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OYO STATE

IBADAN URBAN FLOOD MANAGEMENT PROJECT

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

FOR THE

EMERGENCY DREDGING OF CHANNELS AND CLEARING OF BLOCKED DRAINAGES ACROSS IBADAN FOR THE YEAR 2019

DRAFT REPORT

JULY, 2019

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EXECUTIVE SUMMARY

ES 01 Background

The World Bank is supporting the Oyo State Government to implement the Ibadan Urban Flood Management project (IUFMP) that aims at developing a long-term flood risk management framework by initiating risk assessment, community awareness, and providing enough flexibility in the project design to make changes based on learning. The project is being implemented through a combination of structural and non-structural measures. The project also supports capacity building for flood risk management in the city of Ibadan. It reinforces Oyo State government's early warning and response capabilities and leverages existing World Bank projects (such as the Community and Social Development Project, CSDP) in Oyo State in support of the IUFMP.

Table ES1: IUFMP components and main activities

Project Components	Main Activities
Sub-component 1.1:*Ibadan's Flood Risk Management Investment Program*	This component will finance: (a) the preparation of a flood risk management investment program building on three key city Masterplans namely Integrated Physical Master Plan, Solid Waste Management Master Plan, and Integrated Flood Risk Management Master Plan; (b) carrying out feasibility studies, detailed engineering designs and construction supervision services for works to be carried out under Component 2 of the Project; (c) preparation of emergency preparedness plan for Eleyele dam as well as ESIAs and ESMPs.
Sub-component 1.2: ***Ibadan's Long-Term Flood Resilience Strategy***	This component will support the preparation of a long-term Flood Resilience Strategy for Oyo State, which will provide detailed recommendations on potential source of investment financing and appropriate tools on the policy, regulatory and institutional reforms required so as to clarify the legal and institutional mandates of the various stakeholders and MDAs with regards to flood risk management in the city of Ibadan.
Sub-component 1.3: ***Ibadan's Flood Early Warning and Response System***	This component will finance: (i) the design of an Integrated Flood Early Warning and Response System for the city of Ibadan to improve flood forecasting to communities and government for response; (ii) the establishment of a flood forecasting and early warning weather forecast radar system , and software for development of hydraulic and hydrological modelling and (iii) community based contingency planning and awareness.
Sub-component-1.4: ***Contingency Component***	Following an adverse natural event that causes a major disaster, and after an official declaration of a state of Emergency by either the President of the Federal Republic of Nigeria or the Oyo State Governor, the state government may request the Bank to approve access to project funds under this component.
Component 2: Flood Risk Reduction	
Sub-component 2.1: ***Priority Infrastructure Improvement Program in "Priority Sites"***	This component will finance both critical infrastructure improvements in priority secondary and tertiary sub-catchments involving 14 pre-identified priority sites for rehabilitation of drainage culverts, drains, roads, including the necessary works needed to restore the flood damaged Eleyele dam for safety.
Sub-component 2.2:*Long-term Integrated Flood Risk Mitigation Measures*	This component will be based on the recommendations of the Integrated Flood Risk Management Master Plan (initiated under Sub-Component-1.1), and will finance the rehabilitation and construction of robust infrastructure in "Targeted Project Sites".
Sub-component 3.1: ***Project Administration***	Will finance the procurement of office supplies and furniture, ICT equipment, transport vehicles for the Project Implementation Unit (PIU), and procuring a comprehensive set of Project maps; (ii) office running costs; (iii) the hiring of external Financial and Technical Audits; (iv) PIU yearly allowances paid from the counterpart funding, and Fiduciary and Safeguard Training including hiring of External Auditors.
Sub-component 3.2:*Project Management Support*	Will finance the procurement of Project Management Consultancy for a period of four years.

ES 02 Objectives of the ESMP

The overarching objective of the ESMP is to ensure that the environmental and social impacts likely to arise from the project activities are identified and appropriate mitigation measures integrated into project implementation and operation in order to protect human and environmental health.

The specific objectives of the ESMP are to:

- Comply with applicable national and State environmental and Social legislations, standards and guidelines as well as the World Bank's environmental and social safeguard policies;
- Achieve and demonstrate sound environmental performance based on the principle of continual improvement;
- Identify potential positive and negative environmental and social impacts that may arise from the implementation of the project;
- Proffer management actions that need to be implemented in order to mitigate the negative environmental and social impacts and enhance the positive impacts of the project;
- Propose environmental and social monitoring programmes that will ensure that mitigation measures are implemented and effective during project execution and timely corrective actions are taken where required;
- Propose institutional arrangements, incorporating roles and responsibilities of stakeholders involved in management actions and monitoring;
- Outline the implementation schedule and reporting procedures for the ESMP;
- Communicate environmental and social expectations and requirements throughout the project life cycle; and
- Ensure the allocation of sufficient resources for effective implementation of the mitigation measures

ES 03 Scope of work on Dredging sites

The proposed intervention includes three (3) categories of activities to be implemented as indicated in the Table ES2 below;

Table ES2: Scope of works for 2019 Dredging/Desilting project

SITE CATEGORY	LENGTH (M)	GENERAL WORK REQUIREMENT	SPECIFIC WORK REQUIREMENT
A1 *(River/Stream channel where accessibility of disposal trucks is achievable*	31,100	Excavation of all classes of soil, except rock from the Channel, not exceeding 1m depth and **variable** width not exceeding 6m Removal of impediments, debris, wastes, shrubs, vegetation etc at river channels, bridges/culverts locations River training along the channel where applicable or as may be directed by the Supervising Engineer; Dredging for removal of silt material and solid wastes.	Disposal of dredged material to the dump sites and identified spoil areas as jointly directed by the supervising Engineer and representatives of Ministry of environment. The spoil area will not be less than 500m away from the site.
A2 *(River/Stream channel where accessibility of heavy truck is NOT feasible due to weak/narrow right of ways)*	23,350		The excavated silt materials are to be spread at a distance not less than 5m from the channel embankment, spread and compacted to spread sediment to a maximum height of 100 - 200mm at maximum.
B *(Road side drains)*	5,700	Removal of solid waste, debris, grass and other materials from a lined channel/drainage.	Disposal of excavated materials to dump sites and an identified spoil areas to be determined by Supervising Engineer and Ministry of Environment and Water Resources representatives.

ES 04 Description of Bassline Condition and Project Environment

Climate & Meteorology: The climate of the project area and its immediate environment is influenced by the tropical and continental air masses which are associated, respectively with the north-east and moisture-laden monsoon south-west winds The movement of these air masses results in the two weather seasons – the wet season from April to November, the dry season from December to March typical of the project area.

Rainfall: Rain falls in virtually all the months of the year with annual average of 186mm. Rainfall pattern shows double maxima, with a relatively dry period occurring in August. Two seasons are identifiable: the rainy season (April to November) and the relatively dry season (December to March). Rainfall is heaviest during the months of June and

September. This period accounts for over 50% of the total annual rainfall whilst only about 7.5% of annual total rainfall occurs between November and February.

Temperature: Based on the average of temperature data obtained from the NIMET for 2003 to 2017, Temperature is relatively constant throughout the year, with annual ranges of 28 to 32^0C and 23 to 26^0C for maximum and minimum temperature records respectively. Mean monthly maximum and minimum temperatures are 30 and 24^0C respectively. Lowest temperatures are recorded between July and September while highest temperatures are recorded between October and March.

Wind: The project area has a calm weather with wind speed ranging between 2-5 m/s. The wind speed is lower than 2.7m/s in about 60% of the time, and seldom (<2% of the time) exceeds 3 m/s. Wind speeds are generally lower in the night than during the day with the highest wind speed recorded at the onset of the rainy season. The prevailing wind direction (about 55% of the time) is South West to north east (2100 - 2400). However, during the dry season, winds are distributed in all directions, but predominantly north east to south-west.

Geology & Hydrogeology: The project area falls within the Dahomey sedimentary basin, a basin known to have resulted from events associated with the break-up of Gondwana and subsequent opening of the southern Atlantic. Deposition was in a fault-controlled depression, bounded by faults and other tectonic structures of the Romanche Fault Zone on the west, and by the Benin Hinge line, also a major fault structure, on the east.

Air Quality & Noise level: The air quality in the study area is within acceptable FMEnv regulatory limits, in all cases, as shown by the results of the ambient air quality measurement around the area. Suspended Particulate Matter (SPM were very low in all cases, and reflected, to some extent, the scrubbing effect of rainfall, since sampling was carried out in the rainy season. Virtually all the gases tested were not detected. Although carbon monoxide was detected in some locations, it was below the regulatory limit of 10ppm stipulated for 8hr occupational exposure by the FMEnv as well as the World Bank/IFC's limit of 9ppm.

The measured noise levels were all below the FMEnv regulatory limit of 90 dB (A) over an 8 hour exposure period.

Surface/Groundwater: Generally, some of the water parameters sampled, in several locations, especially turbidity were above the FMEnv acceptable limits, probably a reflection of the effects of solid waste inputs and flood runoff from inland areas. Water samples were in the acidic range with pH ranging between 6.2 and 6.5. Salinity was 0.0‰ across the various locations, indicating that the area is exclusively freshwater. DO was generally low across the area, with most samples recording values below 4.5mg/l, for the survival of most aquatic life. The waters were generally turbid ad this is hardly unexpected given the high volume of wastes evident in the waters, as observed during field sampling.

Vegetation and Crops

Generally, most of the areas proposed for dredging fell in occupied/built-up areas and as such, dense, quasi-natural vegetation occurred only along riverbanks, especially. Vegetation consisted mostly of riparian species along the waterways in undeveloped areas.

Wildlife: The faunal diversity across the proposed dredging sites was preponderated by avian species, including aquatic birds such as egrets, plovers and birds of gardens and farmlands like doves, village weavers, etc. In some places were vestiges of natural forest remained, including Shalom Estate Stream, rodents and monkeys were reported to inhabit some of the riparian forests along the rivers/streams.

Socio-economic and cultural overview: According to Baseline Study on Flood Mitigation and Resilence, City of Ibadan (December 2018) Ibadan, the capital city of Oyo State and the third largest metropolitan area in Nigeria, after Lagos and Kano. It is the largest metropolitan geographical area in West Africa (1,190 sq mi or 3,080 km^2) with a highly built up and dense population.

Population Structure & Distribution: The National Population Commission (NPopC) published population figures for Nigeria, by State and Local Government Areas. Based on this, and extrapolations using appropriate/applicable growth rates, the population figure for the 11 LGAs in Ibadan (2011) in 2019 is currently estimated at 3,780,514 people, consisting of 1,897,818 males and 1,882,696.

Traditional Leadership Structure: Leadership within the communities covered by this study are typical of Yoruba traditional structure with a King (*Oba*) who over the entire kingdom. The *Oba is* the *Olubadan* of Ibadan. At the community level, the head is referred to as the *Baale*. The *Baale*, though the highest authority amongst the communities pledges and remains loyal to the *Oba* and is charged with the traditional leadership mandate of running the affairs of the community. The Mogajis (compound heads) do handle matters that relates to their respective indigenous families within the city. Various community-based associations across the city. In all the identified 2019 dredging locations, there are Community Development Associations (CDAs) or Landlords Associations that that coordinate community-led development efforts.

Economic Activities: Ibadan is regional hub for trade and markets, since the city is located on the operational railway route in the Southern region connecting Lagos to Kano in the North of Nigeria. Trade and commerce forms the predominant employment sector in the city with 40 % of workforce engaged in the trading of cassava, cocoa, cotton, timber, rubber and palm oil. The main industries in the area include the processing of agricultural products; tobacco processing and cigarette (manufacture); flour mills, leather-working and furniture-making. Most residents in the areas contiguous to the dredging locations are artisans, small business owners and government employees. Some sand-mining activities are also being carried out in these areas.

Land Use and Land Cover: The total land area of the eleven local governments of Ibadan is 3473 km², out of which about 18.51% falls under forest category and 31.04% in the vegetative land. Open/Barren land in the city occupies 23.40% while agricultural land is 12.27%. Total built-up area in the city is 13.80%, which is mainly concentrated in the centric urban areas. Water bodies occupies nearly 1% of the city land. There has been repeated episodes of flooding on the lands adjoining the streams that are to dredged.

Infrastructure: About 78% of the population is still dependent on boreholes and wells whereas the government is only able to supply piped water to 6% as per this study. Households also lack the basic sanitation facilities, about 55% have water closets, 28% have pit latrines while the rest 17% lack any basic sanitation facility.

The overall access to electricity in the Ibadan city is only 63% as per 2006 estimates with 72% in the inner areas. However, nationally the proportion is higher i.e. 85% implying that, with the increased availability of generators and rural electrification programs, Ibadan's households are now more likely to have electricity in their homes.

Solid Waste Management: Majority of the city population i.e., 45% burn their generated solid waste, while solid waste generated by other 20% and 17% of the population were collected by government and private organization. Nearly 14% of households dump their solid waste on open land and 4% in the nearby river channels. Most of the streams and drains to be worked on under the dredging/desilting project in 2019 are currently blocked by solid waste materials.

Table ES3: Site-Specific baseline socio-economic conditions at 2019 dredging sites

SN	Dredging site	LGA	Project Location Area/Address	Existing Community Leadership Structure	Urban/Rural/Peri-Urban	Predominant Occupation	Condition of main access through stream	Presence of other access crossings at Upstream and and Downstream locations	Proximate Social Amenities & Utilities	Other Economic Activities of riverbed	Waste dumping	Vehicular Traffic
1	Adeniran Stream	Ona Ara	Kajola Street, Academy Bus stop, Iwo Road.	Baale	Rural	Artisans & trading	Bad, but passable	No	No	No	Yes	Light
2	Adukale Stream	Iddo	All Saint College road, junction before before All saint College. After bridge, left turn after Nihort.	Landlords Association	Rural	Government Employees	Good, and passable	No	No	Yes	No	Light
3	Ajidun River, New Ife road, Ibadan		Tella Estate, beside, After Tella town hall, Nipco Filling Station, Ojurin Akobo	Landlords Association	Peri-Urban	Government Employees	Good, and passable	Yes, but abandoned.	No	Washed off fish ponds	Yes	Light
4	Ajongolo Stream	Lagelu	NIPCO Filling Station Junction, Power line, after Tella street. Ojurin akobo	Landlords Association	Rural	Government Employees	No	No	No	No	Yes	None
5	Alaguntan stream	Iddo	Ologuneru-Eleyele Road.	Landlords Association	Rural	Government Employees	Bad, and passable	No	No	SandMining, Fishing	No	None
6	Alawaye Stream	Ona Ara	Olounloyo Area, Olorunsogo, Lagos/Ibadan Express way.	Landlords Association	Peri-Urban	Artisans& trading	Bad, but passable	No	Fences of two residence buildings	None	No	Light
7	Basorun Estate	Ibadan North	Bode Wasimi Street, Bashorun estate.	Landlords Association	Urban	Artisans& trading	Good, and passable	No	Yes	No	Yes	Light
8	Bethel Estate stream	Ibadan South West LGA	Bode Igbo Area, Abeokuta Road	CDA	Peri-Urban	Fishing	Bad and Not Passable	Yes	Electric poles, worship centres,, Well	No Market	NO	LIGHT

SN	Dredging site	LGA	Project Location Area/Address	Existing Community Leadership Structure	Urban/Rural/Peri-Urban	Predominant Occupation	Condition of main access through stream	Presence of other access crossings at Upstream and and Downstream locations	Proximate Social Amenities & Utilities	Other Economic Activities of riverbed	Waste dumping	Vehicular Traffic
9	Dalegan Stream, Omi River	Egbeda	Iyana Agbala, New Ife Road, adegbayi	Landlords Association	Rural	Artisans	Bad, but passable	No	No	Yes(Sand Mining)	No	Light
10	Farayola Stream	Ibadan North	Agbowo, Major Salawu Street, Opposite U.I Gate, Bodija	Landlords Association	Urban	Trading & Artisans	Good, and passable	Yes	Uncompleted Building	No	Yes	Light
11	Farinto Stream, Kute	Lagelu	Kute, Wofun juction, along Jenrinyin Road, around Olodo Iwo Road.	Landlords Association	Rural	Artisans& trading	Bad, but passable	No	No	No	No	None
12	Fatosi Stream	Ona Ara	Olomi, Olounde Street, from Academy Junction, After Iwo Road, Lagos/Ibadan express Road	Landlords Association	Rural	Trading & Artisans	Bad, but passable	No	No	No	Yes	Light
13	Gbaro Ajimosun stream	Lagelu	Ago Olunde area, Ibadan	CDA	Peri-Urban	Trading	Good and passable		Electric poles, worship centres, Well	No Market	NO	LIGHT
14	Idiagbon stream	Egbeda	Surulere street, after Kajola Junction, Laogun, Close to Former egbeda L.G Chairman's house Old Ife Road.	Landlords Association	Rural	Trading & Artisans	Good, and passable	Yes	Worship center(fence)	No	Yes	Light
15	Idi-Osan	Egbeda	Kumapayi Street, Olodo, After Wofu, Iwo Road	Landlords Association	Rural	Trading & Artisans	Bad, but passable	Yes	No	No	No	Light
17	Isokan Stream	Egbeda	New Ife Road, Oluwo Nla Junction,	Landlords Association	Rural	Artisans& trading	Good, and passable	No	No	None	No	Light

SN	Dredging site	LGA	Project Location Area/Address	Existing Community Leadership Structure	Urban/Rural/Peri-Urban	Predominant Occupation	Condition of main access through stream	Presence of other access crossings at Upstream and and Downstream locations	Proximate Social Amenities & Utilities	Other Economic Activities of riverbed	Waste dumping	Vehicular Traffic
18	Lami Stream	Ona Ara	Olomi, Olounde Street, from Academy Junction, After Iwo Road, Lagos/Ibadan express Road	Landlords Association	Rural	Trading & Artisans	Bad, but passable	No	No	No	No	Light
19	Moga Stream	Ona Ara	Moga, Olounloyo Area, Olorunsogo, Lagos/Ibadan Express way.	Landlords Association	peri-Urban	Artisans& trading	Good, and passable	Yes	Worship centre, and an uncompleted building	No	No	Light
20	Odeku Stream	Oluyole	Along akala Express way	Landlords Association	Rural	Govt. Employee & Trading	Bad, but passable	No	No	Yes, Sand mining	No	Light
21	Odo Osun	Oluyole	Ifewasopo junction Akalaway, after new Garage.	Landlords Association	Peri-Urban	Traders, Govt. Employees	Good, and passable	No	Worship center	Trading, Block Indusry	Yes	Light
22	Okewusi Stream	Egbeda	New Ife Road, Oluwo Nla Junction, Okewusi 2 avenue.	Landlords Association	Peri-Urban	Artisans& trading	Good, and not passable, it is abandoned.	No	water way is between a school building and a residential building, a worship center	Yes, wash off fish ponds on the side.	No	Light
23	Olope woroko stream	Ibadan South east	Eyin Grammar Street last junction, Behind Molete Grammar School.	Landlords Association	Peri-Urban	Trading & Artisans	No	No	Worship center, fence	No	Yes	None
24	Oloro Stream	Egbeda	Aba titi street, Olode, Obat Filling station junction, Ilesha/Ife express Road.	Landlords Association	Peri-Urban	Govt. Employee & Trading	Good, and passable	Yes	No	No	Yes	Not vehicular

SN	Dredging site	LGA	Project Location Area/Address	Existing Community Leadership Structure	Urban/Rural/Peri-Urban	Predominant Occupation	Condition of main access through stream	Presence of other access crossings at Upstream and and Downstream locations	Proximate Social Amenities & Utilities	Other Economic Activities of riverbed	Waste dumping	Vehicular Traffic
25	Olorunsogo Estate Stream	Egbeda	New Ife Road, After Oluwo junction, before Toll gate	Landlords Association	Peri-Urban	Government Empoyees	Bad, but passable	Yes (1 Nos upstream)	Schools, Worship places	Fishing	No	None
26	Orukanga Stream	Lagelu	From Nipco filling station junction, to Sooko street, to Alapata Estate, Olunda, Ojurin, Akobo	Landlords Association	Rural	Govt. Employee & Trading	Bad, but passable	No	No	Yes, Sand mining	No	Light
27	Sasa Alapata Stream	Akinyele	Beside Grammer School, Akinyele Council office. Moniya	Baale	Peri-Urban	Artisans& trading	Bad, but passable	Yes	School, Worship center	Sand mining	Yes	Light
28	Shalom Estate Stream	Iddo	Beside shalom Christian college, Shalom Estate, off Alafara road, Jericho	Landlords Association	Urban	Government Employees	Bad, but passable	No	School wired fence, a fence	No	No	None
29	Yokele-Tpekun stream	Ona Ara	Sawmill area, Old Ife Road, Ibadan	CDA	URBAN	Trading	Good and passable		Schools, Hospitals, Water pipes, wells, electric poles, worship centres etc	Market Available	YES	HEAVY

ES 05 Assessments of Potential Impacts

The proposed dredging and clearing of blocked drainages sub-projects will be largely beneficial, as the aim is to prevent the occurrence of flash floods and the associated losses and damage to property and possible loss of lives. However, it is expected that some adverse impacts may arise from the implementation of the project activities. These impacts will be expressed on the biophysical and socio-economic environment. Table ES4 presents an overview of the general issues associated with the proposed project activities and required mitigation measures

Table ES4: Recommended Mitigation Measures for Identified Environmental and Social impacts

Project Activity/Phase	Identified Impacts	Recommended Mitigation Measures
DREDGING OF CHANNELS/STREAMS & CLEARING OF DRAINAGES		
Mobilization/ Pre-construction Phase	During mobilization, the trucks carrying the dredgers move slowly and will tend to cause serious traffic.	Mobilization activities shall be timed to coincide with off-peak traffic periods. Based on an assessment of the existing settings in most of the project areas, this would be either in the day time, between 10am and 2pm, or at night, between 10pm and 5am A Traffic Management Plan (TMP) has been prepared for this project. Details are presented in Annex 5. The support of traffic control agencies such as the Traffic Division of the Nigeria Police, and the Federal Road Safety Corps (FRSC) shall be enlisted to control traffic during mobilization and demobilization
	Emissions from the engines could contribute noxious gases into ambient air, leading to degradation of air quality.	All dredgers and other vehicles and machinery to be used for the project shall be properly serviced and maintained to ensure their compliance with international emission standards
Rehabilitation Phase	Generation of excavated materials which could cause nuisance in the neighbourhood.	Excavated materials shall be subjected to thin layer disposal, not more than 9 inches thick, and not less than 5m from river bank. Such dumped materials shall be properly compacted, to prevent/minimise washback into river channel. An ESHS supervisor will be engaged to supervise the implementation of ESHS requirements described in this ESMP and will be empowered to issue stop-work orders, where contraventions occur. The Terms of Reference (ToR) of the ESHS Supervisor is presented as Annex 11 to this report. Community involvement in determination of location for drop-off of excavated material
	If adequate care is not taken in the dumping of spoils dredged from channels, it could lead to blockage of runoff routes from inland into the channel. This could create fresh flooding concerns upstream.	Adequate spacing shall be provided between dumps of spoil, to ensure that the dumps do not block existing natural runoff routes.
	There may be general complaints from sites communities/Risk of social conflicts	A Grievance Redress Mechanism shall be put in place for this project such that community members who have any issues can formally submit their grievances via dedicated hotlines lines provided (see Annex 4). The HSE Officer of the Supervision Engineer will be on site during project implementation, will be empowered to listen and respond to grievances that may come up while he is on field. The PIU team monitoring the exercise will also be on hand to listen to complaints and resolve them on the spot. A code of conduct for individual employees will be administered at the ESMP kick-off training. *(See Annex 10)*
	Nature of excavated materials could be municipal solid wastes rather than vegetal silt which could constitute	Where municipal solid wastes predominate over silt materials, arrangements shall be made to ensure that excavated materials are carted away to

Project Activity/Phase	Identified Impacts	Recommended Mitigation Measures
	aesthetic nuisances and also contribute odours in the immediate vicinity.	designated dump sites
	The foundation of some fences are very close to the stream	Manual dredging will be carried out in such areas based on instructions of ESHS supervisor Dredged material will be used to impound the foundations of such structures in a manner that allows stream flow but protects the integrity of the structures.
	Dumping of dredged materials on private property on the riverbed.	Locations for dumping of dredged materials will be approved by the ESHS supervisor in advance. The ESHS supervisor will review daily work schedules and give approvals, not less than 24hours before commencement, to consider pre-identified locations for depositing dredged materials. Areas that are too close to human activities or structures will be avoided and will therefore not be approved by the ESHS supervisor Manual dredging will be carried out in sections of the stream channel that are too narrow for the mechanical dredging equipment.
Operation/ Maintenance Phase	Traffic congestion during waste evacuation and demobilization of equipment.	The movement of wastes trucks and equipment shall be timed to coincide with off-peak traffic periods. Based on our assessment of the existing settings in most of the project areas, this would be either in the day time, between 10am and 2pm, or at night, between 10pm and 5am The support of traffic control agencies such as Oyo State Traffic Management agency (OYTRMA), the Traffic Division of the Nigeria Police, and the Federal Road Safety Corps (FRSC) shall be enlisted to control traffic during mobilization and demobilization
	Health and Safety issues like cases of incidents, accidents, near miss.	Contractors shall use best engineering practice and provide and use necessary PPEs for all personnel. The HSE Officer of the Supervision Engineer shall ensure provision of PPEs by the Contractors and enforce the strict usage of same by all personnel on site.

ES 06 ESMP Implementation

The successful implementation of the ESMP requires combined efforts of the IUFMP PIU, the supervising Contractor and relevant Regulatory Institutions in Oyo state. Although this is a short-term project, the successful implementation of this ESMP depends on the commitment and capacity of various institutions and stakeholders to implement the ESMP effectively. Thus, the arrangement as well as the roles and responsibilities of the institutions and persons that will be involved in the implementation, monitoring and review of the ESMP are discussed below

Table ES5: Institutional Responsibilities

S/No	Category	Roles & Responsibilities
1.	Safeguards Unit (PIU)	**Environmental Safeguards** • Collate environmental baseline data on relevant environmental characteristics of the selected project sites; • Analyze potential community/individual sub-projects and their environmental impacts; • Ensure that project activities that are implemented will be in accordance to best practices and guidelines set out in the site specific ESMP; • Identify and liaise with all stakeholders involved in environment related issues in the project; and be responsible for the overall monitoring of mitigation measures and the impacts of the project during implementation. **Social Safeguards** • Develop, coordinate and ensures the implementation of the social aspects of the ESMP • Identify and liaise with all stakeholders involved in social related issues in the project; • Monitor the implementation of required mitigation measures developed in this ESMP and new requirements as might emerge in the course of project implementation.

S/No	Category	Roles & Responsibilities
2.	PIU	• Liaise closely with Oyo State Ministry of Environment and Water Resources in preparing a coordinated response on the environmental and social aspects of project development respectively; • E& S Safeguards due diligence • PIU engineering team will ensure the monitoring of the implementation of technical job specifications with a view to ensure the works don't trigger new E&S issues in the course of project implementation.
3.	Ministry of Environment and Water Resources	• Environmental compliance overseer at the State level • Lead role - provision of advice on project implementation • Site assessment and monitoring of ESMP implementation
4.	Other relevant State Government MDAs	• Other MDAs come in as and when relevant areas or resources under their jurisdiction or management are likely to be affected by or implicated projects. These will include the State Transport Management Authority (OYTMA) and the State Waste Management Agency (OYOWMA) • They participate in the EA processes and in project decision-making that helps prevent or minimize environmental and social impacts and to mitigate them. These institutions may also be required, to issue a consent or approval for an aspect of a project; allow an area to be included in a project; or allow impact to a certain extent or impose restrictions or conditions, monitoring responsibility or supervisory oversight
5.	World Bank	• Overall supervision and provision of technical support and guidance. • Recommend additional measures for strengthening the management framework and implementation performance; • .
6.	Contractor	• Compliance to BOQ specification in procurement of material and project implementation
7.	Site Engineers/HSE Supervisors	• Provide oversight function during construction and decommissioning • Ensure that recommended mitigation measures are strictly implemented; • Determine the suitability of locations for the dumping of dredged materials based on the environmental and social considerations of this ESMP • Review daily work program of contractors and issue approval not less than 24hrs before commencement of works, upon the suitability of the compliance of such program with E&S considerations of this sub-project. • Issue stop work order where human/community health and safety are at risk (However, this shall only be as a last resort)
8.	Local Government	• Provide oversight function across various sites in LGAs for ESMP compliance • Liaising with the PIU. Engage and encourage carrying out comprehensive and practical awareness campaign for the proposed sub-projects, amongst the various relevant grass roots interest groups
9.	Local Community	• Promote environmental awareness • Assist and Liaise with other stakeholders to ensure proper siting and provision of approval for such sites • Support with provision of necessary infrastructures and engage/ encourage carrying out comprehensive and practical awareness campaign for the proposed projects, amongst the various relevant grass roots interest groups.
10.	CDA	• Ensure Community participation by mobilizing, sensitizing community members;
11.	NGOs/CSOs	• Assisting in their respective ways to ensure effective response actions, Conducting scientific researches alongside government groups to evolve and devise sustainable environmental strategies and rehabilitation techniques, Organizing, coordinating and ensuring safe use of volunteers in a response action, and actually identifying where these volunteers can best render services effectively & Providing wide support assistance helpful in management planning, institutional/governance issues and other livelihood related matter, Project impacts and mitigation measure, Awareness campaigns
12.	Others/General Public	• Identify environmental and social issues that could derail the project and support project impacts and mitigation measures, Awareness campaigns

ES 07 Monitoring plan

The dredging/clearing works are not expected to run for more than 1 month. However, there is a need to monitor the implementation of the ESMP. The effectiveness of the mitigation measures is greatly dependent on the strict and timely implementation of these measures and these cannot be entrusted entirely to the contractors. Therefore, the Safeguards unit of the PIU, working in consonance with the Oyo State Ministry of Environment and Water Resources, shall arrange to undertake comprehensive monitoring of the dredging and channel clearing activities. For effective monitoring, the following measures will be taken:

- In addition to the supervising engineer(s) having a HSE officer, the PIU will appoint an ESHS Supervisor to oversee the activities of contractors, to ensure that mitigation measures are properly implemented, in a timely manner

- Where breaches or non-compliance are observed, the ESHS Supervisor shall be empowered to issue stop-work orders.
- Additional Monitoring will be conducted by the Environmental and Social Specialists/Consultants of the PIU and other relevant personnel;

ES 10 Budget for Implementing the ESMP

To effectively implement the mitigation and monitoring measures recommended in this ESMP, necessary provision will have to be made. The cost of these measures have been estimated and included in the ESMP. The cost of mitigation by the Contractor will be included in the contract as part of the implementation cost while a provisional sum will be set aside for monitoring. As indicated earlier, the PIU will engage an independent ESHS supervisor, who will work in conjunction with the supervising engineers to ensure the smooth and proper implementation of the project. In addition, a comprehensive Occupational and Community Health and Safety Management Plan (OCHSMP) has been developed for this project. It is presented as Annex 12. The OCHSMP includes an implementation budget and responsible parties

The estimated costs of implementing the ESMP will include the following:

1.	Cost of Mitigation of impacts from Dredging/Clearing of Channels/Drains	US$11,700.00
2.	Cost of implementing the OCHSMP	US$22,200
3.	Cost of Monitoring for Dredging/Clearing of silted streams/ blocked drains	US$3,400.00
4.	Total Cost for implementation of the ESMP	**US$37,300.00**
10% of total for Contingency		**US$ 3,730.00**
Grand Total		**US$41,030.00**

(Forty-one Thousand, and thirty United States Dollars Only)

ES11 stakeholder Consultation

A meeting of community leaders from all the project communities selected for the 2019 dredging exercise was conducted at the Ibadan Business School on 8th May, 2019. Participants included representatives of the community Development Associations (CDAs) in the areas. Guidance was given to attending CDAs to ensure that participants consist of the CDA chairman (1 person), Secretary (1 person), Women representative/leader (1 person) and Youth (1 person). See chapter 5 for details

Generally, all respondents, including those who refused to be mentioned or captured on camera were positively receptive to the planned interventions and were grateful for the anticipated interventions. However, in some cases, specific issues were highlighted.

