR office and its deputy director and manager office, strategy and planning department, stores, Driver's room, finance department offices, deputy director and manger office, cashier office, resource center, meeting room, kitchenette, cleaners closet, elevator and gender desegregated WC toilets.

Third floor will contain the Chief Executive Office with a store, bathroom and WC toilet, Executive lounge, Boardroom, Corporate secretary and legal services directorate office, Directors office, internal audit directorate offices, corporate communications department offices, corporate services directorate, manger, director, and deputy director offices, Chairman's office, infrastructure development and management and director offices, kitchenette, store and gender desegregated WC toilets.

Finally the Roof terrace will contain the staff breakout area, common room, store/services, water tanks, service collider and toilets.

2.2.1 Floor

The proposed development will feature a variety of floor finishes in different areas. The parking area and driveways will be finished with Cabbro, while the main entrance will have non-slip Granite tiles. Granite tiles will also adorn the reception area, central courtyard, corridors, and office corridors, with hardened cement screed for service corridors. Porcelain tiles will dominate most office floors, while executive offices will have wall-to-wall carpeting. Meeting rooms will have porcelain tiles except for the executive floor, which will have carpeting. Wet areas will feature non-slip ceramic tiles, common rooms will have Granito tiles, and the staff breakout area will use porcelain tiles. The roof terrace will be finished with PVC composite decking for durability and ease of installation. Staircases will feature granite slabs, with porcelain tiles for the fire escape. Various rooms like the pump room, stores/water tank area, server room, CCTV/security room, laboratory, and kitchenette will each have their specified floor finishes, including anti-static raised floors and non-slip ceramic tiles.

2.2.2 Walls

The reception area of the proposed office will feature internal walls finished with plaster and paint, while the exterior walls will have powder-coated aluminum frames with laminated glass curtain walling. The reception back wall or feature wall will be clad with painted gypsum board, polished mahogany slates, and a backlit CWWDA logo. Corridors will have stainless steel railings and toughened glass on the void side, with office partitions made of powder-coated aluminum frames and filmed glass on polished mahogany surrounds. Offices, meeting rooms, and common rooms will also feature similar partitions. The laboratory and associated spaces will have ceramic tiles, plastered and painted walls, and aluminum frames with filmed glass. Wet areas will be finished with ceramic wall tiles and aluminum frames with laminated MDF. Service areas will have plastered and painted masonry walls. Staircases will feature stainless steel railings and toughened glass, with plaster and paint for the surrounding walls. The fire escape staircase will have similar railings and finishing.

2.2.3 Ceilings

In the reception area, the ceiling will feature gypsum with decorative cornices, a bulkhead over the reception area, and part suspended polished mahogany slates. Corridors will have gypsum ceilings with part suspended polished mahogany slates. Offices, meeting rooms, and common rooms will be finished with gypsum ceilings and decorative cornices, while meeting rooms will also have part suspended polished mahogany slates. The laboratory and associated spaces will feature gypsum ceilings with decorative cornices. Wet areas will have gypsum ceilings with decorative cornices as well. Service areas like stores, water tank rooms, and pump rooms will have plastered and painted ceilings. The main staircase soffits and fire escape staircase soffits will be plastered and painted, while the skylight will be finished with laminated and tinted glass on a primed and spray-painted RHS structure.

2.2.4 Roof

The roof of the proposed development will be finished with concrete tiles installed on an EPDM waterproofing membrane.

2.3 Green Architecture Approach

• Sustainable Construction Approach

The sustainable site approach for the design emphasizes a Low Impact Development Strategy that considers the existing flora and fauna. One of the key sustainable measures involves maintaining the natural flow of stormwater. This will be achieved by employing stormwater management techniques that prioritize directing maximum stormwater into the ground rather than through pipes. Permeable paving materials like pavers will be utilized to allow rainwater to seep into the soil, contributing to the natural water balance. Additionally, the gradual greening of the development, including the maturation of landscaped areas and trees over time, will further support this water balance by intercepting more rainwater. Another aspect of the sustainable approach focuses on reducing pollution, particularly dust and noise pollution during the construction phase. This strict policy will aim to minimize or eliminate the impact on existing buildings and ensure minimal interruption to services and workflow in other sections of building.

• Material Management

The development will prioritize the use of locally available materials in its construction to minimize economic and environmental costs while integrating harmoniously with the natural landscape. This approach will foster a sense of belonging to the environment. Additionally, the project will implement a solid waste management disposal system, including a Construction Waste Management Plan, which will guide the proper disposal, minimization, and reuse of materials. Furthermore, if materials from the demolished building are found to be in good condition, they will be repurposed for backfilling and other purposes, aligning with the goal of reducing waste and maximizing resource efficiency.

• Water and Energy Usage

The main source of energy will be from the National Grid, standby generator and solar will be installed to supplement the Kenya Power & Lighting Company (KPLC) electrical supply hence reducing its consumption considering its mainly generated from natural resources such as hydropower and geothermal. Unsustainable use of the power can lead to depletion of natural resources hence the call for efficient use. Energy efficiency is a key focus of the development, demonstrated by the specification of energy-efficient lighting fittings such as LED lights and the installation of solar panels for lighting and water heating. For example, the office spaces will be equipped with motion-sensing LED lights that automatically adjust brightness based on occupancy, reducing unnecessary energy consumption. Additionally, the installation of solar panels on the roof will provide renewable energy for lighting and water heating, further enhancing energy efficiency.

The project will utilize water from the supply of a borehole within the site if the quality is deemed suitable for construction. The contractor, and occupants of the once completed building shall be encouraged to use water sparingly to avoid wastage. In terms of water efficiency, the development has integrated water-saving measures through the use of water-efficient sanitary fittings. For instance, low-flow toilets and faucets will be installed throughout the building to minimize water usage. These water-efficient fittings are designed to reduce water wastage without compromising on functionality, contributing to sustainable water management practices within the development.

• Indoor Environmental Quality (IEQ)

The design of the building has been meticulously planned with a focus on creating a healthy and conducive environment for its occupants. This includes considerations for indoor air quality, access to natural daylight and views, comfortable acoustic conditions, and giving occupants control over lighting and thermal comfort. Ensuring better indoor environmental quality not only benefits the health and well-being of the occupants but also adds value to the building and reduces liability for the owners. To achieve this, several measures have been proposed:

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- Indoor Air Quality Plan: This plan addresses the quality of air inside the building, focusing on pollutant concentrations and thermal conditions that affect occupants' health and comfort. Strategies include using building materials with low volatile organic compound (VOC) content and flushing out toxins before occupancy.
- **Thermal Comfort:** The building materials chosen will contribute to maintaining a comfortable temperature zone within the structure.
- **Building Acoustics:** The building's fabric and glazing thicknesses will be designed to minimize excess noise pollution from outside, with internal finishes to prevent echoes.
- **Building Finishes:** Interior materials emitting low levels of VOCs will be prioritized during construction.
- Flush Out: To improve indoor air quality, outdoor air will be circulated through the completed building for a period to remove emissions from newly installed materials.
- Adequate Ventilation and Exhaust: Proper ventilation and exhaust systems will prevent the build-up of odors, allergens, and toxins indoors. Cross-ventilation and openable fenestrations will be provided, alongside air conditioning where necessary.
- **Daylighting:** An effective daylighting strategy will be implemented to illuminate the building space without causing glare or major light level variations, enhancing comfort and productivity.
- Entryway Systems / Walk-off Mats: Entryway systems like grates and walk-off mats will be installed to reduce the amount of outside dirt and particulates brought into the building, maintaining cleanliness.
- Views (External and Internal): Landscaped surrounding areas, sun-shaded fenestrations, and well-designed internal courtyards with water features and planters will provide occupants with pleasing views, contributing to their overall well-being.

• Operations and Maintenance

Operations and maintenance have been given utmost priority in the design of the building, considering sustainable environments and fostering interaction between staff and users. A key aspect is allowing the client's maintenance staff to collaborate with the design team to develop a comprehensive maintenance plan. This plan will ensure that the buildings and their surroundings continue to function as intended and commissioned. Continuous monitoring by the client will be implemented, with adjustments made as needed to enhance system performance and efficiency over time.

• Site Layout and Orientation

The proper site layout and orientation have been carefully considered to optimize energy efficiency. This includes minimizing solar exposure to the building facades by strategically orienting window openings predominantly towards the North-South direction. By doing so, solar loading is reduced, leading to a decreased demand for cooling systems. Furthermore, the relationship between the interior and exterior spaces has been thoughtfully designed to maximize natural lighting and provide captivating views around the building, enhancing the overall user experience.

• Passive Cooling Techniques

Passive cooling techniques play a significant role in the building's sustainability strategy. An internal landscaped courtyard or atrium has been incorporated to facilitate passive cooling through the stack effect, especially benefiting the main circulation areas. Additionally, a solar shading system has been implemented to minimize solar heat gain on the building facades, control glare, and evenly distribute daylight within interior spaces. These passive cooling measures not only contribute to energy efficiency but also create a comfortable and inviting environment for occupants while reducing the building's environmental footprint.

2.4 Land requirement and ownership

The property in question is situated in the bustling Mombasa Central Business Area, characterized by a dense concentration of commercial and office buildings. The designated zone allows for a range of land uses, including offices, commercial establishments, institutional buildings, and hotels, with no specified height restrictions noted, particularly as our proposed building is limited to approximately four levels. The site is currently utilized as offices, hence no need for a change in land use. Notably, the planned CWWDA office block will be constructed within the proximity of premises of the Mombasa Water Supply and Sanitation Company Ltd (MOWASSCO) Nyali Business Unit with the land ownership and management falling under the jurisdiction of CWWDA as the asset holder on behalf of the Ministry of Water (Water Act 2016) – Annex 9. PDP.

2.5 Project cost

The cost estimates for this project have been derived using the current (2024) prices from manufacturers and priced bills of quantities of recently contracted works of similar nature. The Project cost is around Ksh.170million.

2.6 **Project Activities**

The project activities will proceed concurrently, following a structured implementation approach. The phases encompass project planning, site clearance including the demolition of existing structures, excavation work, construction activities, operation of the project upon completion, and finally, the decommissioning phase. Each phase is crucial and must be executed systematically to ensure the overall success and sustainability of the development. Starting with meticulous project planning, which lays the foundation for subsequent stages, the process moves through site clearance to prepare the area for construction, followed by excavation and actual building work. Once operational, the project will serve its intended purpose before eventually entering the decommissioning phase, where closure activities are undertaken responsibly.

2.6.1 Planning and Design Phase

This phase involves preparation of plans and designs for the proposed project, taking into account the type and nature of materials to be utilized. It also considers the physical

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conditions of the plot, ensuring alignment with the total costs and economic value of the project. The focus is on creating comprehensive plans that not only meet the functional requirements of the project but also optimize resource utilization and cost-effectiveness. Factors such as site characteristics, environmental considerations, regulatory requirements, and sustainability principles are carefully integrated into the planning and design process to ensure a well-rounded and successful outcome for the project. the phase is not resource-intensive since it only requires the use of expertise, professional knowledge, gadgets, and printouts of drawings.

2.7 Construction Phase

During this phase, several critical activities will take place, including excavations to prepare the site, setting foundations, and carrying out filling works for stability. Construction work will involve masonry for structural elements, roofing installations, electrical and plumbing installations, and civil works such as roads and pathways. Additionally, landscaping efforts will be initiated, encompassing planting, shaping terrain, and installing outdoor features. Drainage works are essential, including the construction of storm water and wastewater facilities to manage water effectively on the site. Throughout this phase, there will be a focus on clearing construction debris to maintain a safe and organized environment for work and ensuring that all infrastructure elements are in place for a functional and aesthetically pleasing outcome.

2.7.1 Demolition/Site clearance Phase

There are structures within the project site belonging to the proponent CWWDA that shall have to be demolished to pave way for the proposed development. The structures will include; two single storey structure , boundary wall, and an approximately 30ft tall metallic tank, to be evacuated also are four 40ft long containers previously used for storage. Also, in the premises there were scattered metallic and plastic pipes, gutters belonging to CWWDA which will be removed to pave way for the development. To be noted, one of the buildings on site is roofed with Asbestos while the other has iron sheets. Inside the buildings there was an underground water- well (borehole) currently

unutilized. It was also identified an underground pipeline flow of water passing through the area which distributes and supplies water to the local community of Nyali region and a Car park attached/proceeding to the area of the proposed project. There were observable trees grass cover and flowers within the site.

The general characteristics of the preferred demolition methods are common to Kenya. Methods that do not involve blasting, are appropriate. Whereas the eventual detailed demolition plan of the selected demolition contractor(s) may not be precisely as summarized here, the consultants believe that the methods are sufficiently effective and applicable for all the tasks such that confidence can be placed in the assessments. Where possible, methods that will help reduce noise and dust nuisances will be chosen.

2.7.2 General Approach to Demolition of Buildings and Structures

This section seeks to illustrate some of the more general procedures for demolition that apply in Kenya. The intention in this section is not to prescribe a precise method or provide a work specification or a demolition plan but to indicate the approach, which will be taken, in sufficient detail to facilitate broad agreement on the methodology. Whereas the eventual detailed demolition plan of the selected demolition contractor(s) may not necessarily adopt the methodology proposed in this report, the consultants believe that general characteristics of the methods are appropriate. The methods are sufficiently effective and applicable for the tasks and where possible methods that will help reduce noise and dust nuisances have been chosen. The options selected are also broadly in line with what will need to be observed at the detailed design stage. The overriding concerns for the demolition project are Safety and Minimization of environmental impacts

These will include the safety of the operatives; Safety of the other workers on the site and Safety of the general public; Protection of adjacent facilities and Minimization of nuisances. The Contractor should during the course of demolition, ensure and verify that all utilities and services (such as water and electricity supply systems) have been disconnected and rendered safe.

2.7.3 Hoarding and Site Access

Typical hoardings will be provided along the site boundaries. Portable barricades could be used to cordon off different work zones where demolition is in progress. Where conditions warrant, the Contractor should seek opinion and advice from the Site Engineer in order to modify such plans accordingly. No members of the public or unauthorized person would be allowed to enter the site. Only contractors' personnel and Government officials concerned with the demolition will be allowed within the project site.

The proposed development will be situated on pre-existing developed land with structures that need demolition to make room for the office block. To ensure efficiency and minimize waste, the demolition process will employ the most appropriate method to salvage reusable materials. Skilled masonry, carpenters, welders and excavators will be utilized to carefully dismantle the structures without causing unnecessary damage to salvageable materials. This approach not only aligns with sustainable practices by reducing waste but also maximizes the potential for reusing materials, contributing to cost-effectiveness and environmental responsibility in the project implementation.

2.7.4 General Safety Measures

The Contractor will need to carry out works in accordance with the Factories Act, particularly the Construction Site (Safety) Regulations and practices for scaffolding safety, not forgetting the provisions of the Occupational Safety and Health Act of 2007, as well as all other statutory requirements and guidelines covering health and safety issues. All contractors and sub-contractors to be hired for this proposed demolition should be competent and qualified in demolition works. Site Engineer will need to ensure that all levels of Contractor(s) and his subordinates are fully conversant with the demolition plans, method statements and procedures. If the Site Engineer will propose scaffolding as a preference, the Contractor will arrange for a competent scaffolding expert to visit site and inspect the scaffolding process, to make the necessary adjustments required to the process to ensure its stability. The Contractor should also

appoint a competent person, experienced or trained in the type of operation being performed at that particular time, to supervise and control the work on site. The Contractor will ensure that every work place, approach and opening, which may pose a danger to persons employed and others will be properly illuminated and protected.

The buildings and other structures in the compound will generally be demolished in the reverse order to that of their construction. The order of demolition for the structures will be progressive, starting with the first floor. Overloading or piling of any parts of the remaining structure with debris or other materials will be avoided. When lowering materials and debris from roof, care will be taken to prevent the possibility of material hurting or creating a danger to the workers on site. Walls will be broken along the original blocks that were initially used in the construction of the wall. Hence the debris expected to be formed are no larger than the size of the blocks that were initially used in the construction of the walls of the structures.

All debris would be removed at frequent intervals and stockpiles will not be allowed to build up excessively. It is anticipated that demolition waste will be removed on a daily and continuous basis. Reinforced concrete structural members will be cut into lengths appropriate to the weight and size that can be lifted by a single person before being lowered to the ground. Removal of block walls will be from top to bottom in horizontal runs. Before and during demolition, the Contractor will pay attention to the nature and condition of the concrete from the underground tanks, the condition and position of reinforcement, and the possibility of lack of continuity of reinforcement will be ascertained. Attention will also be paid to the principles of the structural design to identify parts of the structure, which cannot be removed in isolation or whose removal presents safety risks for the demolition workers; the removal of this parts of the building will seek the advice of the Site Structural Engineer who will give the best methods of removal.

2.7.5 Approach

As the demolition project commences, the contractor and subcontractors are advised to conduct a comprehensive site assessment to identify potential hazards and obtain the

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necessary permits for the demolition activities. They will ensure that all personnel are equipped with appropriate safety gear, including hard hats, protective goggles, and high-visibility vests. The area will be clearly marked with warning signs and barriers to restrict unauthorized access and prioritize safety. The team, trained in demolition techniques, will carefully plan the sequence of tasks, starting with the single-storey structures previously used for administrative purpose by the proponent and proceeding methodically from the top down to minimize debris and risks. They will employ specialized equipment and expertise to dismantle the underground tank and metallic water tank in sections, ensuring proper drainage, safe removal of debris, and compliance with waste management protocols. Post-demolition, thorough inspections will be conducted to confirm the site's safety and regulatory compliance.

2.7.6 Materials

All materials will be sourced locally to ensure they are exploited in a sustainable manner to avoid environmental pollution.

During the construction phase, various raw materials will be sourced for different purposes. Here are the raw materials and their typical sources:

Stones/Building Blocks:

Sources: Quarries or stone mining operations for natural stones, or manufacturing plants for concrete blocks.

Sand:

Sources: Riverbeds, quarries, or coastal areas where sand is naturally deposited.

Concrete:

Sources: Concrete batching plants that mix cement, sand, gravel, and water to produce concrete.

Timber:

Sources: Forests or sustainable timber plantations where trees are harvested for wood products.

Steel Reinforcement Bars:

Sources: Steel mills or manufacturing plants that produce steel bars from raw materials like iron ore and scrap metal.

Cement:

Sources: Cement factories where raw materials such as limestone, clay, and gypsum are processed and blended to produce cement.

Tiles:

Sources: Tile manufacturing plants that use raw materials like clay, ceramics, or porcelain to produce tiles of various types and designs.

Roofing Material:

Sources: Roofing material manufacturers producing materials such as corrugated iron sheets, clay tiles, asphalt shingles, or metal roofing panels.

Electrical Wires:

Sources: Electrical supply stores or manufacturers producing electrical wires from materials like copper, aluminum, or other conductive metals.

Water:

Water serves as a critical construction material essential for activities like concrete mixing, plastering, and overall site upkeep. In the context of a thr CWWDA proposed office block project, water will be supplied by Mombasa Water Supply and Sanitation Company (MOWASSCO). A construction endeavor of this magnitude will demand a substantial quantity of water, often measured in thousands of gallons or cubic meters throughout the project duration. It's imperative to adopt efficient water management strategies to mitigate wastage and ensure sustainable utilization throughout the construction phase.

These raw materials are essential for different aspects of construction, from structural elements like stones, concrete, and steel reinforcement bars to finishing materials like tiles, roofing materials, and electrical components such as wires. Sustainable sourcing

practices and responsible material management are crucial to ensure environmental stewardship and minimize the ecological footprint of construction activities.

2.7.7 Machinery

During the construction phase, various equipment and machinery will be required to facilitate different tasks. Here are some essential equipment and their functions:

Cranes:

Will be used for lifting heavy materials and equipment to higher levels during construction, especially for erecting structural components like beams and columns.

Excavator:

Will be used for digging trenches, excavating soil, and moving earth and debris on the construction site.

Vibrators:

Will be used in concrete construction to remove air bubbles and ensure proper compaction of concrete for durability and strength.

Welding Machines:

Will be used for joining metal components together, such as steel reinforcement bars, beams, and columns, using welding techniques.

Wheelbarrows:

Will be used for transporting smaller quantities of materials such as sand, gravel, or concrete mix within the construction site.

Transportation Vehicles:

Includes trucks, dumpers, and trailers will be used for transporting bulk materials like sand, gravel, stones, and construction equipment to and from the site.

Concrete Mixer:

Will be used for mixing cement, sand, gravel, and water to produce concrete batches of varying sizes for construction activities.

The above equipment play crucial roles in ensuring the efficiency, safety, and timely completion of construction projects. Proper maintenance, operation by skilled personnel, and adherence to safety protocols are essential to maximize the effectiveness and longevity of the equipment during construction.

2.8 Operational Phase

During the operational phase, the proposed building will be occupied and utilized for its intended purposes. The project design will prioritize the use of the best available technology to prevent or minimize any potentially significant environmental impacts associated with the project. This includes adopting sustainable practices, energy-efficient systems, and waste management strategies to reduce the building's ecological footprint.

Additionally, the design will incorporate efficient operational controls and procedures, complemented by trained staff who are equipped to ensure high levels of efficiency and environmental performance throughout the building's operational lifespan. This approach aims to optimize resource use, minimize waste generation, and promote a healthy and sustainable environment both within the building and its surrounding area

2.8.1 Utilities

As mentioned earlier the main source of energy will be from the National Electricity Grid, standby generator and solar will be installed to supplement the KPLC electrical supply hence reducing its consumption considering it is mainly generated from natural resources such as hydropower and geothermal. Unsustainable use of the power can lead to depletion of natural resources hence the call for efficient use. Energy efficiency is a key focus of the development, demonstrated by the specification of energy-efficient lighting fittings such as LED lights and the installation of solar panels for lighting and water heating. For example, the office spaces will be equipped with motion-sensing LED lights that automatically adjust brightness based on occupancy, reducing unnecessary energy consumption. Additionally, the installation of solar panels on the roof will provide renewable energy for lighting and water heating, further enhancing energy efficiency.

The project will utilize water supplied by MOWASSCO who are within the premises, the contractor, and occupants of the once completed building are encouraged to use water conservation methods to avoid wastage. In terms of water efficiency, the development has integrated water-saving measures through the use of water-efficient sanitary fittings. For instance, low-flow toilets and faucets will be installed throughout the building

to minimize water usage. These water-efficient fittings are designed to reduce water wastage without compromising on functionality, contributing to sustainable water management practices within the development.

2.9 Decommissioning Phase

This is the final phase in the life cycle of a project that happens when the project/development seizes its operations or when the proponent decides to change the use of such a development. During the decommissioning phase, the project will undergo careful dismantling and closure activities to ensure minimal environmental impact and efficient resource management. The decommissioning process will prioritize the use of best practices and technologies to mitigate potential environmental hazards and maximize material recovery for reuse or recycling.

Key aspects of the decommissioning phase will include:

- i. **Dismantling and Demolition:** Skilled workers will carefully dismantle structures using appropriate methods to salvage reusable materials and minimize waste generation. Machinery and equipment will be utilized judiciously to avoid unnecessary damage.
- Waste Management: Comprehensive waste management practices will be implemented to segregate, treat, and dispose of waste materials responsibly. Hazardous materials will be handled in accordance with regulatory requirements to prevent environmental contamination.
- iii. **Site Remediation:** The site will undergo remediation to address any soil or groundwater contamination resulting from the project's activities. Soil stabilization and vegetation restoration may be undertaken to restore ecological balance.
- iv. **Infrastructure Removal:** Infrastructure such as utilities, roads, and drainage systems will be removed or decommissioned in a manner that minimizes disruption and environmental impact.
- v. Documentation and Reporting: Detailed documentation of decommissioning activities, including environmental monitoring data, will be compiled. Reports will be prepared to demonstrate compliance with regulatory standards and environmental commitments.

- vi. **Stakeholder Engagement:** Communication with stakeholders, including local communities and regulatory agencies, will be maintained throughout the decommissioning process. Feedback and concerns will be addressed transparently and responsibly.
- vii. **Closure and Monitoring:** Once decommissioning is complete, the site will be formally closed and secured. Ongoing monitoring may be conducted to assess environmental impacts post-decommissioning and ensure long-term environmental integrity.

Overall, the decommissioning phase will be characterized by a systematic and environmentally conscious approach, aiming to minimize adverse effects on the environment while promoting resource recovery and sustainable practices.

CHAPTER 3 ENVIRONMENTAL AND SOCIAL BASELINE CONDITION

3.1 Introduction

Baseline conditions entail the sum-total of all biophysical and geo-physical condition of the project area. Gathering of baseline data is necessary to meet the following objectives:

- To understand key social, cultural, economic, and political conditions in areas potentially affected by the proposed project;
- To provide data to predict, explain and substantiate possible impacts;
- To understand the expectations and concerns of a range of stakeholders on the proposed development;
- To inform the development of mitigation measures; and
- To benchmark future socio-economic changes/impacts and assess the effectiveness of mitigation measures.

3.2 Geographical characteristic of the project area

3.2.1 Location of the Project

The proposed project is situated on a 0.1483-hectare parcel of land, designated as F.R. No. 320/173, located off Links Road in Nyali, within the mainland North division of Mombasa County. This plot offers ample space for the construction of an ultra-modern four-storey office development, encompassing a total built-up area of 2150m2, including terraces.

Strategically positioned, the site enjoys convenient access via the A109 highway, facilitating smooth transportation for staff, clients, and visitors. Its proximity to the Mombasa Water Supply and Sanitation Company Ltd (MOWASSCO) Nyali offices presents opportunities for collaboration within the water management sector.

Precisely pinpointed at Latitude 4° 02' 46.4" S and Longitude 39° 41' 43.6" E, the site coordinates ensure accurate positioning, aligning seamlessly with development plans.



Figure 3-1: Proposed site (Source Consultant Date: March 20th 2024)



Figure 3-2: Proposed Project location (Source google earth)

3.2.2 Project Neigbours

The project will share the same compound with MOWASSCO offices who will be of great benefit in provision of water during the construction and operation period. Opposite the development from the main gate the project neighbours residential apartments, hence the contractor is advised to reduce noisy activities during the night to avoid disturbance. The residents of the apartment will also be subjected to traffic congestion resulting from trucks delivering materials on site hence the contractor should utilize off-peak hours. About 300 meters from the development Nyali school was identified as a sensitive receptor to the development activities, care should be taken to avoid any negative impacts to the school going children and the contractor is advised to provide sensitization to the local community and pupils.

3.2.3 Climate and Rainfall

The project area is situated in Mombasa county within Nyali Sub-County which experiances a constent climate and rainfall pattern. Year-round, the region encounters warm to hot temperatures with minimal seasonal variation, averaging between 25°C to 32°C (77°F to 90°F) during the day and rarely dropping below 20°C (68°F) at night. The coastal proximity contributes to elevated humidity levels, often surpassing 70%, especially during the rainy seasons. These occur from April to June and October to December, characterized by heavy downpours and occasional thunderstorms.

Annually, the project area receives an average rainfall ranging from 900mm to 1,200mm (35 to 47 inches), with the highest precipitation recorded during the long rainy season. Sea breezes provide relief from the heat, aiding temperature moderation. This understanding of the climate dynamics is crucial for various sectors, such as agriculture, tourism, and urban planning, to effectively plan and manage activities within the region.



Figure 3-3: Annual Rainfall Pattern



Figure 3-4: Annual Temperature Pattern

3.2.4 Geology and Ecological Conditions

The geology and ecological conditions of the project area play significant roles in shaping its landscape, biodiversity, and suitability for development. Understanding these factors is crucial for sustainable planning and environmental management.

The project area exhibits a diverse geological composition typical of coastal regions. This may include formations such as sedimentary rocks, limestone, and sandstone, influenced by the region's geological history and coastal processes. Understanding the geology helps assess factors like soil stability, groundwater conditions, and geological hazards such as erosion or subsidence.

The ecological conditions in the project area encompass a range of habitats and biodiversity. As a coastal region, it may feature mangrove forests, sandy beaches, and coral reefs, supporting diverse flora and fauna. These ecosystems provide vital services such as coastal protection, carbon sequestration, and habitat for marine life. Additionally, the project area may be home to endemic species and migratory birds, highlighting its ecological significance.

Assessing the geology and ecological conditions of the project area allows for informed decision-making regarding development activities, land use planning, and environmental conservation efforts. It helps identify areas of ecological sensitivity, potential environmental impacts, and opportunities for sustainable development practices. Additionally, considering these factors ensures the preservation of natural resources and ecosystems, contributing to the long-term resilience and health of the project area.

3.2.5 Topography

The topography of the project area, characterized by an average elevation of 75 feet, reveals a diverse landscape conducive to development and environmental management. Situated in a coastal region, the area encompasses a flat terrain typical of coastal plains, with occasional low-lying areas susceptible to flooding, especially near the coastline or riverbanks. Additionally, the presence of coastal formations such as beaches, cliffs, and dunes contribute to the aesthetic appeal of the area while influencing land use patterns. Despite occasional variations in elevation, ranging from a minimum of -7 feet to a maximum of 194 feet, the overall topography can be described as predominantly flat. This topographic diversity presents both opportunities and challenges for development, requiring careful consideration of drainage, flood mitigation, and infrastructure design to ensure sustainable development practices.

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Understanding these topographic characteristics is essential for guiding land use decisions and enhancing the resilience of the project area to environmental hazards

3.2.6 Hydrology

Kongowea River, a key surface water source within Nyali sub-county about 2KM from the project area. This river's flow dynamics, particularly during the rainy seasons, play a crucial role in local water availability and potential flood risks. Additionally, smaller streams and seasonal ponds contribute to the site's hydrology, affecting groundwater recharge and overall water management strategies.

The hydrogeological assessment reveals the presence of shallow aquifers with varying permeability and recharge rates. Groundwater levels exhibit seasonal fluctuations, responding directly to rainfall patterns and local water demand. Given the aquifer's susceptibility to contamination, continuous monitoring and effective management practices are necessary to safeguard water quality and availability.

Rainfall patterns in the project area exhibit distinct wet and dry seasons, influencing water availability and quality. High-intensity rainfall events during the wet season contribute significantly to surface runoff, soil erosion, and overall hydrological dynamics. Understanding these local rainfall patterns is critical for informed water resource planning, flood risk mitigation, and sustainable water management practices.

Existing water infrastructure, including wells, boreholes, and small-scale reservoirs, serves as vital water supply sources for nearby communities. Water demand, driven by domestic, agricultural, and industrial activities, experiences seasonal variations. The project's assessment includes forecasting water demand based on population growth, land use changes, and the implementation of water conservation measures to ensure efficient water use.

Water quality assessments highlight variations in surface and groundwater quality influenced by land use practices and human activities. Parameters such as turbidity, pH levels, dissolved oxygen content, and nutrient concentrations require continuous

monitoring to ensure safe water supply and environmental health. Integrated mitigation measures for water pollution sources are integral to the project's environmental management plan.

Proposed water management strategies encompass rainwater harvesting systems, groundwater recharge initiatives, and water conservation practices. These sustainable approaches aim to minimize water wastage, promote efficient irrigation techniques, and explore water reuse opportunities. Collaborative efforts with local stakeholders and water authorities are essential for effective water resource management and addressing hydrological challenges comprehensively.

3.3 Socio-economic characteristics

3.3.1 Population and Settlement

Table 3-1:Project area and population

	Populations					
Location	Male	Female	Total	Households	Area (km2)	Density
Kongowea	57,390	53,701	111,093	36,491	14.5	7,678

3.3.2 Education

The education landscape in Kongowea Sub-County is diverse and comprehensive, catering to students across various levels. There are a total of 10 Early Childhood Development (ECD) centers, providing foundational education for young learners. Moving up the education ladder, there are 6 primary schools offering basic education, followed by 2 secondary schools that accommodate students advancing to higher levels of learning.

In terms of educational attainment among residents, a significant proportion (57%) have completed their education up to the Secondary school level, indicating a strong emphasis on basic education. Additionally, twenty percent (20%) of respondents have achieved a university level of education, reflecting opportunities for higher learning within the community. Primary education completion stands at fifteen percent (15%),

highlighting the foundational education base, while Technical Trainings and Pre Primary education are at four percent (4%) each, showcasing a diverse range of educational pathways available to individuals.

For students pursuing secondary education, Kongowea Sub-County offers convenient access to local secondary schools like Kongowea Secondary School. Those demonstrating academic excellence have opportunities to access sub-county and national schools across the country, ensuring a wide range of educational options. Furthermore, for individuals seeking vocational training and higher education, nearby institutions such as the Technical University of Mombasa and Kenya Coast National Polytechnic provide avenues for specialized skills development and tertiary education, contributing to a well-rounded and accessible educational environment in the region.





3.3.3 Health Access

In terms of healthcare, Kongowea Sub-County faces common health challenges typical of coastal regions. Diseases like malaria, dengue fever, respiratory infections, and waterborne illnesses such as typhoid and dysentery are prevalent. Healthcare facilities in the sub-county range from clinics and dispensaries to major hospitals like Premier Hospital in Nyali, Coast Provincial General Hospital and Aga Khan Hospital, providing primary, secondary, and specialized medical care services.

Public health efforts in Kongowea focus on disease prevention, maternal and child health, immunization programs, and HIV/AIDS management. Community health workers play a crucial role in disseminating health information and promoting healthy practices. Despite these efforts, challenges like limited healthcare access in some areas, shortages of medical staff and equipment, and ongoing health education needs remain areas of focus for improving healthcare delivery in Kongowea Sub-County.

3.3.4 Solid Waste Management

The main sources of waste generation in the project area are domestic households, commercial ventures, hotels, markets, industrial facilities, and institutional establishments including health facilities. The waste generated comprises both biodegradable and non-biodegradable materials. Biodegradable waste includes food remnants, wooden debris, natural rubber, paper, and biomedical waste. Non-biodegradable waste consists of plastic products, metals, disposable diapers, rubber tires, among others.

It is estimated that the project area generates approximately 700-800 tons of waste per day. Currently, solid waste collection covers approximately 68% of the generated waste, while the remaining 32% is either burnt or improperly disposed of, such as being thrown on streets, in drains, at the seashore, or in open grounds, posing health and environmental hazards.

Waste materials in the project area are collected from point sources and/or project area dustbins in a mixed state and transported to designated disposal sites. All types of waste, including hazardous materials containing heavy metals, oils, batteries, and acids, as well as domestic and biomedical waste, are transported to these disposal sites.

Despite improvements in solid waste management due to continued devolution, the main concern and threat to the ecosystem in the project area is the dumpsite. The dumping of raw garbage, particularly into water bodies, poses significant environmental risks. Efforts are underway to rehabilitate the dumpsite, with plans to convert it into a recreational park. However, concerns remain regarding the method used for waste disposal, as it may impact water quality and environmental health in the project area.

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3.3.5 Housing

In the project area, about 40 per cent of the households live in stone/brick walled houses, 90 per cent in mud/wood walled houses while 5.19 per cent live in grass straw/tin walled houses. Most housing units in the county are roofed with corrugated iron sheets (94.38 per cent), while Makuti and grass roof constitute 0.18per cent of the households



Figure 3-6: Type of housing

Source: Consultant taken on 20th March 2024

3.3.6 Land tenure and Ownership

Land tenure in the Project area is classified into freehold or leasehold land. Freehold land is held by an individual for an unspecified period of time while leasehold land is given by the government to an individual or organization over a specified period of time and is expected to remit rent to the government.

According to the constitution, public land is Land which at the effective date was alienated government land as defined by an Act of Parliament in force at the effective date, land lawfully held, used or occupied by any State organ, land transferred to the State by way of sale, reversion or surrender, land in respect of which no individual or

community ownership can be established by any legal process or land in respect of which no heir can be identified.

Public land shall vest in and be held by a county government in trust for the people resident in the county, and shall be administered on their behalf by the National Land Commission. Community land is land held by communities identified on the basis of ethnicity, culture or similar community of interest. It consists of: land lawfully registered in the name of group representatives under the provisions of any law, land lawfully transferred to a specific community by any process of law, any other land declared to be community land by an Act of Parliament; and land that is used by the community as trust land by the county governments. Private land is registered land held by any person under any freehold tenure or any other land declared private land under an Act of Parliament.

3.3.7 Biological environment

3.3.7.1 Vegetation

The project areas area has surrounding high rise buildings which act as lodges and residential units. The Project area has grass. Some of the tree species notable within the project area are as shown in the table below;

Table 3-2:Tree s	pecies in the	Project areas
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No.	Scientific name	Local name
1.	Mangifera indica	Mango
2.	Makaranga kilimadscharica	Paw paw
3.	Moringa oleifera	Muringa
4.	Tabernaemotanas stapfianas	Mwerere

The above tree species have established along the fence of the Project area.



Figure 3-7: Tree on the proposed site

Source: Consultant taken on 20th March 2024

3.3.7.2 Fauna

Mombasa County which is the project area of influence is located along the Kenyan coast, is rich in biodiversity, hosting a variety of fauna. Some of the notable species found in the County include:

- Marine Life: Mombasa's coastal waters are home to diverse marine life, including fish species like snappers, groupers, barracudas, and reef fish. Other marine fauna such as dolphins, turtles (like the green sea turtle), and various crustaceans and mollusks inhabit these waters.
- Birds: The county boasts a diverse avian population, with species like the African fish eagle, pelicans, herons, egrets, kingfishers, and numerous migratory birds. The coastal areas and mangrove ecosystems provide important habitats for these birds.
- **Mammals:** While urbanization has impacted some larger mammal populations, Mombasa still has some presence of smaller mammals like monkeys (e.g., vervet

monkeys), mongooses, and bats. Additionally, marine mammals such as dolphins can be spotted offshore.

- Reptiles: Reptilian fauna include various snake species, lizards like geckos and skinks, and terrapins. The coastal areas also support populations of sea turtles, particularly during nesting seasons.
- Insects and Arachnids: The region is teeming with insect life, including butterflies, beetles, ants, and various other insects. Spiders and scorpions are also part of the arachnid fauna found in Mombasa County.
- Marine Invertebrates: Coral reefs along the coast support a wealth of marine invertebrates such as corals, sea anemones, sea stars, sea urchins, and diverse types of crustaceans and mollusks.

