RC: 493538

LABSTAFF NIGERIA LIMITED

26th January, 2026

The Honourable Minister,
Federal Ministry of Environment,
Federal Secretariat,
Mabushi, Abuja.

The Honourable Minister Sir,

SUBMISSION OF DRAFT ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA) REPORT FOR THE PROPOSED LAGOS MEDIPARK PROJECT, IKOYI, ETI-OSA LOCAL GOVERNMENT AREA, LAGOS STATE

Kindly refer to the above named subject matter.

On behalf of IASO Medipark Limited, we herewith submit to the ministry Draft ESIA Report for the Proposed Lagos Medipark Project to be located at Ikoyi in Eti-Osa Local Government Area of Lagos State.

The ESIA was conducted in full compliance with regulations set out in the revised EIA procedural guidelines of 2007 by the Federal Ministry of Environment, EIA Act CAP E12, LFN 2004, Lagos State Environmental Management and Protection Law of 2017, National Health Act of 2014, and all such extant laws (local and international) relevant to the proposed project.

While thanking the Honourable Minister for usual co-operation and early response, please do have the assurances of our most esteemed regards.

Yours Faithfully,

For: Labstaff Nigeria Limited



Simon ODAUDU
Chief Technical Consultant

Abuja Office: Suites G03-5 Millipat Plaza by Abuja City Gate, Umaru Musa Yar'dua Way (Formerly Airport Road) FCT.
Tel: +234 (0) 929 18071, +234 809 592 6550, +234 803 589 9609 **E-mail:** labstaffnigeria@yahoo.com
Environmental Resource Managers

DRAFT

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA)

For the Proposed

Lagos MediPark Project,

Ikoyi, Eti-Osa Local Government Area,
Lagos State, Nigeria

By

IASO MEDIPARK LIMITED

Submitted to

FEDERAL MINISTRY OF ENVIRONMENT,
MABUSHI, ABUJA, NIGERIA

JANUARY, 2026

TABLE OF CONTENTS

Cover Page … … … … … … … … … i
Table of Contents … … … … … … … … … ii
List of Tables … … … … … … … … … vi
List of Figures … … … … … … … … … … ix
List of Plates … … … … … … … … … x
List of Acronyms and Abbreviations … … … … … … … … xi
List of ESIA Report Preparers … … … … … … … … xv
Executive Summary
Acknowledgement

CHAPTER ONE - INTRODUCTION

1.1 Background Information … … … … … … … 1-1
1.2 Objectives of the ESIA … … … … … … … 1-3
1.3 The Project Proponent … … … … … … … 1-5
1.4 Terms of Reference … … … … … … … … 1-7
1.5 Scope of the ESIA … … … … … … … … 1-8
1.6 ESIA Process in Nigeria and Alignment with AfDB Requirements … … 1-8
1.7 Legal and Regulatory Framework … … … … … … 1-11
1.7.1 National Regulatory Requirements … … … … … 1-11
1.7.2 Lagos State Legislation … … … … … … 1-25
1.7.3 Eti Osa LGA Bye Laws … … … … … … 1-31
1.7.4 IASO Health, Safety, Security, Environment and Community Relations Policy 1-31
1.7.5 International Standards, Treaties and Conventions … … … 1-32
1.7.6 AfDB Integrated Safeguards Systems … … … … … 1-37
1.7 Structure of the ESIA Report … … … … … … … 1-41

CHAPTER TWO – PROJECT JUSTIFICATION

2.1 Introduction … … … … … … … … … 2-1
2.2 Need for the Project … … … … … … … … 2-1
2.3 Benefits of the Project … … … … … … … … 2-3
2.4 Value of the Project … … … … … … … … 2-4
2.5 Envisaged Project Sustainability … … … … … … 2-5
2.5.1 Economic Sustainability … … … … … … 2-5
2.5.2 Social Sustainability … … … … … … … 2-6
2.5.3 Environmental Sustainability … … … … … … 2-6
2.5.4 Technical Sustainability … … … … … … 2-7
2.6 Project Alternatives … … … … … … … … 2-8
2.6.1 Alternative Location … … … … … … … 2-9
2.6.2 Alternative Technology … … … … … … 2-10
2.6.3 Alternative Utilities and Infrastructure … … … … … 2-10
2.7 Project Development Options … … … … … … … 2-11
2.7.1 Option One: No project option … … … … … 2-11
2.7.2 Option Two: Delayed project option … … … … … 2-12
2.7.3 Option Three: Go-Ahead Project Option … … … … 2-12
2.8 Summary … … … … … … … … 2-12

CHAPTER THREE

3.0 Project Description … … … … … … … … 3-1
3.1 The Site … … … … … … … … … 3-1
3.2 Location … … … … … … … … … 3-5
3.2.1 The Project Site in Its Local Context … … … … … … 3-2
3.2.2 The Site Within Its Region … … … … … … … 3-9
3.3 Site Plan … … … … … … … … … 3-11
3.4 Architectural Plan … … … … … … … … … 3-13
3.5 Building and Civil Work… … … … … … … … … 3-37
3.6 Resource and construction material requirements … … … … 3-45

CHAPTER FOUR - ENVIRONMENTAL BASELINE STUDY OF THE PROJECT AREA

4.1 Introduction 4-1
4.2 Study Area And Proposed Project's Area Of Influence 4-1
4.2.1 Primary Project Site 4-2
4.2.2 Immediate Surrounding Environment 4-2
4.2.3 Wider Study Area 4-2
4.2.4 Area of Influence (AoI) 4-3
4.2.5 Rationale for Study Area Delineation 4-3
4.3 Study Methodology 4-5
4.3.1 Literature Review 4-5
4.3.2 Reconnaissance Survey and Delineation 4-5
4.3.3 Scoping Workshop 4-6
4.3.4 Consultation with Regulators and Stakeholders 4-7
4.3.5 Field visit and Desktop Research 4-7
4.3.6 Field Sampling and Secondary Data/Information 4-8
4.4 Baseline Data Of The Physical Environment 4-16
4.4.1 Climate and Meteorology 4-16
4.4.2 Climate Risks 4-22
4.4.3 Air Quality And Noise Assessment Of The Project Area 4-31
4.4.4 Geology Of The Area 4-37
4.4.5 Soil Study of Ikoyi Area 4-40
4.4.6 Groundwater Study of the Project Environment 4-49
4.4.7 Surface Water Study of the Project Environment 4-53
4.4.8 Vegetation Study of the Proposed Project Area 4-63
4.4.9 Wildlife of the Study Area 4-68
4.4.10 Land Use and Land Cover Change 4-69
4.5 Socio-economic Study 4-70
4.5.1 Introduction 4-70
4.5.2 The Objectives of Socio-Economic Study 4-70
4.5.3 Scope of the Survey 4-70
4.5.4 Study Approach and Methodology 4-71
4.5.5 Baseline Information on Socio-Economic 4-73
4.5.6 Baseline Information on Socio-Economic 4-77
4.6 Health Assessment 4-102
4.6.1 Baseline Health Characteristics 4-102
4.6.2 Health Characteristics and Findings for Lagos State Study Area 4-102

4.7 Public Consultation 4-104
4.7.1 Introduction *4-104*
4.7.2 Levels of Consultation *4-104*
4.7.3 Key Objectives of Consultation *4-105*
4.7.4 Summary of Consultations *4-106*
4.7.5 Final Remarks from Stakeholders *4-110*

CHAPTER FIVE
5.0 Associated and Potential Environmental and Social Impacts… … … 5-1
5.1 Introduction … … … … … … … … … 5-1
5.2 Methodology … … … … … … … … … 5-1
5.3 Preliminary Identification and Screening… … … … … … … 5-3
5.4 Modified Leopold Matrix Screening … … … … … … … 5-5
5.5 Detailed Assessment of Impact… … … … … … … … 5-6
5.6 Impacts Quantification … … … … … … … … 5-7
5.7 Impact Severity Evaluation … … … … … … … … 5-14
5.8 Impact Significance … … … … … … … … … 5-17
5.9 Project Associated and potential impact … … … … … … 5-24
5.10 Risk Assessment … … … … … … … … … 5-30
5.11 Expert's Assessment … … … … … … … … … 5-31
5.12 Cumulative Impact Assessment… … … … … … … … 5-55
5.13 Summary of Impact … … … … … … … … … 5-59

CHAPTER SIX
6.0 Mitigation Measures … … … … … … … … … 6-1
6.1 Introduction … … … … … … … … … 6-1
6.1.1 Specific and General Mitigations … … … … … … 6-1
6.1.2 Implementation of Mitigations … … … … … … … 6-1
6.2 Specific Mitigation Measures … … … … … … … … 6-2
6.3 Mitigation of Construction Phase Impacts… … … … … … … 6-4
6.4 Mitigation of Operation Phase Impact … … … … … … … 6-15
6.5 Ensure Efficient Energy Consumption… … … … … … … 6-18
6.6 Mitigation of Decommissioning Phase Impacts… … … … … 6-23
6.7 Environmental Risks to the Project… … … … … … … … 6-24
6.8 General Mitigation Measures… … … … … … … … 6-44

CHAPTER SEVEN
7.0 Environmental and Social Management Plan … … … … … … 7-1
7.1 Introduction … … … … … … … … … 7-1
7.2 Policies… … … … … … … … … … 7-2
7.3 Planning … … … … … … … … … 7-3
7.3.1 Management Programme… … … … … … … 7-3
7.3.2 Environmental and Social Management Plan … … … 7-3
7.4 Implementation … … … … … … … … … 7-7
7.5 IASO Medipark Limited Environmental and Social Management System (ESMS) 7-15
7.6 Environmental and Social Monitoring Plan … … … … … 7-16
7.7 Hazard and Effects Management Process … … … … … … 7-50

7.8 Occupational Health and Safety Plan … … … … … 7-52
7.9 Inspection and Correction … … … … … … 7-59
7.10 Mitigation Measures and Monitoring Implementation Budget… … … 7-61
7.11 Corporate Social Responsibility Plan… … … … … 7-61
7.12 Grievance Redress Mechanism… … … … … … 7-62
7.13 Stakeholder Engagement Plan … … … … … … 7-65
7.14 Organization Structure … … … … … … 7-69

CHAPTER EIGHT
8.0 DECOMMISSIONING AND ABANDONMENT PLANS

CHAPTER NINE
CONCLUSIONS AND RECOMMENDATIONS

LIST OF TABLES

Table 3.1: The Buildings in the MediPark … … … … … … 3-5
Table 3.2: Key Project Activities … … … … … … … 3-53
Table 3.3: Labour Requirements (Number of Employees) … … … … 3-80
Table 3.4: Waste Segregation and Receptacles during Construction Phase… … … 3-45
Table 3.5: Project Programme … … … … … … … … 3-53
Table 4.1 Sample Stations and Coordinates 4-15
Table 4.2: Projected Water Stress for Alaro City. 4-24
Table 4.3: Summary of Prominent Hazards for Baseline and Projections. 4-29
Table 4.4: Result of Air Quality and Noise Level Measurement around the Proposed Project Site 4-36
Table 4.5: Physicochemical Properties of soil Samples within and around the project Environment 4-44
Table 4.6: Microbiological characteristics of soil Samples within and around the Project Environment 4-47
Table 4.7: Physico-Chemical Analysis of Ground Water Samples 4-52
Table 4.8: Physico-Chemical Analysis of Water Samples from Lagos Lagoon 4-56
Table 4.9: Microbiological Characteristics of Water Samples from Lagos Lagoon 4.57
Table 4.10: Physico-Chemical Analysis of Sediment Samples from Lagos Lagoon 4-58
Table 4.11: Microbiological characteristics of sediment samples 4-58
Table 4.12: Distribution and Abundance of Phytoplankton Communities 4-59
Table 4.13: Distribution and Abundance of Zooplankton Communities 4-60
Table 4.14: Macro-invertebrates Species composition 4-61
Table 4.15 List of Some Fin and Shell Fish from the study area 4-62
Table 4.16a: Checklist of plant species present in the Project area 4-65
Table 4.16b: Checklist of plant species present in the Project area and their IUCN Status 4-66
Table 4.17: shows the fauna observed or attested for in the project site 4-68
Table 4.18: Scope of ESIA in the Community 4-71
Table 4.19: Population of the Host Local Government Area in 2006 Census 4-74
Table 4.20: Sample presentation 4-75
Table 4.21: Age Distribution of Residents within the Project 4-80
Table 4.22: Gender Distribution of Residents within the Project 4-80
Table 4.23: Marital Status of Respondents 4-80
Table 4.24: Educational Qualification of Respondents 4-81
Table 4.25: Employment Status of Respondents 4-81
Table 4.26: Occupational Distribution of Survey Respondents 4-82
Table 4.27: Respondents' Professional Experience 4-82
Table 4.28: Respondents' Awareness of the Proposed project 4-82
Table 4.29: Distribution of Respondents by Household Size 4-83
Table 4.30: Distribution of Respondents by Number of Dependents 4-83
Table 4.31: Distribution of Respondents by Monthly Income Level 4-84
Table 4.32: Respondents' Awareness of the School of Nursing Facility 4-84
Table 4.33: Respondents' Perception of Heritage Landmark in the area 4-84
Table 4.34: Analysis of Respondents' Response to Cultural Norms/Practices 4-85
Table 4.35: Analysis of Respondents' Response to Informal Rules on Noise/Construction 4-85
Table 4.36: Analysis of Respondents' Response to Symbolic/Community -Valued Sites 4-85
Table 4.37: Analysis of Respondents' Response to Belong to Residents' Association 4.86
Table 4.38: Analysis of Respondents' Association Activity Level 4-86
Table 4.39: Distribution of Respondents' Religious Affiliation 4-86

Table 4.40: Distribution of Respondents' Response to Valued Public Green Spaces 4-87
Table 4.41: Distribution of Respondents' Response to Community Sensitivities 4-87
Table 4.42: Respondents' Primary Source of Income 4-87
Table 4.43: Respondents' Response to Owning Businesses 4-88
Table 4.44: Respondents' Participation/Engagement to Work life Dependent on Traffic Situation along Awolowo Road 4-88
Table 4.45: Respondents' Response to Work Relies on Corporate Hubs 4-89
Table 4.46: Respondents whom own Businesses Creating Job Opportunities 4-89
Table 4.47: Respondents' Perceived Impact of the Project/Intervention 4-89
Table 4.48: Respondents' Responses to Interest in Medi Park Jobs/Partnerships 4-90
Table 4.49: Respondents' to interested in Training/Skills acquisition 4-90
Table 4.50: Respondents' Housing Types 4-90
Table 4.51: Housing/Accommodation Status of Respondents 4-91
Table 4.53: Respondents' Performance/Quality Ratings of Community Security 4-91
Table 4.54: Respondents' Response about Adequacy of Car Parking Spaces 4-92
Table 4.55: Respondents' Perception of Noise and Congestion Disturbance 4-92
Table 4.56: Respondents' Priorities for Urban Improvements 4-92
Table 4.57: Main Water Sources Used by Respondents 4-93
Table 4.58: Perceived Reliability of Electricity Supply Among Respondents 4-93
Table 4.59: Types of Electricity Backup Power Used by Respondents 4-93
Table 4.60: Respondents' Waste Disposal Methods 4-94
Table 4.61: Respondents' Perception of Accessibility of Healthcare Facilities 4-94
Table 4.62: Travel Time to Nearest Hospital Among Respondents 4-95
Table 4.63: Respondents' Perception of Road Network Conditions 4-95
Table 4.64: Perceived Effectiveness of Drainage and Flood Control Measures 4-95
Table 4.65: Awareness of the Medipark Project Among Respondents 4-96
Table 4.66: Respondents' Perception of the Project 4-96
Table 4.67: Respondents' Perceived Expected Benefits 4-97
Table 4.68: Distribution of Perceived Benefits Among Respondents 4-97
Table 4.69: Respondents' Concern About Increased Traffic 4-97
Table 4.70: Respondents' Perception on Whether Medipark Will Improve Healthcare Access 4-98
Table 4.71: Respondents' Support for Prioritizing Local Residents in Employment 4-98
Table 4.72: Desired Community Amenities Among Respondents 4-98
Table 4.73: Respondents' Experience of Noise Pollution 4-99
Table 4.74: Respondents' Concern About Air Quality Impacts 4-99
Table 4.75: Respondents' Perception on Whether Development Will Increase Waste 4-100
Table 4.76: Respondents' Opinion on the Preservation of Trees/Green Buffers 4-100
Table 4.77: Respondents' Perception of Areas Prone to Flooding 4-100
Table 4.78: Recommended Safeguards by Respondents 4-101
Table 4.79: Prevalence of Diseases common to Study Area 4-103
Table 4.80: Process and Stages of Consultation 4-106
Table 4.81: Summary of Consultation Meetings 4-107
Table 5.1 Environmental, Social and Health Components and Impact Indicators… … 5-4
Table 5.2: Modified Leopold Matrix … … … … … … … 5-8
Table 5.3: The Rau' Ad Hoc Method … … … … … … … 5-10
Table 5.4 Screening Matrix for Potential Impacts (Biophysical and Social Impacts) … 5-11
Table 5.5: Impact Assessment of Spatial Effects … … … … … 5-18
Table 5.6: Impact Assessment of Temporal Effects… … … … … … 5-18

Table 5.7 Impact Assessment of Combined Spatial and Temporal Effect … … 5-18
Table 5.8: Overall Impact Assessment Severity (Combined Spatial and Temporal Effects and Sensitivity) … … … … … … … 5-18
Table 5.9: Overall Impact Significance … … … … … … 5-19
Table 5.10: Summary of Impact Severity … … … … … … 5-20
Table 5.11: Negative Impact … … … … … … … … 5-21
Table 5.12: Impact Significance Evaluation … … … … … … 5-24
Table 5.13: Impacts Identification Qualification and Rating for pre-construction, Operation… … … … … … … … … … 5-25
Table 5.13: Potential and Associated Impact, Qualification …… … … … 5-28
Table 5.14: Risk Assessment Matrix … … … … … … … 5-30
Table 5.15: Biodiversity: Loss of vegetation … … … … … … 5-33
Table 5.16: Biodiversity: Loss of habitat containing protected species or SSC … … 5-35
Table 5.17: Biodiversity: Potential spread of alien vegetation… … … … 5-35
Table 5.18: Aquatic Biodiversity: Changes to the hydrological regime and potential for soil erosion … … … … … … … … … 5-36
Table 5.20: Aquatic Biodiversity: Increased velocity of surface water flows … … 5-37
Table 5.15: Aquatic Biodiversity: Changes to Water Quality… … … … 5-39
Table 6.1: Summary of Mitigation Measures for Pre - Construction Phase Specific to the Impact and its Residual Impact … … … … … … 6-28
Table 7.1: Environmental Management Plan (EMP) – Pre-construction Phase … 7-7
Table 7.2: Environmental Management Plan - Construction Phase … … … 7-7
Table 7.3: Environmental Management Plan – Operation Phase … … … 7-10
Table 7.4: Environmental Management Plan - Decommissioning Phase … … 7-12
Table 7.5: Environmental Monitoring Programme for the proposed project … … 7-13
Table 8.1: Recommended Mitigation Measures for Decommissioning Phase … … 8-5

LIST OF FIGURES

Figure 1.1: Google Earth Imagery of the Proposed Site … … … … 1-3
Figure 1.2: Map of Nigeria showing Lagos State (The proposed host State) … … 1-4
Figure 1.3: Map of Lagos State showing the proposed LGA hosting the proposed project 1-4
Figure 3.1: A typical Logistic Company … … … … … … 3-1
Figure 3.2: Stages of warehousing … … … … … … … 3-12
Figure 4.1: Satellite Imagery of the project area with an imposed Sampling map for Air Quality and Noise Level measurements 4-10
Figure 4.2: Satellite Imagery of Lagos Lagoon with an imposed sampling map for surface water and sediments sampling and in-situ measurements 4-12
Figure 4.3: Annual Rainfall of the study area 4-17
Figure 4.4: Annual Maximum Temperature of the Study Area 4-18
Figure 4.5: Annual Minimum Temperature of the Study Area 4-18
Figure 4.6: Average Relative Humidity of the Study Area 4-19
Figure 4.7: Average Wind Speed in the Project Area 4-20
Figure 4.8: Wind rose of secondary meteorological data (1989 – 2024) 4-20
Figure 4.9: Cloud Cover Categories in Lagos Study Area 4-21
Figure 4.10: Annual Sunshine hours 4-22
Figure 4.11: Nigeria's Risk of Urban Flood (left) and Risk of Wildfire (right) 4-24
Figure 4.12: Projected Water Stress for Nigeria (2030 & 2050) 4-25
Figure 4.13: Asset Risk Score, SSP1-2.6. 4-26
Figure 4.14: Asset Risk Score, SSP5-8.5. 4-26
Figure 4.15: Projection Risk Score Composition: SSP SSP1-2.6, 2030. 4-28
Figure 4.16: Projection Risk Score Composition: SSP SSP1-2.6, 2050. 4-28
Figure 4.17: Projection Risk Score Composition: SSP SSP5-8.5, 2030. 4-28
Figure 4.18: Projection Risk Score Composition: SSP SSP5-8.5, 2050. 4-29
Figure 4.19: Geological Map of Lagos State 4-38
Figure 4.20: Generalized Geological Map of Dahomey Basin 4-38

LIST OF PLATES

Plate 3.1: Transport equipment … … … … … … … 3-9
Plate 3.2: Showing Positioning equipment (Manipulator) … … … … 3-10
Plate 3.3: Showing Unit Load Formation equipment … … … … … 3-10
Plate 3.4: Storage equipment … … … … … … … … 3-11
Plate 4.1: Photograph depicting briefing during site verification exercise 4-6
Plate 4.2: EIA Team of Experts with FMEvn and LSMEnv Representatives on the field for site Verification 4-6
Plate 4.3: Photograph showing FMEnv, LSMEnv and community representatives during the scoping workshop 4-7
Plate 4.4: In-situ measurements of VOCs, SPM, NO, CO_2, CO, SO2, CH_4, H_2S, Noise Level and Wind Speed 4-33
Plate 4.5: Photograph of Soil Sampling and labeling 4-41
Plate 4.6: Photograph of ground water Sampling and labeling 4-52
Plate 4.6: Surface water sampling and in-situ measurement 4-53
Plate 4.7: Vegetation extract around the Proposed Project Area 4-64
Plate 4.8: Showing Infrastructure around the proposed project area 4-79
Plate 4.9: Photograph of the lagoon Hospital 4-102
Plate 4.10: Community Consultation with FMEnv Regulators 4-111
Plate 4.11: Site Verification with FMEnv Regulators 4-111
Plate 4.12: Interactive Session with Community Leaders During the Stakeholder Consultation 4-111
Plate 4.13: Project Site Equipment and Compliance Inspection Protocol 4-112
Plate 4.14: Photograph during question and answers session 4-112

LIST OF ACRONYMS AND ABBREVIATIONS

Units of Measurement

0C	Degrees Centigrade
dB(A)	Decibel Class A
EC	Electrical Conductivity
g/kg	Gram per kilogramme
km	Kilometre
m	Metre
mg/kg	Miligramme per kilogramme
mg/l	Miligramme per litre
ml	Millilitre
mm	Millimetre
NTU	Nephelometric Turbidity Units
ppm	Parts per million
µg/m3	micro gram per metre cube
µS/cm	Micro Siemens per centimetre
%	Percentage

General Abbreviations and Acronyms

%	-	Percentage
OC	-	Degree Celsius
A/C	-	Air Condition
AC	-	Alternate Current
AfDB	-	African Development Bank
ALARP	-	As Low as Reasonably Practicable
AQ	-	Air Quality
APPI	-	Area of Potential Project Influence
As	-	Arsenic
AS	-	Approach Surface
Ba	-	Barium
BAT	-	Best Available Technique
BATNEEC	-	Best Available Technology Not Entailing Excessive Cost
BOD	-	Biochemical Oxygen Demand
Ca	-	Calcium
CBD	-	Convention on Biological Diversity
Cd	-	Cadmium
CDC	-	Community Development Committee
CEC	-	Cation Exchange Capacity
CFC	-	Chlorofluorocarbons
CH4	-	Methane

Cl-	-	Chloride Ion
CLO	-	Community Liaison Officer
CO	-	Carbon Monoxide
CO2	-	Carbon Dioxide
COD	-	Chemical Oxygen Demand
C.O.D	-	Corrugate Optic Duct
Cr	-	Chromium
CSR	-	Corporate Social Responsibility
Cu	-	Copper
dBA	-	Decibels
DC	-	Direct Current
Deg	-	Degree
DO	-	Dissolved Oxygen
EA	-	Environmental Assessment
EAG	-	Environmental Assessment Guidelines
EIA	-	Environmental Impact Assessment
EIS	-	Environmental Impact Statement
ESMP	-	Environmental and Social Management Plan
EMS	-	Environment Management System
EPA	-	Environmental Protection Agency
ESA	-	Environmentally Sensitive Areas
ESMS	-	Environmental and Social Management System
EPA	-	Environmental Protection Agency
Fe	-	Iron
FEPA	-	Federal Environmental Protection Agency
FGD	-	Focus Group Discussion
FMEnv	-	Federal Ministry of Environment
FRN	-	Federal Republic of Nigeria
FRSC	-	Federal Road Safety Commission
Ft	-	Feet
GHGs	-	Greenhouse Gases
GIS	-	Geographical Information Systems
GPS	-	Global Positioning System
GW	-	Groundwater
H2S	-	Hydrogen Sulphide
HCO3-	-	Bicarbonate Ion
Hg	-	Mercury
HSE	-	Health Safety and Environment
HSE-MS	-	Health Safety and Environment Management System
HSSE	-	Health, Safety, Security, and Environment
ICT	-	Information and Computer Technology

ITCZ	-	Inter-Tropical Convergence Zone
K	–	Potassium
Km	-	Kilometre
Km/h	-	Kilometre per hour
KVA	-	Kilo Volt-Amps
LAN	-	Local Area Network
LAU	-	Land Use Act
Lat	-	Latitude
LCA	-	Life Cycle Analysis
LGA	-	Local Government Area
Long	-	Longitude
Mg	-	Magnesium
NESREA	-	National Environmental Standards and Regulations Enforcement Agency
NGOs	-	Non-Governmental Organisations
NH4+	-	Ammonium
NGDC	-	New Generation Green Data center
Ni	-	Nickel
NiMet	-	Nigerian Meteorological Agency
NO2	-	Nitrogen Dioxide
NO3	-	Nitrate
NPC	-	National Population Commission of Nigeria
NPE	-	National Policy on the Environment
OSH	-	Occupational Safety and Health
PAH	-	Polynuclear Aromatic Hydrocarbons
Pb	-	Lead
PCB	-	Polychlorinated biphenyls
pH	-	Hydrogen ion concentration
Plc	-	Public Limited Company
PM	-	Particulate Matter
POA	-	Point of Access
POP	-	Persistent Organic Pollutants
PPE	-	Personal Protective Equipment
PPP		Public-Private Partnership
PVC	-	Polyvinyl chloride
QA/QC	-	Quality Assurance/ Quality Control
QHSE	-	Quality, Health, Safety, and Environment
RAID	-	Redundant Array of Independent Disks
RH	-	Relative Humidity
SEPA	-	State Environmental Protection Agency
SHOC	-	Safe Handling of Chemical
SIA	-	Social Impact Assessment

SO4	–	Sulphate
SOx	-	Sulphur Oxides
Sp	-	Species
SPM	-	Suspended Particulate Matter
STI	-	Sexually Transmitted Infection
TAH	-	Total Aliphatic Hydrocarbon
TDS	-	Total Dissolved Solids
THB	-	Total Heterotrophic Bacteria
THC	-	Total Hydrocarbon Content
THEMES	-	T- Traffic Management and Transportation; H- Health and Environment; E- Education and Technology; M- Making Lagos a 21st Century Economy; E- Entertainment and Tourism; S- Security and Governance
TMAX	-	Temperature maximum
TMIN	-	Temperature minimum
TOC	-	Total Organic Content
ToR	-	Terms of Reference
TS	-	Transitional Surface
TSS	-	Total Suspended Solids
UNEP	-	United Nations Environment Programme
UNFCCC	-	United Nations Framework Convention on Climate Change
UNICEF	-	United Nations International Children Emergency Fund
USAID	-	United States Agency for International Development
VOC	-	Volatile Organic Carbon
VOD	-	Video-on-Demand
VOIP	-	Voice Over Internet Protocol
WHO	-	World Health Organization
WMO	-	World Meteorological Organization
WMP	-	Waste Management Plan
WWTU	-	Waste-Water Treatment Unit
Zn	-	Zinc

LIST OF ESIA REPORT PREPARERS

S/N	Name	Responsibility
1	Simon Odaudu (M.Sc. Env. Mgt., M.Sc. Environmental Tech., MIST, MAEIAN, MNES)	Project Director/Editor
2	Dr. Florence Ijeoma Nkuku (M.Sc. Env. Mgt. Ph.D Env. Mgt. MAEIAN, MNES	Project Coordinator/Editor
3	Yunusa Ahmed Muhammed (B.Sc. Geography; M.Sc. Env. Mgt. MAEIAN	Team Lead/Data Analysis/GIS
4	Paul Onyebuchi Igboke (HND Elect. Elect., PGD Env. Res. Mgt. – in view)	Engineering (HSE)
5	Odaudu Ruth Opiotu (M.Sc. Chemistry)	Field Work (Air Quality/Noise)
6	Gum Samuel Luper (B. Tech. Ind. Chemistry)	Field Work (Air Quality/Noise)
7	Michael N. Odaudu (M.Sc. Agric. Econs, Ph. D, In-view)	Socio-economic Investigation/Community Study
8	Simon Odaudu Jnr. (B.Sc., M.Sc. Sociology)	Socio-economic Investigation/Community Study
9	Emmanuel Oche Odaudu (B.Sc. M.Sc. Development Politics)	Socio-economic Investigation/Community Study
10	Oluwatobi Dosunmu (B.Sc. Botany)	Field Work (Ecology)
11	Sunday Jami'u (B.Sc Botany, M.Sc Env. Sci.)	Field Work (Ecology/Air Quality/Noise)
12	Dr. Joe Ogweje (MB BS. MPH)	Health Survey Report Editor
13	Aminu Oche Alhassan (B.Eng Civil)	Engineering (Civil)
14	Albert Achi (NCE, Secretariat Studies)	ICT/Office Assistant

EXECUTIVE SUMMARY

ES 1 Background Information

IASO Medipark Limited, through a public-private- partnership (PPP) initiative with the Lagos State Government proposed to build a modern medical facility, to be known as Lagos Medipark at Plot 1-9 Awolowo Road, Ikoyi, Eti-Osa Government Area. The proposed development has 140 – bed spaces, diagnostic centre, residences and an ancillary building. The project site is the former School of Nursing which has been demolished in preparation for the development of the health care facility. This ESIA is designed to identify and predict impacts of the project on the biophysical, human and socio-economic characteristics of the project environment in line with Environmental Impact Assessment (EIA) Act CAP E12 L.F.N 2004, Lagos State Environmental Protection Agency Edict, Lagos State Ministry of Urban and Regional Planning, AfDB's Integrated Safeguards System (ISS), 2023 and such other local, national and international laws relevant to the assessment.

ES 2 Objectives of the ESIA

The main objective of this Environmental and Social Impact Assessment (ESIA) is to develop a clear understanding of the existing environmental and social conditions within the proposed project area before any construction or development begins.

i. To gather relevant background data/information on the general environmental (bio-physical, chemical, cultural, socio-economic and health) and social components of the proposed project that are likely to be impacted by the project in the project area;
ii. To analyze the data obtained and characterize the present environmental and social statuses of the study area prior to the proposed project activities, with particular reference to all the environmental components significant to such infrastructure development; and
iii. To identify adverse and potential environment and social impacts that may arise from the proposed project activities in the study area and recommend appropriate mitigation measures as well as integrate ESMP for their amelioration and monitoring.
iv. Comply with the national and international ESIA guidelines and other environmental statutes and regulations on major development projects.
v. Identify the best practicable environmental option, alternative processes and most environmentally suitable options at early stages; and

vi. Demonstrate to all stakeholders, management of the Proponent's resolve and readiness to protect the environment while carrying on its economic activities in the project area.

vii. To ensure that no environmental laws and any other laws relevant to this project are broken.

viii. Develop a site-specific Environmental and Social Management Plan (ESMP)

ES 3 Project Location

The proposed Medipark Project is situated at a prime location on plot No 1 – 9, Awolowo Road, Ikoyi, Eti-Osa Local Government Area of Lagos State. It has an area of 16,000m^2 (1.6 hectares). The Revised Ikoyi-Victoria Island Model City Plan recognizes the Medipark project site as institutional land use, with adjoining properties being a mix of commercial, institutional/public and residential uses. The proposed project is specifically situated within Latitude 6.444389°N and Longitude 3.408722°E along Awolowo Road in Ikoyi **of** Eti-Osa Local Government Area, Lagos State. It lies on the southern flank of Awolowo Road, a major arterial route connecting Ikoyi to Lagos Island and other adjoining districts. The site falls within the core Ikoyi district**, a** premium area of Metropolitan Lagos renowned for its institutional, residential and commercial significance. The site is bordered by commercial and institutional buildings including banks, offices, and hospitality facilities. It is directly accessible from Awolowo Road located south of the site.

ES 4 The Project Proponent

The project is a public-private partnership initiative between Lagos State Government (IBILE Holdings Limited) and IASO Medipark Limited (IASO). IASO is the special purpose vehicle that will implement this project named "Lagos Medipark".

IBILE Holdings is an investment company owned by the Lagos State Government, established in 1989. IBILE is an abbreviation Ikeja, Badagry, Ikorodu, Lagos Island, Epe, for unity and shared prosperity. IBILE Holdings was established to manage Lagos State assets, drive economic growth, and invest strategically in sectors like real estate, infrastructure, tech and finance. IBILE act as a bridge between public policy and private enterprises and manage commercial investments for Lagos State.

Iwosan Investment is a member of the consortium that formed IASO Medipark, a special purpose vehicle (SPV). Other promoters of the SPV are: Radical Technology (Technology Solutions), EL-Alan (construct services) and Verraki Partners (Business Innovation Consultants). In order to effectively implement this strategic project IASO Medipark put together specialist organizations such as Hok Architects, USA, ECAD Architects Africonsultae Engineers, JNCI Medical equipment integrators, and cool technology providers to deliver this world class project, at record time and of the highest quality.

ES 5 Justification for the Project

Needs for the Project

Lagos State, Nigeria's most populous and economically dynamic state, faces significant pressure on its healthcare system due to rapid population growth, urbanization, and a rising burden of both communicable and non-communicable diseases. Despite being a national healthcare hub, with over 2,300 health facilities and a mix of public and private providers, gaps in capacity and quality persist.

Infrastructure and Capacity Constraints:

- Lagos State has approximately 1,800 private and 362 public healthcare facilities, with only a fraction able to offer advanced services beyond basic care.
- The state reportedly faces a hospital bed deficit of around 66,000 beds relative to population needs, far below World Health Organization benchmarks.
- Many primary health centers are overstretched or lack essential infrastructure, with some facilities operating limited hours or under staffed conditions.

Human Resource Gaps: At the national level, Nigeria's overall healthcare workforce is insufficient, with an estimated doctor-to-patient ratio far below WHO standards commonly reported at around 1 doctor per 4,000 - 5,000 people, compared to the WHO recommendation of 1 per 600. This shortage contributes to long waiting times, limited specialist availability, and strain on existing services.

Access and Quality Issues: Public facilities are often overcrowded and under-equipped, contributing to inequitable access to quality care, particularly in underserved communities.

Many residents still bypass local facilities for perceived higher quality care, historically fueling medical tourism and out-of-country healthcare spending. Though recent data suggests a sharp decline in outbound spending, the underlying drivers of care gaps remain.