Several issues bothering on sound Environmental and Social (E&S) performance of the proposed dredging works were identified during the process of engagement carried out with stakeholders. An overview of the issues as well as required Management Strategies that have been considered in the ESMP table is summarized as follows;

Table ES6: Summary of stakeholder engagement outcomes

S/N	Environmental & Social Concern	Management Strategy
1	Breakdown of contractor machinery	Adequate monitoring by the ESHS independent monitor will cater for this issue.
2	Traffic disruptions occasioned by vehicular breakdowns	A Traffic Management Plan will be prepared as part of the ESMP and will be enforced on all contractors. This will contain provisions such as movement of heavy duty equipment during off-peak hours only.
3	Presence of dykes in some sections of the streams	(i) Avoidance of functional assets (ii) Manual dredging in areas with functional assets within the 6m+3m limits of dredging
4	The foundation of some fences/houses are very close to the stream	Manual dredging will be carried out in such areas. Dredged material will be used to impound the foundations of such structures in a manner that allows stream flow but protects the integrity of the structures.
5	Misbehavior of contactor staff	The code of conduct for contractor personnel will cover respectful communication and conflict-free interactions
6	Complaints	Modified GRM approaches will be prepared and communicated to community leaders for registration of project-related grievances during the implementation phase.

Other long-term issues raised during the engagements include;

i. The practice of dumping Solid Waste in river channels
ii. The need to widen stream channels
iii. The need to enforce building regulations in the watersheds contiguous to these intervention communities.
iv. Effective communication and sensitization is required to dissuade residents from engaging in behavior that increases the flood risk of these project areas.

ES 12 Grievance Redress Mechanism

For this project, a grievance mechanism is recognized as the formal legal mechanisms for resolving complaints and dissatisfactions. The grievance mechanisms for this project is designed with the objective of solving disputes at the earliest possible time in the interest of all parties concerned.

The generic provisions of the IUFMP Grievance Redress Mechanism shall be modified to suit the project circumstances due to the short time span of proposed dredging works. There shall be 3 core institutional blocks dedicated to Project grievances at (i) Site-Community, (ii) Local government and (iii) State levels. These core institutional blocks are:

1. The Site- Community Grievance Redress Structures made up of
   i. Chairman and One female member of the Community Development Association/Landlords Association
   ii. ESHS supervisor;
2. IUFMP PIU Community Relations Team, including the Social Safeguards officer as the key driver and the Environmental safeguards, Communications and M&E officers as members.
3. Oyo State Mediation Centre

The management of grievances should be as follows:

4. Each person responsible at its own level (community representatives, ESHS supervisors and IUFMP) should disseminate their phone number for SMS complaints.
5. The IUFMP environmental and social safeguard officers will be the direct liaison with PAPs in collaboration with the Landlord committee representative to ensure objectivity in the grievance process.
6. Where the affected person is unable to write, the designated community representative or social safeguards officer will write the note on the aggrieved person's behalf and duly thumb printed by the complainant.

Any informal grievances will also be documented in the format prescribed in the Grievance Redress Log of the project.

ES 13 Summary and Recommendation

Generally, the study has indicated that the proposed project is desirable and will not cause significant adverse effects on the existing environmental, social and health situations of project sites, as well as safe conditions of the people, locally. Although a number of adverse impacts are anticipated, they can be reasonably mitigated using simple and cost-effective measures.

The successful application of the mitigation measures is hinged on stringent monitoring and enforcement of the ESMP. The PIU, working in consonance with the Oyo State Ministry of Environment and Water Resources must ensure that the project is properly monitored during its implementation.

CHAPTER ONE: BACKGROUND AND INTRODUCTION

1.1 Background

The Ibadan Urban Flood Management Project (IUFMP) is being supported by the World Bank to build the capacity of Oyo State to effectively manage flooding challenges in the city of Ibadan. This is achieved through the implementation of the three main components. The components and the objectives of each are presented in the Table below;

Table 1.1: IUFMP components and main activities

Project Components	Main Activities
Sub-component 1.1:*Ibadan's Flood Risk Management Investment Program*	This component will finance: (a) the preparation of a flood risk management investment program building on three key city Masterplans namely Integrated Physical Master Plan, Solid Waste Management Master Plan, and Integrated Flood Risk Management Master Plan; (b) carrying out feasibility studies, detailed engineering designs and construction supervision services for works to be carried out under Component 2 of the Project; (c) preparation of emergency preparedness plan for Eleyele dam as well as ESIAs and ESMPs.
Sub-component 1.2: *Ibadan's Long-Term Flood Resilience Strategy*	This component will support the preparation of a long-term Flood Resilience Strategy for Oyo State, which will provide detailed recommendations on potential source of investment financing and appropriate tools on the policy, regulatory and institutional reforms required so as to clarify the legal and institutional mandates of the various stakeholders and MDAs with regards to flood risk management in the city of Ibadan.
Sub-component 1.3: ***Ibadan's Flood Early Warning and Response System***	This component will finance: (i) the design of an Integrated Flood Early Warning and Response System for the city of Ibadan to improve flood forecasting to communities and government for response; (ii) the establishment of a flood forecasting and early warning weather forecast radar system , and software for development of hydraulic and hydrological modelling and (iii) community based contingency planning and awareness.
Sub-component-1.4: *Contingency Component*	Following an adverse natural event that causes a major disaster, and after an official declaration of a state of Emergency by either the President of the Federal Republic of Nigeria or the Oyo State Governor, the state government may request the Bank to approve access to project funds under this component.
Component 2: Flood Risk Reduction	
Sub-component 2.1: *Priority Infrastructure Improvement Program in "Priority Sites"*	This component will finance both critical infrastructure improvements in priority secondary and tertiary sub-catchments involving 14 pre-identified priority sites for rehabilitation of drainage culverts, drains, roads, including the necessary works needed to restore the flood damaged Eleyele dam for safety.
Sub-component 2.2:*Long-term Integrated Flood Risk Mitigation Measures*	This component will be based on the recommendations of the Integrated Flood Risk Management Master Plan (initiated under Sub-Component-1.1), and will finance the rehabilitation and construction of robust infrastructure in "Targeted Project Sites".
Sub-component 3.1: *Project Administration*	Will finance the procurement of office supplies and furniture, ICT equipment, transport vehicles for the Project Implementation Unit (PIU), and procuring a comprehensive set of Project maps; (ii) office running costs; (iii) the hiring of external Financial and Technical Audits; (iv) PIU yearly allowances paid from the counterpart funding, and Fiduciary and Safeguard Training including hiring of External Auditors.
Sub-component 3.2:*Project Management Support*	Will finance the procurement of Project Management Consultancy for a period of four years.

Potential activities may include rehabilitation of various identified urban infrastructure or flood prone sites. These activities may lead to environmental and social impacts, which must be mitigated in accordance with the National and State Environmental and Social Polices and World Bank Safeguard Policies.

As part of its mandate, short term measures that can alleviate the immediate and chronic issues of flooding in sections of the city are encouraged and regularly implemented. Some of these short-term measures include the rehabilitation works on the Eleyele Dam and Intake Tower, 4 priority sites (which has been completed) and the 13 priority sites.

The IUFMP, working in conjunction with the Oyo State Ministry of Environment and Water Resources has taken on additional duties of dredging channels that are overflowed by flood in the rainy season as well as clearing blocked

drainages that could impede water flows and thus create flash floods. The rainy season occurs between April and November and rainfall is heaviest during the months of June and September. Support for this activity was initiated in 2017 with the clearing/ de-silting of 11 streams and 2 drainages covering a total length of 23,728 meters; while a total of 69 sites were either dredged and/or cleared in 2018 covering a total length of 70,882 meters. The city of Ibadan did not experience an alarming flooding as predicted and experienced in the neighbouring states for those years. However, a total of 32 sites have been identified for dredging/de-silting in 2019. The selection of sites was based on a combination of physical determination following routine requests by affected communities and follow-up fact-finding visits. Summarily, the process involved;

i. Letters/calls from concerned/affected communities,
ii. Inspection visits by staff of the Oyo State Ministry of Environment and Water Resources for assessment, sorting of proposed works based on severity and determination of appropriate interventions
iii. Joint field visits by MEnv&WR and IUFMP Engineers for finalization of proposed works.

The criteria used in the selection of the sites include;

i. Current situation of the sites with reference to recent flood events
ii. Reported impact of flood events on lives and property
iii. Non-inclusion of sites captured in previous dredging and desilting exercises in 2017 and 2018;
iv. Not being within the catchment of planned long-term investment projects

To this end, in line with the World Bank's Operational Policy on Environmental Assessment OP 4.01, the proposed dredging and clearing of blocked drainages has been classified as a Category "B" Project thus requiring an Environmental and Social Management Plan (ESMP) to be prepared.

1.2 Project Location

The project sites for dredging and clearing of blocked drainages are scattered around the city of Ibadan and surrounding Local Government Area (LGAs). Ibadan is the capital city of Oyo State. Oyo State is located in South-west Nigeria, and shares frontiers with several states. Oyo is bounded by the states of Kwara on the north, Osun on the east, and Ogun on the south and by the Republic of Benin on the west.

Oyo State is administratively divided into 33 LGAs. The dredging and clearing of blocked drainages is expected to span a total of 11 of the 33 LGAs. These LGAs are: Ibadan North, Ibadan North East, Ibadan North West, Ibadan South West, Ibadan South East, Egbeda, Iddo, Akinyele, Lagelu, Ona Ara and Oluyole LGAs. Figure 1.1 presents an administrative map of Oyo State showing the 33 LGAs while Figure 1.2 shows the various locations for dredging and clearing of blocked drainages.

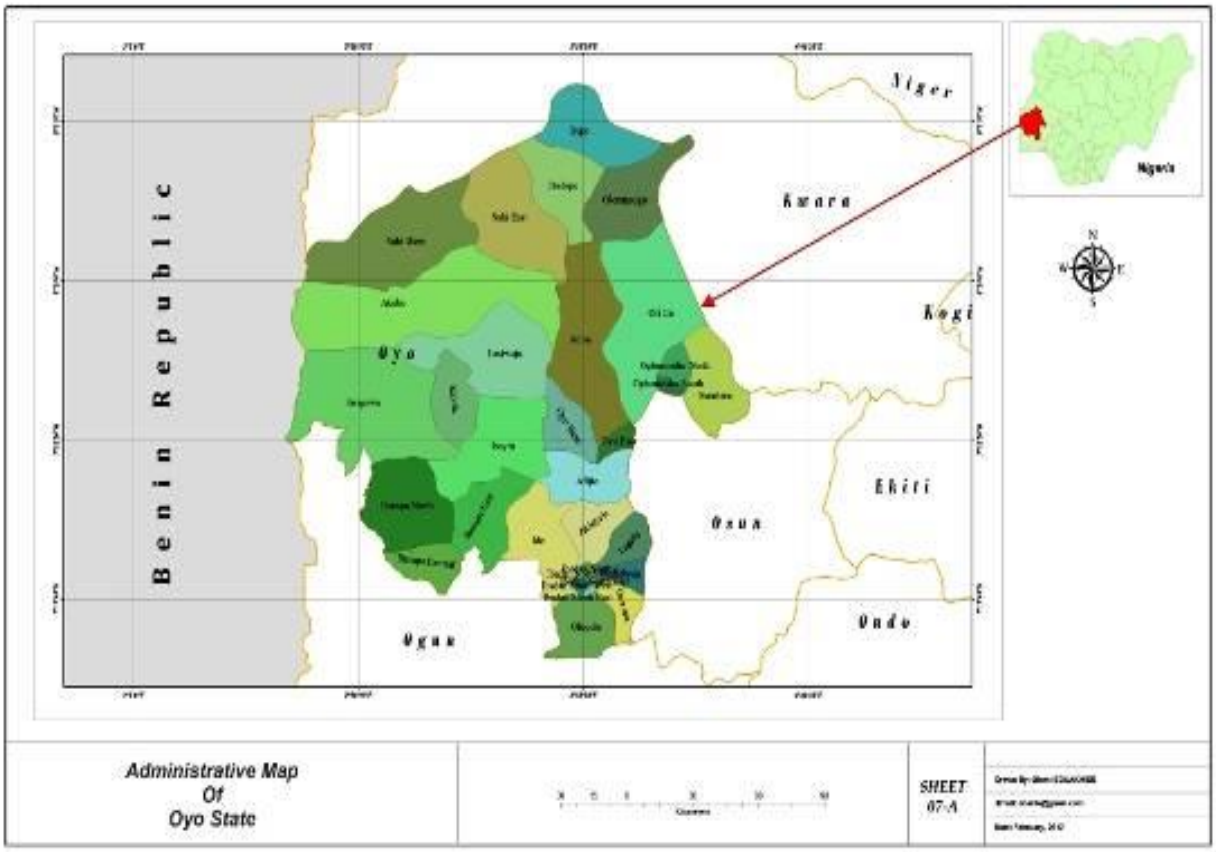

Figure 1.1: Administrative map of Oyo State showing the 33 LGAs

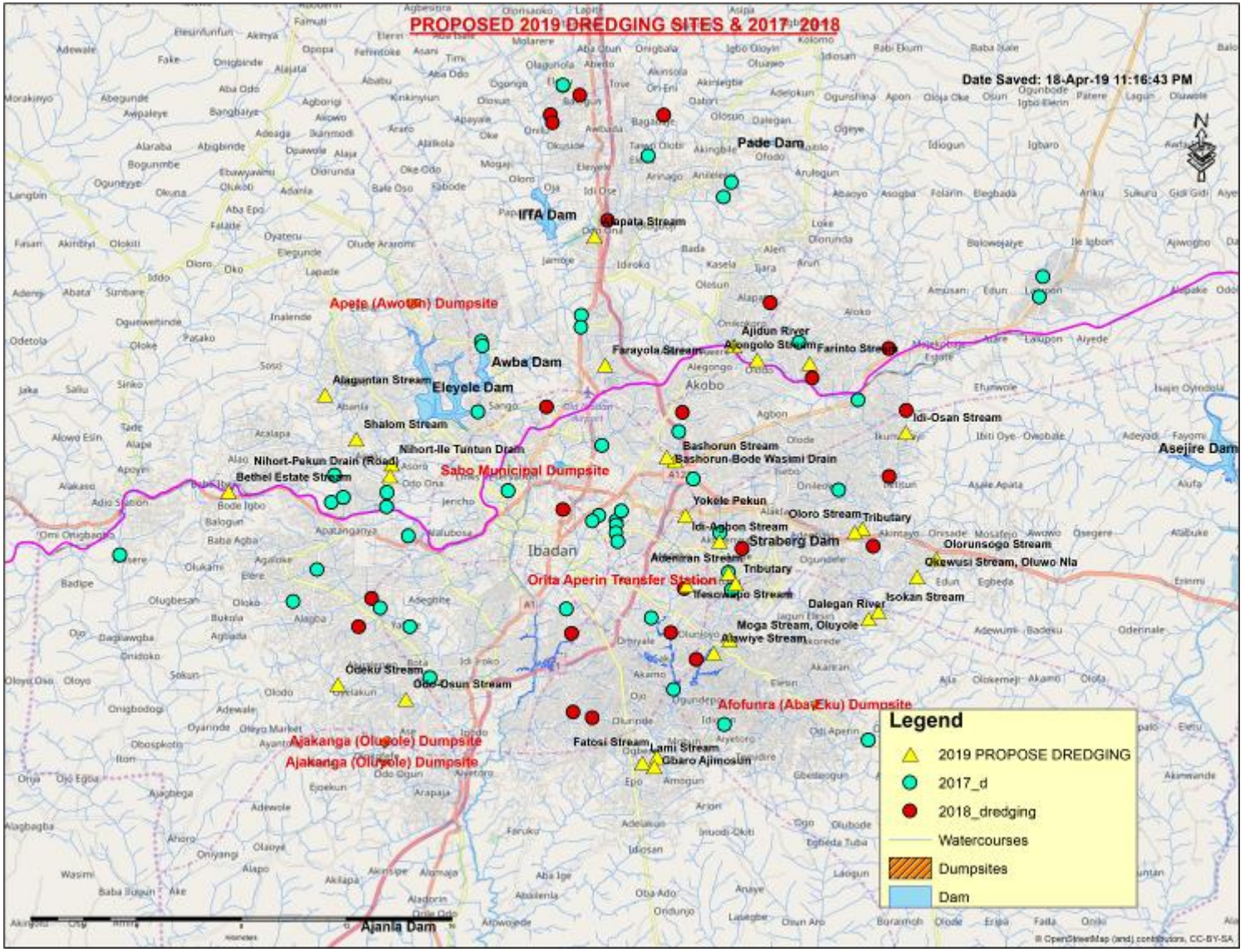

Figure 1.2: Map showing the distribution of proposed dredging and blocked drainage locations (2017,2018, 2019)

1.3 Description of the Proposed Works

The proposed intervention includes two (2) categories of activities to be implemented as indicated in the Table 1.1 below;

Table 1.1: Summary of Works Requirements on Dredging/Desilting for 3 classes of sites.

SITE CATEGORY	LENGTH (M)	GENERAL WORK REQUIREMENT	SPECIFIC WORK REQUIREMENT
A1 *(River/Stream channel where accessibility of disposal trucks is achievable*	31,100	Excavation of all classes of soil, except rock from the Channel, not exceeding 1m depth and **variable** width not exceeding 6m Removal of impediments, debris, wastes, shrubs, vegetation etc at river channels, bridges/culverts locations River training along the channel where applicable or as may be directed by the Supervising Engineer; Dredging for removal of silt material and solid wastes.	Disposal of dredged material to the dump sites and identified areas as jointly directed by the supervising Engineer and representatives of Ministry of environment. The area will not be less than 500m away from the site.
A2 *(River/Stream channel where accessibility of heavy truck is NOT feasible due to weak/narrow right of ways)*	23,350		The excavated silt materials are to be spread at a distance not less than 5m from the channel embankment, spread and compacted to spread sediment to a maximum height of 100 - 200mm at maximum.
B *(Road side drains)*	5,700	Removal of solid waste, debris, grass and other materials from a lined channel/drainage.	Disposal of excavated materials to dump sites and an identified spoil areas to be determined by Supervising Engineer and Ministry of Environment and Water Resources representatives.

Table 1.1 shows the list of areas for dredging sites (S/N 1-29) and clearing (S/N 30-32) works will be carried out, including some pictures of the sites. The proposed works are in two parts:

A. Dredging Works

About twenty - nine (29) sites have been identified. The dredging works includes: the dredging of stream channels to remove silt and wastes which have clogged the stream channels, leading to restriction to water flow, thus causing flash floods during heavy rainfalls. Generally, mechanical dredging will be used and dredged materials will be piled along the banks of the stream/channel being dredged. The strategy for the conduct of the dredging will involve the removal of silt from the river channels which will be moved out to designated spoil areas OR where there are space constraints, removed materials will be deposited and compacted on the banks, at a minimum distance of 5m and not more than 900mm height, where there is sufficient space. All debris clogging hydraulic devices crossing the streams will be removed, carted away and deposited appropriately depending on the composition of such material. Generally, the dredging activity will ensure that no dikes are created as a result of removal of materials from the channels. Routes for runoff water will be preserved and thus adequate spacing will be left between dumps to allow continued runoff into the channels. However, in cases where there are solid wastes, arrangements have been made to have these carted off to designated government approved dumpsites. Details of these are presented in the Waste Management Plan presented as Annex 5

Generally, a maximum dredging depth of 1m will be achieved at all locations. However, the width and length of dredging will vary from location to location, and will be driven by the envisaged requirement on site.

B. Clearing of Blocked Drainages

Three (3) blocked drainages were identified. The blockages are the result of indiscriminate disposal of solid wastes, gradual siltation, weed growth and collapse of drainage structures, or a combination of these factors. The proposed works include the removal of silt and solid wastes which have constituted blockages along the drains, thus leading to occurrence

of flash floods. In all cases, clearing of drains will be to the base of the drain. There will be no widening or rehabilitation of existing drains.

It is anticipated that a very large proportion of materials to be excavated from blocked drains will be solid wastes. As such, apart from constituting obstruction to regular routes along which these drains are located, the solid wastes will also constitute aesthetic disturbances. Therefore, all excavated materials from the drainages will be carted away to designated dump sites. The designated dumpsites and their relative locations are indicated in the waste management plan presented as Annex 6 to this report.

S/N	NAMES OF SITES	LAT.	LONG.	ALT(m)	Upstream Distance (m)	Downstream Distance (m)	Width	Lot #	PICTURES
					STREAMS/RIVERS TO BE DREDGED				
1	Olorunsogo Estate stream, Ibadan	7.37442488	4.02942353	198	300	1200	6.0	1	 
2	Ajidun River, New Ife road, Ibadan	7.44782701	3.95993503	252	400	1700	6.0	2	 
3	Moga stream, Olunloyo, Ibadan	7.34684844	3.95813777	211	200	1300	6.0	3	 
4	Alawaye stream, Olorunsogo area, Ibadan	7.34236243	3.95253835	198	300	700	5.0	3	 

5	Farayola stream, Bodija, (Major Salawu street) Ibadan	7.4412999	3.91536825	229	400	1700	6.0	2		
6	Shalom stream, idi ishin, ile titun area, ibadan	7.41607499	3.82957457	203	300	1700	6.0	3		
7	Alapata stream, Shasha, Moniya area, Ibadan	7.48551395	3.91181481	221	300	1200	6.0	2		
8	Ajogonlo stream, Akobo/Yawuri area, Ibadan	7.44306882	3.96789629	235	Total Length downstream = 2300		6.0	2		
9	Odeku stream, Bota area, Oluyole, Ibadan	7.33176443	3.82306189	189	400	1600	6.0	1		

10	Adeniran stream, Gbaremu, Gangansi area, Ibadan	7.36982827	3.95782442	233	800	1000	6.0	3		
11	Alaguntan stream, Ologuneru-Eleyele road, Ibadan	7.43124	3.81888957	228	Total Length downstream = 2500		6.0	3		
12	Ifesowapo stream, Babanla, Oremeji area, Ibadan	7.36568118	3.94328157	226	150	1350	6.0	3		
13	Fatosi stream, Olomi, Olunde area, Ibadan	7.30668513	3.93307587	189	1000	500	6.0	3		
14	Oloro stream Tributary, Olode, Adegbayi, Ibadan	7.3849939	4.00402766	186	Total length downstream = 300		6.0	1		

15	Odo-Osun stream, Ashipa, Oluyole, Ibadan	7.32681639	3.84645249	180	300	1700	6.0	1		
16	Idi-Agbon stream, Laogun, Old Ife Road, Ibadan	7.38067429	3.95468325	216	500	1000	6.0	3		
17	Bashorun stream, Bode Wasimi area, Ibadan	7.40839446	3.93950409	246	900	600	6.0	2		
18	Idi-Osan stream, Kumapayi, Ibadan	7.41791282	4.01903358	194	600	1900	7.0	1		
19	Dalegan river, Iyana Agbala, Adegbayi, Ibadan	7.35402497	4.00600065	162	700	2300	8.0	1		

20	Isokan stream, Oluwo, Ibadan	7.3564081	4.00936652	165	500	1500	6.0	1		
21	Orunkanga Stream, Apatupu, Elewuro Road Akobo Ibadan	7.46246251	3.97236729	239	Total Length of drain = 1500		6.0	2		
22	Lami Stream, Olunde	7.3047998	3.9279922	194	400	1100	6.0	3		
23	Farinto stream powerline, Kute area	7.44174696	3.98585345	223	600	1900	6.0	2		
24	Adukanle Stream Agbofieti	7.41195982	3.81675101	202	1800	1200	6.0	2		

25	Okewusi Stream, Oluwonla area, Adegbayi	7.36838160	4.02278011	169.4	750	1250	6.0	1		
26	Gbaro Ajimosun stream, Lagelu	7.3033	3.9321	202	Total Length of Drain is 2000		6.0	2		
27	Yokele-pekun stream, Oluyole	7.3896	3.9430	263	Total Length of Drain is 500m		5.0	1		
28	Bethel Estate stream, Bode Igbo Area, Abeokuta Road	7.3980	3.7855	203	Total Length of Drain is 2500m		6.0	1		
29	Olope Woroko stream, behind Ibadan Grammar School, Molete	7.3489844	3.89735571	202	800	1200	6.0	3		

					BLOCKED DRAINS FOR CLEARING					
30	Bashorun-Bode Wasinmi road, Ibadan	7.40974659	3.93661860	255	Total Length of Drain = 1200	0.6		2		
31	Nihort – Ile Titun road, Ibadan	7.40742078	3.84181617	192	Total Length of drain =2000	1.0		2		
32	Nihort – Pekun road, Ibadan	7.40336148	3.84118265	201	Total Length of drain = 2500	1.0		2		

Project Schedule
The project is planned for implementation before the onset of the heavy rains. Usually the intense rainfall period in Ibadan is between June and August, each year. During this period, more than 40% of annual rainfall occurs and it is usually during these periods that the most grievous damages associated with flooding occurs. A maximum period of 4 weeks is anticipated for the completion of all dredging and clearing works.

1.4 Objectives of the ESMP

The overarching objective of the ESMP is to ensure that the environmental and social impacts likely to arise from the project activities are identified and appropriate mitigation measures integrated into project implementation and operation in order to protect human and environmental health.

The specific objectives of the ESMP are to:

- Comply with applicable national and State environmental and Social legislations, standards and guidelines as well as the World Bank's environmental and social safeguard policies;
- Achieve and demonstrate sound environmental performance based on the principle of continual improvement;
- Identify potential positive and negative environmental and social impacts that may arise from the implementation of the project;
- Proffer management actions that need to be implemented in order to mitigate the negative environmental and social impacts and enhance the positive impacts of the project;
- Propose environmental and social monitoring programmes that will ensure that mitigation measures are implemented and effective during project execution and timely corrective actions are taken where required;
- Propose institutional arrangements, incorporating roles and responsibilities of stakeholders involved in management actions and monitoring;
- Outline the implementation schedule and reporting procedures for the ESMP;
- Communicate environmental and social expectations and requirements throughout the project life cycle; and
- Ensure the allocation of sufficient resources for effective implementation of the mitigation measures

1.5 Approach and Methodology

This ESMP was prepared in accordance with the World Bank safeguard policies and the Nigerian environmental assessment guidelines and procedures. The methodology essentially entailed: Preliminary site visits, literature review/desktop studies, field studies, community/stakeholder consultations and the preparation of the ESMP.

1.5.1 Literature Review/Desktop Studies

Literature review and desktop studies were undertaken to obtain information on the proposed project as well as the environmental and socio-economic conditions in the project area.

The documents reviewed included:

- Project Appraisal Document (PAD);
- Environmental and Social Management Framework (ESMF);
- World Bank Safeguards Policies;
- Federal and state environmental laws regulations, decrees, acts, policies and guidelines;
- 2018 dredging ESMP
- Baseline Study on Flood Mitigation and Resilience, City of Ibadan (December 2018)

1.5.2 Field Data Collection

Field studies were carried out with a view to gather additional information on the baseline environmental and social conditions that may potentially be affected during project implementation and operation phases. This involved in-situ measurements, visual assessment/observations, and unstructured Key Informant Interviews (KIIs).

1.5.3 Stakeholder Consultations

The planned activities are largely beneficial. However, rapid stakeholder consultations were carried out. The consultations built on previous engagements of the MoEnvWR with site communities who presented the requests. In order to ensure comprehensive and complete coverage of all stakeholders, a joint stakeholder meeting was held with all affected communities. Details of these stakeholder consultations are presented in Chapter 5, while evidence of stakeholder meetings in some locations are presented in Annex 8. Such discussions aimed at obtaining their views on the planned activities, and the concerns they may have with regards to project implementation. Through this process, concerns and issues were addressed; views and inputs as regards the potential environmental and social impacts of the project and proposed mitigation/enhancement measures were obtained.

CHAPTER TWO: REGULATORY AND ADMINISTRATIVE FRAMEWORK

Details of the administrative and regulatory framework applicable to the Ibadan Urban Flood Management Project (IUFMP) and its anticipated sub-projects have already been extensively covered in chapter two of the environmental and social management framework (ESMF) that was prepared for the project at the onset. For the purpose of reiteration however, an overview of the relevant key regulations are presented in the following sub-sections:

2.1 Oyo State Regulations

The Oyo State Government is committed to environmental protection and sustainable development. To this end therefore, the state established the Ministry of Environment and Water Resources, and saddled it with the primary responsibility of protecting the state's environment and water resources. The Ministry has the following duties and responsibilities:

i. Responsible for formulation, enforcing and coordinating policies, statutory rules and regulation on Solid Waste collection and disposal, general environmental protection, flood control and regulation of the ecological, system and all activities related therein, throughout the State;

ii. Conduct public enlightenment campaign and disseminates vital information on environmental and ecological matters, and to mobilise the inhabitants of all areas for effective observance of environmental rules and guidelines, for the purpose of healthy and safe environment;

iii. Renders advisory services and support to all Local Government in the State in areas of Flood Control, Solid Waste Management Ecological and Sanitation Matters;

iv. Preparation of master plan for drainage, solid and liquid wastes, and general aesthetics, and of annual State of the environment report for the State and transmit same to the secretariat of the National Council of Environment;

v. Monitor of sources of toxic pollutants in air, land and water and offering of necessary advice to industrial establishments; Monitoring of the Implementation of the Environmental Impact Assessment (EIA) and the Environmental Audit Report (EAR) guidelines and procedures on all development policies and projects within the State;

vi. To initiate measures to ensure pollution-free air, land and water throughout the State including other steps to obviate, mitigate or climate environmental discomfort to individuals or groups or danger to lives and properties;

vii. Develop strategies for settlement patterns with a view to integrating physical planning with economic programmes;

viii. Prepare master plans for major cities of the State;

ix. To ensure that the lawns and the surroundings of the departmental offices in the secretariat precincts are kept tidy and well-trimmed;

x. To plan, execute and maintain areas that may be designated public open spaces in the State;

xi. To obtain research findings from the relevant Federal and State Agencies for the purpose of policy formulation and dissemination of the supply and usage of water in the State;

xii. To carry out both administrative, supervision and establishment duties with a view to ensuring well-managed finances and administration of the Ministry in line with Government policies.

2.2 National Regulations

At the national level, the FMEnv is saddled with the primary responsibility of safeguarding the environment of the nation, and is empowered with various regulations. FMEnv's mandate includes the establishment of federal water quality standards and effluent limitations, protection of air and atmospheric quality, protection of the ozone layer, control of discharge of hazardous substances, inter alia and ensures that all major development projects in Nigeria are subject to mandatory Environmental Impact Assessment (ESIA) pursuant to ESIA Act. No. 86 (Decree No. 86) of 1992.

As contained in FEPA Act 58 of 1988 and 59 of 1992, FMEnv has put in place statutory instruments and documents to aid the monitoring, control and abatement of industrial waste. The statutory documents currently in place include:

i. National Policy on the Environment 1989
ii. National Environmental Protection (Effluent Limitations) Regulations (S.I.8) 1991;
iii. National Environmental Protection (Pollution Abatement in Industries and Facilities Generating Wastes) (S.I.9) 2004;
iv. National EnvironmentalI1.15) 1991;
v. Guidelines and Standards for Environmental Pollution Control in Nigeria 1991;
vi. Sectoral Guidelines for ESIA 1995
vii. Harmful Wastes (Criminal Provisions) Decree No. 42, 1988;
viii. Environmental Impact Assessment Procedural Guidelines 1995;
ix. Environmental Impact Assessment (ESIA) Act No. 86 of 1992; and
x. Environmental Impact Assessment (Amendments) Act 1999.
xi. National Guidelines and Standards for Water Quality 1999
xii. National Guidelines on Environmental Management Systems (EMS) 1999
xiii. National Guidelines on Environmental Audit in Nigeria 1999
xiv. Inland Fisheries Act, CAP I10, LFN 2004
xv. Arbitration and Conciliation Act CAP A18, LFN 2004.
xvi. Nigeria Policy on Child Labour, 2013
xvii. National Policy on Occupational, Safety and Health, 2006
xviii. National Workplace Policy on HIV and AIDS, 2013
xix. Lifting and Allied Work Equipment Safety Regulations
xx. Prohibition of Violence Against Women Law of Oyo State, 2016.

These statutory documents clearly state the restrictions imposed on the release of toxic substances into the environment and the responsibilities of all industries whose operations are likely to pollute the environment. Such responsibilities include provision of antipollution equipment and adequate treatment of effluent before being discharged into the environment. There are also published laws and regulations that govern key social issues of interest such as Alternative Dispute Resolution procedures and principles, Child Labour, Occupational Safety and Health, Workplace mitigation of HIV/STI disease risks as well as a broad range of issues related to Gender-Based Violence Mitigation.