During the site visit there were no animals identified on site but the project should ensure sustainable development to avoid environmental polluting activities that could affect fauna within Mombasa region.

CHAPTER 4 ANALYSIS OF PROJECT ALTERNATIVES

Regulation 18(1) of Legal Notice 101 outlines the fundamental requirements for an Environmental Impact Assessment Study or Project Report. Subsequently, subsection (i) mandates an analysis of alternatives. This analysis involves comparing feasible alternatives for the proposed project across various criteria, including project site, technology, potential environmental and social impacts, costs, local suitability, and acceptability by neighboring land users. This chapter delves into the exploration of different alternatives considered during the project's design phase, emphasizing the proactive nature of environmental and social assessment to improve project design. The examination of alternatives extends beyond mere impact reduction, aiming to identify actions that align with sustainable development goals. The chapter scrutinizes project alternatives, focusing on site variations and non-implementation scenarios. It emphasizes the importance of including diverse alternatives in Environmental and Social Impact Assessments (ESIAs) to foster environmental and socio-economic challenges associated with new projects. The options/ alternatives discussed include:

- No project alternative
- Relocation option
- Waste water/sewage management alternative
- Demolition option
- Alternatives to achieving green building

4.1 No-Project Alternative

The 'no-action/project' alternative plays a crucial role in environmental impact assessments as it provides a baseline for comparative analysis. This alternative is essential when the potential environmental impact of implementing the proposed action is deemed too high compared to the impact of not taking that action. In the context of the proposed project, choosing the "no project" alternative means maintaining the status quo and not proceeding with the construction. While this option may seem ideal from an extreme environmental standpoint as it avoids interference with existing conditions, it

comes with significant drawbacks. Firstly, the proponent's proposal would not receive necessary approval from authorities, leading to a halt in the project. This would result in losses for both the proponent and the community at large, impacting socio-economic aspects negatively. Therefore, while the "no project" alternative may seem environmentally favourable, it is the least preferred from a socio-economic and partly environmental perspective due to its potential adverse effects on stakeholders and development opportunities. Some of the direct impact of the alternative include:

- The economic status of Kenyans would remain unchanged
- The local skills would remain underutilized (in terms of labor provision)
- Increased poverty and crime in Kenya due to lack of job opportunities
- The water administrative sector would continue to suffer due to lack of enough office space within the Coastal region.

4.2 Relocation Option

Relocating the proposed project for constructing the Coast Water Works Development Agency Office Block is indeed considered an alternative to mitigate potential environmental and social impacts. However, in the present circumstances, relocating the project is not feasible. The primary reason for this is that the proponent has already obtained consent to utilize the proposed site for development. Acquiring an alternative site would be a costly endeavour, considering the expenses involved in securing new approvals, conducting additional assessments, and adjusting project plans to fit a new location. Moreover, the current site may have been chosen strategically based on various factors such as accessibility, infrastructure availability, and alignment with agency objectives. Therefore, while relocation could theoretically reduce certain impacts, practical constraints and existing approvals make it impractical and financially burdensome at this stage of the project.

4.3 Waste Water/sewage Management Alternative

The following available technologies can be alternatives to be considered:

- Use of constructed/artificial wetland
- Use of septic tank and/or bio-digesters
- Use of stabilization ponds/lagoons

- Use of waste treatment plants such a Bio-box or the Vex-P system
- Connection to the municipal council sewage system
- Use of conservancy tanks, partial treatment and pumping to a municipal council sewage system

The available and feasible alternative to sewage and waste water management is the connection to the Mombasa Water Supply and Sanitation Company's system

4.4 **Demolition Alternatives**

4.4.1 No-Action Alternative

The 'no-action/project' alternative, which serves as a baseline for comparative analysis, must be included where the environmental impact of taking the proposed action is too high compared to the impact of not taking the proposed action. The "No project" alternative option in respect to the proposed project implies that the status quo is maintained. This option is the most suitable alternative from an extreme environmental perspective as it ensures non-interference with the existing conditions. Under "No project" option, the proponent's proposal would not receive necessary approval from Authorities. Under "no action" the demolition would not take place consequently the proposed development would not be enacted. In this situation the no project alternative would hinder development hence halting the economic development in the region, the issue of lack of enough office space for CWWDA leading to poor service delivery.

4.4.2 Relocation Option

Relocating the proposed project is indeed considered as an alternative to minimize environmental impact. However, in the current situation, relocation is not feasible due to the nature of demolition activities. Demolition can only occur at the existing site where the structures are present, making it impractical to relocate the project to another location. This limitation is inherent in the process of demolition, as it involves dismantling and removing existing buildings or structures, which cannot be replicated elsewhere. Therefore, while relocation may be a viable option in other scenarios, it is not applicable in this context where demolition is a necessary part of the project.

4.4.3 Renovating and Extending the Existing Structures

Advising the proponent to renovate and extend the current structures instead of demolishing them is indeed a valid consideration. However, this approach may not fully realize the potential benefits of constructing a new structure with modern design features and technologies. A new structure could incorporate ambient spaciousness, accommodate new technologies like vertical landscaping, natural lighting, natural ventilation, and ensure efficient energy and water utilization. It's important to note that the structures marked for demolition are described as very old and unfashionable, which could lead to dilapidation and pose a safety hazard in the future. Therefore, while renovation and extension may seem like a cost-effective option initially, the long-term implications, both in terms of safety and functionality, should be carefully evaluated. Balancing the desire for modern amenities and sustainability with practical considerations such as safety and cost-effectiveness will be crucial in making an informed decision regarding the project's direction.

4.4.4 Options for Demolition Methods

There are several main methods and techniques for demolition, each with its own advantages and applications:

a) Top-Down Methods using Jackhammers, Percussive, or Hydraulic Breakers:

Top-down demolition methods are versatile and effective for various types of structures. Equipment such as jackhammers and hydraulic breakers are commonly used in these methods, offering advantages such as reduced vibration from jackhammers and decreased noise from hydraulic breakers. However, machine-mounted percussive breakers and large machinery used for toppling or breaking structures may not provide significant reductions in dust, noise, or vibration emissions. While these methods may not be exclusively employed, it's prudent to consider a combination of them in a worstcase scenario at the demolition site. This approach ensures thorough planning and preparedness for any potential environmental impacts while acknowledging the efficacy of top-down methods in efficiently dismantling concrete and masonry structures.
b) Wrecking Ball:

While a wrecking ball method, involving a large steel ball swung by a crane, is effective for demolishing large structures with open areas, it may not be suitable in cases where buildings have substantial steel reinforcement. This method is generally more suitable for dilapidated buildings with less structural complexity, as the impact of the swinging ball can efficiently break apart weaker materials. However, when structures have significant steel reinforcement, the wrecking ball's impact may not effectively break through these reinforced areas, making the method less applicable and potentially inefficient. Therefore, alternative demolition techniques that can handle steel-reinforced structures may need to be considered in such cases to ensure a thorough and successful demolition process.

c) Implosion:

Controlled explosions strategically placed within the structure cause it to collapse inward. This method requires careful planning to avoid damage to surrounding buildings.

d) Saw Cutting and Drilling:

Cutting through concrete and steel using specialized saws and drills. This method is precise and used for selective demolition.

e) Non-Explosive Demolition Agents:

Chemical agents are applied to weaken and break down concrete without explosives. It's used in areas where noise and vibration need to be minimized.

f) Thermal Lance:

A high-temperature cutting tool that melts and cuts through metal. It's used for cutting steel beams and columns.

g) Water Jet:

High-pressure water jets are used to cut through concrete and metal. It's effective for precision cutting and in areas where sparks and heat are a concern.

Each method has its suitability depending on factors like the type of structure, surrounding environment, safety considerations, and the desired level of precision. Potential polluting impacts in the form of noise, vibration and dust can be reduced by

using methods such as circular saw cutting, wire saw cutting, and stitch drilling which are effective for all structures and can reduce vibration, noise and dust. According to the proposed project Non-Explosive method is the most efficient considering the setup of the structures to be demolished.

4.4.5 Option for Removal of Waste

The options for removal of waste relevant to this site include the use of conventional Lorries. It is envisaged that during the peak of demolition process small to heavy vehicles would be required to remove waste from the Site. Potential dust arising from the loading and movement of road vehicles on the site can be controlled by a range of practical mitigation measures (e.g. vehicle washing, haul road damping) familiar to the construction industry. In addition, assessments indicate that additional waste disposal road vehicles could be absorbed into the surrounding road network without undue inconvenience. Therefore, disposal of waste by road is the preferred option.

4.5 Alternatives to Achieving Green Building

The areas of concern may be categorized broadly as follows:

- Proper and efficient use of resources. These include power, water and other sources of energy
- Reducing waste and pollution
- Improving occupant health

Green building can take on various forms. From the basic office level to the national level, efforts are being put to reduce reliance on the costly fossil fuels. Some of the methods that can be adopted in this include:

i. Use of Renewable Energy

Office environments are witnessing a shift towards sustainable energy practices, mirroring the broader trend seen in residential settings. Solar panels are becoming a prevalent choice, facilitated by the accessibility and simplicity of installation. This technology's widespread adoption is bolstered by the ease with which panels can be set up, encouraging more offices to embrace solar power. As businesses and institutions navigate towards greener practices, the adoption of renewable energy sources like solar

power for water heating (mandated by current regulations) and wind energy for security lighting is highly recommended. These measures not only align with legal requirements but also contribute to a more sustainable and environmentally conscious office setup, reflecting a commitment to responsible energy management.

ii. Adoption of Water Harvesting, Treatment and Re-Use

In the context of office spaces and their associated infrastructure, incorporating water treatment and re-use practices is paramount, especially in large-scale projects like the proposed one. This approach not only helps in cost-cutting measures but also meets the expectations of environmentally conscious clientele seeking green and sustainable compounds throughout the year. An effective water treatment system involves collecting and treating used water in dedicated collection tanks strategically placed within the premises. The treated water can then be reused for essential purposes such as irrigation of lawns and flushing toilets, contributing significantly to water conservation efforts.

Therefore, the adoption of sewage treatment systems like the bio-box is imperative to ensure efficient water management within the office premises. Additionally, water harvesting methods should be prioritized, utilizing tanks and water pans in areas with available space, along with creating trenches in gardens to capture runoff water effectively. It's essential to integrate rainwater harvesting systems seamlessly into the proposed project to maximize water conservation and sustainability practices, aligning perfectly with the green initiatives expected in modern office setups.

iii. The Use of Plants or Vegetation

Integrating plants into the office environment serves multiple purposes, including acting as natural water towers to help replenish groundwater levels. Particularly in hot climates, incorporating plants can effectively regulate temperatures, creating a cooler and more comfortable atmosphere within the premises. Therefore, it's advisable for the project proponent to prioritize establishing a robust vegetation cover around the development. This not only contributes to environmental sustainability but also enhances the aesthetic appeal of the office space while providing natural cooling benefits, ultimately creating a healthier and more pleasant working environment for occupants.

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iv. Adoption of Natural Lighting and Ventilation

Incorporating strategic elements like well-placed windows and porches can significantly enhance natural lighting within the office space. Sunlight is a valuable resource that not only reduces the need for artificial lighting but also creates a more vibrant and inviting atmosphere. Similarly, the inclusion of sunroofs has become a popular trend, allowing ample sunlight to enter rooms and further enhancing the natural lighting experience. These approaches align perfectly with green building practices, emphasizing the importance of utilizing natural resources efficiently. By maximizing natural light through thoughtful design elements such as windows, porches, and sunroofs, the proposed project can reduce energy consumption, promote sustainability, and create a more comfortable and productive workspace for occupants.

CHAPTER 5 POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK

5.1 Overview

This chapter outlines the policy, legal, regulatory and institutional framework in Kenya particularly for environmental management, protection and assessment applicable to the proposed Project.

The development of infrastructure projects involves various laws, by-laws, regulations, Acts of parliament, and policy documents. These statutes cannot be encompassed under a single heading.

The project will be subject to laws, regulations, guidelines and standards of the Government of Kenya the African Development Bank (sectoral Intervention Framework on water and sanitation 2014-2018). Note that wherever any of the laws contradict each other, the Environmental Management and Coordination Act (EMCA) prevail.

5.2 Environmental Policy Framework

The proposed investments will be implemented within provisions of various government policies as summarized in Error! Reference source not found. below

Table 5-1: Environmental Policy Framework

No	Policy	Applicability
1.	Constitution of	The CoK at Article 43 (1) provides that every person has the right - (b) to accessible and
	Kenya 2010	adequate housing, to reasonable standards or sanitation; and, (d) to clean and safe water in
		adequate quantities. These provisions cover oblige state organs and bind them to provide not just
		the high quality or clean and safe water but also adequate quantities to all people that they will
		serve.
		In addition, 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.
		Relevance
		The constitution of Kenya provides for sound management and sustainable development of all of
		Kenya's projects, both public and private investments. It also calls for the duty given to the Project
		proponent to cooperate with State organs and other persons to protect and conserve the
		environment as mentioned in Part II.
2.	Kenya Vision	This is the current national development blueprint for the period 2008 to 2030. The vision has
	2030	three pillars – economic, social, and political. It is recognized that Kenya is a water-scarce country
		but stated (Kenya, 2007: 115) that the Vision for the water and sanitation sector is "to ensure
		water and improved sanitation services availability.
		Relevance

No	Policy	Applicability
		The project will directly contribute towards the achievement of the objectives of the vision under
		the environment and social pillar through the provision of the planned water and sanitation
		development services.
3.	National Land	Chapter 2 of the policy is linked to constitutional reforms; regulation of property rights is vested in
	Policy 2003,	the government by the Constitution with powers to regulate how private land is used to protect the
		public interest. The Government exercises these powers through compulsory acquisition and
		development control. Compulsory acquisition is the power of the State to take over land owned
		privately for a public purpose. However, the Government must make prompt payment of
		compensation.
		Chapter 4 of the land policy under Environmental Management Principles, the policy provides
		actions for addressing environmental problems such as the degradation of natural resources, soil
		erosion, and pollution. For the management of the urban environment, it provides guidelines to
		prohibit the discharge of untreated waste into water sources by industries and local authorities; it
		also recommends appropriate waste management systems and procedures, including waste and
		waste water treatment, reuse, and recycling.
		The policy goes further to advocate for environmental assessment and audit as a land
		management tool to ensure environmental impact assessments and audits are carried out on all
		and developments that may degrade the environment and take appropriate actions to correct the
		situation. Public participation has been indicated as key in the monitoring and protection of the
		environment. Chapter 4 further advocates for the Implementation of the polluter pays principle

No	Policy	Applicability
		which ensures that polluters meet the cost of cleaning up the pollution they cause, and
		encourages industries to use cleaner production technologies.
		Relevance
		The project proponent shall implement the ESMP to ensure that the environment within the project
		area and adjacent areas are not polluted by the subsequent activities during the construction and
		operational phases. Health and safety measures will have to be maintained with the proximity to
		affected rivers. The proponent will also ensure that any affected land owner is promptly
		compensated
4.	National	The strategy paper recognizes that Kenya is a water-scarce Country and offers a variety of
	Climate	strategies for ensuring that the resource is utilized in ways that recognize that it is a finite
	Change	resource. The paper also argues that interventions in the water sector should take a participatory
	Response	approach involving different water users including gender groups, socioeconomic groups,
	Strategy,	planners, and policy makers in water resource management (Kenya, 2010: 53).
	2010	Relevance
		These principles will also apply to the sanitation initiatives discussed in this ESIA.
5.	The National	The goal of the policy is to ensure a better quality of life for present and future generations
	Environment	through sustainable management and the use of the environment and natural resources.
	Policy, 2013	The objectives of the Policy are <i>inter alia</i> :
		Provide a framework for an integrated approach to planning and sustainable management of
		Kenya's environment and natural resources;
		Strengthen the legal and institutional framework for good governance, effective coordination, and

No	Policy	Applicability
		management of the environment and natural resources; and
		Ensure sustainable management of the environment and natural resources, such as unique
		terrestrial and aquatic ecosystems, for national economic growth and improved livelihoods.
		Some of the guiding principles in the implementation of the policy include:
		Environmental Right: Every person in Kenya has a right to a clean and healthy environment and
		a duty to safeguard and enhance the environment;
		Right to Development: The right to development will be exercised taking into consideration
		sustainability, resource efficiency, and economic, social, and environmental needs;
		Sustainable Resource Use: Environmental resources will be utilized in a manner that does not
		compromise the quality and value of the resource or decrease the carrying capacity of supporting
		ecosystems; and
		Public Participation: A coordinated and participatory approach to environmental protection and
		management will be enhanced to ensure that the relevant government agencies, county
		governments, private sector, civil society, and communities are involved in planning,
		implementation, and decision-making processes.
		Relevance
		In chapter 8 an ESMMP is provided, the proponent and contractor should ensure it is
		implemented to ensure that the ecosystems are not destabilized by the subsequent Project
		activities.
6.	Kenya	This Policy aims at ensuring that the youth play their role alongside adults in the development of
	National	the Country. The National Youth Policy visualizes a society where youth have an equal

No	Policy	Applicability
	Youth Policy	opportunity as other citizens to realize their fullest potential.
	2006	Relevance
		Proposed Sanitation Projects will provide direct employment to the youth as required by the
		Policy.
7.	The National	The Policy envisions a clean, healthy and economically prosperous Kenya free from sanitation
	Environmental	and hygiene related diseases and seeks to ensure universal access to improved sanitation, clean
	Sanitation and	and healthy environment by 2030. It is the outcome of reviews to address limitations of the
	Hygiene	National Environmental Sanitation and Hygiene Policy published in 2007. The Policy takes a
	Policy-2016-	rights-based approach and redirects efforts of the government at national and county level
	2030	towards achieving the Kenya Vision 2030 and the global Sustainable Development Goals (SDGs).
		The strategy developed in the Policy that will not only enable all in Kenya to enjoy their right to
		highest attainable standards of sanitation but also to a clean and healthy environment as
		guaranteed by the Constitution of Kenya 2010. It puts emphasis on increasing public and private
		sector investment through public-private partnerships. The Policy is divided into seven Chapters:
		Introduction and Background (1); Situation Analysis (2); The Policy Context (3); Policy Direction
		and Principles (4); Policy Strategies and Measures (5); Institutional Framework (6);
		Implementation Framework (7).
		The Policy articulates and clarifies the roles and responsibilities of the many stakeholders and
		agencies involved in the sanitation sector, spelling out the national and county Governments
		commitments to increasing investment in sanitation and creating an enabling environment. To
		address institutional fragmentation and financing bottlenecks, the Policy provides for the

No	Policy	Applicability
		establishment of the National Environmental Sanitation Coordination and Regulatory Authority
		(NESCRA) and the National Sanitation Fund (NASF). To ensure its effective implementation, a
		national environmental sanitation and hygiene strategy (NESHS), National Environmental Health
		and Sanitation Bill and county environmental sanitation and hygiene strategic and investment
		plans (CESHSIPs) will be prepared.
		Relevance
		Implementing the Project will directly contribute to the achievement of the Policy

5.3 Overview of the relevant Legislation

The Legislation are presented in the Table below:

Table 5-2: Overview of the Legislation

No	Policy	Applicability
1.	The	The Act provides for the establishment of a legal and institutional framework for the management
	Environmental	of the environment and for matters connected therewith and incidental thereto. Just as in the new
	Management	constitution, Part II of EMCA confers to every person the right to a clean and healthy environment
	and	and to its judicial enforcement. The new Constitution and EMCA therefore obligates the project's
	Coordination	Executing Agency and Contractor to work in a clean environment and not to contravene the right
	Act	of any person within its zone of influence, to this entitlement. EMCA has provided for the
	Amendment	development of several subsidiary legislations and guidelines which govern environmental
	2015	management and are relevant to the project implementation. These include:
		The Environmental (Impact Assessment and Audit) Regulations, 2009 Legal Notice No. 101
		The Environmental Impact Assessment and Audit Regulations state in Regulation 3 states that
		"the Regulations should apply to all policies, plans, programmes, projects and activities specified
		in Part IV, Part V and the Second Schedule of the Act.
		Part III of the Regulations indicates the procedures to be taken during preparation, submission
		and approval of the environmental project report.
		Part 4(1) of the Regulation further states that: "no Proponent shall implement a project"
		Likely to have a negative environmental impact; or
		For which an environmental impact assessment is required under the Act or these Regulations,

No	Policy	Applicability
		unless an environmental impact assessment has been concluded and approved in accordance
		with these Regulation.
		Relevance
		This EIA report has been compiled to comply with EMCA and the Environmental (Impact
		Assessment and Audit) Regulations, 2003.
		The Environmental Management and Coordination (Waste Management) Regulations, 2006
		Legal Notice No. 121
		These Regulations were published in the Kenya Gazette Supplement No. 69, Legislative
		Supplement No. 37, and Legal Notice No. 121 of 29th September, 2006. The regulations provide
		details on management (handling, storage, transportation, treatment and disposal) of various
		waste streams including:
		Domestic waste;
		Industrial waste;
		Hazardous and toxic waste;
		Pesticides and toxic substances;
		Biomedical wastes; and
		Radioactive waste.
		Regulation No. 4 (1) makes it an offence for any person to dispose of any waste on a public
		highway, street, road, recreational area or in any public place except in a designated waste
		receptacle. Regulation 5 (1) provides categories of cleaner production methods that should be
		adopted by waste generators in order to minimize the amount of waste generated and they

No	Policy	Applicability
		include:
		Improvement of production process through
		Conserving raw materials and energy;
		Eliminating the use of toxic raw materials and wastes;
		Reducing toxic emissions and wastes.
		Monitoring the product cycle from beginning to end by
		Identifying and eliminating potential negative impacts of the product;
		Enabling the recovery and re-use of the product where possible,
		Reclamation and recycling and
		Incorporating environmental concerns in the design and disposal of a product.
		Regulation 6 requires waste generators to segregate waste by separating hazardous waste from
		non- hazardous waste for appropriate disposal. Regulation 15 prohibits any industry from
		discharging or disposing of any untreated waste in any state into the environment. Regulation 17
		(1) makes it an offence for any person to engage in any activity likely to generate any hazardous
		waste without a valid Environmental Impact Assessment license issued by NEMA.
		Relevance
		The proposed project, during construction phases will generate wastes, which will need to be
		disposed of as per the guidelines in the regulations.
		The Environmental Management and Coordination (Water Quality) Regulations, 2006 Legal
		Notice No. 120
		These Regulations were published in the Kenya Gazette Supplement No. 68, Legislative

No	Policy	Applicability
		Supplement No. 36, and Legal Notice No. 120 of 29th September 2006. The Regulations provides
		for sustainable management of water resources including prevention of water pollution and
		protection of water sources (lakes, rivers, streams, springs, wells and other water sources).
		It is an offence under Regulation No. 4 (2), for any person to throw or cause to flow into or near a
		water resource any liquid, solid or gaseous substance or deposit any such substance in or near it,
		as to cause pollution. Regulation No. 11 further makes it an offence for any person to discharge or
		apply any poison, toxic, noxious or obstructing matter, radioactive waste or other pollutants or
		permit the dumping or discharge of such matter into the aquatic environment unless such
		discharge, poison, toxic, noxious or obstructing matter, radioactive waste or pollutant complies
		with the standards for effluent discharge into the environment.
		Relevance
		The proponent should ensure that waste is handled, stored, transported and disposed as per this
		regulation.
		The Environmental Management and Coordination (Noise and Excessive Vibration
		Pollution) (Control) Regulations, 2009 Legal Notice No. 61
		These regulations were published as legal Notice No. 61 being a subsidiary legislation to the
		Environmental Management and Co-ordination Act, 1999. The regulations provide information on
		the following:
		Prohibition of excessive noise and vibration;
		Provisions relating to noise from certain sources;
		Provisions relating to licensing procedures for certain activities with a potential of emitting

No	Policy	Applicability
		excessive noise and/or vibrations and
		Noise and excessive vibrations mapping.
		According to regulation 3 (1), no person shall make or cause to be made any loud, unreasonable,
		unnecessary or unusual noise which annoys, disturbs, injures or endangers the comfort, repose,
		health or safety of others and the environment. Regulation 4 prohibits any person to (a) make or
		cause to be made excessive vibrations which annoy, disturb, injure or endanger the comfort,
		repose, health or safety of others and the environment; or (b) cause to be made excessive
		vibrations which exceed 0.5 centimeters per second beyond any source property boundary or 30
		meters from any moving source.
		Regulation 5 further makes it an offence for any person to make, continue or cause to be made or
		continued any noise in excess of the noise levels set in the First Schedule to these Regulations,
		unless such noise is reasonably necessary to the preservation of life, health, safety or property.
		Regulation 12 (1) makes it an offence for any person to operate a motor vehicle which (a)
		produces any loud and unusual sound; and (b) exceeds 84 dB(A) when accelerating. According to
		sub-regulation 2 of this regulation, No person shall at any time sound the horn or other warning
		device of a vehicle except when necessary to prevent an accident or an incident. Regulation 13
		(1) provides that except for the purposes specified in sub-Regulation (2) there under, no person
		shall operate construction equipment (including but not limited to any pile driver, steam shovel,
		pneumatic hammer, derrick or steam or electric hoist) or perform any outside construction or
		repair work so as to emit noise in excess of the permissible levels as set out in the Second
		Schedule to these Regulations.

No	Policy	Applicability
		Regulation 19 (1) prohibits any person to carry out activities relating to fireworks, demolitions,
		firing ranges or specific heavy industry without a valid permit issued by the Authority. According to
		sub-regulation 4, such permit shall be valid for a period not exceeding three months.
		Relevance
		The contractor for civil works will be required to ensure compliance with the above regulations in
		order to promote a healthy and safe working environment throughout the construction phase. This
		shall include regular inspection and maintenance of equipment and prohibition of unnecessary
		hooting of vehicles.
		The Environmental Management and Coordination (Conservation of Biological Diversity
		and Resources, Access to Genetic Resources and Benefit Sharing) Regulations, 2006
		Legal Notice No. 160
		Part II of Regulations, section 4 states that no person shall engage in any activity that may have
		adverse impacts on ecosystems, lead to introduction of exotic species or lead to unsustainable
		use of natural resources without an EIA license. The regulation puts in place measures to control
		and regulate access and utilization of biological diversity that include among others banning and
		restricting access to threatened species for regeneration purposes. It also provides for protection
		of land, sea. Lake or river declared to be a protected natural environmental system in accordance
		to section 54 of EMCA, 1999.
		Relevance
		During the construction phase of proposed project, there will be removal of the existing natural
		vegetation. For this to occur, the relevant authority, NEMA in this case, will require a detailed EIA

No	Policy	Applicability
		on the proposed project and projected impacts before issuing a license for commencement.
		Other relevant EMCA 1999 to be considered during construction and operation of the
		project are;
		Environmental Management and Coordination (Wetlands, River Banks, Lake Shores and Sea
		Shore Management) Regulation, 2009.
		Environmental Management and Coordination (Fossil Fuel Emission Control) Regulations, 2006
		The Environmental Management and Coordination (Controlled Substances) Regulations, 2007
		Legal Notice No. 73.
		Relevance to the Project
		EMCA 2015 and above listed regulations shall form the main statutory instruments which will
		guide the implementation of the project so that any likely adverse impacts that could be caused by
		the project are promptly mitigated as recommended in this assessment. This report is also in
		compliance with the requirement of the EIA/EA regulations.
2.	Water Act	The Act vests the responsibility of developing water and Sanitation infrastructure (sewerage and
	2016	water supply) to Water Works Development Agency, in this case represented by Athi Water Works
		Development Agency. Section 73 of the Act allows a person with a license to supply water
		(licensee) to make regulations for purposes of protecting against degradation of sources of water,
		which he is authorized to take. Under the Act, the licensee could be a local authority, a private
		Trust or an individual and the law will apply accordingly under the supervision of the Regulatory
		Board.
		Section 75 and sub-section 1 allows a licensee for water supply to construct and maintain drains

No	Policy	Applicability
		and other works for intercepting, treating or disposing of any foul water arising or flowing upon
		land for preventing water belonging to the licensee or which the is authorized to take for supply
		from being polluted. However, if the proposed works will affect or is likely to affect any body of
		water in the catchment, the licensee shall obtain consent from the Water Resources Management
		Authority.
		Relevance to the Project
		This Act shall be relevant during both construction and operation phases of the project whereby
		the contractor and proponent shall ensure that all relevant water resources are not polluted from
		both liquid and solid wastes.
3.	Water	The regulation has set prescription of water use activities; issue of approvals, permits and
	Resources	authorizations for water use and waterworks; guidelines on surface water, including declaration of
	Regulations,	a watercourse, wetlands, land reclamation, water use for irrigation and Works Associated for
	2021	protection and control of fish; groundwater development, including borehole and issue of specific
		permits and authorizations; water quality monitoring and liquid waste disposal, including control of
		water pollution, water quality monitoring; inspection and controls concerning waterworks; water
		use charges, including penalties for misuse or for over-abstraction; roles and powers of water
		resource users associations and basin water resources committees; identification of protected and
		designated groundwater conservation areas; composition of reserve; categories of water sector
		professionals and contractors and issue of related permits and licenses. A water resource user
		association shall have a gender mainstreaming and environmental approach.
		Relevance

No	Policy	Applicability
		The project will ensure that the river riparian areas are respected and are not interfered with.
4.	County	Part II of the Act empowers the county government to be in charge of functions described in
	Government	Article 186 of the constitution, (county roads, water and Sanitation, Health). Part XI of the Act vest
	Act No. 17 of	the responsibility of planning and development facilitation to the county government with
	2012	collaboration with national government. This arrangement has been adopted for interventions in
		order not to conflict with provisions of the Kenyan Constitution.
		Relevance
		The project once commissioned shall be handed over to MOWASSCO which is a water utility
		company.
6.	Occupational	This legislation provides for protection of workers during construction and operation phases. It is
	Health and	tailored at implementation of the EHS plan in compliance with the relevant sections of this Act.
	Safety Act	The EMP prepared under this assessment has provided for specific health and safety aspects to
	(OSHA 2007)	be complied with during implementation of the project.
		Subsection 18 - Sanitary conveniences
		Sufficient and suitable sanitary conveniences for persons employed in the factory/ work places
		shall be provided, maintained and kept clean, and effective provision shall be made for lighting the
		conveniences and where persons of both sexes are, such conveniences shall afford proper
		separate accommodation for persons of each sex.
		Subsection 21 – Prime movers
		Every flywheel directly connected to any prime mover and every moving part of any prime mover,
		shall be securely fenced, whether the flywheel or prime mover is to be situated in an engine -

No	Policy	Applicability
		house or not . Head and tailrace of every water wheel and of every water turbine shall be securely
		fenced. Every part of electric generators, motors and rotary converters and every flywheel directly
		connected thereto shall be securely fenced unless it is in such a position or of such construction
		as to be safe to every person employed or working in the premises as it would be if securely
		fenced.
		Subsection 22 -Transmission Machinery
		Every part of transmission machinery shall be securely fenced unless it is in such a position or of
		such construction as to be safe to every person employed or working in the premises, as it would
		be if securely fenced.
		Efficient devices or appliances shall be provided and maintained in every room or place where
		work is carried on by which the power can promptly be cut-off from transmission machinery in that
		room or place.
		Every machine intended to be driven by mechanical power shall be provided with an efficient
		starting and stopping appliance, the control of which shall be in such a position as to be readily
		and conveniently operated by the person operating the machine.
		Subsection 25 - Construction and maintenance of fencing
		All fencing or other safeguards provided in pursuance of the foregoing provisions shall be of
		substantial construction, constantly maintained, and kept in position while the parts required to be
		fenced or safe guarded are in motion or in use except when any such parts are necessarily
		exposed for examination and for any lubrication or adjustments shown by such examination to be
		immediately necessary.

No	Policy	Applicability
		Subsection 13 – Cleanliness
		Every factory/work place shall be kept in a clean state and free from effluent arising from any
		drain, sanitary convenience or nuisance.
		Subsection 14 – Overcrowding
		A factory/ work place shall not while work is carried on be so overcrowded as to cause risk of
		injury to the health of the persons employed therein. Standard cubic space allowed for every
		person in a workroom should not be less than three hundred and fifty cubic feet.
		Section 51- Air pollution
		Preventive measures shall be put in place during operation of the project to prevent fumes and
		exhaust gases from entering into the atmosphere.
		Relevance to the Project
		The Act provides Occupational Health and Safety guidelines which shall be followed by both the
		contractor and supervising consultant during implementation of the project in order to avoid
		injuries and even loss of life to workers and neighboring community.
7.	The Public	Part IX section 115 of the Act states that no person/institution shall cause nuisance or condition
	Health Act	liable to be injurious or dangerous to human health. Section 116 requires Local Authorities to take
	(Cap.242)	all lawful, necessary and reasonably practicable measures to maintain their jurisdiction clean and
		sanitary to prevent occurrence of nuisance or condition liable for injurious or dangerous to human
		health. Such nuisance or conditions are defined under section 118 and include nuisances caused
		by accumulation of materials or refuse which in the opinion of the medical officer of health is likely
		to harbor rats or other vermin.

No	Policy	Applicability
		Relevance to the Project
		The Act provides guidelines 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 1999 for
		utmost compliance. The Act also shall be applied to ensure that the food that is provided to the
		workers during construction of the project meets the safety requirements.
8.	The Penal	Section 191 of the Penal Code makes it an offence for any person or institution that voluntarily
	Code (Cap.	corrupts, or foils water for public springs or reservoirs rendering it less fit for its ordinary use.
	63)	Similarly, section 192 of the same act prohibits making the atmosphere in any place to make it
		noxious to health of persons/institution in dwellings or business premises in the neighborhood or
		those passing along a public way.
		Relevance
		The Contractor and the project proponent will be required to ensure strict adherence to the
		Environmental Management Plan throughout the project cycle in order to mitigate against any
		possible negative impacts associated with dust, noise and effluent discharge. This code is also
		applicable during the operation phase of the project.
9.	Employment	This is an Act of parliament that applies to all employees employed by any employer under a
	Act	contract of service. The Act came in operation in June 2008. Employment of children in the
		following forms is prohibited in the following sections of the Act:
		53. (1) notwithstanding any provision of any written law, no person shall employ a child in any
		activity that constitutes worst form of child labour.

No	Policy	Applicability
		56. (1) No person shall employ a child who has not attained the age of thirteen years whether
		gainfully or otherwise in any undertaking.
		(2) A child of between thirteen years of age and sixteen years of age may be employed to perform
		light work which is
		Not likely to be harmful to the child's health or development; and
		Not such as to prejudice the child's attendance at school, his participation in vocational orientation
		or
		training Programs approved by Minister or his capacity to benefit from the instructions received.
		Relevance
		CWWDA and the contractor will need to understand the requirements of the Act during
		employment. Equal opportunity should be given to all both men and women so as to ensure
		equity.
10.	Work Injury	It is an act of Parliament to provide for compensation to workers for injuries suffered in the course
	Benefits Act	of their employment. It outlines the following:
	(WIBA)	Employer's liability for compensation for death or incapacity resulting from accident;
		Compensation in fatal cases;
		Compensation in case of permanent partial incapacity;
		Compensation in case of temporary incapacity;
		Persons entitled to compensation and methods of calculating the earnings;
		No compensation shall be payable under this Act in respect of any incapacity or death resulting
		from a deliberate self-injury;

No	Policy	Applicability
		Notice of an accident, causing injury to a workman, of such a nature as would entitle him for
		compensation shall be given in the prescribed form to the director.
		Relevance
		The Contractor will need to abide by all the provisions of WIBA.
11.	Sustainable	The Act aims at fulfilling the following;
	Waste	Promote Sustainable Waste Management: The primary goal of the act is to establish a
	Management	framework for waste management that is environmentally sustainable and socially responsible,
	Act, 2022	ensuring the proper handling and disposal of waste.
		Improve Public Health: By ensuring a clean and healthy environment, the act seeks to
		enhance the overall health and well-being of all Kenyan citizens. Proper waste management
		reduces the risk of diseases and environmental contamination.
		Reduce Pollution: The act targets the reduction of pollution in various forms, including air,
		land, freshwater, and marine pollution. This helps protect natural ecosystems and preserves the
		quality of air, water, and soil.
		Effective Waste Service Delivery: It aims to promote and ensure efficient and effective
		delivery of waste services to all Kenyan communities, making waste management more
		accessible and reliable.
		Green Economy and Employment: By creating an enabling environment for employment
		in the green economy related to waste management, recycling, and recovery, the act contributes
		to job creation and economic growth in these sectors.
		Environmentally Sound Infrastructure: It establishes an environmentally sound

No	Policy	Applicability
		infrastructure and system for sustainable waste management, which includes the development of
		waste disposal facilities and recycling centers with minimal negative impacts on the environment.
		Circular Economy Practices: The act promotes circular economy practices, which
		emphasize recycling, reusing, and reducing waste, leading to more sustainable and resource-
		efficient methods of production and consumption.
		Resource Efficiency: By mainstreaming resource efficiency principles in sustainable
		consumption and production practices, the act encourages responsible and efficient use of
		resources, reducing waste and conserving raw materials.
		Responsible Public Behavior: Finally, the act seeks to inculcate responsible public
		behavior in waste management and environmental stewardship. It emphasizes the importance of
		individual and community responsibility in ensuring a cleaner and more sustainable environment.
		The Sustainable Waste Management Act of 2022 in Kenya is a comprehensive policy framework
		that aims to transform the waste management landscape in the country. It focuses on
		sustainability, public health, pollution reduction, economic growth, and environmental
		responsibility to create a cleaner, healthier, and more sustainable future for all Kenyan citizens.
		Relevance to the Project
		The Act provides guidelines 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 1999 for
		utmost compliance.