Economic and Systemic Consequences: The insufficient availability of advanced diagnostic and specialist treatment centers encourages reliance on overseas medical care by those who can afford it, resulting in economic losses and reduced access to timely care for many Nigerians.

Other needs are:

- Expand Healthcare Capacity & Access
- Improve Service Quality and Emergency Care
- Align with Policy and Public–Private Partnership Goals
  Drive Broader Socio-Economic Benefits

Project Benefits

Beyond its financial and physical value, the proposed Medipark Project will deliver substantial social and economic benefits to Lagos State and its wider catchment areas. These benefits are expected to accrue throughout the construction, operational and operational phases of the project. The principal benefits associated with the proposed development are outlined in the following sub-sections:

- Improved access to modern, high-quality healthcare services for residents of Lagos State and neighbouring areas;
- Strengthening of tertiary and specialist medical care, thereby reducing pressure on existing healthcare facilities;
- Generation of direct and indirect employment opportunities during construction and operation, alongside capacity building and skills development;
- Provision of opportunities for medical research, training and professional development within the healthcare sector; and
- Contribution to improved public health outcomes, enhanced quality of life and overall socio-economic development.

Collectively, these benefits reinforce the strategic importance of the proposed Medipark project as a critical investment in social infrastructure and human capital development.

Value of the Project

The final cost of the proposed development is still being reviewed to account for inflation and prevailing market conditions; however, the project is expected to have a high real estate and investment value. The overall cost covers substructure and superstructure works, mechanical

and electrical installations, internal and external finishes, landscaping, parking, and supporting infrastructure.

In addition to direct capital expenditure, the project will generate significant wider economic benefits throughout its lifecycle, including employment creation during construction and operation, increased demand for local goods and services, and induced economic activities across the value chain. With more than 60 percent of project spending expected to be retained within Lagos State through local contractors, suppliers, and workforce, the development will contribute meaningfully to local economic growth, income generation, and internally generated revenue. The total project cost is currently estimated at approximately ₦48 billion, underscoring its scale, complexity, and strategic importance as a major healthcare infrastructure investment in Lagos State.

Envisaged Project Sustainability

The sustainability of the proposed Medipark project has been assessed across environmental, technical and socio-economic dimensions. These elements are interrelated and collectively ensure long-term project viability while minimizing adverse environmental and social effects.

- **Technical Sustainability**

The technical sustainability of the project is based on the application of proven engineering, architectural and healthcare facility management practices. The design incorporates durable materials and reliable technologies that meet internationally acceptable standards for safety, efficiency and performance. Construction works will be executed by experienced and reputable contractors and subcontractors to ensure quality control, adherence to specifications and compliance with health and safety requirements. Innovative and economically viable technologies with minimal environmental and social risks will be adopted where feasible.

The hospital has been designed for a minimum operational lifespan of approximately 60 years. A structured maintenance and asset management programme will be implemented to ensure long-term functionality, operational efficiency, and adaptability to evolving healthcare needs. The Proponent has undertaken detailed studies to support the design of the Medipark project that include geotechnical investigations and traffic studies. The Proponent has technically competent personnel required for effective operation of the Project.

- **Environmental Sustainability**

Environmental considerations have been fully integrated into the planning, design, construction and proposed operation of the hospital facility. The project has been designed in accordance with applicable environmental regulations, planning standards and internationally recognized best practices for healthcare developments.

Potential environmental impacts associated with site preparation, construction activities, and operational phases, such as land disturbance, air emissions, noise, water use, waste generation, and occupational health and safety risks have been identified and addressed through appropriate mitigation measures. These measures will be implemented throughout the project life cycle to prevent, minimize or control adverse effects on land, water, air quality, and surrounding communities. The environmental sustainability measures include:

- Efficient site layout and land-use planning to minimize environmental disturbance;
- Adoption of effective waste management systems, including medical and hazardous waste handling;
- Incorporation of energy- and water-efficient technologies to reduce resource consumption;
- Measures to control air emissions, noise, and surface runoff; and
- Landscaping and green areas to enhance the aesthetic and ecological quality of the site.

These measures will ensure that the project is developed and operated in an environmentally responsible manner.

- **Socio-economic Sustainability**

The project will be implemented through a Public–Private-Partnership (PPP) arrangement, which enhances financial sustainability by shared investment responsibilities, risks and technical expertise between the public and private sector. Socio-economic sustainability considerations include employment generation, compliance with labour and occupational health and safety requirements and contribution to local economy. The project will create direct and indirect employment opportunities during construction and operational phases, thereby supporting livelihoods and skills development. The continuous demand for healthcare services is expected to ensure sustained utilization of the Medipark facility and long-term revenue generation. With appropriate maintenance and operational management, the hospital and associated infrastructure will remain functional and economically viable throughout its life

cycle. In addition, property values in the project area are expected to continue appreciating, further strengthening the project's economic outlook.

Project Alternatives

In line with the provisions of the EIA Act No. 86 of 1992, as amended and consolidated in the EIA Act, Cap E12, L.F.N, 2004, an Environmental and Social Impact Assessment (ESIA) is required to examine technically and economically feasible alternatives for project implementation, including the assessment of the environmental implications of such alternatives. Furthermore, the ESIA Procedures and Charges Regulations, issued by the Federal Republic of Nigeria through Official Gazette No. 105, Vol. 108 (S.I. No. 109) in September 2021, require that project alternatives be evaluated with respect to technology, site selection, energy use and water requirements. Accordingly, the following project alternatives have been examined:

Alternative Technology

During the project planning and design stages, alternative technology for construction and operation of the proposed Medipark project will be evaluated. The objective of this assessment will be to identify technologies capable of delivering high-quality healthcare services while optimizing operational efficiency, ensuring patient and staff safety, and minimizing environmental and social impacts.

One alternative will involve the use of conventional construction methods and standard building systems, characterized by limited energy-efficiency features and reliance on traditional mechanical and electrical installations. While this approach may offer lower initial capital costs, it is expected to present notable disadvantages, including higher long-term energy consumption, increased operational costs and a larger environmental footprint. In addition, such systems may provide limited adaptability to future technological advancements in healthcare delivery.

Another alternative will involve the adoption of modular or prefabricated construction technologies for major building components. Although modular systems can potentially reduce construction duration and site disturbance, their application to large-scale tertiary healthcare facilities is anticipated to be constrained by design rigidity, limited flexibility for specialized medical spaces, and challenges associated with integrating advanced diagnostic and treatment equipment. Furthermore, long-term maintenance and replacement of modular components may be costlier due to reliance on specialized suppliers.

The preferred technology will integrate modern, durable construction materials with energy-efficient building systems and advanced medical technologies. This approach will include the use of high-performance building envelopes, efficient heating, ventilation and air-conditioning systems, water-efficient fixtures and healthcare-appropriate waste management systems. Medical equipment and support systems will be selected based on reliability, safety and compatibility with recognized international healthcare standards to ensure operational efficiency and quality of care.

This preferred technological approach is expected to provide a balanced solution by reducing long-term operational costs, enhancing patient and staff comfort, and minimizing environmental impacts associated with energy and water consumption. It will also allow for future system upgrades and expansion in response to evolving healthcare demands.

Based on technical feasibility, life-cycle cost considerations, operational reliability and environmental performance, the alternative technology options will not be adopted. The selected technology will therefore be considered the most suitable and sustainable option for the proposed Medipark Project.

As part of the selected technology for the Medipark Project, appropriate air quality control measures shall be incorporated into the facility design and operational systems. These shall include the installation of dedusting units at truck unloading stations and along outtake conveying systems to effectively capture dust generated during material handling activities. Dust suppression measures shall be applied to prevent the escape of fines and particulate matter, with particular emphasis on conveyor transfer points where dust generation is most pronounced.

Although alternative design and technology were reviewed during the project planning process, they do not present significant technical, financial, or environmental advantages over the proposed technology. Accordingly, alternative technology options are not considered viable for further assessment and shall not be pursued further in this ESIA.

Site Alternatives

The proposed project site is government-owned and designated for institutional development under the approved planning framework. As a result, alternative sites were not considered, as relocation would be inconsistent with land-use planning objectives and would introduce additional environmental, social and economic constraints.

Alternative Utilities and Infrastructure

Alternative options for water supply, wastewater management, power supply, and waste management were evaluated, including exclusive use of on-site systems and connection to municipal infrastructure with backups. The preferred option combines public utility connections with on-site backup systems to ensure reliability, environmental protection, and operational continuity. Renewable energy, particularly solar power with battery storage, is incorporated to reduce dependence on fossil fuels and diesel use, in line with the National Policy on Climate Change. Accordingly, a hybrid power system is proposed, integrating public power supply, solar PV with inverters and batteries, and diesel generators for backup.

Solid waste management alternatives

Significant solid waste will be generated during the project phases. An integrated solid waste management system will be implemented in line with best practices and regulations. Priority will be given to waste reduction at source through efficient resource use and awareness programmes for staff, patients, and visitors. Recycling and reuse will be promoted via source separation of plastics, paper, metals, and glass for transfer to accredited recyclers in Lagos State. Non-recyclable wastes will be collected and disposed of by LAWMA-accredited contractors in compliance with state guidelines. Radioactive wastes will be managed in accordance with NNRA regulations, ensuring safe and sustainable waste handling.

Project Development Options

An evaluation of feasible project development options were undertaken to inform decision-making and ensure selection of the most suitable option. The assessment considered environmental and social implications, technical feasibility, economic viability, land-use compatibility and stakeholder considerations. The project development options evaluated include:

i. No-Project Option
ii. Delayed Project Option
iii. Go-ahead Option

- **No-Project Option**

Under the no-project option, the proposed Medipark project would not be implemented and the project site would remain vacant following the demolition and abandonment of previous

structures. While this option may allow limited natural regeneration, it offers no social or economic benefits.

The option would result in the loss of opportunities to improve healthcare service delivery, generate employment and enhance socio-economic development. Investments already made in feasibility studies, planning and documentation would be forfeited. Given the identified healthcare needs and the site's compatibility with institutional land use, the no-project option is considered undesirable.

- **Delayed Project Option**

The delayed project option involves postponing implementation to a later date. This option is typically considered where social conflict, land ownership disputes or unfavourable economic or political conditions exist. None of these conditions applies to the proposed development. Delaying the project would increase costs due to inflation, undermine planning efforts already undertaken and prolong existing gaps in healthcare infrastructure. Consequently, this option is considered impracticable.

- **Go-ahead Option**

The execution of the Medipark project has been identified as the most viable and beneficial option. The project will enhance healthcare infrastructure, improve access to modern medical services, generate employment and support professional development within the health sector. The development will be supported by sound land-use planning, robust engineering design, and strong socio-economic justification. Potential adverse environmental and social impacts will be effectively managed through the implementation of appropriate mitigation and management measures. Accordingly, the execution of the Medipark project is considered the most suitable, feasible, and sustainable option for implementation.

ES 6 Project Description

The proposed Lagos Medipark site is located at plots 1 – 9, Awolowo Road, Ikoyi, Eti-Osa Local Government Area. It has an area of 16,000m^2 (1.6 hectares). It abuts Awolowo Road in the southern axis, while Obadeyi Close is its boundary northwards. The Onikan flyover bridge bounds the site westwards, with a mix of institutional and undeveloped plots in the eastern boundary. The primary access to the site is the Awolowo Road.

The proposed development is comprised of buildings including hospital buildings, diagnostic centre, residences and an ancillary building, which is largely devoted to parking.

There are also engineering works or services like roads, drains power, water and water supply. The buildings are to be developed in phases. As shown in the Layout Plan, 37 percent of the uses/development at the site is circulation (road), which is the largest. Others are 24.51 and 20.24 percent for Greens and Medical respectively. The least land use group are Parking and Services with 9.44 percent, Commercial as 3.91 percent, and mixed use with 3.91 percent.

Project Activities

- **Site Preparation and Establishment**

This stage includes the development of site access, construction compound, workers' yard, material storage areas and site office for coordination and logistics. Critical services such as power, water, communication and drainage will be connected to the site, subject to capacity assessments from surrounding communities.

- **Site Access:** Construction traffic will comprise workforce transportation, haulage of excavated materials, movement of construction materials and equipment, and visits by consultants and suppliers. Traffic volumes and vehicle types will be managed in line with the project's Traffic Impact Analysis.
- **Drainage Works:** Drainage systems will be installed early in the construction phase to manage surface runoff, protect the site from flooding, and support subsequent construction activities.
- **Foundation and Superstructure Works:** Construction will commence with foundation works, which are critical to structural stability, followed by erection of walls, framing of trusses, roofing, and development of the superstructure in accordance with approved designs. Registered builders and structural engineers will oversee these works.
- **Regulatory Inspections:** Inspections will be carried out at key stages of construction by the Lagos State Building Control Agency (LASBCA) to ensure compliance with building standards and regulatory requirements.
- **Mechanical, Electrical and Plumbing Works:** Mechanical, electrical, and plumbing systems will be installed prior to internal finishes. This includes plumbing, wiring, ductwork, HVAC systems, venting, and water heating installations.
- **Interior Works and Finishing:** This phase involves installation of medical equipment, cabinetry, flooring, doors, staircases, fittings, and other architectural finishes that transform the structures into functional healthcare facilities.

- **Building Commissioning:** The final stage will involve comprehensive inspections and testing to confirm compliance with applicable standards. LASBCA certification will be obtained, culminating in the issuance of the statutory Certificate of Fitness for Habitation.

ES 7 Description of the Environment

Baseline Data Acquisition

Baseline data acquisition was carried out using a multidisciplinary approach within a Quality, Health, Safety and Environment (QHSE) management framework to ensure compliance with scientific and regulatory requirements. The process involved literature review, development of a field sampling strategy, pre-mobilization activities such as equipment calibration, field sampling and in-situ measurements, sample preservation and documentation, and laboratory analysis.

The literature review focused on collecting relevant biophysical and socio-economic information from authoritative sources, including the Nigerian Meteorological Agency (NiMet), National Population Commission (NPC), academic publications, and journals. Reconnaissance surveys and site delineation were conducted between 11th and 14th November 2025, followed by an FMEnv-supervised site verification on 8th December 2025. These exercises involved key stakeholders and included visual assessments within a 2 km radius of the project area to identify environmental features, land use, ecological characteristics, drainage patterns, and surrounding human communities.

The scoping workshop for the proposed Lagos Medipark project was held on 8th December 2025 to ensure compliance with ESIA regulatory requirements, engage host and surrounding communities, communicate the project and its anticipated benefits, and identify community concerns and expectations.

Key highlights of the workshop included presentations on the ESIA framework for the project, the project scope and justification, the role of scoping in the ESIA process, and the defined ESIA scope covering biophysical, socio-economic, and health components, impact assessment, environmental management planning, and proposed mitigation measures and recommendations.

Climate and Meteorology

The Lagos coastal area has a humid tropical climate influenced by two seasonal wind systems: the dry north-easterly Tropical Continental (Tc) and the moist south-westerly Tropical

Maritime (Tm), separated by the Inter-Tropical Convergence Zone (ITCZ). Six climatic periods are observed, including the harmattan, alternating wet and dry seasons, and the August break.

Rainfall dominates the climate, peaking in June (~304 mm) with a secondary peak in September and minimal rain in January (<20 mm). Average monthly rainfall is 132.8 mm, supported by high humidity and coastal influences. Temperatures are moderate, with annual averages of 32.6 °C (max) and 23.9 °C (min), hottest in February–April and coolest in January. Relative humidity averages 82.4% year-round, highest in June–July, while wind is primarily south-westerly during the wet season and north-easterly in the dry season, averaging 4.72 m/s, with occasional stronger winds during thunderstorms. These conditions support safe construction with proper planning.

Air Quality and Noise level

To establish a baseline for the proposed project, in-situ measurements of air quality, noise, and particulate matter were conducted at 12 locations within and around the site using calibrated handheld digital meters. Oxides of nitrogen and carbon were measured in parts per million (ppm) using a portable iBrid MX6 analyzer, calibrated with a standard gas/air mixture at 1.0 psi. Particulate matter concentrations were recorded in mg/m³, while noise levels were measured in dB(A).

- **Noise Levels:** Measured between 40.5–60 dB(A), highest along access roads due to traffic. All readings are below FMEnv, WHO, and NESREA limits, indicating a generally quiet baseline environment. Main sources include traffic, human activity, and natural sounds.
- **Nitrogen Dioxide (NO_2):** 0.01–0.02 ppm near access roads; negligible away from roads. Levels are within national and international limits.
- **Carbon Monoxide (CO):** 2–4 ppm near roads; 0 ppm elsewhere. Within permissible limits, mainly from vehicular emissions.
- **Carbon Dioxide (CO_2):** 499–756 ppm, below OSHA 8-hour limit of 5,000 ppm. Slightly higher near roads due to traffic and human activity.
- **Sulfur Dioxide (SO_2):** Not detected at any location.
- **Volatile Organic Compounds (VOCs):** 0.08–0.40 ppm, highest near access roads. Levels are low and within standards.

- **Suspended Particulate Matter (SPM):** PM2.5: 14–30 μg/m³; PM10: 22–50 μg/m³. Most values below NESREA and WHO limits, except points near main roads where traffic contributes to elevated levels.
- **Methane (CH_4):** Below detection limits at all sites.

Air quality across the project site is generally good, with traffic along access roads being the main contributor to localized increases in NO_2, CO, VOCs, and particulate matter. Noise levels are low and within the permissible limits stipulated by the Federal Ministry of Environment (FMEnv), which prescribes a maximum of 90 dB(A) for an 8-hour exposure and 105 dB(A) for a 1-hour exposure, as well as the WHO and NESREA permissible noise limits for mixed-use receptors. The primary sources of ambient noise identified during the field survey include vehicular traffic along access roads, routine human activities such as conversations, and natural sounds including bird calls. Notwithstanding these sources, noise levels at the control location and sampling points within the project site remained within acceptable regulatory thresholds, indicating a relatively quiet baseline noise environment.

Surface Water Study

The Lagos Lagoon, a perennial and navigable water body near the project site, has a flow rate of 0.56 m/s and experiences seasonal flooding in parts of Ikoyi. It is vital for local transport and ecological connectivity. Discharges into the Lagoon could affect water quality and aquatic ecosystems. Baseline water and sediment samples were collected at six points along the Lagoon at 500-meter intervals to assess conditions.

- **pH and Alkalinity:** The pH ranged from 7.5–7.8 with high alkalinity (350–395 mg/L), suitable for buffering but may affect treatment.
- **Salinity and Dissolved Solids:** Very high TDS (13,700–14,900 mg/L) and salinity (14.8–16.7 ppt); water is highly mineralized and not suitable for drinking without treatment.
- **Turbidity and Suspended Solids:** Low turbidity (1.8–2.6 NTU) but high TSS (295–335 mg/L), indicating particulates or recent disturbance.
- **Oxygen and Organic Load:** Moderate DO (3.9–4.6 mg/L); very high BOD (245.9–290.3 mg/L) and COD (2,600–3,050 mg/L), indicating substantial organic pollution.

- **Hardness and Major Ions:** Moderate hardness (100–175 mg/L), high chloride (560–640 mg/L), sulfate (315–365 mg/L), nitrate (50–60 mg/L), phosphate (1.89–3.42 mg/L), ammonia (11–14.5 mg/L); suggests wastewater influence and potential health/taste concerns.
- **Metals:** Sodium elevated; copper (0.82–1.02 mg/L) and manganese (1.31–1.62 mg/L) moderately high; lead, cadmium, chromium very low (<0.01 mg/L), nickel slightly elevated (0.22–0.30 mg/L).

For microbiology, total plate count ranged from 1.5×10^3 to 2.0×10^3 CFU/mL, total coliforms present ranged from 2.9×10^2 to 4.3×10^2 CFU/mL. E. coli was not detected, indicating some contamination but low fecal risk.

The water is highly saline and mineralized with significant organic pollution, elevated nitrates, and some microbial presence. Treatment would be necessary for potable

Ground Water Study

Groundwater samples were collected from a borehole (GW 01) and a hand-dug well (GW 02) and evaluated against WHO and FMEnv standards to assess suitability for domestic use.

The results were evaluated against the World Health Organization (WHO) drinking water guidelines and the Federal Ministry of Environment (FMEnv) standards to determine suitability for domestic use and to establish baseline conditions prior to project implementation.

- pH ranged from 7.5–7.8, indicating neutral to slightly alkaline water within acceptable limits.
- Electrical conductivity (910–942 μS/cm), TDS (451–472 mg/L), and hardness (101–106 mg/L) were all within permissible standards, showing moderate mineralization and low scaling potential.
- Turbidity (7.0–8.1 NTU) exceeded limits, suggesting the presence of suspended particles, particularly in the hand-dug well.
- Nitrate, sulphate and chloride levels were low, while dissolved oxygen (3.6–3.7 mg/L) was slightly below guideline values, typical for groundwater.
- BOD (3.1–3.2 mg/L) indicated low biodegradable organic matter.

- **Heavy Metals:** Iron (0.72–0.85 mg/L) exceeded WHO limits but was within FMEnv limits; may cause staining or taste issues. Manganese (1.82–2.05 mg/L) exceeded both guidelines, potentially posing long-term health concerns. Other metals, including lead, cadmium, zinc, and copper, were within safe limits.
- **Microbiological Quality:** Total plate counts ($1.5 \times 10^3 – 1.8 \times 10^3$ CFU/ml) and total coliforms ($1.1 \times 10^2 – 1.5 \times 10^2$ CFU/100 ml) exceeded recommended limits, indicating potential contamination from surface infiltration. Escherichia coli was not detected, suggesting no recent fecal contamination.

While physico-chemical parameters of the samples are largely acceptable, elevated turbidity, manganese, iron, and coliform presence indicate that treatment is required before domestic consumption.

Soil Study

The soils within the proposed Medipark project area in Ikoyi are typical of coastal alluvial environments, reflecting the influence of the Lagos Lagoon and the broader sedimentary processes of the Lagos Island–Ikoyi axis. The soil profile observed during field investigation shows a sequence of young, weakly developed alluvial deposits consistent with areas undergoing continuous sedimentation and anthropogenic modification.

Soil assessment across ten locations and two control points showed slightly acidic to near-neutral, non-saline, sandy soils with good structure and aeration. Topsoil had higher organic carbon, nutrients, and microbial activity than subsoil, indicating active biological processes. Total hydrocarbons were low, and heavy metals—including iron, copper, zinc, lead, nickel, chromium, and cadmium were within natural background levels, with mercury, arsenic, and barium below detection. Overall, the soils are fertile, well-drained, and uncontaminated, providing a healthy baseline for project development.

Vegetation Study

The proposed Medipark site in Ikoyi is a highly urbanized coastal area with reclaimed land, landscaped greens, and limited secondary vegetation. Natural mangrove and swamp forests are largely absent due to decades of urban development. Vegetation is dominated by ornamental shrubs, hedges, and shade trees like Terminalia mantaly, Ficus benjamina, Gmelina arborea, and Delonix regia, along with maintained grasses and lawns. Isolated secondary trees, including oil palm and Albizia lebbeck, occur sporadically. Small patches of freshwater swamp vegetation exist in poorly drained depressions, consisting of sedges, ferns, reeds, and hydrophytic grasses. Overall, the site reflects a modified urban plant community shaped by landscaping and human activity, with a mix of ornamental, economic, and secondary species.

Fauna Study

It should be noted that areas within and around the project location are all built-up part of Ikoyi, Lagos State. Therefore, the commonest wildlife expected is birds and the reptiles. Various birds have been reportedly present in the project location and indeed Lagos, and these include aquatic species such as kingfishers, egrets; and garden and forest species such as the doves and weaverbirds.

Public Consultation

The ESIA fieldwork engaged relevant government agencies (Federal Ministry of Environment, Lagos State Ministry of Environment, and regulatory authorities), host community representatives (Ikoyi residents, youth and women leaders, Baale's compound), and interest groups (Community Development Associations, local NGOs, artisans, and trade associations). Consultations provided a structured platform for stakeholders to express concerns, clarify project details, and contribute to environmental and social planning.

The Community highlighted key expectations for healthcare accessibility, affordability, and equitable employment opportunities. Anticipated benefits include local job creation, vocational training for youth and women, increased economic activity through local procurement, and integration of women- and youth-led enterprises. Governance and transparency mechanisms, including complaint and monitoring frameworks, were requested to ensure the ESMP enforces binding commitments. Stakeholders, including the FMEnv and AfDB, recognized these priorities as essential for securing community trust, equitable participation, and the project's social license.

Socio-economic and Social Assessment

A comprehensive socio-economic and social assessment was undertaken in Ikoyi, Eti-Osa Local Government Area of Lagos State between 10th November and 14th December 2025 as part of the Environmental and Social Impact Assessment (ESIA) for the proposed MediPark development. The study was conducted in line with international best practices, the requirements of the Federal Ministry of Environment, and the African Development Bank (AfDB) Integrated Safeguards System. Its purpose was to establish baseline social and economic conditions, assess potential project-related impacts, and identify mitigation and enhancement measures that would promote inclusive development while protecting the rights and welfare of affected communities and workers.

The assessment covered a wide range of social and economic variables, including population characteristics, livelihoods, income and employment patterns, access to social infrastructure, community health, cultural heritage, governance structures, and community perceptions of the proposed project. Particular attention was given to vulnerable groups, including women, youth, informal workers, and low-income households, in recognition of AfDB safeguard requirements on social inclusion and equity.

Data Collection

Data collection combined both primary and secondary sources. Primary data were obtained through household questionnaires, focus group discussions, key informant interviews, public consultations, and direct field observations within communities located within a one-kilometre radius of the project site. Secondary information was sourced from the National Population Commission, the National Bureau of Statistics, health facility records, published literature, and relevant government reports. A combination of purposive and random sampling techniques was adopted, resulting in fifty valid household responses. Quantitative and qualitative analytical methods were applied to generate reliable baseline socio-economic and social indicators.

The Host Community

The host community is Ikoyi, which is characterized by predominantly working-age population, with approximately two-thirds of residents falling between the ages of 26 and 55. The community is relatively well educated, with a high proportion of residents possessing post-secondary qualifications, reflecting Ikoyi's role as a major residential and commercial hub within Lagos. Employment is largely concentrated in the private sector, corporate services, self-employment, and small-scale enterprise, while unemployment levels are relatively low.

Household income levels range from middle to high income, although pockets of lower-income households and informal workers remain present, underscoring the need for inclusive benefit-sharing mechanisms.

Community Structure

Socially, the community exhibits a high level of organization and cohesion, with active community associations, residents' groups, and traditional leadership structures playing important roles in local governance. Christianity and Islam are the dominant religions, coexisting peacefully within a culturally diverse and cosmopolitan environment. The community places strong value on public green spaces, orderly development, and quality urban infrastructure, while expressing sensitivity to traffic congestion, parking pressure, noise, and construction-related disturbances. Awareness of the site's historical use as a former nursing school remains strong, contributing to heightened expectations regarding healthcare delivery and social value.

Livelihood

Livelihoods within the study area are closely linked to formal employment, local businesses, and service-based activities, many of which depend on accessibility along major corridors such as Awolowo Road. A significant proportion of residents operate small businesses or provide services within the area, and many expressed interest in employment, training, or partnership opportunities associated with the Medipark project. There is strong community expectation that the project will prioritize local employment, skills development, and procurement, particularly for youth and women, while maintaining high professional and safety standards.

Social Infrastructure

Access to social infrastructure within Ikoyi is generally moderate to good, although notable gaps exist. Water supply is largely dependent on boreholes and packaged water due to limited reliance on public mains. Electricity supply is widely perceived as unreliable, resulting in heavy dependence on diesel generators, with associated noise and air quality concerns. Healthcare facilities are relatively accessible, with most residents able to reach hospitals within short travel times; however, demand for specialized and high-quality medical services remains strong. Road conditions, drainage, and parking availability were identified as key areas requiring improvement, particularly in light of anticipated project-related traffic and construction activities.

Labour

From a labour and workforce perspective, the proposed Medipark project is expected to generate significant employment opportunities during both construction and operational phases. In alignment with AfDB requirements and International Labour Organization (ILO) conventions, the project is expected to uphold workers' rights, including the right to fair wages, safe and healthy working conditions, freedom of association, and non-discrimination. Employment practices will be required to comply with national labour laws and relevant ILO core conventions, including the prohibition of child labour and forced labour, equal opportunity for women and men, and respect for workers' dignity. Occupational health and safety measures, grievance redress mechanisms, and transparent recruitment processes will be essential to safeguarding workers and maintaining social acceptance of the project.

Community Perception

Community perceptions of the Medipark project are generally positive but conditional. While many residents anticipate improvements in healthcare access, employment generation, and local economic activity, concerns remain regarding traffic congestion, noise, waste generation, and equitable access to project benefits. The community has emphasized that their support is contingent upon transparent engagement, enforceable social commitments, and the meaningful inclusion of local residents, women, and youth in employment, training, and decision-making processes.

Overall, the socio-economic and social baseline indicates a highly active, organized, and economically productive host community with clear expectations for responsible development. The Medipark project presents a significant opportunity to enhance healthcare delivery, stimulate local employment, and contribute to sustainable urban development in Ikoyi. However, realizing these benefits will require robust social management measures, adherence to AfDB safeguards and ILO labour standards, and continuous engagement with stakeholders to ensure that project impacts are managed equitably and sustainably throughout the project lifecycle.

Health Assessment

The study reviewed published health data, facility records and conducted surveys and interviews to assess baseline health in the Lagos State study area. Both orthodox (hospitals, health centers, dispensaries) and non-orthodox (traditional birth attendants) health facilities exist, with urban areas better equipped than rural ones. Common health issues include malaria (leading cause of outpatient visits, maternal, and childhood mortality), diarrheal diseases, respiratory infections, gastroenteritis, urinary tract infections, pneumonia, tuberculosis, measles, and sexually transmitted diseases.

ES 8 Associated and Potential Environmental Impacts of the Project

Positive Project Impacts

Lagos Medipark development will bring about many positive impacts with wide range of physical, economic and social impacts. The positive impacts anticipated are highlighted below

Provision of Tertiary – Level Medical Facility

The Medipark Project will address a critical gap in the availability of advanced healthcare services that has historically driven outbound medical tourism, particularly for cancer treatment. The proposed state-of-the-art equipment and specialized clinical departments will significantly enhance the medical landscape of the State, improve access to high-quality tertiary healthcare, and contribute to substantial savings in foreign exchange for the country.

Improvement in the Physical Setting of the site/district

Prolonged non-use of the site has resulted in its misuse, including the emergence of illegal structures and shanties, leaving the area largely unoccupied and poorly managed. The proposed development will restore order to the site through proper planning and structured land use, while ensuring effective integration with adjoining developments, thereby enhancing the overall physical setting of the district.

Substantial Employment Generation

The project will generate substantial employment opportunities across its various phases. These opportunities will span a wide range of skill levels, including professionals such as medical practitioners, engineers, and finance experts, as well as artisans, craftsmen, and general labourers.

Provision of Infrastructure

The proposed development is expected to catalyse improvements to infrastructure within and around the project area. These upgrades will include enhancements to the road network, electricity distribution, potable water supply, and solid waste and wastewater management systems. The improved infrastructure will be designed, operated, and maintained in accordance with applicable regulatory and ESIA requirements to adequately support project occupants and contribute to improved service delivery in the surrounding area.

Work Area, Hospitality and Leisure Time Activity Areas Development

Work areas, hospitality, and leisure activity zones will be developed within the project area. These will comprise light industrial facilities, shopping malls, hotels, motels, event centres, and eateries. In addition, landscaped parks, gardens, and playgrounds equipped with modern recreational facilities will be provided. Collectively, these components will enhance leisure and recreational opportunities for residents of the new town and the wider Lagos metropolis, while also promoting economic activity, social interaction, and improved quality of life.

Increase in Trading of Building Materials Supplies

The proposed development is expected to result in a significant increase in demand for building materials within the Lagos Region and surrounding areas. In line with the proponent's commitment to comply with the Nigerian Local Content Law, priority will be given to the engagement of indigenous traders, suppliers, and service providers. This approach will stimulate local markets, support domestic enterprises, and contribute positively to the regional economy.

Attraction of Foreign Investment

The scale, scope, and technical content of the proposed development are expected to attract foreign investment, particularly in the areas of advanced medical equipment, specialized medical personnel, and supporting infrastructure development, including power supply and waste treatment systems. This inflow of investment will contribute to technology transfer, capacity building, and the overall strengthening of the healthcare and infrastructure sectors.

Skill Acquisition For Youth in the Local Communities

The project will require a substantial pool of skilled and semi-skilled artisans, a capacity that is currently limited within the State. To address this gap, the project proponent will implement targeted training and skill acquisition programmes for youths from local communities, with the objective of enhancing their employability during both the construction and operational

phases of the project. This initiative represents a significant human capital development benefit and will contribute to long-term socio-economic empowerment at the local and regional levels.

Crime Reduction and Security Enhancement

The proposed development is expected to contribute to a reduction in crime within the project area. Portions of the site have previously been used by miscreants as hideouts or temporary shelters following criminal activities. The introduction of a well-planned and actively managed development, supported by formal land use, improved lighting, security presence, and increased human activity, is anticipated to deter criminal behaviour. Local communities have expressed strong confidence that the project will enhance security and significantly curtail criminal activities within the area.

Negative Project Impacts

In spite of the many positive impacts of the Medipark project, there are also several potential and associated impacts. These are also highlighted below.

Aquatic and Terrestrial Biodiversity Impacts

The site has low ecological sensitivity with modified habitats and artificial drainage systems. No protected species, Species of Special Concern, natural wetlands or riparian ecosystems were identified. Vegetation loss, potential spread of alien species, and minor changes to hydrology, erosion, runoff velocity, and water quality are anticipated mainly during construction. With mitigation, all biodiversity-related impacts reduce to low or very low significance.

Vegetation and Habitat Impact

Vegetation loss will occur primarily during construction due to site clearing and soil disturbance, with limited additional loss during operation. No loss of protected habitats is expected. Residual impacts after mitigation are low.

Impact of Changes to Water Quality

Potential impacts include erosion, sedimentation, and temporary water quality degradation from construction activities and operational wastewater risks. Effective stormwater management, erosion control, and waste handling reduce impacts to low significance.

Heritage Resources Impact

No cultural, archaeological, or paleontological resources were identified on site. The risk of heritage loss is very low, with chance-find procedures in place.

Social Impacts (Population and Demographics)

Influx of workers, job seekers, and service users may temporarily affect local safety, security, and social dynamics. Opportunistic settlement and demographic changes are possible but manageable. With mitigation, residual social impacts are low, and in some cases neutral.

Occupational Health and Safety Impacts

Occupational and community health and safety risks, including traffic, site access, waste handling, and infection risks, are initially high negative but can be mitigated to low significance through strict HSE controls and ESMP implementation.

Noise, Dust, Air Quality and Waste

Construction and operation will generate noise, dust, emissions, and various waste streams. Without controls, impacts are medium negative; with mitigation, residual impacts are low.

Infrastructure and Services

Increased demand on roads and utilities may occur. Construction impacts are very low with planning, while operational impacts may be medium positive due to improved services, provided utility reliance is well managed.

Topography and Climate

Topographical and climatological impacts related to drainage, design, and greenhouse gas emissions are medium negative initially but reduce to low with appropriate design, water management, re-vegetation, and energy efficiency measures.

With full implementation of mitigation measures, the project's residual environmental and social impacts are predominantly low, while delivering clear socio-economic and employment benefits.

Cumulative and Residual Impacts

The cumulative impact assessment considers the combined effects of the proposed medical park and other existing or foreseeable developments in the surrounding area. Overall, cumulative impacts are expected to be localized, mostly temporary during construction, and manageable with appropriate project-level controls.