FMEnv also has put in place procedural and sectorial guidelines detailing the ESIA process including a categorization of environmental projects into Categories I, II and III (referred to by the World Bank as categories A, B and C respectively). These guidelines require that a complete ESIA be performed for category I projects. Category II projects may not require an ESIA, or a partial ESIA.

Some of the specific guidelines and standards that apply to the planned project include the following:

Effluent Limitations Regulations
This regulation was made pursuant to Section 37 of the FEPA Act Cap 131 LFN, to regulate ways and manners of treating effluent as well as installation of anti-pollution equipment by industries operating in Nigeria.

The regulation mandates every industry to install anti-pollution equipment for the detoxification of effluent and chemical discharges emanating from the industry (Regulation 1(1)). Such installed anti-pollution equipment shall be based on Best Available Technology (BAT), BPT or the Uniform Effluent Standards (UES) (Regulation 1(2)).

An industry which discharges effluent shall treat the effluent to a uniform level as specified in the schedule to the receiving water into which the effluent is discharged (Regulation 3(1)).

An industry specified in column 1 of schedule 3 to the regulations shall be subject to the additional sectoral effluent limitations set out in columns 2 and 3 respectively, to the schedule (Regulation 4).

The regulation sets out effluent limitations and gaseous emissions guidelines in Nigeria for the petroleum exploration and production industry.

Contravention of this regulation is an offense punishable as specified in Section 35 or 36 of FEPA (Regulation 5).

Pollution Abatement in Industries and Facilities Generating Wastes

This regulation is made pursuant to FEPA Act, CAP 131 LFN Section 37, to designate and regulate the management of solid and hazardous wastes generated from facilities in Nigeria.

Unless with the approval of the Agency (FEPA, now FMEnv), no industry or facility shall release hazardous or toxic substances into the air, water or land of Nigeria's ecosystem and such limits approved by the Agency shall not be exceeded. Storage, treatment, and transportation of harmful toxic waste without permit is also prohibited (Regulations 1, 10, and 15).

It mandates that an industry or facility has a pollution monitoring unit within its premises, sets up a machinery for combating pollution hazard and maintains equipment in the event of an emergency, and assigns the responsibility for pollution control to a person or corporate body accredited by the Agency (Regulations 2 and 8).

Solid waste generated by an industry or facility, including sludges and all by-products resulting from the operation of pollution abatement equipment shall be disposed of in an environmentally safe manner, and no industry solid waste shall be disposed of in any municipal landfill (Regulation 16).

It further enjoins every industry or facility which is likely to release gaseous particles or solid untreated discharges to install into its system a prescribed abatement equipment by the Agency (Regulation 17).

It also empowers the Agency to demand environmental audit from existing industries and environmental impact assessment from new industries and major development projects and the industries shall comply within 90 days of the receipts of the demand (Regulation 21).

It places responsibilities of collection, treatment, transportation, and final disposal of waste on the industry or facility generating the waste, and imposes a liability, on such industry or facility, for any clean-up, remediation or restoration connected with the waste and where necessary, compensation to all affected parties (Regulation 11(1) (2)).

Any person or group, whether corporate or unincorporated who contravenes any provision of the regulations shall be guilty of an offense and liable on conviction to the penalty specified in Sections 35 or 36 of the FEPA Act (Regulation 22).

Establishes monitoring pollution units, pollution response centres and other machinery for combating pollution (Regulations. 3, 6, and 7).

Management of Hazardous Waste Regulation

This regulation designates those solid wastes, which are dangerous or extremely hazardous to the public health and environment.

In order to determine if the waste generated is to be designated as "dangerous i.e. hazardous waste" or "extremely hazardous waste" in accordance with the stipulations under Part II of the Regulations, the generator or operator has to consult the dangerous waste list, characteristics and criteria set out under schedules 6-13 and follow the detailed cross checking procedures established there.

It provides for surveillance and monitoring of dangerous and extremely hazardous waste and substances, until they are detoxified, reclaimed, neutralized, or disposed of safely.

It also provides the form and rules necessary to establish a system for manifesting, tracking, reporting, monitoring, record keeping, sampling and labeling dangerous, and extremely hazardous wastes.

It further encourages recycling, reuse, reclamation, and recovery to the maximum extent possible.

2.3 World Bank Guidelines

The World Bank has a set of safeguard policies that regulate the activities of projects which it is funding or providing assistance. One of these policies is OP/BP 4.01 on Environmental Assessment, which applies to this project. It is used to examine the potential environmental impacts and benefits associated with Bank lending operations. Under OP/BP 4.01, Bank lending operations are broadly defined to include investment lending, sector lending, and rehabilitation lending through financial intermediaries, and investment components of hybrid lending. Applicable Ops : OP/BP 4.01 Environmental assessment

Under this guideline, the Bank requires environmental assessment (EA) of projects proposed for Bank financing to help ensure that they are environmentally sound and sustainable, and thus to improve decision making. EA evaluates a project's potential environmental risks and impacts in its area of influence; examines project alternatives; identifies ways of improving project selection, siting, planning, design, and implementation by preventing, minimizing, mitigating, or compensating for adverse environmental impacts and enhancing positive impacts; and includes the process of mitigating and managing adverse environmental impacts throughout project implementation.

Table 1.3: Operational Policies Triggered on IUFMP Interventions

Operational Policy	Reasons
Environmental Assessment(OP.4.01);	Safeguards policy OP 4.01 is triggered, in component 2 and the potential civil work activities include rehabilitation of the damaged spillway and stilling basin to improve dam safety (incl. removing vegetation to expose concrete surface, making access), immediate repairs and restoration of bridges and CDC on critical secondary and tertiary subcatchment areas across the city of Ibadan and major rehabilitation of bridges and CDC, cleaning of river channel on main three rivers, restoring or establishing natural flood retention ponds, and undertaking flood plain management activities.
Natural Habitat (OP/BP 4.04)	This policy is triggered because some project activities may take place near to critical natural habitats (forests, wetlands, mangroves, etc.) or environmentally sensitive areas and some mitigation measures may be necessary to minimize any negative environmental and social impacts.
Physical Cultural Resources (OP 4.11)	Some activities in components 2 may include civil works that could expose chance finds. These chance find sites may include sacred shrines and burial sites. To mitigate this risk, specific procedures (such as chance find procedures) will be included in the sub-project ESIAs as required.
Involuntary Resettlement (OP/BP 4.12)	This policy is trigged because most of the sub-projects could involve minimal or moderate land acquisition and or restriction of access to usual means of livelihood as most of the subprojects will largely be rehabilitation of existing infrastructure. Also, site specific Resettlement Action Plans (RAPs) or Abbreviated Resettlement Action Plans (ARAPs) will address the needs of persons who will be affected by loss of economic activities, land acquisition and/or relocation.
Safety of Dams (OP/BP 4.37)	The IUFMP will not be directly involved in the construction of new dams. However, component 2 may include the rehabilitation of the damaged spillway and stilling basin to improve dam safety. The client will carry out a detailed environmental and social and safety audit of these dam prior to the appraisal. The outcome of the audit will include dam safety and sedimentation reports would underpin the preparation of dam specific environment and social management plans, early warning and response systems and composition of dam safety panel to be put in place by the borrower.
Disclosure Policy (OP/BP 17.50)	All projects must disclose key information in-country and through the Bank's Infoshop

CHAPTER THREE: DESCRIPTION OF BASELINE BIOPHYSICAL AND SOCIO- ECONOMIC CONDITIONS

3.1 Overview

This section presents an overview of the environmental and socio-economic conditions around the various sites where dredging and/or desilting activities are planned to take place for the year 2019. A combination of sources were used, including literature review and evaluation of recent studies in the project area as well as direct site observations and in-situ measurements of specific environmental and socio economic parameters. In addition, detailed consultations were held with affected stakeholders.

Details of the procedures and observations are presented in the following sub-sections.

3.2 Environmental Baseline Data Collection Methods

Data collection for this exercise was limited to in-situ sampling, and visual observations. For in-situ sampling, the studies focused on water (surface and groundwater), air quality and noise levels, using digital handheld meters. For biological parameters such as vegetation, wildlife and, endangered species, visual observation, aided with identification keys were employed. Details of the sampling methods for environmental parameters are presented below:

3.2.1 Air Quality and Noise Sampling

Ambient air quality and noise level measurements were carried out on site using in-situ digital air quality monitoring equipment. Measurements were taken at various points around the various project site. Measurements were taken with due considerations for upwind and downwind directions. Table 3.1 shows a list of equipment used for this study.

Table 3.1: List of Air Quality and Noise Measurement Equipment Used in the Study

Parameter	Equipment
Total Suspended Particulate (TSP)	Haz Dust Digital Dust Indicator
Hydrogen Sulphide (H_2S)	Crowcon Gasman
Carbon monoxide (CO)	COM4 - CO indicator
Nitrogen Oxides (NO_X)	Crowcon Gasman
Sulphur Oxides (SO_X)	Crowcon Gasman
Noise level	Rion Sound Level Meter

The general sampling plan involved collection of air samples around designated work areas (including control points).

3.2.2 Water Quality

Water samples were collected by simple direct dip method using sample containers at proposed dredging locations. The water samples were collected for in-situ measurements only. At each sampling point, *in situ* measurements were taken using an Extech Water Quality Kit, equipped to sample 7 parameters. The field sample data sheets were appropriately completed at each sampling point. The parameters covered at each point are: pH, Conductivity, TDS, Salinity, DO, Temperature and Turbidity.

3.2.3 Biological Parameters

Vegetation sampling was conducted around the project area. In each sampling zone, an area of 10m x 10m was marked out for the studies. In each marked out area, all vegetation within it were identified to species level. The approach involved direct *in-situ* observation and assessment of the general and specific characteristics of the vegetation like; the floristic composition, life form and structure, photographic captures and collection of leaves and other plant materials necessary for taxonomic identification/studies.

Identification keys and field guides were used for identification. Some of these keys include: Ndiribbe and Illoh (2007), Akobundu and Agyakwa (1998), Gledhill (1972), Hutchinson and Dalziel, (1968) and Keay, et. al., (1964).

In-situ observation of wildlife kinds within the project area was conducted. Photographs of observed wildlife were taken where possible, these included, birds, reptiles, and mammals, etc. In addition, discussions with local communities on wildlife were held. Illustrated keys were used to discuss with residents and this formed the basis, among others, of identifying species that are available in the areas, and their relative abundance levels.

Some keys handbooks and field guides used include: Kingdon (2004), van Perlo (2002), Branch (1998), Nason (1992), Happold (1991), Booth (1991), Boorman (1991, 1970).

3.3 Environmental Baseline Conditions

3.3.1 Climate /Meteorology

The climate of the project area and its immediate environment is influenced by the tropical and continental air masses which are associated, respectively with the north-east and moisture-laden monsoon south-west winds The movement of these air masses results in the two weather seasons – the wet season from April to November, the dry season from December to March typical of the project area.

Summary of climatological data for the Ibadan area, based on historical data from the Nigerian Meteorological Institute (NIMET) for the years 2003 to 2017 is presented in Table 3.2.

Table 3.2: Summary of climatic characteristics of the Ibadan area

Month	Average Rainfall (mm)	Temperature C				Relative Humidity (%)		Average Sunlight (hrs)
		Average		Recorded				
		Max	Min	Max	Min	am	Pm	
January	28	31	23	35	17	84	65	6
February	46	32	25	36	19	83	69	7
March	102	32	26	37	16	82	72	6
April	150	32	25	37	21	81	72	6
May	269	31	24	40	21	83	76	6
June	460	29	23	34	21	87	80	4
July	279	28	23	34	20	87	80	3
August	64	28	23	36	19	85	76	3
September	450	28	23	34	20	86	77	3
October	286	29	23	36	21	86	76	5
November	69	31	24	37	21	85	72	7
December	25	31	24	37	19	86	68	7
Min	25	28	23	34	16	81	65	3
Max	460	32	26	40	21	87	80	7
Average	186	30	24	36	20	85	74	5

Source: NIMET, Oshodi

Rainfall

Rain falls in virtually all the months of the year with annual average of 186mm. Rainfall pattern shows double maxima, with a relatively dry period occurring in August. Two seasons are identifiable: the rainy season (April to November) and the relatively dry season (December to March). Rainfall is heaviest during the months of June and September. This period accounts for over 50% of the total annual rainfall whilst only about 7.5% of annual total rainfall occurs between November and February (Figure 3.1).

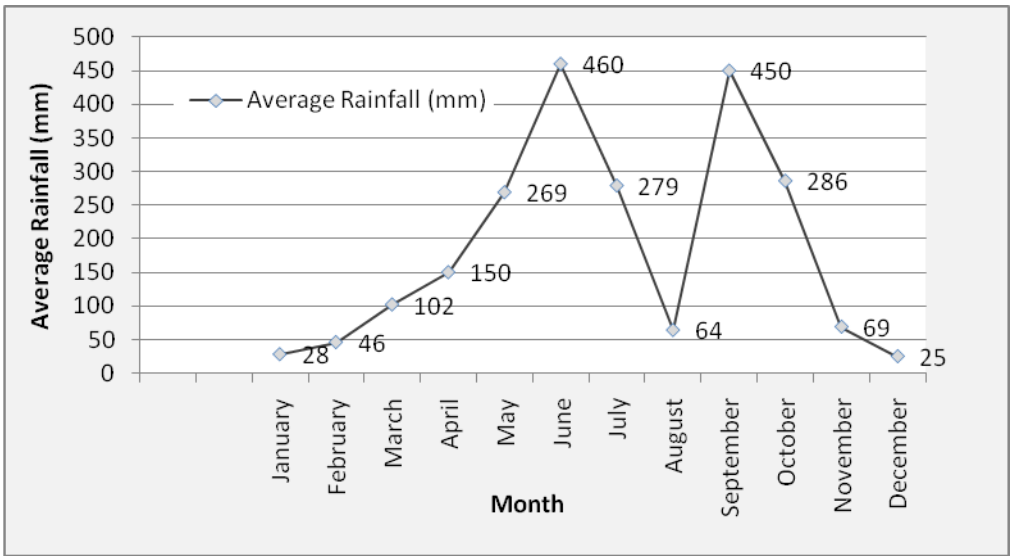

Figure 3.1: Rainfall Characteristics of the Ibadan Area

Temperature

Based on the average of temperature data obtained from the NIMET for 2003 to 2017, Temperature is relatively constant throughout the year, with annual ranges of 28 to 32^{0}C and 23 to 26^{0}C for maximum and minimum temperature records respectively. Mean monthly maximum and minimum temperatures are 30 and 24^{0}C respectively. Lowest temperatures are recorded between July and September while highest temperatures are recorded between October and March (figure 3.2)

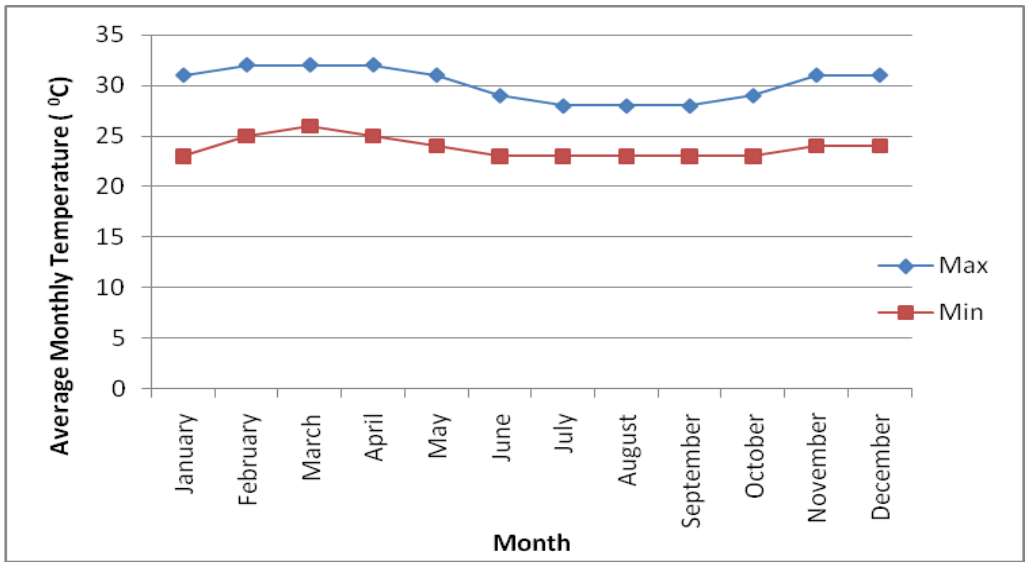

Figure 3.2: Temperature characteristics of the proposed project Area

Wind

The project area has a calm weather with wind speed ranging between 2-5 m/s. The wind speed is lower than 2.7m/s in about 60% of the time, and seldom (<2% of the time) exceeds 3 m/s. Wind speeds are generally lower in the night than during the day with the highest wind speed recorded at the onset of the rainy season. The prevailing wind direction (about 55% of the time) is South West to north east (2100 - 2400). However, during the dry season, winds are distributed in all directions, but predominantly north east to south-west.

3.3.2 Geology and Hydrogeology

The project area falls within the Dahomey sedimentary basin, a basin known to have resulted from events associated with the break-up of Gondwana and subsequent opening of the southern Atlantic. Deposition was in a fault-controlled

depression, bounded by faults and other tectonic structures of the Romanche Fault Zone on the west, and by the Benin Hinge line, also a major fault structure, on the east.

3.3.3 Air Quality and Noise Level

The air quality in the study area is within acceptable FMEnv regulatory limits, in all cases, as shown by the results of the ambient air quality measurement around the area. Suspended Particulate Matter (SPM were very low in all cases, and reflected, to some extent, the scrubbing effect of rainfall, since sampling was carried out in the rainy season. Virtually all the gases tested were not detected. Although carbon monoxide was detected in some locations, it was below the regulatory limit of 10ppm stipulated for 8hr occupational exposure by the FMEnv as well as the World Bank/IFC's limit of 9ppm.

The measured noise levels were all below the FMEnv regulatory limit of 90 dB (A) over an 8 hour exposure period.

A summary of in-situ air measurements across the project sites is presented in Table 2.3 while detailed site-specific measurements are shown in Annex 1.

Table 3.3: Air Quality and Noise Measurements in the Study Area

Parameter	Unit	FMEnv Standards	Minimum	Maximum	Average
CO	Ppm	10	0.0	1.5	0.8
VOC	Ppm	-	0.0	0.0	0.0
SO_2	Ppm	0.14	0.0	0.0	0.0
NO_2	Ppm	0.06	0.0	0.0	0.0
H_2S	ppm		0.0	0.0	0.0
SPM	µg/m^3	250	19	110	64.5
Noise	dB	90	35	78	54

Source: Fieldwork, May/June, 2019

3.3.4 Surface/Groundwater

Physico-chemistry

A summary of the results of in-situ water measurements around proposed dredging locations are presented in Table 3.4 while detailed results are presented as Annex 2. Generally, some of the parameters sampled, in several locations, especially turbidity were above the FMEnv acceptable limits, probably a reflection of the effects of solid waste inputs and flood runoff from inland areas.

Table 3.4: Summary of In-situ water measurements

	pH	Cond mS/cm	TDS mg/l	Salinity ‰	Turbidity NTU	Temp °C	DO mg/l
Minimum	6.2	0.02	42	0	450	28.9	3.5
Maximum	6.5	0.06	57	0	600	30.1	5.4
Average	6.4	0.04	48	0	490	29.8	4.3
FMEnv Limits	6.5 to 8.5		100	-	500	45	-

Generally, all water samples were in the acidic range with pH ranging between 6.2 and 6.5. Salinity was 0.0‰ across the various locations, indicating that the area is exclusively freshwater. DO was generally low across the area, with most samples recording values below 4.5mg/l, for the survival of most aquatic life. The waters were generally turbid ad this is hardly unexpected given the high volume of wastes evident in the waters, as observed during field sampling.

3.3.5 Biological Environment

Vegetation and Crops

Generally, most of the areas proposed for dredging fell in occupied/built-up areas and as such, dense, quasi-natural vegetation occurred only along riverbanks, especially. Vegetation consisted mostly of riparian species along the waterways in undeveloped areas. Prominent plants were grasses and a lot of aquatic weeds, while a few trees occurred in areas that had not received recent human impacts. Within the neighbourhoods where dredging will be done, there are crops such as plantains, bananas and sugarcane, as well as vegetables, cassava and maize are being grown. However, they are at distances where impacts can be completely avoided based on the variable widths of 4-6m channel width to be implemented. Table 3.5 shows a list of the vegetation observed around the area while Plates 3.5 to 3.8 show vistas of observed vegetation across the project locations.

Table 3.5: List of plants observed around the study area

	Biological Name	Common Name	Habit
1.	*Ageratum conyzoides*	Goat weed	Forb
2.	*Alchornea cordifolia*	Christmas Bush	Tree
3.	*Andropogon gayanus*	Elephant grass	Grass
4.	*Aspilia Africana*	Hemorrhage plant	Forb/small plant
5.	*Axonopus compressus*	Carpet grass	Grass
6.	*Bambusa vulgaris*	Bamboo	Tree
7.	*Boerhevia diffusa*	Pigweed	Forb/small plant
8.	*Brachiaria deflexa*	Signal grass	Grass
9.	*Capsicum spp.*	Pepper	Forb/small plant
10.	*Carica papaya*	Pawpaw	Tree
11.	*Chromolaena odorata*	Siam weed	Forb
12.	*Colocasia esculenta*	Cocoyam	Herb
13.	*Commelina benghalensis*	Tropical Spiderwort	Forb
14.	*Cyperus esculentus*	Yellow nutsedge	Sedge
15.	*Elaeis guineensis*	Oil palm	Tree
16.	*Eragrostis tremula*		Grass
17.	*Euphorbia heterophylla*	Milkweed	Sedge
18.	*Euphorbia hirta*		
19.	*Euphorbia hyssopifolia*		
20.	*Fiscus exasperata*	Sandpaper tree	Tree
21.	*Gomphrena celosiodes*		
22.	*Luffa aegyptica*	Sponge	Creeper
23.	*Lycopersicum esculentum*		
24.	*Mangifera indica*	Mango	Tree
25.	*Manihot esculenta*	Cassava	Shrub
26.	*Musa paradisiaca*	Plantains	Tree
27.	*Musa sapientum*	Banana	Tree
28.	*Panicum maximum*		Grass
29.	*Paspalum vaginatum*		Grass
30.	*Phyllanthus arnarus*		Sedge
31.	*Setaria bartata*		Grass
32.	*Synedrella nodiflora*	Nodeweed	Herb
33.	*Talinum triangulare*	Waterleaf	Herb
34.	*Tridax procumbens*		Herb
35.	*Truimfetta cordifolia*		
36.	*Vernonia cinerea*	Ironweed	Herb




Plates 3.5 to 3.8: Vistas of vegetation across the project area

Wildlife

Thee faunal diversity across the proposed dredging sites was preponderated by avian species, including aquatic birds such as egrets, plovers and birds of gardens and farmlands like doves, village weavers, etc. In some places were vestiges of natural forest remained, including Shalom Estate Stream, rodents and monkeys were reported to inhabit some of the riparian forests along the rivers/streams. Based on visual observation, the bird species observed are presented in Table 3.6 while some of the birds sighted are shown in Plates 3.9 to 3.11.

Table 3.6: Avian species sighted in the course of fieldwork

Common Name	Local (Yoruba) Name	Biological Name
Senegal Coucal	*Eluuluu*	*Centropus senegalensis*
Palm-nut Vulture	*Igunnigun*	*Gypohierax angolensis*
Black Kite	*Asadi*	*Milvus migrans*
Red-eyed Dove	*Adaba*	*Streptopelia semitorquata*
Vinaceous dove	*Odere Koko*	*Streptopelia vinacea*
Blue-breasted Kingfisher		*Halcyon malimbicus*
Square-tailed Rough-winged Swallow	*Ologose*	*Psalidoprocne nitens*
Plain-backed Pipit		*Anthus leucophyrs*

Common Name	Local (Yoruba) Name	Biological Name
Carmelite Sunbird		*Nectarinia fuliginosa*
Olive-bellied Sunbird		*Nectarinia chloropygia*
Common Bulbul		*Pycnonotus barbaetus*
Grey-headed Sparrow		*Passer griseus*
Village Weaver	*Eye Ega*	*Ploceus cucculatus*
Cattle Egret	*Lekeleke*	*Ardeola ibis*

Plate 3.9: A flock of Cattle Egrets (*Ardeola ibis*) observed around the project site

Plate 3.10: Vinaceous dove (*Streptopelia vinacea*) observed in the project area

Plate 3.11: Rainbow lizard (*Agama agama*) observed in the project area

3.4 Socio-economic and Cultural Overview

3.4.1 Overview and Historical Perspectives on Ibadan

Oyo State is homogeneous, and has a population of about 8million people (based on extrapolations from the 2006 National Population Census). It is predominantly occupied by Yoruba people. Within the State however, there are sub-ethnic groups with distinct dialect peculiarities. According to Baseline Study on Flood Mitigation and Resilience, City of Ibadan (December 2018) Ibadan, the capital city of Oyo State and the third largest metropolitan area in Nigeria, after Lagos and Kano. It is the largest metropolitan geographical area in West Africa (1,190 sq mi or 3,080 km^2) with a highly built up and dense population. Ibadan city is frequently exposed to floods. Notable of these events, was the Ogunpa disaster of year 1980 which was recorded to have resulted in a death toll of 500 people. The latest flood event took place after a downpour of 187.5 mm (about 7.38") occurred in about 4-5 hours on August 26, 2011, induced by the overflow from Eleyele reservoir causing the death of more than 120 people and serious damages to infrastructure (many bridges collapsed, roads washed away, and substantial property loss) (Government's Task Force Report, November 2011). Based on government assessments after the floods, the following impacts of the flood disaster have been highlighted: (i) the housing sector suffered the biggest impact with about 2100 homes partially or severely affected, estimated to approximately Naira 2 billion (US$12.5 million equivalent); (ii) the agriculture sector experienced damages to hardware, infrastructure, fish and food stocks (losses included the actual year's production) estimated at over Naira 300 million (US$1.9 million equivalent); and (iii) substantial damages occurred to the transport sector, particularly bridges and culverts, estimated to have cost more than Naira 4 billion (US$25 million equivalent). The water sector, including Eleyele dam, experienced substantial damages and losses.

3.4.2 Population Structure and Distribution

The National Population Commission (NPC) published population figures for Nigeria, by State and Local Government Areas. Based on this, and extrapolations using appropriate/applicable growth rates, the population figure for Oyo state (2011) was put at 6,615,059 people, consisting of 3,320,760 males and 3,294,299 females. The population figure was further extrapolated to 2018, using the national growth rate of 2.83% annually.

Population figures for Oyo State is currently estimated at 8,050,527, consisting of 4,041,364 males, and 4,009,562 females. Table 3.7 shows the Population figures for the eleven LGAs in Ibadan City for 2008 to 2011, and for 2019.

Table 3.7: Projected Population of Ibadan Metropolitan Area (all 11 LGAs), 2008–2011 and 2019.

Local Government Area	Projected Population				
	2008	2009	2010	2011	2019
Akinyele	226,715	234,556	242,668	251,061	312,813
Egbeda	303,602	314,102	324,965	336,203	418,897
Ibadan North	354,766	367,036	379,729	392,862	489,492
Ibadan North East	329,800	341,206	353,006	365,215	455,045
Ibadan North West	164,867	170,569	176,468	182,571	227,477
Ibadan South East	285,206	295,070	305,275	315,833	393,517
Ibadan South West	303,018	313,498	324,340	335,557	418,092
Ido	111,411	115,264	119,251	123,375	153,720
Lagelu	158,556	164,040	169,713	175,583	218,771
Oluyole	217,778	225,309	233,102	241,163	300,480
Ona-Ara	284,258	294,089	304,260	314,783	392,209
Total	**2,739,977**	**2,834,739**	**2,932,777**	**3,034,206**	**3,780,514**

3.4.3 Traditional Leadership structure

Leadership within the communities covered by this study are typical of Yoruba traditional structure. At the apex of the structure is the King (*Oba*) who rules and reigns over the entire kingdom. The *Oba is* the *Olubadan* of Ibadan. At the community level, the head is referred to as the *Baale*. The *Baale*, though the highest authority amongst the communities pledges and remains loyal to the *Oba* under whose jurisdiction the community falls. The *Baale* is charged with the traditional leadership mandate of running the affairs of the community. The *Baale* is supported and assisted by the Council of elders in the governance of the community. The *Baale* and His Council members meet on schedules and as occasions demand to make decisions on the welfare and development of the communities.

The Ibadan traditional council has the Olubadan as the paramount Oba of the city, and there are chiefs who are members of the traditional council. Despite reforms in the traditional political hierarchy, whith the emergence of crowned kings in some of the satellite communities, the Olubadan-in-Council retains its supremacy as an Imperial Council from which the authority of both senior chiefs (some now crowned kings) and bales is derived. The Mogagis are the heads of the families , they are directly after the chiefs on the hierarchy , they handle family matters and they handle matters that relates to the family. As a large city with wide vast land mass, there are some settlements outside the city that are under the leadership of the Baales, and they report to the chiefs in the city. They are in charge of the settlements and carry out all civic responsibilities in their domains. The Mogajis do handle matters that relates to their domains.

Various associations exist at different segments of the community. The associations are good organs of socialization and political administration. Figure 3.4 shows the traditional leadership structure in the study area.

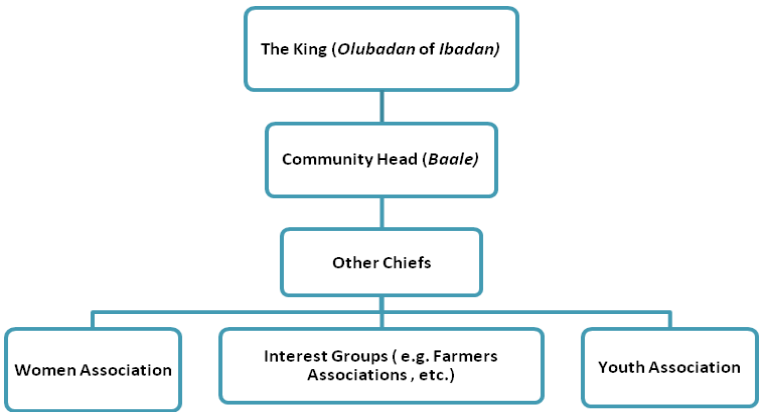

Figure 3.4: Traditional Leadership Structure in the Study Area

3.3.4 Urban Pattern

The Ibadan city has expanded over the years, the built-up area had the major rapid expansion in last 16 years. The area with the most substantial growth has been along the highway with infill development taking place as communities become established. The industrial and commercial land acquired in the city is limited indicating formal economy is small and not creating sufficient jobs. The characteristic of living in the urban is the differentiation of the city into a core, traditional area occupied largely by the indigenous population and a largely migrant, sub-urban city. The inner core areas of the city over the span of time have grown by the process of densification which eventually results in the emergence of the informal settlements. The natural spaces around the houses in the traditional core area were built up to provide for more dwelling houses within traditional family compounds as family units grew larger. The compound disintegration is a direct reflection of changes in the socio economic and cultural conditions of people. According to Baseline Study on Flood Mitigation and Resilience, City of Ibadan (December 2018) About 26,254 housing units are located in the core area of the city. However, the area always suffered from inadequate provision of infrastructural facilities such as absence or irregular pipe-borne water supply, poor or non-existent drainage and sewerage systems and inadequate sanitation facilities. The houses in the areas are usually in poor condition and the provision of community facilities and utilities is insufficient. There are numerous older buildings with historic value that tell the story of Ibadan's importance and growth, but many are in a poor state of repair.

The sub urban city is a mix of neighbourhoods which are well defined and better planned residential areas compared to the core areas. These core areas are generally located within the 5 LGAs in the old city which follows the patterns of a largely ancient town. The newer settlements however are located on the periphery of these 5 LGAs and the outer 6 LGAs (Akinyele, Lagelu, Oluyole, Iddo, Ona-Ara and Egbeda). While there are some areas in the sub urban city which are mixed agglomerations which cannot be clearly defined based on socio economic class or residential density. Nevertheless, a pattern of haphazard development is still evident especially in the newly developed and peripheries of the city. Therefore, the urban arrangement in the city has taken place with violated aspects of building regulations such as plot coverage, setback stipulations, room size, provision of utilities and the change of use from a wholly residential use to the incorporation of home-based enterprises.