No	Policy	Applicability
12	NCA Act,	The National Construction Authority Act of 2011 plays a pivotal role in regulating and coordinating
	2011	the development of the construction industry in the country. This legislation was enacted to
		address various aspects of construction activities, including standards, licensing, and oversight,
		with the overarching goal of promoting professionalism, safety, and quality within the sector.
		One of the key objectives of the Act is to ensure that construction projects adhere to established
		standards and codes. This involves setting guidelines for construction materials, methods, and
		practices to safeguard structural integrity, environmental sustainability, and public safety. By
		enforcing these standards, the Act aims to mitigate risks associated with substandard construction
		work, thereby protecting the interests of stakeholders and the general public.
		Another crucial aspect of the Act is the licensing and registration of construction practitioners and
		firms. It establishes mechanisms for certifying professionals such as architects, engineers,
		contractors, and project managers, ensuring that they possess the requisite qualifications and
		competence to undertake construction projects. This accreditation process not only enhances
		industry professionalism but also instills trust and confidence among clients and investors.
		Furthermore, the Act mandates the National Construction Authority (NCA) to coordinate and
		oversee the development of the construction sector. This includes monitoring industry trends,
		promoting capacity building initiatives, facilitating technology transfer, and fostering collaboration
		among stakeholders. By serving as a central authority for construction-related matters, the NCA
		plays a vital role in driving sectoral growth, innovation, and sustainable development.
		Relevance to the Project
		The project Management shall liaise with NCA to ensure licensed contractors are the ones to be

No	Policy	Applicability
		awarded construction contracts.
13	The National	An Act to provide for the establishment of a National Council for Disability, its composition,
	Council for	functions and administration for the promotion of the rights of persons with disabilities
	Disability Act,	set out in international conventions and legal instruments, the Constitution and other
	2003/ The	laws, and for other connected matters.
	Disability Act	Relevance to the Project
	2010	People with disability interest including access to the project facilities will be catered for including
		constructing ramps in all entrance points, friendly ablution and WASH facilities, as well as access
		to employment.
14	HIV/AIDS	Part 11 Section 7 requires HIV and AIDs education in work places; specifically provision of basic
	Prevention	information and instruction on HIV/AIDS prevention and control.
	and Control	Relevance to the Project
	Act, 2006	During the implementation phase, the contractor to a large extent is expected to create awareness
		to the employees and local community on issues related to HIV/AIDs.

No	Policy	Applicability
15	Physical	The County Governments are empowered under Section 29 of the Act to prohibit or control the
	Planning Act,	use and development of land and buildings in the interest of proper and orderly development of an
	Cap 286	area.
	(Revised	Relevance to the Project
	2012)	The project Management is required to seek development approval from the Mombasa County
		Physical planning departments for the civil works (construction activities).

5.4 Treaties and Conventions

No	Treaty	Applicability
1	Kyoto Protocol	The Kyoto Protocol, a landmark international agreement under the United Nations Framework
		Convention on Climate Change (UNFCCC), introduced modified emissions goals aimed at
		stabilizing greenhouse gas concentrations in the atmosphere. The protocol's primary objective
		was to prevent dangerous interference with the Earth's climate system by setting targets for
		reducing emissions of key greenhouse gases from industrialized nations. By establishing binding
		commitments for emission reductions, Kyoto aimed to mitigate the impacts of climate change and
		foster global cooperation in addressing environmental challenges.
		Relevance to the Project
		By aligning with the emissions goals outlined in the Kyoto Protocol, the CWWDA proposed project
		can adopt measures to mitigate its carbon footprint. This may include incorporating renewable
		energy sources, implementing energy-efficient technologies, optimizing transportation practices,
		and adopting sustainable waste management strategies. These actions not only contribute to
		global climate change mitigation efforts but also demonstrate the project's commitment to
		environmental responsibility and long-term sustainability.
2	U.N.	The UNFCCC sets an overall framework for intergovernmental efforts to tackle the challenge
	Framework	posed by climate change. It recognizes that the climate system is a shared resource whose
	Convention on	stability can be affected by industrial and other emissions of carbon dioxide and other greenhouse
	Climate	gases. The Convention enjoys near universal membership, with 191 countries having ratified.

	Change	Under the Convention, governments:
		-Gather and share information on greenhouse gas emissions, national policies and best practices;
		-Launch national strategies for addressing greenhouse gas emissions and adapting to expected
		impacts, including the provision of financial and technological support to developing countries;
		and
		-Cooperate in preparing for adaptation to the impacts of climate change.
		The Convention entered into force on 21 March 1994. Kenya signed the UNFCCC on 12th July
		1992, ratified it on 30th August 1994 and started enforcing it on 28th November 1994.
		Relevance to the Project
		The project proponent should observe the above convention in all its operations throughout the
		project cycle and especially reducing the releasing of greenhouse gases by avoiding open
		burning of waste.
3	Convention on	The Convention on Biological Diversity (CBD) is a legally binding international agreement with
	Biological	three core objectives. Firstly, it aims to conserve the diversity of life on Earth, including species,
	Diversity	ecosystems, and genetic resources. Secondly, it promotes the sustainable use of biological
	(CBD)	components, emphasizing responsible resource management for human needs and economic
		development. Lastly, the CBD seeks fair and equitable sharing of benefits derived from genetic
		resources, particularly benefiting indigenous communities with traditional knowledge. Adopted in
		1992, the CBD remains a crucial framework for global cooperation in preserving biodiversity while

	supporting sustainable development and ensuring social equity.
	Relevance to the Project
	The proponent should ensure conservation of existing flora and fauna for the interest of the current and future generation.

5.5 African Development Bank Operation Safeguards

5.5.1 African Development Bank Polices on Environment and Social Operational Safeguards

The African Development Bank's environmental policy framework is strongly anchored in the concept of sustainable development. This concept defines sustainability as "development that meets the needs of the present without compromising the needs of the future".

The AfDB Operational Safeguards (OS) include:

5.5.2 OS 1: Environmental and Social Assessment.

This OS governs the process of determining a project 's environmental and social category and the resulting Environmental and Social Assessment requirements. The requirements cover the scope of application, categorization, use of Strategic Environmental and Social Assessment (SESA) and Environmental and Social Impact Assessment (ESIA) where appropriate, Environmental and Social Management Plans, climate- change vulnerability, public consultation, community impacts, treatment of vulnerable groups, including indigenous peoples, and grievance procedures.

The OS requires:

- Screening of the project for environmental and social impacts including climate change impacts, potential adaptation and mitigation measures, and the vulnerability of populations and their livelihoods—to determine the specific type and level of environmental and social assessment;
- Scoping of the project's components, including delineating the project's geographic and temporal area of influence, consideration of alternatives, and assessment of cumulative impacts, where relevant. Scoping activities also determine the range of likely potential risks and impacts and also determines whether specific requirements of the Bank's OSs apply. All relevant direct and indirect environmental and social risks and impacts, including those specifically covered the other Operational Safeguards would be addressed in an integrated manner;

- Consideration of real alternatives to the project's location and/or design to avoid adverse impacts. The mitigation hierarchy to be applied includes: if avoidance is not possible, reduce and minimize potential adverse impacts; if reduction or minimization is not sufficient, mitigate and/or restore; and as a last resort compensate for and offset;
- Assessment to comply with the relevant legislation and standards applicable in the local jurisdiction, bearing in mind the equivalence of standards with those of the Bank. Assessment to also take into consideration national or regional- level programming documents that are under implementation or in preparation;
- Assessment process to support and strengthen existing country systems for environmental, climate, and social risk management, including those specifically related to OSs 2-5, such as systems and institutions covering resettlement, biodiversity protection, pollution control, and labor standards;
- The assessment to be conducted according to the principles of proportionality and adaptive management. The level of assessment and management required should be proportionate to the level of risk that the project poses as identified during categorization and scoping—and the management measures adopted should be capable of being adapted to changing circumstances during the full project cycle;
- Assessment to include the development of a comprehensive and implementable ESMP with a realistic timeframe, incorporating the necessary organizational capacity (including further training requirements) and financial resources to address and manage the environmental and social risks that may occur during the full project cycle;
- Categorization of projects following the principle of using the appropriate type and level of environmental and social assessment for the type of operation. The categories include:
 - Category 1- projects likely to induce significant and/or irreversible adverse environmental and/or social impacts, or to significantly affect

environmental or social components that the Bank or the borrowing country considers sensitive

- Category 2: Projects likely to have detrimental site-specific environmental and/or social impacts that are less adverse than those of Category 1 projects. Likely impacts are few in number, site specific, largely reversible, and readily minimized by applying appropriate management and mitigation measures or incorporating internationally recognized design criteria and standards
- Category 3: Projects which do not directly or indirectly affect the environment adversely and are unlikely to induce adverse social impacts. They do not require an environmental and social assessment. Beyond categorization, no action is required.
- Category 4: Projects which involve Bank lending to financial intermediaries that on-lend or invest in subprojects that may produce adverse environmental and social impacts
- The Proposed Project component will trigger this safeguard. The Project is Category 2 since its site specific with moderate interaction with the physical, biological and social setting within the immediate surroundings.

5.5.3 OS 2: Involuntary Resettlement: Land Acquisition, Population Displacement and Compensation.

This safeguard consolidates the policy commitments and requirements set out in the Bank's policy on involuntary resettlement, and incorporates a number of refinements designed to improve the operational effectiveness of those requirements. In particular, the OS embraces comprehensive and forward-looking notions of livelihood and assets, to account for their social and cultural dimensions, as well as their economic ones. It also adopts a progressive understanding of community and common property that emphasizes the crucial need to maintain social cohesion, community structures and the social inter- linkages that common property provides.

The Proposed Project will not triger this safeguard since there will be no resettlement of population since the consent to use the land for the proposed project is already issued.

5.5.4 OS 3: Biodiversity and ecosystem services

This safeguard aims to conserve biological diversity and promote the sustainable use of natural resources. It also translates the commitments in the Bank's policy on integrated water resources management into operational requirements. It reflects the importance of biodiversity in the African continent and the value to the population of key ecosystems. Its content has benefited from recent joint work among the MDBs to improve their approach to assessing how the potential impacts of projects on different types of habitats can be avoided, minimized or offset.

Project activities have no direct linkage to biological diversity and ecosystem services. OS 3 shall be applied in isolated minor cases of biodiversity and ecosystem services.

5.5.5 OS 4: Pollution prevention and control, hazardous materials and resource efficiency.

This safeguard covers the range of key impacts of pollution, waste, and hazardous materials for which there are agreed international conventions, as well as comprehensive industry-specific and regional standards, including greenhouse gas accounting, that other multilateral development banks follow. It also introduces a GHG emission threshold for projects to trigger a detailed analysis of feasible reduction or offset measures and reporting on emission levels. Borrowers or clients are required to consider measures to improve resource efficiency.

The project shall utilize raw materials both during construction and operation phase that could result to pollution of biophysical environment if not handled appropriately. Project activities shall not result to significant amount of greenhouse gases. The EMSP has proposed measures of ensuring that any greenhouse gas generated shall be collected and flared appropriately. The project triggers OS 4.
5.5.6 OS 5: Labour conditions, health and safety

This safeguard establishes the Bank's requirements for its borrowers or clients concerning workers' conditions, rights and protection from abuse or exploitation. It also ensures greater harmonization with most other multilateral development. It also covers workers' organizations, and avoidance of child or forced labour and occupational health and safety.

The Project shall involve workers both during construction and operation phases of the project. This policy reads together with OSHA 2007 and IFC Performance Standards. Labour and Working Conditions shall form integral instruments to be used in ensuring that health, safety and working conditions of both workers and community is maintained. The project triggers OS 5.

The following table summarizes the project activities checked against the operational safeguards, and how the project activities are likely to trigger each of the operational safeguards.

Policy	Triggered by the	Discussions
	project	
OS 1: Environmental and	Yes	The project components will trigger EA
Social Assessment.		safeguards and is Category 2 since its site
		specific with moderate interaction with the
		physical, biological and social setting within
		the immediate surroundings.
OS 2: Involuntary	NO	The Office block will be constructed within
Resettlement: Land		the premises of Mombasa Water Company
Acquisition, Population		where consent has already been issued.
Displacement and		

Table 5-3: Summary of operational safeguards and whether it's being triggered

Compensation.		
OS 3: Biodiversity and	No	Project activities have no direct linkage to
Ecosystem Services.		biological diversity and ecosystem services
		OS 1 shall be applied in isolated minor
		cases of biodiversity and ecosystem
		services.
OS 4: Pollution Prevention	Yes	The project shall utilize raw materials both
and Control, Greenhouse		during construction and operation phase
Gases, Hazardous		that could result to pollution of biophysical
Materials and Resource		environment if not handled appropriately.
Efficiency.		Project activities shall not result to
		significant amount of greenhouse gases,
		EMSP has proposed measures of ensuring
		that any greenhouse gas produced is
		collected and flared appropriately.
		The project design has ensured that the
		both clean
		water and sewer flows through the
		distribution lines by gravity hence reducing
		the need for pumping.
OS 5: Labour Conditions,	yes	The Project shall involve workers both
Health and Safety.		during construction and operation phases of
		the project. This policy read together with
		OSHA 2007 and IFC Performance
		Standards 2 on Labour and Working
		Conditions shall form integral instruments to
		be used in ensuring that health, safety and
		working conditions of both workers and
		community is maintained.

5.6 Project Implementation Institutional Structure

CWWDA has established implementation units for the project with project engineers in charge for various county projects, the Agency hires on case-by-case basis the services of environment specialist to oversee implementation of the EMSP developed for projects.

I. The Contractor

The contractor will be required to establish an environmental office to continuously advise on environmental components of the project implementation. Elements in the environmental and social management plan are expected to be integrated in the project with appropriate consultations with CWWDA through the supervising environmental expert. The environmental officer of the contractor is also expected to fully understand the engineering and management aspects of the project for effective coordination of relevant issues.

II. The Supervisor

The supervisor will be engaged by CWWDA (as the project proponent) to ensure effective implementation of the environmental management plan. It is expected that supervisor engages the services of an environmental expert who should in return understand the details of the recommendations on environment management and especially the proposed action plans, timeframes and expected targets of the management plan. The environmental supervisor expert should also be the liaison person between the contractor and CWWDA on the implementation of environmental concerns as well as issues of social nature associated with the Project.

CHAPTER 6 STAKEHOLDER CONSULTATION

6.1 Introduction

Public consultation is useful for gathering environmental data, understanding likely impacts, determining community and individual preferences, selecting project alternatives and designing viable and sustainable mitigation and compensation plans. Public consultation process for the Project took place at the scoping stage and the ESIA stage. The main objective for the consultation process was to involve the community at the very early stages so as to identify likely negative impacts and find ways to minimize negative impacts and enhance positive impacts of the project.

6.2 stakeholder engagement plan

The overall purpose of this Stakeholders Engagement Plan is to ensure that a consistent, comprehensive and coordinated approach is taken in stakeholder engagement and Project disclosure throughout the project implementation phase. It is further intended to demonstrate the commitment to engage each stakeholder during the implementation phase of the Project. This is in line with the financier African Development Bank (AFDB) Principles on Stakeholder Engagement (2015).

In line with Stakeholders Engagement Plan best practice, stakeholder engagement is conducted on the basis of timely, relevant, and accessible information. In this way, the Stakeholders Engagement Plan seeks to ensure that stakeholders are given sufficient opportunity to voice their opinions and concerns, and that these concerns influence project decisions. The Stakeholders Engagement Plan therefore:

- Provides the approach to stakeholder engagement, showing how this will be fulfilled throughout the project cycle;
- Identifies the main categories of stakeholders and how they will be included in the implementation of the Project; and
- Identifies the ways to document engagement undertaken with the stakeholders throughout the project.

6.2.1 Objectives of Stakeholder Engagement

The objectives of engaging stakeholders during project Implementation phase include:

- Ensuring Understanding: An open, inclusive and transparent process of engagement and communication will be undertaken to ensure that stakeholders are well informed about the proposed Project. Information will be communicated early and as detailed as possible.
- Involving Stakeholders in the Assessment: Stakeholders were included in the scoping of issues and identification of sampling points especially in areas that had high pollution. They also played an important role in providing local knowledge and information for the baseline survey of sampling points and community involvement in the Project.
- Building Relationships: Through supporting open dialogue, engagement will help to establish and maintain a productive relationship between the implementation team and stakeholders.
- Managing Expectations: It is important to ensure that the proposed Project does not create, or allow, unrealistic expectations to develop amongst stakeholders about potential Project benefits. The engagement process will serve as a mechanism for understanding and managing stakeholder and community expectations, by disseminating accurate information in an easily understandable manner. The exercise will not involve handing over money during implementation. The Stakeholders will be made to understand that the Project is for their own benefit and falls within the mandate of Stakeholder.
- **Ensuring Compliance**: The process is designed to ensure compliance with both local laws requirements and international best practice.

6.2.2 REGULATORY CONTEXT

6.2.3 Policy, Legal and Institutional Framework for Public Participation

The Republic of Kenya has the following polices and legislations related to citizen/stakeholder engagement which covers both the right to access information and participation in policy development and decision-making.

The Constitution entrenches a wide range of social, political, economic and cultural rights and revolutionizes the entire system of political governance by devolving authority to county governments and decreeing the need for citizen participation in decision making. It enshrines the right to access information and makes principles of international laws and treaties ratified by Kenya an integral part of the country's municipal law. The Constitution in Article 232 further outlines transparency and timely provision to the public of accurate information as one of the values and principles of public service, going further to bind all state agencies at both national and county government levels and state corporations to these values and principles.

Moreover, Article 69 outlines the obligations of the government in respect to the environment, asserting that "The State shall ensure sustainable exploitation, utilization, management and conservation of the environment and natural resources and ensure the equitable sharing of the accruing benefits". Under its sixth chapter on leadership and integrity, the constitution has entrenched values and principles that should govern the operations of all entities and public officers within the state and called for adherence of the same. The Constitution introduces changes in the public finance management framework in Kenya, outlining principles of public finance such as equity, openness and accountability through public participation in financial matters.

Under the Social Pillar of Vision 2030, i.e., the Country's commitment to invest in the people of Kenya, Kenya's journey towards prosperity is envisioned to involve the building of a just and cohesive society, which enjoys equitable social development in a clean and secure environment. The Political Pillar, -Moving to the Future as One Nation, states in part that Kenya is committed to "adherence to the rule of law as applicable to a modern, market-based economy in a human rights-respecting state" (emphasis in italics, added). Furthermore, Vision 2030 is anchored on aspirations to better define and clarify land tenure rights and perhaps by extension facilitate the identification of carbon rights and associated equity in accruing benefits.

The Climate Change Act (2016) provides guidance for application of public participation, access to information and representation in all sectors of the economy, at both national and country level for climate change adaptation and mitigation Environmental Impact Assessment (EIA), Review Guide for Communities, Dec. (2014). The Environmental,

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Management and Coordination Act (1999, 2015) has mandatory requirements on public participation. This review guide seeks to enhance public participation in the project cycle management under the Environmental (Impact Assessment and Audit) Regulations, (2003). The guide targets communities falling within the project areas to assist them in reviewing and commenting on Environmental Impact Assessment

(EIA) reports. It gives a step-by-step guidance and direction on how communities can actively participate in the EIA process through provision of clear responses to public participation calls to ensure that their needs and aspirations are taken into account.

Environmental Management and Coordination Act (EMCA) 2009 set out general principles, and the principle of public participation in the development of policies, plans and processes for the management of the environment is made mandatory in the Act.

Environment Impact Assessment Guidelines and Administrative Procedures required public participation and disclosure of project information during EIA procedure in the development of projects, policies, plans and programmes.

6.2.4 International Requirements

AfDB Operation Safeguards of 2013 states that the Project implementer shall be responsible for carrying out and providing evidence of meaningful consultation (i.e. consultation that is free, prior and informed) with Stakeholders/communities likely to be affected by the Project impacts, and with other local stakeholders. The key focus of meaningful consultation is inclusivity; namely, the approach taken needs to ensure that all groups that are directly or indirectly affected by the Project are embraced within the consultation process on equal terms, and that all groups are given the capacity to express their views with the knowledge that these views will be put into consideration. OS 1 also states that the implementer of the Project shall be responsible for ensuring that all Stakeholders are engaged and satisfied.

The AfDB operation safeguard requires that stakeholder engagement starts at an early stage during project preparation and that it should continue throughout. The results of such engagement should be adequately reflected in project during the Project implementation, as well as in the preparation of project documentation. In all cases, consultation should be carried out after, or in conjunction with, the relevant Stakeholders.

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Once all stakeholders are identified, the developer should develop and implement a Stakeholder Engagement Plan (SEP) that is proportionate to the project risks, impacts and development stage, and that is tailored to the characteristics and interests of the affected Stakeholders. The advantage of having a SEP is;

- a.) That it provides a formal commitment,
- b.) Defines responsibilities
- c.) Ensures that adequate funds are made available to carry out the program of consultation.

A Stakeholders Engagement Plan typically describes measures to allow the effective consultation and participation of all affected parties, a description of any consultations that have already taken place, and a definition of the reporting procedures. A Grievance Mechanism should also be developed by the implementer, and it will detail the procedures that a project will establish for managing complaints and grievances especially from the stakeholders involved in the implementation of the Project.

6.2.5 Stakeholders' identification and analysis

6.2.6 Identification of Project Stakeholders

Project stakeholders are defined are persons or groups who directly or indirectly interact with the project, as well as those who may have interests in a project and/or the ability to influence its outcome, either positively or negatively (IFC's Handbook on Stakeholder Engagement (2007)).

Stakeholder identification and analysis is an essential component of effective and meaningful stakeholder engagement activities. The objective of this step was to provide a general overview of all stakeholders.

Key stakeholders' groups that were identified are parties were directly interlinked and have a stake in the Project. A participatory and consultative approach that involves all stakeholders was adopted, to ensure optimal participation of key stakeholders at all stages of the assignment and enrich the outcomes of the study. The identified stakeholders were divided into Primary, Secondary and Tertiary. This is shown in the table below;

Table 6-1: Stakeholder Categories

No.	Name	Category
Primar	y Stakeholders	
	Mombasa Water Supply and Sanitation	Water Service Provider
	Company	
	National Government Administrative Office	National Government
	Deputy County Commissioners (DCC),	
	Chiefs/ Assistant chiefs	
	Mombasa County Government,	County Government
	Village Elders	Community Representatives
	Area Residents (Residential Associations)	Community
	Community Groups	Community
Second	dary Stakeholders	
	Physical Planning Officer	National/County Government
	Sub-county Lands Registrar	Agencies and Ministries

You

1. The methodology for stakeholder analysis

This stakeholder analysis was conducted as follows:

2. Identification of Stakeholders

The first stage in stakeholder relations involved researching individuals and third-party organizations that may be relevant to the project. This included groups/organizations that are directly affected by the Project (positively or negatively), have influence or power over its success, and have an interest in its successful or unsuccessful conclusion. This was done through search in traditional media and industry reports and analysing online conversations occurring in the digital space to identify individuals, groups or organizations that that have interest in water and sewerage within the basin.

3. Analyzing Stakeholders

Once potential stakeholders were identified the consultant analysed them to establish their interest, involvement in the project, their points of intersection with our objectives,

their level of activity in the project or their key points of contact. The consultant also did a network with others through phone and in-person meetings to gain more insight.

4. Prioritize Stakeholders

Having achieved a better understanding of the stakeholder ecosystem, the next step for the contractor was to prioritize the actors. The following was considered:

- Relevance
- Visibility
- Credibility
- Influence
- Reach

5. Contacting Stakeholders

Once the stakeholders had been identified, researched, and prioritized, the final step involved making contact with them and exploring their interest in potential future collaboration and to build opportunities that will demonstrate a win/win proposition for both organizations. Efforts were made to identify the contact person within the organization.

6.2.7 Stakeholder engagement program

The Stakeholder Engagement Program is a formal document which outlines the plan to communicate with stakeholders who have interest or potential interest in a project. It helps engage all the stakeholders in the project and, by doing so, help the project become sustainable and inclusive. It is important to keep in mind that SEP implementation is a dynamic process and some stakeholders and their interests might change over time or new stakeholders and information emerges, and hence the SEP will be updated accordingly.

6.2.8 Engagement Methods and Tools to be used

The Project intend to utilize various methods of engagement that will be used as part of its continuous interaction with the stakeholders. For the engagement process to be effective and meaningful, a range of various techniques need to be applied that are specifically tailored to the identified stakeholders. Methods used for consulting with statutory officials may be different from a format of liaising with the local communities.

The suggested methods would be used to communicate and consult with the stakeholders:

- Online Platform: A dedicated webpage/platform will be created for the project to enable users to find all the information about the project. The goal of the platform is to provide core information about the project and to ensure accessible online feedback project stakeholders and to support several stakeholder engagement activities. The platform will be used to support face-to-face consultations through digital feedback surveys at regular intervals and will provide a dedicated portal for the identified sub-projects to inform the population and engage them in providing feedback and support monitoring through the implementation cycle. All stakeholder consultations events will be advertised through this platform.
- Stakeholder consultations/virtual consultations: Consultations will be organized during the project design stage and project implementation. Stakeholder consultations will be organized for project monitoring reports. Moreover, consultations will be held on quarterly basis as part of the stakeholder engagement process during the project cycle.
- Workshops: The workshops with stakeholders will be carried out. The main topics of these workshops will include disseminating project monitoring results and project progress.
- In-depth interviews with relevant experts: Expert's views and recommendations on various project issues will be conducted as part of the social assessment. They will continue to be used as part of specific project activities.
- Leaflets/ informative notes: Leaflets with information that might present more interest for stakeholders will be developed and distributed in the meetings/ stakeholder consultations.
- Letters: introduction letters, invitation letter during stakeholder meetings will be an instrument used in order to facilitate the Project implementation process through good collaboration between the implementing entity and other stakeholders.

- **Reports:** periodic reports will be distributed to keep informed the main stakeholders of the Project.
- E-mails: To facilitate communication between implementing entity and the stakeholders.

The format of every consultation activity should meet general requirements on accessibility, i.e., should be held at venues that are easily reachable and inclusiveness, i.e., engaging all segments of the stakeholders. If necessary, logistical assistance should be provided to enable participants to attend public meetings scheduled by the project. All the meetings and consultations will be taken while ensuring an observation of MOH guidance on hand washing.

6.2.9 Stakeholder Engagement Plan

Stakeholder engagement is an inclusive process that must be conducted throughout the project cycle. The table below presents key stakeholders' engagement activities to take place during the project implementation and closure.

In case of stakeholder consultation "events" (whether virtual and in face -to-face meetings), the CWWDA will strive to provide relevant information to stakeholders with enough advance notice (10-15 business days) so that the stakeholders have enough time to prepare to provide meaningful feedback. CWWDA will gather written and oral comments, review them and report back to stakeholders on how those comments were incorporated, and if not, provide the rationale within 10-15 working days from the stakeholder consultation event. All consultation events will be widened in terms of outreach through the opportunity to use on-line feedback through the platform.

STAKEHOLDER CATEGORY	SUBGROUP	RESPONSIBILITIES
GOK & AGENCIES	Ministry of Land, Transport, Infrastructure, Urban Development and Housing (MTIHUD-State department of infrastructure)	Offering continuous advise and co-ordination of project activities

Table 6-2: Project Stakeholders and their Responsibilities

STAKEHOLDER	SUBGROUP	RESPONSIBILITIES
CATEGORY	-Ministry of Treasury	-Ensure financing of project administration activities.
	- Ministry of Labour and Social protection	- Ensure citizen and workers safety, protection of minors, and Contractor compliance with the country's Labour laws during project execution.
	-NEMA	-Providing oversight and monitoring of project activities to ensure environmental sustainability and compliance with environmental standards established under EMCA.
	-DOSH	-Compliance with safety and health legislation (OSHA, WIBA) and promotion of safety and health of workers
Supervision Consultant	Resident Engineer and team	 -Preparation of Engineering Designs and Procurement Documents. -Construction Supervision. -Support the engagement processes and help address stakeholder concerns where necessary.

STAKEHOLDER CATEGORY	SUBGROUP	RESPONSIBILITIES
COMMUNITY	-Residents/settlements where project activities will be performed -Farmers -Vulnerable groups -Administrators of Public enterprises-e.g. Schools and Religious institutions -Leaders of community associations-e.g. business communities.	-Active participation during project lifecycle -Support project in implementation of vulnerable groups programs
Contractors	-Contractors -Suppliers of goods and services -Transportation workers	-Implementation of good construction practice, OH&S measures and environmental protection, -Quick intervention and elimination of risks that cause adverse incidents -Efficient and timely execution of construction work.
Vulnerable Groups/ People	-Disabled -Elderly -Single parents -Orphans	-Expressing their opinions, suggestions and specific proposals during the implementation of project activities
Civil Society Organizations	-National -Community based. -Faith Based -Self-Help groups	Following the implementation of the vulnerable groups' projects and raising concerns regarding the environmental and social issues that need to be mitigated.

STAKEHOLDER	SUBGROUP	RESPONSIBILITIES
CATEGORY		
Local Authorities	County Governments Municipal Boards Townships Local Communities Public Enterprises	-Support the project and Project Implementation Team (PIT) for efficient implementation of the vulnerable groups support -Adoption of the technical documentation for the realization of the project, -Issuing of sectorial comments for approval of the EIA Report -Supervision of construction activities -Ensuring proper access of the population to their homes -Ensuring the full implementation of OH&S and environmental standards during the construction activities.
Financial Institutions and Private Companies	-AfDB -Other financial Institutions -Suppliers of equipment -Transporters -Contractors/Providers of consultancy services	 Providing financial support for realization of the project, Following the implementation of the OH&S and environmental standards in all project phases, Public participation according to the AfDB OS1 Implementation of the OH&S and environmental standards in all project phases.

STAKEHOLDER CATEGORY	SUBGROUP	RESPONSIBILITIES
Other Interested Parties	-Media	-Publicity of the project
	-General public	through local radio
	-Workers	station, social media,
		newspaper
		-Providing information on
		the dynamics of
		performing the project
		activities,
		-Providing information
		about delays of the
		project during the
		execution of project
		activities,
		-Professional and
		efficient execution of the
		project activities in
		accordance with the
		Dynamic Plan.

6.3 AfDB Operational Safeguard 1 – Environmental and social assessment

The AfDB Environmental and Social Assessment safeguard policy, provides for stakeholders' participation during the consultation process so that affected communities and stakeholders have timely access to information in suitable forms about the Bank operations, and are consulted meaningfully about issues that may affect them. In line with this, the ESIA for the project is mandatory and it is regulated in line with the Banks policy OS 1.

6.4 Benefits of Public Consultation

6.4.1 Benefit to the Developer

- The developer is likely to benefit from local knowledge
- Costs may be saved as key issues are identified by the public and studies are focused on key issues as opposed to a broad range of issues;
- Measures to reduce adverse impacts and enhance benefits will be identified with stakeholders;
- Relations with the communities in the vicinity of the development are likely to be improved;
- Delays in decision making may be reduced because of good participation early in the process;
- The public are unlikely to raise objections to the project; and
- The developer's image and reputation is likely to be enhanced.

6.4.2 Benefit to Public

- Capacity is built through people playing an active role during the process. The skills learnt can be used in other community projects;
- Public rights are exercised and protected in participating; and
- Inputs are likely to influence the form and nature of the development and are likely to lead to better development that takes society's needs into account.

6.4.3 Benefit to Decision Makers

- Public participation is likely to improve decisions since there is access to a broader range of perspectives and opinion on the proposed rehabilitation/augmentation;
- The development is likely to be more sustainable as it takes people's needs and views into account; and
- The legitimacy of project commencement and implementation is likely to be improved.

6.4.4 Approach to Public Participation and Consultation

The Public consultation process involved visiting the project area and its environs. Project stakeholders were identified and consulted with the aim of informing them about the proposed project, collect their views on anticipated positive and/or negative impacts, get recommendations on how the adverse impacts can be mitigated or avoided, and gather local knowledge that would be useful to the proposed project.

6.4.5 Aims and Objectives of Stakeholders Consultation and Public Participation (CPP)

The aims and objectives of public involvement and consultation include:

- Informing stakeholders and members of public
- Gaining their views, concerns and values
- Taking account of public inputs in decision making
- Influencing project design
- Obtaining local knowledge
- Increasing public confidence
- Improving transparency and accountability in decision making
- Reducing conflict in the community

6.5 Stakeholder and Public Consultation

The main Key informants targeted in the consultations were both Government and private Institutions operating within the project area. Listening to stakeholder concerns and feedback is a valuable source of information that can improve project design and outcomes and help in identifying any impacts. Consultations and interviews are still in

progress with various stakeholders in the proposed project areas. The stakeholders were grouped into Primary and Secondary groups as shown in the Table 6-1 below

Table 6-3: Stakeholder Categories

No.	Name	Category
Primar	y Stakeholders	
	Mombasa Water Service and Sanitation	Water Service Provider
	Company	
	National Government Administrative Office	National Government
	Deputy County Commissioners (DCC),	
	Chiefs/ Assistant chiefs	
	Coast County Government,	County Government
	Village Elders	Community Representatives
•	Area Residents	Community
	Community Groups	Community
Second	dary Stakeholders	
	Physical Planning Officer	National/County Government
	Sub-county Lands Registrar	Agencies and Ministries

The key stakeholders included the Chiefs, DCCs and ACCS, Public sensitization meeting was held within the project area on 23rd March 2024 with the help of the respective local administration more so the area chiefs and assistant chiefs. The attendance lists and minutes of meetings are presented in Annex 3. A Grievance Redress Mechanism has been formulated and is attached at Annex 4.

Table 6-4: Summary of Public Meeting Held

No.	Date		Venue		Location	No.	of
						Participants	
1.	23 rd	March	Mombasa	Water	Nyali	Male: 13	
	2024		Office Comp	lex		Female: 10	
						Total: 23	

The following stakeholders were present in the meetings;

- Area chiefs
- Area assistant chiefs
- Village Elders
- Area Residents

6.5.1 Summary of Comments and Responses from the Public Sensitization Meetings and KII Meetings

Error! Reference source not found.Tables below present comments/ concerns that were raised during the public meetings and the responses that were given.

Table 6-5: Comments/ concerns raised during public meetings and the responsesgiven

Comments	Response
Residents expressed worry about	Consultants assured residents that a
potential traffic congestion during the	comprehensive traffic management plan
construction phase and increased traffic	would be implemented during construction
once the office block is operational.	to minimize congestion. They also
	committed to exploring alternative
	transportation options for workers to reduce
	traffic.
Many residents raised concerns about	Consultants acknowledged the concerns
noise and dust pollution generated by	about noise and dust pollution and
construction activities, affecting their	committed to implementing measures such
quality of life.	as noise barriers, dust control, and
	scheduling noisy activities during off-peak
	hours to mitigate these impacts.
Residents voiced concerns about the	Consultants assured residents that
environmental impact of the project,	environmental impact assessments would
including destruction of vegetation.	be conducted, and measures would be
	taken to destruction of vegetation. They

	committed to implementing erosion control
	measures and preserving green spaces
	where possible.
Some residents were worried about	Consultants emphasized their commitment
disruption to their daily lives, including	to open communication and engagement
increased noise and disturbance from	with the community throughout the project.
operational activities.	They assured residents that their concerns
	would be addressed promptly through
	barricading of the construction site to avoid
	disruption to their daily lives.

6.5.2 Photo log

Below are the Photographs taken during the preceding of the meetings and land owners' engagements





Figure 6-1: Public Consultation Meeting (Source Consultant Date: March 23rd 2024)

CHAPTER 7 ENVIRONMENTAL AND SOCIAL IMPACTS ASSESSMENT AND MITIGATION MEASURES

7.1 Introduction

This chapter identifies the potential environmental impacts as a result of the proposed project. Once the potential impacts of the proposed project were identified, the team went further to predict the nature of the impacts. Predictions are normally based on explicit assumptions about environmental processes, professional judgment and different value judgments expressed by various stakeholders during consultations. Determination of the significance of the potential impacts was based on the three broad categories of determining impact significance. Environmental impacts manifest at all stages of a project. This is because of the different project activities that inform particular actions which in turn act on environmental factors. The significance of these impacts is also varied. Impacts are categorized into;

- Impacts on biophysical environment;
- Health and safety impacts; and
- Social-economic impacts.

7.2 Definition and Classification of Environmental Impact

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 widespread 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.

7.3 Impact Significance

The purpose of this ESIA CPR is to identify the significant impacts related to the project under consideration and then to determine the appropriate means to avoid or mitigate those which are negative. Significant impacts are defined, not necessarily in order of importance, as being those which:

- Relate to protected areas or to historically and culturally important areas;
- Area of public concern and importance.
- Trigger subsequent secondary impacts.
- Elevate the risk to life threatening circumstances.
- Affect sensitive environmental factors and parameters.

7.4 Impact Scoring and Rating Criteria

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.

		Likelihood				
		1 Rare	2 Unlikely	3 Possible	4 Likely	5 Almost Certain
Consequences	5 Catastrophic	5 Moderate	10 High	15 Extreme	20 Extreme	25 Extreme
	4 Major	4 Moderate	8 High	12 High	16 Extreme	20 Extreme
	3 Moderate	3 Low	6 Moderate	9 High	12 High	15 Extreme
	2 Minor	2 Low	2 Moderate	6 Moderate	8 High	10 High
	1 Negligible	1 Low	2 Low	3 Low	4 Moderate	5 Moderate

Figure 7-1: Impact Scoring and Rating Criteria

7.5 Pre-construction phase positive impacts

7.5.1 Documentation and publicity

The project area will benefit significantly in terms of the intensive information gathering during the pre-project feasibility study and the pre-project EIA which will generate useful reports that will create important reference points for the area both for scientific research and planning activities.

7.5.2 Employment

Employment opportunities will be created in the development of project design by Architects design enginers, surveyors, environmentalist and contractor while establishing construction site.

7.6 Pre-Construction Phase Negative impacts

7.6.1 Influx of workers from other areas

The project area might experience an influx of construction workers from other areas.