Ambient Air: During construction, combined dust and vehicular emissions from multiple developments may temporarily reduce air quality, but impacts are minor and localized. During

operation, no significant cumulative air quality impacts are anticipated, as surrounding developments do not generate substantial emissions.

Noise: Construction activities across concurrent projects may collectively increase noise levels; however, these effects are temporary, localized, and minor. Operational noise is expected to remain largely within site boundaries, resulting in insignificant cumulative impacts.

Waste: Construction waste from the project and nearby developments may place additional pressure on municipal waste systems, resulting in a minor cumulative impact. During operation, increased population and healthcare activities will raise both general and hazardous waste generation, leading to a moderate cumulative impact, particularly on treatment and disposal facilities.

Energy, Water and Wastewater: Construction-phase demand on municipal services is minimal and minor. During operation, combined developments will increase demand for energy, water, and wastewater services. Although infrastructure is generally adequate, cumulative energy use and associated greenhouse gas emissions result in a moderate cumulative impact.

Gender-Based Violence, Illicit Behaviour and Crime: During construction, the presence of multiple workforces in residential areas may elevate risks of crime and social conflict, leading to a moderate cumulative impact. In the operational phase, with permanent staffing and enforcement of codes of conduct, cumulative impacts related to crime and illicit behaviour are expected to be minor.

Cumulative impacts from the project, when considered alongside existing and foreseeable developments, range from minor to moderate, with construction-related impacts being largely temporary and operational impacts mainly associated with waste management, service demand, and energy use. With effective mitigation and coordination at the project level, cumulative effects are not expected to pose significant long-term environmental or social constraints.

ES 9 Mitigation Measures

Mitigation measures are actions taken to enhance positive impacts and to minimize negative ones. They aim to improve the environmental sustainability of a project. Depending on the nature of the impact they seek to ameliorate, they can be applied during the design or implementation stage of the project. Mitigation measures are implemented on a continuous

basis through the project's life-cycle. The mitigation measures for the Lagos Medipark Project are structured to address environmental, social, health, and safety risks across the construction, operation, and decommissioning phases, in line with AfDB ESIA requirements and national regulations.

Construction Phase

Land Acquisition and Displacement: No land acquisition, physical displacement, or economic displacement is involved, as the site was voluntarily allocated by the Lagos State Government. The impact is negligible, with ongoing engagement to ensure regulatory compliance.

Biodiversity and Vegetation: The project is located on a brownfield site with limited ecological value. Mitigation focuses on restricting activities to the approved footprint, preserving remaining vegetation where feasible, and landscaping with native/adaptive species. Residual impacts are low and reversible.

Soils, Erosion and Slopes: Measures include topsoil stripping and reuse, erosion and sediment controls, slope stabilization, geotechnical investigations, controlled earthworks, drainage provision, and prompt re-vegetation to minimize erosion and slope failure risks.

Water Resources and Demand: Water demand will be managed through connection to municipal supply, on-site storage, supplementary boreholes, water-efficient fixtures, conservation measures, and consumption monitoring, ensuring no significant impact on existing users.

Public Utilities: Existing utilities will be identified and mapped prior to construction, with coordination with service providers, protective excavation methods, temporary diversions, and prompt repair of any damaged infrastructure.

Materials and Waste Management: Construction materials will be sourced from licensed suppliers, procured efficiently to minimize wastage, and reused or recycled where possible. An integrated waste management hierarchy (reduce, reuse, recycle, dispose) will be applied using licensed waste handlers.

Air Quality, Dust, Noise, and Vibration: Dust suppression (watering, speed control), equipment maintenance, reduced idling, low-sulphur fuels, daytime work scheduling, and equipment enclosures will minimize emissions, noise, and vibration impacts.

Liquid Waste and Pollution Control: Domestic effluents will be collected using mobile toilets and managed by licensed wastewater contractors. Oil spill risks will be controlled through designated maintenance areas and good housekeeping practices.

Occupational Health, Safety and Welfare: Comprehensive OSH measures include provision of PPE, safe work procedures, permits for high-risk activities, emergency preparedness and evacuation plans, fire and electrical safety systems, first aid and medical support, insurance coverage, workers' welfare facilities, ergonomics, and machinery safety inspections.

Community Health and Social Measures: HIV/AIDS and public health awareness campaigns, vector control, dust control near communities, and solid waste systems to deter scavengers will be implemented. Engagement with authorities will address pressure on local infrastructure.

Operation Phase

Cultural Heritage and Social Interaction: No physical cultural resources are affected. Cultural integration programmes will promote cohesion between staff and host communities.

Flooding and Drainage: Properly designed drainage systems and site landscaping will prevent flooding and runoff-related impacts.

Solid Waste and Healthcare Waste Management: A comprehensive healthcare waste management system will be implemented, including segregation, staff training, waste minimization, sustainable treatment technologies, and licensed disposal in line with WHO and national standards.

Sewage Management: Adequate sewage systems will be provided and maintained to prevent blockages, leaks, and environmental contamination.

Resource Efficiency: Energy-efficient systems, renewable energy integration, water-saving fixtures, leak repairs, and continuous monitoring will ensure efficient use of energy and water.

Privacy, Public Health and Safety: Data protection measures, site fencing, tree buffers, infection prevention and control systems, emergency preparedness, accident prevention measures, odour control, and comprehensive noise mitigation strategies will be implemented.

Radiological, Electrical and Magnetic Fields: Exposure will be managed through monitoring, access control, shielding, work rotation, and implementation of a REMF safety programme.

Decommissioning Phase

Waste, Dust and Noise: Demolition waste will be managed responsibly, with dust suppression, noise control, and use of appropriate equipment.

Site Rehabilitation: Borrow pits and disturbed areas will be rehabilitated, and the site restored as far as practicable, including re-vegetation.

Road Safety and Transport of Dangerous Goods: Road safety management systems, vehicle standards, routing controls, spill prevention, emergency response planning, and community awareness will reduce accident and spill risks.

Fire Hazards: Fire risks will be mitigated through prevention measures, active and passive fire protection systems, emergency planning, regular drills, and staff training.

With full implementation of these mitigation measures, construction, operational, and decommissioning impacts are expected to be reduced to low or negligible significance, while ensuring compliance with AfDB safeguards, national regulations, and international best practice.

ES 10 Environmental and Social Management Plan (ESMP)

The Environmental and Social Management Plan (ESMP) has been structured around the relevant environmental and social components to ensure effective monitoring and management of residual impacts. To serve as an integrated mechanism for managing all potential impacts identified in the ESIA (both adverse and beneficial) an Environmental and Social Management System (ESMS) will be established and implemented.

The ESMS will provide a systematic framework to ensure that all mitigation and enhancement measures identified in the ESIA and the associated Environmental and Social Management and Monitoring Plan (ESMMP) are effectively implemented throughout the project life cycle. In addition, the ESMS will support continuous monitoring, compliance auditing, and inspection programmes, thereby enabling the Project to meet its environmental and social commitments in accordance with applicable Nigerian regulatory requirements and international lender standards, including the African Development Bank's Integrated Safeguards System (ISS) and other relevant good international industry practices.

ES 11 Decommissioning and Closure Plan

The Federal Ministry of Environment (FMEnv) ESIA process requires projects of this scale and nature to incorporate an environmentally sound decommissioning plan. The Decommissioning Plan for the proposed project is guided by its intended function as a medical park. As such, the facility is not expected to cease operations abruptly; rather, its buildings, infrastructure, and services may gradually deteriorate or become obsolete over time as a result of normal use and technological advancement.

Accordingly, decommissioning activities are anticipated to focus primarily on phased renovation, rehabilitation, rebuilding, or renewal of facilities and infrastructure to restore functionality and extend the operational life of the development. These interventions will be implemented periodically to rejuvenate the medical park and maintain compliance with evolving regulatory, environmental, and healthcare standards.

Where full decommissioning becomes necessary, the planning and execution of such activities will be undertaken in consultation with, and under the oversight of FMEnv, Lagos State Ministry of Environment and Water resources, and the Local Government authorities. In all cases, rehabilitation measures will include appropriate site restoration and re-vegetation to enhance environmental quality and ensure consistency with national regulations and AfDB environmental and social safeguard requirements.

ES 12 Conclusion

IASO Medipark Limited has, from the project initiation stage, given due consideration to potential environmental, social, economic, health, and safety issues associated with the proposed Lagos Medipark development. The ESIA has identified both the positive and negative impacts of the project, and appropriate mitigation measures have been prescribed for all significant adverse impacts.

IASO Medipark Limited is fully committed to implementing the recommended mitigation measures to minimize negative impacts to acceptable levels throughout the project life cycle. In addition, it is recommended that the positive impacts of the project, particularly those related to employment generation, improved healthcare delivery, capacity building, and socio-economic development be enhanced and maximized to the greatest extent practicable.

ACKNOWLEDGEMENT

This Environmental and Social Impact Assessment (ESIA) for the Proposed Lagos Medipark Project, Ikoyi, was undertaken with the support, cooperation, and constructive engagement of numerous stakeholders, including corporate organizations, community groups, individuals, and relevant Ministries, Departments, and Agencies (MDAs), in line with the requirements of the Federal Ministry of Environment (FMEnv) and the African Development Bank (AfDB) ESIA guidelines.

The study team gratefully acknowledges the invaluable support and cooperation of the Ikoyi/Obalende Community Development Council (CDC) and the various Community Development Associations (CDAs) within the project area. Special appreciation is extended to the Chairman of the CDC, Mr. Yemisi Shodipo, for his leadership and assistance in mobilizing community members and facilitating stakeholder consultations. His experience and guidance in community engagement significantly contributed to the effectiveness of the consultation process.

The contribution of the Iyaloja General (General Market Women Leader) for Eti-Osa Local Government Area, Chief Alhaja Jokotade Logun, is also highly appreciated, particularly for her insights into the concerns and perspectives of market women and other vulnerable stakeholder groups within the project area.

The study further benefited from the cooperation of Lagos State MDAs, notably the Ministries responsible for Transportation, Physical Planning and Urban Development, Health, Environment, and Water Resources, whose officers provided critical data, guidance, and institutional perspectives essential to the assessment. Appreciation is also extended to the Ikoyi/Obalende Local Council Development Area and business owners along Awolowo Road, Ikoyi, for their cooperation during field consultations.

The residents of Obadeyi Close, St. Gregory College Road, Moshalasi Street, and other neighbouring communities are acknowledged for providing a conducive environment for consultations and for sharing valuable information on the potential impacts of the proposed project. The cooperation of local artisans' associations, including welders, mechanics, iron benders, carpenters, and bricklayers in Obalende and Onikan, adjoining the project area, is also gratefully acknowledged.

Finally, the contributions of professional and technical organizations, including ECAD Architects Limited, Africonsultae Engineers, and Lateral Design Concept, are sincerely

appreciated for their roles in the development of the project designs and their technical inputs to the ESIA study.

CHAPTER ONE
INTRODUCTION

1.1 Background Information

Lagos State plays a central role in Nigeria's socio-economic development. It serves as the country's main commercial, financial, and industrial hub, attracting population growth, investment, and economic activity. Its strategic coastal location, established transport infrastructure, and concentration of businesses and institutions continue to drive urban expansion and demand for social infrastructure, particularly healthcare services. The rapid expansion of the Lagos Metropolitan Area has created continuous social and environmental challenges. Demand for housing, transportation, healthcare, water supply, waste management, and energy has grown faster than service delivery. This has resulted in congestion, overstretched infrastructure, and inadequate access to essential services, with clear effects for urban efficiency, social equity, and long-term sustainability. In this context, the ability of government alone to provide and maintain adequate social infrastructure particularly healthcare facilities has been affected by financial, institutional, and demographic constraints. As a result, the Lagos State Government has adopted policies that actively encourage private sector participation in key areas of the urban economy. Priority sectors include healthcare, residential and commercial development, manufacturing, hospitality, and entertainment, all of which directly influence social welfare, employment, and quality of life. This approach is clearly shown in the Lagos State Government's THEMES Plus Agenda of the Babajide Sanwo-Olu led administration's six-pillar framework designed to transform Lagos into a 21st Century economy and a more livable city. The agenda focuses on "T- Traffic Management and Transportation; H- Health and Environment; E- Education and Technology; M- Making Lagos a 21st Century Economy; E- Entertainment and Tourism; S- Security and Governance". The "Plus" in the agenda signifies an intensified focus on social inclusion, gender equality and youth empowerment to ensure governance benefits all residents. Of particular relevance is the agenda's focus on Health and Environment which aims to improve healthcare services, sanitation and sustainable environmental practices. This agenda on Health and Environment recognizes the close link between public health outcomes, environmental quality and overall social well-being of citizens and visitors residing within Lagos State. Rising healthcare costs, increasing demand for specialized medical services, and ongoing gaps in access to quality care highlight the need for additional, well-planned healthcare infrastructure in the State.

Private investment plays important role in healthcare delivery in Lagos through the establishment of hospitals, clinics, diagnostic centres, laboratories, pharmacies, and specialist facilities. According to the Lagos State Health Facility Monitoring and Accreditation Agency (HEFAMAA), over 4,000 healthcare facilities are registered across the State. Despite this, differences remain in service quality, capacity, and spatial distribution, particularly for advanced and specialized care. These gaps contribute to inadequate access to services, high out-of-pocket healthcare costs, and continued medical travel outside the State and the country.

Against this background, the proposed Lagos Medipark Project, Ikoyi, Eti-Osa Local Government Area (LGA) of Lagos State, is conceived as an integrated healthcare development that responds to identified social and environmental needs. The project is designed to complement existing public and private healthcare facilities by expanding access to high-quality, specialized medical services and improving health outcomes for residents, workers, and visitors within the Lagos Metropolitan Area.

Ikoyi is a prominent urban district within Metropolitan Lagos, known for its historical importance, strategic location, proximity to Lagos Island, and mix of residential, commercial, and institutional land uses. The area is largely characterized by high-income residential communities, embassies, corporate offices, and premium commercial activities. Sustained investments by Federal, State, and Local Governments have strengthened infrastructure in the district, increasing its attractiveness for large-scale developments. However, such developments also raise important social considerations, including land-use compatibility, traffic generation, community safety, and access to essential services.

IASO MediPark Limited, in partnership with the Lagos State Government under a Public–Private Partnership (PPP) arrangement, proposes the development of the Lagos Medipark project to be located on Plots 1–9, Awolowo Road, Ikoyi, within Eti-Osa LGA of Lagos State. The proposed development includes a 140-bed multi-specialist hospital, a diagnostic center, residential accommodation, and supporting facilities. The site previously housed a School of Nursing, which has been demolished to allow for redevelopment. The reuse of this site represents an urban regeneration initiative with potential social benefits, including job creation, skills development, and improved access to healthcare services.

Awolowo Road is a major arterial route within Ikoyi, connecting the district to other parts of the Lagos Metropolitan Area. Over time, it has developed into a busy commercial corridor, accommodating offices, hotels, retail outlets, and fuel stations. While this growth has

strengthened economic activity, it has also increased traffic volumes, pedestrian movement, and pressure on existing infrastructure. These factors are important considerations in assessing the social impacts of the proposed project.

The proposed hospital will operate alongside existing healthcare facilities in the wider area, including Lagos Island General Hospital, Lagos Island Maternity Hospital, Massey Children's Hospital, and several nearby specialist centers. The concentration of healthcare facilities in the district underscores the need to assess not only project-specific impacts but also cumulative social impacts, such as access to services, traffic flow, emergency response capacity, and broader community health benefits.

To manage the environmental and social impacts of major developments, the Federal Government of Nigeria and the Lagos State Government have established relevant legal and regulatory frameworks. The Environmental Impact Assessment Act, CAP E12, Laws of the Federation of Nigeria (LFN) 2004, requires an Environmental Impact Assessment for projects likely to have significant environmental and social impacts. In addition, the Lagos State Environmental Management and Protection Law, 2017, mandates prior environmental assessment for developments that may affect communities, public health, and the urban environment. In line with these legal requirements and international best practice, IASO MediPark Limited engaged Labstaff Nigeria Limited, an accredited environmental consulting firm, to carry out an Environmental and Social Impact Assessment (ESIA) for the proposed Lagos MediPark Project, Ikoyi, Lagos.

The ESIA provides a structured approach for identifying, predicting, and evaluating both positive and negative environmental and social impacts associated with the construction and operation of the project. These impacts may include changes in land use, traffic and transportation patterns, employment opportunities, community health and safety, access to services, socio-economic impacts, and overall quality of life. The ESIA also supports the development of mitigation and enhancement measures aimed at reducing adverse impacts, strengthening social benefits, and ensuring that the project is implemented in an environmentally responsible, socially inclusive, and sustainable manner.

This Draft Environmental and Social Impact Assessment (ESIA) Report was prepared following a site verification and scoping workshop conducted by officials of the Federal Ministry of Environment and Lagos State Ministry of Environment and Water Resources, extensive field investigations including sampling activities, stakeholder engagement at various

levels and laboratory analysis of sampled environmental components. This report documents the findings of the ESIA and includes an Environmental and Social Management Plan (ESMP), which outlines measures for mitigating and managing all identified significant environmental and social impacts associated with the proposed project.

This introductory chapter provides an overview of the proposed project and describes the methodology and approach adopted in undertaking the ESIA. It also outlines the applicable legal, regulatory and policy framework guiding the ESIA process and the implementation of the Medipark project.

1.2 Objectives of the ESIA

The main objective of this Environmental and Social Impact Assessment (ESIA) is to develop a clear understanding of the existing environmental and social conditions within the proposed project area before any construction or development begins. This involves documenting baseline physical, biological, and socio-economic conditions that may be affected by the proposed Lagos MediPark Project. The ESIA also seeks to identify, predict, and assess potential environmental and social impacts both positive and negative associated with the construction, operation, and, where applicable, decommissioning of the project. These impacts may include changes to the biophysical environment, public health and safety, land use, traffic and mobility, employment, local livelihoods, and overall community well-being. A key objective of the ESIA is the preparation of a practical and implementable Environmental and Social Management Plan (ESMP). The ESMP outlines measures to prevent, minimize, mitigate, or compensate for adverse impacts, while enhancing positive environmental and social outcomes. The findings and recommendations of the ESIA will be integrated into the project's design, planning, implementation, and operational phases to ensure environmental protection and social well-being, in line with the Environmental Impact Assessment Act Cap E12 Laws of the Federation of Nigeria (LFN) 2004, relevant Lagos State regulations and African Development Bank Integrated Safeguards System (AfDB ISS) 2023.

The specific objectives of the ESIA are to:

i. Ensure Compliance with National and Lagos Environmental laws and Regulations; the AfDB Integrated Safeguards System of 2023, and applicable national environmental, social, health, and safety legislation.
ii. Establish baseline environmental and social conditions within the project area through detailed assessment of ecosystem characteristics, physical environmental conditions, and socio-economic factors, providing a reference point for monitoring future changes;
iii. Support project design and planning by identifying aspects of site selection, construction activities, operational processes, and potential decommissioning that may result in environmental, health, safety, or socio-economic impacts;
iv. Facilitate Stakeholder Engagement and Disclosure; ensuring that the views of affected communities and other stakeholders are considered in project planning and implementation.
v. Identify, assess, and predict potential environmental and social impacts of the proposed project, including their nature, magnitude, extent, duration, significance, and cumulative effects;
vi. Review relevant environmental and social policies, laws, and regulatory requirements applicable to the project, and identify the standards, permits, and approvals required for implementation; and
vii. Propose appropriate mitigation and enhancement measures to reduce adverse impacts, protect community health and safety, and maximize positive socio-economic benefits, including employment generation, skills development, and improved access to healthcare services.
viii. Develop a site-specific Environmental and Social Management Plan (ESMP)

1.3 The Project Proponent

The proposed Lagos MediPark Project is being implemented through a Public–Private Partnership (PPP) between the Lagos State Government, acting through Ibile Holdings Limited, and IASO Medipark Limited. This partnership aligns with the State Government's policy approach of using private sector expertise, funding, and innovation to support the delivery of public infrastructure and essential social services, including healthcare. In line with the Lagos State Public–Private Partnership Law, 2011, the Office

of Public–Private Partnership is responsible for initiating, structuring, and procuring PPP projects for the development and management of public assets. This includes managing pre-qualification processes and assessing expressions of interest from potential private sector partners. The Lagos MediPark Project was developed through this formal process, leading to an agreement between the Lagos State Government, its relevant agencies including Ibile Holdings Limited and IASO Medipark Limited as the private sector partner.

1.3.1 IBILE Holdings Limited

IBILE Holdings Limited is an investment company wholly owned by the Lagos State Government and serves as a key vehicle for the State's investment and asset management activities. Established in 1989, the Company's mandate is to diversify the State's economic base, generate sustainable financial returns, and deliver measurable socio-economic benefits to the people of Lagos State. The Company operates under a legal and regulatory framework that includes national laws and international best practices, such as the Nigeria Data Protection Regulation (NDPR) and internationally recognized dispute resolution mechanisms, including UNCITRAL arbitration principles. These frameworks promote transparency, accountability, and good corporate governance. IBILE Holdings Limited has strategic investments across multiple sectors, including banking, insurance, construction, and real estate. Its real estate activities cover property development, acquisition, brokerage, and facilities management. According to IBILE Holdings Limited, as of 31 December 2024, its investment portfolio was valued at over ₦61.9 billion, highlighting its important role in Lagos State's economic development. The Company continues to pursue growth by partnering with credible technical and strategic partners to develop new sectors and critical infrastructure. Its vision is to "be a leading diversified investment management company with a focus on maximizing stakeholders' value." This vision underpins its participation in the Lagos Medipark Project, which aims to provide long-term social benefits through improved healthcare access, employment opportunities, and urban regeneration.

1.3.2 IASO Medipark Limited

IASO Medipark Limited is the private sector partner and project sponsor for the Lagos Medipark Project. The company is a Special Purpose Vehicle (SPV) established specifically to develop, finance, and manage the proposed medical facility. The project aims to address

gaps in Nigeria's healthcare system, particularly in providing high-quality, specialized medical services. IASO Medipark Limited is promoted and led by Iwosan Investments, a Nigerian healthcare management company and owner of Iwosan Lagoon Hospitals. The SPV is co-promoted by Radical Technology (technology solutions), EL-ALAN Construction (construction services), and Verraki Partners (business innovation and advisory services). This consortium brings together complementary expertise in healthcare delivery, construction, technology, and business strategy. For effective project implementation, IASO Medipark Limited has assembled a multidisciplinary technical consortium, including HOK Architects (USA), ECAD Architects, Africonsult Engineers, JNCI Medical Equipment Integrators, and specialized cooling and technology solution providers. This integrated approach is designed to ensure that the project meets international standards in design, construction, medical technology, environmental performance, and social responsibility.

1.4 Terms of Reference

In compliance with statutory requirements, the project proponent, prepared a Terms of Reference (ToR) for the Environmental and Social Impact Assessment (ESIA) and submitted it to the Federal Ministry of Environment, Lagos State Ministry of the Environment and Water Resources (MOEWR) for review and approval. The approved ToR provides the framework and methodology for the ESIA, ensuring that all relevant environmental and social factors are properly assessed.

The key elements of the approved ToR include the following:

i. Define the overall scope of the study, including data needs related to the proposed project and the environmental and social receptors likely to be affected;
ii. Establish procedures and methods for identifying, assessing, and evaluating potential environmental and social impacts, and for developing an effective Environmental and Social Management Plan (ESMP);
iii. Provide a framework for interdisciplinary collaboration, integrating inputs from environmental experts, social specialists, stakeholders, and regulatory authorities;
iv. Facilitate consultations with regulatory agencies, host communities, and other relevant stakeholders to ensure inclusive participation and consideration of their concerns;
v. Identify applicable legal, institutional, and administrative requirements for the project; and

vi. Provide guidance for decommissioning and site restoration measures to be implemented at the end of the project lifecycle.

1.5 Scope of the ESIA

The scope of this Environmental and Social Impact Assessment covers all activities associated with the planning, construction, operation, and eventual decommissioning of the proposed Lagos Medipark Project. Specifically, the ESIA addresses the following:

i. Reviewing applicable national and international environmental and social laws, regulations, guidelines, and codes of practice relevant to the proposed development;
ii. Describing and analyzing the proposed project activities across all phases, including site preparation, construction, operation, and decommissioning;
iii. Reviewing existing literature and secondary data on the project area, identifying data gaps, and conducting field surveys and laboratory analyses to establish reliable baseline conditions;
iv. Analyzing and documenting baseline environmental and social conditions, with particular focus on sensitive environmental components and social receptors;
v. Identifying and evaluating potential adverse environmental and social impacts on surrounding communities, including effects on cultural heritage, social infrastructure, land use, livelihoods, and community lifestyles;
vi. Assessing public health and safety risks associated with the project during construction, operation, and decommissioning, including potential exposure pathways for local populations;
vii. Developing practical, cost-effective mitigation and enhancement measures, resulting in a comprehensive Environmental and Social Management Plan (ESMP);
viii. Preparing the ESIA report in full compliance with applicable State and Federal guidelines and standards; and
ix. Facilitating the ESIA approval process through submission of the final report to the Federal Ministry of Environment, Lagos State Ministry of the Environment and Water Resources (MOEWR) and engagement with relevant regulatory authorities

1.6 ESIA Process in Nigeria and Alignment with AfDB Requirements

The Environmental and Social Impact Assessment (ESIA) for this project was undertaken in

accordance with the Environmental Impact Assessment Act, Cap E12, Laws of the Federation of Nigeria (LFN) 2004, and the relevant guidelines of the Federal Ministry of Environment (FMEnv). In addition, the ESIA process was aligned with the African Development Bank (AfDB) Integrated Safeguards System (ISS), particularly Operational Safeguard 1 (OS1): Environmental and Social Assessment. The ESIA followed a structured and iterative process designed to integrate environmental and social considerations into project planning and decision-making, consistent with both national regulatory frameworks and AfDB requirements. This approach ensures that the project is environmentally sound, socially responsible, and sustainable.

Key steps in the ESIA process included:

- Project Screening and Categorization, to determine the level of environmental and social assessment required in line with FMEnv procedures and AfDB project categorization.
- Scoping and Terms of Reference (ToR) Development, including identification of key environmental and social issues, potential risks, and stakeholders, consistent with AfDB ISS scoping requirements.
- Baseline Environmental and Social Studies, covering biophysical, socio-economic, health, and cultural aspects within the project's area of influence, in accordance with AfDB and national standards.
- Stakeholder Engagement and Public Consultation, undertaken to ensure meaningful participation of affected communities and interested stakeholders, in line with AfDB disclosure and consultation principles.
- Impact Identification, Prediction, and Evaluation, including direct, indirect, and cumulative impacts across the construction, operation, and decommissioning phases of the project.
- Application of the Mitigation Hierarchy, emphasizing impact avoidance, minimization, mitigation, and, where applicable, compensation, in accordance with AfDB Operational Safeguards.
- Development of an Environmental and Social Management Plan (ESMP), detailing mitigation measures, monitoring indicators, institutional responsibilities, and reporting requirements.
- Preparation and Disclosure of the ESIA Report, to inform regulators, financiers, and stakeholders and to support decision-making.

- Review, Approval, and Monitoring, including submission of the ESIA report to FMEnv for approval, as well as AfDB review to ensure compliance with its safeguards.

The ESIA process therefore satisfies both national legal requirements and AfDB safeguard policies, providing a robust framework for managing environmental and social risks and enhancing positive impacts throughout the project lifecycle. An overview of the ESIA process is presented in Figure 1.1.

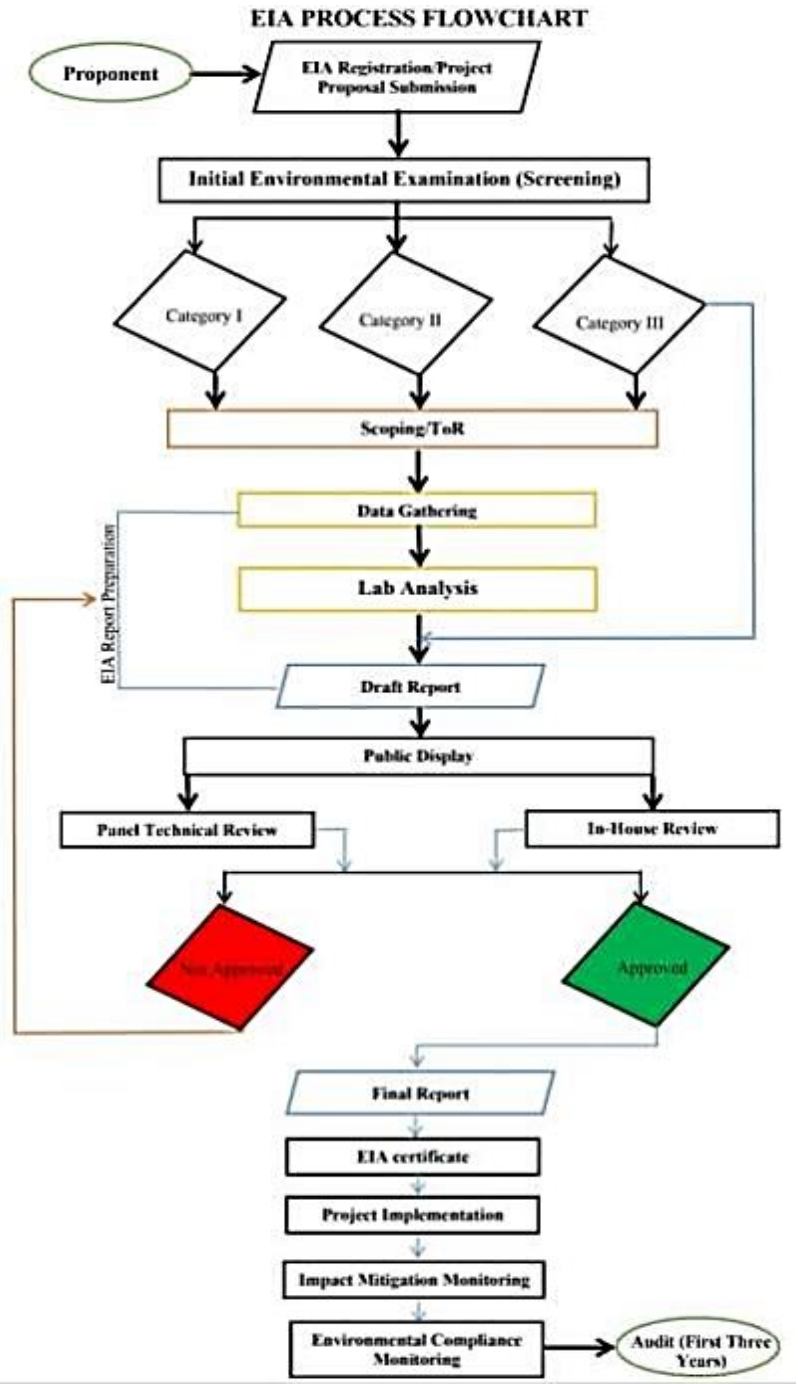


Figure 1.1: FMEnv EIA/ESIA Implementation Flowchart
Source: Federal Ministry of Environment, 2021

1.7 Legal and Regulatory Framework

The proposed Lagos Medipark Project is governed by a comprehensive set of national, state, and international laws and policies covering environmental protection, social safeguards, public health, occupational safety, land administration, and sustainable development. These instruments have been reviewed and incorporated into this Environmental and Social Impact Assessment (ESIA) to ensure full compliance with statutory requirements and alignment with international best practices, including those of the African Development Bank (AfDB).

1.7.1 National Regulatory Requirements

The Federal Ministry of Environment (FMEnv) ensures coordination of all environmental matter within the country and empowers States Ministries of Environment to establish such environmental criteria, guidelines/specifications or standards for the protection of the state's air, lands and waters as may be necessary to protect the health and welfare of the people. Consequently, policies and regulations of these regulatory bodies are the major driving forces for this ESIA study.

- **National Policy on Environment, (1989, revised in 1999 and 2016)**

The National Policy on Environment, defines guidelines and strategies for achieving the policy goal of sustainable development by:

- Securing for all Nigerians a quality of environment adequate for their health and well-being.
- Conserving and using the natural resources for the benefit of present and future generations.
- Restoring, maintaining and enhancing the ecosystem and ecological processes essential for the preservation of biological diversity.
- Raising public awareness and promoting understanding of the essential linkages between the environment, resources and development.

Highlights of the Provisions

The National Policy on the Environment is a document of actions rooted in a conceptual framework within which the linkages between environmental problems and their causes, effects, and solutions can be discussed. This is achieved in the policy document through five major initiatives of:

- Preventive activities directed at the social, economic, and political origins of the environmental problems;

- Abatement, remedial, and restorative activities directed at the specific problems arising from industrial production processes, problems caused by rapid population growth and the attendant excessive pressure of the population on the land and other resources, and problems due to rapid growth of urban centres;
- Design broad strategies for sustainable environmental protection and management at systematic or sub-systematic levels;
- Enactment of legal instruments designed to strengthen the activities and strategies recommended by this policy; and
- Establishment/emplacement of management organs, institutions and structures designed to achieve the policy objectives (Article 3.0).

The National Policy on the Environment provides for comprehensive implementation strategies for the various sectors of the economy covering issues such as: human population, culture, housing and human settlements, biological diversity, and natural resources conservation. Other matters include land use and soil conservation, agriculture, water resources, forestry, wildlife and protected natural areas, marine and coastal area resources, mining and mineral resources, industry, energy, trade, tourism, science and technology. The implementation strategies cover matters such as; institutional and inter-governmental arrangements, legal arrangements, international treaties and obligations. Financing environmental protection and natural resources conservation, and the use of economic instruments and incentives in the management of the environment and natural resources are also highlighted (Articles 4.0 - 11.0). In particular, the sustainable exploitation strategies are to be adopted in the oil and gas sector.

- **Environmental Impact Assessment Act CAP E12 LFN 2004**

The ESIA institutional framework is provided by Environmental Impact Assessment (EIA) Act CAP E12, LFN 2004. ESIA is an assessment of the potential impacts (whether positive or negative) of a proposed project on the natural environment. The Act deals with the considerations of environmental impact in respect of public and private projects. The sections on environmental emergency prevention:

- Section 2 (1) requires an assessment of public or private projects likely to have a significant (negative) impact on the environment.
- Section 2 (4) requires an application in writing to government before embarking on projects for their environmental assessment to determine approval.
- Section 13 establishes cases where an EIA is required and

- Section 60 creates a legal liability for contravention of any provision.

➢ **National Environmental Standards and Regulations Enforcement Agency (NESREA) (Establishment) Act, 2007 (as Amended in 2018)**

The National Environmental Standards and Regulations Enforcement Agency (NESREA) (Establishment) Act, 2007, as amended in 2018, established the National Environmental Standards and Regulations Enforcement Agency (NESREA). The Agency operates under the supervision of the Federal Ministry of Environment and is mandated to ensure the protection and development of the environment, promote biodiversity conservation, and facilitate the sustainable use of Nigeria's natural resources.

NESREA is responsible for enforcing environmental standards, regulations, policies, and guidelines, as well as coordinating environmental compliance activities with relevant stakeholders within and outside Nigeria. The 2018 Amendment strengthened the Agency's enforcement powers and governance structure, enhancing its capacity to regulate environmental compliance nationwide.

The key functions of NESREA include:

- Enforcing compliance with environmental laws, regulations, guidelines, policies, and standards.
- Coordinating and liaising with stakeholders, both within and outside Nigeria, on matters relating to environmental standards and enforcement.
- Enforcing compliance with international environmental agreements, protocols, conventions, and treaties to which Nigeria is a signatory, including those relating to climate change, biodiversity conservation, desertification, forestry, chemicals management, hazardous waste, ozone depletion, marine resources, wildlife protection, pollution control, and sanitation.
- Enforcing compliance with policies, standards, and legislation on water quality, environmental health, sanitation, and pollution abatement.
- Ensuring sustainable ecosystem management and biodiversity conservation through enforcement of relevant environmental legislation.
- Regulating and enforcing sound chemical management practices, including the safe use and disposal of pesticides and hazardous substances.
- Regulating the importation, exportation, production, distribution, storage, sale, use, handling, and disposal of hazardous chemicals and waste (excluding the oil and gas

sector).