3.3.5 Economy

According to Baseline Study on Flood Mitigation and Resilience, City of Ibadan (December 2018), Ibadan is regional hub for trade and markets, since the city is located on the operational railway route in the Southern region connecting Lagos to Kano in the North of Nigeria. Trade and commerce forms the predominant employment sector in the city with 40 % of workforce engaged in the trading of cassava, cocoa, cotton, timber, rubber and palm oil. The main industries in the area include the processing of agricultural products; tobacco processing and cigarette (manufacture); flour mills, leather-working and furniture-making.

However, the rapid population growth of the city has increased substantial pressure on urban infrastructure and social facility creating large gaps in the provision across the city. The city's manufacturing sector has stagnated in recent years as pressures on infrastructure and services deterred large companies from setting up operations in Ibadan, in some cases even relocating to other urban centers. This exacerbates the problem of insufficient job opportunities among base industries for the local working population which seeks alternative opportunities in the informal sector. Ibadan city has also a wide and vibrant MSME sector in both formal and informal sectors. The system needs great support in terms of finance and provision of necessary infrastructure. The peri urban areas on the other hand show challenges as they are not usually usefully integrated into spatial planning and economic development frameworks to maximize the income and employment opportunities it presents for the urban population.

3.3.6 Land Use and Land Cover

According to Baseline Study on Flood Mitigation and Resilence, City of Ibadan (December 2018The change rates of the major land use types from 1984 to 2013 which have decreased are vegetation and waterbody. However, the low and high-density settlement and bare ground/ rock outcrop areas increased. The existing land use pattern of Ibadan prepared for the

study shows a clear distinction between the predominantly residential Ibadan built-up area and agricultural use in rural areas. The total land area of the eleven local governments of Ibadan is 3473 km², out of which about 18.51% falls under forest category and 31.04% in the vegetative land. Open/Barren land in the city occupies 23.40% while agricultural land is 12.27%. Total built-up area in the city is 13.80%, which is mainly concentrated in the centric urban areas. Water bodies occupies nearly 1% of the city land.

3.3.7 Infrastructure

The infrastructural development of city has been unable to keep up with the urbanization in Ibadan. The city lacks proper infrastructural facilities such as piped water supply, sanitation facilities, electricity etc. According to Baseline Study on Flood Mitigation and Resillence, City of Ibadan (December 2018), about 78% of the population is still dependent on boreholes and wells whereas the government is only able to supply piped water to 6% as per this study. The households also lack the basic sanitation facilities, about 55% have water closets, 28% have pit latrines while the rest 17% lack any basic sanitation facility.

The overall access to electricity in the Ibadan city is only 63% as per 2006 estimates with 72% in the core areas. However, nationally the proportion is higher i.e. 85% implying that, with the increased availability of generators and rural electrification programs, Ibadan's households are now more likely to have electricity in their homes. Majority of the city population i.e., 45% burn their generated solid waste, while solid waste generated by other 20% and 17% of the population were collected by government and private organization. Nearly 14% of households dump their solid waste on open land and 4% in the nearby river channels. These solid wastes disposed on open land were transported through runoff during rainy season and reaches low-lying area. Moreover, these solid wastes subsequently block the bridges and culverts creating a major issue during rainy season. It is evident from this study that the solid waste collection system is available only for 37% of the total population. Nearly 14% of households dump their solid waste on open land and 4% in the nearby river channels. Over the last 5 years, with the help of household initiatives many Ibadan's households have improved water supply, toilet facilities and access to electricity; they are also more likely to use official means of refuse disposal.

3.3.8 Baseline socio-economic conditions of 2019 dredging sites.

Tables 3.8 and 3.9 below present an overview of the baseline situation at each of the proposed intervention sites and pictorial representation of the situation respectively. The information presented in the tables is based on visual observation and interviews with key informants as elicited with the Social Baseline Data sheet (SBDS) developed (find in annexure 7) for the data gathering component of the ESMP report preparation.

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Table 3.8: Baseline Social Conditions at 2019 dredging sites

SN	Dredging site	LGA	Project Location Area/Address	Existing Community Leadership Structure	Urban/Rural/Peri-Urban	Predominant Occupation	Condition of main access through stream	Presence of other access crossings at Upstream and and Downstream locations	Proximate Social Amenities & Utilities	Other Economic Activities of riverbed	Waste dumping	Vehicular Traffic
1	Adeniran Stream	Ona Ara	Kajola Street, Academy Bus stop, Iwo Road.	Baale	Rural	Artisans & trading	Bad, but passable	No	No	No	Yes	Light
2	Adukale Stream	Iddo	All Saint College road, junction before before All saint College. After bridge, left turn after Nihort.	Landlords Association	Rural	Government Employees	Good, and passable	No	No	Yes	No	Light
3	Ajidun River, New Ife road, Ibadan		Tella Estate, beside, After Tella town hall, Nipco Filling Station, Ojurin Akobo	Landlords Association	Peri-Urban	Government Employees	Good, and passable	Yes, but abandoned.	No	Washed off fish ponds	Yes	Light
4	Ajongolo Stream	Lagelu	NIPCO Filling Station Junction, Power line, after Tella street. Ojurin akobo	Landlords Association	Rural	Government Employees	No	No	No	No	Yes	None
5	Alaguntan stream	Iddo	Ologuneru-Eleyele Road.	Landlords Association	Rural	Government Employees	Bad, and passable	No	No	SandMining, Fishing	No	None
6	Alawaye Stream	Ona Ara	Olounloyo Area, Olorunsogo, Lagos/Ibadan Express way.	Landlords Association	Peri-Urban	Artisans& trading	Bad, but passable	No	Fences of two residence buildings	None	No	Light
7	Basorun Estate	Ibadan North	Bode Wasimi Street, Bashorun estate.	Landlords Association	Urban	Artisans& trading	Good, and passable	No	Yes	No	Yes	Light

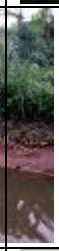
SN	Dredging site	LGA	Project Location Area/Address	Existing Community Leadership Structure	Urban/Rural/Peri-Urban	Predominant Occupation	Condition of main access through stream	Presence of other access crossings at Upstream and and Downstream locations	Proximate Social Amenities & Utilities	Other Economic Activities of riverbed	Waste dumping	Vehicular Traffic
8	Bethel Estate stream	Ibadan South West LGA	Bode Igbo Area, Abeokuta Road	CDA	Peri-Urban	Fishing	Bad and Not Passable	Yes	Electric poles, worship centres,, Well	No Market	NO	LIGHT
9	Dalegan Stream, Omi River	Egbeda	Iyana Agbala, New Ife Road, adegbayi	Landlords Association	Rural	Artisans	Bad, but passable	No	No	Yes(Sand Mining)	No	Light
10	Farayola Stream	Ibadan North	Agbowo, Major Salawu Street, Opposite U.I Gate, Bodija	Landlords Association	Urban	Trading & Artisans	Good, and passable	Yes	Uncompleted Building	No	Yes	Light
11	Farinto Stream, Kute	Lagelu	Kute, Wofun juction, along Jenrinyin Road, around Olodo Iwo Road.	Landlords Association	Rural	Artisans& trading	Bad, but passable	No	No	No	No	None
12	Fatosi Stream	Ona Ara	Olomi, Olounde Street, from Academy Junction, After Iwo Road, Lagos/Ibadan express Road	Landlords Association	Rural	Trading & Artisans	Bad, but passable	No	No	No	Yes	Light
13	Gbaro Ajimosun stream	Lagelu	Ago Olunde area, Ibadan	CDA	Peri-Urban	Trading	Good and passable		Electric poles, worship centres, Well	No Market	NO	LIGHT
14	Idiagbon stream	Egbeda	Surulere street, after Kajola Junction, Laogun, Close to Former egbeda L.G Chairman's house Old Ife Road.	Landlords Association	Rural	Trading & Artisans	Good, and passable	Yes	Worship center(fence)	No	Yes	Light
15	Idi-Osan	Egbeda	Kumapayi Street, Olodo, After Wofu, Iwo Road	Landlords Association	Rural	Trading & Artisans	Bad, but passable. No hydraulic structure at the crossing.	Yes	No	No	No	Light

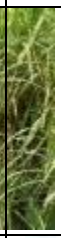
SN	Dredging site	LGA	Project Location Area/Address	Existing Community Leadership Structure	Urban/Rural/Peri-Urban	Predominant Occupation	Condition of main access through stream	Presence of other access crossings at Upstream and and Downstream locations	Proximate Social Amenities & Utilities	Other Economic Activities of riverbed	Waste dumping	Vehicular Traffic
17	Isokan Stream	Egbeda	New Ife Road, Oluwo Nla Junction,	Landlords Association	Rural	Artisans& trading	Good, and passable	No	No	None	No	Light
18	Lami Stream	Ona Ara	Olomi, Olounde Street, from Academy Junction, After Iwo Road, Lagos/Ibadan express Road	Landlords Association	Rural	Trading & Artisans	Bad, but passable	No	No	No	No	Light
19	Moga Stream	Ona Ara	Moga, Olounloyo Area, Olorunsogo, Lagos/Ibadan Express way.	Landlords Association	peri-Urban	Artisans& trading	Good, and passable	Yes	Worship centre, and an uncompleted building	No	No	Light
20	Odeku Stream	Oluyole	Along akala Express way	Landlords Association	Rural	Govt. Employee & Trading	Bad, but passable	No	No	Yes, Sand mining	No	Light
21	Odo Osun	Oluyole	Ifewasopo junction Akalaway, after new Garage.	Landlords Association	Peri-Urban	Traders, Govt. Employees	Good, and passable	No	Worship center	Trading, Block Indusry	Yes	Light
22	Okewusi Stream	Egbeda	New Ife Road, Oluwo Nla Junction, Okewusi 2 avenue.	Landlords Association	Peri-Urban	Artisans& trading	Good, and not passable, it is abandoned.	No	water way is between a school building and a residential building, a worship center	Yes, wash off fish ponds on the side.	No	Light
23	Olope woroko stream	Ibadan South east	Eyin Grammar Street last junction, Behind Molete Grammar School.	Landlords Association	Peri-Urban	Trading & Artisans	No	No	Worship center, fence	No	Yes	None
24	Oloro Stream	Egbeda	Aba titi street, Olode, Obat Filling station junction, Ilesha/Ife express Road.	Landlords Association	Peri-Urban	Govt. Employee & Trading	Good, and passable	Yes	No	No	Yes	Not vehicular

SN	Dredging site	LGA	Project Location Area/Address	Existing Community Leadership Structure	Urban/Rural/Peri-Urban	Predominant Occupation	Condition of main access through stream	Presence of other access crossings at Upstream and and Downstream locations	Proximate Social Amenities & Utilities	Other Economic Activities of riverbed	Waste dumping	Vehicular Traffic
25	Olorunsogo Estate Stream	Egbeda	New Ife Road, After Oluwo junction, before Toll gate	Landlords Association	Peri-Urban	Government Empoyees	Bad, but passable	Yes (1 Nos upstream)	Schools, Worship places	Fishing	No	None
26	Orukanga Stream	Lagelu	From Nipco filling station junction, to Sooko street, to Alapata Estate, Olunda, Ojurin, Akobo	Landlords Association	Rural	Govt. Employee & Trading	Bad, but passable	No	No	Yes, Sand mining	No	Light
27	Sasa Alapata Stream	Akinyele	Beside Grammer School, Akinyele Council office. Moniya	Baale	Peri-Urban	Artisans& trading	Bad, but passable	Yes	School, Worship center	Sand mining	Yes	Light
28	Shalom Estate Stream	Iddo	Beside shalom Christian college, Shalom Estate, off Alafara road, Jericho	Landlords Association	Urban	Government Employees	Bad, but passable	No	School wired fence, a fence	No	No	None
29	Yokele-Tpekun stream	Ona Ara	Sawmill area, Old Ife Road, Ibadan	CDA	URBAN	Trading	Good and passable		Schools, Hospitals, Water pipes, wells, electric poles, worship centres etc	Market Available	YES	HEAVY

Table 3.9: Pictures of 2019 Dredging sites

SN	Dredging site	LGA	Pictures of current conditions of Project Area		
1	Adeniran Stream	Ona Ara			
2	Adukale Stream	Iddo			
3	Ajidun River, New Ife road, Ibadan				
4	Ajongolo Stream	Lagelu			
5	Alaguntan stream	Iddo			
6	Alawaye Stream	Ona Ara			

SN	Dredging site	LGA	Pictures of current conditions of Project Area		
7	Basorun Estate	Ibadan North			
8	Bethel Estate stream	Ibadan South West LGA			
9	Dalegan Stream, Omi River	Egbeda			
10	Farayola Stream	Ibadan North			
11	Farinto Stream, Kute	Lagelu			
12	Fatosi Stream	Ona Ara			No

SN	Dredging site	LGA	Pictures of current conditions of Project Area
13	Gbaro Ajimosun stream	Lagelu	  
14	Idiagbon stream	Egbeda	  
15	Idi-Osan	Egbeda	 
16	Ifesowapo stream, Babanla, Oremeji area, Ibadan		  
17	Isokan Stream	Egbeda	  
18	Lami Stream	Ona Ara	  

SN	Dredging site	LGA	Pictures of current conditions of Project Area		
19	Moga Stream	Ona Ara			
20	Odeku Stream	Oluyole			
21	Odo Osun	Oluyole			
22	Okewusi Stream	Egbeda			
23	Olope woroko stream	Ibadan South east			

SN	Dredging site	LGA	Pictures of current conditions of Project Area		
24	Oloro Stream	Egbeda			
25	Olorunsogo Estate Stream	Egbeda			
26	Orukanga Stream	Lagelu			
27	Sasa Alapata Stream	Akinyele			
28	Shalom Estate Stream	Iddo			School wired fence, a fence
29	Yokele-pekun stream	Ona Ara			

CHAPTER FOUR: ENVIRONMENTAL AND SOCIAL IMPACTS AND MITIGATION MEASURES

4.1 Introduction

In this section, an overview of the anticipated environmental and social impacts of proposed dredging activities across the city of Ibadan, as well as recommendations to mitigate the negative/adverse impacts are presented. It also presents an environmental and social management and monitoring plan to ensure that the mitigation measures are implemented and are effective.The presentation in this section is based on observations made in the course of field data collection and assessment carried out specifically for the purpose of preparing this ESMP report.

4.2 Environmental and Social Impacts of Proposed Dredging and Desilting Activities

4.2.1 General Environmental and Social Impacts

The proposed dredging and clearing of blocked drainages sub-projects will be largely beneficial, as the aim is to prevent the occurrence of flash floods and the associated losses and damage to property and possible loss of lives. However, it is expected that some adverse impacts may arise from the implementation of the project activities. These impacts will be expressed on the biophysical and socio-economic environment. This section presents an overview of the general issues associated with the proposed project activities.

4.2.2 Environmental and Social Impacts, and Mitigation Measures

Table 4.1 presents an overview of the general impacts and recommended mitigation, while Table 4.2 presents site-specific situations for the proposed dredging works and the blocked drains clearing works.

In this section, the following considerations were given due cognizance:

1. In the course of executing all the civil works associated with this project, impacts on existing man-made structures will be **avoided.** There would be no demolition of buildings/assets or productive assets such as farm crops and economic trees on the riverbeds. Where necessary, the width of the stream to be dredged will be reduced to suit the existing land use. Manual dredging will also be carried out to avoid impacts on man-made structures.
2. Two locations that were isolated for RAP in the 2018 ESMP have been included following preparation of ARAPs. These sites are: (i) Bethel Stream, Bode Igbo, and (ii) Gbaro Ajimosun stream.
3. Dredged materials that are mainly municipal solid wastes will be carted away for disposal at designated dumpsites, indicated in the Waste Management Plan (Annex 6).
4. Wastes from road drainages shall be evacuated immediately to designated dumpsites.
5. The option of clearing drains during weekends and Traffic off-peak hours will be undertaken at busy commercial areas and offices to reduce impact on traffic.

4.2.3 Positive Environmental and Social Impacts of Dredging & Clearing Activities

a. Flood reduction in the communities thereby reducing the number of properties and people that are being affected;
b. Alleviate seasonal sufferings of residents whose properties get periodically inundated;
b. Income enhancement for local vendors of items such as food and daily needs through patronage by contractor workers;
c. Temporal employment opportunities to the owners of the dredgers.

4.2.4 Potential Negative Environmental and Social Impacts of Dredging & Clearing Activities

a. Traffic impact during mobilization of equipment to sites and carting away of wastes, especially along sites that are not accessible by good roads;
b. Ambient air quality deterioration due to emissions from engines;
c. Noise pollution;
d. Unsuitable dumping of dredged materials constituting aesthetic nuisances and odours;
e. Risk of accidents/ incidence;
f. Conflicts; Disputes between workers and community members, youth restiveness, altercation with touts etc .

4.3 Mitigation Measures

The primary objectives of the mitigation measures are to ensure that anticipated impacts are kept to the barest minimum and that the effectiveness of the mitigation measures is monitored. The recommended mitigation measures, based on the negative impacts identified above are presented below.

Table 4.1: Recommended Mitigation Measures for Identified Environmental and Social impacts

Project Activity/Phase	Identified Impacts	Recommended Mitigation Measures
DREDGING OF CHANNELS/STREAMS & CLEARING OF DRAINAGES		
Mobilization/ Pre-construction Phase	During mobilization, the trucks carrying the dredgers move slowly and will tend to cause serious traffic.	Mobilization activities shall be timed to coincide with off-peak traffic periods. Based on an assessment of the existing settings in most of the project areas, this would be either in the day time, between 10am and 2pm, and weekends or market sanitation days (where applicable). A Traffic Management Plan (TMP) has been prepared for this project. Details are presented in Annex 5. The support of traffic control agencies such as the Traffic Division of the Nigeria Police, and the Federal Road Safety Corps (FRSC) shall be enlisted to control traffic during mobilization and demobilization
	Emissions from the engines could contribute noxious gases into ambient air, leading to degradation of air quality.	All dredgers and other vehicles and machinery to be used for the project shall be properly serviced and maintained to ensure their compliance with international emission standards
Rehabilitation Phase	Generation of excavated materials which could cause nuisance in the neighbourhood.	Excavated materials shall be subjected to thin layer disposal, not more than 9 inches thick, and not less than 5m from river bank. Such dumped materials shall be properly compacted, to prevent/minimise washback into river channel. An ESHS supervisor will be engaged to supervise the implementation of ESHS requirements described in this ESMP and will be empowered to issue stop-work orders, where contraventions occur. The Terms of Reference (ToR) of the ESHS Supervisor is presented as Annex 11 to this report. Community involvement in determination of location for drop-off of excavated material
	If adequate care is not taken in the dumping of spoils dredged from channels, it could lead to blockage of runoff routes from inland into the channel. This could create fresh flooding concerns upstream.	Adequate spacing shall be provided between dumps of spoil, to ensure that the dumps do not block existing natural runoff routes.
	There may be general complaints from sites communities/Risk of social conflicts	A Grievance Redress Mechanism shall be put in place for this project such that community members who have any issues can formally submit their grievances via dedicated hotlines lines provided (see Annex 4). The HSE Officer of the Supervision Engineer will be on site during project implementation, will be empowered to listen and respond to grievances that may come up while he is on field. The PIU team monitoring the exercise will also be on hand to listen to complaints and resolve them on the spot. A code of conduct for individual employees will be administered at the ESMP kick-off training. *(See Annex 10)*
	Nature of excavated materials could be municipal solid wastes rather than vegetal silt which could constitute aesthetic nuisances and also contribute odours in the immediate vicinity.	Where municipal solid wastes predominate over silt materials, arrangements shall be made to ensure that excavated materials are carted away to designated dump sites
	The foundation of some fences is some built-up locations (e.g Farayola, Idi-Agbon) are very close to the stream	Manual dredging will be carried out in suchareas based on instructions of ESHS supervisor
	Conflicts and altercations involving touts	Engagement with community groups and associations. Unresolved incidents should be reported to the security agencies in the

Project Activity/Phase	Identified Impacts	Recommended Mitigation Measures
		area. Contractors would be required to maintain hotlines of security agencies in each of the locations where works will take place to facilitate rapid escalation of security incidents.
	Dumping of dredged materials on private property on the riverbed.	Locations for dumping of dredged materials will be approved by the ESHS supervisor in advance. The ESHS supervisor will review daily work schedules and give approvals, not less than 24hours before commencement, to consider pre-identified locations for depositing dredged materials. Areas that are too close to human activities or structures will be avoided and will therefore not be approved by the ESHS supervisor Manual dredging will be carried out in sections of the stream channel that are too narrow for the mechanical dredging equipment.
Operation/ Maintenance Phase	Traffic congestion during waste evacuation and demobilization of equipment.	The movement of wastes trucks and equipment shall be timed to coincide with off-peak traffic periods. Based on our assessment of the existing settings in most of the project areas, this would be either in the day time, between 10am and 2pm, or at night, between 10pm and 5am The support of traffic control agencies such as Oyo State Traffic Management agency (OYTRMA), the Traffic Division of the Nigeria Police, and the Federal Road Safety Corps (FRSC) shall be enlisted to control traffic during mobilization and demobilization
	Health and Safety issues like cases of incidents, accidents, near miss.	Contractors shall use best engineering practice and provide and use necessary PPEs for all personnel. The HSE Officer of the Supervision Engineer shall ensure provision of PPEs by the Contractors and enforce the strict usage of same by all personnel on site.
	Risk of exposure to hazards of local community residents/ passers – by.	Adequate signage / cautions will be provided at all work sites to warn non-workers/community members to go off the dredging perimeter. Contractors shall ensure continuous engagement with communities and residents of their work areas prior to, and during works. The PIU will undertake electronic media announcement and publicity to ensure that the general public are informed about ongoing project activities so that appropriate caution can be taken. A comprehensive Occupational and Community Health and Safety Management Plan (OCHSMP) has been developed specifically for this project, including costs of implementing mitigation measures. This is presented as Annex 12 to this report

Table 4.2: Environmental and Social Impacts Mitigation and Monitoring Plan on streams & drainages to be Cleared/De-silted

Name of Proposed Site	Potential Impacts ream Dredging	Recommended Mitigation	Party Responsible for Implementing Mitigation	Cost of Mitigation (US$)	Monitoring Indicators	Frequency of Monitoring	Responsible Party for Monitoring	Estimated Costs of monitoring (US$)
Adeniran stream, Gbaremu, Gangansi area, Ibadan	Generation of excavated wastes and plant materials which could constitute aesthetic and health problems.	Excavated/dredged materials around the culvert, which are mostly Municipal Solid Waste shall be evacuated and disposed at designated locations, based on the Waste Management Plan in Annex 6	Dredging contractor	200.00	Monitor dimensions (height, length and distance from stream bank) of spoil dumps, as well as distance between dumps to ensure that drainage routes are not cut off.	Daily Weekly	HSE Supervisor; PIU Environmental Experts & ME&WR	100.00
Adukanle Stream Agbofieti	Generation of excavated materials	Spoil dumps shall be discontinuous with minimum of 5m spacing between dumps	Dredging contractor	250.00	Monitor disposal of spoils by stream banks	Daily Weekly	HSE Supervisor; PIU Environmental Experts & ME&WR	50.00
Ajidun River, New Ife road, Ibadan	Generation & Disposal of dredged spoils.	Care shall be taken to ensure that runoff routes are not blockedspoil dumps shall be discontinuous, with a minimum of 5m break between dumps	Dredging Contractor	200.00	Monitor dimensions (height, length and distance from stream bank) of spoil dumps, as well as distance between dumps to ensure that drainage routes are not cut off.	Daily Weekly	HSE Supervisor's team PIU Environmental and Social Experts & ME&WR	100.00
Ajongolo stream, Akobo/Yawuri area, Ibadan	Wastes excavated around the culvert will be mostly Municipal Solid wastes and could constitute aesthetic and health hazards, if not properly disposed. Deposit of	Spoil dumps shall be discontinuous, with a minimum of 5m break between dumps across the entire stretch of the dredging location. Manually dredge the section and dump dredged materials on a fence on the RB of the	Dredging contractor Dredging contractor	250.00 400.00	Monitor dimensions (height, length and distance from stream bank) of spoil dumps, as well as distance between dumps to ensure that drainage routes are not cut off. Width of stream dredged in affected sections	Daily Weekly Daily	HSE Supervisor; PIU Social & Environmental Experts ESHS supervisor, PIU Safeguards	100.00 100.00

Name of Proposed Site	Potential Impacts ream Dredging	Recommended Mitigation	Party Responsible for Implementing Mitigation	Cost of Mitigation (US$)	Monitoring Indicators	Frequency of Monitoring	Responsible Party for Monitoring	Estimated Costs of monitoring (US$)
	dredged materials on fence within the riverbed	river						
Alaguntan stream, Ologuneru-Eleyele road, Ibadan	Generation of excavated materials.	Dredge spoils will be dumped by the banks far enough to prevent washback In dumping the spoils, care shall be taken to ensure that runoff routes are not blocked. spoil dumps shall be discontinuous, with a minimum of 5m break between dumps	Dredging contractor	250.00	Monitor dimensions (height, length and distance from stream bank) of spoil dumps, as well as distance between dumps to ensure that drainage routes are not cut off.	Daily Weekly	HSE Supervisor; PIU Environmental Experts & ME&WR	100.00
Alapata stream, Shasha, Moniya area, Ibadan	Generation of excavated materials	Spoil dumps shall be discontinuous, with a minimum of 5m break between dumps across the entire stretch of the dredging location	Dredging contractor	150.00	Monitor dimensions (height, length and distance from stream bank) of spoil dumps, as well as distance between dumps to ensure that drainage routes are not cut off.	Daily	HSE Supervisor; PIU Environmental and Social Expert & ME&WR	100.00
Alawaye stream, Olorunsogo area, Ibadan	Generation of excavated materials	Spoil dumps shall be discontinuous, with a minimum of 5m break between dumps across the entire stretch of the dredging location	Dredging contractor	350.00	Monitor dimensions (height, length and distance from stream bank) of spoil dumps, as well as distance between dumps to ensure that drainage routes are not cut off.	Daily Weekly	HSE Supervisor; PIU Environmental & Social Experts	100.00

Name of Proposed Site	Potential Impacts ream Dredging	Recommended Mitigation	Party Responsible for Implementing Mitigation	Cost of Mitigation (US$)	Monitoring Indicators	Frequency of Monitoring	Responsible Party for Monitoring	Estimated Costs of monitoring (US$)
Bashorun stream, Bode Wasimi area, Ibadan	Generation of excavated materials	Spoil dumps shall be discontinuous, with a minimum of 5m break between dumps across the entire stretch of the dredging location Excavated/dredged materials around the bridge, which are mostly Municipal Solid Waste shall be evacuated and disposed at designated locations, based on the Waste Management Plan in Annex 6	Dredging contractor	250.00	Monitor dimensions (height, length and distance from stream bank) of spoil dumps, as well as distance between dumps to ensure that drainage routes are not cut off.	Daily Weekly	HSE Supervisor; PIU Environmental Experts & ME&WR	50.00
Bashorun-Bode Wasinmi road, Ibadan	Traffic congestion	Use of signages and cautions Traffic control agencies such as the Traffic Police, OYTMA and the FRSC will be mobilized to support traffic control during excavation works, in line with the provisions of Traffic Management Plan in Annex 5 All excavated materials will be carted away to approved dumpsites	Contractor	400.00	Monitor traffic during drain clearing	Daily	HSE Supervisor; PIU Environmental Experts & ME&WR	100.00
	Generation of excavated wastes which could constitute aesthetic and health hazards.		Contractor	100.00	Monitor appropriate disposal of excavated materials	Weekly		
	Damage to fences close to riverbed	Manual dredging in affected sections	Contractor	500.00	Monitor conditions of such locations. Track complaints	Daily	HSE Supervisor, PIU Engineering & Safeguards Teams	

Name of Proposed Site	Potential Impacts ream Dredging	Recommended Mitigation	Party Responsible for Implementing Mitigation	Cost of Mitigation (US$)	Monitoring Indicators	Frequency of Monitoring	Responsible Party for Monitoring	Estimated Costs of monitoring (US$)
Bethel Estate stream, Bode Igbo Area, Abeokuta Road	Generation of excavated materials	Spoil dumps shall be discontinuous with minimum of 5m spacing between dumps. Excavated/dredged materials around the culvert, which are mostly Municipal Solid Waste shall be evacuated and disposed at designated locations, based on the Waste Management Plan in Annex 6	Dredging Contractor	250.00	Monitor dimensions (height, length and distance from stream bank) of spoil dumps, as well as distance between dumps to ensure that drainage routes are not cut off.	Daily Weekly	HSE Supervisor; PIU Environmental Experts & ME&WR	50.00
	Damage to temporary crossing on stream channel	Replacement of wooden crossing after completion of dredging activity	Contractor	500.00	Availability of functional crossing structure for movement across the stream channel at completion	One-off upon completion	ESHS Supervisor/ PIU	50.00
Dalegan river, Iyana Agbala, Adegbayi, Ibadan	Generation of excavated materials	Spoil dumps shall be discontinuous with minimum of 5m spacing between dumps.	Dredging Contractor	200.00	Monitor dimensions (height, length and distance from stream bank) of spoil dumps, as well as distance between dumps to ensure that drainage routes are not cut off.	Daily Weekly	HSE Supervisor; PIU Environmental Experts & ME&WR	100.00
Farayola stream, Bodija, (Major Salawu street) Ibadan	Generation of excavated materials	Spoil dumps shall be discontinuous, with a minimum of 5m break between dumps across the entire stretch of the dredging location	Dredging contractor	150.00	Monitor dimensions (height, length and distance from stream bank) of spoil dumps, as well as distance between dumps to ensure that drainage routes are not cut off.	Daily Weekly	HSE Supervisor; PIU Environmental and Social Experts & ME&WR	100.00
	Damage to	Manual dredging in	Dredging	500.00	Monitor conditions of	Daily	HSE Supervisor;	

Name of Proposed Site	Potential Impacts ream Dredging	Recommended Mitigation	Party Responsible for Implementing Mitigation	Cost of Mitigation (US$)	Monitoring Indicators	Frequency of Monitoring	Responsible Party for Monitoring	Estimated Costs of monitoring (US$)
	fences close to riverbed	affected sections	contractor		such locations and also track any complaints		PIU Safeguards and Engineering Team	
Farinto stream powerline, Kute area	Generation of excavated materials	Spoil dumps shall be discontinuous with minimum of 5m spacing between dumps	Dredging contractor	200.00	Monitor disposal of spoils by stream banks	Daily One-off, during mobilization and demobilization	HSE Supervisor; PIU Environmental Experts & ME&WR	100.00
Fatosi stream, Olomi, Olunde area, Ibadan	Generation of excavated materials mainly silt and vegetal.	Dredge spoils will be dumped along the stream banks.	Dredging contractor	250.00	Monitor dimensions (height, length and distance from stream bank) of spoil dumps, as well as distance between dumps to ensure that drainage routes are not cut off.	Daily Weekly	HSE Supervisor; PIU Environmental Experts & ME&WR	50.00
For the 29 streams to be dredged	Mobilization of dredger to site could disturb normal traffic around the location Mobilization and demobilization of dredger could lead to interference with existing traffic in the area	The Traffic Management Plan presented in Annex 10 shall be applied during evacuation of dredged materials around the bridge. Traffic agencies such as the OYTMA, the FRSCand the Traffic Police shall be enlisted to direct traffic during this period.	Contractor	1000.00	Monitor traffic around the culvert during mobilization, demobilization and evacuation of wastes		HSE Supervisor's team Environmental and Social Experts of PIU & ME&WR	50.00
Gbaro Ajimosun stream	Generation of excavated materials	Spoil dumps shall be discontinuous with minimum of 5m spacing between dumps. Excavated/dredged	Dredging Contractor	250.00	Monitor dimensions (height, length and distance from stream bank) of spoil dumps, as well as distance	Daily One-off, during evacuation of dredged	HSE Supervisor; PIU Environmental Experts & ME&WR	50.00