Mitigation Measures:

• Effective community engagement and strong grievance mechanisms on matters related to labor

7.7 Demolition Phase Positive Impacts

During the demolition phase, several potential positive impacts to be accrued include:

7.7.1 Economic Stimulus

The demolition phase will requires hiring local labor and contractors, providing employment opportunities and stimulating the local economy.

7.7.2 Resource Recovery

The demolition will result in the recovery of valuable materials such as metals, wood, and concrete, which can be recycled or reused, reducing waste and environmental impact.

7.7.3 Improved Safety

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Demolishing the old or dilapidated structures will remove safety hazards, reducing the risk of accidents or injuries to the community and nearby properties.

7.7.4 Infrastructure Enhancement

Demolition will pave the way for new infrastructure development, such as roads, utilities, or green spaces, improving overall community infrastructure.

7.7.5 Environmental Benefits

The demolition activities will include the removal of hazardous materials like asbestos in one of the housing structures within the premises and lead paint that was previously used on the metalic tank, leading to improved environmental quality and health outcomes.

7.7.6 Urban Renewal

Removing outdated or blighted structures will contribute to urban revitalization, attracting investment, improving property values, and enhancing the aesthetics of the area.

7.7.7 Community Engagement

The demolition will involve community engagement and consultation, providing opportunities for stakeholders to voice their concerns, contribute ideas, and participate in decision-making processes.

7.7.8 Regulatory Compliance

The demolition projects will adhere to regulatory requirements and environmental standards hence, contributing to sustainable development and responsible urban planning.

7.8 Demolition Phase Negative Impacts

During the demolition phase outlined in the scope, there are several potential negative impacts to consider:

7.8.1 Environmental Contamination

Demolition of buildings with asbestos roofing can release harmful fibers into the air, posing health risks to workers and nearby residents. Improper handling and disposal of asbestos materials can lead to environmental contamination.

- Asbestos Survey: Conduct a thorough asbestos survey before demolition to identify areas with asbestos-containing materials (ACMs).
- Asbestos Removal by Licensed Professionals: Hire licensed asbestos removal contractors to safely remove and dispose of asbestos materials according to regulatory standards.
- Containment and Wetting: Use containment measures such as plastic sheeting and wetting down asbestos materials during removal to minimize fiber release.
- Personal Protective Equipment (PPE): Provide workers with appropriate PPE including respirators, disposable coveralls, gloves, and eye protection to prevent exposure to asbestos fibers.
- Air Monitoring: Conduct air monitoring before, during, and after asbestos removal to ensure airborne fiber levels are within permissible limits.
- Proper Waste Disposal: Dispose of asbestos waste in designated hazardous waste disposal sites following local regulations. Use sealed containers and labeling for transport.
- Worker Training: Train workers on safe handling and removal of asbestos, including proper procedures for containment, removal, and disposal.
- Community Notification: Notify nearby residents and stakeholders about the asbestos removal activities, potential risks, and safety measures in place.
- Regulatory Compliance: Adhere to relevant environmental and occupational health regulations and guidelines governing asbestos removal and disposal.

7.8.2 Waste Generation

Demolition activities generate a significant amount of waste, including debris from demolished structures, metallic tanks, pipes, and gutters. Improper disposal of this waste can contribute to landfill pollution and environmental degradation.

- Waste Segregation: Separate different types of waste materials such as concrete, metals, plastics, and hazardous substances during demolition to facilitate proper disposal and recycling.
- Recycling: Maximize recycling opportunities by sorting and recycling materials like concrete, metals, and plastics at recycling facilities instead of sending them to landfills.
- Hazardous Waste Handling: Identify and handle hazardous waste materials such as lead-based paints, asbestos, and chemicals according to regulatory guidelines. Use licensed contractors for hazardous waste disposal.
- Reuse of Materials: Explore opportunities to reuse salvaged materials like bricks, wood, and metals in future construction projects or for other purposes, reducing the demand for new materials.
- Waste Management Plan: Develop a comprehensive waste management plan that includes waste reduction strategies, recycling goals, proper disposal methods, and monitoring of waste streams.
- Landfill Minimization: Minimize the amount of waste sent to landfills by prioritizing recycling, reuse, and proper disposal of non-recyclable waste in designated landfill sites.
- Environmental Monitoring: Monitor environmental impacts of waste disposal activities, including soil and water quality, to ensure compliance with environmental regulations and minimize pollution.
- Education and Training: Provide education and training to workers on proper waste management practices, including waste segregation, handling, and disposal procedures. Encourage a culture of waste reduction and recycling onsite.

7.8.3 Disruption to Water Supply

The underground pipeline flowing water through the area is critical for supplying water to the local community. Demolition activities near the pipeline could disrupt water flow, leading to temporary shortages or interruptions in water supply.

- Pipeline Mapping: Conduct a thorough mapping and identification of the underground water pipeline before demolition begins to ensure awareness of its location and depth.
- Protective Barriers: Erect protective barriers or fencing around the pipeline to prevent accidental damage from heavy equipment, machinery, or debris during demolition.
- Safe Distance: Maintain a safe distance between demolition work areas and the pipeline to minimize the risk of direct impact or disturbance.
- Use of Non-invasive Methods: Use non-invasive demolition methods or techniques that minimize ground disturbance near the pipeline, such as controlled dismantling or hand demolition in sensitive areas.
- Regular Monitoring: Implement regular monitoring and inspection of the pipeline during demolition activities to detect any signs of damage or leaks promptly.
- Emergency Response Plan: Develop and implement an emergency response plan specific to pipeline damage, including procedures for immediate shutdown, containment of spills, and notification of relevant authorities.
- Qualified Personnel: Ensure that demolition contractors and workers are trained and qualified to work near underground utilities, including understanding the location and importance of the water pipeline.
- Coordination with Water Service Provider: Coordinate closely with local water authorities or utility companies responsible for the pipeline to obtain relevant information, permits, and guidance on protective measures.

7.8.4 Potential Hazards

Evacuating and relocating the four 40ft containers used as stores involves handling heavy equipment and materials, posing safety hazards for workers if not done carefully.

- Site Assessment: Conduct a detailed site assessment to identify potential hazards and obstacles that may affect the safe evacuation and relocation of the containers.
- Safety Training: Provide comprehensive safety training to workers involved in handling heavy equipment and materials, focusing on proper lifting techniques, equipment operation, and hazard awareness.
- Use of Appropriate Equipment: Use specialized equipment such as cranes, forklifts, and rigging tools designed for lifting and moving heavy containers safely.
- Load Calculation: Calculate the weight and distribution of the containers to determine the appropriate lifting capacity and rigging requirements for the equipment used in relocation.
- Securement: Ensure that containers are securely fastened and stabilized during transport to prevent shifting or tipping that could lead to accidents or injuries.
- Clear Communication: Maintain clear communication among workers, equipment operators, and supervisors throughout the evacuation and relocation process to coordinate movements and address any safety concerns promptly.
- Personal Protective Equipment (PPE): Require workers to wear appropriate PPE such as helmets, gloves, and safety boots to protect against potential hazards like falling objects or slips.
- Emergency Response Plan: Develop and implement an emergency response plan specific to handling accidents or incidents during container evacuation, including procedures for immediate medical assistance and reporting.

7.8.5 Soil and Groundwater Contamination

Demolition of structures with underground features like water wells and pipelines can lead to soil and groundwater contamination if proper precautions are not taken during demolition and excavation activities.

- Site Assessment: Conduct a thorough site assessment and survey to identify the locations of underground features such as water wells, pipelines, and other utilities before demolition activities commence.
- Protective Barriers: Erect protective barriers or fencing around underground features to prevent accidental damage or disturbance during demolition and excavation.
- Safe Demolition Techniques: Use controlled and precise demolition techniques that minimize ground disturbance near underground features. Avoid using heavy machinery directly above or near sensitive areas.
- Excavation Planning: Develop a detailed excavation plan that includes proper techniques for uncovering and accessing underground features without causing damage or contamination.
- Spill Prevention Measures: Implement spill prevention measures such as containment berms, silt fences, and absorbent materials around excavation areas to capture any potential spills or leaks during demolition.
- Waste Management: Properly handle and dispose of demolition debris, contaminated soil, and hazardous materials in accordance with environmental regulations and guidelines to prevent contamination of soil and groundwater.
- Monitoring and Testing: Conduct regular monitoring and testing of soil and groundwater quality before, during, and after demolition and excavation activities to detect any signs of contamination early.
- Emergency Response Plan: Develop and implement an emergency response plan specific to potential soil and groundwater contamination incidents, including procedures for containment, cleanup, and reporting to relevant authorities.

7.8.6 Noise and Air Pollution

Demolition activities, especially involving heavy machinery and equipment, can generate noise and air pollution, affecting the quality of life for nearby residents and workers.

Mitigation Measures:

Noise Control Measures:

- Use quieter equipment and machinery or install noise-reducing attachments to minimize noise levels during demolition.
- Schedule noisy activities during daytime hours and avoid disruptive activities during early morning or late evening hours.
- Erect sound barriers or acoustic enclosures around noisy equipment to reduce noise propagation to surrounding areas.
- Provide workers with hearing protection devices (e.g., earplugs or earmuffs) to mitigate noise exposure risks.

Dust and Air Pollution Control:

- Implement dust suppression measures such as water spraying or misting systems to reduce airborne dust particles generated during demolition.
- Use enclosed equipment with dust collection systems to capture and contain dust at the source.
- Ensure proper ventilation and air filtration systems in enclosed work areas to maintain air quality and minimize exposure to airborne pollutants.
- Monitor air quality regularly using air quality sensors or monitoring devices to assess the effectiveness of dust control measures.

Community Notification and Communication:

- Notify nearby residents and stakeholders in advance about planned demolition activities, potential noise, and air pollution impacts, and mitigation measures in place.
- Establish open communication channels with the community to address concerns, receive feedback, and adjust mitigation strategies as needed.

Compliance with Regulations:

- Adhere to local regulations and guidelines governing noise levels, air quality standards, and pollution control measures during demolition activities.
- Obtain necessary permits and approvals from relevant authorities and comply with recommended best practices for noise and air pollution mitigation.

Environmental Monitoring:

- Conduct regular monitoring of noise levels and air quality parameters (e.g., particulate matter, volatile organic compounds) to assess compliance with regulatory limits and identify areas for improvement.
- Keep records of monitoring results and implement corrective actions as necessary to maintain environmental standards and minimize impacts on surrounding areas.

7.8.7 Community Disruption

Demolition projects can disrupt the daily lives of nearby residents, causing inconvenience, traffic congestion, and potential safety concerns if not managed effectively.

- Inform nearby residents well in advance about the demolition schedule, expected duration, and potential impacts such as noise, dust, and traffic disruptions.
- Provide contact information for a dedicated project manager or liaison to address residents' concerns, receive feedback, and coordinate responses to issues promptly.
- Develop a comprehensive traffic management plan to minimize disruptions and congestion caused by demolition activities, including rerouting traffic when necessary.
- Coordinate with local authorities and transportation agencies to implement temporary traffic control measures, such as signage, detours, and flaggers, to ensure safe passage for pedestrians and vehicles.

- Employ noise mitigation measures such as using quieter equipment, scheduling noisy activities during off-peak hours, and installing sound barriers or enclosures around work areas.
- Implement dust suppression techniques such as water spraying, dust barriers, and covering debris piles to reduce airborne dust particles and improve air quality.
- Maintain clear signage and barriers around the demolition site to ensure public safety and prevent unauthorized access.
- Conduct regular safety inspections and hazard assessments to identify and mitigate potential safety risks to nearby residents, pedestrians, and motorists.
- Hold community meetings or forums to discuss the demolition project, address concerns, and provide updates on progress and mitigation efforts.
- Encourage open communication between project stakeholders, residents, and local community groups to foster collaboration and resolve issues collaboratively.
- Monitor environmental factors such as air quality, noise levels, and vibration impacts during demolition activities to assess compliance with regulatory standards and identify areas for improvement.
- Share monitoring results and mitigation measures with the community to demonstrate transparency and accountability in managing project impacts.

7.9 Construction Phase Positive Impacts

The following are the positive impacts during construction phase of the proposed Project:

7.9.1 Employment opportunities

The implementation of the proposed Project will create job opportunities for both skilled and unskilled workers, leading to improved living standards through increased earnings. The workforce will comprise casual labourers, plumbers, and engineers who will be engaged on-site for a specific duration. Additionally, semi-skilled, unskilled labourers, and formal employees will also find gainful employment during the construction phase.

The adoption of labour-intensive construction techniques will not only provide employment opportunities for the youth but also align with the government's initiatives aimed at job creation.

7.9.2 Creation of Wealth

The proposed development brings many opportunities in investment and procurement where the youth and people of Mombasa can compete to provide different goods and services to the proponent during construction of the proposed CWWDA office block. This in turn creates opportunities for entrepreneurship and wealth creation for the residents. The construction phase will attract temporary business such as food vendors who will benefit from the trade by selling the food to the construction workers. This will improve their living standards from their earnings.

7.9.3 Creation of a market for construction materials

The project will require materials, some of which will be sourced locally and some internationally. These include plant steel and plastic pipes, valves, cement, sand, hardcore and chemicals. This will provide a ready market for suppliers in and outside the project area.

7.9.4 Increased local incomes

The local community may get extra income from the sale of construction materials from their shops and firms.

7.9.5 Economic growth

Through the use of locally available materials during the construction phase for example masonry bricks, sand, cement, steel, pipes and others; the project will contribute towards growth of the country 's economy by contributing to the gross domestic product. The consumption of these materials, oil, fuel and others will attract taxes.

7.9.6 Injection of money into the local economy

A large sum of the Project money shall be released into the local economy due to the construction activities. It is envisaged that during construction a large number of downstream activities shall take place including but not limited to the following:

- Payments for skilled and unskilled labour;
- Purchases of construction materials; and
- Payments for local provisions including fuel, foods and accommodation.

7.10 Construction Phase Negative Impacts

7.10.1 Noise & vibration

The site preparation and construction phases of the development may likely have the most negative impact to the ambient noise and vibration in the development area. A number of measures may be undertaken by the Contractors to reduce the impact of noise on the existing and potential residents as well as the workers involved in the project. This is temporary, however, and the aim at this point is to make the increase in noise minimal as possible until this phase is complete. The cumulative impact of the construction activities occurring simultaneously may increase the noise and vibration levels in the area significantly.

Mitigation Measures:

- Access roads should selected for exclusive use of the transportation of workers, goods and materials. These roads should be sited in such a way that the noise from this movement affects as few of the existing residents as possible.
- Where possible silenced machinery and instruments should be employed to reduce the impact of noise on the existing residents and workers.
- Machinery, vehicles and instruments that emit high levels of noise should be used on a phased basis to reduce the overall impact. These pieces of equipment such as drills, graders and cement mixers should also be used when the least number of residents can be expected to be affected, for example during periods where most residents are at work or school.
- Construction hours should be limited to the hours of 8:00 a.m. and 6:00 p.m. daily.
- The delivery of raw materials must be limited to 8:00 a.m. and 6:00 p.m. daily.
- Provision of appropriate personnel protective equipment to the workers.

7.10.2 Dust Emissions
Dust will be emitted during excavation and related earthworks. Air borne particulate matter pollution is likely to occur during the site clearance, excavation and during the transport of construction materials. This is likely to affect site workers and the residents, in extreme situations leading to respiratory problems.

Mitigation Measures:

- Wet all active construction areas as and when necessary to lay dust;
- Use of dust control methods, such as covers, water suppression, or increased moisture content for open materials storage piles, or controls, including air extraction and treatment through a bug house or cyclone for material handling sources, such as conveyors and bins.
- Ensure that all material (sand and aggregate) stockpiled on the site to be used in construction activities are regularly sprayed to reduce the effects of wind whipping
- Ensure that all trucks carrying aggregate and sand are covered during delivery to the site.
- Earth moving be done under dump conditions as much as possible to prevent emission of dust into the air.
- Strict measures are to be applied for the handling of construction materials in powder form such as cement, lime, concrete additives, etc. and for the disposal of the packaging
- Excavation, handling and transport of erodible materials shall be avoided under high wind conditions or when a visible dust plume is present.
- Minimizing the number of motorized vehicles on use;

7.10.3 Vegetation Clearing, Soil Erosion and Sedimentation

Construction activities have the potential to clear vegetation and, loosen which can then be washed down into the lower areas (streams and valleys) and soil quality degradation is also likely to occur during construction as a result of disposal of construction materials on the adjacent lands. It is worth noting that the potential significant impact on flora in the area will be short term and reversible. No rare, threatened, critically endangered or endemic plant or animal species were observed.

Mitigation Measures

- Only clear vegetation that is absolutely necessary for the construction activities;
- Retain all mature trees (> 25 cm diameter at breast height during this phase of the development if possible;
- Avoid the use of Invasive Alien Species in the landscaping activities
- Determine access roads which are to be used by machinery used in the construction and site clearance phase of the development to avoid the unnecessary trampling of vegetation that will be maintained within the development area.
- Cement mixing should be done in a designated area away at a safe distance from storm water drains;
- Spilled cement or concrete should be collected and disposed away from natural water ways or storm water drainage;
- Re-vegetation of exposed areas around the site should be carried out rapidly in order to mitigate against erosion of soil through surface water runoff and wind erosion.

7.10.4 Solid Waste Generation

Solid waste generated during construction include papers used for packing, plastics, cuttings and trimmings off materials among others. Dumping around the site will interfere with the aesthetic status on the surrounding environment. This impact is short term. However, the disposal mechanism of the waste can have long term consequences. It is expected that the contractor should ensure full compliance with the EMCA Waste Management Regulations of 2006 as well as the following measures: -

- All solid waste will be collected at a central location of the site and will be stored temporarily until removal to an appropriately permitted disposal site in the vicinity of the site.
- No dumping within the surrounding area is to be permitted. Where potentially
 hazardous substances are being disposed of, a chain of custody document should
 be kept with the environmental register as proof of final disposal.

- Waste generated at the site should be segregated and disposed of in NEMA designated dumping site
- Wherever possible reusing and recycling should be carried out.
- A site waste management plan should be prepared by the contractor prior to commencement of construction works. This should include designation of appropriate waste storage areas, collection and removal schedule and identification of approved disposal site;
- Proper solid waste receptacles and storage containers should be provided, particularly for the disposal of lunch and drink boxes so as to prevent littering of the site.

7.10.5 Occupational safety and health impacts

The project is likely to bring a temporary influx of migrant workers. This may stimulate business in the project area and also propagate the spread of STI's including, HIV/AIDS. There could also be cases of unwanted pregnancies as the migrant workers interact and get into relationships with the local communities. Local services such as medical, water supplies sanitation and waste disposal can be over stretched by the sudden increase in population. Improper sanitation arrangements at the construction site can cause contamination of groundwater and pose a major health hazard, and outbreaks of diseases such as diarrhoea, cholera and typhoid.

Mitigation measures

Minimizing spread of the Corona virus, HIV/AIDS and other STI's due to the presence of migrant workers is meant to reduce the increase of HIV among the host community and among the project workers. The following measures should be put in place

- Sensitize the migrant workers on risky sexual behaviour.
- Have VCT services on site and encourage workers to undergo the same.
- Provision of protective devices such as condoms.
- Provision of hand washing points/ sanitizers
- Encourage wearing of masks
- Keeping social distance as recommended by the ministry of health

- Provision shall be made for employee facilities including shelter, toilets and washing facilities.
- Toilet facilities supplied by the contractor for the workers shall occur at a minimum ratio of Toilet per 30 workers (preferred 1:15).
- The exact location of the toilets shall be approved by the Public Health Department prior to establishment.
- Sanitation facilities shall be located within 100m from any point of work, but not closer than 50 m to any water body.
- All temporary/portable toilets shall be secured to the ground to prevent them toppling due to wind or any other cause.
- The contractor shall ensure that the entrances to toilets are adequately screened from public view.
- These facilities shall be maintained in a hygienic state and serviced regularly.
- Toilet paper shall be provided
- The contractor shall ensure that no spillage occurs when the toilets are cleaned or emptied and that the contents are removed from site to an approved disposal site.
- Discharge of waste from toilets into the environment and burying of waste is strictly prohibited.
- Wash areas shall be placed and constructed in such a manner so as to ensure that the surrounding areas are not polluted.

7.10.6 Site Related Oil Spills

During construction, oil spills may result from construction site equipment and storage, which may affect the flora, fauna, soils, and surface as well as underground water ways in the area after being swept by rain water into water courses and seeping into the soil. If the machinery yard, workshops are not properly protected, the roaming animals and birds could be poisoned if they drink contaminated water caused by accidental spillage of oil, petroleum products, solvents and similar category of materials.

Mitigation measures

• The Contractor should ensure that the employees on site are aware of the company procedures for dealing with spills and leaks e.g. using dispersants or

adding biological agents to speed up the oil breakdown for the construction machinery though induction and safety training (the contractor will propose a method of clean-up which will be subject to approval);

- All vehicles and equipment should be kept in good working order, serviced regularly in accordance to the manufacturers specifications and stored in an area approved by the Resident Engineer/Supervising Consultant;
- Ensure spill kits are provided at the construction sites
- Ensure fuels, oils, lubricants and chemicals are stored are stored in impermeable containers and away from surface drains

7.10.7 Soil Related Impacts

Accidental oil spills, and petroleum products (amongst other liquid waste) particularly in areas of concentrated activities, may infiltrate into soils and cause soil pollution. This is only possible during the construction phase of the project and the impact is expected to be minor and highly localized, hence the impact is considered insignificant.

All construction activities have some minor impacts on the soil. It is expected that these impacts are also short-lived during construction and mitigation measures are recommended. The key impacts will revolve around soil erosion, contamination, disturbance of the natural soil structure and thus reducing the ecological function of the soil

- The valuable top soil containing organic material, nutrients as well as seeds and the soil fauna should be excavated separately and piled in an adequate manner for re-use where applicable.
- Plan emergency response measures in case of accidental oil spills.
- In cases where it is identified that during construction there is a danger of increased run-off or at the project site, drainage channels with stone pitching or holding ponds can be employed
- After completion of the construction works, restoration of the ground by sowing adequate grass cover and planting of trees will be followed, therefore the impact is temporary and reversible.

7.10.8 Impact on Existing Water Resources (Water Quality)

Oil spills, bitumen and grease generation by construction traffic as well as traffic during operation could lead to pollution by altering the chemical and biological characteristics of surface and ground water resources. This may occur when spilled compounds are swept by rain water from the construction site, and traffic routes into water courses.

There is potential for contamination of water resources as a result of improper disposal of liquid and solid waste from construction activities and construction Site. The impacts on water sources are therefore expected to be minimal.

Mitigation measure

- Areas dedicated for hazardous material storage shall provide spill containment and facilitate clean up through measures such as: maximum separation from sensitive features (water bodies); clear identification of the materials present; access restricted to authorized personnel and vehicles only and dedicated spill response equipment
- Provide solid and liquid waste disposal system a waste collector, NEMA recommended waste disposal manual and a waste collection bin for each housing unit, workshop, plant, structural shelter.
- Ensure fuels, oils, lubricants and chemicals are stored in impermeable containers and away from surface drains
- Ensure that the machines are serviced in specific locations to avoid spillage of oils and grease into the surface runoff channels.

7.10.9 Fire outbreak

Fire outbreak in the construction site or in the machinery being used is always a risk. This is because there are flammable substances in use. Depending on the severity, fire can cause loss of life, disability, or property damage. Thus, precautions are necessary.

- Label all inflammable materials and store them appropriately
- Provision of adequate firefighting equipment capable of fighting all classes of fire
- Put 'No Smoking' Signs in areas where inflammable are stored
- Train workers on the use of firefighting equipment

7.11 Social conflicts and community risks

7.11.1 Liability for loss of life, injury property

Some of the Construction activities may lead to accidents that may be mild or fatal depending on various factors. During the implementation of the proposed project, accidents could be due to negligence on part of the workers, machine failure or breakdown or accidental falls from elevated points of the structure. These incidents can be reduced through proper work safety procedures.

In addition, during Construction, there may be damage to private property that may not be foreseen.

- Develop a site safety action plan detailing safety equipment to be used, emergency procedures, restriction on site, frequency and personnel responsible for safety inspections and controls.
- Provision of requisite PPE as established from risk assessment in the safety action plan and enforcing their usage.
- The workers should receive requisite training especially on the operation of the machinery and equipment.
- There should be adequate warning and directional signs.
- Ensuring that the prepared code of conduct for staff is followed to prevent accidents.
- Provide First Aid Kit within the construction sites and ensure that at any moment during the works, there is a trained first aider on site. The ration of trained first aiders to worker will be as per defined by the OSHA First Aid Rules.
- Recording of all injuries that occur on site in the incident register, corrective actions for their prevention are instigated as appropriate.
- Contractor to ensure compliance with the Workmen's Compensation Act, ordinance regulations and union agreements and maintain insurance cover throughout the construction period.
- The Contractor to promptly repair any damage done to private property.

• Limit damage to property by observing construction area limits by clear demarcation

7.11.2 Crime incidences

The facilities will be located in high populated area with idlers hence the construction site is prone to have a few incidences of crime including, stealing of construction materials or individual property, drug abuse and alcoholism among others, within and without the construction site.

Mitigation measures:

- Fencing off the site with plant, equipment, and materials.
- Working with local committees (e.g. "Nyumba Kumi") to provide security within the site in addition to the Contractor's own security.
- Removing any employee who persists in any misconduct or lack of care, carries out duties incompetently or negligently, fails to conform to any provisions of the contract, or persists in any conduct which is prejudicial to safety, health, or the protection of the environment.
- Taking all reasonable precautions to prevent unlawful, riotous or disorderly conduct by or amongst the contractor's personnel, and to preserve peace and protection of persons and property on and near the site.

7.11.3 Spread of HIV and AIDS

Big projects like the proposed office block attract migrant workers. These men and women away from their partners can get into sexual liaisons with the host community. Thus, being exposed to HIV/AIDS and other sexually transmitted infections.

- Develop HIV/AIDS awareness programs or initiatives to target the construction workers, community, institutions and the general members of the community, particularly the youth; with the objective of reducing the risks of exposure and the spread of HIV/AIDS within the project area.
- Sensitize the migrant workers on risky sexual behaviour.
- Provide VCT services on site and encourage workers to undergo the same.
- Provision of protective devices such as condoms.

• Maximize hiring skilled and unskilled workers from the host community

7.11.4 Disturbance of traffic and difficulty of access

During the construction phase of the CWWDA Office block, the disturbance of traffic and difficulty of access can pose significant challenges. These issues can arise due to various construction-related activities, including the movement of heavy machinery, delivery of materials, and temporary road closures for safety reasons. This access difficulty will have more impact on elderly people, handicapped and children, who may accidentally fall in open trenches or make tedious long cycles before they reach their targeted locations.

Mitigation measures

- Provide diversion routes where possible.
- Give a construction itinerary in advance so that the potentially affected population can use alternative routes and start early to get to their destinations on time.
- Erect warning signs of on-going works.
- Expedite construction works so as to reduce the times where roads are blocked.
- Traffic department should approve crossing plan prior to construction, and should approve obstruction times during construction.
- Suitable warning signs should be placed at near locations and should be visible at night.
- Alternatives access ways should be communicated to the community.

7.11.5 Interruption of existing installations on the specified construction sites

There are various installations which cross on the project sites, among them are underground utilities e.g. electricity, telephone links, data cables and water distribution lines.

These services are critical and have implications with spill over effects on the social and economic performance.

- Formal request for permission should be sought and the relevant institutions such as Kenya Power, data network companies and WSPS;
 - Ensure dissemination of relevant information to each of the affected parties;

• A work plan with clear responsibilities for each party should be developed to ensure smooth execution of the construction.

7.11.6 Labour influx

Large construction projects often require labour force and associated goods and services cannot be fully supplied locally for reasons such as worker unavailability and lack of technical skills and capacity. In such cases, the labour force (total or partial) needs to be brought in from outside the project area. This influx is compounded by an influx of other people who follow the incoming workforce with the aim of selling them goods and services, or in pursuit of job or business opportunities. The influx of workers can have adverse social and environmental impacts on local communities, particularly if the communities are rural, remote or small.

Adverse effects include;

- Increased demand and competition for local social and health services, as well as for goods and services, which can lead to price hikes and crowding out of local consumers.
- Increased volume of traffic and higher risk of accidents
- Higher demands on the ecosystem and natural resources
- Increased risk of spread of communicable diseases
- Increase in illicit behaviour and crime.
- Social conflicts within and between communities

- Reduce labour 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. Specialised workmen may be hired from elsewhere. Local workers may also be trained especially if they are required for the operation of the project.
- Effective contractual obligations for the contractor to adhere to the mitigation of risks against labour influx. Depending on the risk factor, appropriate mitigation measures may be deployed. These may range from engagement with a local community liaison to the use of the local elders.

- 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 AfDB Code of Conduct guidelines where applicable.
- The contractor should prepare and implement a gender action plan, to include at minimum:
- Gender mainstreaming in employment at the worksite with opportunities provided for females to work, in consonance with local laws and customs
- Gender sensitization of workers (this could be done by the HIV/AIDS services provider; see above)
- Provision of gender disaggregated bathing, changing, sanitation facilities
- Grievance redress mechanisms including non-retaliation.
- Effective community engagement and strong grievance mechanisms on matters related to labour
- All workers to sign employment contract including Code of Conduct
- Sensitize workers on community based social behaviour and conduct.
- Efforts to be geared toward instilling attitudes of tolerance, support and understanding of labour immigrates by the local communities

7.11.7 Child labour and protection

The Children Act of Kenya prohibits contractors from "employing children in a manner that is economically exploitative, hazardous, and detrimental to the child's education, harmful to the child's health or physical, mental, spiritual, moral, or social development. It is also important to be vigilant towards potential sexual exploitation of children, especially young girls. The contractor should adopt a 'Child Protection Code of Conduct'; that all staff of the contractor must sign, committing themselves towards protecting children, which clearly defines what is and is not acceptable behaviour

Mitigation measure

- Ensure no children are employed on site in accordance with national labour laws.
- Ensure that any child sexual relations offenses among contractors' workers are promptly reported to the police.

7.11.8 Gender Equity, Sexual Harassment

Construction workers are predominantly younger males. Those who are away from home on the construction job are typically separated from their family and act outside their normal sphere of social control. This can lead to inappropriate and criminal behaviour, such as sexual harassment of women and girls, exploitative sexual relations, and illicit sexual relations with minors from the local community. In large scale cases, male labour may also lead to an increase in exploitative sexual relationships and human trafficking whereby women and girls are forced into sex work.

Mitigation measure

- 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 where applicable.
- Provide toilets and bathrooms for both male and female workers on site
- Strive for an equitable distribution of employment opportunities between men and women. Mainstream Gender Inclusivity in hiring of workers as required by Gender Policy 2011 and 2/3 gender rule;
- The contractor should prepare and implement a gender action plan, to include at minimum:
- Gender mainstreaming in employment at the worksite with opportunities provided for females to work, in consonance with local laws and customs
- Gender sensitization of workers (this could be done by the HIV/AIDS services provider; see above)
- Provision of gender disaggregated bathing, changing, sanitation facilities
- Grievance redress mechanisms including non-retaliation.

7.11.9 Increased GBV

The Mombasa and its environs experiences its own forms of GBV which is said to be compounded by the fact that most culprits go scoot free due to lack of evidence or fear from the victims as most residents are not aware of how to preserve evidence or are afraid of stigmatization respectively. It is in fact more severe that a majority of child sexual abuse cases go unreported because of fear of stigmatization and revenge in the

region. This impact refers to gender-based violence that women and girls may experience as a result of project implementation. This includes, for example, an increase in intimate partner violence (IPV) especially when women receive income.

Mitigation measures

- Develop and implement provisions that ensure that gender-based violence at the community level is not triggered by the Project e.g. effective and on-going community engagement and consultation, particularly with women and girls;
- Ensure adequate referral mechanisms are in place if a case of GBV at the community level is reported related to project implementation
- Sensitization of workers and the community.
- Training on GBV.
- Having workers sign a code of conduct.

7.11.10 Sexual Exploitation and Abuse (SEA)

This impact refers to sexual exploitation and abuse committed by Project staff against communities and represents a risk at all stages of the Project, especially when employees and community members are not clear about prohibitions against SEA in the Project.

- Develop and implement an SEA action plan with an Accountability and Response Framework as part of the C-ESMP. The SEA action plan will follow guidance on the AfDB strategy to address gender-based violence (GBV) within it's projects and progeams.
- The SEA action plan will include how the project will ensure necessary steps are in place for:
- Prevention of SEA: including COCs and ongoing sensitization of staff on responsibilities related to the COC and consequences of non-compliance; project-level IEC materials;
- Response to SEA: including survivor-centred coordinated multi-sectoral referral and assistance to complainants according to standard operating procedures; staff reporting mechanisms; written procedures related to case

oversight, investigation and disciplinary procedures at the project level, including confidential data management;

- Engagement with the community: including development of confidential community-based complaints mechanisms discrete from the standard GRM; mainstreaming of PSEA awareness-raising in all community engagement activities; community-level IEC materials; regular community outreach to women and girls about social risks and their PSEA-related rights;
- Management and Coordination: including integration of SEA in job descriptions, employments contracts, performance appraisal systems, etc.; development of contract policies related to SEA, including whistle-blower protection and investigation and disciplinary procedures; training for all project management; management of coordination mechanism for case oversight, investigations and disciplinary procedures; supervision of dedicated PSEA focal points in the project and trained community liaison officers.

7.12 Operation phase positive impacts

During the operation phase of the CWWDA Office block, several positive impacts will be anticipated:

7.12.1 Employment Opportunities

The office block's operation will create job opportunities for administrative staff, maintenance personnel, security personnel, and other support roles, contributing to local employment and economic growth.

7.12.2 Infrastructure Development

The construction and operation of the office block may lead to improvements in local infrastructure, such as roads, utilities, and public facilities, benefiting the surrounding community.

7.12.3 Enhanced Services

The presence of the office block may attract businesses, services, and amenities to the area, improving access to essential services for residents and visitors.

7.12.4 Community Engagement

The office block can serve as a hub for community engagement, hosting meetings, workshops, and events that promote collaboration, networking, and civic participation.

7.12.5 Environmental Considerations

The design and operation of the office block will incorporate environmentally sustainable practices, such as energy-efficient systems, waste management strategies, and green spaces, contributing positively to the local environment.

7.12.6 Knowledge Sharing

The office block will facilitate knowledge sharing, research, and innovation in water works development and related fields, leading to advancements in water management practices and technologies.

7.12.7 Social Impact

The presence of a well-functioning office block can contribute to a positive social impact by fostering cooperation, knowledge exchange, and partnerships among stakeholders involved in water works development and related sectors.

7.12.8 Quality of Life

Overall, the successful operation of the CWWDA Office block can contribute to an improved quality of life for residents by promoting economic development, enhancing infrastructure, and fostering community engagement and sustainability.

7.13 Operation Phase Negative Impacts

7.13.1 Traffic Congestion

Increased traffic from employees, visitors, and service vehicles can lead to congestion on local roads, especially during peak hours, causing delays and inconvenience to commuters and residents.

- **Transportation Management Plan:** Develop and implement a comprehensive transportation management plan to coordinate employee commuting, visitor access, and service vehicle movements efficiently.
- Alternative Transportation: Encourage employees to use alternative modes of transportation such as public transit, carpooling, cycling, or telecommuting to reduce the number of single-occupancy vehicles on the road.
- Flexible Work Hours: Offer flexible work schedules or staggered shifts to reduce peak-hour traffic congestion and spread out employee arrivals and departures.
- **Remote Work Options:** Promote telecommuting and remote work options for employees where feasible to reduce the need for daily commuting to the office.
- **Parking Management:** Implement parking management strategies such as designated parking areas, employee parking permits, and incentives for carpooling to optimize parking space usage and reduce on-street parking.
- Shuttle Services: Provide shuttle services or transportation subsidies for employees commuting from nearby areas to reduce reliance on personal vehicles and alleviate traffic congestion.
- **Traffic Signal Optimization:** Coordinate with local authorities to optimize traffic signals, adjust signal timing, and improve intersection designs to enhance traffic flow and reduce congestion hotspots.
- **Pedestrian and Cyclist Facilities:** Enhance pedestrian walkways, bike lanes, and cycling infrastructure around the office block to promote walking and cycling as alternative transportation modes.
- **Traffic Monitoring:** Regularly monitor traffic conditions, collect data on congestion patterns, and use real-time traffic information to make informed decisions and adjust traffic management strategies as needed.
- Public Awareness Campaigns: Educate employees, visitors, and the local community about transportation options, traffic management measures, and the importance of reducing single-occupancy vehicle trips to mitigate traffic congestion effectively.

7.13.2 Noise and Air Pollution

Operational activities such as vehicle movements, deliveries, and maintenance work can contribute to noise pollution and emissions, affecting the quality of the surrounding environment and residents' well-being.

- Noise Barriers: Install noise barriers or soundproofing measures around noisy equipment, loading docks, and operational areas to minimize noise emissions and mitigate its impact on nearby residents.
- Quiet Equipment: Use quieter equipment, machinery, and vehicles where possible, and implement noise-reducing technologies such as mufflers, silencers, and acoustic enclosures to lower noise levels during operations.
- **Operating Hours:** Schedule noisy activities, such as deliveries, maintenance work, and construction, during off-peak hours or times when nearby residents are less likely to be affected, to reduce disturbance from noise pollution.
- **Maintenance and Inspection:** Regularly maintain and inspect equipment, vehicles, and machinery to ensure they operate efficiently and comply with noise emission standards and regulations to minimize noise pollution.
- **Green Landscaping:** Plant trees, shrubs, and greenery around the office block to act as natural barriers and absorb noise, while also enhancing air quality and reducing airborne pollutants.
- Emission Control: Implement emission control measures for vehicles, equipment, and machinery, such as using low-emission vehicles, installing emission control devices, and adopting cleaner fuel alternatives, to reduce air pollution emissions.
- Vehicle Idling Policies: Enforce policies and practices to minimize vehicle idling during loading/unloading, waiting periods, and maintenance activities to reduce unnecessary emissions and noise.
- Community Engagement: Engage with the local community to raise awareness about noise and air pollution issues, solicit feedback, and collaborate on effective mitigation measures and solutions to address concerns and improve environmental quality.