- Monitoring and enforcing environmental standards relating to air quality, noise control, land, marine, and inland water bodies (excluding the oil and gas sector).
- Ensuring that environmental projects funded by donor agencies and external support organizations comply with environmental safety and protection standards.
- Implementing environmental control measures through registration, licensing, and permitting systems (excluding the oil and gas sector).
- Conducting environmental audits and maintaining a regulatory database on environmental compliance and enforcement mechanisms.
- Promoting public awareness, environmental education, and private sector compliance with environmental regulations.
- Performing such other functions as may be necessary or expedient for the effective discharge of its statutory mandate.

In the context of the proposed Lagos Medipark Project, NESREA's role is particularly relevant to healthcare waste management, effluent discharge control, air emissions (including generator or incinerator emissions), hazardous chemical handling, and environmental monitoring during both construction and operational phases.

- **National Environmental (Air Quality and Control) Regulations, 2021, S.I.88.**

The National Environmental (Air Quality Control) Regulations, 2021 (S.I. No. 88) was enacted to prevent, control, and reduce air pollution in order to safeguard public health and ensure the maintenance of clean and healthy ambient air quality across Nigeria. The Regulations establish emission standards and permissible limits for both mobile sources (e.g., motor vehicles, marine vessels) and stationary sources (e.g., industrial facilities, power generators, incinerators). They also provide for the designation of controlled areas and the development of Air Quality Management Plans to regulate emissions within such areas. The proposed Lagos Medipark Project will generate air emissions during its construction, operation, and decommissioning phases. Potential emission sources include construction equipment, haulage vehicles, standby generators, HVAC systems, and any waste treatment or incineration facilities (if installed). In compliance with the Regulations, a qualitative air quality assessment has been undertaken as part of this ESIA. The primary objective of the air quality assessment is to evaluate the potential impacts of project-related emissions on the existing ambient air quality during both construction and operational phases. Predicted

emission levels have been assessed against applicable national air quality standards, taking into account baseline environmental conditions in the Ikoyi area. Where necessary, mitigation measures have been recommended to ensure compliance with regulatory limits, noting that several control measures—such as dust suppression, equipment maintenance, low-emission technologies, and generator stack design—have already been incorporated into the project design.

- **National Environmental Protection (Effluent Limitations) Regulations, S.I.8 of 1991 Official Gazette, Federal Republic of Nige**ria No. 42, Vol.78, August 1991, which requires installation of anti-pollution equipment for detoxification of effluents and chemical discharges from the company's existing facilities. The National Environmental Protection (Effluent Limitations) Regulations establish permissible limits for the discharge of industrial and institutional effluents into surface water, groundwater, land, and public drains in Nigeria. The Regulations require all facilities generating wastewater to treat such effluent to prescribed standards before discharge.

  For the proposed Lagos Medipark project, these Regulations apply to wastewater generated from clinical activities, laboratories, laundry services, kitchens, and sanitary facilities. The project will therefore be required to install and operate an appropriate wastewater treatment system (e.g., sewage treatment plant or effluent pre-treatment facility) to ensure that all discharges meet national effluent quality standards prior to disposal into municipal drains or receiving water bodies. Routine effluent monitoring, record keeping, and reporting to relevant regulatory authorities (FMEnv/NESREA and LASEPA) will also be mandatory to ensure compliance.

- **National Environmental Protection (Pollution Abatement in Industries and Facilities Generating Wastes), S.I.9 of 1991** Official Gazette, Federal Republic of Nigeria No. 42, Vol. 78, August 1991, establish mandatory controls for industries and institutional facilities to prevent, reduce, and monitor the release of hazardous or toxic substances into air, water, and land beyond limits approved by the Federal Ministry of Environment (FMEnv). The Regulations require facilities to adopt pollution control technologies, maintain monitoring records, and ensure that emissions and waste discharges remain within permissible standards.

  For the proposed Lagos Medipark project, the Regulations are applicable due to the generation of clinical waste, laboratory chemicals, pharmaceutical residues, air emissions

(from generators or incinerators, if installed), and wastewater from medical and support services. The project will therefore be required to implement effective pollution control measures, including emission control systems, proper hazardous waste handling and storage, effluent treatment facilities, and routine environmental monitoring. Compliance with these Regulations will ensure that the hospital's operations do not result in unacceptable contamination of surrounding land, water bodies, or ambient air within the Ikoyi environment.

- **National Environmental Protection (Management of Hazardous and Solid Wastes), S.I.15 of 1991:** Official Gazette, Federal Republic of Nigeria, No. 102, Vol. 78, 31st December 1991; provides comprehensive guidelines for the handling, treatment, storage, transportation, and disposal of hazardous and solid wastes in Nigeria. The Regulations set standards for groundwater protection, surface impoundments, land treatment practices, waste piles, landfill operations, and incinerator design and operation, with the objective of preventing environmental contamination and protecting public health.

  These Regulations are directly applicable to the proposed Lagos Medipark project due to the anticipated generation of hazardous healthcare waste, pharmaceutical waste, laboratory chemicals, and general solid waste. The project will be required to ensure safe segregation, secure temporary storage, licensed transportation, and environmentally sound treatment or disposal of all hazardous and solid wastes. Where incineration or other treatment technologies are proposed, such systems must comply with approved design and operational standards to prevent soil, groundwater, or air pollution. Compliance will help safeguard the surrounding Ikoyi environment from contamination risks associated with improper waste management.

- **National Environmental (Sanitation and Wastes Control) Regulations, 2009 (S. I. 28).** The purpose of these Regulations is the adoption of sustainable and environmentally friendly practices in environmental sanitation and waste management to minimize pollution. For Industrial Sanitation, the regulations state that a person in care, management, or control of any industrial facility shall:
  - Provide welfare facilities such as potable water, conveniences, and cloakrooms;
  - Provide educational and pictorial signs to direct persons to where they can drop waste;
  - Provide receptacles for recyclable materials inappropriate and easily accessible

locations;

- Service, maintain and empty the receptacles regularly;
- Keep the premises, drains, and all public or private lands, streets, lanes, walkways; beaches, or docks within five meters of the boundary of the property free from litter at all times;
- Ensure that discarded materials are regularly collected and disposed of sanitarily;
- Ensure that recyclable materials are properly packed and neatly stacked;
- Ensure the sorting and segregation of solid waste at the source.

- **National Environmental (Noise Standards and Control) Regulations, 2009 (S.I.35)**

The purpose of the Regulations is to ensure maintenance of a healthy environment for all people in Nigeria, the tranquility of their surroundings and their psychological well-being by regulating noise levels and generally, elevating the standard of living of the people by:

i. Prescribing the maximum permissible noise level that a facility or activity to which a person may be exposed;

ii. Providing for the control of noise and for mitigating measures for the reduction of noise;

iii. Giving effect to the provisions of Section 22 of the Act.

The regulations among others, state the permissible noise levels to which a person may be exposed; control and mitigation of noise; permits for noise emissions above permissible levels; and enforcement.

- **National Environmental (Surface and Groundwater Quality Control) Regulations, 2010 (S.I.22)**

These Regulations, made under section 34 of the National Environmental Standards and Regulations Enforcement Agency (Establishment) Act, 2007, provide for quality control of and quality standards and requirements of surface waters and groundwater in Nigeria. They also provide with respect to enforcement, define offenses and prescribe penalties for such offenses. The Regulations concern the protection of water resources for purposes of various uses including clean water supply, agriculture, aquaculture and aquatic ecosystems.

- **Criminal Code Act Cap C38 LFN, 2004**

The Nigerian Criminal Code makes it an offence punishable with up to six-months imprisonment for any person who:

- Violates the atmosphere in any place to make it noxious to the health of persons in

general dwelling or carryon business in the neighbourhood, or passing along a public way; or

- Does any act which is, and which he knows or has reason to believe to be, likely to spread the infection of any disease dangerous to life, whether human or animal.

- **Labour Act CAP L1 LFN, 2004**

Nigeria has ratified all eight core International Labour Organization Conventions. The Labour Act (1999) is the primary law protecting the employment rights of individual workers. The Act covers the protection of wages; contracts; employment terms and conditions; recruitment; and classifies workers and special worker types.

- **Land Use Act Cap L5 LFN 2004**

The Act vests all land in the urban areas of each State in the control and management of the Governor. The Governor holds the land in trust for the people and is solely responsible for the allocation of land in all urban areas to individuals and organizations for residential, agricultural and commercial purposes. Other land in the State, subject to conditions under the Land Use Act, is under the control and management of the Local Government.

- **National Building Code 2006**

This Code aims to set minimum standards for Building Pre-design, designs, construction, and post-construction stages to ensure quality, safety, and proficiency in the building Industry. The provisions of this Code shall, subject to its adoption by the states, apply to and control all matters concerning the design and specification, costing, construction, alteration, addition to moving, demolition, location, repair, and use of any building or structure, for existing or proposed building works within the Federal Republic of Nigeria.

- **Nigerian Urban and Regional Planning Act CAP N138, LFN 2004**

The Act makes provision for activities of governments at the three levels - Federal, State and Local. The Federal Government to carry out the following:

  - The formulation of national policies for urban and regional planning and development;
  - The preparation and implementation of the National Physical Development Plan and regional plans on the recommendation of the Minister;
  - The formulation of urban and regional planning standards for Nigeria on the recommendation of the Minister;
  - The supervision and monitoring of the execution of projects in urban and regional planning;

- Carrying out development control over Federal lands; and
- The provision of technical and financial assistance to states in the preparation and implementation of plans.

  At the State level, the Act stipulates the following:
- Formulation of a State policy for urban and regional planning, within the framework of national policies; and
- The preparation and implementation of regional, sub-regional, urban and subject plans within the state

- **Employees' Compensation Act (ECA), 2010**

  The Employees' Compensation Act (ECA), 2010 provides the legal framework for the payment of compensation to employees who suffer work-related injuries, diseases, disabilities, or death arising out of or in the course of employment in Nigeria. The Act repealed the Workmen's Compensation Act and established a more comprehensive, no-fault compensation system.

  The Act is administered by the Nigeria Social Insurance Trust Fund (NSITF) Management Board, which is responsible for managing the Employees' Compensation Scheme.

  The Employees' Compensation Act is particularly relevant during the construction and operational phases of development projects, including hospitals and mixed-use developments, where workers may be exposed to occupational hazards such as physical injuries, exposure to hazardous substances, ergonomic risks, and work-related stress. Compliance with the Employees' Compensation Act supports the protection of workers' rights and welfare and aligns with AfDB Integrated Safeguards System (Operational Safeguard 2 – Labour and working conditions and OS4- Community, Health, Safety and Security).

- **The Endangered Species Act, Cap E9, LFN 2004**

  This Act focuses on the protection and management of Nigeria's wildlife and some of their species in danger of extinction as a result of over-exploitation. These sections are noteworthy:

  - **Section 1** prohibits, except under a valid license, the hunting, capture or trade in animal species, either presently or likely to be in danger of extinction.
  - **Section 5** defines the liability of any offender under this Act.

- **Section 7** provides for regulations to be necessary for environmental prevention and control as regards the purposes of this Act.

➢ **Harmful Waste (Special Criminal Provisions) Act, Cap H1, LFN 2004**

The Harmful Waste Act prohibits, without lawful authority, the carrying, dumping or depositing of harmful waste in the air, land or waters of Nigeria. The following sections are notable:

- Section 6 provides for a punishment of life imprisonment for offenders, as well as the forfeiture of land or anything used to commit the offence.
- Section 7 makes provision for the punishment accordingly, of any conniving, consenting or negligent officer where the offence is committed by a company.
- Section 12 defines the civil liability of any offender. He would be liable to persons who have suffered injury as a result of his offending act.

➢ **National Guidelines on Environmental Management System 1999**

The National Guidelines on Environmental Management System (EMS), 1999, issued by the Federal Ministry of Environment (FMEnv), provide a structured framework for organizations to systematically manage their environmental responsibilities. The Guidelines are consistent with international best practice, particularly the ISO 14001 Environmental Management System standard, and are intended to promote continuous environmental performance improvement across public and private sector projects in Nigeria. The Guidelines require organizations and project proponents to establish and implement an EMS that integrates environmental considerations into planning, construction, operation, and decommissioning activities. Key objectives include pollution prevention, compliance with environmental laws and standards, efficient resource use, and proactive management of environmental risks.

Recognizing the value of EMS to EIA, this document sets out objectives and provides a guide on the general scope and content of an EMS.

➢ **The Fire Service Act CAP F29, LFN 2004**

The Fire Service Act, Cap F29, Laws of the Federation of Nigeria (LFN) 2004, establishes the legal framework for fire prevention, fire-fighting, rescue operations, and fire safety management in Nigeria. The Act provides for the creation, powers, and functions of the Federal Fire Service (FFS) and sets out requirements aimed at safeguarding lives, property, and the environment from fire hazards. In accordance with the Fire Service

Act, development projects are required to incorporate adequate fire prevention and protection measures at the design, construction, and operational stages. This includes:

- Installation of appropriate fire detection and alarm systems.
- Provision of fire-fighting equipment such as extinguishers, hydrants, hose reels, sprinklers, and smoke control systems, as applicable.
- Adequate means of escape, emergency exits, signage, and assembly points.
- Access routes for fire service vehicles and emergency response.
- Periodic fire safety inspections and certification by the relevant fire authority.

- **Climate Change Act, 2021**

The Act provides a framework for Nigeria to achieve low greenhouse gas emissions (GHG) through inclusive green growth and sustainable economic development and the implementation of Nigeria's commitment to net zero emissions declared at COP26 in 2021.

- **Nigerian Gender-Related Policies**

Gender equality and the empowerment of women and vulnerable groups are recognized priorities in Nigeria's development framework. Several national policies, laws, and institutional mechanisms guide the integration of gender considerations into development projects, including infrastructure, healthcare, and mixed-use developments.

- **National Gender Policy (2006; Revised 2021)**

The National Gender Policy (NGP) is the primary policy instrument guiding gender mainstreaming in Nigeria. It seeks to eliminate gender-based discrimination and promote equal opportunities for women and men in political, economic, social, and cultural development.

Key objectives include:

- Ensuring equal access to resources, opportunities, and benefits of development.
- Promoting women's participation in decision-making at all levels.
- Reducing gender disparities in employment, education, health, and access to services.
- Addressing gender-based violence (GBV) and harmful traditional practices.
- The policy mandates that public and private sector projects integrate gender considerations in planning, implementation, monitoring, and evaluation.

- **Violence Against Persons (Prohibition) Act, 2015 (VAPP Act)**

The VAPP Act provides a comprehensive legal framework for the prevention and

prohibition of all forms of violence, including:

- Gender-Based Violence (GBV)
- Sexual exploitation and abuse
- Domestic violence
- Harmful traditional practices

The Act is relevant to this ESIA implementation, particularly in relation to labour management, community interactions, worker conduct, and the establishment of grievance redress mechanisms.

- **National Policy on Women (2000)**

  This policy focuses on improving the status of women and ensuring their full participation in national development. It addresses: Economic empowerment, Education and skills development, Health and reproductive rights and Legal protection and social welfare.

- **National Social Protection Policy (2017)**

  The policy aims to protect poor and vulnerable populations, including women, children, persons with disabilities, and the elderly. It promotes inclusive development and equitable access to social and economic opportunities.

- **National Guidelines on Environmental Audit in Nigeria, 1999 (revised in 2011 and 2024)**

  The National Guidelines on Environmental Audit in Nigeria, first issued in 1999 by the Federal Ministry of Environment (FMEnv) and subsequently revised in 2011 and 2024, provide a comprehensive framework for assessing, verifying, and improving the environmental performance of projects, facilities, and organizations operating in Nigeria. The review also places National Environmental Standards and Regulations Enforcement Agency (NESREA) in better stead to ensure proper environmental auditing of the regulated community, as well as assist the regulated community to carry out mandatory and voluntary self-audit of their facilities.

  The Guidelines are designed to ensure continuous compliance with environmental laws, standards, and permit conditions, and to promote environmental accountability and sustainable development across all sectors. The Environmental Audit Guidelines complement the requirements of the Environmental Impact Assessment (EIA) Act Cap E12 LFN 2004 by ensuring that mitigation measures and commitments identified in an ESIA are effectively implemented and maintained throughout the project lifecycle.

- **Renewable Energy Guideline and Policy 2006**

  The Renewable Energy Guideline and Policy, 2006, issued by the Federal Government of Nigeria through the Federal Ministry of Power, provides the national framework for the promotion, development, and utilization of renewable energy resources in Nigeria. The policy was developed to address challenges associated with energy insecurity, over-dependence on fossil fuels, and environmental degradation, while supporting sustainable economic development.

Objectives of the Policy

The key objectives of the Renewable Energy Guideline and Policy include:

- Diversifying Nigeria's energy mix through increased use of renewable energy sources.
- Reducing greenhouse gas emissions and environmental pollution.
- Promoting energy efficiency and sustainable energy production.
- Enhancing energy access, reliability, and security.
- Encouraging private sector participation and investment in renewable energy technologies.
- Supporting local capacity development, technology transfer, and innovation.
- Renewable Energy Sources Covered

The policy promotes the development and utilization of various renewable energy sources, including: Solar energy, wind energy, Small and medium-scale hydropower, Biomass and bio-energy, Waste-to-energy systems, Geothermal energy (where feasible).

In the context of this ESIA, the Renewable Energy Guideline and Policy supports the incorporation of clean and sustainable energy solutions into project design and operation. For projects such as hospitals and mixed-use developments, this may include:

- Integration of solar photovoltaic (PV) systems for auxiliary or backup power.
- Adoption of energy-efficient lighting, equipment, and building systems.
- Reduction in reliance on diesel-powered generators and associated air and noise pollution.
- Contribution to climate change mitigation and improved environmental performance.
- Alignment with National and International Safeguards

The policy aligns with Nigeria's broader environmental and climate commitments and supports compliance with: Climate Change Act, Environmental Impact Assessment (EIA) Act Cap E12 LFN 2004, National Environmental Management System (EMS) Guidelines, AfDB Integrated Safeguards System (OS3 – Resource Efficiency and Pollution Prevention).

- **The National Policy on Waste Battery Management, 2022:** The National Policy on

Waste Battery Management was approved in February 2022 and seeks to provide specific direction on Environmentally Sound Management of waste batteries.

- **Nigerian Safety and Security of Radioactive Sources Regulations, 2006**

  The Safety and Security of Radioactive Sources Regulations, 2006 were issued under the authority of the Nuclear Safety and Radiation Protection Act (1995 No. 19) by the Nigerian Nuclear Regulatory Authority (NNRA) to provide specific regulatory requirements for controlling radioactive sources in Nigeria. These regulations form part of a broader national radiation safety framework in Nigeria, which also includes other instruments such as the Transportation of Radioactive Sources Regulations (2006) and the Radioactive Waste Management Regulations. Nigeria has adopted these to align with the International Atomic Energy Agency (IAEA) Code of Conduct on the Safety and Security of Radioactive Sources, ensuring international best practices are reflected in domestic law

- **Nigerian Radioactive Waste Management Regulations (2006)**

  The Nigerian Radioactive Waste Management Regulations (2006) were promulgated by the Nigerian Nuclear Regulatory Authority (NNRA) under the Nuclear Safety and Radiation Protection Act to regulate the safe handling, storage, transport, and disposal of radioactive waste in Nigeria. These regulations form part of the national framework designed to protect human health, property, and the environment from the harmful effects of ionizing radiation.

  Key Requirements

  - Licensing: No person or organization may generate, manage, or dispose of radioactive waste without an appropriate license from the NNRA. Waste generators must apply for this license and demonstrate compliance with regulatory safety requirements.
  - Segregation and Storage: Waste must be segregated, collected, and characterized by type and radioactivity level at the point of origin, and stored in appropriate containers until it can be treated, conditioned, or disposed of safely.
  - Labelling and Documentation: Containers holding radioactive waste must carry clear labels indicating the type of waste, radiological properties, dates of generation and storage, and responsible parties.
  - Treatment and Conditioning: Before long term storage or disposal, radioactive waste must be treated and conditioned to reduce volume and facilitate safe handling.

- Disposal Controls: Waste that cannot be discharged or released must be stored in designated facilities pending appropriate disposal options.
- Monitoring and Reporting: Licensees must maintain inventories of waste quantities and characteristics, monitor releases (if permitted), and report to the NNRA any relevant incidents or changes.

- **Local Content Act, 2010**

  In order to stimulate local economy through job creation, skill development and increase business opportunities for local enterprises and communities to enhance overall economic resilience.

- **Nigeria's Cultural Policy (1996)**

  Nigeria's Cultural Policy is a government framework designed to promote, preserve and develop the country's diverse cultural heritage as a foundation for national unity, identity, and socio-economic development. Culture in this context is understood as the totality of the way of life of Nigerians, including norms, values, artistic expression, traditions, languages, and practices that distinguish various ethnic and social groups across the country.

- **National Guidelines for Decommissioning of Facilities in Nigeria 2014:** These Guidelines facilitate the development and implementation of practical steps to expeditiously and effectively decommission a facility and restore the site to its natural state as much as practicable possible.

- **Water Resources Act CAP W2 LFN 2004**

  This Act vests the right to use and control all surface and groundwater and all water in any watercourse affecting more than one state, together with the banks and beds thereof, in the Federal Government (section 1). The purposes for this including the promotion of planning, development and use of Nigeria's water resources; coordination of activities likely to influence the quality, quantity, use, distribution and management of water; the application of appropriate standards and techniques for use, protection, etc.; and technical assistance and rehabilitation for water supplies (section 1).

  Notwithstanding the vesting of water resources in the Federal Government, persons may take water for a variety of uses, including domestic uses, the watering of livestock, fishing and navigation, and the irrigation of land over which they have rights of occupancy (section 2).

- **Federal Road Safety Commission (Establishment) Act, No. 22 of 2007**

An act to repeal the Federal Road Safety Commission Act, Cap 141 LFN, 1990 (as amended) to establish the Federal Road Safety Commission with the responsibility for traffic management, preventing and minimizing accidents on the highways. The supervision of users of such highways, the regulation of traffic thereon, and clearing of obstruction on any part of the highways and for educating drivers, motorists and other members of the public generally on the proper use of highways; and for related matters to safety on the highway.

- **Public Health and Occupational Safety Laws**

National Policy on Occupational Safety and Health 2006 revised in 2020

The National Policy on Occupational Safety and Health derived its main ground from the 1999 Constitution as amended, which in Section 17 (3c) prescribes that, the Nigerian state shall make laws and bye-laws for the preservation of the health and well-being of workers in the workplaces, men and women at work. The goal of the National Policy on Occupational Safety and Health 2020 is to facilitate the improvement of occupational safety and health performance in all sectors of the economy and ensure harmonization of workers' rights protection with regional and international standards.

- **The Nigeria National Health Act 2014**

The aim of the Act is to establish a national framework for the regulation, development and management of a national health system, to set standards for rendering health services in Nigeria. Other key provisions include:

- Establishment of the national health systems,
- Provides for exemption from payment for health services in public health establishments, and
- Provides for the establishment of the basic health care provision fund among others.

- **Public Health Act, Cap P16, LFN 2004**

The Public Health Act provides the legal basis for protecting public health in Nigeria. It empowers government authorities to regulate sanitation, water quality, waste management, disease prevention, and control of environmental nuisances.

Key provisions include:

- Control of communicable and infectious diseases.
- Regulation of sanitary conditions in public and private premises.
- Protection of drinking water sources.

- Management of environmental conditions that may endanger public health.

This Act is particularly relevant to healthcare facilities, construction projects, and mixed-use developments where sanitation, waste management, and disease control are critical.

1.7.2 Lagos State Legislation

- **Lagos State Ministry of the Environment and Water Resources**

The Lagos State Ministry of the Environment and Water Resources was carved out of the former Lagos State Ministry of the Environment and Physical Planning in January 2003. The Ministry is charged with the responsibility of providing a decent, orderly and reasonably conducive environment for a habitable society, as contained in the Ministerial responsibilities.

The Ministry has responsibilities for:

. Conservation of soil and natural resources.

. Environmental sanitation and protection services.

. Control of Environment Pollution, e.g., noise, water, land and illegal trading. Supervision of state agencies in charge of water supply, waste management and others.

. Evaluation of Environmental Impact Assessment (EIA) and Environment Audit Report (EAR).

. Monitoring and coordination of all World Bank Assisted Projects.

. Evaluation of World Bank Projects.

- **Lagos Waste Management Authority**

The Lagos Waste Management Authority (LAWMA), formerly known as Lagos State Refuse Disposal Board (LSRDB) was established in 1977, vide Edict No. 9 of 1977. It was to strengthen waste management activities of government and make waste management process in the state very efficient.

- **Lagos State Environmental Protection Agency**

The Lagos State Environmental Protection Agency (LASEPA) was established by Edict of 1996. The agency amongst others is saddled with the responsibility of:

i. Monitoring and controlling of disposal of wastes generated within the state;

ii. Monitoring and controlling all forms of environmental degradation from agricultural, industrial and governmental operations;

iii. Monitoring of surface, underground and potable water, air, land and soils within the

state to determine the pollution level as well as collect baseline data;

iv. Cooperating with Federal, State and Local Governments, statutory bodies and research agencies on matters and facilities relating to environmental protection.

- **Lagos State Environmental Management and Protection Law, 2017**

The purpose of this Law is to harmonize all laws relating to the environment for management, protection and sustainable development of the environment in Lagos State. The objectives of this law are to provide a clean, safe and healthy environment for all residents in the State, and to enable citizens access the various public amenities or segments of the environment for recreational, educational, health, cultural and economic purposes.

- **Lagos State Urban and Regional Planning and Development Law 2010**

This Law is to provide for the control of urban and regional planning activities in the State. It created three agencies thus: Lagos State Physical Planning Permit Authority, the Lagos State Building Control Agency, and the Lagos State Urban Renewal Agency. It gave power to the Ministry of Physical Planning and Urban Development, thus:

- Initiation, formulation of policies, co-ordination of programmes and review of all aspects of physical planning, urban development and urban regeneration and building control.
- Preparation and approval of hierarchies of physical development plan such as Regional Plan, Sub-Regional Plan, District Plans and Model City Plans.

- **Lagos State Physical Planning Permits Regulations, 2019**

The 2019 Regulations cover different areas including the procedure for application for a planning permit, land use zones and complementary uses, setbacks to public utilities and right of way, charges and fees, and the requirement for high-rise and public buildings. For the building control operations, the 2019 Regulations address issues such as a document to be submitted by the developer with notice of intention to commence construction, site inspection, and authorization to commence construction. Other areas covered include construction site, building stage certification, building certificate of worthiness and certificate of completion and fitness for habitation.

- **Lagos State Environmental Sanitation Law 2000**

The environmental sanitation law of Lagos State was enacted to establish the Environmental Sanitation Corps and for connected purposes.

The Lagos State House of Assembly enacts the law as follows:

1. As from the commencement of this Law, every owner, tenant and occupier of any building shall;

- keep clean the sidewalks and gutter area (45cm from the sidewalk into the street) along the building frontage, sides and back at all time;
- bind all old newspapers, loose papers, rubbish and rags before putting out for collection;
- put refuse into securely tied plastic bags or leak proof dustbins with tightly fitting lids;
- keep refuse dustbins within their premises until the time of collection;
- ensure that refuse dustbins are covered at all times with tight fitting cover;
- not dump yard sweepings, hedge cuttings, grass, leaves, cards, stones, bricks or business waste with household refuse;
- not use dustbins which may be leaking or permitting litter to escape or which might injure people handling them; and
- not litter, sweep out, or throw ashes, refuse, paper, nylon, and rubbish into any street, public place or vacant plot.

2. As from the commencement of this Law, every owner, tenant and occupier of any building shall ensure the cleanliness of his premises, particularly the backyard and the courtyard.

3. As from the commencement of this Law every owner or operator of a restaurant, hotel, nightclub or school shall ensure the cleanliness of all toilets and bathrooms within the premises.

4. As the construction activities will include generation of solid wastes, construction and demolition wastes, the provisions of the above-said Act will be relevant to the construction sites and construction camps.

- **Lagos State Infectious Diseases (Emergency Prevention) Regulations 2020**

The Regulation cited as the Infectious Diseases (Emergency Prevention) Regulations 2020, comes into force on the 27th day of March 2020. The Purpose of this Regulation is to prevent and contain the spread of COVID19 within the Local Area.

- **The Lagos State Fire and Rescue Service Law, 2020**

A law to make provision for the organization, discipline, powers and duties of the Lagos

State Fire Service and for other connected purpose was made in 2020. The Law was made to improve fire services and enforces safety measures. It was also to protect citizens and enhance public safety. Besides, it requires fire safety equipment in buildings. It therefore applies to the construction and operation of the proposed hospital.

- **Lagos State Properties Protection Law, 2016**

Generally, the Land Use Act (1978) as amended specifically vests the ownership of all lands in Nigeria in the Governors of the respective State. The same Acts also requires that any person who wants to alienate or transfer his land must obtain Governor's Consent to make the transaction valid in accordance with Land Use Act.

Notwithstanding the foregoing, the purchase or transfer of properties in Lagos State has been greatly hindered by the activities of "land grabbers" otherwise known as Omo-Onile. The practice of land grabbing entails the use of force, threat or violence to take possession or prevent a purchase from acquiring legitimate interest and possession of properties unless certain conditions are met. The Lagos State Properties Protection Law 2016 was passed to prohibit forceful entry and illegal occupation of landed properties as well as violent and fraudulent conducts in relation to landed properties in Lagos State. The main objective of the law is to provide legal comfort and assurance to interested investors that they can carry on legitimate land and property transactions without fear of harassment, intimidation or unnecessary exploitation by these land grabbers.

Section 2 of the Law prohibits the use of help, force, threat or self-help to takeover any landed properties, or engage in any act inconsistent with the proprietary rights of the owner. Additional, persons who have used force to take the property of another and remains in possession after the commencement of the Law shall be held to have committed an offence and liable to ten (10) years imprisonment.

Section 4 provides that any person who occupies a property as an encroacher and fails to leave the property, upon a request by the owner commits an offence punishable upon conviction with a fine not exceeding 5M (Five Million Naira) or 5 years imprisonment or both.

Section 8 of the Law criminalizes any offer by any person to sell a property for which he has no lawful title or the requisite authority to sell. The section also prohibits the sale of or offers for sale of land that has been previously sold, without a court judgment

repudiating the earlier sale

However, for the purpose of Property Protection Law 2016, the land for the proposed Medipark belongs to the government. The proponent has taken appropriate steps to ensure that all issues pertaining to land have been satisfactorily addressed through the PPP Law.

- **Lagos State Road Traffic Law 2012**

The law provides for the control and management of vehicular traffic in Lagos State. Without prejudice to the provisions of Section 11 of the Lagos State Traffic Management Authority Law, the Authority's control and management of vehicular traffic in the State, shall include the:

a. Prohibition or restriction of the use of any specified highway by vehicles of specified class or description;

b. Prohibition of driving or propelling of vehicles on any specified highway otherwise than in a specified direction;

c. Prohibition of vehicles parking or waiting on any specified highway;

d. Prohibition or restriction of the use of sirens, and the sounding of horns or other similar appliances either in general or during specified hours or in respect of specified areas;

e. Regulation of the conduct of persons driving, propelling, being in charge of or riding any vehicle or animal on a highway;

f. Application of breath testing, blood and urine specimen testing devices on any driver to detect driving under the influence of alcohol, or drugs;

g. Demand of a psychiatric evaluation of any person who drives against the normal flow of traffic or who fails to comply with any of the provisions of this Law, if in the opinion of any officer of the Authority such an evaluation is necessary for the purpose of determining the person's ability to operate a motor vehicle provided that such shall be at the driver's cost; and h.General regulation of traffic on public highways.

The construction and operation of the hospital vis-à-vis mobility is expected to be within the requirement of this Law.

- **Lagos State Safety Commission Law Cap NO. 6, 2011**

The Lagos State Safety Commission Law of 2011. Some of the functions of the Commission as stated in Section 9 of the law include:

a. Policy formulating, advisory and regulatory body for the co-ordination of all Government Ministries, Agencies and Parastatals and relevant bodies on matters relating to:

i. Safety of lives and property at all levels. ii. Other safety related issues

b. Set safety standard for all sectors in the State Set safety standard for all sectors in the State

c. Issuance and withdrawal of Safety compliance Issuance and withdrawal of Safety compliance certificates at all levels

d. Promote safety culture in the State and promote safety culture in the State e. Conduct and review risk assessment report

f. Conduct and review risk assessment report workplace safety, wellbeing, wellness and Improve workplace safety, wellbeing, wellness and

g. Give out safety alerts and signals

Also, Section 10 of the law vested in the Commission the power to:

a. Clearly define and set safety standards for all ministries and agencies of Government

b. Formulate and adopt safety policies, procedures to ensure enforcement and compliance with all relevant laws, by-laws and regulations on safety in the State at all levels

c. Co-ordinate and monitor the activities of organizations involved in safety services in the State.

As a medical facility, safety at all stages of its development and at operation is considered most important. Accordingly, the provisions of the Law apply.

- **Lagos State Construction Workers Safety Law, 2003**

This law provides for the safety of workers in construction and allied industries in Lagos State. Essentially, the law is to guarantee safety of health and environment. It strives to protect workers' health. In addition, the law mandates all employers to compulsorily insure their workers against occupational risks.

1.7.3 Eti Osa LGA Bye Laws

Relevant by-laws include;

- Economic recommendations to the State;
- Collection of taxes and fees;
- Licensing of bicycles, trucks (other than mechanically propelled trucks), canoes, wheel barrows and carts;

- Establishment, maintenance and regulation of markets, motor parks and public conveniences
- Construction and maintenance of roads, streets, drains and other public highways, parks, and open spaces;
- Provision and maintenance of public transportation and refuse disposal;
- Registration of births, deaths and marriages;
- Assessment of privately owned houses or tenements for the purpose of levying such rates as may be prescribed by the House of Assembly of a State; and,
- Control and regulation of out-door advertising, movement and keeping of pets of all descriptions, shops and kiosks, restaurants and other places for sale of food to the public, and laundries.

1.7.4 IASO Health, Safety, Security, Environment and Community Relations Policy

IASO Medipark Limited through its financiers is committed to conducting its operations with utmost Health, Safety, Security and environment (HSSE) and Corporate Social Responsibility (CSR) standards that are internationally obtainable. The financier's HSSE and CSR policy, which is expected to be a driver to environmental protection shall give utmost regards to safety, security of persons, preservation of the operating environment and peaceful coexistence with host communities and the public. It believes that the achievement of this commitment is an integral part of efficient and profitable business management. In order to achieve this, the policy drive identified below shall be pursued.

Health and Safety Policy

The proponent shall strength its policy with regards to safe work, environment, safety incentive programme, fire safety and other procedure following applicable statutory regulations and best practices. It will encourage the Company and the contractor's employees to maintain a healthy work/life balance.

Appropriate Personal Protective Equipment (PPE) shall be provided for employees, while their use shall be forced. The contractors are similarly required to provide appropriate equipment and ensure use in compliance with the PPE Policy. Compliance with Health and Safety rules and regulations will be a condition of employment for contractors' employees.

Environment

All operations shall be conducted with due regard to the preservation of the environment, and in compliance with Local Regulations and Guidelines, and

international codes of practice. Environmental and Social Management Plans shall be developed to monitor the effectiveness of mitigating measures and review as necessary.

Security

Partnership shall be established with host communities of Ikoyi and Obalende to secure lives and assets. Non-confrontational security strategies shall be applied in compliance with laws concerning human rights.