Name of Proposed Site	Potential Impacts ream Dredging	Recommended Mitigation	Party Responsible for Implementing Mitigation	Cost of Mitigation (US$)	Monitoring Indicators	Frequency of Monitoring	Responsible Party for Monitoring	Estimated Costs of monitoring (US$)
		materials around the culvert, which are mostly Municipal Solid Waste shall be evacuated and disposed at designated locations, based on the Waste Management Plan in Annex 6			between dumps to ensure that drainage routes are not cut off.	materials to dumpsite		
Gbaro Ajimosun stream, Lagelu	Generation of excavated materials	Spoil dumps shall be discontinuous with minimum of 5m spacing between dumpsOnly	Dredging contractor	200.00	Monitor disposal on the right hand side around locations where houses/structures occur proposed dredging stretch Monitor disposal of spoils by stream banks	Daily Weekly	HSE Supervisor; PIU Environmental Experts & ME&WR	50.00
Idi-Agbon stream, Laogun, Old Ife Road, Ibadan	Generation of excavated materials Spoil dumps could cut of run-off routes leading to flooding in upstream areas.	Spoil dumps shall be discontinuous with minimum of 5m spacing between dumps.	Dredging contractor	250.00	Monitor dimensions (height, length and distance from stream bank) of spoil dumps, as well as distance between dumps to ensure that drainage routes are not cut off.	Daily Weekly	HSE Supervisor; PIU Environmental Experts & ME&WR	50.00
	Damage to fences close to riverbed	Manual dredging in affected sections	Dredging contractor	500.00	Monitor conditions of such locations and also track any complaints	Daily	HSE Supervisor; PIU Safeguards and Engineering Team	
Idi-Osan stream, Kumapayi, Ibadan	Generation of excavated waste	Spoil dumps shall be discontinuous with minimum of 5m spacing between dumps.	Dredging contractor	300.00	Monitor dimensions (height, length and distance from stream bank) of spoil dumps, as well as distance	Daily Weekly	HSE Supervisor; PIU Environmental Experts & ME&WR	100.00

Name of Proposed Site	Potential Impacts ream Dredging	Recommended Mitigation	Party Responsible for Implementing Mitigation	Cost of Mitigation (US$)	Monitoring Indicators	Frequency of Monitoring	Responsible Party for Monitoring	Estimated Costs of monitoring (US$)
					between dumps to ensure that drainage routes are not cut off.			
	Disconnection of communities on both sides of the stream at the crossing point. There is no culvert at the crossing. The dredging will deepen the channel at this point and make vehicular crossing impossible	Widen the channel at the crossing and maintain a shallow depth at the crossing	Contractor	300.00	Depth of dredging at the crossing point to be shallow.	Daily	HSE Supervisor; PIU Environmental Experts & ME&WR	100.00
Ifesowapo stream, Babanla, Oremeji area, Ibadan	Generation of excavated materials	Excavated/dredged materials around the culvert, which are mostly Municipal Solid Waste shall be evacuated and disposed at designated locations, based on the Waste Management Plan in Annex 6	Dredging contractor	250.00	Monitor dimensions (height, length and distance from stream bank) of spoil dumps, as well as distance between dumps to ensure that drainage routes are not cut off.	Daily Weekly	HSE Supervisor; PIU Environmental Experts & ME&WR	50.00
Isokan stream, Oluwo, Ibadan	Generation of excavated materials	Spoil dumps shall be discontinuous with minimum of 5m spacing between dumps.	Dredging contractor	200.00	Monitor the evacuation of dredged materials to dumpsite	Daily Weekly	HSE Supervisor; PIU Environmental Experts & ME&WR	100.00

Name of Proposed Site	Potential Impacts ream Dredging	Recommended Mitigation	Party Responsible for Implementing Mitigation	Cost of Mitigation (US$)	Monitoring Indicators	Frequency of Monitoring	Responsible Party for Monitoring	Estimated Costs of monitoring (US$)
Lami Stream, Olunde	Generation of excavated materials	Spoil dumps shall be discontinuous with minimum of 5m spacing between dumps	Dredging contractor	200.00	Monitor disposal of spoils by stream banks Monitor the evacuation of dredged materials to dumpsite	Daily One-off, during evacuation of dredged materials to dumpsite	HSE Supervisor; PIU Environmental Experts & ME&WR	100.00
Moga stream, Olunloyo, Ibadan	Generation of excavated materials, mainly silt & vegetal matter.	Spoil dumps shall be discontinuous, with a minimum of 5m break between dumps across the entire stretch of the dredging location	Dredging contractor	250.00	Monitor dimensions (height, length and distance from stream bank) of spoil dumps, as well as distance between dumps to ensure that drainage routes are not cut off.	Daily Weekly	HSE Supervisor; P PIU Environmental & Social Experts	100.00
	Damage to iron foot bridge on stream channel	Reinstallation of the footbridge after completion of dredging activity	Contractor	350.00	Availability of functional crossing structure for movement across the stream channel at completion	One-off upon completion	ESHS Supervisor/ PIU	50.00
Nihort – Ile Titun road, Ibadan	Traffic congestion Generation of excavated wastes which	Use of signages and cautions Traffic control agencies such as the Traffic Police, OYTMA and the FRSC will be mobilized to support traffic control during excavation works, in line with the provisions of Traffic Management Plan in Annex 5	Contractor Contractor	200.00 100.00	Monitor traffic during drain clearing Monitor appropriate disposal of excavated materials	Daily Weekly	HSE Supervisor's team Environmental and Social Experts of PIU & ME&WR	100.00

Name of Proposed Site	Potential Impacts ream Dredging	Recommended Mitigation	Party Responsible for Implementing Mitigation	Cost of Mitigation (US$)	Monitoring Indicators	Frequency of Monitoring	Responsible Party for Monitoring	Estimated Costs of monitoring (US$)
	could constitute aesthetic and health hazards	All excavated materials will be carted away to approved dumpsites						
Nihort – Pekun road, Ibadan	Traffic congestion Generation of excavated wastes which could constitute aesthetic and health hazards	Use of signages and cautions Traffic control agencies such as the Traffic Police, OYTMA and the FRSC will be mobilized to support traffic control during excavation works, in line with the provisions of Traffic Management Plan in Annex 5 All excavated materials will be carted away to approved dumpsites	Contractor Contractor	200.00 100.00	Monitor traffic during drain clearing Monitor appropriate disposal of excavated materials	Daily Weekly	HSE Supervisor's team Environmental and Social Experts of PIU & ME&WR	100.00
Odeku stream, Bota area, Oluyole, Ibadan	Generation of excavated materials.	Excavated/dredged materials around the culvert, which are mostly Municipal Solid Waste shall be evacuated and disposed at designated locations, based on the Waste Management Plan in Annex 6	Dredging contractor	350.00	Monitor dimensions (height, length and distance from stream bank) of spoil dumps, as well as distance between dumps to ensure that drainage routes are not cut off.	Daily Weekly	HSE Supervisor; PIU Environmental Experts & ME&WR	100.00

Name of Proposed Site	Potential Impacts ream Dredging	Recommended Mitigation	Party Responsible for Implementing Mitigation	Cost of Mitigation (US$)	Monitoring Indicators	Frequency of Monitoring	Responsible Party for Monitoring	Estimated Costs of monitoring (US$)
Odo-Osun stream, Ashipa, Oluyole, Ibadan	Generation of excavated materials.	Dredge spoils will be dumped by the banks far enough to prevent washback.	Dredging contractor	250.00	Monitor dimensions (height, length and distance from stream bank) of spoil dumps, as well as distance between dumps to ensure that drainage routes are not cut off.	Daily Weekly	HSE Supervisor; PIU Environmental Experts & ME&WR	 100.00
Okewusi Stream, Oluwonla area, Adegbayi	Generation of excavated materials	Spoil dumps shall be discontinuous with minimum of 5m spacing between dumps only	Dredging contractor	200.00	Monitor disposal of spoils by stream banks	Daily Weekly	HSE Supervisor; PIU Environmental Experts & ME&WR	 100.00
Olope Woroko stream, behind Ibadan Grammar School, Molete	Generation & Disposal of dredged spoils.	Dredge spoils will be dumped by the banks far enough to prevent washback In dumping the spoils, care shall be taken to ensure that runoff routes are not blocked. spoil dumps shall be discontinuous, with a minimum of 5m break between dumps	Dredging Contractor	250.00	Monitor dimensions (height, length and distance from stream bank) of spoil dumps, as well as distance between dumps to ensure that drainage routes are not cut off	Daily Weekly	HSE Supervisor's team Environmental and Social Experts of PIU & ME&WR	 100.00

Name of Proposed Site	Potential Impacts ream Dredging	Recommended Mitigation	Party Responsible for Implementing Mitigation	Cost of Mitigation (US$)	Monitoring Indicators	Frequency of Monitoring	Responsible Party for Monitoring	Estimated Costs of monitoring (US$)
Oloro stream Tributary, Olode, Adegbayi, Ibadan	Generation of excavated materials	Dredged spoils will be dumped along the stream banks.	Dredging contractor	150.00	Monitor dimensions (height, length and distance from stream bank) of spoil dumps, as well as distance between dumps to ensure that drainage routes are not cut off.	Daily Weekly	HSE Supervisor; PIU Environmental Experts & ME&WR	100.00
	Damage to two (2 Nos) temporary crossing on stream channel	Replacement of wooden crossing after completion of dredging activity	Contractor	500.00	Availability of functional crossing structure for movement across the stream channel at completion	One-off upon completion	ESHS Supervisor/ PIU	50.00
Olorunsogo Estate stream, Ibadan	Generation & Disposal of dredged spoils.	Dredge spoils will be dumped by the banks far enough to prevent washback In dumping the spoils, care shall be taken to ensure that runoff routes are not blocked. spoil dumps shall be discontinuous, with a minimum of 5m break between dumps.	Contractor	250.00	Monitor dimensions (height, length and distance from stream bank) of spoil dumps, as well as distance between dumps to ensure that drainage routes are not cut off	Daily Weekly	HSE Supervisor's team Environmental and Social Experts of PIU & ME&WR	100.00
	Damage to temporary crossing on	Replacement of wooden crossing after completion of dredging activity	Contractor	400.00	Availability of functional crossing structure for	One-off upon completion	ESHS Supervisor/ PIU	50.00

Name of Proposed Site	Potential Impacts ream Dredging	Recommended Mitigation	Party Responsible for Implementing Mitigation	Cost of Mitigation (US$)	Monitoring Indicators	Frequency of Monitoring	Responsible Party for Monitoring	Estimated Costs of monitoring (US$)
	stream channel				movement across the stream channel at completion			
Orunkanga Stream, Apatupu, Elewuro Road Akobo Ibadan	Generation of excavated materials	Spoil dumps shall be discontinuous with minimum of 5m spacing between dumps Excavated/dredged materials around the bridge, which are mostly Municipal Solid Waste shall be evacuated and disposed at designated locations, based on the Waste Management Plan in Annex 11	Dredging contractor	200.00	Monitor disposal of spoils by stream banks Monitor the evacuation of dredged materials to dumpsite	Daily One-off, during evacuation of dredged materials to dumpsite	HSE Supervisor; PIU Environmental Experts & ME&WR	100.00
Shalom stream, idi ishin, ile titun area, ibadan	Generation of excavated materials	Dumps will be discontinuous with minimum of 5m spacing between dumps.	Dredging Contractor	200.00	Monitor dimensions (height, length and distance from stream bank) of spoil dumps, as well as distance between dumps to ensure that drainage routes are not cut off.	Daily Weekly	HSE Supervisor; PIU Social Experts	100.00
	Damage to temporary crossing on stream channel	Replacement of wooden crossing after completion of dredging activity	Contractor	400.00	Availability of functional crossing structure for movement across the stream channel at completion	One-off upon completion	ESHS Supervisor/ PIU	50.00
	Damage to utilities (electric poles)	Relocation of affected electricity poles before the commencement of works	Contractor	250.00	Reconnection of affected homes and businesses	One-off before commencement	ESHS Supervisor/ PIU	50.00
Yokele-pekun stream, Oluyole	Generation of excavated materials	Spoil dumps shall be discontinuous with minimum of 5m spacing	Dredging Contractor	250.00	Monitor dimensions (height, length and distance from stream	Daily Weekly	HSE Supervisor; PIU Environmental Experts & ME&WR	50.00

Name of Proposed Site	Potential Impacts ream Dredging	Recommended Mitigation	Party Responsible for Implementing Mitigation	Cost of Mitigation (US$)	Monitoring Indicators	Frequency of Monitoring	Responsible Party for Monitoring	Estimated Costs of monitoring (US$)
		between dumps. Excavated/dredged materials around the culvert, which are mostly Municipal Solid Waste shall be evacuated and disposed at designated locations, based on the Waste Management Plan in Annex 6			bank) of spoil dumps, as well as distance between dumps to ensure that drainage routes are not cut off.			
TOTAL			**SUB**	**11,700**				**3,400.00**

Currency and Equivalents: Currency Unit = Nigerian Naira; US$1 = N360

4.4 Contractual Measures

All mitigation measures for the dredging/clearing activities are the obligations of the Contractor during all phases of project implementation. Therefore, provision should be made in the tender documents to conveniently address all the mitigation measures, with appropriate flexibility to adjust these measures to site circumstances.

4.5 Environmental and Social Management and Monitoring Program

4.5.1 Monitoring and Reporting Procedure

The dredging / clearing works are not expected to run for more than 1 month. However, there is a need to monitor the implementation of the ESMP. The effectiveness of the mitigation measures is greatly dependent on the strict and timely implementation of these measures and these cannot be entrusted entirely to the contractors. Therefore, the Safeguards unit of the PIU, working in consonance with the Oyo State Ministry of Environment and Water Resources, shall arrange to undertake comprehensive monitoring of the dredging and channel clearing activities. For effective monitoring, the following measures will be taken:

- In addition to the supervising engineer(s) having a HSE officer, the PIU will appoint an Independent ESHS Supervisor to oversee the activities of contractors, to ensure that mitigation measures are properly implemented, in a timely manner
- Where breaches or non-compliance are observed, the ESHS Supervisor shall be empowered to issue stop-work orders.
- Additional Monitoring will be conducted by the Environmental and Social Specialists/Consultants of the PIU and other relevant personnel;

4.6 Institutional Arrangements

Although this is a short-term project, the successful implementation of this ESMP depends on the commitment and capacity of various institutions and stakeholders to implement the ESMP effectively. Thus, the arrangement as well as the roles and responsibilities of the institutions and persons that will be involved in the implementation, monitoring and review of the ESMP are discussed below

Table 4.4: Institutional Responsibilities

S/No	Category	Roles & Responsibilities
1	Safeguards Unit (PIU)	**Environmental Safeguards** • Collate environmental baseline data on relevant environmental characteristics of the selected project sites; • Analyze potential community/individual sub-projects and their environmental impacts; • Ensure that project activities that are implemented will be in accordance to best practices and guidelines set out in the site specific ESMP; • Identify and liaise with all stakeholders involved in environment related issues in the project; and be responsible for the overall monitoring of mitigation measures and the impacts of the project during implementation. **Social Safeguards** • Develop, coordinate and ensures the implementation of the social aspects of the ESMP • Identify and liaise with all stakeholders involved in social related issues in the project; • Monitor the implementation of required mitigation measures developed in this ESMP and new requirements as might emerge in the course of project implementation.
2	PIU	• Liaise closely with Oyo State Ministry of Environment and Water Resources in preparing a coordinated response on the environmental and social aspects of project development respectively; • E& S Safeguards due diligence • PIU engineering team will ensure the monitoring of the implementation of technical job specifications with a

S/No	Category	Roles & Responsibilities
		view to ensure the works don't trigger new E&S issues in the course of project implementation.
3	Ministry of Environment and Water Resources	• Environmental compliance overseer at the State level • Lead role - provision of advice on project implementation • Site assessment and monitoring of ESMP implementation
4	Other relevant State Government MDAs	• Other MDAs come in as and when relevant areas or resources under their jurisdiction or management are likely to be affected by or implicated projects. These will include the State Transport Management Authority (OYTMA) and the State Waste Management Agency (OYOWMA) • They participate in the EA processes and in project decision-making that helps prevent or minimize environmental and social impacts and to mitigate them. These institutions may also be required, to issue a consent or approval for an aspect of a project; allow an area to be included in a project; or allow impact to a certain extent or impose restrictions or conditions, monitoring responsibility or supervisory oversight
5	World Bank	• Overall supervision and provision of technical support and guidance. • Recommend additional measures for strengthening the management framework and implementation performance; • .
6	Contractor	• Compliance to BOQ specification in procurement of material and project implementation
7	ESHS Supervisor	• Provide oversight function during construction and decommissioning • Ensure that recommended mitigation measures are strictly implemented; • Determine the suitability of locations for the dumping of dredged materials based on the environmental and social considerations of this ESMP • Review daily work program of contractors and issue approval not less than 24hrs before commencement of works, upon the suitability of the compliance of such program with E&S considerations of this sub-project. • Issue stop work order where human/community health and safety are at risk (However, this shall only be as a last resort) • Collaborate with Engineering supervisor to ensure that the technical specifications in the Implementation Strategy and the ESMP are carried out.
8	Local Government	• Provide oversight function across various sitest in LGAs for ESMP compliance • Liaising with the PIU. Engage and encourage carrying out comprehensive and practical awareness campaign for the proposed sub-projects, amongst the various relevant grass roots interest groups
9	Local Community	• Promote environmental awareness • Assist and Liaise with other stakeholders to ensure proper siting and provision of approval for such sites • Support with provision of necessary infrastructures and engage/ encourage carrying out comprehensive and practical awareness campaign for the proposed projects, amongst the various relevant grass roots interest groups.
10	CDA	• Ensure Community participation by mobilizing, sensitizing community members;
11	NGOs/CSOs	• Assisting in their respective ways to ensure effective response actions, Conducting scientific researches alongside government groups to evolve and devise sustainable environmental strategies and rehabilitation techniques, Organizing, coordinating and ensuring safe use of volunteers in a response action, and actually identifying where these volunteers can best render services effectively & Providing wide support assistance helpful in management planning, institutional/governance issues and other livelihood related matter, Project impacts and mitigation measure, Awareness campaigns
12	Others/General Public	• Identify environmental and social issues that could derail the project and support project impacts and mitigation measures, Awareness campaigns

4.7 Implementation Schedule

S/N	Activity	Responsibility	Pre-Rehabilitation (Weeks)					Rehabilitation (Weeks)				Operation & Maintenance
Environmental & Social Management			1	2	3	4	5	6	7	8	9	
1	Formal Disclosure of ESMP	PIU	X	X	X	X						
2	Contract award	PIU				X						
3	Review and Approval of Contractor's ESMP and TMP, OHS WMP sub-plans	PIU-Environmental / Social Development / Engineering					X	X				
4	Environmental and Social Development Training	Environmental and Social Consultant						X				
5	Implementation of Environmental and Social Mitigation Measures	Contractor						X	X	X	X	
6	Supervision of pre-Construction and Construction activities	PIU-Engineering					X					
7	Supervision of ESMP Implementation	PIU-Environmental / Social / Engineering						X	X	X	X	
8	Environmental and Social Monitoring and Auditing	PIU/ Ministry of Environment & Water Resources/Consultant										X
9	Reporting on ESMP Implementation	PIU/Relevant MDAs										X

Cost Estimates

To effectively implement the mitigation and monitoring measures recommended in this ESMP, necessary provision will have to be made. The cost of these measures have been estimated and included in the ESMP. The cost of mitigation by the Contractor will be included in the contract as part of the implementation cost while a provisional sum will be set aside for monitoring. As indicated earlier, the PIU will engage an independent ESHS supervisor, who will work in conjunction with the supervising engineers to ensure the smooth and proper implementation of the project.

The estimated costs of implementing the ESMP will include the following:

a.	Cost of Mitigation of impacts from Dredging/Clearing of Channels/Drains	US$11,700.00
b.	Cost of OCHSMP Mitigation implementation	US$22,200
c.	Cost of Monitoring for Dredging/Clearing of silted streams/ blocked drains	US$3,400.00
d.	Total Cost for implementation of the ESMP	**US$37,300.00**
10% of total for Contingency		**US$ 3,730.00**
Grand Total		**US$41,030.00**

(Forty-one Thousand, and thirty United States Dollars Only)

CHAPTER FIVE: CONSULTATIONS AND STAKEHOLDER ENGAGEMENT

5.1 Rationale for consultations

Public consultation has proven to be vital in project conception and implementation. It allows people own the projects and enhances project survival and trust between government and beneficiary community. Critical stakeholders engaged were 'Project Affected Parties (PAPs)" and 'other interested parties'. The affected parties were property owners, residents and business owners while other affected parties were NGOs and government officials. Because of the nature of this project, which is an emergency activity and which is one-off, a procedure that was suited to the multiplicity of dredging sites was implemented. The procedures and outcomes of this approaches is described in this chapter.

5.2 Procedure

In order to achieve this, the following procedure was undertaken while engaging the communities.

1. *Pre-consultation:* The PIU safeguards unit obtained the list of community leaders who had written requests to the Ministry of Environment for the proposed works. Most of the requests were turned in by Landlords Associations of the affected areas as well as umbrella Community Development Associations.
2. Preliminary One-on-One Engagements: As part of the field visits conducted for the collection of baseline data for the preparation of this ESMP, rapid consultations with community contact persons was carried out. The contacts were also sensitised on the arrangement to have a **Stakeholders' Consultation Forum** with key primary stakeholders from the 32 project communities.
3. *Joint Stakeholder Consultation Forum:* A meeting of community leaders from all the project communities selected for the 2019 dredging exercise was conducted at the Ibadan Business School on 8th May, 2019. Participants included representatives of the community Development Associations (CDAs) in the areas. Guidance was given to attending CDAs to ensure that participants consist of the CDA chairman (1 person), Secretary (1 person), Women representative/leader (1 person) and Youth (1 person). Photographic evidence and records of persons who were in attendance at the Joint Stakeholder Consultation Forum are included as included as annex 8 and 9 of this report. An issue elicitation sheet was also provided for participants to documents their issues and concerns.

   The mandatory inclusion of women in the forum was further supported by a dedicated session where women were encouraged to disclose their concerns as related to the project.

5.3 Summary of the Outcome of Stakeholder Consultations

Generally, all respondents, including those who refused to be mentioned or captured on camera were positively receptive to the planned interventions and were grateful for the anticipated interventions. However, in some cases, specific issues were highlighted. A summary of these specific issues are presented in Table 5.1 below.

Table 5.1: Summary of proceedings of consultations

S/N	NAMES OF SITES	ISSUES/CONCERNS RAISED	RESPONSES/CLARIFICATIONS PROVIDED
1	Ajogonlo stream, Akobo/Yawuri area, Ibadan	During the 2018 dredging activity at Sooko community (a neighbouring community), one of the dredging equipment broke down and was not moved away for about two months. This caused a lot of discomfort for the people of the area. Such situations need to be avoided in the 2019 exercise.	Such occurrences would not be tolerated. However, residents should register complaints through the project GRM. The contact details of the modified GRM institutional hierarchies will be made available to community leaders when the dredging works are launched.

S/N	NAMES OF SITES	ISSUES/CONCERNS RAISED	RESPONSES/CLARIFICATIONS PROVIDED
2	Alaguntan stream, Ologuneru-Eleyele road, Ibadan	A dyke was made in one of the upstream areas. The obstruction in stream flow occasioned by the dyke leads to a water overflow that lasts about 4 days. What can be done to the fish pond and the dam? What can be done to the issue of Sand Miners?	If the dyke is part of a fish pond, it cannot be demolished under this project. The project will consider all options for the avoidance of any impact on the dyke. Such avoidance measures will be optimized to ensure that communities verging the area will be flood relieved while impact will be avoided on all economic structures. The project employs the mitigation hierarchy which follows the avoidance, minimization and offset considerations in project preparation and management. IUFMP has a mandate as an intervention platform of OYSG. It does not take over the traditional role of government agencies. Sand mining is an illegal and unregulated activity that should be reported to the Ministry of Environment and Water Resources
3	Alawaye stream, Olorunsogo area, Ibadan	IUFMP needs to engage the community routinely (maybe quarterly basis) in a bid to advise people on flooding issues particularly on man-made flood drivers.	The PIU does that as part of project preparation and implementation in areas where interventions have been identified. Engagement and discussions with the wider city is also being done by concerned agencies of government.
4	Bashorun stream, Bode Wasimi area, Ibadan	What do we do about waste management? Our people are responsible for dumping debris into the drains and it ends up spilling on the road or blocking culverts.	The government should setup a team to look into it, maybe by creating a space where these debris are dropped. Waste can be bought and transferred under a waste recycling or conversion programme from the community. Solid Waste Management (SWM) being a known driver of flood risk will be dealt with under the project. However, there is an agency of government in charge of SWM. The OYSG policy requires the use of private refuse collectors. However, there is little subscription to this service. Communities need to engage contractors that can take out waste completely.
5	Bethel Estate stream, Bode Igbo Area, Abeokuta Road	When will the dredging exercise commence? There have been delays in implementing the intervention in the area in since 2017.	The delays were occasioned by the need to study and mitigate the full range of social impacts particularly resettlement impacts identified in the area. The dredging will be done along with other sites under the 2019 intervention due to the fact that the RAPs have now been prepared.
6	Dalegan river, Iyana Agbala, Adegbayi, Ibadan	Water overflows the bridge and breaks the culvert causing flooding which prevents members of the community from getting home.	Dredging for removals and disposal to dumping sites will alleviate these issues

S/N	NAMES OF SITES	ISSUES/CONCERNS RAISED	RESPONSES/CLARIFICATIONS PROVIDED
7	Farayola stream, Bodija, (Major Salawu street) Ibadan	What do we do about waste management? Our people are responsible for dumping debris into the drains and it ends up spilling on the road or blocking culverts. The government should setup a team to look into it, maybe by creating a space where these debris are dropped and bought from the community.	Waste is a consideration under IUFMP but there is an agency (OYOWMA) in charge. OYSG also has a policy on waste collection through private refuse collectors but people have not fully subscribed to this service. OYOWMA encourages communities to negotiate terms of service and payment with their designated refuse collector in a bid to facilitate the use of this service for refuse collection in this neigborhood
8	Farinto stream powerline, Kute area	The bridge we have is small and cannot contain the amount of water flowing. We want another bridge constructed. Water overflows the bridge and breaks the culvert causing flooding which prevents members of the community from getting home.	Such requests cannot be accommodated under the current dredging activity. However, a holistic process to ensure the adequacy of hydraulic devices has been done under the Drainage Masterplan which will be implemented gradually. Dredging for removal and disposal of materials blocking the stream path to dumping sites, will be undertaken to reduce the problem(s)
9	Fatosi stream, Olomi, Olunde area, Ibadan	There is a need to link the stream to the main Ogbere river.	The technical feasibility will be assessed and addressed accordingly. However, the lengths of stream that were selected under the 2019 intervention are adequate to cater for the level of flooding being experienced during heavy tides in the area.
10	Idi-Agbon stream, Laogun, Old Ife Road, Ibadan	Some of the waterways in the area have been blocked.	Dredging is being undertaken to clear the waterway
11	Ifesowapo stream, Babanla, Oremeji area, Ibadan	Waterways in the area are blocked.	The proposed dredging will create a flow path of adequate width that will ease the flow in the area.
12	Isokan stream, Oluwo, Ibadan	Contractor staff might be unruly and conduct themselves disrespectfully during the exercise. How do we address issues with the contractor staff?	A code of conduct that commits the personnel of the contractor to minimum standards of good conduct will be signed by all personnel. Communities should avail themselves of the opportunities presented by the IUFMP complaint channels because IUFMP will not always be on the site.
13	Odo-Osun stream, Ashipa, Oluyole, Ibadan	Excavation and removal of blockages in the stream path will increase the volume of water flow and may cause inundation in downstream areas that might not be included in the scope of works for this dredging.	This consideration has been made in the determination of the lengths to be cleared during the dredging exercise. Generally the lengths selected in downstream portions are longer than upstream sections to ensure adequate flow in the downstream portions of the stream.
14	Okewusi Stream, Oluwonla area, Adegbayi	Parts of the river bank are very close to the foundation of some houses	Dredging should be shifted to the other side to protect those houses

S/N	NAMES OF SITES	ISSUES/CONCERNS RAISED	RESPONSES/CLARIFICATIONS PROVIDED
15	Oloro stream Tributary, Olode, Adegbayi, Ibadan	There is encroachment on the river setbacks. What can be done to deal with these encroachments?	Enforcement of river setback regulations is outside the mandate of IUFMP. Communities should work with the LGA offices responsible for Town Planning and the Bureau for Physical Planning & Development Control (BPP&DC). There is no demolition in this dredging project as variable widths (5m-6m) allowing for free flow of water will be excavated on the stream/river channels.
		Refuse is being dumped in the river around the area.	Communities can mount their own sensitization activities to complement what government and IUFMP is doing. Persuasive deterrents can be done to dissuade community members from such acts. These includes installation of sign posts
		Some of the waterways in the area have been blocked.	This is the main reason for this intervention.
16	Olorunsogo Estate stream, Ibadan	Human activities in the community leads to incidences of flooding. Though the dredging intervention would reduce the flood risk, the behavior of residents will ultimately lead to subsequent flooding episodes and will destroy the road surfaces.	Community leaders need to sensitize community members on the need to stop these acts by highlighting the direct and indirect consequences of careless acts that increase flood risk.
17	Orunkanga Stream, Apatupu, Elewuro Road Akobo Ibadan	The 2018 dredging at a neighbouring community (Sioko) led the breakdown of a dredger on the main access road and consequently caused traffic disruption for about 2 months after the completion of the dredging.	Faulty machine would not be left on site. Contractual measures to enforce compliance will be enforced. GRM channels should be used to escalate complaints to the IUFMP
18	Shalom stream, idi ishin, ile titun area, ibadan	The current situation in the community leads to periodic overflow of the river into the households	Dredging and widening of the river to allow heavy flow

5.4 Overview of Environmental & Social Concerns raised through consultation process and required mitigation approaches

As required by OP 4.01, consultations with project beneficiaries and the wider public is essential to the adequacy an Environmental & Social Assessment process by facilitating feedback for project preparation and also for the identification of potential ESHS concerns and issues that may occur at various stages in the implementation of the project/sub-project.

Several issues bordering on sound Environmental and Social (E&S) performance of the proposed dredging works were identified during the process of engagement carried out with stakeholders. An overview of the issues as well as required Management Strategies that have been considered in the ESMP table is summarized as follows;

S/N	Environmental & Social Concern	Management Strategy
1	Breakdown of contractor machinery	Adequate monitoring by the ESHS independent monitor will cater for this issue.
2	Traffic disruptions occasioned by vehicular breakdowns	A Traffic Management Plan will be prepared as part of the ESMP and will be enforced on all contractors. This will contain provisions such as movement of heavy duty equipment during off-peak hours only.
3	Presence of dykes in some sections of the streams	(iii) Avoidance of functional assets (iv) Manual dredging in areas with functional assets within the 6m+3m limits of dredging
4	The foundation of some fences/houses are very close to the stream	Manual dredging will be carried out in such areas. Dredged material will be used to impound the foundations of such structures in a manner that allows stream flow but protects the integrity of the structures.
5	Misbehavior of contactor staff	The code of conduct for contractor personnel will cover respectful communication and conflict-free interactions
6	Complaints	Modified GRM approaches will be prepared and communicated to community leaders for registration of project-related grievances during the implementation phase.

Other long-term issues raised during the engagements include;

v. The practice of dumping Solid Waste in river channels
vi. The need to widen stream channels
vii. The need to enforce building regulations in the watersheds contiguous to these intervention communities.
viii. Effective communication and sensitization is required to dissuade residents from engaging in behavior that increases the flood risk of these project areas.

CHAPTER SIX: GRIEVANCE REDRESS MECHANISM

6.0 Grievance Redress Mechanism for sub-project

The generic provisions of the IUFMP Grievance Redress Mechanism shall be modified to suit the project circumstances due to the short time span of proposed dredging works.

There shall be 3 core institutional blocks dedicated to Project grievances at (i) Site-Community, (ii) Local government and (iii) State levels. These core institutional blocks are:

7. The Site- Community Grievance Redress Structures made up of

   iii. Chairman and One female member of the Community Development Association/Landlords Association

   iv. ESHS supervisor;

8. IUFMP PIU Community Relations Team, including the Social Safeguards officer as the key driver and the Environmental safeguards, Communications and M&E officers as members.

9. Oyo State Mediation Centre

6.1 Expectations when Grievances Arise

When local people present a grievance, they generally expect to receive one or more of the following: acknowledgement of their problem, an honest response to questions/issues brought forward, an apology, adequate compensation, modification of the conduct that caused the grievance and some other fair remedies. In voicing their concerns, they also expect to be heard and taken seriously. The company, contractors, or government officials must therefore convince people that they can voice grievances and work to resolve them without retaliation.