- Regulatory Compliance: Ensure compliance with relevant noise pollution regulations, air quality standards, and emission limits set by environmental authorities, and implement measures to exceed minimum requirements where feasible.
- Continuous Monitoring: Monitor noise levels, air quality, and emissions regularly using environmental monitoring systems and conduct periodic assessments to evaluate the effectiveness of mitigation measures and make adjustments as needed.

7.13.3 Solid Waste Generation

Daily operations may generate waste such as paper, plastic, and electronic waste, requiring proper management and disposal to prevent environmental pollution.

- Waste Segregation: Implement a waste segregation system to separate recyclable materials (such as paper, plastics, and electronic waste) from non-recyclable waste at the source to facilitate proper disposal and recycling.
- **Recycling Programs:** Establish recycling programs for paper, plastics, glass, metals, and electronic waste within the office block to encourage employees and tenants to participate in recycling efforts and reduce landfill waste.
- **Composting:** Implement composting initiatives for organic waste, such as food scraps and green waste, to divert biodegradable materials from landfills and produce nutrient-rich compost for landscaping and gardening purposes.
- Reducing Single-Use Items: Minimize the use of single-use plastics, disposable packaging, and paper products by promoting reusable alternatives, providing reusable utensils and containers, and encouraging waste reduction practices among employees and tenants.
- Waste Reduction Policies: Develop and enforce waste reduction policies, including purchasing environmentally friendly products, minimizing packaging waste, and opting for digital documentation and communication to reduce paper consumption.

- Waste Management Infrastructure: Provide adequate waste storage facilities, such as recycling bins, compost bins, and general waste bins, with clear labeling and signage to ensure proper waste segregation and disposal by occupants.
- Education and Training: Conduct regular training sessions, workshops, and awareness campaigns for employees, tenants, and cleaning staff on proper waste management practices, recycling guidelines, and the importance of waste reduction and environmental stewardship.
- Collaboration with Waste Management Services: Partner with reputable waste management companies or services to ensure proper collection, transportation, and disposal of different types of waste, adhering to regulatory requirements and environmental standards.
- Monitoring and Auditing: Implement waste monitoring and auditing systems to track waste generation, recycling rates, landfill diversion, and overall waste management performance, and use data to identify areas for improvement and optimization.
- Continuous Improvement: Continuously review and improve waste management practices, explore innovative waste reduction technologies and solutions, and seek feedback from stakeholders to achieve sustainable waste management goals and reduce environmental impact.

7.13.4 Liquid Waste Generation

The facility will generate a substancial amount of waste water from different points including washrooms, kitchen, and laboratory which might have a negative effect if not properly managed.

- Wastewater Collection System: Install a comprehensive wastewater collection system with separate lines for domestic wastewater from offices and public areas and specialized lines for laboratory wastewater containing chemicals, solvents, and potential contaminants.
- Laboratory Waste Segregation: Implement strict waste segregation protocols within the laboratory, separating hazardous waste (e.g., chemicals, biological materials) from non-hazardous waste to facilitate safe disposal and treatment.

- Chemical Spill Contingency Plan: Develop and implement a chemical spill contingency plan for the laboratory, including spill response procedures, containment measures, and emergency protocols to minimize environmental impact and ensure the safety of personnel.
- Wastewater Treatment Plant: Install an onsite wastewater treatment plant (WWTP) or utilize centralized municipal wastewater treatment facilities capable of treating diverse wastewater streams, including laboratory effluents, to meet regulatory standards and protect water quality.
- Advanced Treatment Technologies: Consider advanced wastewater treatment technologies such as filtration, activated carbon adsorption, chemical precipitation, and biological treatment (e.g., aerobic and anaerobic processes) to remove contaminants and pollutants from laboratory wastewater before discharge.
- Monitoring and Compliance: Implement regular monitoring programs to assess wastewater quality, chemical concentrations, and discharge parameters, ensuring compliance with environmental regulations, discharge permits, and effluent standards set by regulatory authorities.
- Spill Prevention Measures: Install spill containment and prevention measures within the laboratory, including secondary containment systems, spill trays, and chemical storage cabinets, to minimize the risk of accidental spills and leaks into the wastewater system.
- Employee Training: Provide comprehensive training to laboratory staff on proper waste handling, chemical management, spill response procedures, and wastewater disposal practices to prevent contamination and ensure compliance with safety and environmental protocols.
- Wastewater Discharge Protocols: Establish protocols for the safe and responsible discharge of treated wastewater from the laboratory, including monitoring discharge points, documenting effluent quality, and maintaining records for regulatory reporting and compliance.
- **Continuous Improvement:** Continuously review and update wastewater management practices, invest in technology upgrades, conduct periodic audits

and assessments, and engage in stakeholder consultations to improve efficiency, minimize risks, and enhance environmental stewardship in wastewater management within the office block and laboratory facilities.

7.13.5 Water Usage

The office block's water consumption for daily operations, sanitation, and landscaping may strain local water resources, particularly during periods of water scarcity or drought.

- Water-Efficient Fixtures: Install water-efficient fixtures such as low-flow toilets, faucets, and showerheads to reduce water consumption in washrooms and kitchens, without compromising functionality and user experience.
- Greywater Recycling: Implement greywater recycling systems to capture and treat wastewater from sinks, showers, and laundry facilities for non-potable uses such as toilet flushing, landscaping irrigation, and cooling systems, thereby reducing demand for freshwater.
- Rainwater Harvesting: Incorporate rainwater harvesting systems to capture and store rainwater from rooftops and paved surfaces, using it for irrigation, cooling towers, and non-potable applications, thus supplementing municipal water supply and reducing reliance on groundwater.
- Water-Efficient Landscaping: Design water-efficient landscaping with native plants, drought-resistant species, and efficient irrigation methods such as drip irrigation and soil moisture sensors to minimize outdoor water use and promote sustainable landscaping practices.
- Water Recycling and Reuse: Implement water recycling and reuse systems for process water, cooling water, and industrial applications within the office block, utilizing treated wastewater for non-potable purposes and reducing demand for fresh water.
- Leak Detection and Repair: Conduct regular inspections and maintenance to detect and repair water leaks, faulty plumbing fixtures, and irrigation systems promptly, preventing water wastage and ensuring efficient water use throughout the office block.

- Water Monitoring and Conservation Policies: Implement water monitoring systems to track water usage, identify trends, and implement conservation policies and practices such as water-use restrictions, employee awareness campaigns, and incentives for water conservation efforts.
- Educational Programs: Educate employees, tenants, and visitors about water conservation practices, efficient water use behaviors, and the importance of preserving water resources through workshops, training sessions, and informational materials.
- Water-Efficient Equipment: Select water-efficient equipment, appliances, and machinery for office operations, kitchen facilities, and landscaping needs, considering ENERGY STAR-rated products and water-saving technologies to minimize water consumption.
- Community Collaboration: Collaborate with local water authorities, conservation organizations, and community stakeholders to promote water conservation initiatives, share best practices, and support sustainable water management strategies at the regional level.

7.13.6 Energy Consumption

The building's energy usage for lighting, heating, cooling, and other operational needs may contribute to increased energy consumption and greenhouse gas emissions if not managed efficiently.

- Energy-Efficient Lighting: Install energy-efficient LED lighting fixtures, occupancy sensors, and daylight harvesting systems to reduce electricity consumption for lighting while maintaining optimal illumination levels.
- Building Envelope Improvements: Enhance efficient windows to minimize heat loss during winter and reduce cooling loads in summer, thereby lowering energy demand for heating and cooling systems.
- **HVAC System Optimization:** Implement energy-efficient heating, ventilation, and air conditioning (HVAC) systems with variable speed drives, programmable

thermostats, and zone controls to optimize energy use based on occupancy and thermal comfort requirements.

- Renewable Energy Integration: Explore renewable energy options such as solar photovoltaic (PV) panels, wind turbines, or geothermal systems to generate onsite renewable energy and reduce reliance on grid electricity, thereby lowering carbon emissions associated with electricity consumption.
- Energy Management Systems: Deploy advanced energy management systems (EMS) with real-time monitoring, analytics, and control capabilities to optimize energy use, identify inefficiencies, and implement energy-saving measures proactively.
- Occupant Behavior Programs: Promote energy conservation behaviors among building occupants through awareness campaigns, energy-saving tips, and incentives for sustainable practices such as turning off lights, using energyefficient appliances, and minimizing waste.
- Green Building Certifications: Pursue green building certifications such as LEED (Leadership in Energy and Environmental Design) or BREEAM (Building Research Establishment Environmental Assessment Method) to ensure compliance with stringent energy performance standards and demonstrate commitment to sustainability.
- Energy Audits and Retrofits: Conduct regular energy audits to identify energysaving opportunities, prioritize retrofit projects for energy-intensive systems, and implement energy-efficient upgrades such as energy-efficient boilers, lighting retrofits, and HVAC system retro-commissioning.
- Smart Building Technologies: Incorporate smart building technologies such as building automation systems (BAS), smart meters, and demand response strategies to optimize energy use, manage peak demand, and reduce overall energy consumption during operational hours.
- Collaborative Partnerships: Collaborate with energy service companies (ESCOs), utilities, and government agencies to access energy efficiency incentives, rebates, and financing options for implementing energy conservation measures and renewable energy solutions within the office block.

7.13.7 Community Disruption

Operational activities such as deliveries, events, and maintenance work may disrupt the daily routines of nearby residents, businesses, and institutions, leading to inconvenience and potential conflicts.

- Communication and Coordination: Establish clear communication channels with the local community, residents, businesses, and institutions to inform them about upcoming activities, deliveries, events, and maintenance schedules. Coordinate closely with relevant stakeholders to minimize disruptions and address concerns promptly.
- Traffic Management: Develop and implement a comprehensive traffic management plan that includes designated delivery zones, parking areas, and traffic flow regulations to minimize congestion, ensure pedestrian safety, and reduce disruptions to local traffic during peak hours.
- Noise and Dust Control: Implement measures to control noise levels and dust emissions from operational activities such as construction, deliveries, and maintenance. Use sound barriers, mufflers, and dust suppression techniques to mitigate impacts on nearby residents and businesses.
- Timing and Scheduling: Schedule noisy or disruptive activities such as construction, deliveries, and maintenance work during off-peak hours or times when community impact is minimized, such as weekends or evenings. Coordinate with local authorities to comply with noise ordinances and regulations.
- Community Engagement: Engage with the local community through outreach programs, public meetings, and feedback mechanisms to address concerns, gather feedback, and involve residents in decision-making processes related to operational activities and community disruptions.
- Event Management: If hosting events or gatherings within the office block, obtain necessary permits, inform the community in advance, and implement

measures to manage crowd control, parking, security, and noise levels to minimize disruptions and ensure safety.

- Environmental Monitoring: Conduct regular environmental monitoring of air quality, noise levels, and other potential impacts to assess the effectiveness of mitigation measures and take corrective actions as needed to mitigate community disruptions.
- Conflict Resolution: Establish protocols and procedures for addressing conflicts, complaints, or grievances from the local community regarding operational activities. Designate a point of contact or community liaison to handle issues and facilitate resolution through dialogue and mediation.
- Continuous Improvement: Continuously evaluate and review mitigation measures, gather feedback from stakeholders, and incorporate lessons learned into future operational planning to improve community relations, minimize disruptions, and enhance overall project sustainability.

7.13.8 Ecological Impact

Depending on the location and design of the office block, there could be ecological impacts such as habitat disturbance, loss of green spaces, and disruption of wildlife corridors.

- Green Design and Landscaping: Incorporate green design principles and sustainable landscaping practices into the office block's construction and site development. This includes preserving existing green spaces where possible, planting native vegetation, creating green roofs or walls, and incorporating green areas within the premises to enhance biodiversity and ecosystem services.
- Tree Preservation: Identify and protect mature trees and vegetation on-site by implementing tree protection zones, using root barriers, and avoiding unnecessary tree removals during construction. Incorporate tree planting and replacement programs to offset any tree losses and enhance the overall greenery of the area.

- Vegetation Restoration: Implement vegetation restoration measures in areas affected by construction activities. This may include revegetation, reforestation, and wetland restoration initiatives to restore ecological functions.
- Stormwater Management: Implement sustainable stormwater management practices such as green infrastructure, permeable surfaces, rain gardens, and retention ponds to reduce runoff, improve water quality, and promote groundwater recharge while enhancing green spaces within the project site.
- Green Infrastructure Integration: Integrate green infrastructure elements such as green spaces, vegetated swales, and wildlife-friendly features into the office block's design and site layout to promote biodiversity, reduce heat island effects, and enhance the overall ecological resilience of the surrounding environment.
- Educational Outreach: Engage with the local community, employees, and stakeholders through educational programs, interpretive signage, and outreach initiatives to raise awareness about ecological conservation, sustainable practices, and the importance of preserving green spaces within and around the office block.

7.13.9 Social and Cultural Impact

The presence of a large office block may alter the social fabric and cultural identity of the area, leading to gentrification, changes in community dynamics, and potential displacement of existing residents or businesses.

- **Community Engagement and Consultation:** Engage with local residents, community leaders, cultural institutions, and businesses through meaningful consultations, public meetings, and participatory processes to understand their concerns, aspirations, and priorities. Incorporate community feedback into project planning and decision-making to ensure inclusive and equitable outcomes.
- Preservation of Cultural Heritage: Identify and protect cultural heritage sites, landmarks, and traditions within the project area. Develop strategies for preserving historical buildings, artifacts, and cultural practices, and integrate

them into the office block's design or surrounding public spaces to celebrate local heritage and identity.

- Affordable Housing and Inclusive Development: Address potential gentrification pressures by promoting affordable housing options, mixed-income developments, and inclusive community spaces within or adjacent to the office block. Collaborate with housing authorities, nonprofits, and developers to provide housing opportunities for diverse socio-economic groups and mitigate displacement risks.
- Support for Local Businesses: Foster partnerships with local businesses, entrepreneurs, and artisans to promote economic opportunities, job creation, and cultural entrepreneurship within the project area. Provide support for small businesses, cultural events, and creative industries to thrive and contribute to the vibrancy of the community.
- **Public Spaces and Social Infrastructure:** Design public spaces, recreational areas, and community facilities within the office block's premises or nearby areas to promote social interaction, cultural activities, and community cohesion. Invest in social infrastructure such as schools, healthcare facilities, libraries, and community centers to enhance quality of life and social well-being for residents.
- Cultural Programming and Events: Organize cultural programs, festivals, exhibitions, and educational workshops that showcase local talents, traditions, and cultural diversity. Encourage cross-cultural exchanges, intergenerational dialogue, and mutual understanding to foster a sense of belonging and cultural pride among residents and stakeholders.
- Diversity and Inclusion Policies: Implement diversity and inclusion policies within the office block, including equal employment opportunities, antidiscrimination measures, cultural sensitivity training, and accessibility provisions. Create a welcoming and inclusive environment that respects and values diverse backgrounds, perspectives, and identities.
- Monitoring and Evaluation: Establish mechanisms for monitoring social impacts, conducting regular assessments, and evaluating the effectiveness of mitigation measures. Continuously engage with stakeholders, gather feedback,

and adapt strategies as needed to address emerging social and cultural challenges, promote positive outcomes, and enhance community resilience.

7.13.10 Health and Safety

Operational hazards such as accidents, fire risks, and occupational health issues may arise, requiring proper safety measures, emergency preparedness, and employee training.

- Occupational Health and Safety Policies: Develop and implement comprehensive health and safety policies, procedures, and protocols specific to the office block's activities. Ensure compliance with local regulations, industry standards, and best practices to minimize occupational risks and promote a safe working environment for employees, contractors, and visitors.
- Safety Training and Awareness: Provide regular training sessions, workshops, and awareness programs on occupational health and safety practices, hazard identification, risk assessment, emergency response protocols, and use of personal protective equipment (PPE). Ensure that all personnel are knowledgeable and equipped to handle potential hazards effectively.
- Risk Assessment and Management: Conduct thorough risk assessments of workplace hazards, including ergonomic risks, chemical exposures, electrical hazards, fire risks, and potential accidents. Develop risk management plans, control measures, and emergency procedures to mitigate identified risks and prevent incidents.
- Emergency Preparedness: Establish emergency response plans, evacuation procedures, and contingency measures to address emergencies such as fires, chemical spills, medical emergencies, and natural disasters. Conduct regular drills, simulations, and exercises to test response capabilities and ensure swift and coordinated actions during crises.
- Health Surveillance and Monitoring: Implement health surveillance programs to monitor employee health, detect early signs of occupational illnesses or injuries, and provide timely medical intervention and support. Conduct regular

health assessments, screenings, and medical examinations as part of proactive health management.

- Safety Equipment and Facilities: Provide appropriate safety equipment, tools, and facilities to mitigate workplace hazards, including PPE (such as helmets, gloves, safety goggles, and respiratory protection), first aid kits, emergency alarms, firefighting equipment, and ergonomic workstation setups. Ensure proper maintenance, inspection, and availability of safety resources at all times.
- Stress Management and Well-being: Promote employee well-being, mental health, and stress management through wellness programs, counseling services, work-life balance initiatives, and support networks. Foster a culture of safety consciousness, mutual support, and open communication to address health and safety concerns proactively.
- Continuous Improvement: Establish mechanisms for ongoing monitoring, evaluation, and feedback on health and safety performance. Conduct regular audits, inspections, incident investigations, and corrective actions to identify areas for improvement, address root causes of safety issues, and enhance overall health and safety management systems.

7.13.11 Visual and Aesthetic Impact

The design and appearance of the office block, if not aesthetically pleasing or compatible with the surrounding environment, may detract from the area's visual appeal and architectural harmony.

- Architectural Design: Collaborate with experienced architects and designers to develop a visually appealing and architecturally harmonious design for the office block. Consider factors such as building materials, colors, textures, scale, proportions, and landscaping to create an attractive and cohesive aesthetic that complements the surrounding environment.
- Urban Planning Integration: Ensure that the office block's design integrates seamlessly with the existing urban fabric and architectural style of the area. Adhere to local urban planning guidelines, zoning regulations, and design

standards to maintain architectural continuity and enhance the area's overall visual quality.

- Green Building Practices: Incorporate green building practices and sustainable design elements into the office block's construction, such as energy-efficient lighting, passive cooling systems, green roofs, and native landscaping. These features not only improve environmental performance but also contribute to a visually pleasing and eco-friendly building aesthetic.
- Public Art and Landscaping: Enhance the office block's visual appeal by incorporating public art installations, sculptures, murals, and green spaces in the surrounding area. Create inviting outdoor spaces, pedestrian-friendly pathways, and recreational amenities that enhance the overall aesthetic experience and promote community engagement.
- Facade Treatments: Pay attention to facade treatments, architectural details, and facade materials to create an attractive and dynamic exterior appearance. Use high-quality materials, innovative designs, and sustainable finishes that withstand weathering, reduce maintenance requirements, and contribute to a lasting visual impact.
- Lighting Design: Implement thoughtful lighting design strategies for both exterior and interior spaces of the office block. Use strategic lighting placement, accent lighting, and energy-efficient fixtures to highlight architectural features, create visual interest, and enhance nighttime visibility while minimizing light pollution.
- Community Engagement: Involve local stakeholders, community members, and design experts in the planning and design process to gather feedback, incorporate diverse perspectives, and ensure that the office block's aesthetic aligns with community preferences and values.

7.14 Decommissioning Phase Positive Impacts

7.14.1 Environmental Rehabilitation

Decommissioning activities may involve restoring the site to its natural state or implementing environmental remediation measures, leading to improved soil quality, habitat restoration, and biodiversity enhancement.

7.14.2 Resource Recovery

During decommissioning, valuable materials and equipment can be salvaged, recycled, or repurposed, reducing waste generation and promoting resource conservation.

7.14.3 Infrastructure Upgrade

Decommissioning provides an opportunity to upgrade infrastructure systems, such as water and energy utilities, by replacing outdated equipment with more efficient and sustainable alternatives, contributing to long-term environmental benefits.

7.14.4 Public Safety

Removing outdated or unsafe structures enhances public safety by eliminating potential hazards, reducing the risk of accidents, and improving overall community well-being.

7.14.5 Economic Opportunities

Decommissioning projects can create employment opportunities in demolition, salvage, recycling, and environmental restoration sectors, stimulating local economies and supporting sustainable development.

7.14.6 Community Engagement

Involving stakeholders and local communities in decommissioning planning and decision-making processes fosters transparency, accountability, and trust, leading to positive community relations and social cohesion.

7.14.7 Regulatory Compliance

Successful decommissioning ensures compliance with regulatory requirements, environmental standards, and industry best practices, demonstrating corporate responsibility and environmental stewardship.

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7.15 Decommissioning Phase Negative Impacts

7.15.1 Environmental Disruption

Demolition and removal of structures can disturb natural habitats, soil, and vegetation, leading to temporary disruption of local ecosystems and potential loss of biodiversity.

Mitigation Measures:

- Ecological Surveys: Conduct comprehensive ecological surveys before demolition to identify sensitive habitats, endangered species, and protected areas. Implement protective measures to minimize disturbance to these areas.
- Vegetation Management: Implement vegetation management practices such as selective clearing, transplanting of native plants, and establishment of buffer zones to protect adjacent ecosystems and minimize habitat loss.
- Erosion Control: Implement erosion control measures such as installing silt fences, erosion blankets, and sediment traps to prevent soil erosion and minimize sediment runoff into water bodies.
- Habitat Restoration: Develop and implement habitat restoration plans postdemolition to restore disturbed ecosystems, replant native vegetation, and enhance biodiversity in the project area.
- Biodiversity Conservation: Identify and protect critical biodiversity areas within the project site through conservation easements, land set-asides, and wildlife corridors to maintain ecological connectivity and species diversity.
- Environmental Monitoring: Establish a comprehensive environmental monitoring program during demolition to assess and mitigate potential impacts on soil quality, water resources, and wildlife habitats. Implement adaptive management strategies based on monitoring results.
- Compliance with Regulations: Ensure compliance with environmental regulations, permits, and mitigation measures prescribed by environmental authorities to protect sensitive habitats, wildlife, and ecosystems during demolition activities.

7.15.2 Air and Noise Pollution

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Demolition activities, especially those involving heavy machinery and equipment, can generate dust, emissions, and noise pollution, impacting air quality and causing disturbances for nearby residents.

Mitigation Measures:

- **Dust Control Measures:** Use water spray systems, dust suppression chemicals, and covering materials to minimize dust generation during demolition. Implement dust barriers and enclosures around the work area to contain airborne particles.
- Emission Reduction Technologies: Use low-emission equipment, machinery, and vehicles powered by cleaner fuels to reduce exhaust emissions during demolition operations. Maintain equipment properly to minimize emissions.
- Noise Reduction Techniques: Implement noise barriers, sound insulation, and acoustic enclosures around noisy equipment to reduce noise levels at the source. Schedule noisy activities during daytime hours and limit noisy operations during sensitive periods.
- Worksite Layout: Optimize the layout of equipment and machinery to minimize noise propagation towards residential areas. Use mufflers, silencers, and vibration dampening techniques on equipment to reduce noise emissions.
- Community Notification: Inform nearby residents and stakeholders about upcoming demolition activities, expected noise levels, and mitigation measures. Establish communication channels for feedback and address community concerns promptly.
- Regulatory Compliance: Adhere to local regulations and standards for air quality and noise emissions during demolition. Obtain necessary permits and approvals, and conduct regular monitoring of air quality and noise levels to ensure compliance.
- Worker Protection: Provide workers with personal protective equipment (PPE) such as respiratory masks, earplugs, and noise-canceling headphones to minimize exposure to airborne dust and noise hazards.

7.15.3 Waste Generation

Decommissioning generates a significant amount of waste materials, including debris, hazardous substances, and construction waste, which if not properly managed, can contribute to landfill pollution and environmental degradation.

- Waste Segregation: Implement a waste segregation plan to separate different types of waste such as concrete, metal, wood, hazardous materials, and recyclables at the source. Use color-coded bins and labels for proper waste sorting.
- Recycling and Reuse: Prioritize recycling and reuse of materials whenever possible. Salvage and recycle materials like concrete, metals, wood, and plastics to minimize waste sent to landfills. Utilize recycled materials in future construction projects.
- Hazardous Waste Management: Identify and handle hazardous materials such as asbestos, lead-based paints, and chemicals according to regulatory guidelines. Use certified contractors for hazardous waste removal and disposal to prevent environmental contamination.
- Construction Debris Management: Implement effective debris management practices such as on-site crushing of concrete for reuse as aggregate, shredding of wood waste for mulch or biomass fuel, and compacting of non-recyclable materials for disposal.
- Waste Disposal: Dispose of non-recyclable waste in authorized landfills or waste management facilities following proper disposal procedures. Avoid illegal dumping or unregulated waste disposal practices that can harm the environment.
- Waste Minimization: Minimize waste generation by optimizing demolition techniques, using efficient equipment, and avoiding over-ordering of materials. Plan deconstruction activities to maximize salvageable materials and reduce overall waste.
- Environmental Impact Assessment: Conduct an environmental impact assessment (EIA) to identify potential waste generation issues and develop mitigation measures specific to the project site and scope of decommissioning activities.

 Monitoring and Compliance: Monitor waste management practices throughout the decommissioning process to ensure compliance with waste regulations, permits, and environmental standards. Keep detailed records of waste generation, recycling efforts, and disposal methods.

7.15.4 Soil and Water Contamination

Improper handling and disposal of construction materials, chemicals, and waste can lead to soil contamination, groundwater pollution, and surface water runoff issues, posing risks to environmental and public health.

- Site Assessment: Conduct a comprehensive site assessment to identify potential sources of soil and water contamination, including underground storage tanks, hazardous materials, and pollutant hotspots. Use soil and water sampling techniques to analyze contamination levels.
- Contaminated Soil Management: Implement soil remediation measures for areas with contaminated soil. This may involve excavation, treatment, and disposal of contaminated soil at authorized facilities. Use soil stabilization techniques to prevent further contamination spread.
- Groundwater Protection: Install groundwater monitoring wells to assess groundwater quality and detect potential contaminants. Implement measures such as groundwater pumping and treatment systems to mitigate contamination and protect aquifers.
- Waste Management Practices: Properly manage construction waste, hazardous materials, and chemicals to prevent soil and water contamination. Use spill containment measures, secondary containment systems, and leak detection devices for hazardous storage areas.
- Erosion and Sediment Control: Implement erosion and sediment control measures to prevent soil erosion, sediment runoff, and sedimentation in nearby water bodies. Use erosion control barriers, sediment traps, and vegetative buffers to minimize soil disturbance and runoff.

- Stormwater Management: Design and implement stormwater management systems to capture, treat, and infiltrate runoff water from the decommissioning site. Use stormwater ponds, bio-retention basins, and permeable surfaces to reduce pollutants in runoff.
- Regulatory Compliance: Ensure compliance with environmental regulations, permits, and guidelines related to soil and water quality protection. Obtain necessary permits for soil excavation, groundwater discharge, and waste disposal activities.
- Monitoring and Reporting: Monitor soil and water quality during and after decommissioning activities to assess the effectiveness of mitigation measures. Develop a monitoring plan and report findings to regulatory agencies as required.

7.15.5 Community Disruption

Demolition activities can disrupt the daily lives of nearby residents, businesses, and institutions, causing noise disturbances, traffic congestion, safety concerns, and potential conflicts with local stakeholders.

- Community Engagement: Establish open communication channels with local residents, businesses, and institutions to inform them about the demolition schedule, potential disruptions, and mitigation measures. Seek feedback and address concerns to foster understanding and cooperation.
- **Noise Control:** Implement noise control measures such as using quieter machinery and equipment, scheduling noisy activities during off-peak hours, and installing sound barriers or mufflers to reduce noise levels during demolition.
- Traffic Management: Develop a traffic management plan to minimize disruptions caused by increased construction traffic. Coordinate with local authorities to implement temporary traffic controls, detours, and signage to ensure safe and efficient flow of vehicles.
- Safety Measures: Prioritize safety measures to protect workers, pedestrians, and nearby properties during demolition. Use warning signs, barriers, and
flaggers to delineate work zones and prevent accidents. Conduct regular safety inspections and provide training to workers on safety protocols.

- Dust and Air Quality Control: Use dust suppression techniques such as water spraying, dust barriers, and covering materials to minimize airborne dust and particulate matter during demolition. Monitor air quality and implement measures to mitigate any exceedances of air quality standards.
- Waste Management: Properly manage construction waste and debris to minimize visual impact and maintain cleanliness in the area. Use covered containers, waste segregation, and recycling practices to reduce waste generation and promote environmental sustainability.
- Community Support Services: Provide support services to affected residents and businesses, such as offering alternative parking options, access routes, and information on local amenities during the demolition period. Address any complaints or issues promptly to maintain community goodwill.
- **Post-Demolition Reconciliation:** After demolition activities are completed, engage with the community for post-demolition reconciliation efforts. Conduct feedback sessions, community meetings, or surveys to assess impacts, gather input for improvement, and foster positive relationships for future projects.

7.15.6 Cultural and Historical Loss

Demolition of existing structures may result in the loss of cultural heritage, historical sites, or architectural landmarks, impacting community identity, cultural values, and historical preservation efforts.

Mitigation Measures:

- Heritage Assessment: Conduct a thorough heritage assessment prior to demolition to identify any culturally or historically significant structures, artifacts, or sites within the project area. Consult with local historians, cultural experts, and heritage preservation authorities to understand the significance and value of these assets.
- **Documentation and Preservation:** Document and record cultural and historical assets through photography, videography, and detailed descriptions before

demolition begins. Preserve significant elements or artifacts through relocation, salvage, or incorporation into the new development where feasible and appropriate.

- Heritage Impact Assessment: Conduct a heritage impact assessment to evaluate the potential impacts of demolition on cultural and historical resources. Identify measures to mitigate adverse impacts, such as alternative design options, adaptive reuse of heritage structures, or commemorative plaques or displays.
- Public Education and Awareness: Raise public awareness about the cultural and historical significance of the affected structures or sites through educational campaigns, public exhibitions, and informational materials. Engage with local communities, schools, and cultural organizations to promote appreciation and understanding of heritage values.
- Consultation and Collaboration: Engage in meaningful consultation and collaboration with relevant stakeholders, including heritage authorities, indigenous communities, local historians, and preservation advocates. Seek input, feedback, and expertise to develop sensitive demolition plans and preservation strategies.
- Legal and Regulatory Compliance: Ensure compliance with applicable heritage protection laws, regulations, and guidelines during demolition activities. Obtain necessary permits, approvals, and clearances from heritage authorities and regulatory bodies before proceeding with demolition of heritage structures or sites.
- Mitigation Measures: Implement specific mitigation measures to minimize impacts on cultural and historical assets, such as carefully planned demolition techniques, salvage and reuse of architectural features, creation of heritage interpretation zones, and development of commemorative displays or memorials.
- Legacy and Interpretation: Create a legacy plan or interpretive program to celebrate the cultural and historical heritage of the area, even after demolition. Incorporate interpretive signage, digital exhibits, public art installations, or cultural

events that honor the past and enrich the community's sense of identity and pride.

7.15.7 Health and Safety Risks

Decommissioning activities pose various health and safety risks for workers, including exposure to hazardous materials, falls, accidents, and structural collapses, requiring stringent safety measures and protocols to mitigate risks.

Mitigation Measures:

- Hazard Assessment: Conduct a comprehensive hazard assessment before decommissioning to identify potential risks and hazards associated with the project. Consider factors such as hazardous materials, structural stability, confined spaces, and machinery operation.
- Safety Training: Provide thorough safety training and orientation for all workers involved in decommissioning activities. Ensure they are knowledgeable about hazard recognition, emergency procedures, personal protective equipment (PPE) use, and safe work practices.
- Personal Protective Equipment (PPE): Require the use of appropriate PPE, such as hard hats, safety goggles, gloves, respirators, and protective clothing, based on the specific hazards present during decommissioning. Regularly inspect and maintain PPE to ensure effectiveness.
- Safe Work Practices: Implement safe work practices and procedures to minimize risks, such as proper equipment operation, secure scaffolding and ladders, controlled demolition techniques, and adherence to lockout/tagout procedures for equipment isolation.
- Health Monitoring: Establish a health monitoring program to monitor workers' exposure to hazardous substances, noise levels, and ergonomic risks during decommissioning. Conduct regular health assessments and provide medical surveillance as needed.
- Emergency Response Plan: Develop and implement an emergency response plan that outlines procedures for responding to accidents, injuries, spills, fires,

and other emergencies. Ensure all workers are familiar with the plan and conduct regular drills and training exercises.

- Site Security: Control access to the decommissioning site to prevent unauthorized entry and minimize potential safety risks from trespassers or bystanders. Implement barriers, warning signs, and designated access points as needed.
- Environmental Controls: Implement environmental controls to minimize exposure to hazardous materials and prevent environmental contamination during decommissioning. This may include containment measures, dust suppression, waste segregation, and proper disposal practices.
- Safety Oversight: Assign qualified safety personnel or supervisors to oversee decommissioning activities and ensure compliance with safety protocols. Conduct regular safety inspections, audits, and reviews to identify and address potential hazards proactively.
- Continuous Improvement: Encourage feedback from workers and stakeholders regarding safety concerns and suggestions for improvement. Use lessons learned from past projects to enhance safety practices and promote a culture of continuous improvement in health and safety performance.

7.15.8 Economic Impact

Decommissioning projects can lead to temporary disruptions in local economies, such as loss of business revenue, displacement of workers, and changes in property values, impacting livelihoods and economic stability.

Mitigation Measures:

- Economic Impact Assessment: Conduct a thorough economic impact assessment before initiating decommissioning activities to identify potential economic effects on local businesses, employment, property values, and overall economic stability. Use this assessment to inform mitigation strategies.
- Stakeholder Engagement: Engage with local businesses, community leaders, and government authorities to understand their concerns and develop

collaborative solutions. Involve stakeholders in decision-making processes and seek input on measures to minimize economic disruptions.

- Job Retention and Training: Explore opportunities to retain existing jobs and skills within the local workforce by providing training, retraining, and job placement programs for workers affected by decommissioning. Consider offering incentives for businesses to retain employees or retrain them for alternative roles.
- Diversification of Economy: Encourage economic diversification and development of alternative industries or businesses to offset the potential loss of revenue and employment from decommissioning. Support initiatives that promote entrepreneurship, innovation, and investment in new sectors.
- Local Procurement and Contracting: Prioritize local procurement and contracting for goods and services related to decommissioning activities to support local businesses and stimulate economic activity within the community. Consider partnerships with local suppliers, contractors, and service providers.
- Community Support Programs: Implement community support programs or funds to assist businesses, workers, and residents affected by decommissioning. Provide financial assistance, grants, loans, or subsidies to mitigate financial hardships and support economic recovery efforts.
- Transitional Employment Opportunities: Explore transitional employment opportunities or job creation initiatives during decommissioning, such as temporary construction projects, environmental restoration work, or infrastructure upgrades. Partner with government agencies, NGOs, and private sector organizations to facilitate employment transitions.
- Public Awareness and Communication: Maintain open and transparent communication with stakeholders about the economic impact of decommissioning, mitigation measures, and available support programs. Provide regular updates, resources, and guidance to help businesses and individuals navigate economic challenges.
- Long-term Planning: Develop long-term economic development plans and strategies for the post-decommissioning period to promote sustainable growth,

attract new investments, and enhance economic resilience. Collaborate with regional economic development agencies and industry stakeholders to align efforts and maximize economic opportunities.

CHAPTER 8 ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING PLAN (ESMMP)

8.1 Introduction

The aim of the environmental and social management and monitoring plan (ESMMP) is to detail the actions required to effectively implement the mitigation measures identified and recommended in the ESIA. These actions are required to minimize negative impacts and enhance positive impacts associated with the proposed Coast Water Works Development Agency Office Block. The ESMP actions present the commitments made by the proponent, for addressing the impacts of the project. It is important to note that an ESMMP is a living document since it is to be updated and amended as new information (e.g., environmental data), policies, authority guidelines and technologies develop. The ESMP identifies management actions that need to be implemented in various phases of the proposed office block as follows:

8.2 Planning and design phase

Refers to the stage when the feasibility studies are being undertaken, the project description is being developed and proposed CWWDA offie block is being designed. During this phase, the ESIA is completed and license is applied for.

8.3 Construction phase

This will commence after the proposed office block license has been issued and CWWDA has taken the decision to implement the project. The construction phase involves the development and construction of the development.

8.4 Operations

This is the phase during which the proposed office will be operated. CWWDA employees will be accommodated in the building during the operation phase.

8.5 Decommissioning Phase

The decommissioning phase of a project includes restoring the environment to its original form once all the operational activities of the project have ceased. The

necessary activities, mitigation measures, allocation of responsibilities, time frames and costs pertaining to prevention, minimization and monitoring of all potential impacts associated with the decommissioning and closure phase of the project are outlined in the table below.

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

Table 8-1: Steps to follow in case of an overhaul for project structures

8.6 Auditing of ESSMP

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

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

8.7 Management Responsibility of ESMMP

In order to ensure the sound development and effective implementation of the ESMMP, it will be necessary to identify and define the responsibilities and authority of the various persons and Organizations which will be involved in the project. The following entities should be involved in the implementation of this ESMMP as presented in the table below:

Table 8-2: Institutional Framework for ESMP	
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Nos	Name of Institution	Role of Institution
1.	Coast Water Works	Central agency responsible for holding all information
	Development Agency	on the ESIA.
		Oversite the implementation of the ESMP
2.	County Government	Responsible for oversite of the project as per the
	of Mombasa	integrated spatial plans and necessary permits and
		advisory services to the project implementers
5.	NEMA	Provide approval of the ESIA report

Nos	Name of Institution	Role of Institution			
		Review and provide a NEMA license for the ESMP.			
		Be part of the SCRCC and participate in the resolution			
		of grievances.			
		Escalate unsolvable grievances to the tribunal.			
6.	Contractor	Implementing the project			
		To ensure strict compliance environmental			
		specifications of this ESMP			
7.	Supervision	Ensure that the proposed ESMP is up to date and is			
	Consultant	being used by the contractor.			
		Periodic audits of the ESMP will have to be done to			
		ensure that its performance is as expected.			