Communities

The host communities are regarded key stakeholders, with which strong relationship shall be established. Proactive engagements with communities shall be pursued, while the atmosphere of peaceful coexistence shall be achieved for ease of implementing sustainable development programmes and projects for the communities.

1.7.5 International Standards, Treaties and Conventions

Nigeria is signatory to a number of International Conventions, Agreements and protocols. Some of the relevant ones for this project include the following; United Nations Guiding Principles on the Human Environment in 1972, and the Rio Declaration on Environment and Development 1992.

United Nations Guiding Principles on the Human Environment

The United Nations (UN), concerned about negative environmental trends since its formation, published two major concept documents: Guiding Principles on the Human Environment, 1972 and the Rio Declaration on Environment and Development. Ten of the Guiding Principles were defined as formal declarations that express the basis on which an environmental policy can be built and which provide a foundation for action. The principles most relevant to the proposed project are summarized below.

Principle Two

The natural resources of the earth, including the air, water, land, flora and fauna and especially representative samples of natural ecosystems, must be safeguarded for the benefit of present and future generations through careful planning or management, as appropriate.

Principle Four

Man has a special responsibility to safeguard and wisely manage the heritage of wildlife and its habitat, which are now gravely imperiled by a combination of adverse factors. Nature conservation, including wildlife, must therefore receive importance in planning for economic development.

Principle Six

The discharge of toxic substances or of other substances and the release of heat, in such quantities or concentrations as to exceed the capacity of the environment to render them harmless, must be halted in order to ensure that serious or irreversible damage is not inflicted upon the ecosystems. The just struggle of the peoples of all countries against pollution should be supported.

The Rio Declaration on Environment and Development

The UN Conference on Environment and Development (Rio de Janeiro, 1992) reaffirmed the 1972 declaration on the Human Environment and sought to build upon it. This is with the goal of establishing a new and equitable global partnership through the creation of new levels of cooperation among States, key sectors of societies and people.

It is also to aid work towards international agreements, which respect the interests of all, protect the integrity of the global environmental developmental system, and recognize the integral and interdependent nature of the earth. The UN thus added additional principles to the originals, the more relevant being:

Principle One

Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature.

Principle Ten

Environmental issues are best handled with the participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided.

Principle Seventeen

Environmental impact assessment, as a national instrument, shall be undertaken for proposed activities that are likely to have a significant adverse impact on the environment and are subject to a decision of a competent national authority.

Vienna Convention for the Protection of the Ozone Layer, 1985 and the Montreal Protocol on Substances that Deplete the Ozone Layer, 1987

The release of chlorofluorocarbons (CFCs) into the atmosphere acts to deplete ozone in the stratosphere, thus, increasing the amount of damaging ultraviolet radiation (DUV) reaching the ground from the sun. The Convention and its Protocol made recommendations and programmes for the control of any substance, practice, process or activity which may affect ozone layer in the stratosphere.

United Nations (UN) Convention on Biological Diversity (1992)

The objectives of this Convention, which was opened for signature at the 1992 Rio Earth Summit, are the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding.

United Nations Framework Convention on Climate Change (UNFCC), 1992 and Kyoto Protocol on Greenhouse Gas Emission Reductions, 2004

Green Houses Gases (GHG) emissions, particularly of carbon dioxide (CO_2) are implicated in global warming of the atmosphere causing global change/increase in the earth's atmospheric temperature and the latter is responsible for series of adverse climatic/meteorological changes such as sea level rise, excessive heat, flooding, desertification, reduced agricultural productivity, human ill health and death of grazing mammals, among others. The Convention and its Protocol called for the protection of climate system for the benefit of present and future generations of humankind, reduction or prevention of anthropogenic emissions of GHG in energy, transport, industry, agriculture, forestry and waste management sector.

The Paris Agreement

Climate change is a global emergency that goes beyond national borders. It is an issue that requires international cooperation and coordinated solutions at all levels.

To tackle climate change and its negative impacts, world leaders at the UN Climate Change Conference (COP21) in Paris reached a breakthrough on 12 December 2015: the historic Paris Agreement.

The Agreement sets long-term goals to guide all nations:

- substantially reduce global greenhouse gas emissions to limit the global temperature increase in this century to 2 degrees Celsius while pursuing efforts to limit the increase even further to 1.5 degrees;
- review countries' commitments every five years;
- provide financing to developing countries to mitigate climate change, strengthen resilience and enhance abilities to adapt to climate impacts.

The Agreement is a legally binding international treaty. It entered into force on 4 November 2016.

Today, 194 Parties (193 States plus the European Union) have joined the Paris Agreement.

The Paris Agreement provides a durable framework guiding the global effort for decades to come. It marks the beginning of a shift towards a net-zero emissions world. Implementation of the Agreement is also essential for the achievement of the Sustainable Development Goals.

United Nations Framework Convention on Climate Change – COP 29

COP29 was held in Baku, Azerbaijan in November 2024. It was the last COP to agree on the Newly Collective Quantified Goal on Climate Finance (NCQG) and the last COP before countries submit their new national climate plans (NDCs). The package of decisions consists of a range of agreed items, including to triple finance for developing countries from $100 billion to $300 billion annually by 2035. The goal is to scale up finance to $1.3 trillion per year by 2035 from public and private sources. COP29 launched the Baku Dialogue on Water for Climate Action to build collaboration on water and climate change. The declaration calls for stakeholders to integrate water-related measures into national climate policies. COP29 also concluded a decade-long wait to finalize Article 6 negotiations on carbon markets. The goal is to redirect investment to developing countries and reduce the cost of implementing climate plans and prioritized equitable outcomes and encouraged the participation of many stakeholders.

Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and their Disposal (1987)

The Basel Convention addresses the risks posed by the generation and disposal of hazardous wastes. This Convention defines the wastes to be regulated and controls the trans-boundary movement of hazardous wastes and other wastes to protect human health and the environment against their adverse effects.

Convention Concerning the Protection of the World Cultural and National Heritage (World Heritage Convention), 1972

The World Heritage Convention (1972) seeks to set aside areas of cultural and natural heritage, the latter defined as areas with outstanding universal value from the aesthetic, scientific and conservation points of view.

African Convention on the Conservation of Nature and Natural Resources, 1968

African countries shall take all necessary measures to ensure that conservation and management of natural resources are treated as an integral part of development planning at all.

International Laws and Guidelines on Radiation Safety

International standards for radiation safety are primarily established to protect human health and the environment from the harmful effects of ionizing radiation. These standards are developed and promoted by global organizations such as the International Atomic Energy Agency (IAEA), the World Health Organization (WHO), and the International Commission on Radiological Protection (ICRP).

1. International Atomic Energy Agency (IAEA)

The IAEA provides the principal safety standards and guidelines for the safe use of radiation, including radioactive sources and nuclear materials.

Key instruments include:

- IAEA Safety Standards Series – Provides recommendations for radiation protection, safety of radioactive sources, and nuclear facility operation.
- Code of Conduct on the Safety and Security of Radioactive Sources (2004) – Establishes principles for safe management, control, and security of radioactive sources to prevent accidents or malicious use.
- Specific Safety Guides – Address transport of radioactive materials, radiation protection in medicine and industry, and radioactive waste management.

2. International Commission on Radiological Protection (ICRP)

The ICRP issues recommendations and principles on radiation protection, including:

- Limiting exposure to ionizing radiation for workers and the public.
- Establishing dose limits, monitoring procedures, and risk assessment methodologies.
- Promoting the ALARA principle (As Low As Reasonably Achievable) for minimizing radiation exposure.

3. World Health Organization (WHO)

The WHO provides guidance on public health aspects of radiation, including:

- Radiation safety in medical diagnostics and therapy.
- Protection against environmental exposure to radiation.
- Guidelines for emergency preparedness and response in case of radiation accidents.

1.7.6 AfDB Integrated Safeguards Systems

The AfDB's Integrated Safeguards System (ISS) is a set of policies, procedures, and guidelines established to identify, assess, and mitigate potential E&S risks and impacts associated with the Bank's funded projects and programs. The ISS were

designed to ensure that the Bank's investments promote sustainable development and do not harm people or the environment. The updated ISS (April 2023) are comprised of the following:

- AfDB's Vision for Sustainable Development
- AfDB's E&S Policy
- Ten(10) E&S Operational Safeguards (OS)
- E&S Guidance Notes (ISS Guidance notes)

There is a significant overlap between the AfDB operational safeguards and the IFC PSs; nevertheless, as the AfDB safeguards are also relevant to this Project the assessment of E&S performance is also assessed against these. A summary of the AfDB Safeguards is provided in Table below:

Table 1.1: AfDB Updated Integrated Safeguards System, 2023

AfDB Safeguard	Description
E&S OS 1 (Assessment and Management of Environmental and Social Risks and Impacts)	The aim of this overarching OS, along with the nine other Oss that complement it, is to mainstream E&S considerations; including those related to climate change vulnerability; into Bank operations and thereby contribute to sustainable development in Africa. An ESIA study carried out under this OS helps to determine the scope and extent to which other OSs are addressed. It sets out the Borrower's (or Project's) responsibilities for assessing, managing, and monitoring E&S risks and impacts associated with each stage of an operation/project supported by AfDB. This OS, together with OS10 (Stakeholder Engagement and Information Disclosure) provide the overall process framework for the E&S assessment and management of AfBD financed operations at project level.
E&S OS 2 (Labour and Working Conditions	The objectives ofOS2 are as follows: protect workers' rights; promote safety and health in the workplace; promote the fair treatment, non-discrimination, and equal opportunity of project workers; protect project workers, including vulnerable workers; prevent the use of all forms of forced labour and child labour; support the principles of freedom of association and collective bargaining of project workers, provide project workers with accessible means to raise workplace concerns; and enquire that the Bank, and national competent authorities as appropriate, be informed promptly of any material adverse impacts and events relating to labour protection and health and safety at the workplace. The applicability of this OS is established during the ESIA described in OS1.

AfDB Safeguard	Description
E&S OS 3 (Resources Efficiency and Pollution Prevention and Management)	OS3 sets out the requirements to address resource efficiency and pollution 36 prevention and Management throughout the project life cycle in a manner consistent with Good International Industry Practice (GIIP). Throughout the different phases of the project's lifecycle planning and design, construction, commissioning, operations, and decommissioning the project is required to assess and evaluate resource-efficiency and pollution-prevention techniques and implement them, taking into consideration their technical and financial feasibility and cost-effectiveness. The applicability of this OS is established during the ESIA described in OS1.
E&S OS 4 (Community Health, Safety and Security)	This OS addresses potential risks and impacts on communities that maybe affected by project activities. Occupational health and safety (OHS) requirements for project workers are set out in OS2, and measures to avoid or minimize impacts on human health and the environment due to existing or potential pollution are set out in OS3. The applicability of this OS is established during the ESIA described in OS1.
E&S OS 5 (Land Acquisition, Restrictions on Access to Land and Land Use, and Involuntary Resettlement)	The objectives ofOS5 are to: avoid involuntary resettlement where feasible, or minimize resettlement impacts where involuntary resettlement is deemed unavoidable after all alternative project designs have been explored; ensure resettlement plans and activities are informed by social assessments (including gender issues); avoid forced evictions; mitigate unavoidable adverse social and economic impacts from land acquisition or restrictions on land use; improve living conditions of poor or vulnerable persons who are physically displaced by the project; establish a mechanism for monitoring the performance and effectiveness of involuntary resettlement activities which result from project activities; conceive and execute resettlement activities as sustainable development programs; and ensure that resettlement activities are planned and implemented with appropriate disclosure of information, meaningful consultation, and the informed participation of those affected. The applicability of OS5 is established during the ESIA described in OS1
E&S OS 6 (Habitat and Biodiversity Conservation & Sustainable Management of Living Natural Resources)	This OS outlines the requirements for the Project to (i) identify and implement opportunities to conserve and sustainably use biodiversity and natural habitats, and (ii) observe, implement, and respond to requirements for the conservation and sustainable management of priority ecosystem services. The applicability of OS6 is established during the ESIA as described in OS1.
E&S OS 7 (Vulnerable Groups)	OS7 contributes to poverty reduction and sustainable development by ensuring that projects supported by the Bank enhance opportunities for vulnerable groups to participate in, and benefit from, the development process in ways that do not threaten their unique cultural identities and well-being. The applicability of OS7 is established during the ESIA as described in OS1

AfDB Safeguard	Description
E&S OS 8 (Cultural Heritage)	This OS sets out general provisions on risks and impacts to cultural heritage from project activities. OS7 sets out additional requirements for cultural heritage in the context of vulnerable groups and highly vulnerable rural minorities including Indigenous Peoples (IPs). The applicability of this OS is established during the ESIA described in OS1.
E&S OS 9 (Financial Intermediaries (FIs)	The objectives of this OS are to: set out how the FI will assess and manage environmental and social risks and impacts associated with the subprojects it finances; promote good environmental and social management practices in the subprojects the FI finances; o promote good environmental and sound human resources management within the FI; support the adoption of best practice standards in corporate governance, business management and corporate responsibility by enterprises supported by the Bank based upon the requirements of OSs 1 through 10, as appropriate; and encourage the consideration of environmental and social governance issues in capital market institutions such as development finance entities and stock exchanges.
E&S OS 10 (Stakeholder Engagement and Disclosure of Information)	This OS therefore recognizes the importance of open and transparent engagement between the project and project stakeholders as an essential element of good international practice. Effective stakeholder engagement can improve the environmental and social sustainability of projects, enhance project acceptance, and make a significant contribution to successful project design and implementation. OS10 applies to all Bank Group's funded operations. The project will engage with stakeholders as an integral part of the project's ESIA and project design and implementation, as outlined in OS1

Source: African Development Bank Group (AfDB) (2023). African Development Bank Group's Integrated Safeguards System (Updated ISS).

1.7 Structure of the ESIA Report

This ESIA Report is structured in accordance with applicable national guidelines and AfDB standards and comprises nine chapters. Chapter One introduces the project and provides contextual background. Chapter Two presents the project justification and need. Chapter Three describes the proposed project and implementation processes. Chapter Four details the baseline environmental and social conditions. Chapters Five and Six assess potential impacts and proposed mitigation measures, respectively. Chapter Seven presents the Environmental and Social Management Plan (ESMP). Chapter Eight addresses decommissioning and site restoration, while Chapter Nine provides conclusions and recommendations.

CHAPTER TWO

PROJECT JUSTIFICATION

2.1 Introduction

The proposed Lagos Medipark Project in Lagos State is justified by the increasing demand for high-quality, specialized healthcare services arising from rapid population growth, urbanization, and the rising burden of both communicable and non-communicable diseases in the State. Lagos, as Nigeria's commercial and economic hub, experiences significant pressure on its healthcare infrastructure due to its large resident population, daily influx of commuters, and concentration of economic activities.

Despite the presence of public and private healthcare facilities, existing infrastructure remains inadequate to meet the growing demand for advanced diagnostic, treatment, and specialized medical services. This gap has contributed to long waiting times, overstretched public hospitals, and increased medical tourism abroad, resulting in substantial economic losses to the State and the country at large.

The Medipark project is conceived as a modern, integrated medical facility offering comprehensive and specialized healthcare services, including advanced diagnostics, inpatient care, and ancillary medical services. The project will complement existing public and private healthcare facilities by improving service availability, accessibility, and quality of care, particularly for residents of Lagos State and surrounding areas.

In line with the Lagos State Government's health sector reform agenda and its encouragement of public–private partnerships (PPP), the Medipark project supports private sector participation in healthcare delivery. The project aligns with key policy drivers such as improved health outcomes, infrastructure development, job creation, and sustainable urban development. It aslo aligns with the Revised Ikoyi–Victoria Island Model City Plan (2013–2033) and represents a suitable and compatible land use for the proposed location.

Beyond healthcare delivery, the project will generate significant socio-economic benefits, including employment opportunities during construction and operation, skills development, increased local economic activity, and enhanced investor confidence in the health sector. The facility will also reduce pressure on overseas medical services, retain healthcare expenditure within the local economy, and contribute to government revenue through taxes and levies.

From an environmental and social perspective, the project is designed to incorporate best practice standards in environmental management, occupational health and safety, waste management, and energy efficiency, in compliance with national regulations and international safeguard frameworks such as those of the African Development Bank (AfDB) and IFC.

The Medipark Medical Project is justified as a strategic, socially beneficial, and sustainable investment that addresses critical healthcare gaps, supports Lagos State's development objectives, enhances public health outcomes, and contributes to the long-term socio-economic growth of the State.

2.2 Need for the Project

Lagos State, as Nigeria's most populous and economically vibrant state, faces increasing pressure on its healthcare system due to rapid population growth, urbanization, and a rising burden of communicable and non-communicable diseases. Existing public and private healthcare facilities are often overstretched, resulting in long waiting times, limited access to specialized medical services, and gaps in quality healthcare delivery. There is a growing need for modern, well-equipped medical facilities capable of providing comprehensive and specialized healthcare services within the State. The absence of sufficient advanced diagnostic and treatment centres has contributed to the increasing reliance on overseas medical care, leading to significant economic losses and reduced access to timely healthcare for many residents.

The Medipark Project is needed to complement existing healthcare infrastructure by expanding capacity, improving service quality, and increasing access to specialized medical care for residents of Lagos State and its environs. The project aligns with the Lagos State Government's health sector reform agenda and its policy of encouraging private sector participation in healthcare delivery through public–private partnerships.

In addition, the project will support improved health outcomes by reducing pressure on public hospitals, enhancing emergency and specialist care services, and promoting efficiency in healthcare delivery. Beyond health benefits, the facility will contribute to employment generation, skills development, and local economic growth. The Medipark Project is needed to strengthen Lagos State's healthcare system, improve access to quality medical services, and support sustainable socio-economic development in the State.

2.3 Benefits of the Project

The proposed Medipark Project will generate significant positive environmental, social, and economic benefits at the local, state, and national levels. The key benefits are outlined below:

Improved Access to Quality Healthcare Services

The project will enhance access to modern, high-quality healthcare services by providing well-equipped medical facilities, advanced diagnostic services, and specialized treatment options. This will help address existing gaps in healthcare delivery in Lagos State, reduce patient overcrowding in public hospitals, and improve overall health outcomes.

Reduction in Medical Tourism and Associated Costs

By offering specialized and advanced medical services locally, the Medipark project will reduce the need for residents to seek medical treatment abroad. This will help retain healthcare expenditure within the local economy while improving timely access to critical medical care.

Employment Generation and Skills Development

The construction , operational and decommission phases of the project will create direct and indirect employment opportunities for skilled, semi-skilled, and unskilled workers. Long-term operational jobs for healthcare professionals, administrative staff, and support services will enhance livelihoods and promote skills transfer within the local workforce.

Economic Growth and Local Development

The project will stimulate economic activities through increased demand for goods and services, including medical supplies, logistics, hospitality, and facility management services. This multiplier effect will contribute to local business growth and increased internally generated revenue for Lagos State.

Strengthening Healthcare Infrastructure

The Medipark project will complement existing public and private healthcare infrastructure by expanding capacity and improving service efficiency. It will contribute to a more resilient healthcare system capable of responding to emergencies, disease outbreaks and increasing healthcare demand associated with population growth.

Improved Emergency and Specialized Care

The availability of modern medical equipment and specialist services will enhance emergency response capabilities and improve the management of complex medical cases. This will contribute to reduced morbidity and mortality rates within Lagos State.

Social Well-being and Quality of Life Enhancement

Improved access to healthcare services will positively impact community well-being by

promoting preventive care, early diagnosis, and effective treatment. This will enhance productivity and overall quality of life for residents.

Support for Government Policies and Development Goals

The project aligns with the Lagos State Government's THEMES Plus Agenda, particularly in the areas of health, environment, and economic development. It also supports national health sector objectives and international development frameworks that promote private sector participation in healthcare delivery.

Contribution to Sustainable Development

The project is designed to incorporate environmentally responsible practices, including efficient water use, waste management, energy efficiency, and compliance with environmental and occupational health and safety standards. These measures will minimize adverse environmental impacts while maximizing long-term social and economic benefits.

2.4 Value of the Project

Although the final cost of the proposed development is still under review to reflect prevailing inflationary trends and market conditions, the current and future real estate value of the project is considered substantial. The overall project value comprises the cost of substructure and superstructure works, electrical and mechanical installations, internal and external finishes, landscaping, parking facilities, and associated infrastructure.

Beyond the direct capital investment by the project proponent, the value of the project also encompasses the wider economic benefits and secondary costs attracted throughout the project lifecycle. These include employment generation during both construction and operational phases, demand for local goods and services, and induced economic activities within the project value chain.

Given that a significant proportion of contractors, suppliers, service providers, and workforce are expected to be residents of Lagos State, it is anticipated that over 60 percent of the total project expenditure will be injected directly into the State's economy. This will contribute to local economic growth, income generation, and increased internally generated revenue. Based on current estimates, the total cost of the project is projected to be approximately ₦48 billion, reflecting its scale, complexity, and strategic importance as a major healthcare infrastructure investment in Lagos State.

2.5 Envisaged Project Sustainability

The Medipark Project is conceived as a long-term, resilient, and sustainable healthcare development that integrates environmental stewardship, social responsibility, and economic viability. Sustainability considerations have been embedded into the project planning, design, construction, and operational phases to ensure that the facility remains functional, efficient, and beneficial throughout its lifecycle.

2.5.1 Economic Sustainability

The initiative of the State Government to develop the hospital through public- private partnership (PPP) initiative is to strengthen its economic potentials, as funding responsibilities or burden are shared between the parties.

Accordingly, the economic sustainability of the project is viewed in terms of the following:

- Substantial amount of capital resources is being dedicated in its execution, which would ensure that all phases of the project are in accordance with internationally acceptable standards;
- The core activity in the development is medical services, hence its use is expected to be continuous. Indeed, with the construction techniques employed, coupled with the maintenance programme envisioned for the facility, it is certain that buildings and associated facilities will serve the purpose over a considerable time; and
- The expected patronage as a modern facility, will sustain its maintenance throughout its life cycle. It is envisioned as a high order or tertiary medical facility. This is further hinged on the high probability that property value in the area will continue to appreciate.

From an economic perspective, the project represents a significant long-term investment in healthcare infrastructure. By attracting skilled professionals, supporting ancillary services, and stimulating local supply chains, the Medipark Project will contribute to economic growth and revenue generation within Lagos State. The integration of commercial and ancillary facilities within the project enhances financial viability, ensuring sustainable operation and maintenance over time.

A substantial proportion of project expenditure is expected to remain within the local economy, reinforcing the project's role as a catalyst for sustainable urban and economic development.

2.5.2 Social Sustainability

The Medipark Project supports social sustainability by improving access to quality healthcare services, reducing pressure on existing public and private medical facilities, and enhancing overall public health outcomes in Lagos State. The project will generate employment opportunities during construction and operation, prioritizing the engagement of local labor and service providers where possible.

The facility is designed to be inclusive and accessible, with provisions for persons with disabilities, gender-sensitive facilities, and safe public spaces. Occupational health and safety measures will be implemented to protect workers and patients, while community engagement mechanisms and grievance redress mechanisms will ensure that stakeholder concerns are addressed throughout the project life-cycle.

2.5.3 Environmental Sustainability

The project is designed to minimize adverse environmental impacts while optimizing resource efficiency. Key sustainability measures include efficient water management through connection to the municipal water supply supported by borehole backup, water storage reservoirs, and water conservation practices. Wastewater management will comply with applicable environmental standards, while solid and medical waste will be handled through segregation, safe storage, and disposal in line with regulatory and international best practices.

Energy efficiency is promoted through the use of modern electrical and mechanical systems, energy-efficient lighting, and provision for renewable energy integration where feasible. The project design also incorporates adequate drainage systems to mitigate flooding risks and landscaping elements that improve microclimate conditions and reduce surface runoff.

The design and subsequent construction of the space, buildings and services in the proposed hospital are guided by regulatory, as well as international, town planning, architecture and engineering standards on space utilization, safety and environmental sustainability and quality control. The incorporation of the recommendations of this study at the various stages of the project will enhance its environmental sustainability. The mission of the proponent is to carry out operations in the healthcare facility and related activities in a way that all elements of the environment – soil / land, water and air are preserved, conserved and protected. Indeed, the various designs Layout Plan, Architecture, and Engineering have been conscious of the

various materials specified for construction and operations, including maintenance. The project will operate under a robust management and governance framework, supported by an Environmental and Social Management System (ESMS) consistent with national regulations and AfDB Environmental and Social Standards. Continuous monitoring, reporting, and periodic audits will be undertaken to ensure compliance, improve performance, and adapt to evolving regulatory and operational requirements.

2.5.4 Technical Sustainability

The design, construction, and operation of the Medipark Project have been conceived to conform with internationally recognized best practices, ensuring long-term functionality, safety, and operational efficiency. Proven, tested, and reliable technologies will be applied across all project components to guarantee technical robustness and minimize operational failures over the project lifecycle. The project design incorporates modern medical, electrical, mechanical, and ICT systems that meet relevant national regulations and international standards for healthcare facilities. Emphasis is placed on durability, maintainability, and adaptability of systems to accommodate future technological advancements and changing healthcare demands without requiring extensive structural modifications.

Construction activities will be executed using high-quality materials and workmanship, in line with approved engineering designs and specifications. The proponent is committed to awarding the construction contract to a reputable and experienced construction company, supported by qualified sub-contractors with demonstrated capacity in healthcare infrastructure delivery. Quality Assurance and Quality Control (QA/QC) procedures will be strictly implemented throughout the construction phase to ensure compliance with design standards, safety requirements, and performance specifications.

During the operational phase, routine inspection, preventive maintenance, and periodic system upgrades will be carried out to sustain optimal performance of building services, medical equipment, and support infrastructure. Facility management systems will be instituted to ensure efficient operation, reduce downtime, and extend the lifespan of critical assets. The technical sustainability of the Medipark Project is anchored on the use of proven technologies, competent project delivery teams, rigorous quality control measures, and proactive maintenance strategies, thereby ensuring reliable healthcare service delivery over the long term.

2.6 Project Alternatives

In line with the requirements of the Environmental and Social Impact Assessment (ESIA) process, a range of project alternatives were examined to inform decision-making and ensure that the proposed development represents the most environmentally sound, socially acceptable, and economically viable option. The consideration of alternatives is a fundamental component of ESIA, as it provides a basis for comparing different options and selecting the most sustainable course of action.

The selection of a preferred alternative is guided by several factors, including the technical feasibility of the option, its environmental and social implications, compliance with applicable government policies and regulatory requirements, stakeholder expectations, and overall socio-economic benefits. Cultural sensitivity, land-use compatibility, infrastructure availability, and long-term sustainability considerations also play critical roles in this evaluation.

For the proposed project, a number of feasible alternatives were identified and assessed. These include alternatives relating to project location and alternatives in technology and design. Each option was evaluated based on its potential environmental and social impacts, cost implications, operational efficiency, and alignment with national regulations and international best practice. A summary of the alternatives considered and the rationale for the selected option is presented in the subsequent.

2.6.1 Alternative Location

Alternative sites within Lagos State were assessed during the project planning stage. However, the selected project location was determined to be the most suitable based on accessibility, proximity to existing and projected healthcare demand centres, availability of supporting infrastructure (including road networks, utilities, and emergency services), and compatibility with surrounding land uses.

The chosen site is the former School of Nursing located at Plot No. 1–9, Awolowo Road, Ikoyi, Eti-Osa Local Government Area, with a total land area of approximately 16,000 m² (1.6 hectares). The School of Nursing had been formally relocated, and the site was observed to have been evacuated and abandoned for a considerable period prior to demolition. Consequently, the redevelopment of the site for the proposed Lagos Medipark Project represents an optimal and efficient reuse of an already disturbed urban parcel.

Relocating the project to an alternative location would likely result in higher land acquisition costs, increased displacement risks, and greater environmental impacts, including potential loss of fauna and flora. In contrast, the selected site is a brownfield location with little or no ecological sensitivity, thereby minimizing biodiversity-related impacts. Furthermore, alternative locations could generate increased traffic-related challenges, reduced accessibility for intended users, and additional environmental and social risks.

Based on these considerations, the proposed site was adjudged to be the most appropriate location for the Lagos Medipark Project, offering the best balance between environmental sustainability, social acceptability, technical feasibility, and economic viability.

2.6.2 Alternative Technology

Different design concepts and construction technologies were evaluated, including variations in building configuration, materials, energy systems, and medical infrastructure. The adopted design integrates modern healthcare planning principles, efficient space utilization by designing the project as a multi-storey facility, energy and water-efficient systems, and flexibility for future expansion. Alternative technologies that were less efficient, more energy-intensive, or associated with higher operational and maintenance costs were rejected in

favour of proven, reliable, and sustainable technologies that align with international healthcare facility standards.

2.6.3 Alternative Utilities and Infrastructure

Alternatives for water supply, wastewater management, power supply, and waste management were also assessed. These included sole reliance on on-site systems versus connection to existing municipal infrastructure with on-site backup. The preferred option combines connection to public utilities with appropriate backup systems to ensure reliability, environmental protection, and operational continuity. This approach minimizes environmental risks while enhancing resilience and service reliability. Renewable energy integration was also adopted to avoid over reliance on fossil fuel generated energy for the project. The overall benefit of using solar power will be enhanced by adding battery storage to enhance the capacity of PV systems to serve as the primary electricity source thereby reducing diesel fuel use which aligns with the National Policy on Climate Change. Summarily, to meet the power need of the Lagos Medipark project, a hybrid system is proposed, where the project shall be connected to public power, backed by a diesel generator, inverters and solar power.

Solid waste management alternatives

A significant quantity of solid waste is expected to be generated from the proposed Lagos Medipark development, particularly during the operational phase. To ensure environmentally sound management of these wastes, an integrated solid waste management system shall be adopted. The proponent will adopt a hierarchical approach consistent with best practices and regulatory requirements. The first priority will be Waste Reduction at Source. This will involve instituting measures to minimize waste generation through responsible consumption, efficient resource use, and proper material handling. Achieving this objective will require sustained waste management awareness among facility management, patients, and visitors. Accordingly, waste-handling instructions and notices will be displayed at strategic locations to guide both residents and visitors.

The second priority will be Recycling and Reuse, aimed at diverting recoverable materials from the waste stream. This will necessitate the implementation of a source-separation programme, enabling the segregation of recyclables such as plastics, paper, metals, and glass. Separated

recyclable materials will be sold or transferred to accredited waste buyers and recycling companies operating within Lagos State.

All residual wastes that cannot be reused or recycled will be managed through approved disposal channels. Such wastes will be collected, transported, and disposed of exclusively by the Lagos State Waste Management Agency (LAWMA) accredited waste contractors, in strict compliance with Lagos State waste management guidelines and existing environmental regulations. All radioactive wastes to be generated during operation shall be handled in line with the Nigerian Nuclear Regulatory Authority (NNRA) Radioactive Waste Management Regulations. This approach ensures efficient, safe, and sustainable handling of all waste streams associated with the project.

2.7 Project Development Options

Various other options have been considered for this project. The project development options include the following:

2.7.1 Option One: No project option

The "No-Project" option considers a scenario in which the proposed medical facility is not developed. This could be due to economic, technical or human capacity deficiencies or that the proponents are unwilling to commence the project or that the regulatory authorities are unwilling to approve the project or that the land resources are unavailable. While this option would avoid the environmental and social impacts associated with construction and operation, it would also mean that the identified healthcare gaps in Lagos State would persist. The absence of the project would limit access to specialized medical services, increase pressure on existing public and private healthcare facilities, and undermine the State's health sector development objectives. Consequently, the No-Project option was considered undesirable from a socio-economic and public health perspective.

2.7.2 Option Two: Delayed project option

This option implies postponing the development of the proposed Lagos Medipark project until a much later date. Such option is usually taken when prevailing conditions are unfavourable for project implementation, such as in a situation of war, or the host community is deeply resentful of the project. Also, if the economics of the project are unacceptable or

unattractive at the time, then a delay may be feasible. But none of these conditions are applicable. On the contrary, both the economics, social and political environment are most favourably disposed towards the project. Therefore, the implication of delaying the project will imply the fact that all contractors, workers and equipment that have been mobilized for this project, will demobilize. Also, because of the inflationary trends in Nigeria, such a delay may result in unanticipated increases in project costs, leading to a decrease in final profit accruable from the project. These, and other related problems make it unnecessary to adopt the delayed project option.

2.7.3 Option Three: Go-Ahead Project Option

Based on the comparative assessment of all options, the proposed project option was selected as the preferred option. It offers the best balance between environmental protection, social benefits, technical efficiency, regulatory compliance, and economic sustainability. Considering the numerous benefits of the project, this option was considered positive in contributing to the nationwide improved and increase medical services with attendant benefits for job creation, increased quality of life and educational development. The chosen option is therefore considered the most suitable for achieving the project objectives while minimizing adverse environmental and social impacts and maximizing long-term benefits.

2.8 Summary

In summary, the project plan, including the current location, is the most optimal. As such, the professional recommendation that can emanate from the foregoing is that the project can proceed as planned, as long as adequate measures are put in place to effectively mitigate/ameliorate the negative environmental and social impacts that may attend the project. The various environmental impacts and the mitigation options for the negative impacts are discussed in subsequent sections of this report.

CHAPTER THREE

3.0 PROJECT DESCRIPTION

3.1 Introduction

This chapter examines the context of the proposed hospital development, considering both the local site and the broader district. It provides an overview of the project's design, including services, utilities, construction, and planning. The chapter also covers the management and operation of the healthcare facilities and their integration with the surrounding social infrastructure.

3.2 The Project Site

The project site is located on plots 1–9 Awolowo Road, Ikoyi, within Eti-Osa Local Government Area, Lagos State, covering approximately 16,000 m² (1.6 hectares). The site is bounded to the south by Awolowo Road, which serves as the main access route, to the north by Obadeyi Close, to the west by the Onikan Flyover Bridge, and to the east by a mix of institutional developments and undeveloped plots. The proposed development includes hospital buildings, a diagnostic centre, residential units, and an ancillary structure for parking. It also incorporates essential infrastructure such as internal access roads, drainage systems, and power and water supply networks. Construction is planned to be carried out in phases. According to the approved Layout Plan, internal roads occupy the largest portion of the site (approximately 37%), followed by green spaces (24.51%) and medical facilities (20.24%). Parking and service areas account for 9.44%, while commercial and mixed-use zones each cover 3.91% of the site. The Layout Plan is shown in Figure 3.3.



Plate 3.1: Entrance to the Proposed Lagos Medipark Project site

Source: ESIA Field study for Lagos Medipark Project



Plate 3.2: Current state of the Proposed Lagos Medipark Project site
Source: ESIA Field study for Lagos Medipark Project

Currently, the site is vacant, following the demolition of the former School of Nursing structures. The site has an irregular shape and is delineated by multiple survey beacons, as depicted in the Survey Plan (Figure 3.1).