To address these challenges, the project shall take the lead and work with their host communities to fund non-judicial, dialogue-based approaches for preventing and addressing community grievances. The overall process of grievance redress will be as follows:

Affected persons will files complaints or grievances with regard to any aspect of the project verbally, in writing or through a representative in English or local language. The mechanism would hotline numbers that allows PAPs to call the ESHS supervisor and project GRM officer to report complaints and written reports using designated forms**.**

Three (3) levels of appeals are proposed to ensure that complainants can move to a higher level if they are not satisfied with the grievance redress suggested before going to the law courts.

Step 1: Site Grievance Redress Institutions
Steps 3: Referral to IUFMP Team
Step 4: Oyo State Mediation Centre (OYMC)

The managing grievances should be as follows:

1. Each person responsible at its own level (community representatives, ESHS supervisors and IUFMP) should disseminate their phone number for SMS complaints.
2. The IUFMP environmental and social safeguard officers will be the direct liaison with PAPs in collaboration with the Landlord committee representative to ensure objectivity in the grievance process.
3. Where the affected person is unable to write, the designated community representative or social safeguards officer will write the note on the aggrieved person's behalf and duly thumb printed by the complainant.
4. Any informal grievances will also be documented in the format prescribed in the Grievance Redress Log of the project.

6.2 Grievances Redress Mechanism Process

The GRM process is described in table 6.0 below:

Table 6.0 : Grievance Procedures Steps

Step	Category	Activities
1	***Receipt and registration***	1. PAP files complaints or grievances regarding any aspect of the project verbally, in writing or through a representative in English or local language. 2. The community leadership working together with the ESHS supervisor is the first step in the determination of complaints related to the project at the local level. If the complaint cannot be resolved locally, then it is escalated to the project office (IUFMP). If still unresolved, then a notification to the State Government (Oyo State Ministry of Environment.
		1. Complaint recorded by the implementing agency with the name of the griever, address and location information, the nature of the grievance and the resolution desired. 2. Grievance made acknowledged within 48 hours of receipt by an official authorized to receive grievances
2	***Resolution***	1. All grievances referred to the appropriate party for resolution 2. Resolution made within 10 days after receipt of grievance. 3. If additional information is needed, project management can authorize additional 5 days for resolution. 4. Results of grievances disclosed to the griever in writing with an explanation of the basis of the decision. 5. The resolution of the grievances will be handled by the "Social Specialist" with the support of the IUFMP PIU.
3	***Appeals***	1. Grievers dissatisfied with the response to their grievance may file an appeal. 2. In such cases, the responsible authority assembles "The IUFMP PIU (Project Coordinator" to hear cases including at least one disinterested party from outside the agency responsible for the resettlement project. 3. There will be no further redress available outside the resettlement project. In such cases, grievances would need to be pursued through the legal system.
4	**Monitoring**	During project implementation and for at least 3 months following the conclusion of the project, monthly reports will be prepared by the Social Safeguards officer regarding the number and nature of grievances filed and made available to project management.

CHAPTER SEVEN : SUMMARY AND RECOMMNEDATIONS

Generally, the study has indicated that the proposed project is desirable and will not cause significant adverse effects on the existing environmental, social and health situations of project sites, as well as safe conditions of the people, locally. Although a number of adverse impacts are anticipated, they can be reasonably mitigated using simple and cost-effective measures.

The successful application of the mitigation measures is hinged on stringent monitoring and enforcement of the ESMP. The PIU, working in consonance with the Oyo State Ministry of Environment and Water Resources must ensure that the project is properly monitored during its implementation.

ANNEXES

ANNEX 1: TOR FOR THE ESMP OF THE 2019 EMERGENCY DREDGING AND CLEARING OF BLOCKED DRAINAGES WORKS IN IBADAN

TERMS OF REFERENCE (TOR) FOR THE PREPARATION OF AN ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP) FOR THE DREDGING AND DE-SILTING OF SELECTED RIVERS & DRAINS IN IBADAN CITY, UNDER THE IBADAN URBAN FLOOD MANAGEMENT PROJECT (IUFMP)

1.0 Background

The World Bank is supporting the Oyo State Government to implement the Ibadan Urban Flood Management project (IUFMP) that aims at developing a long-term flood risk management framework by initiating risk assessment, community awareness, and providing enough flexibility in the project design to make changes based on learning. The project also supports capacity building for flood risk management in the city of Ibadan. It reinforces Oyo State government's early warning and response capabilities and leverages existing World Bank projects in Oyo State in support of the IUFMP.

Specifically, the Bank's support will finance some priority investments related to improving the infrastructure of Ibadan City, especially those destroyed by August 26, 2011 floods. The Bank's support will help Ibadan reduce flood risks, improve waste collection and treatment, while developing and improving the quality of existing infrastructural assets.

The project would be designed to keep a good balance between urgent post disaster needs (dredging, reconstruction of bridges, roads, etc.) and medium-to-long term needs (institutional support, upgrading existing and building new infrastructure to upgrade services and mitigate future risks). Selected sub - projects should comply with regional and local government plans, address critical issues described above to integrate planning and operational aspects that maximize the benefits of infrastructure investments to the beneficiary communities in the long run. The Project Development Objective (PDO) is to "improve the capacity of Oyo State to manage flood risk and to respond effectively and promptly to flooding in the city of Ibadan".

In Oyo State, IUFMP activities involve medium-sized civil works such as construction of infrastructure and/or stabilization or rehabilitation in and around the Ibadan city. These could result in environmental and social impacts thus triggering the World Bank's Safeguard Policies including Environmental Assessment OP 4.01; Involuntary Resettlement OP4.12; Natural Habitats OP 4.04; Physical Cultural Resources OP 4.11, and Safety of Dams OP 4.37 and Public Disclosure OP 17.60.

The environmental and social safeguards concerns are being addressed through the national instrument already prepared under the project: an Environmental and Social Management Framework (ESMF). This framework instrument need to be translated into specific cost, measurable, and monitorable actions for specific intervention sites through the preparation of site-specific management and action plans.

ESMF: In general, the ESMF specifies the procedures to be used for preparing, approving and implementing:

(i) Environmental and Social Assessments (ESIA) and or
(ii) Environmental and Social Management Plans (ESMPs) for individual civil works packages developed for each project. ESMPs are essential elements for Category B projects.

2.0 SPECIFIC OBJECTIVES:

The specific objective is for the consultant to assist Oyo State to undertake the necessary studies and prepare an Environmental and Social Management Plan (ESMP) for the Dredging and De-Silting of Selected Rivers & Drains in Ibadan City in compliance with the World Bank environmental, social safeguards policies and procedures as well as the Oyo State Ministry of Environment and Water Resources and the Federal Ministry of Environment guidelines and procedures.

This Terms of Reference (TOR) is guide for the safeguards unit of the PIU to prepare the ESMP for Dredging and clearing Activities in selected sites in Ibadan Metropolis. The Terms of Reference (TOR) defines the scope of work and core tasks to be undertaken by the unit.

3.0 GOAL OF THE WORK

The proposed Dredging and De-Silting of Selected Rivers & Drains in Ibadan City will improve the capacity of Oyo State to manage flood risk.

The identified sub-projects are classified as **category "B"** project according to the World Bank categorization and a category II project according to the FMEnv categorization. From the foregoing, the less significant environmental and social impacts that are likely to occur, can be reduced or minimized through compliance with appropriate mitigation measures. The nature of the project is such that it will not represent a large-scale intervention in the various site and will not fundamentally change the environment if adequately mitigated.

4.0 RATIONALE OF DREDGING ACTIVITIES IN IBADAN METROPOLIS OF SELECTED SITES

The proposed dredging activities will reduce the impact of flooding in the City. Previous dredging exercises carried out excluded the city from the reality of flood prediction that was given by Nigeria Hydrological Services Agency (NIHSA)in February, 2019. Urban sprawl without appropriate channels or drainage system couple with the undulating topography of the city exacerbates the susceptibility of the city to annual flooding. The 2019 dredging sites were newly identified, different from the previously dredged sites.

5.0 DESCRIPTION OF THE PROPOSED INTERVENTION

The proposed intervention includes two (2) categories of activities to be implemented as indicated in the Table 1.1 below;

Table 1.1: Summary of Works Requirements on Dredging/Desilting for 3 classes of sites.

SITE CATEGORY	LENGTH (M)	GENERAL WORK REQUIREMENT	SPECIFIC WORK REQUIREMENT
A1 (River/Stream channel where accessibility of disposal trucks is achievable	31,100	Excavation of all classes of soil, except rock from the Channel, not exceeding 1m depth and **variable** width not exceeding 6m Removal of impediments, debris, wastes, shrubs, vegetation etc at river channels, bridges/culverts locations River training along the channel where applicable or as may be directed by the Supervising Engineer; Dredging for removal of silt material and solid wastes.	Disposal of dredged material to the dump sites and identified areas as jointly directed by the supervising Engineer and representatives of Ministry of environment. The area will not be less than 500m away from the site.
A2 (River/Stream channel where accessibility of heavy truck is NOT feasible due to weak/narrow right of ways)	23,350		The excavated silt materials are to be spread at a distance not less than 5m from the channel embankment, spread and compacted to spread sediment to a maximum height of 100 - 200mm at maximum.
B (Road side drains)	5,700	Removal of solid waste, debris, grass and other materials from a lined channel/drainage.	Disposal of excavated materials to dump sites and an identified spoil areas to be determined by Supervising Engineer and Ministry of Environment and Water Resources representatives.

Table 1.1 shows the list of areas for dredging sites (S/N 1-29) and clearing (S/N 30-32) works will be carried out, including some pictures of the sites. The proposed works are in two parts:

A. Dredging Works

About twenty - nine (29) sites have been identified. The dredging works includes: the dredging of stream channels to remove silt and wastes which have clogged the stream channels, leading to restriction to water flow, thus causing flash floods during heavy rainfalls. Generally, mechanical dredging will be used and dredged materials will be piled along the banks of the stream/channel being dredged. The strategy for the conduct of the dredging will involve the removal of silt from the river channels which will be moved out to designated spoil areas OR where there are space constraints, removed materials will be deposited and compacted on the banks, at a minimum distance of 5m and not more than 900mm height, where there is sufficient space. All debris clogging hydraulic devices crossing the streams will be removed, carted away and deposited appropriately depending on the composition of such material. Generally, the dredging activity will ensure that no dikes are created as a result of removal of materials from the channels. Routes for runoff water will be preserved and thus adequate spacing will be left between dumps to allow continued runoff into the channels. However, in cases where there are solid wastes, arrangements have been made to have these carted off to designated government approved dumpsites. Details of these are presented in the Waste Management Plan presented as Annex.

Generally, a maximum dredging depth of 1m will be achieved at all locations. However, the width and length of dredging will vary from location to location, and will be driven by the envisaged requirement on site.

B. Clearing of Blocked Drainages

Three (3) blocked drainages were identified. The blockages are the result of indiscriminate disposal of solid wastes, gradual siltation, weed growth and collapse of drainage structures, or a combination of these factors. The proposed works include the removal of silt and solid wastes which have constituted blockages along the drains, thus leading to occurrence of flash floods. In all cases, clearing of drains will be to the base of the drain. There will be no widening or rehabilitation of existing drains.

It is anticipated that a very large proportion of materials to be excavated from blocked drains will be solid wastes. As such, apart from constituting obstruction to regular routes along which these drains are located, the solid wastes will also constitute aesthetic disturbances. Therefore, all excavated materials from the drainages will be carted away to designated dump sites.Table 1 below shows the proposed intervention sites.

6.0 SCOPE OF WORK

The ESMP would consist of a well-documented set of mitigation measures, monitoring, and institutional actions to be taken before and during implementation to eliminate adverse environmental and social impacts, offset them, or reduce them to acceptable levels. It would also include

the measures required to implement these actions, addressing the adequacy of the monitoring and institutional arrangements at upstream and downstream in the intervention site as well as present an indicative cost for ESMP implementation.

6.1.0 THE CORE TASKS FOR THE WORK

These shall include:

- Review the long-term dredging strategy based on international best practices
- Review the IUFMP PAD and ESMF
- Assess the potential environmental and social impacts related to project activities and recommend adequate mitigation measures, including costs estimation.
- Identify responsibilities and actors for the implementation of proposed mitigation measures
- Develop an Environmental and Social Management Plan (ESMP) for the project. The ESMP should underline
  - (i) the potential environmental and social impacts resulting from project activities
  - (ii) the proposed mitigation measures;
  - (iii) the institutional responsibilities for implementation;
  - (iv) the monitoring indicators;
  - (v) the institutional responsibilities for monitoring and implementation of mitigation measures;
  - (vi) the costs of activities; and
  - (vii) a calendar for implementation.
- Public consultations. The ESMP results and the proposed mitigation measures will be discussed with relevant stakeholders, NGOs, local administration and other organizations mainly involved by the project activities. Recommendations from this public consultation will be include in the final ESMP report.

- Preparing the ESMP according to the generic contents presented hereafter.

6.1.1 The following socio-economic issues shall be addressed in the ESMP:

- Determine the project's social impacts on health and social well-being ; quality of the living environment; economic material well-being ;Family and community ; and gender relations
- The report should identify and assess social impact identified during the public consultation process and those that, based on consultant's experience, are also likely to occur. In some instances the affected communities may not be aware of or be in a position to identify all the social impact that may occur. However, this does not mean that they will not occur. In such cases the consultant should use his/her experience to identify additional social impact that have not been raised by the public. A summary of the views of the population including vulnerable groups, determined through thoroughly documented discussions with local communities. These meetings and discussions must be documented and should show how issues and problems raised are or will be resolved
- Pay particular attention to the impacts of the project on vulnerable and marginalized individuals and groups (including but not limited to mobility impaired individuals and groups and People Living with Disabilities)
- Detail measures that will need to be taken to mitigate the negative social impact identified and the procedures for their implementation;
- Identify key uncertainties and risks**:** Identify and communicate any key uncertainties and risks associated with the accuracy of the findings of the social assessment, as well as of the proposed project. Some sources of uncertainty and risk commonly associated with projects are linked to: (a) Lack of adequate information at the community level; (b) Creation of employment and business opportunities for members from the local, historically disadvantaged communities; (c) The influx of job seekers and construction workers to the area and the impact on services; etc.
- Information will be gathered from field surveys and secondary data sources (interviews, in-depth interviews and focus group discussions).

6.2.0 CONTENT OF THE ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

The ESMP Report shall be presented in a concise format. The report shall focus on the findings, conclusions and any recommended actions, supported by summaries of the data collected and citations for any references used. The ESMP report will include the following topics:

Preliminary pages

- Cover page
- Table of contents
- List of acronyms and their definitions

Chapter 1: Introduction

- Description of the proposed intervention
- Objectives of ESMP

- Rationale for ESMP
- Relevant Maps

Chapter 2: Environmental and Social Impact Mitigation Management and Monitoring Plan

- Discussion of the potentially significant adverse environmental and social impacts of the proposed project
- The proposed mitigation measures Institutional Responsibilities for Implementation;
- Monitoring programs;
- Institutional responsibilities for the implementation and monitoring of mitigation measures;
- ESMP Training requirements
- Indicative budget for ESMP implementation

Chapter 3: Public Consultation with Stakeholders

- This chapter shall summarize the actions undertaken to consult the groups affected by the project, as well as other concerned key stakeholders including Civil Society Organizations. The detailed record of the consultation meetings shall be presented in annex to the ESMP.

Chapter 4: Summary and Recommendations

Annexes

- Annex 1: Terms of Reference
- Annex 2 : List of Stakeholders consulted
- Annex 3: General Environmental Management Conditions for Constructions/Civil Works.
- Annex 4 : Grievance Uptake Channels Information Sheet
- Annex 5 : Traffic Management Plan (TPM)
- Annex 6 : Physical and Cultural Resources Management Plan
- Annex 12 : Occupational and Community Health and Safety Management Plan

ANNEX 2: GENERAL ENVIRONMENTAL MANAGEMENT CONDITIONS FOR CONSTRUCTION CONTRACTS

GENERAL ENVIRONMENTAL MANAGEMENT CONDITIONS FOR CONSTRUCTION CONTRACTS

The document below presents a general overview of general environmental and social management conditions for typical construction/civil works contracts handled by the PIU under the purview of the World Bank.

A1.1 General

1. In addition to these general conditions, the Contractor shall comply with any specific Environmental Management Plan (EMP) or Environmental and Social Management Plan (ESMP) for the works he is responsible for. The Contractor shall inform himself about such an EMP, and prepare his work strategy and plan to fully take into account relevant provisions of that EMP. If the Contractor fails to implement the approved EMP after written instruction by the Supervising Engineer (SE) to fulfil his obligation within the requested time, the Owner reserves the right to arrange through the SE for execution of the missing action by a third party on account of the Contractor.

2. Notwithstanding the Contractor's obligation under the above clause, the Contractor shall implement all measures necessary to avoid undesirable adverse environmental and social impacts wherever possible, restore work sites to acceptable standards, and abide by any environmental performance requirements specified in an EMP. In general these measures shall include but not be limited to:

(a) Minimize the effect of dust on the surrounding environment resulting from earth mixing sites, asphalt mixing sites, dispersing coal ashes, vibrating equipment, temporary access roads, etc. to ensure safety, health and the protection of workers and communities living in the vicinity dust producing activities.

(b) Ensure that noise levels emanating from machinery, vehicles and noisy construction activities (e.g. excavation, blasting) are kept at a minimum for the safety, health and protection of workers within the vicinity of high noise levels and nearby communities.

(c) Ensure that existing water flow regimes in rivers, streams and other natural or irrigation channels is maintained and/or re-established where they are disrupted due to works being carried out.

(d) Prevent bitumen, oils, lubricants and waste water used or produced during the execution of works from entering into rivers, streams, irrigation channels and other natural water bodies/reservoirs, and also ensure that stagnant water in uncovered borrow pits is treated in the best way to avoid creating possible breeding grounds for mosquitoes.

(e) Prevent and minimize the impacts of quarrying, earth borrowing, piling and building of temporary construction camps and access roads on the biophysical environment including protected areas and arable lands; local communities and their settlements. In as much as possible restore/rehabilitate all sites to acceptable standards.

(f) Upon discovery of ancient heritage, relics or anything that might or believed to be of archaeological or historical importance during the execution of works, immediately report such findings to the SE so that the appropriate authorities may be expeditiously contacted for fulfillment of the measures aimed at protecting such historical or archaeological resources.

(g) Discourage construction workers from engaging in the exploitation of natural resources such as hunting, fishing, collection of forest products or any other activity that might have a negative impact on the social and economic welfare of the local communities.

(h) Implement soil erosion control measures in order to avoid surface run off and prevents siltation, etc.(i) Ensure that garbage, sanitation and drinking water facilities are provided in construction workers camps.

(j) Ensure that, in as much as possible, local materials are used to avoid importation of foreign material and long distance transportation.

(k) Ensure public safety, and meet traffic safety requirements for the operation of work to avoid accidents.

3. The Contractor shall indicate the period within which he/she shall maintain status on site after completion of civil works to ensure that significant adverse impacts arising from such works have been appropriately addressed.

4. The Contractor shall adhere to the proposed activity implementation schedule and the monitoring plan / strategy to ensure effective feedback of monitoring information to project management so that impact management can be implemented properly, and if necessary, adapt to changing and unforeseen conditions.

5. Besides the regular inspection of the sites by the SE for adherence to the contract conditions and specifications, the Owner may appoint an Inspector to oversee the compliance with these environmental conditions and any proposed mitigation measures. State environmental authorities may carry out similar inspection duties. In all cases, as directed by the SE, the Contractor shall comply with directives from such inspectors to implement measures required to ensure the adequacy rehabilitation measures carried out on the bio-physical environment and compensation for socio-economic disruption resulting from implementation of any works.

A1.2 Worksite/Campsite Waste Management

6. All vessels (drums, containers, bags, etc.) containing oil/fuel/surfacing materials and other hazardous chemicals shall be bunded in order to contain spillage. All waste containers, litter and any other waste generated during the construction shall be collected and disposed off at designated disposal sites in line with applicable government waste management regulations.

7. All drainage and effluent from storage areas, workshops and camp sites shall be captured and treated before being discharged into the drainage system in line with applicable government water pollution control regulations.

8. Used oil from maintenance shall be collected and disposed off appropriately at designated sites or be re-used or sold for re-use locally.

9. Entry of runoff to the site shall be restricted by constructing diversion channels or holding structures such as banks, drains, dams, etc. to reduce the potential of soil erosion and water pollution.

10. Construction waste shall not be left in stockpiles along the road, but removed and reused or disposed of on a daily basis.

11. If disposal sites for clean spoil are necessary, they shall be located in areas, approved by the SE, of low land use value and where they will not result in material being easily washed into drainage channels. Whenever possible, spoil materials should be placed in low-lying areas and should be compacted and planted with species indigenous to the locality.

A1.3 Material Excavation and Deposit

12. The Contractor shall obtain appropriate licenses/permits from relevant authorities to operate quarries or borrow areas.

13. The location of quarries and borrow areas shall be subject to approval by relevant local and national authorities, including traditional authorities if the land on which the quarry or borrow areas fall in traditional land.

14. New extraction sites:

a) Shall not be located in the vicinity of settlement areas, cultural sites, wetlands or any other valued ecosystem component, or on on high or steep ground or in areas of high scenic value, and shall not be located less than 1km from such areas.

b) Shall not be located adjacent to stream channels wherever possible to avoid siltation of river channels. Where they are located near water sources, borrow pits and perimeter drains shall surround quarry sites.

c) Shall not be located in archaeological areas. Excavations in the vicinity of such areas shall proceed with great care and shall be done in the presence of government authorities having a mandate for their protection.

d) Shall not be located in forest reserves. However, where there are no other alternatives, permission shall be obtained from the appropriate authorities and an environmental impact study shall be conducted.

e) Shall be easily rehabilitated. Areas with minimal vegetation cover such as flat and bare ground, or areas covered with grass only or covered with shrubs less than 1.5m in height, are preferred.

f) Shall have clearly demarcated and marked boundaries to minimize vegetation clearing.

15. Vegetation clearing shall be restricted to the area required for safe operation of construction work. Vegetation clearing shall not be done more than two months in advance of operations.

16. Stockpile areas shall be located in areas where trees can act as buffers to prevent dust pollution. Perimeter drains shall be built around stockpile areas. Sediment and other pollutant traps shall be located at drainage exits from workings.

17. The Contractor shall deposit any excess material in accordance with the principles of the general conditions, and any applicable EMP, in areas approved by local authorities and/or the SE.

18. Areas for depositing hazardous materials such as contaminated liquid and solid materials shall be approved by the SE and appropriate local and/or national authorities before the commencement of work. Use of existing, approved sites shall be preferred over the establishment of new sites.

A1.4 Rehabilitation and Soil Erosion Prevention

19. To the extent practicable, the Contractor shall rehabilitate the site progressively so that the rate of rehabilitation is similar to the rate of construction.

20. Always remove and retain topsoil for subsequent rehabilitation. Soils shall not be stripped when they are wet as this can lead to soil compaction and loss of structure.

21. Topsoil shall not be stored in large heaps. Low mounds of no more than 1 to 2m high are recommended.

22. Re-vegetate stockpiles to protect the soil from erosion, discourage weeds and maintain an active population of beneficial soil microbes.

23. Locate stockpiles where they will not be disturbed by future construction activities.

24. To the extent practicable, reinstate natural drainage patterns where they have been altered or impaired.

25. Remove toxic materials and dispose of them in designated sites. Backfill excavated areas with soils or overburden that is free of foreign material that could pollute groundwater and soil.

26. Identify potentially toxic overburden and screen with suitable material to prevent mobilization of toxins.

27. Ensure reshaped land is formed so as to be inherently stable, adequately drained and suitable for the desired long-term land use, and allow natural regeneration of vegetation.

28. Minimize the long-term visual impact by creating landforms that are compatible with the adjacent landscape.

29. Minimize erosion by wind and water both during and after the process of reinstatement.

30. Compacted surfaces shall be deep ripped to relieve compaction unless subsurface conditions dictate otherwise.

31. Revegetate with plant species that will control erosion, provide vegetative diversity and, through succession, contribute to a resilient ecosystem. The choice of plant species for rehabilitation shall be done in consultation with local research institutions, forest department and the local people.

A1.5 Water Resources Management

32. The Contractor shall at all costs avoid conflicting with water demands of local communities.

33. Abstraction of both surface and underground water shall only be done with the consultation of the local community and after obtaining a permit from the relevant Water Authority.

34. Abstraction of water from wetlands shall be avoided. Where necessary, authority has to be obtained from relevant authorities.

35. Temporary damming of streams and rivers shall be done in such a way avoids disrupting water supplies to communities down stream, and maintains the ecological balance of the river system.

36. No construction water containing spoils or site effluent, especially cement and oil, shall be allowed to flow into natural water drainage courses.

37. Wash water from washing out of equipment shall not be discharged into water courses or road drains.

38. Site spoils and temporary stockpiles shall be located away from the drainage system, and surface run off shall be directed away from stockpiles to prevent erosion.

A1.6 Traffic Management

39. Location of access roads/detours shall be done in consultation with the local community especially in important or sensitive environments. Access roads shall not traverse wetland areas.

40. Upon the completion of civil works, all access roads shall be ripped and rehabilitated.

41. Access roads shall be sprinkled with water at least five times a day in settled areas, and three times in unsettled areas, to suppress dust emissions.

A1.7 Blasting

42. Blasting activities shall not take place less than 2km from settlement areas, cultural sites, or wetlands without the permission of the SE.

43. Blasting activities shall be done during working hours, and local communities shall be consulted on the proposed blasting times.

44. Noise levels reaching the communities from blasting activities shall not exceed 90 decibels.

A1.8 Disposal of Unusable Elements

45. Unusable materials and construction elements such as electro-mechanical equipment, pipes, accessories and demolished structures will be disposed of in a manner approved by the SE. The Contractor has to agree with the SE which elements are to be surrendered to the Client's premises, which will be recycled or reused, and which will be disposed of at approved landfill sites.

46. As far as possible, abandoned pipelines shall remain in place. Where for any reason no alternative alignment for the new pipeline is possible, the old pipes shall be safely removed and stored at a safe place to be agreed upon with the SE and the local authorities concerned.

47. AC-pipes as well as broken parts thereof have to be treated as hazardous material and disposed of as specified above.

48. Unsuitable and demolished elements shall be dismantled to a size fitting on ordinary trucks for transport.

A1.9 Health and Safety

49. In advance of the construction work, the Contractor shall mount an awareness and hygiene campaign. Workers and local residents shall be sensitized on health risks particularly of AIDS.

50. Adequate road signs to warn pedestrians and motorists of construction activities, diversions, etc. shall be provided at appropriate points.

51. Construction vehicles shall not exceed maximum speed limit of 40km per hour.

A1.10 Repair of Private Property

52. Should the Contractor, deliberately or accidentally, damage private property, he shall repair the property to the owner's satisfaction and at his own cost. For each repair, the Contractor shall obtain from the owner a certificate that the damage has been made good satisfactorily in order to indemnify the Client from subsequent claims.

53. In cases where compensation for inconveniences, damage of crops etc. are claimed by the owner, the Client has to be informed by the Contractor through the SE. This compensation is in general settled under the responsibility of the Client before signing the Contract. In unforeseeable cases, the respective administrative entities of the Client will take care of compensation.

A1.11 Contractor's Environment, Health and Safety Management Plan (EHS-MP)

54. Within 6 weeks of signing the Contract, the Contractor shall prepare an EHS-MP to ensure the adequate management of the health, safety, environmental and social aspects of the works, including implementation of the requirements of these general conditions and any specific requirements of an EMP for the works. The Contractor's EHS-MP will serve two main purposes:

- For the Contractor, for internal purposes, to ensure that all measures are in place for adequate EHS management, and as an operational manual for his staff.
- For the Client, supported where necessary by a SE, to ensure that the Contractor is fully prepared for the adequate management of the EHS aspects of the project, and as a basis for monitoring of the Contractor's EHS performance.

55. The Contractor's EHS-MP shall provide at least:

- a description of procedures and methods for complying with these general environmental management conditions, and any specific conditions specified in an EMP;
- a description of specific mitigation measures that will be implemented in order to minimize adverse impacts;
- a description of all planned monitoring activities (e.g. sediment discharges from borrow areas) and the reporting thereof; and
- the internal organizational, management and reporting mechanisms put in place for such.

56. The Contractor's EHS-MP will be reviewed and approved by the Client before start of the works. This review should demonstrate if the Contractor's EHS-MP covers all of the identified impacts, and has defined appropriate measures to counteract any potential impacts.

A1.12 EHS Reporting

57. The Contractor shall prepare bi-weekly progress reports to the SE on compliance with these general conditions, the project EMP if any, and his own EHS-MP. An example format for a Contractor EHS report is portrayed below. It is expected that the Contractor's reports will include information on:

- EHS management actions/measures taken, including approvals sought from local or national authorities;
- Problems encountered in relation to EHS aspects (incidents, including delays, cost consequences, etc. as a result thereof);
- Lack of compliance with contract requirements on the part of the Contractor;
- Changes of assumptions, conditions, measures, designs and actual works in relation to EHS aspects; and
- Observations, concerns raised and/or decisions taken with regard to EHS management during site meetings.

58. It is advisable that reporting of significant EHS incidents be done "as soon as practicable". Such incident reporting shall therefore be done individually. Also, it is advisable that the Contractor keep his own records on health, safety and welfare of persons, and damage to property. It is advisable to include such records, as well as copies of incident reports, as appendixes to the bi-weekly reports. A sample format for an incident notification is shown below. Details of EHS performance will be reported to the Client through the SE's reports to the Client.

A1.13 Training of Contractor's Personnel

59. The Contractor shall provide sufficient training to his own personnel to ensure that they are all aware of the relevant aspects of these general conditions, any project EMP, and his own EHS-MP, and are able to fulfil their expected roles and functions. Specific training should be provided to those employees that have particular responsibilities associated with the implementation of the EHS-MP. General topics should be:

- EHS in general (working procedures);
- emergency procedures; and
- social and cultural aspects (awareness raising on social issues).

A1.14 Cost of Compliance

60. It is expected that compliance with these conditions is already part of standard good workmanship and state of art as generally required under this Contract. The item "Compliance with Environmental Management Conditions" in the Bill of Quantities covers this cost. No other payments will be made to the Contractor for compliance with any request to avoid and/or mitigate an avoidable EHS impact.

Example Format: EHS **Report**

Contract: **Period of reporting:**

EHS management actions/measures:

Summarize EHS management actions/measures taken during period of reporting, including planning and management activities (e.g. risk and impact assessments), EHS training, specific design and work measures taken, etc.

EHS incidents:

Report on any problems encountered in relation to EHS aspects, including its consequences (delays, costs) and corrective measures taken. Include relevant incident reports.

EHS compliance:

Report on compliance with Contract EHS conditions, including any cases of non-compliance.

Changes:

Report on any changes of assumptions, conditions, measures, designs and actual works in relation to EHS aspects.

Concerns and observations:

Report on any observations, concerns raised and/or decisions taken with regard to EHS management during site meetings and visits.

Signature (Name, Title Date):

Contractor Representative

4. Example Format: EHS Incident Notification

EHS Incident Notification
Provide within 24 hrs to the Supervising Engineer
Originators Reference No:.....
Date of Incident:..... **Time:**.....
Location of incident:.....
Name of Person(s) involved:.....
Employing Company:.....
Type of Incident:.....
Description of Incident:
Where, when, what, how, who, operation in progress at the time (only factual)
Immediate Action:
Immediate remedial action and actions taken to prevent reoccurrence or escalation
Signature (Name, Title, Date):.....
Contractor Representative

ANNEX 3: GRIEVANCE UPTAKE CHANNELS INFORMATION SHEET

GRIEVANCE UPTAKE CHANNELS

In spite of all the care planned for implementing this project, it is possible that some people may be affected, and will wish to complain. In such a case, a Grievance Redress Mechanism (GRM) will be provided. The Grievance Mechanism will ensure that the IUFMP is responsive to any concerns and complaints particularly from affected stakeholders and communities. In addition, the HSE Supervisor, who will be on site mostly, will be empowered to listen to, and escalate grievances that may be reported to him on the field, in the course of project implementation.