8.8 Emergency procedure during construction and operation phases of the project

An emergency situation means unforeseen happening resulting in serious or fatal injury to employed persons or the neighbouring communities. In the event of an emergency during construction, the workers shall:

- 1. Alert other persons exposed to danger;
- 2. Inform the OSHA coordinator;
- 3. Do a quick assessment on the nature of emergency;
- 4. Call for ambulance.

When emergency is over the OSHA coordinator shall notify the workers by putting a message: "ALL CLEAR".

In the event of such an emergency during operation, the workers shall:

- a) Alert other persons exposed to danger;
- b) Ring the nearest police station and ambulance services.

The proponent should put measures to respond to emergencies in their premises like alarms and a fire assembly point. The proponent should have trained first aiders and fire marshals who can assist in case of emergencies.

8.9 Environmental Social Management and Monitoring Plan

The necessary objectives, activities, mitigation measures, and allocation of costs and responsibilities pertaining to prevention, minimization and monitoring of significant negative impacts and maximization of positive impacts for the proposed CWWDA office block is provided below for the;

- a) Preconstruction stage,
- b) Demolition and Site Clearing
- b) Construction
- c) Operational stage, and
- d) Decommissioning

stage

respectively

Table 8-3: Demolition Phase Environmental and Social Management and Monitoring Plan

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
Environmental	Conduct a thorough asbestos	Contractor (s)	Quantity of asbestos	Ksh 400,000
Contamination by	survey before demolition to identify		material to be	
Asbestos roofing	areas with asbestos-containing		demolished	
	materials (ACMs).		Availability of disposal	
	Hire licensed asbestos removal		site	
	contractors to safely remove and		License of waste	
	dispose of asbestos materials		handler	
	according to regulatory standards.			
	Use containment measures such as			
	plastic sheeting and wetting down			
	asbestos materials during removal			
	to minimize fiber release.			
	Provide workers with appropriate			
	PPE including respirators,			
	disposable coveralls, gloves, and			

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
	eye protection to prevent exposure			
	to asbestos fibers.			
	• Conduct air monitoring before,			
	during, and after asbestos removal			
	to ensure airborne fiber levels are			
	within permissible limits.			
	• Dispose of asbestos waste in			
	designated hazardous waste			
	disposal sites following local			
	regulations. Use sealed containers			
	and labeling for transport.			
	• Train workers on safe handling and			
	removal of asbestos, including			
	proper procedures for containment,			
	removal, and disposal.			
	Community Notification: Notify			
	nearby residents and stakeholders			
	about the asbestos removal			
	activities, potential risks, and safety			
	measures in place.			

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
	Adhere to legal notice 121 of EMCA Regulations, 2006, and occupational			
	health regulations and guidelines			
	governing asbestos removal and			
	•			
Waste Generation	Separate different types of waste	Contractor(s)	Type of waste	
	materials such as concrete, metals,		generated and	
	plastics, and hazardous substances		quantity per category	
	during demolition to facilitate proper		Availability of waste	
	disposal and recycling.		segregation skips	
	• Maximize recycling opportunities by			
	sorting and recycling materials like			
	concrete, metals, and plastics at			
	recycling facilities instead of sending			
	them to landfills.			
	Identify and handle hazardous			
	waste materials such as lead-based			
	paints, asbestos, and chemicals			
	according to regulatory guidelines.			

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
	Use licensed contractors for			
	hazardous waste disposal.			
	Explore opportunities to reuse			
	salvaged materials like bricks, wood,			
	and metals in future construction			
	projects or for other purposes,			
	reducing the demand for new			
	materials.			
	• Develop a comprehensive waste			
	management plan that includes			
	waste reduction strategies, recycling			
	goals, proper disposal methods, and			
	monitoring of waste streams.			
	• Minimize the amount of waste sent			
	to landfills by prioritizing recycling,			
	reuse, and proper disposal of non-			
	recyclable waste in designated			
	landfill sites.			
	Monitor environmental impacts of			
	waste disposal activities, including			

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
	soil and water quality, to ensure			
	compliance with environmental			
	regulations and minimize pollution.			
	• Provide education and training to			
	workers on proper waste			
	management practices, including			
	waste segregation, handling, and			
	disposal procedures. Encourage a			
	culture of waste reduction and			
	recycling on-site.			
	•			
Disruption of water	Conduct a thorough mapping and	Contractor(s)		
supply	identification of the underground		Number of reported	
	water pipeline before demolition		cases water bursts	
The underground	begins to ensure awareness of its			
pipeline flowing	location and depth.			
water through the	• Erect protective barriers or fencing			
area is critical for	around the pipeline to prevent			
supplying water to	accidental damage from heavy			
the local	equipment, machinery, or debris			

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
community	during demolition.			
	• Maintain a safe distance between			
	demolition work areas and the			
	pipeline to minimize the risk of direct			
	impact or disturbance.			
	• Use non-invasive demolition methods			
	or techniques that minimize ground			
	disturbance near the pipeline, such			
	as controlled dismantling or hand			
	demolition in sensitive areas.			
	• Implement regular monitoring and			
	inspection of the pipeline during			
	demolition activities to detect any			
	signs of damage or leaks promptly.			
	• Develop and implement an			
	emergency response plan specific to			
	pipeline damage, including			
	procedures for immediate shutdown,			
	containment of spills, and notification			
	of relevant authorities.			

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
	 Ensure that demolition contractors and workers are trained and qualified to work near underground utilities, including understanding the location and importance of the water pipeline. Coordinate closely with local water authorities or utility companies responsible for the pipeline to obtain relevant information, permits, and guidance on protective measures. 			
Potential Hazards during relocation of the 40ft containers	 Conduct a detailed site assessment to identify potential hazards and obstacles that may affect the safe evacuation and relocation of the containers. Provide comprehensive safety training to workers involved in handling heavy equipment and materials, focusing on proper lifting 	Contractor(s)	No of awareness campaigns No of tainings and toolbox talks Site Assessment report	

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
	techniques, equipment operation,			
	and hazard awareness.			
	• Use specialized equipment such as			
	cranes, forklifts, and rigging tools			
	designed for lifting and moving heavy			
	containers safely.			
	• Calculate the weight and distribution			
	of the containers to determine the			
	appropriate lifting capacity and			
	rigging requirements for the			
	equipment used in relocation.			
	• Ensure that containers are securely			
	fastened and stabilized during			
	transport to prevent shifting or tipping			
	that could lead to accidents or			
	injuries.			
	Maintain clear communication among			
	workers, equipment operators, and			
	supervisors throughout the			
	evacuation and relocation process to			

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
	coordinate movements and address			
	any safety concerns promptly.			
	• Require workers to wear appropriate			
	PPE such as helmets, gloves, and			
	safety boots to protect against			
	potential hazards like falling objects			
	or slips.			
	Develop and implement an			
	emergency response plan specific to			
	handling accidents or incidents			
	during container evacuation,			
	including procedures for immediate			
	medical assistance and reporting.			
Soil and ground	• Conduct a thorough site assessment	Contractor(s)	Site assessment	
water	and survey to identify the locations of		report	
contamination	underground features such as water		Availability of barrier	
	wells, pipelines, and other utilities		Soil test results	
Demolition of	before demolition activities			
structures with	commence.			

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
underground	• Erect protective barriers or fencing			
features like water	around underground features to			
wells and pipelines	prevent accidental damage or			
can lead to soil	disturbance during demolition and			
and groundwater	excavation.			
contamination if	Use controlled and precise			
proper precautions	demolition techniques that minimize			
are not taken	ground disturbance near			
during demolition	underground features. Avoid using			
and excavation	heavy machinery directly above or			
activities.	near sensitive areas.			
	• Develop a detailed excavation plan			
	that includes proper techniques for			
	uncovering and accessing			
	underground features without			
	causing damage or contamination.			
	• Implement spill prevention measures			
	such as containment berms, silt			
	fences, and absorbent materials			
	around excavation areas to capture			

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
	any potential spills or leaks during			
	demolition.			
	• Properly handle and dispose of			
	demolition debris, contaminated soil,			
	and hazardous materials in			
	accordance with environmental			
	regulations and guidelines to prevent			
	contamination of soil and			
	groundwater.			
	Conduct regular monitoring and			
	testing of soil and groundwater			
	quality before, during, and after			
	demolition and excavation activities			
	to detect any signs of contamination			
	early.			
	• Develop and implement an			
	emergency response plan specific to			
	potential soil and groundwater			
	contamination incidents, including			
	procedures for containment, cleanup,			

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
	and reporting to relevant authorities.			
	•			
Noise and Air	Use quieter equipment and	Contractor(s)	No of complaints from	
Pollution	machinery or install noise-reducing		the community	
	attachments to minimize noise levels		Monitoring results	
	during demolition.		Respiratory infections	
	Schedule noisy activities during		from the local	
	daytime hours and avoid disruptive		community	
	activities during early morning or late			
	evening hours.			
	• Erect sound barriers or acoustic			
	enclosures around noisy equipment			
	to reduce noise propagation to			
	surrounding areas.			
	• Provide workers with hearing			
	protection devices (e.g., earplugs or			
	earmuffs) to mitigate noise exposure			
	risks.			
	Implement dust suppression			
	measures such as water spraying or			

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
	misting systems to reduce airborne			
	dust particles generated during			
	demolition.			
	• Use enclosed equipment with dust			
	collection systems to capture and			
	contain dust at the source.			
	• Ensure proper ventilation and air			
	filtration systems in enclosed work			
	areas to maintain air quality and			
	minimize exposure to airborne			
	pollutants.			
	• Monitor air quality regularly using air			
	quality sensors or monitoring devices			
	to assess the effectiveness of dust			
	control measures.			
	Notify nearby residents and			
	stakeholders in advance about			
	planned demolition activities,			
	potential noise, and air pollution			
	impacts, and mitigation measures in			

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
	place.			
	Establish open communication			
	channels with the community to			
	address concerns, receive feedback,			
	and adjust mitigation strategies as			
	needed.			
	• Adhere to local regulations and			
	guidelines governing noise levels, air			
	quality standards, and pollution			
	control measures during demolition			
	activities.			
	Obtain necessary permits and			
	approvals from relevant authorities			
	and comply with recommended best			
	practices for noise and air pollution			
	mitigation.			
	Conduct regular monitoring of noise			
	levels and air quality parameters			
	(e.g., particulate matter, volatile			
	organic compounds) to assess			

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
	 compliance with regulatory limits and identify areas for improvement. Keep records of monitoring results and implement corrective actions as necessary to maintain environmental standards and minimize impacts on surrounding areas. 			
Community Disruption	 Inform nearby residents well in advance about the demolition schedule, expected duration, and potential impacts such as noise, dust, and traffic disruptions. Provide contact information for a dedicated project manager or liaison to address residents' concerns, receive feedback, and coordinate responses to issues promptly. Develop a comprehensive traffic 	Contractor(s)	No of reported cases from the community Air and noise quality results	

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
	management plan to minimize			
	disruptions and congestion caused			
	by demolition activities, including			
	rerouting traffic when necessary.			
	• Coordinate with local authorities and			
	transportation agencies to implement			
	temporary traffic control measures,			
	such as signage, detours, and			
	flaggers, to ensure safe passage for			
	pedestrians and vehicles.			
	• Employ noise mitigation measures			
	such as using quieter equipment,			
	scheduling noisy activities during off-			
	peak hours, and installing sound			
	barriers or enclosures around work			
	areas.			
	• Implement dust suppression			
	techniques such as water spraying,			
	dust barriers, and covering debris			
	piles to reduce airborne dust particles			

Associated	Μ	lanagement Actions	Responsibilities	Monitoring Indicator	Budget
Impacts					
		and improve air quality.			
	•	Maintain clear signage and barriers			
		around the demolition site to ensure			
		public safety and prevent			
		unauthorized access.			
	•	Conduct regular safety inspections			
		and hazard assessments to identify			
		and mitigate potential safety risks to			
		nearby residents, pedestrians, and			
		motorists.			
	•	Hold community meetings or forums			
		to discuss the demolition project,			
		address concerns, and provide			
		updates on progress and mitigation			
		efforts.			
	•	Encourage open communication			
		between project stakeholders,			
		residents, and local community			
		groups to foster collaboration and			
		resolve issues collaboratively.			

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
	 Monitor environmental factors such as air quality, noise levels, and vibration impacts during demolition activities to assess compliance with regulatory standards and identify areas for improvement. Share monitoring results and mitigation measures with the community to demonstrate transparency and accountability in managing project impacts. 			

Table 8-4: Construction Environmental and Social Management and Monitoring Plan

Associated	Management Actions	Target Areas&	Monitoring	Budget
Impacts		Responsibilities	Indicator	
Excessive	Access roads should be selected for	All work areas	Reported	500,000 Kshs

Associated Management Actions Target A	Areas& Monitoring	Budget
Impacts Response	sibilities Indicator	
Vibration and exclusive use for the transportation of	complaints from	
Noise Pollutionworkers, goods and materials.Respons	sibility neighbour	
These roads should be sited in such a Contract	or(s) community and	
way that the noise from this movement	institutions	
affects as few of the existing residents as		
possible.		
Where possible silenced machinery and		
instruments should be employed to		
reduce the impact of noise on the existing		
residents and workers.		
 Machinery, vehicles and instruments that 		
emit high levels of noise should be used		
on a phased basis to reduce the overall		
impact. These pieces of equipment such		
as drills, graders and cement mixers		
should also be used when the least		
number of residents can be expected to		
be affected, for example during periods		l
where most residents are at work or		

Associated	Management Actions	Target Areas&	Monitoring	Budget
Impacts		Responsibilities	Indicator	
	 Construction hours should be limited to the hours of 8:00 a.m. and 6:00 p.m. daily. The delivery of raw materials must be limited to 8:00 a.m. and 6:00 p.m. daily. Provision of appropriate personnel protective equipment to the workers. 			
Dust Emission	 Wet all active construction areas as and when necessary to lay dust; Use of dust control methods, such as covers, water suppression, or increased moisture content for open materials storage piles, or controls, including air extraction and treatment through a bug house or cyclone for material handling sources, such as conveyors and bins. Ensure that all material (sand and aggregate) stockpiled on the site to be used in construction activities are regularly sprayed to reduce the effects of 	All work areas <u>Responsibility</u> Contractor(s)	Cases of respiratory complication at nearby health centre No of infections	200,000

Associated	Management Actions	Target Areas&	Monitoring	Budget
Impacts		Responsibilities	Indicator	
	wind whipping			
	• Ensure that all trucks carrying aggregate			
	and sand are covered during delivery to			
	the site.			
	Earth moving be done under dump			
	conditions as much as possible to			
	prevent emission of dust into the air.			
	• Strict measures are to be applied for the			
	handling of construction materials in			
	powder form such as cement, lime,			
	concrete additives, etc. and for the			
	disposal of the packaging			
	• Excavation, handling and transport of			
	erodible materials shall be avoided under			
	high wind conditions or when a visible			
	dust plume is present.			
	Minimizing the number of motorized			
	vehicles on use.			
Vegetation	Only clear vegetation that is absolutely	All work areas	Number of treees	KShs. 50,000
Clearing	necessary for the construction		cut	

Associated	Management Actions	Target Areas&	Monitoring	Budget
Impacts		Responsibilities	Indicator	
	activities;		Demarcated project	
	• Retain all mature trees (> 25 cm	<u>Responsibility</u>	area during the	
	diameter at breast height during this	Contractor(s)	training's sessions	
	phase of the development if possible;		No of Claims done	
	Avoid the use of Invasive Alien		on reinstatement	
	Species in the landscaping activities			
	• Determine access roads which are to			
	be used by machinery used in the			
	construction and site clearance phase			
	of the development to avoid the			
	unnecessary trampling of vegetation			
	that will be maintained within the			
	development area.			
	• Cement mixing should be done in a			
	designated area away at a safe			
	distance from storm water drains;			
	• Spilled cement or concrete should be			
	collected and disposed away from			
	natural water ways or storm water			
	drainage;			

Associated	Management Actions	Target Areas&	Monitoring	Budget
Impacts		Responsibilities	Indicator	
	 Re-vegetation of exposed areas 			
	around the site should be carried out			
	rapidly in order to mitigate against			
	erosion of soil through surface water			
	runoff and wind erosion.			
Risks of solid	• All solid waste will be collected at a central	All work areas	Number of	400,000
waste	location of the site and will be stored		complaints from	
mismanagement	temporarily until removal to an	<u>Responsibility</u>	community not	
leading to	appropriately permitted disposal site in the	Contractor(s)	happy with waste	
pollution	vicinity of the site.	Supervision	management of	
	• No dumping within the surrounding area is		spoil material	
	to be permitted. Where potentially			
	hazardous substances are being disposed			
	of, a chain of custody document should be			
	kept with the environmental register as			
	proof of final disposal.			
	• Waste generated at the site should be			
	segregated and disposed of in NEMA			
	designated dumping site			
	• Wherever possible reusing and recycling			

Associated	Management Actions	Target Areas&	Monitoring	Budget
Impacts		Responsibilities	Indicator	
	should be carried out.			
	• A site waste management plan should be			
	prepared by the contractor prior to			
	commencement of construction works.			
	This should include designation of			
	appropriate waste storage areas,			
	collection and removal schedule and			
	identification of approved disposal site;			
	Proper solid waste receptacles and			
	storage containers should be provided,			
	particularly for the disposal of lunch and			
	drink boxes so as to prevent littering of the			
	site.			
Occupation	Sensitize the migrant workers on risky	All work areas	Accidents	Kshs.500,000
safety and	sexual behaviour.		occurrence	
health impact	• Have VCT services on site and encourage	<u>Responsibility</u>	incidences	
	workers to undergo the same.	Contractor(s)		
	• Provision of protective devices such as	Supervision		
	condoms.	Engineer		
	Provision of hand washing points/			
Associated	Management Actions	Target Areas&	Monitoring	Budget
------------------	--	-----------------------	-----------------------	-------------
Impacts		Responsibilities	Indicator	
	sanitizers			
	 Encourage wearing of masks 			
	• Keeping social distance as recommended			
	by the ministry of health of safety gear and			
	enforcement of application			
Site Related Oil	• The Contractor should ensure that the	All work areas	Availability of spill	Ksh 100,000
Spills	employees on site are aware of the		lit	
	company procedures for dealing with spills	<u>Responsibility</u>	Availability of	
	and leaks;	Contractor(s)	impermeable	
	All vehicles and equipment should be kept	Supervision	containers for	
	in good working order, serviced regularly	Engineer	storage of fuels,	
	in accordance to the manufacturers		oils, lubricants and	
	specifications and stored in an area		chemicals are	
	approved by the Resident		stored	
	Engineer/Supervising Consultant;			
	• Ensure spill kits are provided at the			
	construction site			
	• Ensure fuels, oils, lubricants and			
	chemicals are stored are stored in			
	impermeable containers and away from			

Associated	Management Actions	Target Areas&	Monitoring	Budget
Impacts		Responsibilities	Indicator	
	surface drains			
Impact on	• Areas dedicated for hazardous material	All work areas	No of complaints	Kshs
existing water	storage shall provide spill containment and		received	1,000,000
Resources	facilitate clean up through measures such	<u>Responsibility</u>	Availably of solid	
	as: maximum separation from sensitive	Contractor(s)	and liquid waste	
	features (water bodies); clear identification	Supervision	disposal system	
	of the materials present; access restricted	Engineer	Designated areas	
	to authorized personnel and vehicles only		for vehicular	
	and dedicated spill response equipment		servicing	
	• Provide solid and liquid waste disposal			
	system - a waste collector, NEMA			
	recommended waste disposal manual and			
	a waste collection bin for each housing			
	unit, workshop, plant, structural shelter.			
	• Ensure fuels, oils, lubricants and			
	chemicals are stored are stored in			
	impermeable containers and away from			
	surface drains			
	• Ensure that the machines are serviced in			
	specific locations off-site to avoid spillage			

Associated	Management Actions	Target Areas&	Monitoring	Budget
Impacts		Responsibilities	Indicator	
	of oils and grease into the surface runoff			
	channels.			
Fire outbreak	• Label all inflammable materials and store	All work areas	Incidence of	Kshs 500,000
	them appropriately		reported cases of	
	Provision of adequate firefighting	<u>Responsibility</u>	fuel leaks and fire	
	equipment capable of fighting all classes	Contractor(s)	incidences	
	of fire	Supervision		
	• Put — 'No Smoking' Signs in areas where	team		
	inflammables are stored			
	• Train workers on the use of firefighting			
	equipment			
Soil related	• The valuable top soil containing organic	All work areas	Restoration of site	Ksh 500,000
Impacts	material, nutrients as well as seeds and		after construction	
	the soil fauna should be excavated	<u>Responsibility</u>	Availability of	
	separately and piled in an adequate	Contractor(s)	drainage channels	
	manner for re-use where applicable.	Supervision		
	• Minimise compaction during stockpiling	Engineer		
	by working with the soil in a dry state.			
	The stockpiling should be done in specific			
	locations subject to the engineer's			

Associated	Management Actions	Target Areas&	Monitoring	Budget
Impacts		Responsibilities	Indicator	
	approval.			
	• Plan emergency response measures in			
	case of accidental oil spills.			
	• In cases where it is identified that during			
	construction there is a danger of			
	increased run-off or at the project site,			
	drainage channels with stone pitching or			
	holding ponds can be employed			
	• After completion of the construction			
	works, restoration of the green spaes by			
	sowing adequate grass cover and			
	planting of trees will be followed,			
	therefore the impact is temporary and			
	reversible.			
	• In areas prone to erosion, provision of			
	soil stabilization in form of a retaining wall			
	or planting of trees, subject to approval			
	by the Resident Engineer			
Fire outbreak	• Label all inflammable materials and store	All work areas	Incidence of	No direct cost
	them appropriately		reported cases of	associated

Associated	Management Actions	Target Areas&	Monitoring	Budget
Impacts		Responsibilities	Indicator	
	Provision of adequate fire fighting	Responsibility	fuel leaks and fire	
	equipment capable of fighting all classes	Contractor(s)	incidences	
	of fire	Supervision		
	• Put — 'No Smoking' Signs in areas where	team		
	inflammables are stored			
	• Train workers on the use of fire fighting			
	equipment			
Liability for loss	Develop a site safety action plan detailing	All work areas	Available	Kshs
of life, injury to	safety equipment to be used, emergency		operator/driver	2,000,000
property	procedures, restriction on site, frequency	<u>Responsibility</u>	licences	
	and personnel responsible for safety	Contractor(s)	Appropriate	
	inspections and controls.	Supervision	signage's erected	
	Provision of requisite PPE as established	team	on site	
	from risk assessment in the safety action			
	plan and enforcing their usage.			
	The workers should receive requisite			
	training especially on the operation of the			
	machinery and equipment.			
	• There should be adequate warning and			
	directional signs.			

Associated	Management Actions	Target Areas&	Monitoring	Budget
Impacts		Responsibilities	Indicator	
Impacts	 Ensuring that the prepared code of conduct for staff is followed to prevent accidents. Provide First Aid Kit within the construction sites and ensure that at any moment during the works, there is a trained first aider on site. The ration of trained first aiders to worker will be as per defined by the OSHA First Aid Rules. Recording of all injuries that occur on site in the incident register, corrective actions for their prevention are instigated as appropriate. Contractor to ensure compliance with the Workmen's Compensation Act, ordinance regulations and union agreements and maintain insurance cover throughout the construction period. The Contractor to promptly repair any 	Responsibilities		
	 moment during the works, there is a trained first aider on site. The ration of trained first aiders to worker will be as per defined by the OSHA First Aid Rules. Recording of all injuries that occur on site in the incident register, corrective actions for their prevention are instigated as appropriate. Contractor to ensure compliance with the Workmen's Compensation Act, ordinance regulations and union agreements and maintain insurance cover throughout the construction period. The Contractor to promptly repair any damage done to private property. 			

Impacts Responsibility • Limit damage to property by observing construction area limits by clear demarcation • Crime • Fencing off the construction site with incidences • All work	work areas Fencing construct	or of the	No additional
Limit damage to property by observing construction area limits by clear demarcation Fencing off the construction site with All wo	work areas Fencing	of the	No additional
Crime • Fencing off the construction site with All wo	work areas Fencing construct	of the	No additional
 Working with local committees (e.g. "Nyumba Kumi") to provide security within the site in addition to the Contractor's own security. Removing any employee who persists in any misconduct or lack of care, carries out duties incompetently or negligently, fails to conform to any provisions of the contract, or persists in any conduct which is prejudicial to safety, health, or the protection of the environment. Taking all reasonable precautions to prevent unlawful, riotous or disorderly conduct by or amongst the contractor's 	sponsibility and ntractor(s) active si pervision No of o m reported	ction sie barricading ites crime cases	cost

Associated	Management Actions	Target Areas&	Monitoring	Budget
Impacts		Responsibilities	Indicator	
	protection of persons and property on			
	and near the site			
Spread of HIV	Develop HIV/AIDS awareness programs	All work areas	HIV AIDs	Ksh 250,000
and AIDS	or initiatives to target the construction		Programme	
	workers, community, institutions and the	<u>Responsibility</u>	Condom dispense	
	general members of the community,	Contractor(s)	No of sensitization	
	particularly the youth; with the objective	Supervision	meeting held,	
	of reducing the risks of exposure and the	team	attendance sheet	
	spread of HIV/AIDS within the project			
	area.			
	Sensitize the migrant workers on risky			
	sexual behaviour.			
	Provide VCT services on site and			
	encourage workers to undergo the same.			
	Provision of protective devices such as			
	condoms.			
	Maximize hiring skilled and unskilled			
	workers from the host community			
Traffic and	• Provide diversion routes where possible.	All work areas	Availability of	Ksh 300,000
access	• Give a construction itinerary in advance		adequate signages	

Associated	Management Actions	Target Areas&	Monitoring	Budget
Impacts		Responsibilities	Indicator	
	so that the potentially affected population	Responsibility	Availability of a	
	can use alternative routes and start early	Contractor(s)	traffic management	
	to get to their destinations on time.	Supervision	plan on site	
	 Erect warning signs of on-going works. 	team	Availability of	
	Alternatives access ways should be		temporary bridges	
	communicated to the community.		Trained traffic	
			marshals	
Interruption of	Ensure dissemination of relevant	All work areas	Availability of a	Kshs 100,000
existing	information to each of the affected		work plan showing	
amenities	parties;	<u>Responsibility</u>	scheduled days for	
	• A work plan with clear responsibilities for	Contractor(s)	affected utilities	
	each party should be developed to	Supervision	Letter informing	
	ensure smooth execution of the	team	utility owners on	
	construction		the anticipated	
			interruptions	
Labour Influx	• Reduce labour influx by tapping into the	Responsibility	Availability of	Kshs 50,000
	local workforce. Depending on the size	Contractor(s)	labour	
	and the skill level of the local workforce, a	Supervision	management plan	
	share of the workers required for the	team	Availability of	
	project may be recruited locally. This may		Contracts	

Associated	Management Actions	Target Areas&	Monitoring	Budget
Impacts		Responsibilities	Indicator	
	be easier for unskilled workmen.			
	Specialised workmen may be hired from			
	elsewhere. Local workers may also be			
	trained especially if they are required for			
	the operation of the project.			
	• Effective contractual obligations for the			
	contractor to adhere to the mitigation of			
	risks against labour influx. Depending on			
	the risk factor, appropriate mitigation			
	measures may be deployed. These may			
	range from engagement with a local			
	community liaison to the use of the local			
	elders.			
	• 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 AfDB Code			
	of Conduct guidelines where applicable.			
	• The contractor should prepare and			

Associated	Management Actions	Target Areas&	Monitoring	Budget
Impacts		Responsibilities	Indicator	
	implement a gender action plan			
Child labour and	• Ensure no children are employed on site	Responsibility	Availability of	No additional
Protection	in accordance with national labour laws.	Contractor(s)	identification cards	cost
	• Ensure that any child sexual relations	Supervision	for all workers on	
	offenses among contractors' workers are	team	site	
	promptly reported to the police.		Complains received	
			by residents in	
			regard to child	
			labour	
Gender Equity &	• The works contractor should be required,	Responsibility	No of complaints	No additional
Sexual	under its contract, to prepare and enforce	Contractor(s)	received	cost
Harassment	a No Sexual Harassment and Non-	Supervision	Availability of	
	Discrimination Policy, in accordance with	team	gender action plan	
	national law where applicable.			
	• Strive for an equitable distribution of			
	employment opportunities between men			
	and women. Mainstream Gender			
	Inclusivity in hiring of workers as required			
	by Gender Policy 2011 and 2/3 gender			
	rule;			

Associated	Management Actions	Target Areas&	Monitoring	Budget
Impacts		Responsibilities	Indicator	
	• The contractor should prepare and			
	implement a gender action plan			
	Provide toilets and bathrooms for both			
	male and female workers on site			
Increased GBV	Develop and implement provisions that	Responsibility	Availability of	200,000
	ensure that gender-based violence at the	Contractor(s)	trained materials,	
	community level is not triggered by the	Supervision	photographs and	
	Project e.g. effective and on-going	team	attendance sheet	
	community engagement and consultation,		Signed CoC	
	particularly with women and girls;			
	Ensure adequate referral mechanisms			
	are in place if a case of GBV at the			
	community level is reported related to			
	project implementation			
	Sensitization of workers and the			
	community.			
	Training on GBV.			
	Having workers sign a code of conduct.			
Sexual	• Develop and implement an SEA action	Responsibility	Availability of a	No additional
Exploitation and	plan with an Accountability and Response	Contractor(s)	SEA action plan	cost

Associated	Management Actions	Target Areas&	Monitoring	Budget
Impacts		Responsibilities	Indicator	
Abuse (SEA)	Framework as part of the C-ESMP. The	Supervision	No of complaints	
	SEA action plan will follow guidance on	team	received in regard	
	the AfDB comprehensive strategy to		to SEA	
	address gender-based violence (GBV)			
	within its projects and programs.			

Table 8-5:Operational Environment and Social Management Plan

Associated	Ma	nagement Actions	Responsibilities	Monitoring Indicator	Budget
Impacts					
Traffic Congestion	•	Develop and implement a	CWWDA	Number of complains	To be
		comprehensive transportation		from the community	established at
		management plan to coordinate		Trend f traffic jam	operation
		employee commuting, visitor			phase
		access, and service vehicle			
		movements efficiently.			
	•	Encourage employees to use			
		alternative modes of transportation			
		such as public transit, carpooling,			
		cycling, or telecommuting to reduce			

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
	the number of single-occupancy			
	vehicles on the road.			
	• Offer flexible work schedules or			
	staggered shifts to reduce peak-			
	hour traffic congestion and spread			
	out employee arrivals and			
	departures.			
	• Promote telecommuting and remote			
	work options for employees where			
	feasible to reduce the need for daily			
	commuting to the office.			
	Implement parking management			
	strategies such as designated			
	parking areas, employee parking			
	permits, and incentives for			
	carpooling to optimize parking space			
	usage and reduce on-street parking.			
	Provide shuttle services or			
	transportation subsidies for			
	employees commuting from nearby			

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
	areas to reduce reliance on personal			
	vehicles and alleviate traffic			
	congestion.			
	• Coordinate with local authorities to			
	optimize traffic signals, adjust signal			
	timing, and improve intersection			
	designs to enhance traffic flow and			
	reduce congestion hotspots.			
	• Enhance pedestrian walkways, bike			
	lanes, and cycling infrastructure			
	around the office block to promote			
	walking and cycling as alternative			
	transportation modes.			
	• Regularly monitor traffic conditions,			
	collect data on congestion patterns,			
	and use real-time traffic information			
	to make informed decisions and			
	adjust traffic management strategies			
	as needed.			
	• Educate employees, visitors, and			

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
	the local community about transportation options, traffic management measures, and the importance of reducing single- occupancy vehicle trips to mitigate traffic congestion effectively.			
Noise and Air Pollution	 Install noise barriers or soundproofing measures around noisy equipment, loading docks, and operational areas to minimize noise emissions and mitigate its impact on nearby residents. Use quieter equipment, machinery, and vehicles where possible, and implement noise-reducing technologies such as mufflers, silencers, and acoustic enclosures to lower noise levels during operations. 	CWWDA	Results from noise and air measurements Complaints recorded Cases of respiratory diseases in hospitals	

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
	Schedule noisy activities, such as			
	deliveries, maintenance work, and			
	construction, during off-peak hours			
	or times when nearby residents are			
	less likely to be affected, to reduce			
	disturbance from noise pollution.			
	• Regularly maintain and inspect			
	equipment, vehicles, and machinery			
	to ensure they operate efficiently			
	and comply with noise emission			
	standards and regulations to			
	minimize noise pollution.			
	• Plant trees, shrubs, and greenery			
	around the office block to act as			
	natural barriers and absorb noise,			
	while also enhancing air quality and			
	reducing airborne pollutants.			
	Implement emission control			
	measures for vehicles, equipment,			
	and machinery, such as using low-			

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
	emission vehicles, installing			
	emission control devices, and			
	adopting cleaner fuel alternatives, to			
	reduce air pollution emissions.			
	• Enforce policies and practices to			
	minimize vehicle idling during			
	loading/unloading, waiting periods,			
	and maintenance activities to reduce			
	unnecessary emissions and noise.			
	Engage with the local community to			
	raise awareness about noise and air			
	pollution issues, solicit feedback,			
	and collaborate on effective			
	mitigation measures and solutions to			
	address concerns and improve			
	environmental quality.			
	Ensure compliance with relevant			
	noise pollution regulations, air			
	quality standards, and emission			
	limits set by environmental			

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
	 authorities, and implement measures to exceed minimum requirements where feasible. Monitor noise levels, air quality, and emissions regularly using environmental monitoring systems and conduct periodic assessments to evaluate the effectiveness of mitigation measures and make adjustments as needed. 			
Solid Waste Generation	 Install noise barriers or soundproofing measures around noisy equipment, loading docks, and operational areas to minimize noise emissions and mitigate its impact on nearby residents. Use quieter equipment, machinery, and vehicles where possible, and implement noise-reducing 	CWWDA	Availability of color coded waste segregation bin Availability of a licenced waste handler Procurement trend	

Associated	Μ	anagement Actions	Responsibilities	Monitoring Indicator	Budget
Impacts					
		technologies such as mufflers,			
		silencers, and acoustic enclosures to			
		lower noise levels during operations.			
	•	Schedule noisy activities, such as			
		deliveries, maintenance work, and			
		construction, during off-peak hours or			
		times when nearby residents are less			
		likely to be affected, to reduce			
		disturbance from noise pollution.			
	•	Regularly maintain and inspect			
		equipment, vehicles, and machinery			
		to ensure they operate efficiently and			
		comply with noise emission			
		standards and regulations to			
		minimize noise pollution.			
	•	Plant trees, shrubs, and greenery			
		around the office block to act as			
		natural barriers and absorb noise,			
		while also enhancing air quality and			
		reducing airborne pollutants.			

Associated	Μ	anagement Actions	Responsibilities	Monitoring Indicator	Budget
Impacts					
	•	Implement emission control			
		measures for vehicles, equipment,			
		and machinery, such as using low-			
		emission vehicles, installing emission			
		control devices, and adopting cleaner			
		fuel alternatives, to reduce air			
		pollution emissions.			
	•	Enforce policies and practices to			
		minimize vehicle idling during			
		loading/unloading, waiting periods,			
		and maintenance activities to reduce			
		unnecessary emissions and noise.			
	•	Engage with the local community to			
		raise awareness about noise and air			
		pollution issues, solicit feedback, and			
		collaborate on effective mitigation			
		measures and solutions to address			
		concerns and improve environmental			
		quality.			
	•	Ensure compliance with relevant			

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
	noise pollution regulations, air quality			
	standards, and emission limits set by			
	environmental authorities, and			
	implement measures to exceed			
	minimum requirements where			
	feasible.			
	• Monitor noise levels, air quality, and			
	emissions regularly using			
	environmental monitoring systems			
	and conduct periodic assessments to			
	evaluate the effectiveness of			
	mitigation measures and make			
	adjustments as needed.			
	•			
Liquid Waste	• Install a comprehensive wastewater	CWWDA	Availability of an	
Generation	collection system with separate lines		Efluent discharge	
	for domestic wastewater from offices		license	
	and public areas and specialized		Availability of an	
	lines for laboratory wastewater		effluent treatment	
	containing chemicals, solvents, and		plant	

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
	potential contaminants.		Availability of	
	• Implement strict waste segregation		separate drainage	
	protocols within the laboratory,		system	
	separating hazardous waste (e.g.,		Training records	
	chemicals, biological materials) from			
	non-hazardous waste to facilitate			
	safe disposal and treatment.			
	• Develop and implement a chemical			
	spill contingency plan for the			
	laboratory, including spill response			
	procedures, containment measures,			
	and emergency protocols to minimize			
	environmental impact and ensure the			
	safety of personnel.			
	 Install an onsite wastewater 			
	treatment plant (WWTP) or utilize			
	centralized municipal wastewater			
	treatment facilities capable of treating			
	diverse wastewater streams,			
	including laboratory effluents, to meet			

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
	regulatory standards and protect			
	water quality.			
	Consider advanced wastewater			
	treatment technologies such as			
	filtration, activated carbon adsorption,			
	chemical precipitation, and biological			
	treatment (e.g., aerobic and			
	anaerobic processes) to remove			
	contaminants and pollutants from			
	laboratory wastewater before			
	discharge.			
	• Implement regular monitoring			
	programs to assess wastewater			
	quality, chemical concentrations, and			
	discharge parameters, ensuring			
	compliance with environmental			
	regulations, discharge permits, and			
	effluent standards set by regulatory			
	authorities.			
	• Install spill containment and			

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
	prevention measures within the			
	laboratory, including secondary			
	containment systems, spill trays, and			
	chemical storage cabinets, to			
	minimize the risk of accidental spills			
	and leaks into the wastewater			
	system.			
	• Provide comprehensive training to			
	laboratory staff on proper waste			
	handling, chemical management,			
	spill response procedures, and			
	wastewater disposal practices to			
	prevent contamination and ensure			
	compliance with safety and			
	environmental protocols.			
	• Establish protocols for the safe and			
	responsible discharge of treated			
	wastewater from the laboratory,			
	including monitoring discharge			
	points, documenting effluent quality,			

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
	and maintaining records for			
	regulatory reporting and compliance.			
	 Continuously review and update 			
	wastewater management practices,			
	invest in technology upgrades,			
	conduct periodic audits and			
	assessments, and engage in			
	stakeholder consultations to improve			
	efficiency, minimize risks, and			
	enhance environmental stewardship			
	in wastewater management within			
	the office block and laboratory			
	facilities.			
	•			
Constrain on water	Install water-efficient fixtures such as	CWWDA	Availability of water	
supply	low-flow toilets, faucets, and		saving features	
	showerheads to reduce water		Availability of Waste	
	consumption in washrooms and		water treatment plant	
	kitchens, without compromising			
	functionality and user experience.			