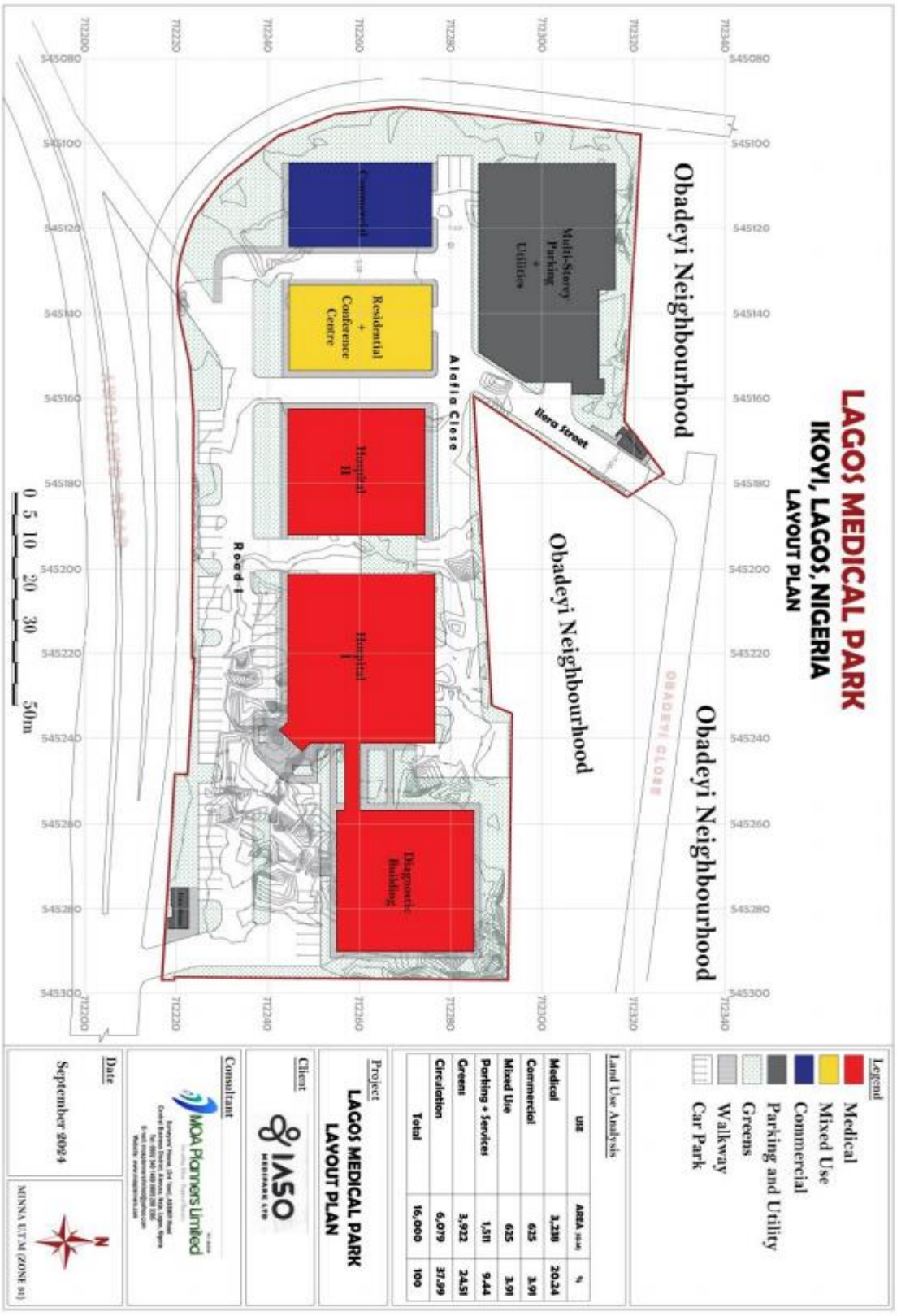


Figure 3.1: The Layout Plan of the Proposed Lagos Medipark Project

Source: MOA Planners Limited, 2025

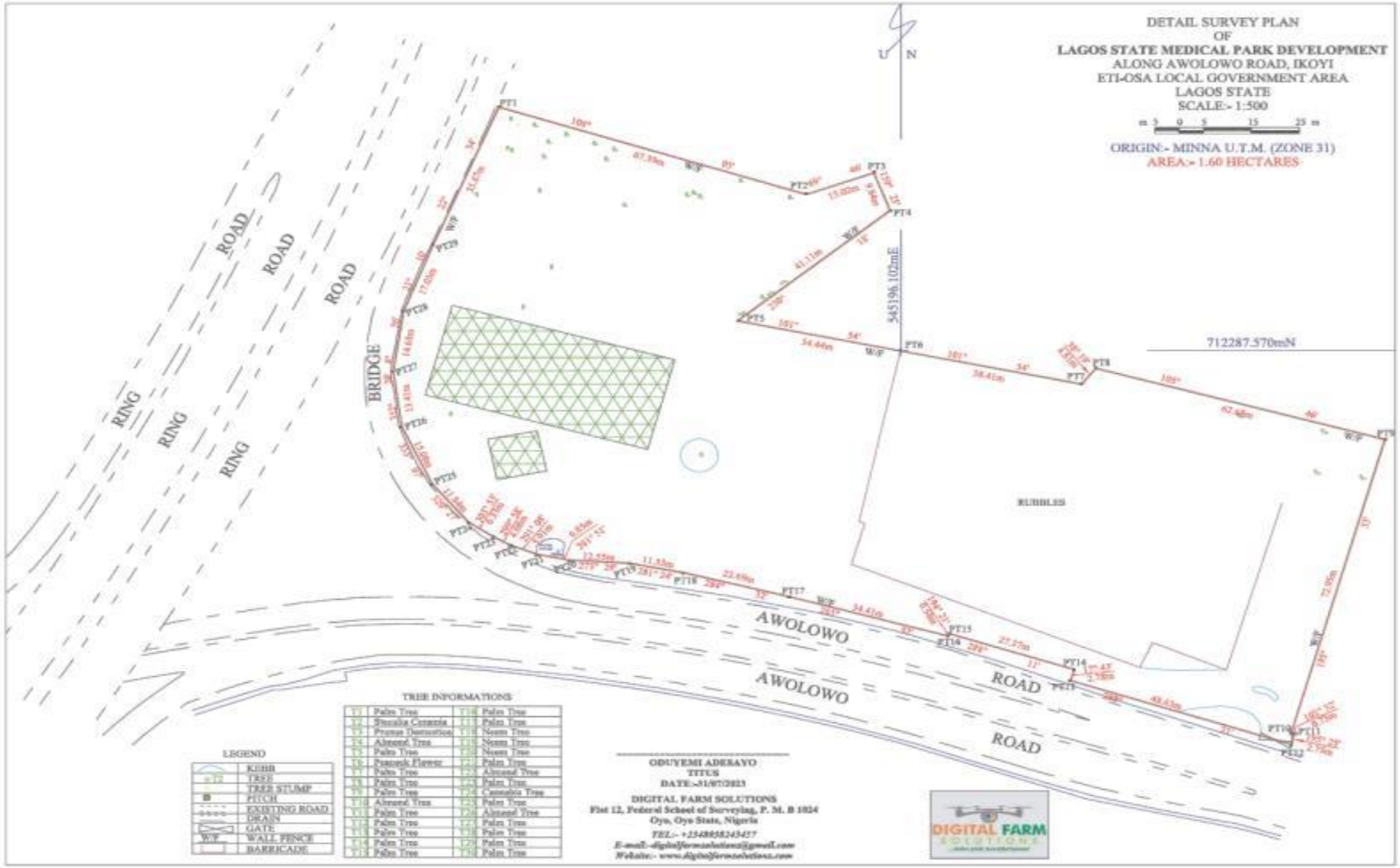


Figure 3.2: The Survey Plan for the Proposed Lagos Medipark Project

Source: Digital Farm Solution,2025

3.2 Location

3.2.1 The Project Site in Its Local Context

As noted in Chapter One, the project site is zoned as Institutional under the Revised Ikoyi–Victoria Island Model City Plan. Surrounding land includes a mix of commercial, institutional/public, and residential uses. To the north, Obadeyi Close is mainly residential, while along Awolowo Road, commercial and semi-public developments such as Westwood Hotel and the Military Hospital are present .

Ikoyi has historically played a key role in the socio-economic development of Lagos and Nigeria. The area is home to many high-net-worth individuals and continues to attract substantial real estate investment, with numerous high-rise offices and multi-storey residential buildings. It hosts the highest concentration of premium properties in Metropolitan Lagos, reflecting a vibrant real estate market. Its history as a residential area for colonial officials has further enhanced its status. Over the years, roads and drainage systems have been upgraded, supporting ongoing development. Proximity to the Atlantic Ocean, other water bodies, and Victoria Island has also accelerated growth. The site is highly accessible to major commercial and business hubs, including Lagos Island, Obalende, Victoria Island, and the Lekki–Ajah corridor, which host key institutional and commercial establishments. Many organizations in the oil and gas, real estate, banking, finance, and healthcare sectors maintain headquarters or regional offices in Ikoyi and its surroundings. Road connections via Osborne Road to the west, Falomo Bridge to the south, and Lekki–Ikoyi Bridge to the east further enhance accessibility. These factors make the proposed hospital well-positioned to attract significant patronage from the local community, the district, and the wider metropolis. Access to alternative transport modes, particularly water transport, further strengthens the site's strategic location and rail are both at less than two kilometers to the project site. For instance, the Marine Train Station is in the south of the site, while the jetty in Falomo is also within the local setting. Figure 3.6 shows the water transport facility. Both can be used by patients, staff and visitors to the hospital, either as intra city or interstate transport service.



Figure 3.3: The Proposed Lagos Medipark Project site and surrounding environment

Source: Google Earth, 2025

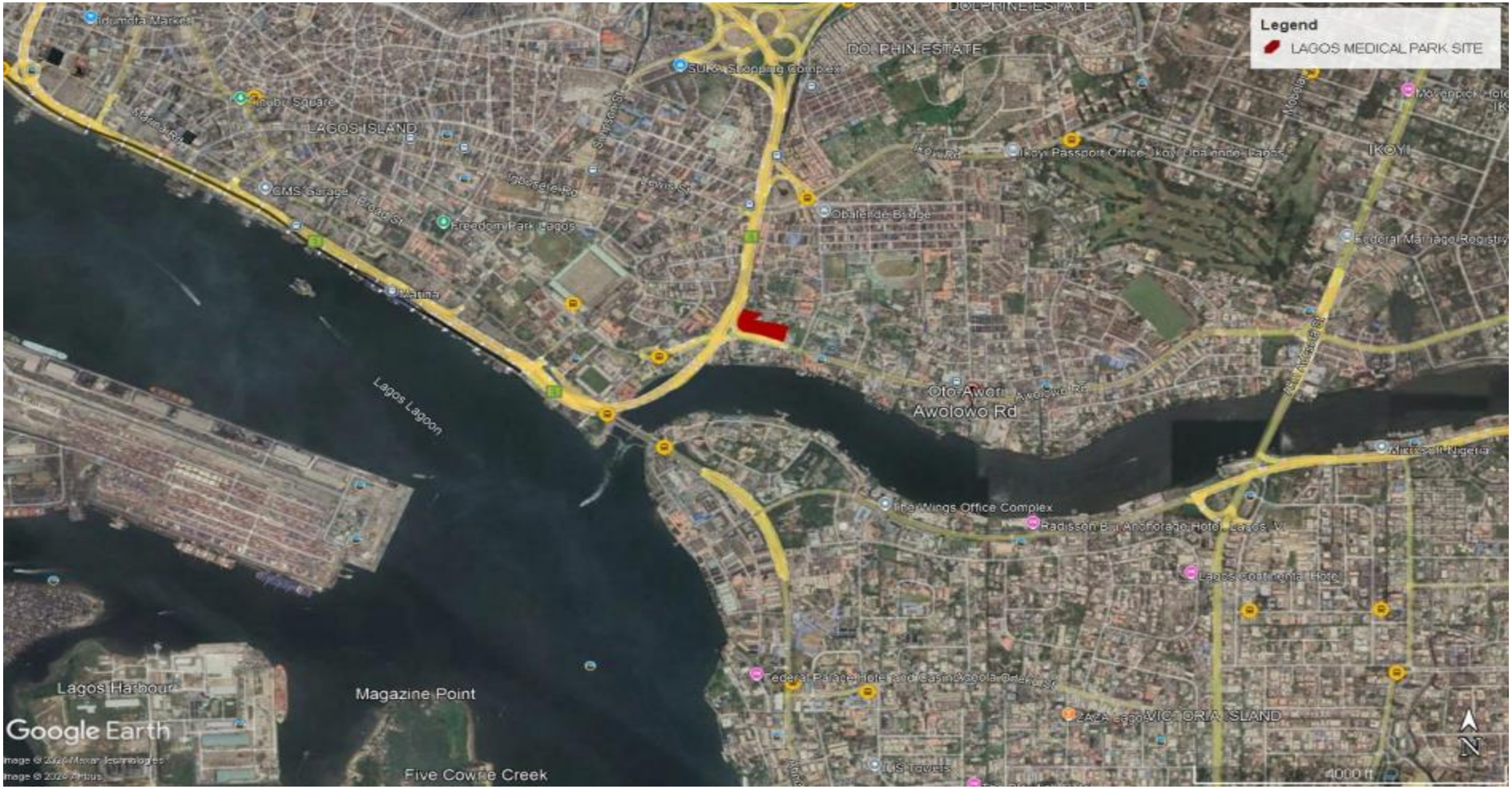


Figure 3.4: The Proposed Lagos Medipark Project site and surrounding physical features

Source: Google Earth, 2025

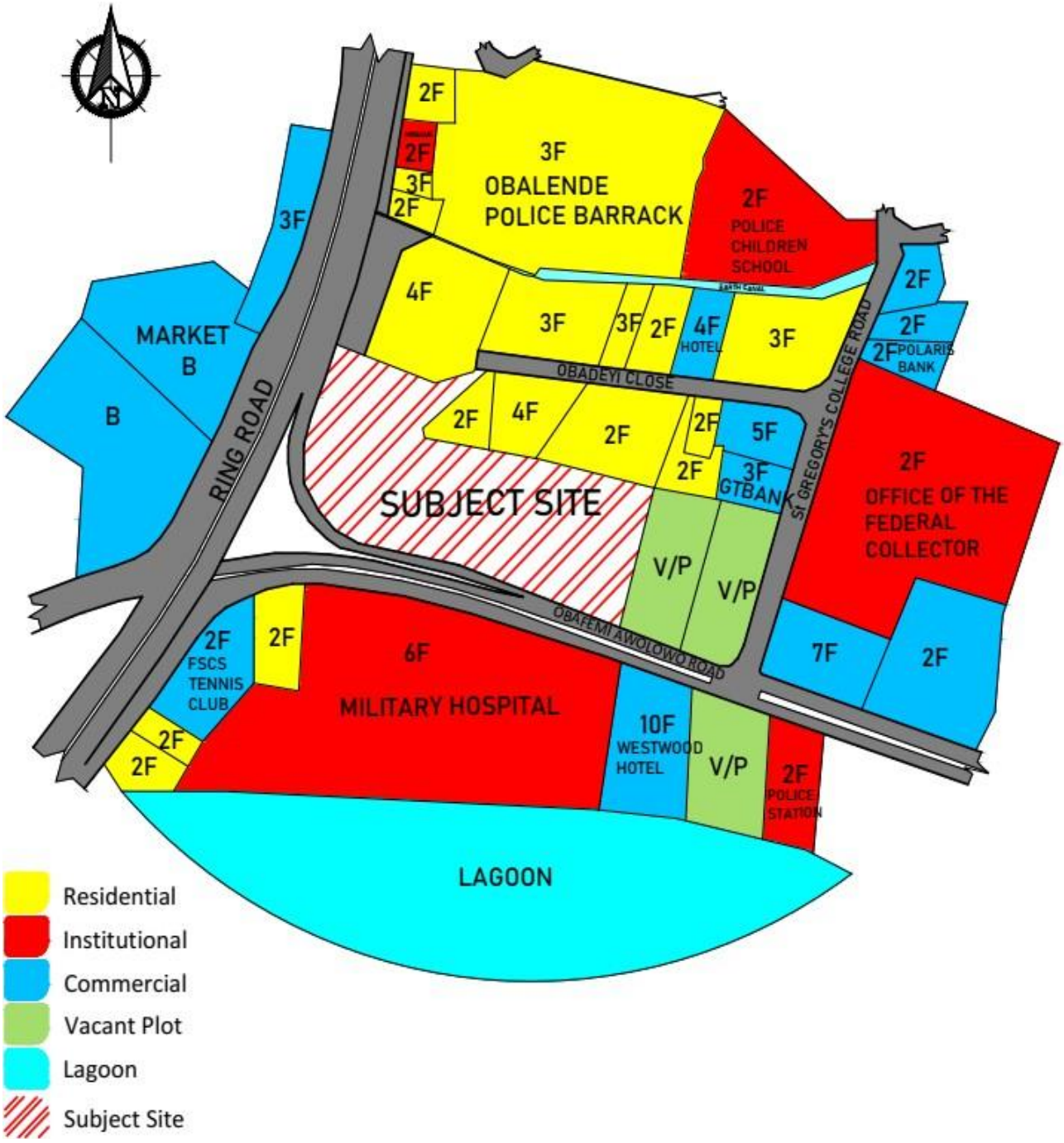


Figure 3.5: Land Use Inventory around the Lagos Medipark Project Site (indicated as "Subject Site")
Source: Field Survey, January 2025



Figure 3.6: The Falomo Jetty

Source: Field Survey, 2025

3.2.2 The Site Within Its Region

The proposed project can be classified as a high-order regional healthcare facility. With a planned 140 bed spaces and advanced diagnostic equipment, the hospital is designed to attract patients from beyond Lagos State, giving it interstate significance.In evaluating potential impacts on other social infrastructure in the city, the site was assessed in relation to major developments along the axis and across Lagos State. Land values in Ikoyi are among the highest in Lagos, ranging from ₦670,000 to ₦985,000 per square meter, depending on location. The area's strategic advantages continue to make it a preferred destination for investors, reinforcing its status as a prime location for high-value development.

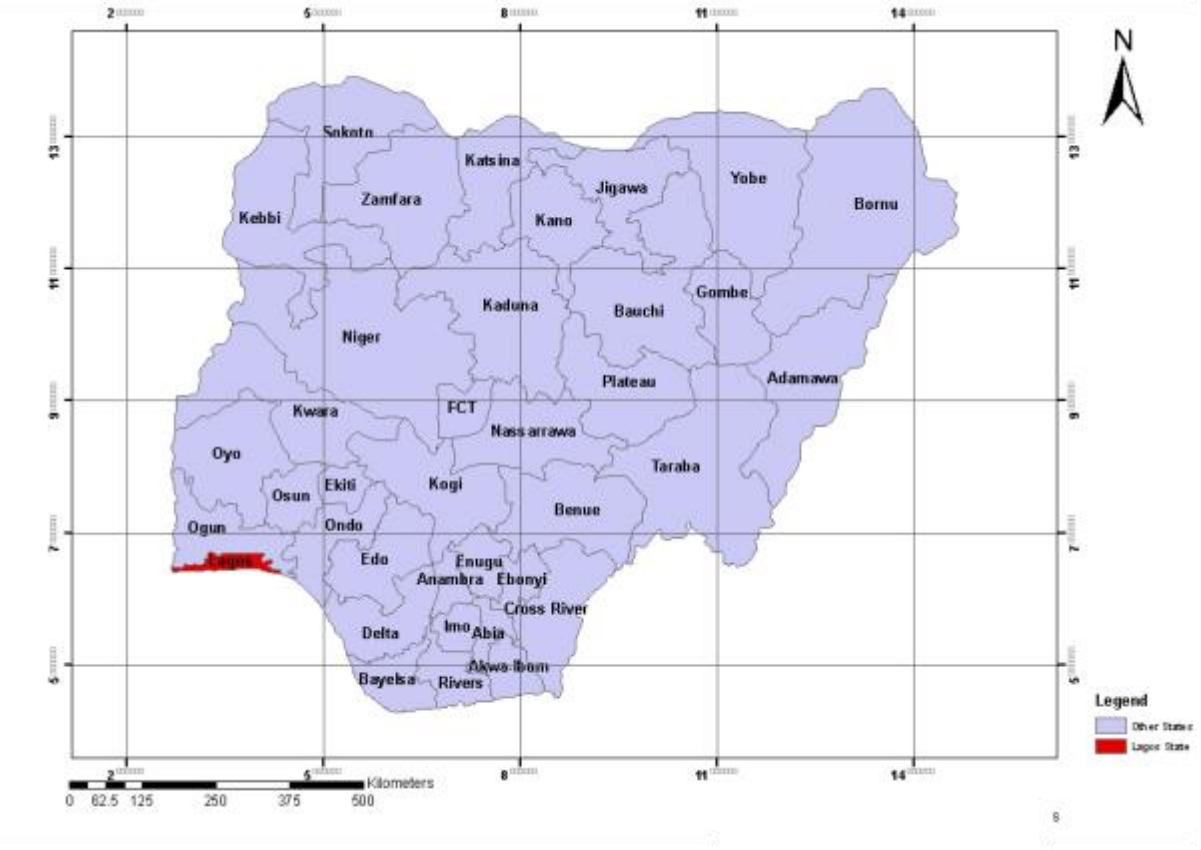


Figure 3.7: Map of Nigeria showing Lagos State in red colour

Source: Department of Surveying and Geoinformatics, University of Lagos, 2019

At the district and sub-regional levels, the project site is connected to Lagos Island via the Third Mainland Bridge, with the Carter Bridge providing another key link from Lagos Mainland. Both bridges are located less than two kilometres west of the site. To the east, the Lekki–Epe Expressway and Ozumba Mbadiwe Road provide sub-regional and regional access, linking Ikoyi to major settlements such as Victoria Island, Lekki, Ajah, Ibeju-Lekki, Epe, Ogun State, and other parts of the country (Figure 3.7).

Ikoyi's location along water bodies also enables connectivity via water transport. The Five Cowries Creek, which opens into Lagos Lagoon, provides access to and from other parts of the state, including Epe, Badore, Apapa, Lekki, and Ikorodu (Figure 3.8).

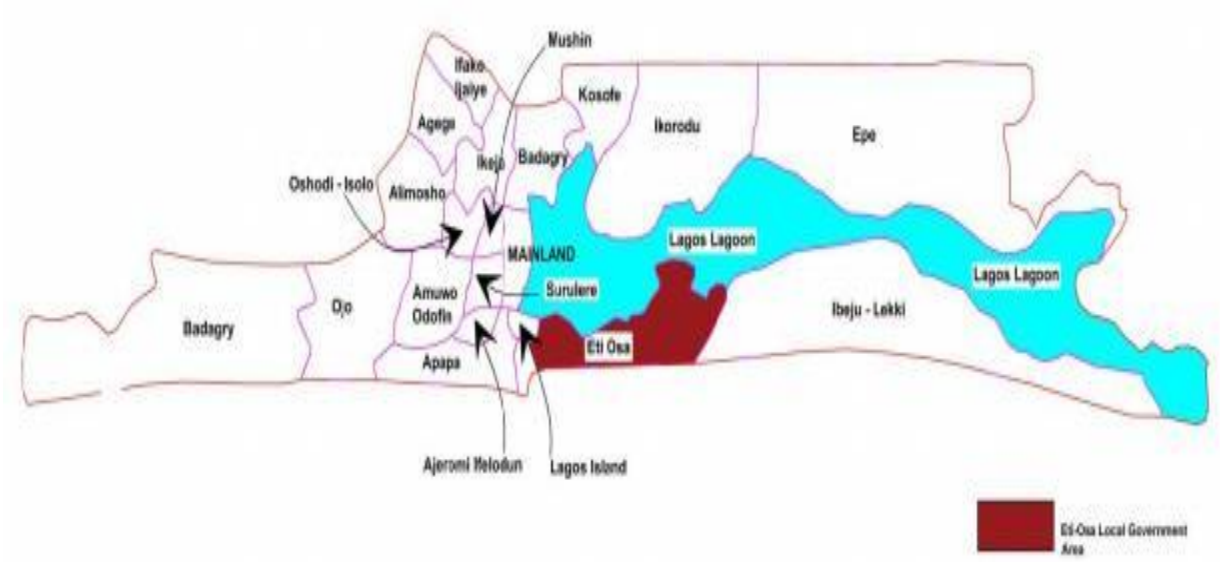


Figure 3.8: Eti-Osa Local Government in the context of Lagos State

Source: Lagos State Ministry of Physical Planning and Urban Development, 2021

Key economic infrastructures that have driven the growth of Lagos State and Nigeria are located near the project site. Notably, the Apapa ports serve as major economic hubs, while Murtala Muhammed International Airport and the Domestic Airport in Ikeja, approximately 13–14 kilometres away, support the movement of goods and services during both construction and operation of the hospital.The proposed hospital can also collaborate with other tertiary healthcare facilities in Lagos, including Lagos University Teaching Hospital (LUTH), Lagos State University Teaching Hospital (LASUTH) in Ikeja, the Federal Medical Centre in Yaba, the Nigerian Medical Research Institute in Yaba, and the National Orthopaedic Hospital in Igbobi. This integration will strengthen the city's healthcare network and improve service delivery.

3.3 The Site Plan

As noted in Section 3.1, the site covers 16,000 m². Of the six planned buildings, three have been fully designed. The first to be constructed is the Ancillary Building on the western side, covering 1,448.38 m², or 9.05% of the total site area. The other buildings include Hospital Building I and the Diagnostic Building. The remaining site area will accommodate the other three buildings, parking facilities, landscaping (hard and soft), and internal roads and drainage systems. Figure 3.9 shows the Site Plan of the proposed development, while Figure 3.10 shows Awolowo Road, the primary road, which provides access to the site. The greenery is a major part of the site.

As designed, the main access into the proposed development is Awolowo Road, while Obadeyi Close is to serve as an alternative.

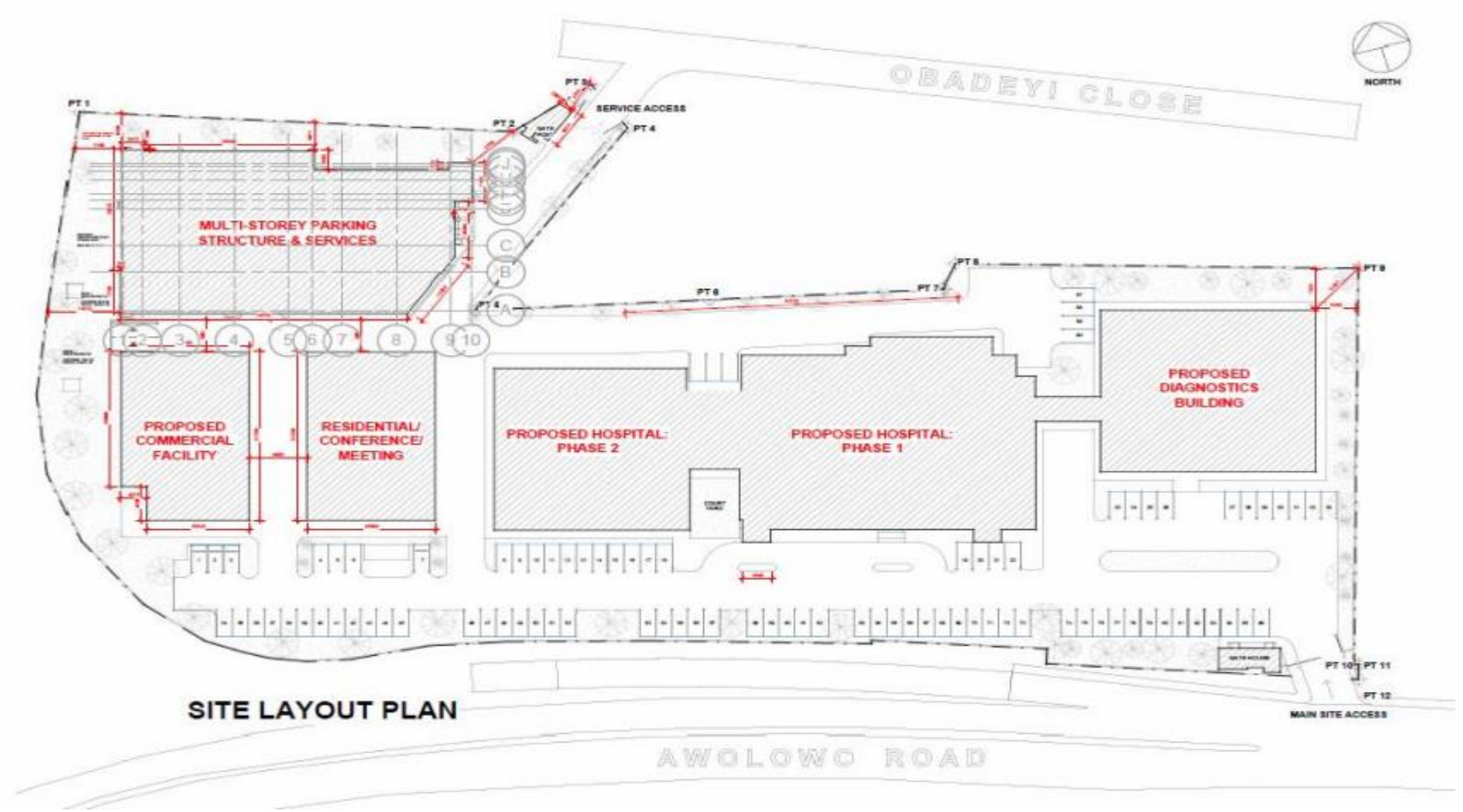


Figure 3.9: The Site Plan

Source: ECAD Architects Limited, 2025



Plate 3.3: The Awolowo Road, around the site

Source: Field Survey, 2025

3.4 The Architectural Plan

The proposed hospital is plan to have six buildings. Table 3.1 shows the buildings and their footprints.

Table 3.1: The Buildings in the MediPark

No	Building	Footprint (m^2)
I	Ancilliary	1448.38
II	Hospital I	1295.50
III	Diagonistic	999.99
IV	Hospital II	891.00
V	Residences Conference	625.00
VI	Commercial	625.00

Because of the functions, the two hospital buildings are fused, also with the diagnostic building. The biggest of the building is Ancillary

3.4.1 The Ancillary Building

The Ancillary Building is a four-storey structure primarily for parking and service support. The ground floor includes the generator and mechanical services room, offices, storage, workshop, maintenance areas, and parking. A total of 96 parking spaces are provided, including two reserved for persons with disabilities.

- **First floor:** 23 parking spaces, electrical service room, and offices for facility management.
- **Second floor:** 26 parking spaces, emergency storage, and a housekeeping office.
- **Third floor:** 30 parking spaces, emergency storage, housekeeping office, toilets (including disabled facilities), a large drivers' lounge with kitchenette, and a battery room.

Figures 3.11 and 3.12 show the ground and third floor plans.

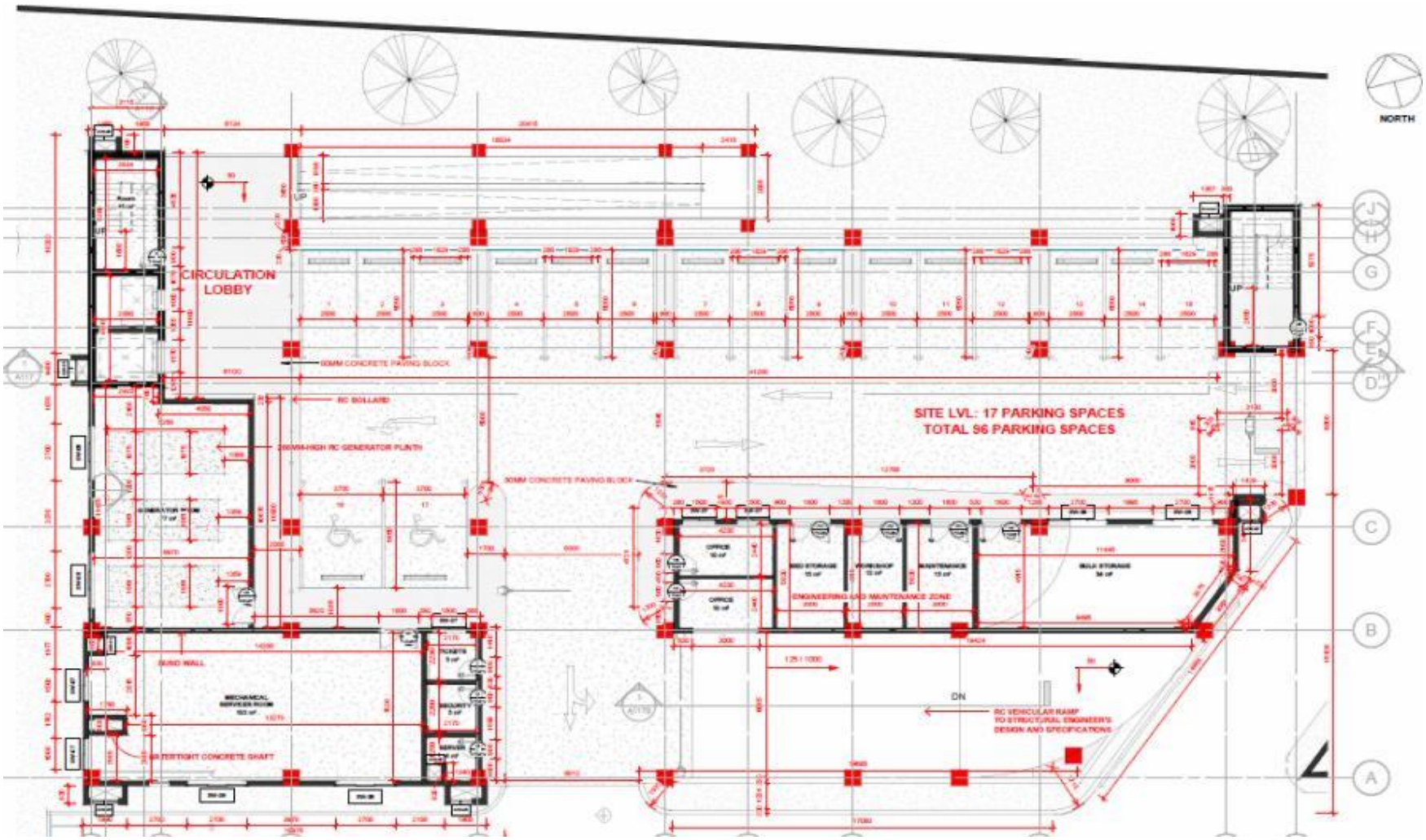


Figure 3.10: The Ground Floor Plan

Source: ECAD Architects Limited, 2025

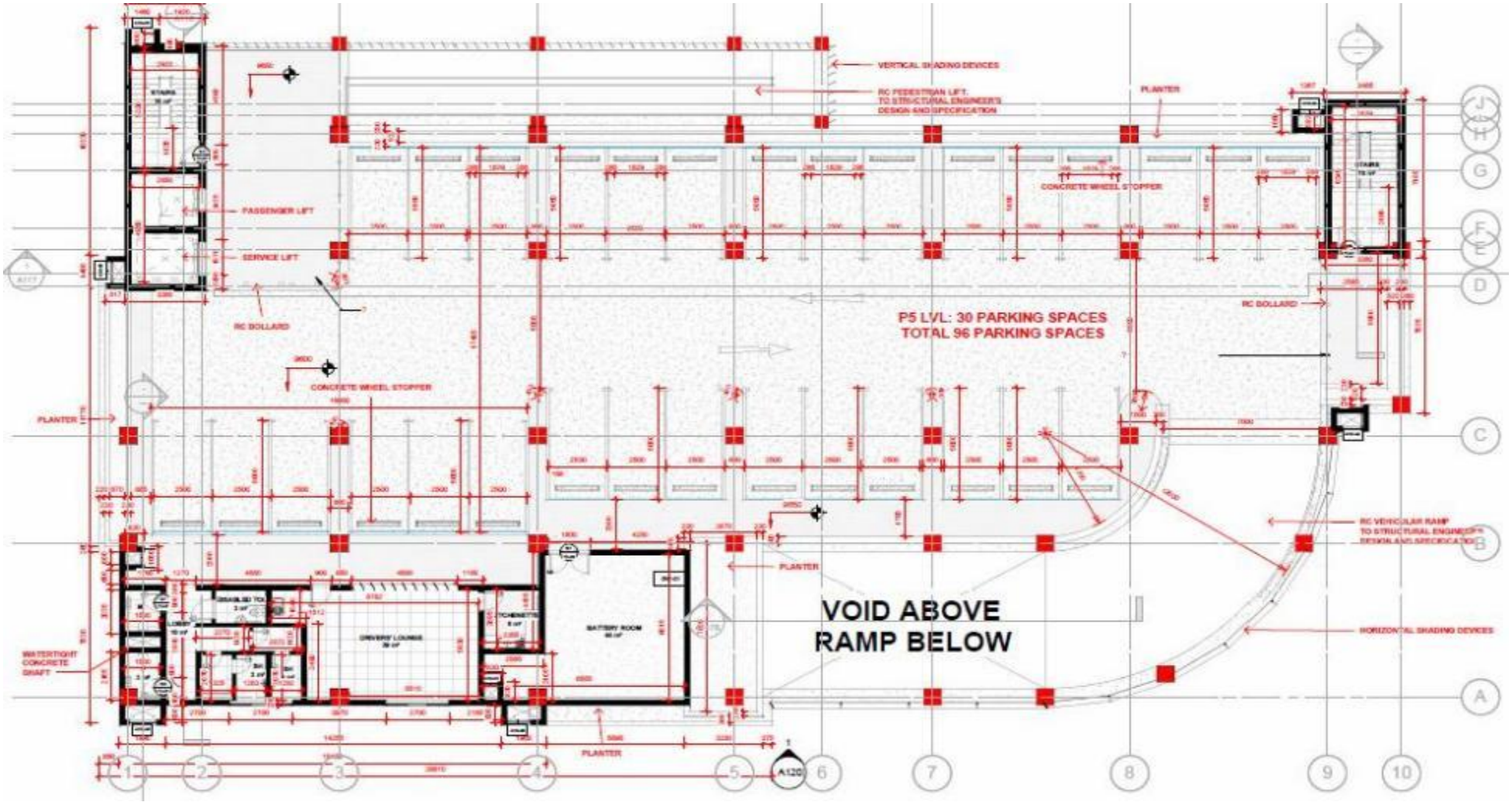


Figure 3.11: The Third Floor Plan

Source: ECAD Architects Limited, 2025

3.4.2 The Hospital Building

As noted earlier, the hospital building is one of the six structures within the development. It is a six-storey facility, with its detailed layout and functional components outlined below.