The following timeframe will apply:

- Written acknowledgement of receipt of the grievance: within 48 hours of receiving the grievance
- Proposed resolution: Immediately, with the knotty issues expected to be resolved within 3 days of receiving the grievance.

The GRM complaints form that will be provided for those who may wish to formally write in their grievances is provided below, while Figure 1 (also below) provides contact details for all grievances.

GRIEVANCE FORM

<table>
<tr><td colspan="2">Project: Dredging of Streams and Channels, and Clearing of Blocked Drains around Ibadan, Oyo State for 2018 by the Ibadan Urban Flood Management Project (IUFMP):
GRIEVANCE FORM</td></tr>
<tr><td colspan="2">INFORMATION ABOUT THE PERSON SUBMITTING THE GRIEVANCE</td></tr>
<tr><td colspan="2">We would like you to provide your name, address and email if possible, so we can keep you informed about future developments with the Project. However, if you wish to remain anonymous this is not a problem - please just enter ANONYMOUS in the box below– your grievance will still be considered by the IUFMP.</td></tr>
<tr><td>Name:</td><td rowspan="4">Internal use only: how was the grievance lodged:
□ In person
□ By Phone
□ At reading room
□ By Mail
□ By email
□ Other (please describe)
……</td></tr>
<tr><td>Date lodged:</td></tr>
<tr><td>Recorded by:
□ Person submitting grievance □ Other (please specify who)
……..</td></tr>
<tr><td>Address:</td></tr>
<tr><td>Email address:</td><td>Do you wish to be kept informed of Project developments? □ Yes □ No</td></tr>
<tr><td>Neighbourhood/Locality:</td><td rowspan="2">Internal use only: Confirm that the Grievance has been acknowledged and a copy of this form provided to the complainant?
□ Yes. Date: ……</td></tr>
<tr><td>Signature of Complainant confirming receipt of completed Grievance Form copy:</td></tr>
<tr><td colspan="2">INFORMATION ABOUT GRIEVANCE</td></tr>
<tr><td colspan="2">Describe the Grievance:</td></tr>
<tr><td colspan="2">INTERNAL USE ONLY: RECORDING AND RESPONSE</td></tr>
</table>

<table>
<tr><td colspan="2">Grievance Reference Number:</td><td colspan="2">Date logged in Grievance Log</td></tr>
<tr><td colspan="2">Name of staff member recording the grievance:</td><td colspan="2" rowspan="2">Copies provided to:
□ Responsible party's office, (Original)
□ Person lodging grievance/ Complainant (Copy 1)
□ IUFMP (Copy 2)</td></tr>
<tr><td colspan="2">Action required (to be updated as needed as the grievance is progressed):</td></tr>
<tr><td colspan="4">Deadline for reporting back to Complainant on progress (to be updated as necessary):

Date: ……</td></tr>
<tr><td colspan="4">INTERNAL USE ONLY: STATUS OF GRIEVANCE</td></tr>
<tr><td>Date:</td><td colspan="3">Status of Grievance (add further rows as needed):</td></tr>
<tr><td>Grievance Closed:</td><td>Date:</td><td colspan="2">Signed off:</td></tr>
</table>

Figure 1: Contact Details for GRM

ANNEX 4: TRAFFIC MANAGEMENT PLAN (TMP)

TRAFFIC MANAGEMENT PLAN FOR PROPOSED DREDGING OF STREAMS/CHANNELS AND CLEARING OF BLOCKED DRAINAGES AT SELECTED LOCATIONS IN IBADAN

1.0 BACKGROUND AND INTRODUCTION

This traffic management plan has been prepared for the specific purpose of handling potential traffic issues that may be associated with the proposed dredging of streams and channels. The Traffic Management Plan (TMP) became necessary in view of the fact that at various stages of the proposed dredging and clearing of drains, there is a high likelihood for disruption of normal traffic to occur, if project activities are not properly planned and undertaken. This document therefore highlights the areas and periods where traffic impacts are anticipated and the management plans that will apply for minimizing traffic impacts.

2.0 OVERVIEW OF AREAS WHERE TRAFFIC ISSUES ARE ANTICIPATED

The proposed dredging and clearing of blocked drains will take place around 12 different Local Government Areas (LGAs) of Oyo State, with most of them centred around Ibadan and its outskirts. The LGAs are: Ibadan North, Ibadan North-East, Ibadan North-west, Ibadan South-East, Ibadan South-West, Iddo, Oluyole, Egbeda, Akinyele, Lagelu, Afijio and Ona Ara.

Because all the channels planned for dredging are not navigable, it is impossible to mobilize dredgers to site using the waterways. Therefore, they will have to be mobilized to site by road. The use of large haulage trucks is therefore inevitable. Mobilizing these dredgers to site by trucks is bound to have some traffic impacts, which need to be planned for.

Similarly, virtually all the drains planned for clearing are located in built up residential, commercial or mixed areas. Clearing the drains may infringe on regular usage of the roads, during clearing and afterwards (if materials cleared from the drains are dumped by the roadside,

As such, during these various stages, there is a need to put in place a comprehensive plan to effectively manage transportation and traffic in the various areas for the project duration. Therefore, a detailed TMP is presented in the next section of this document,

3.0 TRAFFIC MANAGEMENT PLAN

The management of traffic during the various activities mentioned above is premised on a series of activities. These activities will minimize, if not completely eliminate the occurrence of disruptions to normal traffic flow in areas where works are taking place. The plans will be designed for the various phases/activities for this project and will consist of the following:

3.1 Traffic Management During Mobilization and Demobilization of Dredgers to the Various Streams/Channels

In order to effectively manage traffic during mobilization of dredgers to the various sites, the following shall be undertaken:

a. Dredging contractor shall be mandated to submit a Mobilization and Demobilization Plan, which shall indicate the origin and destination of the dredger they plan to use for the works.
b. The plans shall be discussed and approved by the Oyo State Transport Management Agency (OYTRMA)
c. Mobilization will only take place during off peak traffic periods. It is therefore necessary to ensure that the OYTMA gives inputs on peak and off-peak periods in the various areas from which the various dredgers will mobilize and the routes they will follow to their work sites
d. Officers of the OYTMA shall be co-opted to coordinate traffic movement during mobilization and demobilization

3.2 Traffic Management During Dredging of Channels/Streams

During the dredging activities, tipper trucks may be mobilized to evacuate dredge spoils to designated dump sites in areas where the spoil are mostly municipal solid wastes. This is particularly applicable to places like Sooko Akobo Ojurin and Onilu Stream, Moniya. If their movement is not properly planned, it could result in disruption of regular traffic in the various areas. Therefore, the following measures shall be instituted.

a. The movement of tipper trucks to and from dredging sites and the dump sites shall be planned for off peak periods in each location

b. No truck movement will be allowed during peak traffic periods. To this end, night movement of trucks, where feasible, shall be encouraged
c. Adequate signage such as those in Appendix 1 to this document shall be provided at regular intervals to work sites, starting from a minimum of 50ms from the site
d. Personnel of the OYTMA shall be drafted to participate in traffic management activities
e. Strict Speed Limits shall be enforced on all truck drivers working on this project and non-compliances shall be met with very strict punishment, which may include eviction of infringing driver(s) from the work site

3.3 Traffic Management Plan for Clearing of Blocked Drainages

Most of the drainages to be cleared are located in built up areas and are too shallow and narrow to be cleared mechanically, thus manual clearing will be used extensively. To this end, the following actions will be taken during this phase of works

a. Adequate signage shall be provided at strategic points before and after work zones
b. Personnel of the OYTMA shall be co-opted to oversee traffic movement around work sites
c. Work periods at these locations shall be timed for off-peak periods
d. Where feasible, night works for clearing of drains shall be greatly encouraged, to minimize or completely avoid disruption of regular traffic.
e. At Market areas, night clearing works will be applied, or during the weekly market sanitation exercise. There will be NO WORK during market hours.

3.4 Traffic Management During Evacuation of Wastes from Cleared Drains to Dump Sites.

Materials cleared from the drains cannot be dumped by the road side as they could be washed back into the drains or constitute blockage to existing road traffic, thus obstructing free flow of traffic. As such they must be carted away to designated dump sites. During carting away, the following measures shall be instituted:

a. The movement of tipper trucks to and from areas where clearing of drains is taking place and the dump sites shall be planned for off peak periods in each location

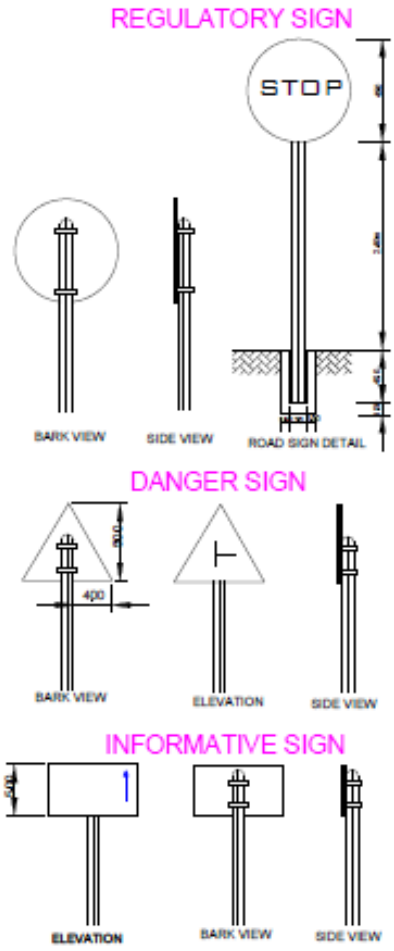
b. No truck movement will be allowed during peak traffic periods. To this end, night movement of trucks, where feasible, shall be encouraged
c. Adequate signage such as those in Appendix 1 to this document shall be provided at regular intervals to work sites, starting from a minimum of 50m from the site
d. Personnel of the OYTMA shall be drafted to participate in traffic management activities
e. Strict Speed Limits shall be enforced on all truck drivers working on this project and non-compliances shall be met with very strict punishment, which may include eviction of infringing driver(s) from the work site

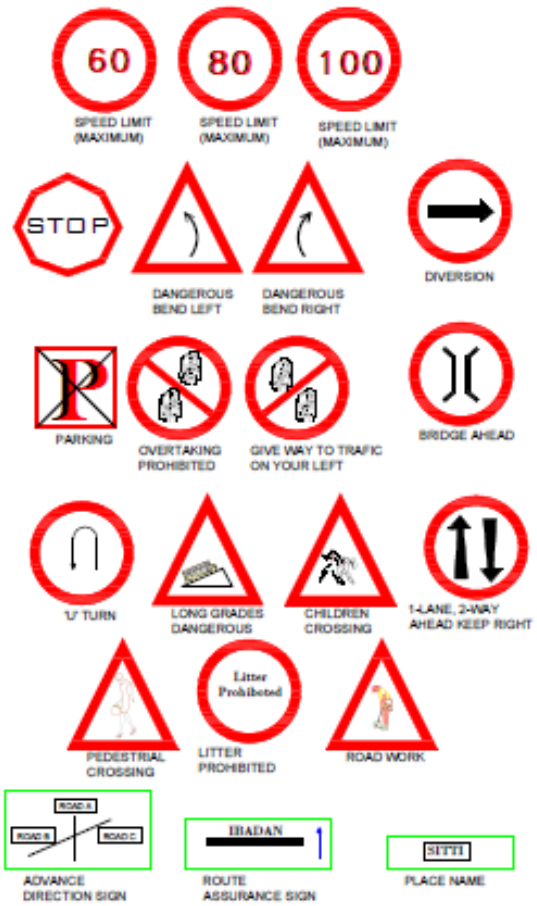
4.0 Conclusion

While it is essential that the planned works are undertaken, to alleviate flooding issues in Ibadan, it is equally crucial to ensure that the activities are undertaken in a sustainable manner, which does not affect existing traffic and transportation activities. The Traffic Management Plan (TMP) shall be instituted to manage traffic during works for this project. Where necessary, other agencies such as the Traffic Division of the Nigeria Police Force, and the Federal Road Safety Corps (FRSC) shall be co-opted to support traffic control during works.

It is believed that the above plans will ensure the project works are undertaken without impacts on traffic movements.

Appendix 1: Sample Road Signs that can be used at Work Sites






VectorStock


CAUTION
MEN AT
WORK

ANNEX 5: WASTE MANAGEMENT PLAN

WASTE MANAGEMENT PLAN FOR THE PROPOSED DREDGING OF STREAMS AND CHANNELS, AND CLEARING OF BLOCKED DRAINS AROUND IBADAN, OYO STATE

1.0 BACKGROUND

The Ibadan Urban Flood Management Project (IUFMP) is desirous of undertaking the dredging of streams and channels around Ibadan, as well as clearing/desilting of blocked drainages within and around the city, to alleviate flooding issues during the rainy season of year 2018. The proposed works will involve the generation of large quantities of dredge spoil, silt materials and solid waste.

In view of the importance of waste management for the sustainability of the proposed activities, it was deemed necessary to develop a waste management plan that will ensure that all wastes generated as a result of the planned project are properly handled and disposed of. This document therefore presents an overview of the plan for managing wastes emanating from the planned dredging and clearing of blocked drainages.

2.0 TYPES OF WASTES ANTICIPATED

Generally, wastes anticipated to emanate from the proposed activities will be in two parts:

a. Direct Wastes: Wastes that will be generated directly as a result of the planned activities. These will be largely silt materials/dredge spoil mixed with solid wastes (paper, cans, polythene bags, textile materials, etc). These materials will be relatively large in quantity across the designated work areas.
b. Indirect Wastes: These are mostly hazardous materials like waste oils, spent oil filters, etc. and domestic wastes such as tins, cans, waste food, etc.

All of these wastes must be properly handled and disposed, to engender sustainability.

3.0 PLANS FOR MANAGEMENT OF SOLID WASTES FROM DREDGING AND BLOCKED DRAINAGE CLEARING WORKS FOR 2018

Waste management is premised on certain principles, which include avoidance, minimization, reuse/recycle, and proper disposal. For the current project, waste generation shall be limited to the lowest possible.

3.1 Avoidance/Minimization

It is impossible to avoid generation of wastes since the wastes must, of necessity, be generated, to achieve the desired goal of creating adequate channels for floodwater runoff, and thus prevent flooding and banks overflow. To this effect, dredging will only take place around designated points and will not exceed such areas, in order to limit the volume of wastes generated. The supervising engineer attached to the project shall ensure that dredging does not take place outside of designated areas. This will ensure that dredging activities are limited only to designated areas, thus minimizing the generation of wastes

3.2 Disposal

The wastes that will be generated from the dredging/drain clearing activities cannot be reused without extensive treatment and/or conversion, therefore, the most crucial aspect of waste management for the purpose of this project is proper disposal. Spoil and other wastes generated from dredging of channels/streams and the clearing of blocked drainages shall be dumped a minimum of 5m from the river bank. The spoils will be dropped in discontinuous heaps along the banks, with adequate care taken to avoid destruction of farmlands, blocking of natural runoff routes and blocking of footpaths to the stream/channel. Apart from ensuring that wastes removed from the drainage are not washed back into the channel (preventing quick re-siltation), it will also ensure that other issues associated with waste generation are avoided.

However, in cases where a lot of the wastes (more than 50%) are municipal solid wastes such as textile and leather materials, tins and cans, polythene, plastics, etc., rather than silt, they will have to be carted away to recommended disposal sites particularly if such locations are close to residential/commercial areas. Basically, this type of situation will occur around locations such as Akobo Ojurin, Aleshinloye Market, Iyaganku, etc.

There are four (4) designated/approved dump sites around Ibadan. An overview of the locations and brief descriptions of these sites are presented in Table 1 below, while figure 1 shows the relative locations of the different dump sites.

Table 1: Location and Description of Municipal Solid Waste dumpsites in Ibadan

S/N	Site Name	Coordinates	General Description
1	Aba Eku	N07°19 E03° 59	The Aba-Eku (also referred to as Afonfura dumpsite) is located along Amuloko-Akanran road at Aba Eku village in Ona-Ara LGA and covers an area of over 10 hectares. The dumpsite is in operation since 1994. The site is located on a hillside, declining towards the northeast, and is surrounded by residential houses on all sides.
2	Ajakanga	N07°18' E03°50'	Ajakanga dumpsite was opened in 1997 and is located over an approximately 10 hectares of land off Odo-Ona Elewe road. The site is located on a hilltop, partly surrounded by residential houses and loose dwellings with gardens, located around the foot of the hills to the north, east and west. Large quantities of poultry waste from

S/N	Site Name	Coordinates	General Description
			chicken farms are also disposed at Ajakanga.
3	Lapite	N07°34 E03°54	Lapite dumpsite is situated over approximately 10 hectares of land at Moniya, along Ibadan-Oyo road. This facility was opened in 1998. The site is located in a rural, agricultural and woodland area with only very few residential houses nearby. The topography is slightly undulating and almost flat at the dumpsite.
4	Awotan	N07°27 E03°50	Awotan dumpsite is situated along Akufo-Ibadan Polytechnic road over an approximately 15 hectares of land area. It was opened in 1998. Currently, approximately half of the land is being used for refuse dumping. The site is located on a hilltop, slightly tilted, and surrounded by residential houses and loose dwellings with gardens, located around the foot of the hills on all sides.

Figure 1: Relative locations of designated disposal sites around Ibadan

Given the foregoing, a cost-effective disposal plan, based primarily on contiguity has been evolved for wastes generated from the dredging and blocked drain clearing project for 2018. This plan involves the disposal of wastes from the proposed activities at the waste dumps closest to the work sites. An overview of the proposed disposal location for solid wastes for the dredging sites is shown in Table 2 below.

Table 2: Waste Dumps around Ibadan and Designated for dumping of wastes from this project

SN	Dredging site	LGA	Dumpsite Location
1	Adeniran Stream	Ona Ara	Aba-Eku
2	Adukale Stream	Iddo	Awotan

3	Ajidun River, New Ife road, Ibadan	Akinyele	Lapite
4	Ajongolo Stream	Lagelu	Lapite
5	Alaguntan stream	Iddo	Awotan
6	Alawaye Stream	Ona Ara	Aba-Eku
7	Basorun Estate	Ibadan North	Aba-Eku
8	Bethel Estate stream	Ibadan South West LGA	Ajakanga
9	Dalegan Stream, Omi River	Egbeda	Aba-Eku
10	Farayola Stream	Ibadan North	Aba-Eku
11	Farinto Stream, Kute	Lagelu	Lapite
12	Fatosi Stream	Ona Ara	Aba-Eku
13	Gbaro Ajimosun stream	Lagelu	Lapite
14	Idiagbon stream	Egbeda	Aba-Eku
15	Idi-Osan	Egbeda	Aba-Eku
17	Isokan Stream	Egbeda	Aba-Eku
18	Lami Stream	Ona Ara	Aba-Eku
19	Moga Stream	Ona Ara	Aba-Eku
20	Odeku Stream	Oluyole	Ajakanga
21	Odo Osun	Oluyole	Ajakanga
22	Okewusi Stream	Egbeda	Aba-Eku
23	Olope woroko stream	Ibadan South east	Ajakanga
24	Oloro Stream	Egbeda	Aba-Eku
25	Olorunsogo Estate Stream	Egbeda	Aba-Eku
26	Orukanga Stream	Lagelu	Lapite

27	Sasa Alapata Stream	Akinyele	Lapite
28	Shalom Estate Stream	Iddo	Awotan
29	Yokele-Tpekun stream	Ona Ara	Aba-Eku
Drain Clearing Sites			
30	Bashorun-Bode Wasinmi road, Ibadan	Ibadan North	Aba-Eku
31	Nihort – Ile Titun road, Ibadan	Ibadan South-West	Ajakanga
32	Nihort – Pekun road, Ibadan	Ibadan South-West	Ajakanga

4.0 **CONCLUSION**

The waste management plan iterated above has been prepared with a view to ensuring that ALL wastes generated from the clearing of blocked drains are effectively disposed. For the dredging activities, most wastes will be carefully dumped by the channel bank. However, where there are situations of excessive solid wastes over dredge spoil/silt, they will be carted away also. The effectiveness of the plan is premised on a number of factors, including, prompt and timely carting away of the wastes and using the right materials and equipment. To this end, waste disposal will be carried out only by contractors certified/approved by the Oyo State Waste Management Authority (OYOWMA). In addition however, adequate supervision shall be provided by the PIU and the Oyo State Ministry of Environment and Water Resources.

ANNEX 6: PHYSICAL AND CULTURAL RESOURCES MANAGEMENT PLAN

PHYSICAL AND CULTURAL RESOURCES MANAGEMENT PLAN FOR THE PROPOSED DREDGING OF STEAMS AND CHANNELS, AND CLEARING OF BLOCKED DRAINS AROUND IBADAN, OYO STATE

1.0 INTRODUCTION

This document has been prepared to guide the activities of the contractors that will handle the dredging of streams and channels around Ibadan, for flood control. The aim of the document is to provide guidelines for the handling of chance finds of physical and/or cultural resources.

2.0 PROCEDURE FOR HANDLING CHANCE FINDS

Based on observations in the course of field/site visits for the purpose of preparing this ESMP document, it is not expected that any cultural resources will occur within the work zones. However, the following measures shall be applicable, in the event of a "chance find".

1. Upon discovery of a cultural resource, all works around the site shall stop immediately
2. The supervising engineer and the HSE supervisor shall be contacted with immediate effect.
3. The above shall establish contact with the Oyo State Ministry of Information and culture, for further action.
4. No further works shall be done at the site until all necessary precautions have been taken and an all-clear is issued by the concerned authorities.

ANNEX 7: SOCIAL BASELINE DATA SHEET

IBADAN URBAN FLOOD MANAGEMENT PROJECT
2019 EMERGENCY DREDGING SUB-PROJECT
SOCIAL BASELINE DATA SHEET (SBDS)

	Social Assessment Parameter	Value
1	Site Name	
2	LGA	
3	Existing Communal Leadership Structure	Baale, Mogaji, CDA, Landlord Association etc
4	Settlement Type 1	Urban Peri-Urban Rural
5	Settlement Type 2 Indigenous Settler Mixed	
6	Predominant occupations in project area	List top 3
7	Condition of main river crossing	*What is the physical condition of the main crossing serving as the centrepoint of proposed dredging activities?* 1. Good and passable 2. Bad but passable 3. Good and Not passable 4. Bad and Not passable
8	Are there access points upstream and downstream of the crossing that will be breached during dredging activities?	Yes (*if yes, state how many)* No
9	Are there farms on the sides of the river?	Yes (*if yes, state how type and number)* No
10	Are there fish ponds?	Yes (*if yes, state how type and number)* No
11	Proximity of dredging works to: Schools Health Centre Market places Worship places *(along/around the stream)* Electric poles Telecom cables/facilities Water pipes	Tick the appropriate one
12	Economic activities along the stream Fishing Sand mining Water abstraction Irrigation	
13	Is there evidence of dumping of waste around the stream?	Heavy Minimal Non-existent
14	What is the pattern of vehicular traffic on the road on which the crossing stands?	Commercial cars Heavy duty lorries/tippers Private cars
15	OTHER ISSUES	

ANNEX 8: PICTURES OF STAKEHOLDERS CONSULTATION FORUM HELD FOR 2019 EMEMRGENCY DREDGING AND DESILTING EXERCISE

ANNEX 9: ATTENDANCE AT JOINT STAKEHOLDER CONSULTATION FORUM HELD ON 8TH MAY, 2019.

IBADAN URBAN FLOOD MANAGEMENT PROJECT

Public Consultation Meeting with Stakeholders on 2019 Emergency Dredging

Date: Wednesday, 8th May, 2019 Venue: Niger Hall, Ibadan Business School, Bodija, Ibadan, Oyo-State

ATTENDANCE SHEET

S/N	NAME	Gender (M/F)	ORGANISATION/ COMMUNITY	DESIGNATION	PHONE NO/EMAIL	SIGNATURE
1	Rev. Michael O. Afamy	M	Peace Estate Aregede Atiba	Community Leader	08034099820	[signature]
2	MR. YUSUFF AKINLOLU E	M	MERCYLAND ESTATE [illegible]	SECT.	08038023579	[signature]
3.	MR. AKINADE OLUFEMI. S.	M	[illegible] COMMUNITY [illegible]	CHAIRMAN	[illegible]	[signature]
4	Mr Abiodun J. Akin	M	[illegible]	Sect	0803556078[illegible]	[signature]
5	Mr Adebayo S-A	M	[illegible] Youth Rep	Youth rep	08039059489	[signature]
6	[illegible]	M	[illegible]	Youth [illegible]	08060770790	[signature]
7	[illegible] Segun	M	[illegible]	member	0705[illegible]	[signature]
8	Odulana-Funmilade	M	Odo Oba -	Member	0805803[illegible]	[signature]
9	Olusola-Taiwo, Michael	M	Adekunle & [illegible]	Member	08029692130	[signature]
10	Adepoju Salco	M	Olodo / Alero River [illegible]	Chairman	0[illegible]3351485	[signature]
11	MR. Kegoure S.A.	M	Olode alero River Basin Community	Member	08182066482	[signature]
12	Mrs Animasaun N. O	F.	[illegible] Community	Member	08053351066	[signature]
13	Olawuyi Joshua A	M.	Bethel Estate Car Wash Area	Secretary	08033954614	[signature]
14	Mrs Christiana Okoh	F	[illegible]	Member	[illegible]	[signature]
15	Mrs Falana Tojin [illegible]	F	[illegible]	Member	07036987672	[signature]

IBADAN URBAN FLOOD MANAGEMENT PROJECT

Public Consultation Meeting with Stakeholders on 2019 Emergency Dredging

Date: Wednesday, 8th May, 2019 Venue: Niger Hall, Ibadan Business School, Bodija, Ibadan, Oyo-State

ATTENDANCE SHEET

S/N	NAME	Gender (M/F)	ORGANISATION / Community	DESIGNATION	PHONE NO/EMAIL	SIGNATURE
16	Funmilayo [illegible]	F	[illegible]	Member	08564420797	[illegible]
17	Rev Raymond Kolawole Oyegbile	M	Odo-dudu [illegible]	Member	08057888087	[illegible]
18	Akinmolayan Olusegun	M	Ododudu Fotoko	Treasurer	[illegible]	[illegible]
19	Mowemi Agnes Aina	F	Ifelapulo/Magunba community	Treasurer	08060947678	[illegible]
20	Adeyemo Davies O.	M	Peace Embassy Canaan Adeoba	Chairman Project	[illegible]	[illegible]
21	Saheed Adekunle	M	Magunton Community	Member	08140913698	[illegible]
22	Enoch Oluwafemi	M	Olkewule	Sec. Gen.	[illegible]	[illegible]
23	ADEDEJI ADEOYE	M	Okewole	Member	08137022724	[illegible]
24	Amosu Adebiyi	M	Okewole	Member	07062208486	[illegible]
25	Oyeprde Tolulope	M	Olode	Member	08062490982	[illegible]
26	Oyebola S. Afao	M	Irewole Community [illegible]	Member	08064478967	[illegible]
27	Alugja Taye Mufutai	F	Olorunsogo Oluwo	Women Rep.	08056100595	TAYE
28	Afelab Olusegi Emmanuel	M	Ni-ayeon Sunlere [illegible]	Youth	08028617572	[illegible]
29	Idiyat Yekini	F	Ni-ayeon Sunlere [illegible]	Women Rep.	070 34 73384	[illegible]
30	Ologunja Adeola	M	Adekanle village Apete [illegible]	Sec	08066437103	[illegible]

IBADAN URBAN FLOOD MANAGEMENT PROJECT

Public Consultation Meeting with Stakeholders on 2019 Emergency Dredging

Date: Wednesday, 8th May, 2019 **Venue:** Niger Hall, Ibadan Business School, Bodija, Ibadan, Oyo-State

ATTENDANCE SHEET

S/N	NAME	Gender (M/F)	ORGANISATION / COMMUNITY	DESIGNATION	PHONE NO/EMAIL	SIGNATURE
31	M.O Ojelade	M	Asipo Oleyo	Chairman	08033598868	[signature]
32	Olatemi Nathaniel	M	Ifesowapo Isokan	Chairman	0807455441	[signature]
33	Ridwan Tawa	F	Ifesowapo	Women Rep	08078990757	T-A
34	Busari Ayinde	M	Heledum Estate	Secretary	0805586[illegible]	[signature]
35	Ali M. Lawal	M	Heledum Estate	Chairman	08059667192	[signature]
36	AFOLABI REDWAN ADEBAYO	M	OLODE/OLOKO word to river community	Youth Member	07064534490	[signature]
37	Oyewole Rebecah Folasade	F	Community	Secretary	08156385657	[signature]
38	ADEWOLE IGE	M	Ashipa Youth forum	SEC	08064123653	[signature]
39	Fasoyin Oladimeji	M	Bethel Estate	Chairman	08033727446	[signature]
40	FATUSIN JOEL O	M	Bethel Estate	Youth Member	08033465417	[signature]
41	Ogunde S. Olabisi	F	Foworogun	Woman	08031370	[signature]
42	Adeyemo Sayo	F	Fororogun	Member	08038569899	[signature]
43	K.C Oshinbote	M	ASIPA Ojoola Estate	SECRETARY	08162977216	[signature]
44	Adedeji Tubosun	M	Odoolodu Former Chairman	Former Chairman	08057447772	[signature]
45	Wahab Adewale	M	Alagutu Alogun Olopomewa	Chairman	08039136432	[signature]

IBADAN URBAN FLOOD MANAGEMENT PROJECT

Public Consultation Meeting with Stakeholders on 2019 Emergency Dredging

Date: Wednesday, 8th May, 2019 **Venue:** Niger Hall, Ibadan Business School, Bodija, Ibadan, Oyo-State

ATTENDANCE SHEET

S/N	NAME	Gender (M/F)	ORGANISATION / COMMUNITY	DESIGNATION	PHONE NO/EMAIL	SIGNATURE
61	Afolabi Adekunle O.	M	Afolabi Komolafe Agbofuti Ltd	Chairman	08038229155	[signature]
62	Mr Olalere Jimoh	M	ISEG	member	09037727	[signature]
63	Mrs Abegunrin E. Adejoke	F	Apatan	Ass. Soc	08036671961	[signature]
64	Musibau Oyesola	M	Agbowo	Chairman	08073002888	[signature]
65	Alhaji Kasali Iyanda	M	✓	✓	08060765872	[signature]
66	Miss M.O Amore	F	✓	✓	0805515296	[signature]
67	Mr Olayiwola Olakunle	M	Abola Ile-tuntun Nehort Area	Member	08030434201	[signature]
68	Mr Rahmon Jubril	M	Abaeh Iletun	Member	08033711064	[signature]
69	Major ROA Salawu	M	Salawu St	Com Leader	08037893449	[signature]
70	Iraolaji Akinlote Ridwan	M.	Mercy land Estate Apata	Community Leader	08038604085	[signature]
71	Olawumi Egitayo A	M.	Mercyland Est	member	08144329800	[signature]
72						
73						
74						
75						

ANNEX 10: CODE OF CONDUCT FOR CONTRACTOR STAFF FOR IMPLEMENTATION OF ENVIRONMENTAL, SOCIAL, HEALTH AND SAFETY (ESHS) REQUIREMENTS OF CIVIL WORKS

FOR INDIVIDUAL EMPLOYEE

I, _____ *(name of employee)*, mitigating the environmental and social risks of the activities of the firm in the immediate project influence area in an integral component of my work responsibilities. Deliberate acts of non-compliance constitute acts of gross misconduct and are therefore grounds for sanctions, penalties or termination of employment. All forms of non-compliance to ESHS are unacceptable either on the work site, neighbouring project communities, or at worker's camps.

Specifically, I agree that while working on projects of IUFMPI will:

i. Maintain conflict-free relationships with residents of project areas *when such relationships and interactions become necessary.*

ii. Study and understand all documents that have been prepared by the client and the contractor firm addressing the environmental and social impacts of construction and construction-related activities

iii. Attend all scheduled ESHS trainings and meetings including induction/kick-off trainings, toolbox talk meetings, refresher trainings e.t.c.

iv. Attend and actively partake in training courses related to ESHS and specifically on Community Relations, HIV/AIDS, GBV and CAE as requested by my employer.

v. Comply with all ESHS site instructions provided by supervising engineer and contractor staff

vi. Report all accidents and incidents to site manager within 1 hour of occurrence by conventional or electronic means

vii. Provide information of the risk of coming within the proximity of areas where injurious activities are taking place of such potential for injuries

viii. Ensure that work areas (for which I have responsibility) are properly cordoned off and inaccessible to unprotected persons

ix. Ensure the use of Personal Protective Equipment (PPE) related to each level of construction works that I may be involved with at all times

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

xi. Not use language or behaviour towards women, children or men that is inappropriate, harassing, abusive, sexually provocative, demeaning or culturally inappropriate.

xii. Report through the GRM or to my manager every conflict or disagreement with other workers, or community residents.