Associated	Μ	anagement Actions	Responsibilities	Monitoring Indicator	Budget
Impacts					
	٠	Implement greywater recycling			
		systems to capture and treat			
		wastewater from sinks, showers, and			
		laundry facilities for non-potable uses			
		such as toilet flushing, landscaping			
		irrigation, and cooling systems,			
		thereby reducing demand for			
		freshwater.			
	•	Incorporate rainwater harvesting			
		systems to capture and store			
		rainwater from rooftops and paved			
		surfaces, using it for irrigation,			
		cooling towers, and non-potable			
		applications, thus supplementing			
		municipal water supply and reducing			
		reliance on groundwater.			
	•	Design water-efficient landscaping			
		with native plants, drought-resistant			
		species, and efficient irrigation			
		methods such as drip irrigation and			

Associated	Μ	anagement Actions	Responsibilities	Monitoring Indicator	Budget
Impacts					
		soil moisture sensors to minimize			
		outdoor water use and promote			
		sustainable landscaping practices.			
	•	Implement water recycling and reuse			
		systems for process water, cooling			
		water, and industrial applications			
		within the office block, utilizing			
		treated wastewater for non-potable			
		purposes and reducing demand for			
		fresh water.			
	•	Conduct regular inspections and			
		maintenance to detect and repair			
		water leaks, faulty plumbing fixtures,			
		and irrigation systems promptly,			
		preventing water wastage and			
		ensuring efficient water use			
		throughout the office block.			
	•	Implement water monitoring systems			
		to track water usage, identify trends,			
		and implement conservation policies			
	1			1	

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
	and practices such as water-use			
	restrictions, employee awareness			
	campaigns, and incentives for water			
	conservation efforts.			
	• Educate employees, tenants, and			
	visitors about water conservation			
	practices, efficient water use			
	behaviors, and the importance of			
	preserving water resources through			
	workshops, training sessions, and			
	informational materials.			
	• Select water-efficient equipment,			
	appliances, and machinery for office			
	operations, kitchen facilities, and			
	landscaping needs, considering			
	ENERGY STAR-rated products and			
	water-saving technologies to			
	minimize water consumption.			
	Collaborate with local water			
	authorities, conservation			

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
	organizations, and community			
	stakenoiders to promote water			
	conservation initiatives, share best			
	practices, and support sustainable			
	water management strategies at the			
	regional level.			
Constrain on	Install energy-efficient LED lighting	CWWDA	Number of blackouts	
Energy Use	fixtures, occupancy sensors, and		in a week	
	daylight harvesting systems to		Availability of energy	
	reduce electricity consumption for		efficient appliances	
	lighting while maintaining optimal			
	illumination levels.			
	• Enhance efficient windows to			
	minimize heat loss during winter and			
	reduce cooling loads in summer,			
	thereby lowering energy demand for			
	heating and cooling systems.			
	• Implement energy-efficient heating,			
	ventilation, and air conditioning			

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
	(HVAC) systems with variable speed			
	drives, programmable thermostats,			
	and zone controls to optimize energy			
	use based on occupancy and thermal			
	comfort requirements.			
	Explore renewable energy options			
	such as solar photovoltaic (PV)			
	panels, wind turbines, or geothermal			
	systems to generate onsite			
	renewable energy and reduce			
	reliance on grid electricity, thereby			
	lowering carbon emissions			
	associated with electricity			
	consumption.			
	Deploy advanced energy			
	management systems (EMS) with			
	real-time monitoring, analytics, and			
	control capabilities to optimize			
	energy use, identify inefficiencies,			
	and implement energy-saving			

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
	measures proactively.			
	Promote energy conservation			
	behaviors among building occupants			
	through awareness campaigns,			
	energy-saving tips, and incentives for			
	sustainable practices such as turning			
	off lights, using energy-efficient			
	appliances, and minimizing waste.			
	• Pursue green building certifications			
	such as LEED (Leadership in Energy			
	and Environmental Design) or			
	BREEAM (Building Research			
	Establishment Environmental			
	Assessment Method) to ensure			
	compliance with stringent energy			
	performance standards and			
	demonstrate commitment to			
	sustainability.			
	Conduct regular energy audits to			
	identify energy-saving opportunities,			

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
	prioritize retrofit projects for energy-			
	intensive systems, and implement			
	energy-efficient upgrades such as			
	energy-efficient boilers, lighting			
	retrofits, and HVAC system retro-			
	commissioning.			
	Incorporate smart building			
	technologies such as building			
	automation systems (BAS), smart			
	meters, and demand response			
	strategies to optimize energy use,			
	manage peak demand, and reduce			
	overall energy consumption during			
	operational hours.			
	Collaborate with energy service			
	companies (ESCOs), utilities, and			
	government agencies to access			
	energy efficiency incentives, rebates,			
	and financing options for			
	implementing energy conservation			

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
	measures and renewable energy			
	solutions within the office block			
Community	Establish clear communication	CWWDA,	No of reported cases	
Disruption	channels with the local community,	Community	of complains	
	residents, businesses, and			
	institutions to inform them about			
	upcoming activities, deliveries,			
	events, and maintenance schedules.			
	Coordinate closely with relevant			
	stakeholders to minimize disruptions			
	and address concerns promptly.			
	Develop and implement a			
	comprehensive traffic management			
	plan that includes designated			
	delivery zones, parking areas, and			
	traffic flow regulations to minimize			
	congestion, ensure pedestrian safety,			
	and reduce disruptions to local traffic			
	during peak hours.			
	Implement measures to control noise			

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
	levels and dust emissions from			
	operational activities such as			
	construction, deliveries, and			
	maintenance. Use sound barriers,			
	mufflers, and dust suppression			
	techniques to mitigate impacts on			
	nearby residents and businesses.			
	• Schedule noisy or disruptive activities			
	such as construction, deliveries, and			
	maintenance work during off-peak			
	hours or times when community			
	impact is minimized, such as			
	weekends or evenings. Coordinate			
	with local authorities to comply with			
	noise ordinances and regulations.			
	• Engage with the local community			
	through outreach programs, public			
	meetings, and feedback mechanisms			
	to address concerns, gather			
	feedback, and involve residents in			

Associated	Μ	anagement Actions	Responsibilities	Monitoring Indicator	Budget
Impacts					
		decision-making processes related to			
		operational activities and community			
		disruptions.			
	•	If hosting events or gatherings within			
		the office block, obtain necessary			
		permits, inform the community in			
		advance, and implement measures			
		to manage crowd control, parking,			
		security, and noise levels to minimize			
		disruptions and ensure safety.			
	•	:Conduct regular environmental			
		monitoring of air quality, noise levels,			
		and other potential impacts to assess			
		the effectiveness of mitigation			
		measures and take corrective actions			
		as needed to mitigate community			
		disruptions.			
	•	Establish protocols and procedures			
		for addressing conflicts, complaints,			
		or grievances from the local			
Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget	
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Impacts					
	community regarding operational				
	activities. Designate a point of				
	contact or community liaison to				
	handle issues and facilitate resolution				
	through dialogue and mediation.				
	Continuously evaluate and review				
	mitigation measures, gather				
	feedback from stakeholders, and				
	incorporate lessons learned into				
	future operational planning to				
	improve community relations,				
	minimize disruptions, and enhance				
	overall project sustainability.				
	•				
Ecological Impact	Incorporate green design principles	CWWDA	No of green spaces in		
	and sustainable landscaping		the area		
	practices into the office block's		Temperature		
	construction and site development.		conditions		
	This includes preserving existing				
	green spaces where possible,				

Management Actions	Responsibilities	Monitoring Indicator	Budget
planting native vegetation, creating			
green roofs or walls, and			
incorporating green areas within the			
premises to enhance biodiversity and			
ecosystem services.			
• Identify and protect mature trees and			
vegetation on-site by implementing			
tree protection zones, using root			
barriers, and avoiding unnecessary			
tree removals during construction.			
Incorporate tree planting and			
replacement programs to offset any			
tree losses and enhance the overall			
greenery of the area.			
Implement vegetation restoration			
measures in areas affected by			
construction activities. This may			
include revegetation, reforestation,			
and wetland restoration initiatives to			
restore ecological functions.			
	 Management Actions planting native vegetation, creating green roofs or walls, and incorporating green areas within the premises to enhance biodiversity and ecosystem services. Identify and protect mature trees and vegetation on-site by implementing tree protection zones, using root barriers, and avoiding unnecessary tree removals during construction. Incorporate tree planting and replacement programs to offset any tree losses and enhance the overall greenery of the area. Implement vegetation restoration measures in areas affected by construction activities. This may include revegetation, reforestation, and wetland restoration initiatives to restore ecological functions. 	Management Actions Responsibilities planting native vegetation, creating green roofs or walls, and incorporating green areas within the premises to enhance biodiversity and ecosystem services. and Identify and protect mature trees and vegetation on-site by implementing tree protection zones, using root barriers, and avoiding unnecessary tree removals during construction. Incorporate tree planting and replacement programs to offset any tree losses and enhance the overall greenery of the area. Implement vegetation restoration measures in areas affected by construction, and wetland restoration initiatives to restore ecological functions.	Management ActionsResponsibilitiesMonitoring Indicatorplanting native vegetation, creating green roofs or walls, and incorporating green areas within the premises to enhance biodiversity and ecosystem services.• Identify and protect mature trees and vegetation on-site by implementing tree protection zones, using root barriers, and avoiding unnecessary tree removals during construction. Incorporate tree planting and replacement programs to offset any tree losses and enhance the overall greenery of the area.• Implement vegetation restoration measures in areas affected by construction activities. This may include revegetation, reforestation, and wetland restoration initiatives to restore ecological functions.

Associated	Μ	anagement Actions	Responsibilities	Monitoring Indicator	Budget
Impacts					
	•	Implement sustainable stormwater			
		management practices such as			
		green infrastructure, permeable			
		surfaces, rain gardens, and retention			
		ponds to reduce runoff, improve			
		water quality, and promote			
		groundwater recharge while			
		enhancing green spaces within the			
		project site.			
	•	Integrate green infrastructure			
		elements such as green spaces,			
		vegetated swales, and wildlife-			
		friendly features into the office			
		block's design and site layout to			
		promote biodiversity, reduce heat			
		island effects, and enhance the			
		overall ecological resilience of the			
		surrounding environment.			
	•	Engage with the local community,			
		employees, and stakeholders			

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
	through educational programs,			
	interpretive signage, and outreach			
	initiatives to raise awareness about			
	ecological conservation, sustainable			
	practices, and the importance of			
	preserving green spaces within and			
	around the office block			
Health and safety	Develop and implement	CWWDA	No of trainings held	
risks	comprehensive health and safety		Availability	
	policies, procedures, and protocols		emergency	
	specific to the office block's activities.		preparedness plan	
	Ensure compliance with local		Availability of	
	regulations, industry standards, and		firstaiders	
	best practices to minimize			
	occupational risks and promote a			
	safe working environment for			
	employees, contractors, and visitors.			
	• Provide regular training sessions,			
	workshops, and awareness programs			
	on occupational health and safety			

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
	practices, hazard identification, risk			
	assessment, emergency response			
	protocols, and use of personal			
	protective equipment (PPE). Ensure			
	that all personnel are knowledgeable			
	and equipped to handle potential			
	hazards effectively.			
	• Conduct thorough risk assessments			
	of workplace hazards, including			
	ergonomic risks, chemical			
	exposures, electrical hazards, fire			
	risks, and potential accidents.			
	Develop risk management plans,			
	control measures, and emergency			
	procedures to mitigate identified risks			
	and prevent incidents.			
	• Establish emergency response plans,			
	evacuation procedures, and			
	contingency measures to address			
	emergencies such as fires, chemical			

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
	spills, medical emergencies, and			
	natural disasters. Conduct regular			
	drills, simulations, and exercises to			
	test response capabilities and ensure			
	swift and coordinated actions during			
	crises.			
	Implement health surveillance			
	programs to monitor employee			
	health, detect early signs of			
	occupational illnesses or injuries, and			
	provide timely medical intervention			
	and support. Conduct regular health			
	assessments, screenings, and			
	medical examinations as part of			
	proactive health management.			
	Provide appropriate safety			
	equipment, tools, and facilities to			
	mitigate workplace hazards, including			
	PPE (such as helmets, gloves, safety			
	goggles, and respiratory protection),			

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
	first aid kits, emergency alarms,			
	firefighting equipment, and			
	ergonomic workstation setups.			
	Ensure proper maintenance,			
	inspection, and availability of safety			
	resources at all times.			
	• Promote employee well-being,			
	mental health, and stress			
	management through wellness			
	programs, counseling services, work-			
	life balance initiatives, and support			
	networks. Foster a culture of safety			
	consciousness, mutual support, and			
	open communication to address			
	health and safety concerns			
	proactively.			
	• Establish mechanisms for ongoing			
	monitoring, evaluation, and feedback			
	on health and safety performance.			
	Conduct regular audits, inspections,			

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
	incident investigations, and corrective			
	actions to identify areas for			
	improvement, address root causes of			
	safety issues, and enhance overall			
	health and safety management			
	systems.			
Social and Cultural	 Engage with local residents, 	CWWDA	Number of suppliers	
Impact	community leaders, cultural		from the local	
	institutions, and businesses		community.	
	through meaningful consultations,		Number of Cultural	
	public meetings, and participatory		heritage maintained	
	processes to understand their		by the agency	
	concerns, aspirations, and			
	priorities. Incorporate community			
	feedback into project planning			
	and decision-making to ensure			
	inclusive and equitable outcomes.			
	 Identify and protect cultural 			
	heritage sites, landmarks, and			

Management Actions	Responsibilities	Monitoring Indicator	Budget
traditions within the project area.			
Develop strategies for preserving			
historical buildings, artifacts, and			
cultural practices, and integrate			
them into the office block's design			
or surrounding public spaces to			
celebrate local heritage and			
identity.			
Address potential gentrification			
pressures by promoting			
affordable housing options,			
mixed-income developments, and			
inclusive community spaces			
within or adjacent to the office			
block. Collaborate with housing			
authorities, nonprofits, and			
developers to provide housing			
opportunities for diverse socio-			
economic groups and mitigate			
displacement risks.			
	 Management Actions traditions within the project area. Develop strategies for preserving historical buildings, artifacts, and cultural practices, and integrate them into the office block's design or surrounding public spaces to celebrate local heritage and identity. Address potential gentrification pressures by promoting affordable housing options, mixed-income developments, and inclusive community spaces within or adjacent to the office block. Collaborate with housing authorities, nonprofits, and developers to provide housing opportunities for diverse socio- economic groups and mitigate displacement risks. 	Management Actions Responsibilities traditions within the project area. Develop strategies for preserving historical buildings, artifacts, and cultural practices, and integrate them into the office block's design or surrounding public spaces to celebrate local identity. • Address potential gentrification pressures pressures by promoting affordable housing options, mixed-income developments, and inclusive inclusive community spaces within or adjacent to the office block. Collaborate with housing authorities, nonprofits, and developers to provide housing opportunities for diverse socio- economic groups and mitigate displacement risks. displacement risks. displacement risks.	Management Actions Responsibilities Monitoring Indicator traditions within the project area. Develop strategies for preserving historical buildings, artifacts, and cultural practices, and integrate them into the office block's design or surrounding public spaces to celebrate local heritage and identity. Address potential gentrification pressures by promoting affordable housing options, mixed-income developments, and inclusive community spaces within or adjacent to the office block. Collaborate with housing authorities, nonprofits, and developers to provide housing opportunities for diverse socio-economic groups and mitigate displacement risks. Monitoring Indicator

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
	Foster partnerships with local			
	businesses, entrepreneurs, and			
	artisans to promote economic			
	opportunities, job creation, and			
	cultural entrepreneurship within			
	the project area. Provide support			
	for small businesses, cultural			
	events, and creative industries to			
	thrive and contribute to the			
	vibrancy of the community.			
	• Design public spaces,			
	recreational areas, and			
	community facilities within the			
	office block's premises or nearby			
	areas to promote social			
	interaction, cultural activities, and			
	community cohesion. Invest in			
	social infrastructure such as			
	schools, healthcare facilities,			
	libraries, and community centers			

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
	to enhance quality of life and			
	social well-being for residents.			
	 Organize cultural programs, 			
	festivals, exhibitions, and			
	educational workshops that			
	showcase local talents, traditions,			
	and cultural diversity. Encourage			
	cross-cultural exchanges,			
	intergenerational dialogue, and			
	mutual understanding to foster a			
	sense of belonging and cultural			
	pride among residents and			
	stakeholders.			
	Implement diversity and inclusion			
	policies within the office block,			
	including equal employment			
	opportunities, anti-discrimination			
	measures, cultural sensitivity			
	training, and accessibility			
	provisions. Create a welcoming			

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
	and inclusive environment that			
	respects and values diverse			
	backgrounds, perspectives, and			
	identities.			
	Establish mechanisms for			
	monitoring social impacts,			
	conducting regular assessments,			
	and evaluating the effectiveness			
	of mitigation measures.			
	Continuously engage with			
	stakeholders, gather feedback,			
	and adapt strategies as needed to			
	address emerging social and			
	cultural challenges, promote			
	positive outcomes, and enhance			
	community resilience			

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
Visual and	Ensure that the office block's	CWWDA	Aprovals from the	
Aesthetic Impact	design integrates seamlessly with		County Government	
	the existing urban fabric and		Evidence of public	
	architectural style of the area.		participation	
	Adhere to local urban planning			
	guidelines, zoning regulations,			
	and design standards to maintain			
	architectural continuity and			
	enhance the area's overall visual			
	quality.			
	 Incorporate green building 			
	practices and sustainable design			
	elements into the office block's			
	construction, such as energy-			
	efficient lighting, passive cooling			
	systems, green roofs, and native			
	landscaping. These features not			
	only improve environmental			
	performance but also contribute			
	to a visually pleasing and eco-			

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
	friendly building aesthetic.			
	Enhance the office block's visual			
	appeal by incorporating public art			
	installations, sculptures, murals,			
	and green spaces in the			
	surrounding area. Create inviting			
	outdoor spaces, pedestrian-			
	friendly pathways, and			
	recreational amenities that			
	enhance the overall aesthetic			
	experience and promote			
	community engagement.			
	Pay attention to facade			
	treatments, architectural details,			
	and facade materials to create an			
	attractive and dynamic exterior			
	appearance. Use high-quality			
	materials, innovative designs, and			
	sustainable finishes that			
	withstand weathering, reduce			

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
	maintenance requirements, and			
	contribute to a lasting visual			
	impact.			
	Implement thoughtful lighting			
	design strategies for both exterior			
	and interior spaces of the office			
	block. Use strategic lighting			
	placement, accent lighting, and			
	energy-efficient fixtures to			
	highlight architectural features,			
	create visual interest, and			
	enhance nighttime visibility while			
	minimizing light pollution.			
	Involve local stakeholders,			
	community members, and design			
	experts in the planning and			
	design process to gather			
	feedback, incorporate diverse			
	perspectives, and ensure that the			
	office block's aesthetic aligns with			

Table 8-6: Decommissioning Phase Environmental and Social Management and Monitoring Plan

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
Loss of jobs and	Notify the employees in advance	WSPs	Record of counselling	To be established at
income	on the project closure date and		session done	Decommissioning
	adequately compensate them;		Record of notification	phase
	Dismissal procedures to be		made to employees in	
	compliant with Employment Act,		regard to job losses	
	2007;			
	Provide counselling and			
	alternative skills for alternative			

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
	activities;			
	Customers are to be notified in			
	advance of the proposed			
	decommissioning.			
Noise Pollution	Schedule noisy activities during	WSPS	No of complaints due	
	the day time period;		to noise pollution	
	Use silencers on machines			
	where possible;			
	Ensure machinery is well			
	maintained to reduce noise			
	emitted.			
Occupation health	Provide the correct PPE for the	WSPS	Availability of	
and Safety	workers when conducting the		appropriate PPEs for	
	demolition activities;		all workers	
	Conduct training on health and		Training records on	
	safety procedures to the workers		occupational health	
	prior to commencement of		and safety	
	demolition;			
	Proper plans should be made			
	prior to demolition so as to			

Associated	Management Actions	Responsibilities	Monitoring Indicator	Budget
Impacts				
	contain the raw sewage and			
	other waste water that poses as			
	health risk to human beings and			
	the environment, to prevent the			
	workers and surrounding			
	communities from getting into			
	contact with it			

CHAPTER 9 : CONCLUSION AND RECOMMENDATIONS

9.1 Conclusion

In conclusion, the Environmental and Social Impact Assessment (ESIA) Comprehensive Project Report (CPR) for the Proposed Project underscores the project's commitment to environmental conservation. The identification of potential adverse impacts and the proposition of feasible mitigation measures demonstrate a thorough understanding of the environmental and social aspects associated with the project. The proposed Environmental and Social Management and Monitoring Plan (ESMMP) not only includes a robust Mitigation Plan but also outlines Monitoring and Enforcement Requirements, as well as the Responsible Persons/Organizations involved.

9.2 Recommendation

Based on the comprehensive evaluation of the Proposed Project, it is recommended that the project be approved by the National Environment Management Authority (NEMA). The project has been thoroughly assessed from social, economic, and environmental perspectives, demonstrating stable economic benefits and a strong anti-risk capacity. The alternatives analysis affirms the project's indispensability, and as such, it is deemed necessary and should be implemented expeditiously.

The development of a comprehensive Environmental and Social Management Plan (ESMP) and Environmental Monitoring Strategy underscores the proponent's commitment to minimizing environmental damage. The alignment of the project with the National Constitution, the National Water Policy (2012), Kenya Vision 2030 goals, and the National Spatial Plan 2015-2045 further supports its approval.

In light of the environmentally sound nature of the proposed project, and the proponent's commitment to implementing disclosed mitigation measures, it is recommended that NEMA issue the project proponent with an Environmental Impact Assessment (EIA) license in accordance with Kenya's environmental laws. This approval will not only signify regulatory compliance but also affirm the project's positive contribution to sustainable development goals at local, national, and international levels.

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in the project design will be effectively implemented. On the basis of these findings, it is recommended that the proposed project be approved. Further, NEMA should issue the proponent with an EIA license as required by Kenya 's environmental laws.

ANNEXES

Annex 1: Lead Expert NEMA License





EAE 23061569

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FORM 7

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/20715 Application Reference No: NEMA/EIA/EL/27398

M/S PATRICK KYALO KITUTA

(individual or firm) of address P.O. Box 76065 - 00508 NAIROBI

is licensed to practice in the

capacity of a (Lead Expert/Associate Expert/Firm of Experts) Lead Expert General

registration number 1275

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

Issued Date: 1/31/2024

Expiry Date: 12/31/2024

Signature.



Annex 2: Layout Plan of Proposed Interventions

Annex 3: Minutes and Attendance Sheet

Minutes of the Public Consultation Meeting for the ESIA Proposed development of Nyali office block, Held on 23rd march 2024, Nyali area, Mombasa County

Subject/Ref	ESIA and Development of Office block Project
County	Mombasa
Location	Nyali Area
Meeting Venue	Mombasa Water Office
Date and time of Meeting	23 rd March 2024 at 2:00-4:00pm

Number	Male: 13
Of participants	
	Female: 10
	PWD: None

Agenda of the Meeting

The agenda was as follows:

- Opening remarks/prayer
- Introduction of participants
- Overview of the agenda of the meeting by Coast Water Works CWWDA
- Project Description by Coast Water Works Development Agency
- Presentation of the ESIA process and development of ESMP by CWWDA
- Question and answer session
- Closing and adjourning of main meeting
- Focus group discussions with road user groups

Commencement of the Meeting

- The meeting was opened by the Area Chief who in turn requested a Muslim to open the meeting with prayer. She then proceeded to state the agenda of the meeting as a public participation meeting.
- The chief introduced the area leadership:
- Assistant County Commissioner Mr. Abdullahi Galgallo continued to welcome the project and the implementation team on the ground headed by Sydney Chihinga from Coast Water Works.
- She mentioned that the meeting venue is within Mkomani Location, Nyali Mombasa County.
- Madam Yasmni Omar stated that the purpose of the meeting was to deliberate about implementation of the project and collection of feedback and views of the residents.
- ACC Galgallo took over and commended the team for their initiative to sensitize the public about the project before inviting the Implementing project team to take over.

Project Description (Team Leader-COAST WATER WORKS DEVELOPMENT AGENCY)

- Bonface the environmentalist introduced the ESIA team and mentioned the purpose of the meeting is to create awareness of the upcoming project and get feedback from the community.
- Stakeholder consultation is a key aspect of the EIA Study and, is anchored in the Constitution of Kenya 2010 and is also supported by the Public Participation Bill of 2018 and the urban areas and cities act 2011. It is therefore crucial that stakeholders in any given development are identified and engaged at various levels with an aim of obtaining their views, concerns, suggestions and recommendations, to be incorporated in the project.
- Bonface explained that it is for this reason that stakeholder engagement is being carried out with various parties including line national government institutions, county government, the public and community fronting the proposed alignment, residents along the corridor and various land users.
- Bonface provided an overview of the proposed Ultra-modern four storey (ground +three floors) office development.
- Plot Registry No. F.R. No. 320/173 off links road in nyali, North Main Land Division of Mombasa County.
- Office Development Total build area 2150m2
- Grid reference
- .
- .
- •
- A Grievance Redress Committee (GRC)
- The Terms of Reference for the ESIA Study had been submitted to NEMA for review and the approval to proceed with the study had been granted
- Once the ESIA Report is submitted to NEMA, the Authority will generate the summary of potential impacts and mitigation measures for publication in two local dailies and in the Kenya gazette. The public will be invited through the advert to peruse the report and give comments over a period of thirty days.
- NEMA will then review the report and make a decision as to whether to issue an EIA

• license with conditions or not issue the EIA license

Interactive Session with Participants

The meeting then progressed to an interactive session whereby the participants were given the opportunity to ask questions, make comments, seek clarification, air their views, concerns and

Recommendations for incorporation into the project development.

9.3 ISSUES RAISED AND RESPONSES GIVEN

Participant	Issue Raised	Responses
Wyclife Ochieng	Wyclife enquired a	Sydney from Coast water
	question about the	works informed him that the
	existing pipeline from	water supply services will
	the site. He mention	not be disrupted by the
	that they have been	project.
	supplied with water	
	coming from the site	They have a plan to
	whether it is going to be	relocate the pipeline before

	disrupted?	the construction project
		commerce.
	Whether the services	
	will be affected	Also informed that this
	disrupted by the	proposed project cannot
	project?	affect the locality in terms of
		water supplies. As all
	What plan do they have	required activities regarding
	for this pipeline	the pipeline will not be
	distributing water to the	affected.
	neighbor?	
Chepkemoi	Chepkemoi enquired	Sydney also stated that the
Jackline	about the Traffic jam	contractor will follow the
	from the trucks ferrying	measures recommended in
	the construction	the Environmental Impact
	materials. What strategy	Assessment Report to
	are the contractors going	minimize traffic jam from
	to use on to minimize	the trucks.
	the traffic caused by the	
	trucks along Links road?	In addition to this he
		indicated that the contractor
		will do the transportation of
		the construction materials
		around the off-pick hours.
Yasmin Omar	Yasmin Enquired about	Sydney stated that the
	the timeframe of the	project is yet to start and
	project.	when it's going to
		commerce a notice of the
	When is the project	same will be
	going to start?	communicated.

		He stated that there is no
		exact timeframe so far set
		for the project once ready
		the community will be
		informed.
Abdullahi Galgallo	What are the working	Bonface the
	hours of the project	environmentalist clarified
	given in mind that there	there will be restriction of the
	are residential houses	construction activities to be
	near the site?	done day time only.
		He also explained that the
		contractor will work during
		the working hours to avoid
		disrupting the residential
		area.
		There will be strict
		maintenance and follow-up
		on working hours to avoid
		unnecessary disturbances
Keroro Geoffrey	He enquired about the	Bonface explained on the
	Noise pollution from the	recommendation and
	machines on the site	mitigation measures
	and the trucks that will	concerning the noise
	be ferrying the	pollution which have been
	construction materials.	recommended to the
		contractor and project
	What are the mitigation	proponent on site.
	measures to be taken?	
		The following measure will

		be undertaken om site to		
		avoid noise pollution whi		
		include:		
	No unnecessary hootin			
		the project and occupant		
		vehicles		
		Use of attenuated		
		(Silent)equipment where		
		possible		
		Restriction of the		
		construction activities to		
		day time only.		
Anastecia Moraa	She enquired about the	Bonface expounded		
	Air pollution from the site	recommendation measures		
	and the trucks that will	and mitigation measures		
	be ferrying the	that will be taken in regard		
	construction materials.	to the Air pollution.		
	What will be used to	These mitigation measures		
	minimize the dust	consist of;		
	coming from the project	Sprinkle water during dust		
	site	generating construction		
		work.		
	What are the mitigation			
	measures to be taken?	Temporarily fencing of the		
		of the construction site		
		Use of dust shields.		
	We realize that some of	Bonface explained on the		
Solomon Ondere	biodiversity will be	mitigation measures which		
	affected especially the	will be undertaken by the		

	vegetation and trees in	project which to help
	the area site for the	reduce biodiversity
	proposed project due to	disruption.
	clearing of the site.	
		He stated that the
	What are the measures	contractor should Maintain
	to be taken on the	trees and vegetation in
	environmental protection	areas not affected by the
	regarding the	development
	biodiversity especially	
	trees cleared on the	The Project proponent
	proposed project?	should do landscaping and
		plan to restore the
		vegetation
		If possible plant new trees
		in public places to replace
		the trees cut down at the
		project site.
Joseph M. Mumbo	Regarding the project	Sydney took over and
	what are the direct	stated that the major
	benefits that will impact	benefits from the project will
	the local community	be Create employment
	positively?	opportunities both in
		casuals working in the
	Will we benefit from the	construction site and also
	project, any added value	for permanent employment
	brought to the	from the Coast water
	community?	works.
		There will be improved
		water services to the
		community due to provision

		of offices hence proper		
		running of the work.		
		There will be easily		
		accessible services to the		
		community especially on		
		water services.		
Musa Amaiza	Will the offices provide	Sydney Explained that the		
	services to the people in	services will be accessible		
	terms of water services?	to the local community. It		
		will also boost the smooth		
	We tend to get permits	running of the organization.		
	and other services like			
	water bills from the	Hence offering better and		
	town?	improved services.		
	Now we realize the HQ			
	of coast water works is			
	relocating nearer will we			
	be getting these services			
	from the office being			
	build?			
Salim Swalhe	From the previous	Sydney answered this		
	pipeline coming from the	question by informing them		
	site supplying and	the community that they will		
	distributing water to the	not be disrupted nor		
	locals, we understand it	affected by the project		
	will be relocated.	which will be taking place.		
	Will this disrupt the	The relocation of the		
	supply of water from site	pipeline will be done way		
	to the community?	before the starting of the		

		construction process.		
	Will this affect us and			
	how many day could it	The community will not la		
	take?	water due to the relocation		
		taking place.		
	Could we end up lacking			
	water due to these			
	activities?			
Miriam B. Mung"au	Due to Air Pollution and	Bonface expounded		
	Fall of objects from the	recommendation measures		
	site	and mitigation measures		
		that will be taken in regard		
		to the Air pollution.		
	What are the mitigation			
	measures going to be	These mitigation measures		
	taken on the same	consist of;		
		Sprinkle water during dust		
		generating construction		
		work.		
		Temporarily fencing of the		
		of the construction site		
		Use of dust shields.		
Noam Kyambi	During the construction	Sydney explained that		
	period we would like our	could be made possible		
	village youth to be	through the contractor who		
	employed as casuals	will be taking over the		
	could that be possible?	project through the		
		implementation process.		
	We also require to			
	benefit from the project	We will talk to the		
	both direct and indirect	contractor and see if he will		

		be considerate in bringing
		on board the community
		youths.
William Juma	How will the project	There will be set a GRC
William Outria	ensure that the	which will represent the
	ensure that the	which will represent the
		community to ensure the
	best concern to the	contractor is considerate
	community?	to the community views.
	Will there be a project	All complaints will go
	team on ground	through this team to
	conducting the	ensure every view and
	implementation of the	concerns is addressed.
	project?	
	What will be a	
	procedure and also	
	entail when	
	submitting a	
	compliant?	
	-	

Closing and Adornment

The ESIA Consultant thanked the participants for creating time to Attend the meeting. The consultant mentioned that participants are invited to share further comments and views through the chief.

The Area Chief thanked the members for a peaceful meeting and gave a vote of thanks to everybody in attendance.

The contractor to be engaged in the project to have a listening ear to the community through the GRC.

The chief further encouraged the members of the community to report security

issues in a timely manner

He thanked the consultant for the initiative of sensitizing community which will avoid conflict during the implementation as experienced from previous projects.

PHOTOS OF THE PUBLIC BARAZA MEETING



	Photo Areahied Public Meeting office bloc	2: Th Adressin Baraz at Nya ck	ie ig :a ali
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ANNEX II PUBLIC BARAZA ATENDANCE LIST

CO AS CO	NSULTANCY SERVICES FOR P SESSMENT (ESLA) STUDIES FOR UNTY. ESIA AND RAI	REPARAT THE PRO P PUBLIC I	ION OF FINAL POSED NYALI O PARTICIPATION C	ENVIR ONMENT, FFICE BLOCK I	AL AND SOCIAL N NYALI AREA, N ASSIST	IMPAC IOMBAN MI GH SUB SUB 2/2-40
DA No.	TE.F.9.0195.10514084	GENDER /JINSIA	LOCATION:	ID NUMBER	TELEPHONE/NAMB ARI YA SIMIU	DT SIGN/S/
1	GHEPKEMOI JACKLINE	F	Миотипі	30446029	07212744959	Attitu
2	ABDUNAHI A GALGALLO	М	Mkomani	33227937	0707846942	A
3	Masmin Omax	F	Kongoulea	1124870	0729010391	Q
5	Keroro Geofy	m	mkomani	20765857	0712475869	ay
6	JOSEPH M. MUMBD	M	MKOMANI	0501024	0726475977	
7	WILLIAM JUMA	М	MNOMANI	20289061	0792503945	4
	DANIEL NHAMOKI	M	MUMAN	monal	May Chim	A

CO ASS CO DA	NSULTANCY SERWICES FOR P SESSMENT (ESIA)) STUDIES FOR UNTY. ESIA AND RAI	REPARAT THE PRO PPUBLICI	ION OF FINAL POSED NYALI O PARTICIPATION O LOCATION :	ENVIRONMENT/ FFICE BLOCK P CONSULTATION F	AL AND SOCIAL NYALI AREA, M ASSI ORM MKO NYA	IMPACT IOMBASA STANT C MANI SUB ILI SUB 274324
No.	NAME/JINA	GENDER / JINSIA	LOCATION/KLJIJI	ID NUMBER	TELEPHONE/NA,MB ARI YA SIMU	SIGN/SAF
1	MIRIAN B MUNG/OU	P	Mkomani	21736077	0715712257	MDe
2	MUSA AMAIZA	M	MKOMAHI	29474834	0716944209	00
,	JACINTA NDINBA	F	MKOMANI	8995343	0795461550	0
4	BRIDGII NTHENIA	Ŧ	MKOMANI		0718308437	NBO
5	KERORO PHILIPT	m	Misman	20765857	0712475869	1 h
5	JOSEPH NOOLOPA	M	MILOMPHI	35 23 3817	0114610301	5
	SALIM SWALKE	M	MIGOMAN	32172036	045285742	B

201 NAME FOR GENERATIONS **Grad Originized Strategy** CONSULTANCY SERVICES FOR PREPARATION OF FINAL ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA) STUDIES FOR THE PROPOSED NYALI OFFICE BLOCK IN NYALI AREA, MOMBAS, LOCATION COUNTY. CUI ESIA AND RAIP PUBLIC PARTICIPATION CONSULTATION FORM SUB NYAL DATE 23 03 1024 LOCATION: NTALL AREA No. NAME/JINA GENDER LOCATION/KULUI ID NUMBER TELEPHONE/NAMB SIGN/SAHII JINSIA ARI YA SIMU COAST INMERINARY VDKE HIHANSIA MALE 1957699 BAMBURI 18587626 CONSULTING H FATT MILLENDE FRANKLE PLCDY2 RANCH KILLEN 3 4 5 6 7 NKOMANI SUB LOCATION

Annex 4: Grievance Resolution Mechanism

GRIEVANCE RESOLUTION MECHANISM

1. Steps in dealing with grievances

- Complaint received in writing from affected person
- Recording of grievance in standard form
- Reconnaissance site visit with the complainant.
- Submission of detailed complaint to Resident Engineer for resolution by negotiation.
- Submission of detailed complaint to the Grievance Committee for resolution by mediation.
- Submission of complaint to CWWDA for resolution.