Ground Floor

The floor has a total footprint of 1,905.6 m^2 and is organized into six distinct sections: the emergency department, oncology/cancer treatment, canteen, security/IT services, offices, and circulation/lobby areas. The cancer treatment section occupies the largest portion of the floor, featuring the LINAC (linear accelerator), a device that delivers high-energy X-rays or electrons for radiation therapy. To accommodate the LINAC, an extensive bunker with a concrete casing averaging 145 cm in thickness would be installed.

The emergency department is located at the front of the floor and includes examination and observation rooms, treatment rooms, and nurse and doctor stations. Adjacent to the emergency section are seven offices, including the CEO's office. The security/IT services area contains reception, admitting offices, mechanical services, and OTS facilities. The canteen is positioned at the rear, with dedicated spaces for food preparation, serving, and medical gas storage.

Circulation areas comprise lobbies, stairhalls, and four lifts (for visitors and patients). Three stairhalls are provided, along with a courtyard adjacent to the reception. A loading bay at the rear of the floor facilitates delivery and dispatch of goods, consumables, and the evacuation of bodies. All functional spaces are interconnected through lobbies and passageways to ensure smooth movement and operational efficiency. Figure 3.16 shows the floor plan.

First Floor

Activities on the floor are organized into five main sections. The right side of the floor is dedicated to cancer treatment. Part of this area covers the roof of the bunker housing the LINAC machine on the ground floor, while the remaining space serves as the infusion section for cancer patients. The infusion section includes nurse workstations (2 units), equipment rooms, water treatment facilities, and other support spaces. A dedicated stairhall and lift provide direct access to the oncology section on the ground floor.

The second largest section is the general consultation area, located centrally on the floor. It comprises examination and treatment rooms, waiting areas, a nurse station, and toilets. The third section is the pharmacy, situated at the rear of the floor. It includes

spaces for pharmacy operations, waiting areas, drug storage, staff lounges, and two locker rooms.

The fourth section contains technical services, encompassing mechanical service rooms, conveniences, and a boardroom. The final section covers circulation, including lobbies, three stairhalls, and four lifts serving both visitors and patients. Figure 3.13 illustrates the floor layout.



Figure 3.12: Ground Floor Plan

Source: ECAD Architects Limited, 2025



Figure 3.13: First Floor Plan

Source: ECAD Architects Limited, 2025

Second Floor

This floor is dedicated to surgical activities and comprises the following:

i. Four operating theatres.
ii. Preparatory / Post Anesthesia Care Unit (PACU) – 12 Nos
iii. Central Sterile Processing Units – Decontamination, Storage
iv. Consultation, Pharmacy
v. Nurse Station / Offices
vi. Equipment Storage Rooms
vii. Surgery Staff Support – Locker Room, Doctor / Nurse Call Room, Staff Lounge

The technical services area maintains the same location as on the two preceding floors. A network of lobbies ensures efficient circulation throughout the floor. Vertical circulation is provided by three lift shafts and two stair-halls, connecting this floor to the rest of the building. Figure 3.15 presents the floor plan.

Third Floor

The floor has two major sections, viz;

i. Women's Department
ii. Intensive Care Unit (ICU)

The Women's Department, situated at the front of the floor, comprises three Labor, Delivery, Recovery, and Postpartum (LDRP) rooms, along with a Neonatal Intensive Care Unit (NICU) accommodating 10 patients. Supporting spaces include a lactation room, nurses' station, equipment room, and medication storage, among others.

The Intensive Care Unit (ICU) is positioned at the rear of the floor, providing 12 beds. The central area between these two core sections accommodates general support functions, including nurses' stations, storage areas, equipment rooms, and a redundant room. Technical services are also located on this floor, alongside circulation elements such as lobbies, stairhalls, and lift ramps. Figure 3.16 illustrates the floor layout.

Fourth Floor

The fourth floor accommodates wards for admitted patients, comprising 14 rooms 12 general wards and 2 private wards with a total of 24 beds. Each room is designed for a single patient. The central area houses general support spaces, including offices, equipment rooms, storage areas, linen rooms (for clean and soiled linen), and a visitor waiting area. Ancillary support spaces include nurses' stations, sluice rooms, and utility shafts. Circulation throughout the floor and connection to other levels is facilitated by lobbies, storage areas, stairwells, lift compartments, and an interconnected network of corridors.

Fifth Floor

The fifth floor serves as the roof level, with the elevator engine room as its principal functional space. The roof also accommodates solar panels, an alternative power source for the hospital, covering approximately 60 percent of the floor area. Figure 3.17 shows the floor layout, Figure 3.18 presents a three-dimensional view of the hospital building, and Figure 3.22 depicts the rear view.



Figure 3.14: Second Floor Plan

Source: ECAD Architects Limited, 2025



Figure 3.15: Third Floor Plan

Source: ECAD Architects Limited, 2025



Figure 3.16: Fifth Floor Plan

Source: ECAD Architects Limited, 2025



Figure 3.17: Three dimensional view of the Hospital Building

Source: ECAD Architects Limited, 2025



Figure 3.18: Rear view of the Hospital Building

Source: ECAD Architects Limited, 2025

3.4.3 The Diagnostic Building

The building is a four-storey structur located in the eastern sector of Medipark project. Its detailed layout and functional components are outlined below.

Ground Floor

The ground floor covers an area of 990 m² and is organized into three main sections: the radiology laboratories, waiting areas, and circulation components. The radiology laboratories occupy the largest portion of the floor and include dedicated spaces for an MRI scanner, CT scanner, two X-ray machines, mammography, and phlebotomy. Each equipment area is supported by adjunct spaces such as offices and storage rooms. The waiting areas are divided into five clusters, with the largest located near the reception. Each laboratory or test area has an attached waiting section, collectively accommodating approximately 100 persons at a time. Circulation is provided through lobbies, two stair-halls, and two lifts serving visitors and patients. All functional spaces are interconnected via lobbies and passageways to ensure smooth movement throughout the floor. Figure 3.20 shows the floor plan.

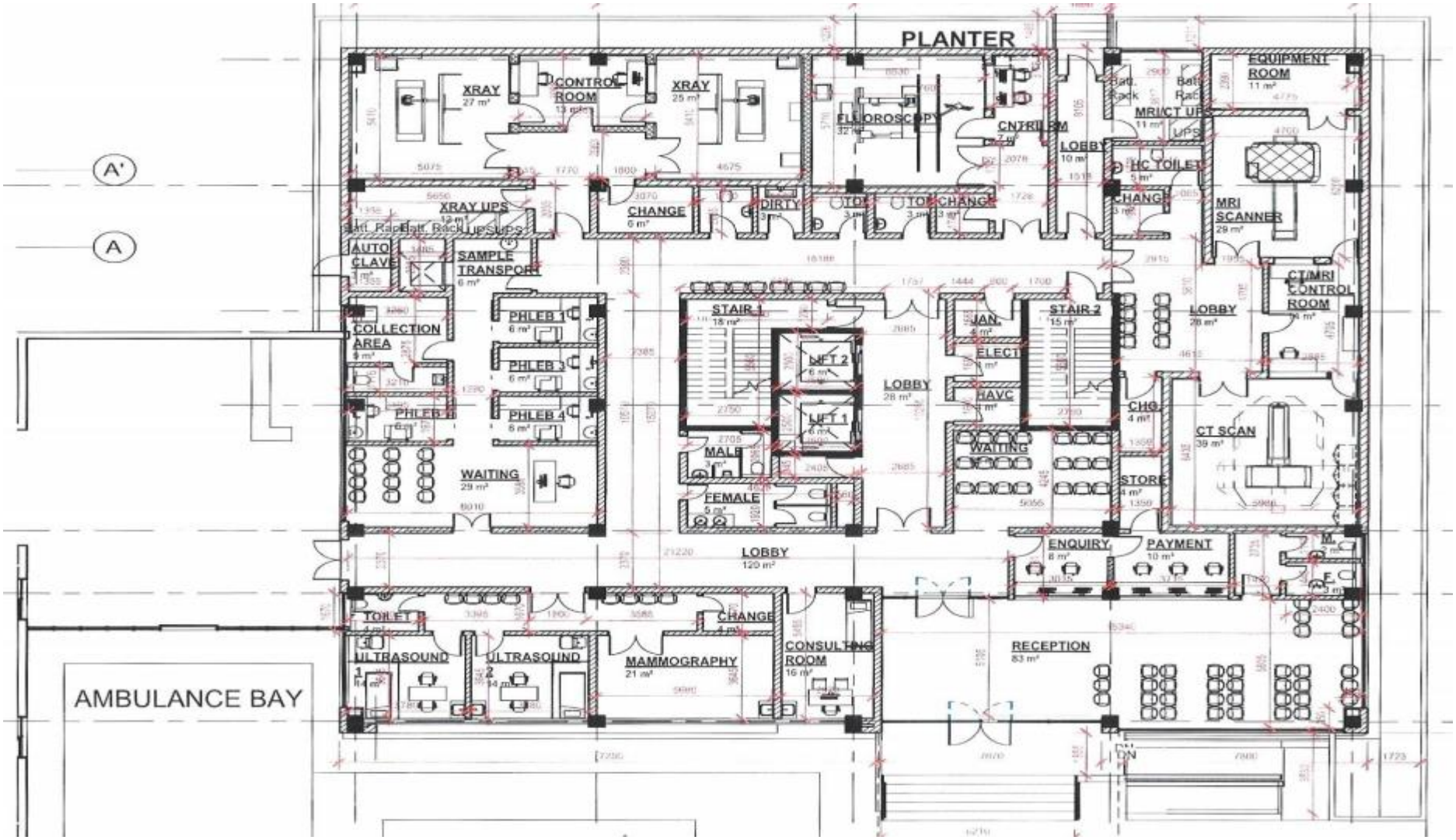


Figure 3.19: Ground Floor Plan of the Diagnostic Building

Source: ECAD Architects Limited, 2025

First Floor

The floor is primarily dedicated to laboratory functions, including microbiology, clinical microscopy, hematology, anatomic pathology, a radiology reading room, and specimen administration. These laboratories are supported by storage spaces, including a cold room, and collectively occupy approximately 40 percent of the floor area. In addition, a consultation cluster houses ten offices for consultants, along with two meeting rooms. A records archive is also provided on the floor. Two separate convenience clusters, divided by gender, support the facility's operational and staff needs.

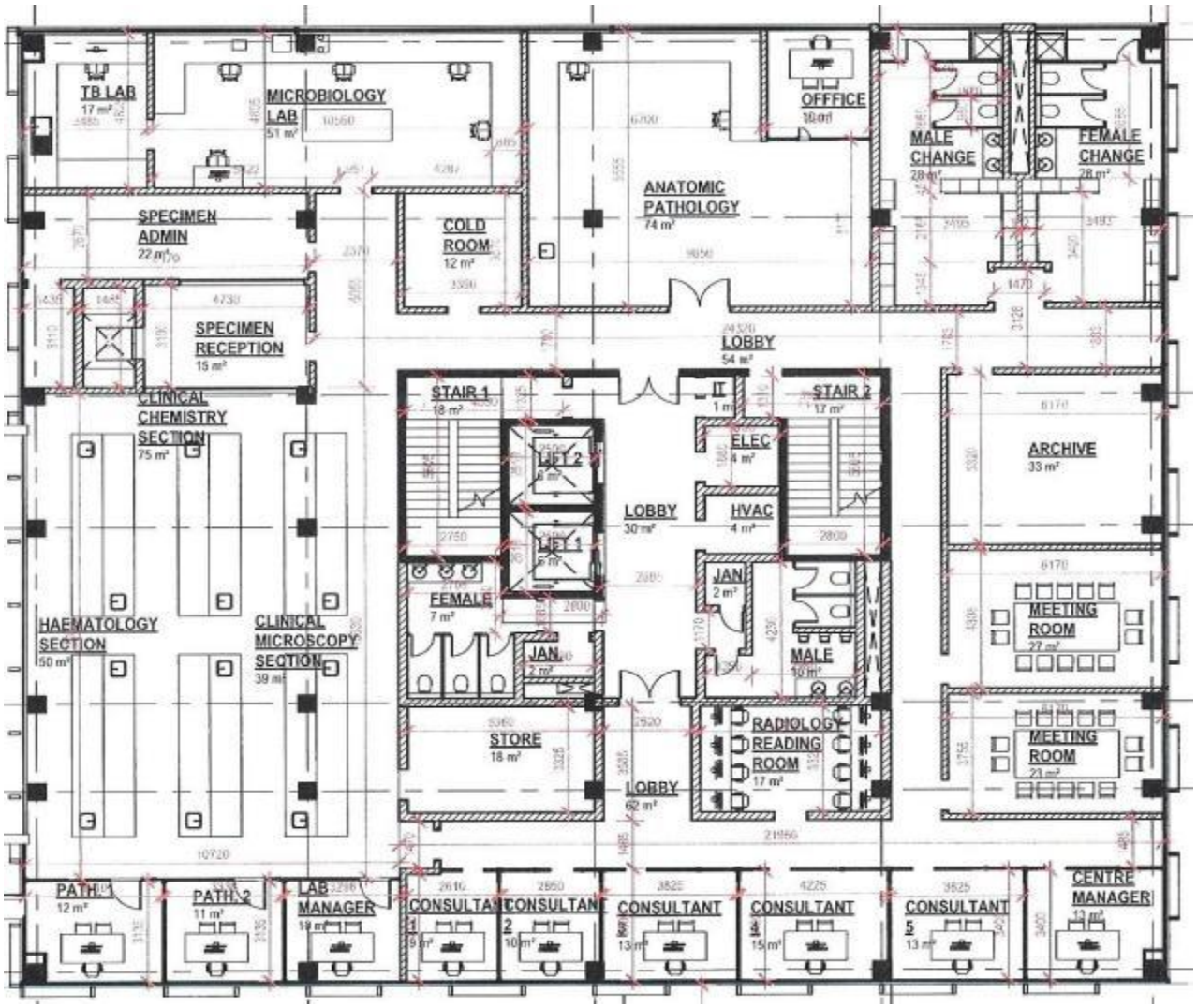


Figure 3.20: First Floor Plan of the Diagnostic Building

Source: ECAD Architects Limited, 2025

The central area of the floor accommodates two stair-halls and lift shafts, as well as technical service ducts. Circulation throughout the floor is facilitated by a network of lobbies. Figure 3.23 illustrates the floor plan.

Second Floor

This floor accommodates a mix of functions, including office spaces for the Human Resources and Finance departments, a server room for CCTV, staff lounges, and four sleep pods. An auditorium, supported by a kitchenette, is also located on this level. Additionally, four cold storage units are provided. Figure 3.24 presents the floor plan.



Figure 3.21: Second Floor Plan of the Diagnostic Building

Source: ECAD Architects Limited, 2025

The fourth floor on the eastern axis is dedicated to a warehouse, providing storage for all hospital supplies. The warehouse occupies an area of 232 m² and is planned to be fitted with shelves and cabinets to ensure proper organization of various categories of supplies. The central area of the floor houses a stairhall, two clusters of conveniences, and lift shafts, facilitating circulation throughout the floor.

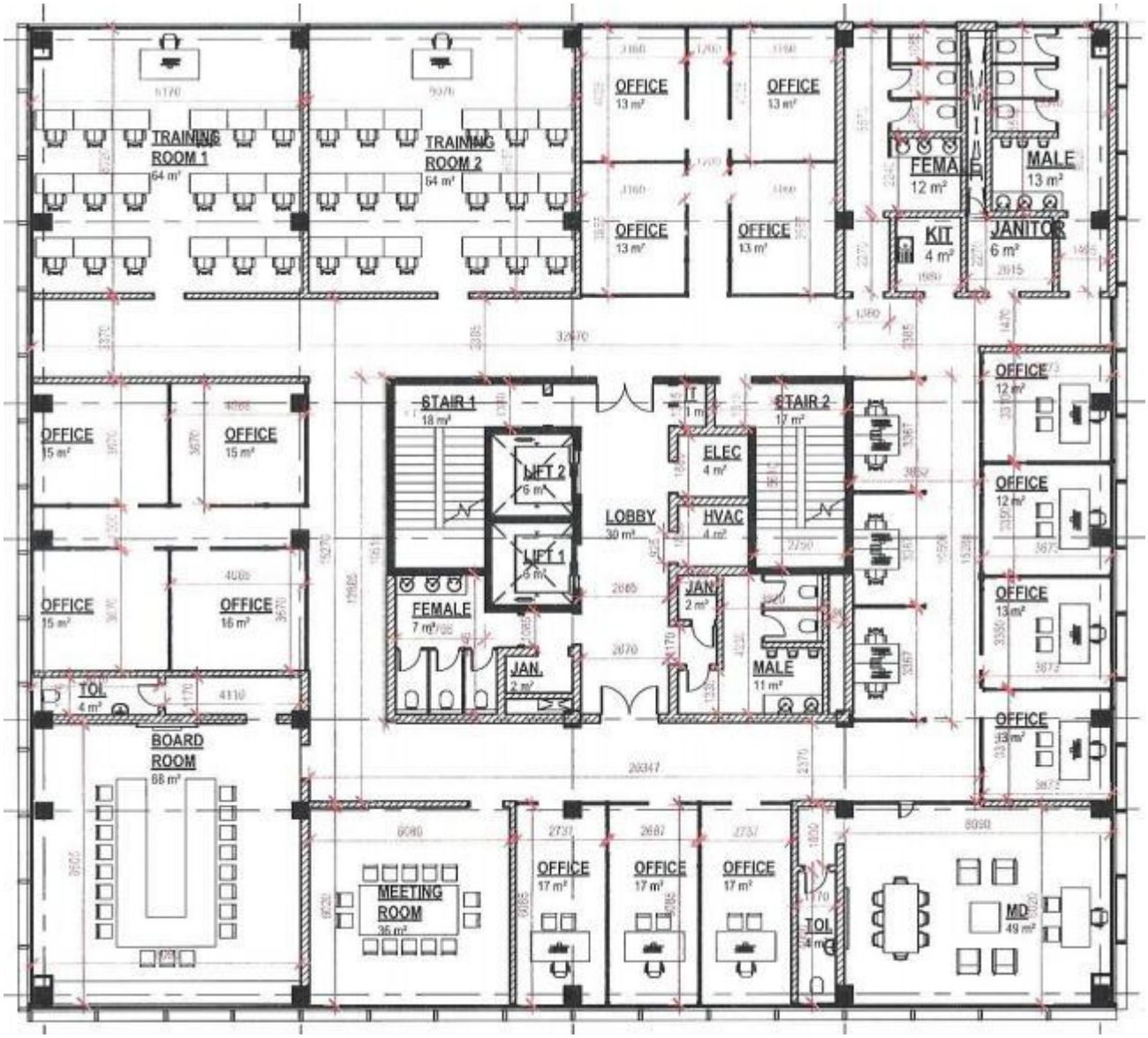


Figure 3.22: Third Floor Plan of the Diagnostic Building

Source: ECAD Architects Limited, 2025

Third Floor

This floor is entirely designated for office and related functions. It contains 18 office spaces, including the Managing Director's office, and two meeting rooms, including a boardroom. Additionally, the floor features two training rooms and two clusters of toilets to serve staff and visitors.

The clusters of toilets and conveniences on the floor are shared by all users. Two stairhalls and the lift shafts are positioned centrally, maintaining vertical circulation throughout the building.

Fourth Floor

The fourth floor is the topmost level of the development. It primarily consists of an open concretized pavement, with the central core housing the uppermost sections of the stairhalls and lift shafts. Two technical service ducts also terminate on this floor. Additional functional spaces include a service area and a storage room. Figure 3.24 presents the rear view of the Diagnostic Building.

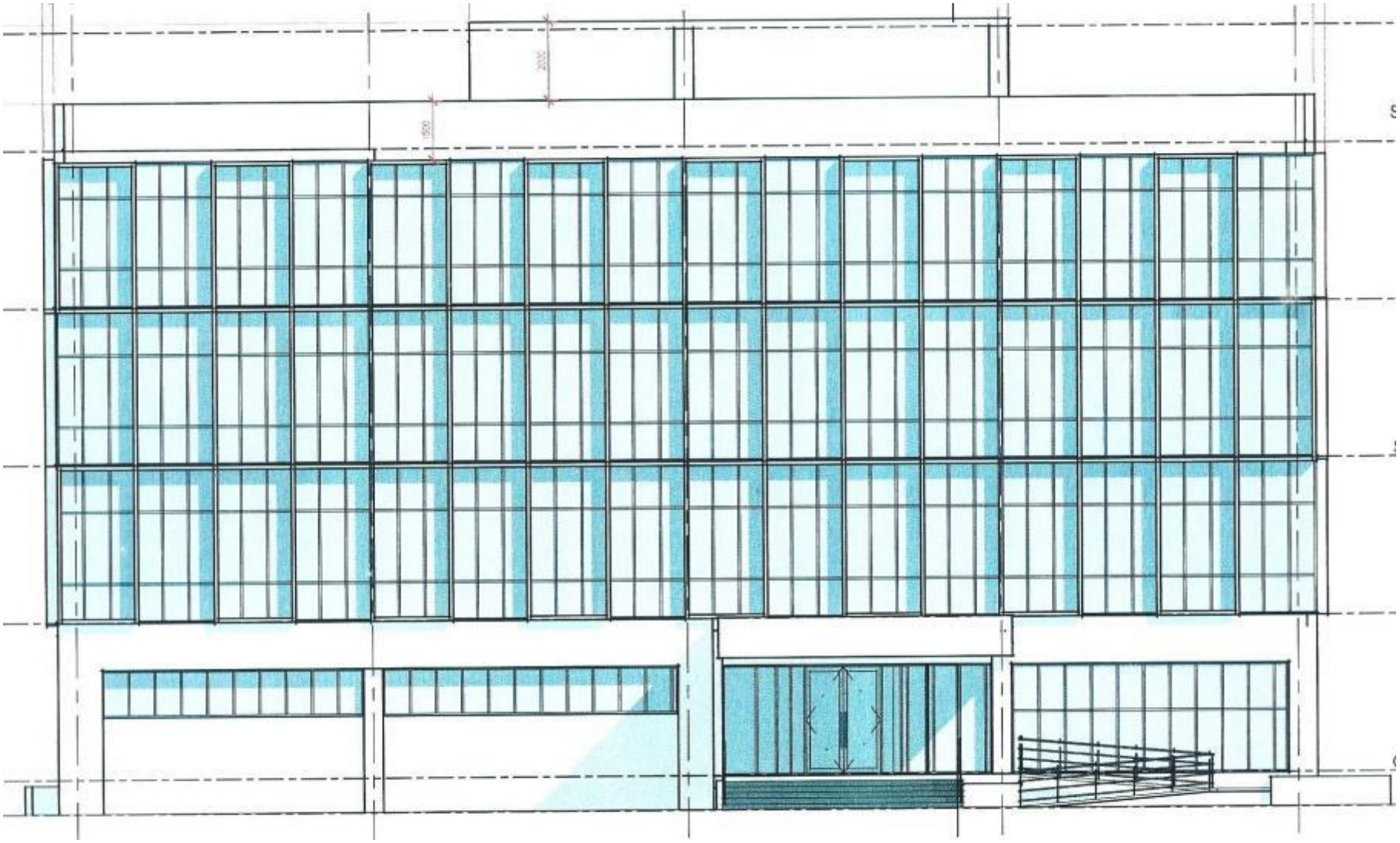


Figure 3.23: Approach view of the Diagnostic Building

Source: ECAD Architects Limited, 2025

3.4.4 Other Project Buildings

The design of the three other buildings have not been completed. These are:

i. Hospital II
ii. Commercial; and
iii. Residential and Conference Center

Conceptually, Hospital II is designed to mirror Hospital I in terms of space utilization, usable areas, and services, and will comprise six floors.

The Commercial Building is planned as a four-storey structure, accommodating commercial facilities such as a pharmacy, mini-mart, and office spaces to provide complementary services to the Medical Park.

The Residential and Conference Center is envisioned as a mixed-use building upon completion, featuring two- and three-bedroom dwelling units alongside conference facilities for training and workshops. The development will also include two gatehouses: one at the Awolowo Road access point and another at the Obadeyi Close exit.

3.5 Construction Planning

The project has been contracted to ELALAN Construction Company, one of Nigeria's fastest-growing and most dynamic construction and civil engineering firms. With over four decades of experience, ELALAN has delivered numerous high-quality buildings and facilities, and is expected to bring this expertise to the hospital project. Given the nature of healthcare facilities, the construction methodology will prioritize quality, safety, and efficiency, mitigating risks such as structural failure, poor workmanship, time delays, and cost overruns.

The development is being executed in the following stages:

- Planning
- Design
- Costing
- Production
- Maintenance

Industry professionals were involved from the project's inception to ensure proper planning, design, construction, and post-construction oversight. Key considerations include buildability and the environmental sustainability of materials. Construction planning will begin with the preparation of a detailed sequence of operations, alongside

applications for Piling Clearance and Planning Permits from the relevant government agencies. Production management documents will be developed to guide execution.
The six buildings will be constructed in phases, with Phase I encompassing the Ancillary Building, Hospital Building I, and the Diagnostic Building.

3.6 Building and Civil Works

The construction activities for the facility have been organized so that certain tasks follow a sequential order, while others can be carried out concurrently. Additionally, some activities are interdependent and will require careful scheduling to ensure efficient execution. The following elements will be addressed during this stage:

- Site Preparation
  - Site access
  - Construction compound
- Drainage Installation
- Construction of the hospital buildings

Table 3.2 shows key project activities

Table 3.2: Project Activities

Project Phase	Activity
Pre-Construction	Design reviews, site assessment, project value analysis and materials procurement
Construction	Pilling, masonry, concrete work and related activities
	Roofing and sheet metal works
	Electrical / Mechanical (Plumbing, wastewater) works
	External Works
Operations	Hospital services, patient admission, lodging/Residency, pharmacy, laboratory services
	Water supply, alternative power generation / fuel Storage
	Solid waste and wastewater management
	Cleaning
	General repairs and maintenance
Decommissioning / Redevelopment	Dismantling of buildings and utilities/services
	Site Restoration
	Reconstruction

3.6.1 Commissioning

Site Preparation

A workers' yard and material storage areas will be established to facilitate the commencement of construction activities, as outlined below.

Site Office

An on-site office will be provided to facilitate meetings and the storage of materials. Its location will be determined based on the following considerations:

- Delivery of raw materials
- Stockpiling of raw materials
- Removal of excavated material
- Storage of equipment and other items

Critical services, including power, communication, water, and drainage, will be provided and connected to the project site from the surrounding Ikoyi community. Further investigations will be conducted to determine the available capacity for each service.

Site Access Roads

Construction site traffic will accommodate:

- Transportation of the workforce
- Haulage of excavated materials
- Movement of construction materials and equipment
- Consultants and suppliers.

Various vehicle types, including cars, vans, and trucks of different capacities, will access the site regularly. The sources and destinations for transporting materials and equipment will depend on the procurement methods and the contractors selected, and cannot be definitively determined at this stage. However, a Traffic Impact Analysis conducted for the project has identified the likely composition of traffic during the different phases of construction.

3.6.2 Construction of the Building

Foundation and Superstructures

The foundation is a critical component of the building process, particularly given the multi-storey nature of the hospital. Proper execution is essential to prevent structural problems in the future. Following completion of the foundation works, the superstructure will be constructed according to the approved building design. A registered builder will be engaged by the contractor to oversee the building production

process, working in coordination with structural engineers appointed by the construction company.

Inspections

Inspections are a vital part of the construction process, ensuring that every element of the building is executed correctly. These inspections will be conducted in accordance with the notification and certification requirements of the Lagos State Building Control Agency (LASBCA). Following the foundation works, walls will be erected and framed alongside roof trusses. Roof sheathing and other framing components will also undergo inspection.

Mechanical Installation

Mechanical installations will be completed prior to the application of sheetrock across all buildings. This stage involves the proper installation of mechanical components and wiring, which is critical as these elements will become largely inaccessible once covered. Plumbing and related services will also be installed during this stage, ensuring all systems are correctly positioned before finishing works proceed.

During this stage, mechanical components will be roughed in, including venting, ductwork, water heaters, and the HVAC system. Once these installations are complete, exterior finishes will be applied to the building.

Interior Works and Finishing

Following the completion of the major structural elements, attention will shift to the interior and finishing works. This phase includes the installation of medical equipment, cabinets, countertops, and interior doors. Additional elements include flooring, moldings, staircase balusters and railings, fireplaces, and base and door trims. This stage focuses on selecting and installing components that transform the structures into fully functional and visually appealing hospital facilities, diagnostic buildings, and ancillary structures. It is during this phase that the distinct character, aesthetic quality, and overall visual identity of the buildings will emerge.

3.6.3 Resource and Construction Material Requirements

The construction of the project components will require the use of both renewable and non-renewable resources, including wood, gravel, sand, steel, aluminium, concrete, glass, cement, bricks, and paper products. With the exception of paper products, these materials will be utilized primarily during the construction phase and will not be required during the operational phase of the project.

Packaging materials such as wood, plastics, paper, and paperboard will also be used during construction; however, their use will be minimized through efficient procurement and handling practices. Significant quantities of infill materials are expected to be sourced externally for building works. All major construction materials to be used are non-combustible in nature, while fixtures and fittings will be constructed from non-combustible materials with low flame-spread ratings, in compliance with applicable fire safety standards.

Fossil fuels, including diesel, gasoline, and lubricating oil, will be required during both the construction and operational phases to power mechanical and electrical equipment. Electricity will be utilized during construction for powering equipment and, during operation, for lighting and running utility systems within the facility. Electricity consumption will be optimized and kept as low as practicable through the adoption of energy-efficient technologies and electricity conservation measures.

The major equipment to be deployed for the construction of the Medipark are shown in Table 3.3.

Table 3.3: Major Construction Equipment

S/N	Equipment
1	Air Compressor
2	Back-hoe Loader
3	Concrete Batching Plant
4	Concrete Mixing Machine
5	Concrete Pump (Mobile)
6	Dump Truck
7	Excavator
8	Excavator + hammer
9	Generator
10	Iron Cut and Bend
11	Mobile welding machine
12	Rotary Driller
13	Light Equipment
14	Scale
15	Shotcrete Pump - Dry
16	Shotcrete Pump - Wet
17	Survey Equipment Set
18	Tower Crane
19	Tower Light
20	Water tanker

21	Trencher
22	Screen Plant

Source: ESIA of Lagos Medipark Field Survey

3.6.4 Work Hours

The expected hours of work for the proposed project shall be in accordance with the construction policy of the State. It is as highlighted below.

Preliminary works (site clearing)

Monday - Saturday,

8:00am to 5:00pm.

Building and Civil Works

Monday - Saturday,

8:00am to 6:00pm.

These activities will be programmed and managed by the appointed contractors in consultation with the project management organisations.

3.6.5 Materials and Energy

The inventory of major materials to be used for construction of the Medical Park are as listed.

○ Aggregate Materials – granite, sand, stone / stone dust ○ Fuel / Engine Oil ○ Cement ○ Water ○ Cement and ceramic tiles ○ Concrete ○ Polythene ○ Bricks / blocks ○ Steel / aluminium ○ Pipes – concrete, steel, PVC pipes ○ Polyfilla, Adhesives ○ Paints ○ Wood ○ Composite Material	○ Ceramics Tiles ○ Copper wires ○ Plastic ○ Electric cable ○ Gas (Acetylene and Oxygen) ○ Cardboard ○ Bitumen, soundproofing, and waterproofing materials ○ Scaffold ○ Insulation ○ Roofing ○ Glass

Source: ESIA of Lagos Medipark Field Survey

3.6.6 Expected Waste Category during Construction Phase

Broad categories of wastes that will be generated from Medical Park construction are as follows:

- Solid waste: (paper, polythene, metal shavings, cement, concrete, welding particles, plastics, sand, grey water, adhesives, paints, soil, plants, cloth, rubber).
- Excavated Soil
- Air emissions: from vehicles engines and burning and friction operations (COx and SOx).
- Oil and fuel spills from vehicles and storage of oil and fuel.
- Dust from movement of vehicles and excavation activities
- Liquid wastes from concrete batching plant.
- Waste Water

3.6.7 Materials Delivery / Load Transport

Load to be transported to site include rebar, batched concrete, wood, parapets, cross beams, formworks, filigram, sand, stone base, and others. The transport routes are the urban road network particularly Awolowo Road, the Third Axial Road, Alfred Rewane Road, Marina and others around the district. No road linking the project site will be closed, neither will there be traffic diversion at any point during the construction phase. Materials are to be transported in trucks and articulated vehicles at off - peak periods to the site.

3.6.8 Personnel Requirement and Transport

Approximately 315 personnel are expected to be engaged in the construction phase. The number of workers at the site is expected to vary depending on the task at hand. There are specialized subcontractors that will be engaged by the main contractors when the needs arise. Core of the workers will be those of the main contractor, with additional workers being engaged from surrounding communities. Some mini contractors are expected to fabricate their components of materials off site and only bring such to the site for fixing. Personnel vehicles are to pick up workers at designated points in parts of the city to work before 8:00am and on the return journey.

Accommodation will be provided for few categories of workers on the site. Others are expected to resume daily at the site. The construction company shall comply with health, safety and environmental management standards, in order to ensure maximum comfort and safety for all workers. Since the work force will be drawn largely from Lagos area,

commuting daily to the site will not be at high inconvenience through public transport, particularly with the high accessibility value of Ikoyi.

3.6.9 Operational Systems, Resource Requirements and Waste Streams

Upon completion of construction, the Lagos Medipark will enter its operational phase, during which a range of medical, diagnostic, administrative, and support activities will be undertaken. The principal operational facilities within the development include the Diagnostic Centre, Hospital I and Hospital II Blocks, Ancillary Building, Residence/Conference Centre, and Commercial Building.