Specifically, with regard to Sexual relations, I also covenant as follows;:

i. Not participate in sexual activity with children—including grooming or through digital media. Mistaken belief regarding the age of a child and consent from the child is not a defence.

ii. Not engage in sexual favours or other forms of humiliating, degrading or exploitative behaviour.

iii. Not have sexual interactions with members of the communities surrounding the work place and worker's camps that are not agreed to with full consent by all parties involved in the sexual act. This includes relationships involving the withholding or promise of actual provision of benefit (monetary or non-monetary) to community members in exchange for sex—such sexual activity is considered "non-consensual" within the scope of this Code.

iv. Not participate in sexual activity with children—including grooming or through digital media. Mistaken belief regarding the age of a child and consent from the child is not a defence.

v. Not engage in sexual favours or other forms of humiliating, degrading or exploitative behaviour.

vi. Not have sexual interactions with members of the communities surrounding the work place and worker's camps that are not agreed to with full consent by all parties involved in the sexual act. This includes relationships involving the withholding or promise of actual provision of benefit (monetary or non-monetary) to community members in exchange for sex—such sexual activity is considered "non-consensual" within the scope of this Code.

vii. Wherever possible, ensure that another adult is present when working in the proximity of children.

viii. Not invite unaccompanied children into my home, unless they are at immediate risk of injury or in physical danger.

ix. Not sleep close to unsupervised children unless absolutely necessary, in which case I must obtain my supervisor's permission, and ensure that another adult is present if possible.

x. Use any computers, mobile phones, or video and digital cameras appropriately, and never to exploit or harass children or to access child pornography through any medium (see also "Use of children's images for work related purposes").

xi. Refrain from physical punishment or discipline of children.

xii. 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.

xiii. Comply with all relevant local legislation, including labour laws in relation to child labour.

I understand that it is my responsibility to use common sense and avoid actions or behaviour that could be construed as GBV or CAE or breach this code of conduct. I do hereby acknowledge that I have read the foregoing Code of Conduct, do agree to comply with the standards contained therein and understand my roles and responsibilities to prevent and respond to GBV and CAE. I understand that any action inconsistent with this Code of Conduct or failure to take action mandated by this Code of Conduct may result in disciplinary action and may affect my ongoing employment.

Signed by _____
(Employee)
Title: _____
Date: _____

Signed by _____
(Employer/Manager)
Title: _____
Date: _____

ANNEX 11: TERMS OF REFERENCE FOR THE INDEPENDENT ESHS SUPERVISOR

IBADAN URBAN FLOOD MANAGEMENT PROJECT (IUFMP)
TERMS OF REFERENCE (TOR) FOR THE INDEPENDENT ENVIRONMENTAL SOCIAL HEALTH AND SAFETY (ESHS) SUPERVISOR FOR 2019 DREDGING SITES

1.0 BACKGROUND INFORMATION

The World Bank is supporting the Oyo State Government to implement the Ibadan Urban Flood Management project (IUFMP) that aims at developing a long-term flood risk management framework by initiating risk assessment, community awareness, and providing enough flexibility in the project design to make changes based on learning. The project also supports capacity building for flood risk management in the city of Ibadan. It reinforces Oyo State government's early warning and response capabilities and leverages existing World Bank projects in Oyo State in support of the IUFMP.

1.1 Brief Description of Oyo State

Oyo State is one of the 36 States of the Federal Republic of Nigeria. It came into existence with the break-up of the old Western State of Nigeria during the state creation exercise in 1976 and it originally included Osun State, which was created out of it in 1991. Oyo State is homogenous, mainly inhabited by the Yoruba ethnic group who are primarily agrarian, but have a predilection for living in high density urban centres.

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Figure 1: Map of Nigeria Indicating Oyo State

1.2 Brief Description of Ibadan

Ibadan is located in south-western Nigeria. It is the capital of Oyo State, and is reputed to be the largest indigenous city in Africa, south of the Sahara. Ibadan had been the centre of administration of the old Western Region, Nigeria since the days of the British colonial rule. It is situated about 125 *km* inland from Lagos, and its population is estimated to be about 2,500,000 according to 2006 estimates. The principal inhabitants of the city are the Yoruba.

1.3 PROPOSED WORKS:

As part of its mandate, the IUFMP intends to carry out emergency dredging of streams and channels and clearing of silted drains across Ibadan city. Similar activities were undertaken in 2017 and 2018. For 2019, a total of 32 streams and drains have been identified across the city of Ibadan. A list of the sites and their relative locations is presented in Tables 1-3 below

Table 1: Details on Locations of Sites for Lot 1

S/N	DESCRIPTION	LAT.	LONG.	ALT(m)	Width (m)
1	Dredging of Olorunsogo Estate stream, Ibadan	7.3744249	4.0294235	198	6
2	Dredging of Odeku stream, Bota area, Oluyole, Ibadan	7.3317644	3.8230619	189	6
3	Dredging of Oloro stream Tributary, Olode, Adegbayi, Ibadan	7.3849939	4.0040277	186	6
4	Dredging of Odo-Osun stream, Ashipa, Oluyole, Ibadan	7.3268164	3.8464525	180	6
5	Dredging of Idi-Osan stream, Kumapayi, Ibadan	7.4179128	4.0190336	194	7
6	Dredging of Dalegan river, Iyana Agbala, Adegbayi, Ibadan	7.354025	4.0060007	162	8
7	Dredging of Isokan stream, Oluwo, Ibadan	7.3564081	4.0093665	165	6
8	Dredging of Okewusi Stream, Oluwonla area, Adegbayi	7.3683816	4.0227801	169.4	6
9	Dredging of Yokele-pekun stream, Oluyole	7.3896	3.943	263	5
10	Dredging of Bethel Estate stream, Bode Igbo Area, Abeokuta Road	7.398	3.7855	203	6

Table 2: Details on Locations of Sites for Lot 2

S/N	DESCRIPTION	LAT.	LONG.	ALT(m)	Width (m)
1	Dredging of Ajidun River, New Ife road, Ibadan	7.447827	3.959935	252	6
2	Dredging of Farayola stream, Bodija, (Major Salawu street) Ibadan	7.4413	3.915368	229	6
3	Dredging of Alapata stream, Shasha, Moniya area, Ibadan	7.485514	3.911815	221	6
4	Dredging of Ajogonlo stream, Akobo/Yawuri area, Ibadan	7.443069	3.967896	235	6
5	Dredging of Bashorun stream, Bode Wasimi area, Ibadan	7.408394	3.939504	246	6
6	Clearing of blocked drain along Bashorun-Bode Wasinmi road, Ibadan	7.409747	3.936619	255	0.6
7	Clearing of blocked drain along Nihort – Ile Titun road, Ibadan	7.407421	3.841816	192	1
8	Clearing of blocked drain along Nihort – Pekun road, Ibadan	7.403361	3.841183	201	1
9	Dredging of Orunkanga Stream, Apatupu, Elewuro Road Akobo Ibadan	7.462463	3.972367	239	6
10	Dredging of Farinto stream powerline, Kute area	7.441747	3.985853	223	6
11	Dredging of Adukanle Stream Agbofieti	7.41196	3.816751	202	
12	Dredging of Gbaro Ajimosun stream, Lagelu	7.3033	3.9321	202	6

Table 3: Details on Locations of Sites for Lot 3

S/N	DESCRIPTION	LAT.	LONG.	ALT(m)	Width (m)
1	Dredging of Moga stream, Olunloyo, Ibadan	7.346848	3.958138	211	6
2	Dredging of Alawaye stream, Olorunsogo area, Ibadan	7.342362	3.952538	198	5
3	Dredging of shalom stream, idi ishin, ile titun area, ibadan	7.416075	3.829575	203	6
4	Dredging of Adeniran stream, Gbaremu, Gangansi area, Ibadan	7.369828	3.957824	233	6
5	Dredging of Alaguntan stream, Ologuneru-Eleyele road, Ibadan	7.43124	3.81889	228	6
6	Dredging of Ifesowapo stream, Babanla, Oremeji area, Ibadan	7.365681	3.943282	226	6
7	Dredging of Fatusi stream, Olomi, Olunde area, Ibadan	7.306685	3.933076	189	6
8	Dredging of Idi-Agbon stream, Laogun, Old Ife Road, Ibadan	7.380674	3.954683	216	6
9	Dredging of Lami Stream, Olunde	7.3048	3.927992	194	6
10	Dredging of Olope Woroko stream, behind Ibadan Grammar School, Molete	7.348984	3.897356	202	6

2.0 GOAL OF THE WORK

In line with the approval received from the World Bank, it is necessary to incorporate environmental and social safeguards considerations into the implementation of the assignment. This Terms of Reference relates to engagement of a consultant to supervise and enforce the implementation of the safeguards consideration for the proposed dredging of streams and clearing of silted drains across Ibadan for 2019, as captured in the ESMP prepared for this project. The goal of the Consultancy is to ensure that the works are carried out in an environmentally friendly and socially inclusive manner for effective enhancement of the tripartite pillars of sustainability. The scope of services to be achieved by dredging contractors is on the premise that three disposal options will be employed for excavated materials, as shown in Table 4 below,

Table 4: Disposal Options, and Sites that fall into the Category

DISPOSAL OPTIONS/LOCATION (SITES)	CUMMULATIVE LENGTH (M)	WORK REQUIREMENT
A. **Silt materials and solid wastes will be disposed of at Government approved dump sites as indicated in the waste management plan (annex 6)**	31,100	Dredging for removal of silt material and solid wastes and disposal to the dump sites and identified spoil disposal areas as jointly directed by the supervising Engineer and representatives of Oyo State Ministry of environment and Water Resources. In line with the dredging strategy approved by the World Bank (See Chapter 2 of this report), the spoil disposal area will not be less than 500m away from the site and dredged material can be re-used where possible.
Olorunsogo Estate Stream.		
Ajidun River, New Ife Road.		
Alawaye stream Olorunsogo area.		
Shalom stream, idi ishin, ile titun area.		
Ajogonlo stream, Akobo/Yawwuri area.		
Odeku stream Bota, Oluyole.		
Adeniran stream, Gbaremu, Gangansi area.		
Alaguntan stream, Ologuneru-Eleyele road.		
Ifesowapo stream, Babanla, Oremeji area.		
Odo-osun stream Tributary, Olode.		
(16) Adegbayi,Idi-Agbon stream, Laogun, Old Ife road. (17) Bashorun stream, Bode Wasimi area.		
(18) Idi-Osan stream, Kumapayi.		
(28) Dalegan river, Iyana Agbala.		
(29) Adegbayi, Gbaro Ajimosun stream, Lagelu.		
(30) Bethel Estate stream, Bode Igbo Area, Abeokuta road Ibadan.		
B. **Sites where accessibility/movement of heavy trucks are not feasible due to weak/narrow right of ways.**	23,350	Dredging for removal of silt material and solid wastes. The excavated silt materials are to be spread at a distance not less than 5m from the channel embankment, spread and compacted to spread sediment to a maximum height of 100 - 200mm at maximum. Accessibility of heavy truck is not feasible due to weak/narrow right of ways.
Moga stream, Olunloyo.		
Farayola stream, Bodija, (Major Salawu Street).		
Alapata stream, Shasha, Moniya area.		
Fatosi stream, Olomi, Olunde area.		
Oloro stream Tributary, Olode, Adegbayi.		
Dalegan river, Iyana Agbala, Adegbayi.		
Isokan stream, Oluwo.		

DISPOSAL OPTIONS/LOCATION (SITES)	CUMMULATIVE LENGTH (M)	WORK REQUIREMENT
Orunkanga stream, Apatupu, Elewuro road Akobo. (25) Lami stream, Olunde.		
Farinto stream powerline, kute area.		
Adukanle stream Agbofieti. 30) Yokele-pekun stream, Oluyole.		
Olope Wokoro stream, behind Ibadan Grammar school, Molete.		
C. Lined/Road side drains areas	5,700	Removal of solid waste, debris, grass and other materials from a lined channel/drainage and disposal to approved dump sites and an identified spoil to be determined by Supervising Engineer and Oyo State Ministry of Environment and Water Resources representatives. The spoil disposal area will not be less than 1km away from the site. (These are the areas with blocked line drains)
Blocked Drain along Bashorun-Bode Wasinmi road.		
Blocked Drain along NIhort, & (23) Blocked drain along Nihort-Pekun road, Ibadan		

3.0 RATIONALE FOR THE CONSULTANCY

The Environmental and Social concerns of the dredging and desilting activities to be undertaken by the Oyo State Government under the IUFMP have been assessed and documented in an Environmental & Social Management Plan (ESMP). The potential impacts of the proposed works must be effectively mitigated. In a bid to ensure that there is sound Environmental & Social performance of the works to be implemented under this sub-project in line with the Nigerian EIA Act and the World Bank Operational Policies, it is important to ensure that qualified and experienced personnel are on site to ensure enforcement of the mitigation measures described in the ESMP.

To this end therefore, the rationale for this assignment is for the PIU to have an independent ESHS Supervisor on site, who will monitor dredging and desilting activities, and ensure/enforce the implementation of required safeguards standards and measures in the implementation of the works.

Generally, the independent ESHS supervisor will work actively on a day-to-day basis to supervise the implementation of the activities of the contractor. Specifically, the ESHS supervisor will ensure that ALL activities are performed in line with the ESMP requirements. The supervisory functions of the ESHS supervisor will be tied into the work of the independent engineering supervisors under the overall guidance of the Project Implementation Unit (PIU) of the IUFMP.

4.0 SPECIFIC OBJECTIVES:

The specific objective is for the Consultant to assist Oyo State, through the Ibadan Urban Flood Management Project, to undertake the supervision of ESHS activities on the dredging assignment and ensure full implementation of the Environmental, Social, Health & Safety (ESHS) measures required for for this dredging and desilting activity as described in the various Management Plans (ESMP, C_ESMP, TMP, WMP, OCHSMP, etc.) prepared for the sub-project.. Among others, the consultant shall:

i. Participate in the pre-mobilization training of contractors and consultants as well as participating MDAs before mobilization to site;
ii. Ensuring that the contractors for the various sites carry out execution of the Mitigation measures recommended by the PIU Safeguards Unit in its prepared and disclosed ESMP.
iii. Ensuring that the General Environmental and Social Management Conditions for Construction Contracts are met;
iv. Ensuring compliance to environmental and social safeguards measures indicated in the ESMP and implementation procedure described in Table 4 above

v. Keeping records of non-compliance to environmental and social safeguards measures and recommending appropriate remedial measures, which may include penalties for repeated contravention to the client (represented by IUFMP);
vi. Send copies of warnings issued to the Contractor to prevent fatality on site and escalate life threatening incidents to the safeguards unit of PIU;
vii. Issue stop-work order where continued ESHS non-compliance is observed

5.0 SCOPE OF THE CONSULTANCY SERVICES

The core tasks for the consultancy shall include the following:

- review the ESMP for the project and understand fully the mitigation measures;
- Review contractors' Traffic Management Plan Waste Management Plans and Occupational Health and Safety Plan/ Community Health and Safety Plan and make recommendations on them;
- Participate in the training of contractor's and supervising consultant's personnel, as well as the relevant implementing MDAs;
- Put in place an inspection schedule/ plan that will be operative throughout the project period (it is expected that the Consultant will visit the sites with an approved monitoring/inspection checklist at least weekly);
- ensure that contractor's Safety Officer conducts "Tools Box Talk" every day prior to commencement of work and minutes of safety meetings and HSE monthly statistics records submitted to IUFMP PIU as and when due;
- monitor the contractor's compliance with all the mitigation measures and commitments to ensuring environmental sustainability as spelt out in the ESMP;
- Ensure that contractor complies with all relevant community based social engagement and interaction plans including the GRM;
- Confirm that regular engagement meetings are held with host communities, to ensure they are carried along on project works, and are fully apprised of requirements from them, in case of emergencies
- routinely check all measures/devices put in place for effective monitoring of project functions and activities.
- Utilize the ESHS performance monitoring checklist prepared by the PIU
- ensure appropriate keeping of the following records by the contractor:
    - Complaint records;
    - Training records;
    - Inspection, maintenance and calibration records;
    - Monitoring data and audit results;
    - Identified problems and corrective actions taken;
    - Incident/Accident reports; and
    - Significant communications with regulators.
- Prepare and submit Project Close out report to the IUFMP at the completion of the works

6.0 Qualifications and Experience of the Consultant:

The consultant is expected to have corporate backing, but must provide a lead consultant, who should, as a minimum, have:

- A minimum of Masters Degree. in Environmental Management and/or Social Sciences related courses
- Experience with, and a professional/technical background appropriate for understanding both the environmental and social management implications of flood risk intervention projects, especially in urban areas, including their design, construction, operation and monitoring.
- At least Ten (10) years' experience in practical safeguards, social and environmental management with demonstrated proficiency in the preparation, review, implementation and approval of ESIAs/ESMPs as well as project construction monitoring to meet World Bank environmental and social safeguard policies
- Excellent analytical, communication and writing skills.
- It is highly desirable that the consultant have experience with working with international development institutions like the World Bank, and on infrastructure related projects.

7.0 Deliverables and timing:

a. Weekly Progress and Monitoring Report providing relevant information on all monitoring activities- These reports are to be made available to the PIU.

b. The Completion report will contain information on the overall process, challenges, lessons learnt and recommendations for future activities. The report should be precise, mostly in tabular format with pictorial evidences.

8.0 Payment Schedule

The duration for the rehabilitation works is currently estimated at 5 weeks; which means a total of 5 weekly reports, and 1 close out report. The payment schedule shall be as follows:

DELIVERABLES	TIMING	PAYMENT
Inception Report at the completion of the Pre-Mobilization training, including a report of the training and a workplan for carrying out this assignment	Within the 3 days of completing the training	20%
Third weekly Report which will give overview of work done so far, challenges and plans for further works	4th week of the contract	40%
Completion Report	At the end of the dredging assignment (not expected to exceed 6 weeks after mobilization month	40%
The ESHS Supervision Consultant, who will operate independent of the contractors and engineering supervising consultants, will have meeting with the safeguards Unit after the submission of each deliverables for intimation with progress and challenges on the dredging/ clearing sites.		

9.0 Responsibilities of IUFMP

The IUFMP shall make available all documents and previous reports that will facilitate the execution of the tasks described in this Terms of Reference. This shall include among others;

- Safeguards Instruments; ESMP, ARAPs,
- Dredging Implementation Strategy
- Grievance Redress Mechanism guidelines

10.0 Reporting & Coordination

- The consultant shall work collaboratively with the engineering supervisor engaged for the purpose on a day-to-day basis.
- The Consultant shall work closely with the safeguards unit of IUFMP and report to the Project Coordinator of the Project Implementation Unit; The Reports will be submitted to the Safeguards unit, who in turn will forward to the Engineering, Procurement teams as well as the PIU, who may then disseminate as necessary.

ANNEX 12: OCCUPATIONAL AND COMMUNITY HEALTH AND SAFETY MANAGEMENT PLAN

OCCUPATIONAL AND COMMUNITY HEALTH AND SAFETY MANAGEMENT PLAN FOR PROPOSED DREDGING OF STREAMS/CHANNELS AND CLEARING OF BLOCKED DRAINAGES AT SELECTED LOCATIONS IN IBADAN

1.0 BACKGROUND AND INTRODUCTION

This Occupational and Community Health and Safety Management Plan (OCHSMP) has been prepared for the specific purpose of handling health and safety issues that may be associated with the proposed dredging of streams and channels. The OCHSMP became necessary in view of the fact that at various stages of the proposed dredging and clearing of drains, there is a high risk of incidents to occur, if project activities are not properly planned and undertaken. This document therefore highlights the various hazards for project workers and host communities as well as the management plan developed to avoid the risks and/or minimize the impacts of their occurrence.

2.0 OVERVIEW OF RISKS AND HAZARDS ASSOCIATED WITH PROPOSED PROJECT ACTIVITIES

The proposed dredging and clearing of blocked drains will take place around 32 locations within and around Ibadan City. Details of the various project locations and the proposed dredging strategy to be adopted are presented in the ESMP prepared specifically for the project

In the table below, an overview of the key risks and the areas where they could occur, as well as an assessment of the risk rating is presented:

Table 1: Summary of risks of the project and risk significance rating

S/N	RISK DESCRIPTION	PARTY AT RISK	SIGNIFICANCE RATING
	Accidents and traffic build-up during mobilization and demobilization of dredgers to site: In most cases, dredgers will be mobilized to site using flat bed trucks. These usually move slowly and the dredgers, quite often shoots out from the sides of such trucks, making it hazardous to overtake them, especially in single carriage roads. This will inevitably lead to traffic build up during peak hours, and impatient motorists may take risk in overtaking, leading to accidents	Community	4
	Damage to hearing of project workers due to prolonged exposure to loud noise from dredging activities: Monitoring activities during previous dredging exercises have revealed that noise emissions from dredgers could exceed regulatory limits for occupational exposure. Therefore, prolonged exposure by project workers, especially those working on the dredgers could damage their hearing	Project workers	3
	Accidental falls into river/channel by workers and community members, leading to drowning Workers on swamp buggies to be used for dredging in some cases could accidentally fall off the vessel into the river channel and sustain grievous injuries and/or drown	Project workers and community	3
	Damage to pedestrian bridges by dredgers, leading to risk of falls into river channels: In passing under pedestrian bridges or during dredging activities that may require widening, the foundations and/or superstructures of pedestrian bridges could be damaged/weakened, resulting in collapse while people are crossing.	Community	3
	Deepening of channels at foot crossings, leading to risks of drowning Many of the channels planned for dredging have silted up and so community members can normally cross it on foot. With dredging however, the channel could become deeper and therefore unsafe for crossing.	Community	5
	Injuries and possible infections to workers clearing blocked drainage due to non use of appropriate PPEs: The drains to be cleared are mostly completely or partially silted up and various waste materials including broken bottles and rusted metals will form a large part of the materials causing the blockage. If project workers do not have appropriate PPEs, especially safety boots and gloves, they could get injured and the injuries develop secondary infections	Project workers	4
	Obstruction of free flow of traffic by dumping excavated on roadsides, leading to traffic build up, possible accidents and		

Key to Impact Significance Rating

1 - Insignificant Risk

2. - Minor Risk

3 - Low Risk

4 - Moderate Risk

5 - Major Risk

3.0 OCCUPATIONAL AND COMMUNITY HEALT AND SAFETY MANAGEMENT PLAN

Given the list of key project implementation risks presented in Table1 above, it is necessary to develop a mitigation and management plan for the risks. This is presented in Table 2 below:

Table 2: Summary of risks, mitigation measures and residual risks after mitigation

S/N	RISK DESCRIPTION	SIGNIFICANCE RATING	RECOMMENDED MITIGATION	POST MITIGATION SIGNIFICANCE RATING
	Accidents and traffic build-up during mobilization and demobilization of dredgers to site: In most cases, dredgers will be mobilized to site using flat bed trucks. These usually move slowly and the dredgers, quite often shoots out from the sides of such trucks, making it hazardous to overtake them, especially in single carriage roads. This will inevitably lead to traffic build up during peak hours, and impatient motorists may take risk in overtaking, leading to accidents	4	As much as possible, mobilization and demobilization of dredgers to site shall be during off peak periods Traffic control agencies (OYTrMA, FRSC, and the Traffic Division of Nigeria Police) will be enlisted to control mobilization and demobilization traffic	1
	Damage to hearing of project workers due to prolonged exposure to loud noise from dredging activities: Monitoring activities during previous dredging exercises have revealed that noise emissions from dredgers could exceed regulatory limits for occupational exposure. Therefore, prolonged exposure by project workers, especially those working on the dredgers could damage their hearing	3	All project workers in high noise areas shall be provided with hearing protection such as ear plugs Contractor shall ensure that no worker exceed 8hrs of work each day, to ensure that they do not suffer excessive occupational exposure to high noise levels	1
	Accidental falls into river/channel by workers and community members, leading to drowning Workers on swamp buggies to be used for dredging in some cases could accidentally fall off the vessel into the river channel and sustain grievous injuries and/or drown	3	ALL project workers, especially those on the dredgers and swamp buggies shall be provided with life jackets and shall be made to wear them while on site All swamp buggies and dredgers shall be provided with life rings that can be thrown to people who accidentally fall into the channel Adequate awareness campaigns on the hazards of the work and possible falls into the channel shall be carried out No community member shall be allowed to stand by the river bank during dredging activities	1
	Damage to pedestrian bridges by dredgers, leading to risk	3	Contractors shall take care to avoid damage to sub	1

S/N	RISK DESCRIPTION	SIGNIFICANCE RATING	RECOMMENDED MITIGATION	POST MITIGATION SIGNIFICANCE RATING
	of falls into river channels: In passing under pedestrian bridges or during dredging activities that may require widening, the foundations and/or superstructures of pedestrian bridges could be damaged/weakened, resulting in collapse while people are crossing.		and super structures of pedestrian bridges. Where such occurs unwittingly, contractor shall undertake to replace such damaged structures	
	Deepening of channels at foot crossings, leading to risks of drowning Many of the channels planned for dredging have silted up and so community members can normally cross it on foot. With dredging however, the channel could become deeper and therefore unsafe for crossing.	5	Adequate notification to communities shall be undertaken prior to, and during dredging activities Contractor shall undertake to provide safe crossing (a pedestrian bridge at portions where this kind of issue occurs Adequate warning signs shall be provided around such locations, in English and the local language Personnel shall be place at such points to warn oblivious people while reflective signage shall be provided around such locations at night	2
	Injuries and possible infections to workers clearing blocked drainage due to non use of appropriate PPEs: The drains to be cleared are mostly completely or partially silted up and various waste materials including broken bottles and rusted metals will form a large part of the materials causing the blockage. If project workers do not have appropriate PPEs, especially safety boots and gloves, they could get injured and the injuries develop secondary infections	4	All workers on contractors site shall be provided with applicable PPEs, but particularly safety boots and hand gloves HSE supervisor shall ensure that all site workers are appropriately kitted for safety Non compliances shall be met with strict sanctions, which may include fines, suspensions and outright expulsion from the project site.	1
	Obstruction of free flow of traffic by dumping excavated on roadsides, leading to traffic build up, possible accidents and	3	As much as possible, excavation of silted drains shall be undertaken during off peak traffic periods Excavated materials shall be promptly evacuated to designated dumpsites, to prevent obstruction of	1

S/N	RISK DESCRIPTION	SIGNIFICANCE RATING	RECOMMENDED MITIGATION	POST MITIGATION SIGNIFICANCE RATING
			traffic.	

4.0 Budget for Implementation of Mitigation Measures

A budget has been drawn up for the implementation of the mitigation measures identified in Table 2 above. The budget is presented in Table 3 below, along with the expected source of funds for the implementation of the budget. In addition to these mitigation measures however, there will be extensive monitoring, to ensure compliance. This has been adequately provided for in the provisions made for the Independent HSE Supervisor, who's Terms of Reference (ToR) is also attached to the ESMP as annex 11.

Table 3: Summary of Mitigation Measures, Responsible parties and Cost of Implementation

RECOMMENDED MITIGATION	RESPONSIBLE PARTY	COST OF MITIGATION (US$)	SOURCE OF FUNDING
As much as possible, mobilization and demobilization of dredgers to site shall be during off peak periods	Contractor and Supervising Engineer	-	
Traffic control agencies (OYTrMA, FRSC, and the Traffic Division of Nigeria Police) will be enlisted to control mobilization and demobilization traffic	Contractor	3,000.00	In contractor's contract
All project workers in high noise areas shall be provided with hearing protection such as ear plugs	Contractor	600.00	In contractor's contract
Contractor shall ensure that no worker exceed 8hrs of work each day, to ensure that they do not suffer excessive occupational exposure to high noise levels	Contractor	-	
ALL project workers, especially those on the dredgers and swamp buggies shall be provided with life jackets and shall be made to wear them while on site	Contractor/Supervising Engineer/Independent HSE Supervisor	1,500.00	In contractor's contract
All swamp buggies and dredgers shall be provided with life rings that can be thrown to people who accidentally fall into the channel	Contractor/Supervising Engineer/Independent HSE Supervisor	600.00	In contractor's contract
Adequate awareness campaigns on the hazards of the work and possible falls into the channel shall be carried out	Contractor/Supervising Engineer		
No community member shall be allowed to stand by the river bank during dredging activities	Contractor/Supervising Engineer/Independent HSE Supervisor		
Contractors shall take care to avoid damage to sub and super structures of pedestrian bridges.	Contractor/Supervising Engineer		In contractor's contract
Where such occurs unwittingly, contractor shall undertake to replace such damaged structures	Contractor/Supervising Engineer		
Adequate notification to communities shall be undertaken prior to, and during dredging activities	Contractor/Supervising Engineer		

RECOMMENDED MITIGATION	RESPONSIBLE PARTY	COST OF MITIGATION (US$)	SOURCE OF FUNDING
Contractor shall undertake to provide safe crossing (a pedestrian bridge at portions where this kind of issue occurs	Contractor/Supervising Engineer	1,500.00	Contractor's contract
Adequate warning signs shall be provided around such locations, in English and the local language	Contractor	3,000.00	Contractor's contract
Personnel shall be place at such points to warn oblivious people while reflective signage shall be provided around such locations at night	Contractor		
All workers on contractors site shall be provided with applicable PPEs, but particularly safety boots and hand gloves	Contractor/Supervising Engineer	9,000.00	Contractor's contract
HSE supervisor shall ensure that all site workers are appropriately kitted for safety	Independent HSE Supervisor	Covered in HSE Supervisor's contract	Professional fees for supervisor
Non compliances shall be met with strict sanctions, which may include fines, suspensions and outright expulsion from the project site.	Independent HSE Supervisor	Covered in HSE Supervisor's contract	
As much as possible, excavation of silted drains shall be undertaken during off peak traffic periods	Contractor/Supervising Engineer/Independent HSE Supervisor		
Excavated materials shall be promptly evacuated to designated dumpsites, to prevent obstruction of traffic.	Contractor/Supervising Engineer/Independent HSE Supervisor	3,000.00	Contractor's contract
Total Cost		**US$22,200.00**	

NOTES: The budget indicated in Table 3 above is for the three (3) lots, this translates therefore into US$7,400/lot.

5.0 Emergency Preparedness Plan

A standard Emergency Preparedness and Response plan must, as a minimum, identify the possible emergencies that could occur, and design a strategy to respond to such emergencies. In this section, an overview of identified emergencies and the responses are presented in Table 4.

Table 4: Emergency Preparedness Plan

S/N	TYPE OF EMERGENCY	PREPAREDNESS AND RESPONSE PLAN
	Dredger falls off the back of flatbed truck conveying it to or from site	• Make arrangement with towing vehicle/crane to standby • Establish hotline contact with them that can be triggered immediately • Establish and maintain contact with traffic control agencies
	Fires on site	• Provide for fire extinguishers • Ensure project workers are trained on their use and fire fighting • Carry out fire drills on a weekly basis • Regularly service/maintain firefighting equipment
	Man Overboard	• Have life rings available on dredgers/swamp buggies • Train project workers on use of life rings • Carry out weekly rescue drills
	Illness on site	• Provide first aid boxes on site • Have arrangement for medical retainership for serious cases • Carry out drills on emergency medical evacuations
	Community Conflict	• Establish close relationship with communities • Appoint a Community Liaison Officer (CLO) • Hold weekly meetings with communities • Undertake some Corporate Social Responsibility • Establish contact with security operatives (especially the Police) and relate with them routinely

6.0 Conclusion

While it is essential that the planned works are undertaken, to alleviate flooding issues in Ibadan, it is equally crucial to ensure that the activities are undertaken in a sustainable manner, which does not pose threats and/or risks to the health and safety of project workers and communities. The Occupational and Community Health and Safety Management Plan (OCHSMP) will be scrupulously implemented. To this end, a dedicated independent HSE supervision will be required to undertake the monitoring of project implementation and will be authorized to stop work as a last resort, if non-compliances are observed and workers and/or community health and safety are found to be at risk.