2. Composition of grievance committee

No	Designation	Organization	Position
1.	EHS officer	CWWDA	Chair
2.	Resident Engineer	Consultant	Committee
			Secretary
3.	EHS officer	Consultant	Committee
			Assistant Secretary
4.	Site Administrator	Contractor	Member
5.	EHS officer	Contractor	Member
6.	Chief	Community Representative	Member

Annex 5: Consent Letter

Annex 6: Signed BoQs

Annex 7: Pollution Management Plan

Pollution Control Plan

1. Introduction:

The pollution control plan for the proposed project aims to mitigate potential environmental impacts associated with the construction and operation phases of the project. This plan is developed in accordance with environmental regulations and best practices to ensure the protection of natural resources and the health of the community. Project construction activities have the potential to generate a range of pollution sources that require proper planning from the outset to avoid resulting in impacts to human, biological or other environmental receptors. These includes accidental emissions to air, water and soil, amongst others. The Project seeks to proactively manage such potential pollution sources and to this effect has included specific obligations regarding pollution prevention.

This CESMP defines the actions and measures necessary for the overall management of pollution.

2. Purpose of the Pollution Prevention CESMP

The potential pollutants that could arise from the Project requires careful management to avoid negative impacts on human health, and environmental factors such as groundwater, soils, surface water and ecology. This CESMP therefore:

This CESMP therefore:

- Outlines the key policies, legislation and standards relating to pollution management;
- Defines roles and responsibilities;
- Outlines actions and measures necessary for the effective prevention of pollution;
- Covers both accidental and intended emissions to air, noise, water and soils;
- Details specific control measures to be
- Incorporates the requirements of the ESIA findings, Supplemental Environmental Assessment, international standards and Project-specific construction permits.

3. Scope of the pollution prevention CESMP

This CESMP covers all construction activities and is applicable to all the staff, Contractors and Sub- contractors. Whilst this CESMP will act as a 'framework' to determine what the Contractors will be expected

4. Key role and responsibilities

An integrated approach to pollution prevention involves a range of stakeholders, including the Client, Consultant, the Contractors (and subcontractors), local authorities, regulatory agencies and the general public. Such a system therefore requires robust processes regarding information dissemination, training, and designation of responsibility, management actions, monitoring, control, and remedial actions. The general roles and responsibility are highlighted in the table below;

Activities	Consultant	Contractors	Client
Planning	x	x	
Dissemination of	fx	x	
information			
Management of	fx	x	x
pollution			
Spill response &		x	x
treatment			
Professional training	x	x	х
Surveillance and	lx .	x	
control			
Monitoring and audit	x	x	
Corrective actions	x	x	
Management of	x	x	
cooperation			

5. Pollution Sources:

Identify and categorize potential sources of pollution associated with the project, including construction activities, operational processes, and wastewater discharge.

3. Mitigation Measures:

Construction Phase:

- Implement erosion and sediment control measures, such as silt fences and sediment basins, to prevent soil erosion and sedimentation in water bodies.
- Proper storage and handling of construction materials to prevent spills and contamination of soil and water.
- Regular inspection and maintenance of construction equipment to minimize emissions and leaks of pollutants.
- Proper waste management practices, including segregation, recycling, and disposal of construction waste at designated facilities.
- Implementation of dust control measures, such as watering of construction sites and covering of materials, to minimize air pollution.

Operational Phase:

- Installation of advanced wastewater treatment technologies to ensure the quality of treated effluent meets regulatory standards before discharge.
- Regular inspection and maintenance of sewer infrastructure to prevent leaks and spills of sewage into the environment.
- Implementation of odor control measures, such as biofilters and chemical treatments, to mitigate unpleasant odors from wastewater treatment facilities.
- Monitoring of air and water quality parameters to detect any deviations from the established standards and take corrective actions promptly.
- Public awareness campaigns to educate residents about proper waste disposal practices and the importance of pollution prevention.

4. Contingency Plan: Develop a contingency plan to address emergency situations, such as spills, leaks, or equipment failures, to minimize the potential environmental impact and ensure prompt response and recovery.

5. Monitoring and Reporting:

Establish a monitoring program to assess the effectiveness of pollution control measures and compliance with regulatory requirements. Regular reporting of monitoring data and implementation of corrective actions as necessary.

Conclusion:

The pollution control plan outlined above aims to minimize environmental impacts associated with the proposed project while ensuring compliance with regulatory standards and promoting sustainable development. Implementation of these measures will contribute to the protection of natural resources and the health and well-being of the community.

6. Annex:

Ref.	Торіс	Location	Requirement	Responsibility	Verification
					Process
1	General	All	The equipment shall	Contractor	Internal
	pollution		be brought to the		audit
	prevention		site in perfect state		program
			of operation, the		
			technical revisions		
			and oil exchange		
			being already made		
2	General	All	All plant, vehicles	Contractor	Internal
	pollution		and equipment to be		audit
	prevention		maintained to		program
			manufacturers		
			standards and		
			maintained in		
			accordance with the		
			provisions of the		
			Government		
			Decision no.		
			332/2007. This		
			includes regular		
			inspections of plant		
			and equipment to		

Appendix 1: Mitigation Measures & Management Actions

			prevent		
			leakage/emissions		
			and technical		
			Continuousal		
			checks of emissions		
			(carbon monoxide		
			and exhaust gases).		
			A plan for this to be		
			created		
			including processes		
			to remedy potential		
			defects.		
3	General	All	All installations to be	Contractor	Internal
	air		well maintained with		audit
	emissions		appropriate valves,		program;
	control		fittings and flanges.		Continuous
					inspections
4	General	All	Idling of vehicles or	Contractor	Internal
	air		equipment to be		audit
	emissions		restricted to		program
	control		minimize emissions.		
5	General	All	Use and maintain	Contractor	Internal
	air		effective filters in		audit
	emissions		vehicle cabs to keep		program,
	control		air free of dusts and		Visual
			fumes		inspections
6	General	All	The vehicles	Contractor	Continuous
	air		transporting		inspections
	emissions		materials issuing		
	control		fine particles in the		
			air shall be covered		
	1			1	

			with tarpaulin		
7	Conorol	All aroon but		Contractor	Continuoua
	General		All powdery/dusty	Contractor	inonactiona
		especially areas	materials to be		inspections
	emissions	with large	stored in enclosed		
	control	mammals	containers or		
			covered to avoid		
			wind dispersal. Dust		
			producing activities		
			to be reduced		
			during strong winds		
			or to be controlled		
			by dust		
			suppression		
			techniques e.g.		
			water sprinkling, use		
			speed controls, all-		
			weather surfaces		
8	General	Residential area	An Air quality	Consultant/Contractor	Analysis
	air		monitoring program		reports
	emissions		shall be		
	control		implemented,		
			especially		
			close to the		
			residential areas	5	
			that determined the		
			impact significance		
			to be "high", in the		
			surroundings of the		
			GCS and site		
			organizations areas		

9General	All	All plant and	Contractor	Internal
noise		machinery to be		audit
control		fitted with		program,
		appropriate noise		Visual
		baffles /		inspections
		silencers to keep		
		noise emissions		
		within normal		
		operating/regulatory		
		limits.		
1General	All	Provision of noise	Contractor	Internal
noise		barriers for static		audit
control		equipment where		program,
		appropriate		Continuous
		especially when		inspections
		noisy work (eg.		
		hammering) is being		
		conducted.		
1General	All	Generators and	Contractor	Internal
noise		water pumps		audit
control		required for 24-hour		program,
		operation will be		Continuous
		super-silenced or		inspections
		screened/located as		
		appropriate to		
		reduce noise; Crane		
		spindles, pulley		
		wheels, telescopic		
		sections and moving		
		parts of working		
		platforms will be		

			adequately		
			lubricated in order to		
			prevent undue		
			screeching and		
			squealing; and,		
			where possible		
			mains electricity will		
			be used rather than		
			generators.		
1	General	All	Personnel will be	Contractor	Internal
	noise		instructed on best		audit
	control		practice measures		program,
			to reduce		Continuous
			noise and vibration		inspections
			as part of their site		
			induction training;		
			Shouting and raised		
			voices will be kept		
			to a minimum e.g. in		
			cases where		
			warnings of danger		
			must be given.		
			Use of audio radios		
			in the open		
			environment will be		
			prohibited except		
			where two-way		
			radios are required		
			for reasons of safety	,	
			and communication;		
			Control of noise		

			introduced into site		
			induction to ensure		
			that all operators on		
			site, including		
			contractors, are		
			working in such a		
			way to minimize		
			noise;		
1	General	All	Compliance	Contractor	Analysis
	noise		monitoring of noise		reports
	control		to ensure limits are		
			being met.		
1	General	All	All materials will be	Contractor	Internal
	noise		handled, stored and		audit
	control		used in a manner		program,
			that		Continuous
			minimizes noise,		inspections
			this include the		
			preclusion of		
			dropping material		
			which would be		
			placed in all		
			instances;		
			Routes and		
			programming for the		
			transportation		
			associated with the		
			works will be		
			carefully considered		
			in order to minimize		
			the overall noise		

			impact generated by		
			these movements		
			and will conform to		
			the operational		
			hours of the works		
			Provision of		
			temporary acoustic		
			barriers (or other		
			means) for use		
			when operations are		
			exposed or are		
			identified as		
			problem activities;		
			Appropriate		
			complaint procedure		
			to ensure		
			complaints are		
			logged, investigated		
			and resolved; and,		
			Control of noise		
			introduced into site		
			induction to ensure		
			that all operators on		
			site, including		
			contractors, are		
			working in such a		
			way to minimize		
			noise.		
1	General	Site	Piling and ground	Contractor	Internal
	noise	establishment	stabilization would		audit
	control	platform wash	be suitably		program,

Wa	ater	controlled on site if	Continuous
	1	necessary	inspections
		However, due to	
	t	he large separation	
	(distances to the	
	1	nearest receptors	
	1	his is not	
		considered an	
	i	ssue);	
		solation of pumps	
	ä	and generators	
		when positioned in	
	(close proximity to	
	ç	sensitive receptors	
	1	o prevent direct	
		vibration transfer;	
		Selection of	
	ć	appropriate	
	(equipment for the	
	1	ask required;	
		Appropriate training	
		with regard to plant	
	(operational	
	1	echniques so as to	
	1	minimize vibration	
	ę	generation;	
		Appropriate	
	(complaint procedure	
	1	o ensure	
		complaints are	
	I	ogged, investigated	

			and resolved.		
1	General	All	Standard industry	Contractor	Internal
	spill		refueling protocols		audit
	prevention		should be followed.		programme,
			Vehicles		Continuous
			maintenance to be		inspections
			undertaken on a		
			purposely provided		
			drip tray. Secondary	,	
			spill containment to		
			be provided		
			wherever refueling		
			or storage occurs.		
			All materials to be		
			properly contained		
			for decanting with fill		
			areas to contain any	,	
			spillage during		
			transfer.		
1	General	All	The exchange of	Contractor	Internal
	spill		oils shall be done in		audit
	prevention		specialized		programme,
			workshops		Continuous
					inspections
1	General	All	Spill kits should be	Contractor	Internal
	spill		continually available		audit
	prevention		and all site		program,
			assemblies will		Continuous
			be equipped with		inspections

	specific materials	
	necessary for the	
	intervention in case	
	of accidents	
	(hydrocarbon	
	leaking), so that any	
	possibility for	
	extension of	
	pollution may be	
	avoided	
1General All	The measuresContractor	Internal
Spill	required for the	audit
prevention	prevention of soil	program,
	pollution with drilling	Continuous
	fluid shall be taken	inspections
2 General All	Perform simulationsConsultant/Contractor	Internal
Spill	regarding	audit
prevention	emergency	program
	situations in case	
	that an	
	accidental pollution	
	is caused, having	
	impact on the water	
	resources	
2 General All	Fuel handling,Contractor	Continuous
Spill	especially bulk	inspections
prevention	storage, will take	
	place in secure	
	bounded areas.	
	Similar conditions	
	will apply to	

lubricant oils,	
chemicals and liquid	
wastes. Should a	
spill occur, polluted	
soils will be cleaned	
up or removed for	
appropriate	
disposal. All wastes	
will be handled,	
stored and disposed	
of as per local	
regulations. Diesel	
and other potentially	
polluting liquids will	
be stored in	
appropriate	
containers, fitted	
with secondary	
containment. Fuel	
equipment shall be	
supplied by oil	
pump, and tanks	
with automatic	
alarms and shut off	
systems to be	
installed in all	
refueling areas. All	
areas to be checked	
prior to delivery to	
prevent overfill and	
spillage.	

2	General	Activities of	All working areas to	Contractor	Continuous
	Water	record	have appropriate		inspections
	resource	keeping,	ecological toilets to		
	protection	correspondence,	be emptied by		
		supervision and	authorized		
		site inspector.	operators		
2	General	Domestic waste	Domestic	Contractor	Continuous
	Water	from	wastewater to be		inspections
	resource	construction	separated from		
	protection	site, pipe	hazardous, oily		
		deposits and	water		
		work fronts	discharges at all		
			sites		
2	General	From activities	Contractors will	Contractor	Internal
	Water	concerning: -	develop and		audit
	resource	Maintenance of	implement an		program
	protection	equipment, -	appropriate plan to		
		Building	prevent accidental		
		demolition-	water pollution		
		Pipelining	based on the BRUA		
			commitments		
			requirements.		
2	General	Support	Standard pollution	Contractor	Continuous
	Water	activities to the	control measures		inspections
	resource	shore,	will be implemented		
	protection	packaging,	i.e. to		
		casings, various	prevent silt		
		carpentry works.	contamination by		
			keeping water out of		
			the works area		
			using appropriate		

			isolation techniques,		
			such as coffer dams		
			and by- pass		
			channels.		
2	General	Pipe trench	Sewage treatment	TRANSGAZ	Wastewater
	Water	excavation,	plant at GCS will be		plant
	resource	foundations,	carefully maintained		maintenance
	protection	building access	strictly		manual
		roads, land	respecting the		
		systematization.	timing of	:	
			maintenance and		
			emptying		
2	General	All	Implement	Contractor	Continuous
	Water		measures against		inspections
	resource		sedimentation. Use		
	protection		of settling ponds,		
			silt fences and		
			screens to prevent		
			sediment transport		
2	General	All	Wastewater should	Contractor	Continuous
	Water		be prevented from		inspections
	resource		entering surface		
	protection		water		
			bodies without prior		
			assessment and		
			treatment if		
			necessary		
2	General	Watercourse	The placing of	Contractor	Continuous
	Water		concrete in, or near		inspections
	resource		to, any watercourse		
	protection		must be		

			controlled to		
			minimize the risk of		
			pollution		
3	General	Site	The adequate	Contractor	Continuous
	Water	organizations	collection and		inspections
	resource		treatment of all the		
	protection		used waters which		
			will result from the		
			site organizations so		
			that no impact is		
			caused on the		
			waters		
3	General	All	Ensure	Contractor	Continuous
	Water		contaminated water		inspections
	resource		from dewatering or		
	protection		cement washing		
			operations is treated		
			prior to discharge,		
			depending on the		
			nature of the		
			contaminants		
3	General	Access ways	Accomplish polders	Contractor	Continuous
	Water		of small dimensions		inspections
	resource		having a sediment		
	protection		exclusion role,		
			respectively for		
			stilling the leaking		
			force of pluvial		
			waters, to be		
			accomplished along		
			the access ways at		

distances of
approximately 30-
50m. The
development of
polders shall be
accomplished on
surfaces of up to
10m2 and at a
maximum depth of
30cm, being
provided with diffuse
leaking areas, in
steps oriented
upstream, in order
to avoid the
occurrence of
erosive phenomena,
at distances of 2-3m
to the access ways,
being used as
accumulation areas
(aggregation) of the
species of
amphibians and not
only, outside the
areas having a
potential for
negative impact
(access ways).

3Traffic	All	Vehicle tyres should	Contractor	Continuous
		be cleaned at the		inspections
		exit from the		
		working areas,in		
		case of use of public		
		roads		
3General	Works site	Works sites will be	Contractor/Consultant	Continuous
principles		subject to legally	,	inspections
		binding documents		
		that will		
		ensure the transfer		
		of ownership.		
		Based on these		
		documents,		
		environmental		
		responsibilities are		
		specifically defined		
		to be transferred to		
		the entrepreneurs		
		and subsequently to		
		the beneficiary,		
		following the		
		responsibilities for		
		each stage to be		
		clearly defined and		
		assumed.		
3General	All	Works organizations	Contractor/Consultant	Continuous
principles		will be established		inspections
		by accurate legal		
		documents that will		
		determine the		

			distinct		
			responsibilities of		
			entrepreneurs,		
			assumed		
			compensation, but		
			also the breach to		
			restore them to the		
			initial state.		
			Based on these		
			documents,		
			environmental		
			liabilities will be		
			clearly defined in		
			the protocols of pre-		
			defining		
			environmental tasks		
			undertaken. Thus,		
			the principles		
			underlying the		
			specific legislation in		
			force (especially the		
			principle: the		
			polluter pays), the		
			contractor will		
			undertake to		
			remedy any fault of		
			its negative effects.		
3	General	All	The workforce will	Contractor	Training
	principles		be provided with		records
			environmental		
			awareness		

			training.		
3	Traffic	On-site Traffic	Dust emissions due	Contractor	Continuous
		Management	to road travel shall		inspections
			be minimized by		
			regulating vehicle		
			speed and watering		
			roads (where		
			required).		
3	Traffic	On-site Traffic	Prepare necessary	Contractor	Records
		Management	reports, inspection		
			logs and incident		
			records.		
3	General	All	Vehicles will be	Consultant/Contractor	Internal
	pollution		maintained in		audit
	prevention		accordance with		programme
			manufacturer		
			guidelines and		
			Romanian licensing		
			requirements and		
			Continuous		
			verification		
			inspections will be		
			undertaken.		
4	General	All	Reducing exposure	Contractor	Internal
	principles		times for people		audit
			working near noisy		programme
			machinery		

4General	All	For the	pre-	TRANSGAZ	Records
		construction	stage		
		when work si	ites will		
		be in place fo	or each		
		sector there	will be		
		a protocol tl	nat will		
		establish	as		
		accurately	as		
		possible	the		
		environmenta	I load,		
		based	on		
		standardized	forms		
		(standard-fori	ms),		
		with	aerial		
		photographs	or		
		photographic			
		images take	n from		
		the ground,	which		
		will act as	control		
		elements. Fo	or each		
		site during	the		
		growing	season		
		(May-Septem	ber the		
		ecological st	tructure		
		and functions	s of the		
		site will	be		
		accurately			
		determined.			
4General	All	Comply wi	th all	Contractor	Internal
principles		mitigation me	easures		audit
		included ir	n the		program

			Environmental		
			Agreement		
4	General	All	Investigate all	Contractor	Internal
	principles		incidents and		audit
			identify any	,	program
			necessary		Records
			corrective		
			actions		
4	General	All	Noise and vibration	Contractor	Internal
			from plant and		audit
			machinery will be		program
			controlled by		
			ensuring that:		
			1) Engine		
			compartments		
			are closed when		
			equipment is in		
			use		
			2) Resonance of		
			body panels and		
			cover plates is		
			reduced by the		
			addition of		
			suitable		
			dampening		
			materials		
			3) Any "rattling		
			noise" is		
			addressed by the		
			tightening of		

			loose parts or the		
			addition of		
			resilient materials		
			if appropriate;		
			4) Siting of semi-		
			static equipment		
			will be orientated		
			as far as is		
			reasonably		
			practicable from		
			noise-sensitive		
			receptors with		
			localised		
			screening if		
			deemed		
			necessary.		
4	Water	Water Courses	All pumps, motors	Contractor	Periodic
	resource		and combustion		inspections
	protection		engines to be		
			operated with drip		
			trays underneath		
			and set back from		
			watercourses		
			(minimum of 20m).		

Annex 8: Stakeholder Engagement Plan

6. STAKEHOLDER ENGAGEMENT PLAN

The overall purpose of this Stakeholders Engagement Plan is to ensure that a consistent, comprehensive and coordinated approach is taken in stakeholder engagement and Project disclosure throughout the project implementation phase. It is further intended to demonstrate the commitment to engage each stakeholder during the implementation phase of the Project. This is in line with the financier African Development Bank (AFDB) Principles on Stakeholder Engagement (2015).

In line with Stakeholders Engagement Plan best practice, stakeholder engagement is conducted on the basis of timely, relevant, and accessible information. In this way, the Stakeholders Engagement Plan seeks to ensure that stakeholders are given sufficient opportunity to voice their opinions and concerns, and that these concerns influence project decisions. The Stakeholders Engagement Plan therefore:

- Provides the approach to stakeholder engagement, showing how this will be fulfilled throughout the project cycle;
- Identifies the main categories of stakeholders and how they will be included in the implementation of the Project; and
- Identifies the ways to document engagement undertaken with the stakeholders throughout the project.

Objectives of Stakeholder Engagement

The objectives of engaging stakeholders during project Implementation phase include:

- Ensuring Understanding: An open, inclusive and transparent process of engagement and communication will be undertaken by to ensure that stakeholders are well informed about the proposed Project. Information will be communicated early and as detailed as possible.
- Involving Stakeholders in the Assessment: Stakeholders were included in the scoping of issues and identification of sampling points especially in areas that had high pollution. They also played an important role in providing local knowledge and information for the baseline survey of sampling points and community involvement in the Project.

- Building Relationships: Through supporting open dialogue, engagement will help to establish and maintain a productive relationship between the implementation team and stakeholders.
- Managing Expectations: It is important to ensure that the proposed Project does not create, or allow, unrealistic expectations to develop amongst stakeholders about potential Project benefits. The engagement process will serve as a mechanism for understanding and managing stakeholder and community expectations, by disseminating accurate information in an easily understandable manner. The exercise will not involve handing over money during implementation. The Stakeholders will be made to understand that the Project is for their own benefit and falls within the mandate of Stakeholder.
- Ensuring Compliance: The process is designed to ensure compliance with both local laws requirements and international best practice.

7. REGULATORY CONTEXT

Policy, Legal and Institutional Framework for Public Participation

The Republic of Kenya has the following polices and legislations related to citizen/stakeholder engagement which covers both the right to access information and participation in policy development and decision-making.

The Constitution entrenches a wide range of social, political, economic and cultural rights and revolutionizes the entire system of political governance by devolving authority to county governments and decreeing the need for citizen participation in decision making. It enshrines the right to access information and makes principles of international laws and treaties ratified by Kenya an integral part of the country's municipal law. The Constitution in Article 232 further outlines transparency and timely provision to the public of accurate information as one of the values and principles of public service, going further to bind all state agencies at both national and county government levels and state corporations to these values and principles.

Moreover, Article 69 outlines the obligations of the government in respect to the environment, asserting that "The State shall ensure sustainable exploitation, utilization, management and conservation of the environment and natural resources and ensure the equitable sharing of the accruing benefits". Under its sixth chapter on leadership and

integrity, the constitution has entrenched values and principles that should govern the operations of all entities and public officers within the state and called for adherence of the same. The Constitution introduces changes in the public finance management framework in Kenya, outlining principles of public finance such as equity, openness and accountability through public participation in financial matters.

Under the Social Pillar of Vision 2030, i.e., the Country's commitment to invest in the people of Kenya, Kenya's journey towards prosperity is envisioned to involve the building of a just and cohesive society, which enjoys equitable social development in a clean and secure environment. The Political Pillar, -Moving to the Future as One Nation, states in part that Kenya is committed to "adherence to the rule of law as applicable to a modern, market-based economy in a human rights-respecting state" (emphasis in italics, added). Furthermore, Vision 2030 is anchored on aspirations to better define and clarify land tenure rights and perhaps by extension facilitate the identification of carbon rights and associated equity in accruing benefits.

The Climate Change Act (2016) provides guidance for application of public participation, access to information and representation in all sectors of the economy, at both national and country level for climate change adaptation and mitigation Environmental Impact Assessment (EIA), Review Guide for Communities, Dec. (2014). The Environmental, Management and Coordination Act (1999, 2015) has mandatory requirements on public participation. This review guide seeks to enhance public participation in the project cycle management under the Environmental (Impact Assessment and Audit) Regulations, (2003). The guide targets communities falling within the project areas to assist them in reviewing and commenting on Environmental Impact Assessment

(EIA) reports. It gives a step-by-step guidance and direction on how communities can actively participate in the EIA process through provision of clear responses to public participation calls to ensure that their needs and aspirations are taken into account.

Environmental Management and Coordination Act (EMCA) 2009 set out general principles, and the principle of public participation in the development of policies, plans and processes for the management of the environment is made mandatory in the Act.

Environment Impact Assessment Guidelines and Administrative Procedures required public participation and disclosure of project information during EIA procedure in the development of projects, policies, plans and programmes.

3.2 International Requirements

AfDB Integrated Safeguard System (2023) states that the Project implementer shall be responsible for carrying out and providing evidence of meaningful consultation (i.e. consultation that is free, prior and informed) with Stakeholders/communities likely to be affected by the Project impacts, and with other local stakeholders. The key focus of meaningful consultation is inclusivity; namely, the approach taken needs to ensure that all groups that are directly or indirectly affected by the Project are embraced within the consultation process on equal terms, and that all groups are given the capacity to express their views with the knowledge that these views will be put into consideration. OS 1 also states that the implementer of the Project shall be responsible for ensuring that all Stakeholders are engaged and satisfied.

The AfDB operation safeguard requires that stakeholder engagement starts at an early stage during project preparation and that it should continue throughout. The results of such engagement should be adequately reflected in project during the Project implementation, as well as in the preparation of project documentation. In all cases, consultation should be carried out after, or in conjunction with, the relevant Stakeholders.

Once all stakeholders are identified, the developer should develop and implement a Stakeholder Engagement Plan (SEP) that is proportionate to the project risks, impacts and development stage, and that is tailored to the characteristics and interests of the affected Stakeholders. The advantage of having a SEP is;

- d.) That it provides a formal commitment,
- e.) Defines responsibilities
- f.) Ensures that adequate funds are made available to carry out the program of consultation.

A Stakeholders Engagement Plan typically describes measures to allow the effective consultation and participation of all affected parties, a description of any consultations that have already taken place, and a definition of the reporting procedures. A Grievance

Mechanism should also be developed by the implementer, and it will detail the procedures that a project will establish for managing complaints and grievances especially from the stakeholders involved in the implementation of the Project.

8. STAKEHOLDERS IDENTIFICATION AND ANALYSIS

Identification of Project Stakeholders

Project stakeholders are defined are persons or groups who are directly or indirectly interact with the project, as well as those who may have interests in a project and/or the ability to influence its outcome, either positively or negatively (IFC's Handbook on Stakeholder Engagement (2007)).

Stakeholder identification and analysis is an essential component of effective and meaningful stakeholder engagement activities. The objective of this step was to provide a general overview of all stakeholders.

Key stakeholders' groups that were identified are parties were directly interlinked and have a stake in the Project. A participatory and consultative approach that involves all stakeholders was adopted, to ensure optimal participation of key stakeholders at all stages of the assignment and enrich the outcomes of the study. The identified stakeholders were divided into Primary, Secondary and Tertiary. This is shown in the table below;

No.	Name	Category				
Primary Stakeholders						
11.	CWWDA	Proponent				
12.	National Government Administrative Office	National Government				
	Deputy County Commissioners (DCC),					
	Chiefs/ Assistant chiefs					
13.	Mombasa County Government,	County Government				
	Ward Administrator					
14.	Village Elders	Community Representatives				
15.	Area Residents	Community				
16.	Community Groups	Community				
Secondary Stakeholders						
5.	Physical Planning Officer	National/County Government				

6.	Sub-county Lands Registrar	Agencies and Ministries
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9. The methodology for stakeholder analysis

This stakeholder analysis was conducted as follows:

10. Identification of Stakeholders

The first stage in stakeholder relations involved researching individuals and third-party organizations that may be relevant to the project. This included groups/organizations that are directly affected by the Project (positively or negatively), have influence or power over its success, and have an interest in its successful or unsuccessful conclusion. This was done through search in traditional media and industry reports and analysing online conversations occurring in the digital space to identify individuals, groups or organizations that that have interest in water and sewerage within the basin.

11. Analyzing Stakeholders

Once potential stakeholders were identified the consultant analysed them to establish their interest, involvement in the project, their points of intersection with our objectives, their level of activity in the project or their key points of contact. The consultant also did a network with others through phone and in-person meetings to gain more insight.

12. Prioritize Stakeholders

Having achieved a better understanding of the stakeholder ecosystem, the next step for the contractor was to prioritize the actors. The following was considered:

- Relevance
- Visibility
- Credibility
- Influence
- Reach

13. Contacting Stakeholders

Once the stakeholders had been identified, researched, and prioritized, the final step involved making contact with them and exploring their interest in potential future collaboration and to build opportunities that will demonstrate a win/win proposition for both organizations. Efforts were made to identify the contact person within the organization.

14. STAKEHOLDER ENGAGEMENT PROGRAM
The Stakeholder Engagement Program is a formal document which outlines the plan to communicate with stakeholders who have interest or potential interest in a project. It helps engage all the stakeholders in the project and, by doing so, help the project become sustainable and inclusive. It is important to keep in mind that SEP implementation is a dynamic process and some stakeholders and their interests might change over time or new stakeholders and information emerges, and hence the SEP will be updated accordingly.

Engagement Methods and Tools to be used

The Project intend to utilize various methods of engagement that will be used by as part of its continuous interaction with the stakeholders. For the engagement process to be effective and meaningful, a range of various techniques need to be applied that are specifically tailored to the identified stakeholders. Methods used for consulting with statutory officials may be different from a format of liaising with the local communities.

The suggested methods would be used to communicate and consult with the stakeholders:

Online Platform: A dedicated webpage/platform will be created for the project to enable users to find all the information about the project. The goal of the platform is to provide core information about the project and to ensure accessible online feedback project stakeholders and to support several stakeholder engagement activities. The platform will be used to support face-to-face consultations through digital feedback surveys at regular intervals and will provide a dedicated portal for the identified sub-projects to inform the population and engage them in providing feedback and support monitoring through the implementation cycle. All stakeholder consultations events will be advertised through this platform.

Stakeholder consultations/virtual consultations: Consultations will be organized during the project design stage and project implementation. Stakeholder consultations will be organized for water monitoring reports. Moreover, public consultations will be held on quarterly basis as part of the stakeholder engagement process during the project cycle.

Workshops: The workshops with stakeholders will be carried out. The main topics of these workshops will include disseminating water quality monitoring results and project progress.

In-depth interviews with relevant experts: Expert's views and recommendations on various project issues will be conducted as part of the social assessment. They will continue to be used as part of specific project activities.

Leaflets/ informative notes: Leaflets with information that might present more interest for stakeholders will be developed and distributed in the meetings/ stakeholder consultations.

Letters: introduction letters, invitation letter during stakeholder meetings will be an instrument used in order to facilitate the Project implementation process through good collaboration between the implementing entity and other stakeholders.

Reports: periodic reports will be distributed to keep informed the main stakeholders of the Project.

E-mails: To facilitate communication between implementing entity and the stakeholders.

The format of every consultation activity should meet general requirements on accessibility, i.e., should be held at venues that are easily reachable and inclusiveness, i.e., engaging all segments of the stakeholders. If necessary, logistical assistance should be provided to enable participants to attend public meetings scheduled by the project. All the meetings and consultations will be taken while ensuring an observation of MOH guidance on hand washing.

15. Stakeholder Engagement Plan

Stakeholder engagement is an inclusive process that must be conducted throughout the project cycle.

In case of stakeholder consultation "events" (whether virtual and in face -to-face meetings), the CWWDA will strive to provide relevant information to stakeholders with enough advance notice (10-15 business days) so that the stakeholders have enough time to prepare to provide meaningful feedback. CWWDA will gather written and oral comments, review them and report back to stakeholders on how those comments were incorporated, and if not, provide the rationale within 10-15 working days from the

stakeholder consultation event. All consultation events will be widened in terms of outreach through the opportunity to use on-line feedback through the platform.

STAKEHOLDER CATEGORY	SUBGROUP	RESPONSIBILITIES
GOK & AGENCIES	Ministry of Land, Transport, Infrastructure, Urban Development and Housing (MTIHUD-State department of infrastructure)	Offering continuous advise and co-ordination of project activities
	-Ministry of Treasury	-Ensure financing of project administration activities.
	- Ministry of Labour and Social protection	- Ensure citizen and workers safety, protection of minors, and Contractor compliance with the country's Labour laws during project execution.
	-NEMA	-Providing oversight and monitoring of project activities to ensure environmental sustainability and compliance with environmental standards established under EMCA.
	-DOSH	-Compliance with safety and health legislation (OSHA, WIBA) and promotion of safety and health of workers

Table 0-1: Stakeholder categories and their responsibilities

STAKEHOLDER	SUBGROUP	RESPONSIBILITIES
CATEGORY		
Supervision Consultant	Resident Engineer and team	 Preparation of Engineering Designs and Procurement Documents. Construction Supervision. Support the engagement processes and help address stakeholder concerns where necessary.
COMMUNITY	-Residents/settlements where project activities will be performed -Farmers -Vulnerable groups -Administrators of Public enterprises-e.g. Schools and Religious institutions -Leaders of community associations-e.g. business communities	-Active participation during project lifecycle -Support project in implementation of vulnerable groups programs
Contractors	-Contractors -Suppliers of goods and services -Transportation workers	-Implementation of good construction practice, OH&S measures and environmental protection, -Quick intervention and elimination of risks that cause adverse incidents -Efficient and timely execution of construction work.
Vulnerable Groups/ People	-Disabled -Elderly -Single parents -Orphans	-Expressing their opinions, suggestions and specific proposals during the implementation of project activities
Civil Society	-National	Following the

STAKEHOLDER CATEGORY	SUBGROUP	RESPONSIBILITIES
Organizations	-Community based. -Faith Based -Self-Help groups	implementation of the vulnerable groups' projects and raising concerns regarding the environmental and social issues that need to be mitigated.
Local Authorities	County Governments Municipal Boards Townships Local Communities Public Enterprises	-Support the project and Project Implementation Team (PIT) for efficient implementation of the vulnerable groups support -Adoption of the technical documentation for the realization of the project, -Issuing of sectorial comments for approval of the EIA Report -Supervision of construction activities -Ensuring proper access of the population to their homes -Ensuring the full implementation of OH&S and environmental standards during the construction activities.
Financial Institutions and Private Companies	-AfDB -Other financial Institutions -Suppliers of equipment -Transporters -Contractors/Providers of consultancy services	 -Providing financial support for realization of the project, -Following the implementation of the OH&S and environmental standards in all project phases, -Public participation according to the AfDB

STAKEHOLDER	SUBGROUP	RESPONSIBILITIES
CATEGORY		
		OS1 -Implementation of the OH&S and environmental standards in all project phases.
Other Interested Parties	-Media -General public -Workers	 -Publicity of the project through local radio station, social media, newspaper -Providing information on the dynamics of performing the project activities, -Providing information about delays of the project during the execution of project activities, -Professional and efficient execution of the project activities in accordance with the Dynamic Plan.

Annex 9: Waste Management Plan

Waste Management Plan

1. Introduction:

This Waste Management Plan outlines the strategies and procedures to effectively manage waste generated during the implementation of the Sewerage project, which is being executed by the Coast Water Works Development Agency. The plan adheres to environmental regulations and aims to minimize adverse impacts on the environment and public health.

2. Objectives:

- Ensure proper handling, storage, transportation, and disposal of waste generated during project activities.
- Minimize environmental pollution and health hazards associated with improper waste management practices.
- Promote the reuse, recycling, and safe disposal of waste materials.
- Comply with relevant environmental laws and regulations.

3. Waste Categories:

The waste generated during the project activities will be categorized as follows:

- 1. Construction and Demolition Waste
- 2. Hazardous Waste
- 3. Non-Hazardous Waste
- 4. Biological Waste

4. Waste Management Practices:

- **Segregation:** Waste will be segregated at the source into different categories to facilitate proper disposal and recycling.
- **Storage:** Adequate storage facilities will be provided on-site for each waste category, ensuring segregation and labeling for easy identification.
- **Transportation:** Waste will be transported using authorized vehicles to designated disposal sites or recycling facilities.
- **Disposal:** Waste disposal will be conducted in accordance with local regulations. Non-hazardous waste will be disposed of at approved landfill sites, while

hazardous waste will be handled and disposed of by licensed contractors following safety protocols.

- Recycling and Reuse: Efforts will be made to maximize recycling and reuse of materials such as concrete, metals, and plastics to reduce the volume of waste sent to landfills.
- Biodegradable Waste Management: Organic waste generated during construction activities will be composted or utilized for bioenergy generation, if feasible.

5. Monitoring and Reporting:

- Regular monitoring of waste management practices will be conducted to ensure compliance with the Waste Management Plan.
- Any deviations or incidents related to waste management will be documented and reported to the project management team for appropriate action.
- Progress reports on waste management will be included in project status reports and shared with relevant stakeholders.

6. Training and Awareness:

- All personnel involved in project activities will receive training on proper waste management practices, including segregation, handling, and disposal procedures.
- Awareness campaigns will be conducted among project staff and local communities to promote waste reduction, recycling, and environmental stewardship.

7. Contingency Plan:

 A contingency plan will be developed to address unforeseen circumstances or emergencies related to waste management, ensuring prompt response and mitigation of environmental risks.

8. Annex: This Waste Management Plan serves as an annex to the project documentation and will be referenced and implemented throughout the duration of the proposed project.

9. Review and Updates: The Waste Management Plan will be reviewed periodically to incorporate any changes in project scope, regulations, or best practices. Updates will be communicated to all relevant stakeholders.

10. Conclusion: Effective waste management is essential for minimizing environmental impacts and ensuring the success of the Proposed project.

. By implementing the strategies outlined in this plan, we aim to uphold environmental sustainability and contribute to the overall well-being of the community.

Annex 10 Part-Development Plan (PDP) showing the Parcel of Land reserved for the Ministry of Water