The Medipark is designed as a tertiary-level healthcare institution with a capacity of 140 inpatient beds. The facility will include:

- Nine (9) operating theatres
- Two (2) cardiac catheterization laboratories (cath labs)
- Endoscopy suites
- Multiple in-suite procedure rooms
- Nuclear medicine facilities
- Two external beam radiation therapy bunkers
- One brachytherapy bunker

These facilities will be equipped with advanced medical technologies to support accurate diagnosis, precision treatment, and specialized clinical care.

Once operational, the Medipark will provide comprehensive and specialized healthcare services, including but not limited to:

- Oncology (including radiotherapy and chemotherapy)
- Cardiovascular and interventional cardiology services
- Neuro-spinal and neurosurgical treatments
- Nephrology and dialysis services
- Pulmonology and respiratory care
- Critical and emergency care services
- Maternal and child health services
- Surgical and rehabilitative care
- Diagnostic imaging (MRI, CT, X-ray, ultrasound)
- Pathology and laboratory services

➢ **Operational Materials and Inputs**

Key materials and inputs during the operational phase will include:

- Pharmaceuticals and medical consumables
- Laboratory reagents and chemicals
- Radiopharmaceuticals (for nuclear medicine)
- Disinfectants and sterilization agents
- Water and electricity
- Medical gases (e.g., oxygen, nitrous oxide)
- Cleaning and maintenance materials

➢ **Waste Streams and Outputs**

The operation of the Medipark will generate various categories of waste, which will be managed in accordance with national environmental and healthcare waste management regulations.

The principal waste streams include:

o **Hazardous Healthcare Waste**

- Sharps waste (needles, scalpels, syringes)
- Infectious waste
- Pathological and anatomical waste
- Cytotoxic waste (from oncology treatments)
- Pharmaceutical waste (expired or unused drugs)
- Chemical waste (laboratory reagents and disinfectants)
- Radioactive waste (from nuclear medicine and radiotherapy)

o **Non-Hazardous Waste**

- General domestic-type waste
- Administrative waste
- Packaging materials
- Food waste
- Non-hazardous recyclable waste (paper, plastics, glass, metals)

In addition to solid waste streams, the facility will generate:

- Wastewater (sewage and laboratory effluent)
- Air emissions (from standby generators and waste treatment system)
- Noise emissions from mechanical equipment

All waste streams will be segregated at source, treated where necessary, and disposed of through approved and licensed waste management systems in compliance with applicable environmental regulations.

3.6.10 Ancillary Facilities

Temporary facilities and the necessary controls for the project shall include the following.

- Site Office(s)
- Vehicle Parking Area
- Cafeteria
- Material Storage Area
- Workshops
- Sanitary Facilities
- Storage Sheds
- Safety Apparatus - First Aid Equipment, Fire Protection
- Access Routes
- Environmental Controls
- Waste Storage Yard - Trash, Debris, Excavated Material,
- Pest and Rodent Control
- Water Runoff and Erosion Control

3.6.10.1 Car Park and Internal Circulation

The Lagos Medipark Project is designed to provide above-ground parking facilities with a capacity exceeding 120 vehicles, adequately serving staff, patients, visitors, service providers, and ancillary operations. The parking layout has been carefully planned to promote efficient traffic circulation, operational functionality, and user safety within the facility. A structured internal road network will be developed to support:

- Dedicated ambulance routes and emergency access lanes, ensuring rapid and unobstructed access to the Accident and Emergency (A&E) unit and other critical care areas;
- Patient, visitor, and staff vehicular access, with clearly defined entry and exit points to minimize congestion;
- Service and operational vehicles, including medical supply deliveries, maintenance vehicles, and waste collection services.

In line with universal accessibility standards and inclusive design principles, the facility will incorporate:

- Designated parking spaces for persons with disabilities, located in close proximity to main building entrances;
- Barrier-free access routes with ramps designed to appropriate gradient standards;
- Wheelchair-accessible pathways and entrances, including automatic or wide-clearance doors;
- Tactile paving and clear wayfinding signage to support visually impaired users;
- Kerb cuts and smooth transitions between parking areas, pedestrian walkways, and building access points.

Pedestrian pathways will be clearly demarcated and segregated from vehicular traffic to reduce accident risks. These walkways will be non-slip, adequately lit, and designed to accommodate wheelchair movement and emergency stretcher transfer where required.

The overall circulation and access system has been developed to ensure operational efficiency, emergency preparedness, patient safety, and full compliance with accessibility and healthcare infrastructure standards.

3.6.10.2 Utilities

The successful implementation and operation of the Lagos Medipark Project will require the provision of reliable and adequate utility services. These utilities constitute both primary and ancillary inputs essential to clinical, administrative, and support functions within the facility. The key utilities required include water supply, electricity, sewerage, and drainage systems.

Water Supply

The Medical Park will obtain water from a combination of on-site boreholes and the public water supply network, thereby ensuring redundancy and reliability. Water abstracted from boreholes will undergo comprehensive treatment to meet potable and medical-grade water quality standards.

The proposed water treatment process will include:

- Filtration: multi-stage filtration using sand filters, activated carbon filters, and membrane systems where required;
- Disinfection: through chlorination, ultraviolet (UV) irradiation, or ozonation to eliminate pathogenic microorganisms;

- Advanced Treatment: softening or deionization depending on the raw water composition and specific hospital requirements (e.g., laboratory and dialysis applications).

Water quality testing and monitoring will be conducted routinely to ensure compliance with applicable national drinking water and healthcare standards.

Power Supply and Hybrid Energy System

To ensure uninterrupted power supply critical for a tertiary healthcare facility, the Lagos Medipark will adopt a hybrid energy configuration comprising Solar Photovoltaic (PV), Battery Energy Storage System (BESS), Grid Supply, and Diesel Generator Backup.

As part of the project's sustainability and climate-resilience strategy, approximately 100 kWp of rooftop or carport-mounted solar PV capacity will be installed. This will be complemented by a battery energy storage system (BESS) to store excess daytime solar generation for use during peak demand periods or grid interruptions.

The hybrid system will operate as follows:

- Solar PV will serve as the primary daytime energy source.
- The battery system will provide short-term backup and load balancing.
- The public grid will supplement energy supply where available.
- Diesel generators will function strictly as emergency or extended outage backup.

Under conventional arrangements in Lagos, healthcare facilities often rely heavily on diesel generators due to grid instability. However, with the integration of solar energy:

- Solar power is expected to supply approximately 55–65% of the annual electricity demand.
- Diesel generator usage will be significantly minimized.
- Annual diesel consumption is projected to reduce from approximately 80,000 liters/year to 20,000–25,000 liters/year, representing an estimated 70% reduction.

This transition will substantially reduce greenhouse gas emissions, improve ambient air quality, lower noise levels, and decrease operational fuel expenditure while enhancing long-term energy security.

Table 3.4: Utility Requirements of the Medipark Project

Utility	Unit	Average Quantity / Year
Water (Borehole / Public)	m^3	150,000
Electricity (Grid + Backup)	kWh	120,000
Solar PV Requirement (planned)	kWp Installed Capacity	100
Estimated Solar Generation	kWh/year	~150,000
Fuel – Petrol, Diesel, Oil	Liters	80,000

The integration of renewable energy into the utility framework aligns with national environmental regulations, climate change mitigation commitments, and international sustainability standards applicable to large-scale healthcare infrastructure projects.

3.6.10.3 Laboratory and Critical Clinical Infrastructure

The Hospital design has the required facilities expected of a tertiary care level. This includes emergency units, wards, outpatient service areas, laboratory units, pharmacy, and administrative units. It is also designed to have solid and liquid waste management facilities, such as incinerators, and sewerage systems. The laboratories will consist of an anteroom and laboratory rooms. It will have gas-impermeable walls, ceilings and floors. Air gaps under doors are acceptable for directional airflow. Whenever door gaps are sealed, the laboratory is not expected to leak gaseous decontamination materials. The laboratory is designed for ease of maintenance, so that access to critical mechanical equipment (ventilation ducts, fans, piping, etc.) is outside containment. The laboratory is consists of high-quality room construction, with special consideration given to joints, finishes and penetrations. There will be a room for large equipment decontamination.

Specifications for floors, walls and ceilings of laboratories: due to the highly pathogenic nature of the microorganisms frequently encountered in biological safety laboratories, the efficacy of disinfection and decontamination procedures must be ensured, without compromising the integrity of the facility.

The laboratories at MediPark will be constructed using concrete footing and stem walls with concrete slab-on-grade floors. Walls would be steel stud framed and roof construction would consist of metal decking over steel bar joists. The exterior walls would have an application of stucco and the painting of the building would be visually consistent with surrounding structures.

The laboratory floors will be impermeable to liquids, monolithic/seamless, or have welded seams. Floors are to be easily cleaned, with chemical-resistant flooring (vinyl, or

epoxy with fiberglass reinforcement) with a slip-resistant, smooth, hard finish. For monolithic floors, either a 100-mm-high, readily cleanable, integrally coved sheet flooring base, or a readily cleanable, 100-mm-high, vinyl or rubber base should be used. For epoxy floors, if silicone sealants are used for penetration, the silicone must be applied after the epoxy has been installed. Floors shall be monolithic and slip resistant.

The walls of the laboratory must be durable, washable, and resistant to detergents/disinfectants (masonry, gypsum board, fiberglass-reinforced plastic, etc.). Walls will also be painted with durable glossy acrylic or epoxy paint. For epoxy paint, if silicone sealants are used for penetrations, the silicone must be applied after the epoxy has been installed. Wall/ceiling penetrations will be kept to a minimum and sealed with non-rigid, non-shrinking silicone or latex sealant. For fire rated walls, sealant will be applied before stopping.

The ceiling of the laboratories is expected to be washable and resistant to detergents/disinfectants. The ceiling has to be painted with durable glossy acrylic or epoxy paint. If silicone sealants are used, the silicone will be applied after the epoxy. The ceiling must be of monolithic construction that is gypsum board, not removable tiles. Additionally, the ceiling must be high enough over Class II Biological Safety Cabinets (BSCs) to allow a canopy/thimble connection or the opening of canopy/thimble door(s). Ceiling height would be at least 3.0 meters to allow 3.2 meters of clearance above BSCs. All penetrations in floors, walls and ceiling surfaces would be sealed, or capable of being sealed to facilitate disinfection, to aid in maintaining appropriate ventilation system air pressures, and to keep pests out.

Eyewash/Safety Shower: numerous microorganisms are infectious if exposed to the mucous membranes around the eye. Therefore, eyes shall be flushed thoroughly after splashes and exposures to the eyes. Emergency eyewash will be in each laboratory room. A combination emergency eyewash/safety shower unit must be in near proximity to places if personnel are exposed to splash hazards (determined during programming). Emergency eyewash and emergency eyewash/safety shower units would be sited and installed**.**

Plumbing: all penetrations must be perpendicular to the surface, and must be sealed to be airtight. Penetrations must also be sealed with non-rigid, non-shrinking, silicone or latex sealant. For fire-rated walls, sealant will be applied before stopping. All pipes into the hospital facilities would be secured to prevent movement. Fixtures must be resistant to corrosion of bleach and other disinfectants. Besides, back-flow prevention devices will

be installed on all faucets (including wastewater). All pipes will be identified by using labels and tags. Water supply control will be located outside the containment area. Plumbing should discharge directly to a sanitary sewer and treatment plant.

Sinks: hand washing sinks in the hospital will be available in each room near the exits. Sinks will be hands-free. Infrared sensors are preferable but may not be suitable for all laboratories. In cases where infrared sensors cannot be used, knee-operated sinks are preferable to foot-operated. Each sink will have chemical-resistant traps (for disinfectants), a covered backsplash, hot-cold water and pre-mixing faucet. Hand washing sink will be accompanied by a paper-towel dispenser and a hands-free soap dispenser mounted for easy reach.

Fire Safety and Alarms: fire alarms shall be audible above ambient noise. A wall-mounted ABC Dry Chemical fire extinguisher must be mounted near the exit door of the hospitals and anteroom. Laboratory-safe refrigerators or EN 14470-1 certified cabinets will be used to store flammable/combustible materials. Alarms are provided for: fire hazard, ventilation failure, differential pressures below 0.05" wg, -80°C ultracold freezers and intrusion detection systems. Alarms will be connected to the building control system and to campus public safety department. Alarms should be audible and visible throughout the laboratory. Alarms shall be differentiated, so that each can be easily identified. Alarms will be on UPS power.

All laboratories would be operated according to all guidance and requirements established by the CDC (CDC 1999), and WHO (WHO, 2004). Prior to operating the laboratories, it would be assessed by regulatory organs at both the State and Federal levels, to verify compliance with biosafety level requirements for working with the biological agent.

Risk analysis will be performed before any infectious microorganisms are handled in the Renal Medullary Carcinoma (RMC) laboratory in accordance with CDC, WHO guidance. Besides, State medical regulatory shall be informed of the microorganisms to be handled in laboratories, and would be aware of the methods of identification and control of associated diseases. Laboratory work associated with infectious microorganisms will be approved and authorized by NCDC.

3.6.11 Estimated Workforce

The proposed project is expected to generate significant employment opportunities for a wide range of skilled and unskilled workers, as well as professional staff. The estimated labor requirements are presented in Table 3.3.

Table 3.3*:* Labour Requirements (Number of Employees)

Type	Early Works	Building and Civil Works
Labour (skilled and unskilled)	370	532
Supervisory and Professional	49	72
Total	**419**	**604**

Accommodation will be provided on-site for selected categories of workers, while others are expected to commute daily. The construction company will adhere to strict health, safety, and environmental management standards to ensure maximum comfort and safety for all personnel. Given that the workforce will largely be drawn from the Lagos area, daily commuting is not expected to pose significant challenges, particularly due to the high accessibility of Ikoyi via public transport.

Hours of Work

The expected hours of work for the proposed project shall be as highlighted below.

Early works (site clearing)

Monday - Saturday, 7:00am to 5:00pm.

Building and Civil Works

Monday - Saturday, 7:00am to 6:00pm.

These activities will be programmed and managed by the appointed contractors in consultation with the project management organisations.

3.6.12 Building Commissioning

The commissioning process will involve a thorough inspection of the buildings to ensure compliance with all applicable standards, as verified by the Lagos State Building Control Agency (LASBCA). The agency will be invited to conduct the necessary stage certifications for all buildings, facilitating the issuance of the statutory Certificate of Fitness for Habitation.

3.7 Occupational Health and Safety (OHS) Practices

The Lagos Medipark Project will implement appropriate Occupational Health and Safety (OHS) measures in compliance with applicable Nigerian labour laws, environmental regulations, and international best practice standards, including provisions of the African Development Bank (AfDB) Operational Safeguards.

During the construction phase, a qualified Safety Officer will be appointed to supervise daily site activities and ensure adherence to established health and safety procedures. The Safety Officer will be responsible for routine site inspections, enforcement of safety protocols, investigation of incidents, and coordination of emergency response actions. This structured approach is intended to minimize occupational risks and protect the health and safety of workers and other persons on site.

The Project Management Unit (PMU) will ensure that all workers are provided with appropriate Personal Protective Equipment (PPE) suited to their assigned tasks. Safety signage will be prominently displayed across the construction site to guide safe operations. Workers will undergo health and safety induction training prior to commencement of duties, and specialized training will be provided for high-risk activities. First aid facilities and emergency response arrangements will be made available on site, and procedures for incident reporting, documentation, and corrective actions will be implemented and maintained.

These measures are aimed at preventing occupational accidents and injuries, promoting a safe working environment, and ensuring compliance with national occupational health and safety requirements, while aligning with internationally recognized safeguard principles.

3.7.1 Incident Reporting, Investigation and Follow-up

The contractor to be selected is expected to an accident report form that contains a list of the body parts affected, the effect on the person, actions taken by the employer to prevent the recurrence of a similar incident, the person responsible for reporting, and related actions.

- **Contingency Plan and Emergency Procedures**

The contractor shall have emergency response procedures for fire and simulations of emergency circumstances to train individuals to respond in real-life scenarios. After a drill, participants and organizers will review the drill's effectiveness, identify areas for improvement, and make adjustment to the emergency plan as stated in the safety manual. The emergency procedures are designed for handling emergencies such as fire/explosion, spillages, and splashes. The fire prevention system shall comprise of portable fire

extinguishers (CO_2, dry powder, foam) mounted at various points at the facility, but the extinguishers need to be refilled.

3.8 Waste Generation and Management

3.8.1 Waste Practices Overview

Waste will be generated throughout the project's lifecycle, from construction through operations and eventual decommissioning. The project proponent is expected to engage a contractor registered with the Lagos Waste Management Authority (LAWMA) for the collection, transportation, and final disposal of all waste. The agreement will include the provision of bins and detail responsibilities regarding authority, resources, standards and procedures, inspections, audits, waste control, and emergency protocols.

The waste management plan will clearly define the responsibilities of the facility's management team in providing the necessary resources. As a hospital, the facility will generate a substantial volume of biomedical waste, requiring specialized handling for its generation, collection, and transportation. The Project Manager will coordinate all waste-related activities, monitor compliance, and maintain documentation. The Environmental Officer will oversee the effectiveness of the plan, ensuring proper documentation of waste sources, quantities, destinations, and accurate tracking throughout the process.

The Environmental Officer will also ensure that facility supervisors comply with the objectives of the waste management plan.

Facility Maintenance Supervisors will be responsible for the collection and segregation of all non-hazardous waste, as well as its storage prior to final disposal by the appointed waste contractor. They will also maintain accurate records of all waste materials generated within the facility. Construction activities will be conducted strictly in accordance with established procedures to minimize waste generation at the source, ensure proper disposal of all waste, and provide effective responses to environmental emergencies.

Waste will be segregated and stored in appropriately color-coded bins to facilitate efficient and comprehensive waste management. Details of waste segregation and the corresponding receptacles are presented in Table 3.4.

Table 3.4 Waste Segregation and Receptacles during Construction Phase

No	Waste Type	Receptacle Code
i.	**General** e.g. Aerosol cans (domestic waste), refrigerant/Freon, flashlight batteries, tins, packaging materials, spent engine filters, spent filter media (water filtration sand etc), oil rags and sorbent, sludge/soil, refractory, scrap metal.	**BLACK BIN**
ii.	**Paper** (to be shredded)	**GREY BIN**

iii.	**Food** e.g. Food remnants, cooking oil (domestic waste)	**GREEN BIN**
iv.	**Plastic** e.g. Plastic bottles, plates, spoons, bags	**BROWN BIN**
v.	**Dangerous** e.g. Batteries (lead/acid; Ni/ Cd/li), contaminated fuels, used oils, paints and paint related materials.	**RED BIN**

Since no biomedical waste is expected at the construction stage, no receptacle is expected to be provided.

3.8.2 Waste Characteristics and Management Approaches during Operation Phase

3.8.2.1 Waste Characteristics

The Medipark's waste management plan in envisioned with the guiding principles of Nigerian legislation and international good practice. It has provided an estimate for the types and quantities of waste produced at the hospital. In the fourth year of completion, the hospital is expected to be fully operational. It is expected that a total of 2,197 kg/day will be generated. Out of which 1,648 kg will be non-hazardous waste, while 549 kg will be hazardous waste. It is proposed that waste be segregated into nine categories, namely: hazardous healthcare waste; sharps, infectious, pathological, pharmaceutical, cytotoxic, chemical and radioactive waste. Others are non-hazardous non-recyclable healthcare waste, and non-hazardous recyclable healthcare waste. In order to facilitate day-to-day operations, the waste plan identifies colour coding scheme which is compliant with the Nigerian legislation to aid segregation of the waste at source into dedicated bins.

The estimated waste composition of the hospital will be 50 percent general non-hazardous waste, while 29.0 percent will be recyclable. Furthermore, 12 percent are expected as infectious waste, 4 percent as chemical, 2.0 percent as pathological waste, with 1.0 percent as pharmaceutical waste, while 2.0 percent will be sharps.

3.8.2.2 Waste Category

- **Hazardous Healthcare waste**
  - Sharps waste
    - Used or unused sharps (e.g. hypodermic, intravenous or other needles, auto- disable syringes, syringes with attached needles, infusion sets, scalpels, scissors, pipettes, knives, blades, broken glass)
  - Infectious Waste
    - Waste is suspected to contain pathogens, that poses risk of disease transmission.
    - Waste contaminated with blood and other body fluids such as from discarded diagnostic samples.

- Cultures and stocks of infectious agents from laboratory work. Example are waste from autopsies and infected animals from laboratories.
- Waste from patients with infections such as swabs, bandages, and disposable medical devices.

- Pathological waste
  - Human tissues, organs or fluids, body parts, fetuses, unused blood products, contaminated animal carcasses.
- Pharmaceutical Wastes
  - Pharmaceuticals that are expired, unused, or no longer needed.
  - Items contaminated by or containing drugs and vaccines.
- Cytotoxic Waste
  - Wastes containing substances with genotoxic properties like highly hazardous substances that are, mutagenic, teratogenic, or carcinogenic), such as cytotoxic drugs used in cancer therapy and their metabolites and genotoxic chemicals).
- Chemical Waste
  - Waste containing chemical substances such as laboratory reagents, film developer; disinfectants that are expired or no longer needed. There are also solvents; waste with a high content of heavy metals, like batteries; mercury in broken thermometers and blood-pressure gauges.
- Radioactive waste
  - Waste containing radioactive diagnostic material or radio-therapeutic materials. Examples are unused liquids from radiotherapy or laboratory research; contaminated glassware and packages or absorbent paper. Others are urine and excreta from patients treated or tested with unsealed radionuclides and sealed sources.

- Non-Hazardous or General Health Care / Domestic Waste
  - Waste that does not pose any particular biological, chemical, radioactive or physical hazard, but which requires attention in the general waste management.

3.8.2.3 Waste Management Approaches

A central waste storage area is designed for the basement of the Ancillary Building. This is indicated in Layout Plan which shows the storage area of waste type. It is estimated that 58m2 will be required, for the types of bins to be used to store waste. This also includes an allowance for an additional 50 percent area for safe movement of the bins. Waste from ward, laboratories and other areas are to be moved to the central waste storage area using the dirty lifts at least twice a day. This in addition to collection from high foot traffic parts of the Medipark. Obadeyi Street has been planned for ingress and egress for trucks that will convey waste from the facility.

Through this waste management plan and its strategies, Medipark would be able to ensure that non-hazardous and hazardous medical waste are segregated, classified, appropriately colour coded, handled, stored, and disposed of through a registered waste carrier in accordance with environmental legislation and regulations of Lagos State. The operator will, by this waste management plan and its arrangements, identify opportunities to improve waste minimization and reduce the associated environmental impacts of managing the waste.

All waste from laboratories, compounding room, operation room are to be decontaminated and marked as "treated hazardous waste" prior to disposal in designated containers for treated infectious waste. The final disposal of various wastes generated will be contracted to a LAWMA Accredited Healthcare and Medical Waste PSP Operators. There are three accredited operators in Eti – Osa district, from which one will be selected by the hospital management after conducting due diligence with regards to operational competencies, pickup procedures, safety manual for waste management and other waste management procedure. The proposed project will have procedures for compliance with all applicable regulations for collecting, storing, processing, and disposing of sanitary liquid, solid and hazardous wastes generated from the facility.

Besides, all biological waste from the facility shall undergo either autoclaving or chemical disinfection. These wastes are to be discharged from laboratory sinks, floor drains, or the tissue digesters and would be held and disinfected in retention tanks before being discharged into the sanitary sewer system. Tap water entering the facility through spigots in the sinks or shower heads would have backflow preventers to protect the potable water distribution system from contamination. Biological cultures could be disposed of in the sinks after undergoing treatment with chemical disinfectants for an appropriate amount of time. The autoclaving process involves placing waste to be autoclaved in a special

container. When autoclaving occurs, an indicator strip on the container changes its colour. This allows facility workers and waste management workers to be able to tell at a glance whether waste has undergone autoclaving. In order to manage waste generated from the proposed Medipark, the following mitigation strategies discussed below will be implemented.

3.8.2.4 Waste Segregation

Proper segregation of waste at source generation (at each department) is essential, efficient and effective in managing hazardous waste. It helps in reducing the quantity of waste requiring treatment prior to final disposal and ultimately reduces the cost of waste treatment/management. Segregation involves putting different classes of wastes into separate and appropriate temporary storage color-coded containers/bags as recommended by the Healthcare Waste Management National Guidelines. As waste segregation and waste colour coding work hand in hand, waste generated from the proposed facility will be segregated and color-coded as outlined in Table 3.6 as recommended by WHO.

Table 3.6: Waste Segregation and Waste Colour Coding

Waste Category	Colour Container and Marking	Type of Container	Collection Frequency
Infection Waste	Yellow with biohazard symbol (highly infectious waste would be additionally marked HIGHLY INFECTIOUS).	Leak-proof strong plastic bag placed in a container (bags for highly infectious waste would be capable of being autoclaved)	When three-quarters filled or at least once a day.
Sharp Waste	Yellow, marked SHARPS with biohazard symbol	Puncture-proof container	When filled to the line or three-quarters filled
Pathological Waste	Yellow with biohazard symbol	Leak-proof strong plastic bag placed in a container	When three-quarters filled or at least once a day
Chemical Waste	Brown, labelled with appropriate hazard symbol	Plastic bag or rigid container	On demand
Non-Hazardous Waste	Black	Plastic bag inside a container or container which is disinfected after use	When three-quarters filled or at least once a day

Source: World Health Organization, 2017

- **Labelling**

  An important aspect of colour coding is labelling. Accordingly, waste bags or containers would be labelled with basic information in English. Basic label information would include the type of waste in the container, name of the laboratory section, date of collection, and warning of hazardous nature.

- **Additional Actions**
  - Identify the source of hazardous waste or date of generation in case of an accident or improper segregation of the waste, ensure that the workers responsible for hazardous waste management handle the different types of wastes safely.
  - Ensure that each staff member feels more responsible for what they put into the bag/receptacle.
  - Ensure that Departments / Units and other activity areas gather data on the amount of waste produced.

3.8.2.4 Collection of Waste from Lagos Medipark

Collection of waste is extremely important particularly to avoid over spilling of waste out of collection containers. Collection would be done promptly and routinely or as often as required. This will reduce the probability of contaminated waste coming into contact with the public. Collection of waste would be done by approved and trained personnel fully equipped with appropriate PPEs and transporting equipment such as laboratory trolley and carts. The laboratory staff and pharmacy staff will be actively involved in the collection of waste as would the waste handlers. They would ensure that their containers/bags (bins/boxes and collection receptacles) are never more than three-quarters full before sealing them at their points of generation. They would also ensure that such collection containers are appropriately labelled in accordance to Guidelines for Management of each Class of Healthcare Waste (HW).

The following shall also be adhered to when collecting waste:

- All HW would be sorted on site before collection and transportation. This will bring about easy identification of content of containers thus preventing careless handling and the risk of secondary infection.
- There would be a fixed schedule for the collection of waste bags and containers from each medical department. This is to ensure regular removal of waste from each location and to ensure coordination between medical staff and cleaning or housekeeping staff. The minimum frequency of waste removal would be once per working shift.
- No bag would be removed without labelling indicating the point of generation (department, office and laboratory section) and content.

- Workers in the laboratory, pharmacy and nursing department shall immediately replace the bags or containers with new ones of the same type.
- There would be separate schedules and separate collection times for different colour coded containers.
- Separate trolleys would be used for different types of waste.
- Vehicles will be disinfected and cleaned daily or at the end of haulage with an appropriate disinfectant at an appropriate site where wastewater will be properly disposed off.
- Waste ducts that convey sacks of waste by gravity will not be used, as they tend to scatter waste at the exits of the chutes, and are subject to fouling by the waste, leading to nuisances such as smell and insects.
- Carts and vehicles used to transport the waste will be carefully designed so that they are stable, quiet in operation, and so that transportation can be achieved with the minimum of effort and inconvenience.
- The trolleys or carts would be large enough so that waste is not piled up on them in an unsafe way and the trolleys and carts would be designed to prevent and accommodate any form of spillage.
- Waste bags would not be hand-carried around, as this may increase the risk of injury to legs, arms, and torso from incorrectly disposed of sharps or other items.
- Sealed sharps containers would be placed in a labelled, yellow infectious health care waste bag, before removal from the medipark.
- Water and hand-wash materials would be readily available for health care waste handlers to wash hands after handling HW.

3.8.2.5 Waste Handling at Lagos Medipark

When handling waste, handlers shall wear protective clothing as such as face masks, aprons, boots, and heavy-duty gloves, at all times. When handling sharps, needles will not be recapped or bent while syringe will be placed in a safety box immediately. When there is a need to use needle removers, it will take place immediately after the injection.Additional waste handling process include:

- Safety boxes will be fully and properly assembled before use.
- Safety boxes will also be sealed and collected when they are 75 percent full and will never be emptied or opened,

- Sharps containers such as safety boxes will be placed as close to the point of use as possible and practical, ideally within arm's reach,
- Safety boxes will be labelled so that people will not unknowingly use them as garbage container for discarding other items,
- Safety box will not be shaken to settle their contents,
- Safety boxes will not be placed in high traffic areas (corridors outside laboratory rooms or sample preparation rooms) where people could bump into them or be stuck by someone carrying sharps to be disposed of,
- Containers will not be placed on the floor or anywhere they could be knocked over.

Infectious Waste Bins

Infectious waste bins would be covered before collection. It would be cleaned and disinfected with 0.5 percent chlorine solution after emptying and before reuse.

3.8.2.6 Waste Handling Safety Measures at Medipark

Safety Measures to be taken are as follows:

- All personnel handling infectious medical waste shall wear gloves and additional protective medical clothing and personal protective equipment (PPE) appropriate
- To the level of risk they encounter, personnel handling waste will remove any protective medical clothing used prior to leaving work area and to place it in a designated area or container;
- Protective medical clothing and PPE would not be submitted for laundering unless sterilized;
- When performing procedures where splashing may occur or when infectious medical waste bags or containers may contact more than the worker's hands and wrists.
- Appropriate protective medical clothing would be of material that does not permit infectious medical waste from penetrating and reaching workers clothes or skin;
- Eye protection, surgical face masks, and face shields when personnel may need to clean the area.

Additionally, immunization will be undertaken for staff members, as necessary, for instance, vaccination for Hepatitis B Virus, Tetanus immunization.

3.8.2.7 Waste Storage at Lagos Medipark

Storage is classified into internal and external. Consideration for storage will be based on the classification or type of waste being dealt with and the potential risk of infection to health-care workers and waste disposal staff. The following rules would be observed for proper storage of HW:

- Initial packaging and storage would take place where HW is generated.
- Storage of waste will then be moved to a temporary on-site storage location.
- Non-risk HW would always be stored in a separate location from the infectious / hazardous HW to avoid cross-contamination.

Internal storage is the temporary placement of waste at the point of generation before transfer to external storage points. A storage location for the HW would be designated inside the facilities, in each department. The waste in the bin-liners or containers would be stored in a separate area, room or building appropriate to the quantity of waste produced bearing in mind the frequency of collection.

Segregation of health care waste (HW) from general waste would be maintained in storage. There would be planned periodic cleaning and disinfection of temporary storage areas and the containers. The storage time for HW before it is transferred to external storage facilities would be on a daily basis. External storage refers to the transit point where waste is stored after removal from primary storage to the time it is collected and transported for treatment and final disposal. External storage location would be isolated at the Park where larger containers found near incinerators would be used to store waste until it is incinerated.

In order to ensure that waste is kept separated, the central storage receptacles for each colour coded bag will be placed in similarly colour coded receptacles.

- There shall be one or more external storage points for hazardous and non-hazardous waste depending on the layout of laboratories and other facilities;
- The external storage point(s) for the hazardous and non-hazardous waste will be geographically separate at within the medical park,
- The walls and floors would be smooth, without cracks, impervious, easy to clean and disinfect.
- The site will be spacious, well-ventilated and lit;
- All loading and unloading of waste would take place within the designated collection area around the storage point; and

- Larger volume waste bins would be available at the external storage facility to receive waste containers from the internal storage points.

As stated earlier, the Medipark has designate an area where waste may be temporarily stored until final collection for disposal and onward treatment. It is expected that hospital will manage the HW it generates. Such a general storage location would be located at the back of the facility and away from the view of the public. In addition, the waste storage area will be large enough to contain all the hazardous waste produced by the Medipark, with space capacity to cope with any maintenance or breakdown of the treatment unit. The storage area would be totally enclosed and secured from unauthorized access, inaccessible to animals, insects, and birds, and easy to clean and disinfect with an impermeable hard-standing base, good water supply, drainage, and ventilation.

3.8.2.8 Waste Transportation

Consideration of transportation shall be based on the classification or type of waste being dealt with and the potential risk of infection to health care workers and waste disposal staff. Transportation is classified into on-site transport and off-site transport, since the waste to be generated from the medical complex will be moved internally, and then to the outside facility.

On-Site transportation

The on-site transport involves conveying wastes from the various points of generation within different sections of the Hospital to a temporary storage location also within the same area. The following would be adhered to when carrying out on-site transportation:

- All waste bags would in-place and intact at the end of transportation;
- Carts, trolley, or containers used for the transportation of health-care waste would not be used for the transportation of any other material; and would be used for transporting safety boxes and bins;
- Waste that has the potential to leak will be double bagged;
- Waste bags would be placed in containers like cardboard boxes or wheeled, rigid, lidded plastic or galvanized bins, before being placed directly into the transportation vehicle;

- A trolley, bin, or wheelbarrow shall be used for transporting safety boxes and bins;
- The collected waste shall not be left even temporarily anywhere, other than at the designated storage room; and
- Containers shall be covered with lids during storage and transport.

Off-Site Transportation

During the transportation of waste outside the Medical Park, the following safety precautions would be included:

- Single-bagged waste and containers of sharps and liquids would be placed within a rigid or semi-rigid container such as a bucket, box, or carton lined with a plastic bag;
- Containers would be covered with lids during transportation;
- When transporting plastic bags of infectious waste, care would be taken to prevent tearing of the bags;
- Infectious waste would not be compacted before treatment;
- Outside the hospital, infectious waste would be transported in closed, leak-proof, rigid containers using trucks;
- The transportation would be properly documented, and all vehicles will carry a consignment note from the point-of collection to the treatment facility;
- Vehicles used for the carriage of waste would be disinfected prior to entering the facility;
- The vehicles would be free of sharp edges, easy to load and unload by hand, easy to clean and disinfect, and fully enclosed to prevent any spillage in the facility premises or on the road particularly roads such as Saint Gregory College Road, Obadeyi Street and Awolowo Road, all of are in the immediate setting of the Hospital during transportation;
- The vehicles would carry adequate supplies of plastic bags, protective clothing, cleaning tools, and disinfectants to clean and disinfect in case of any spillage for reasonably anticipated facial exposure to infectious medical waste.

Waste Collection Points

- Strategically located and well-constructed waste collection points will be provided within the facility for onward evacuation by licensed waste contractors. This approach will promote good housekeeping practices and ensure controlled and efficient waste handling throughout the facility.
- **Waste Recovery and Reuse**
- Where practicable, recoverable wastes will be reused within the system as part of the project's waste minimization and control strategy. This approach has been incorporated into the overall management policy of the facility.
- **Workers' Sensitization on Waste Management and Minimization**
- Personnel engaged during both the construction and operational phases will receive regular training on proper waste management practices and environmental protection. Emphasis will be placed on waste minimization at source and the importance of maintaining a sustainable and environmentally responsible work environment.

3.8.2.9 Waste Treatment and Disposal Methods

The WHO recommends that waste treatment techniques, which minimize the formation and release of chemicals or hazardous emissions should be given priority. In general, proper treatment and disposal of healthcare waste (HW) is necessary to ensure that its impact on the environment and human health is minimized or eliminated. Among all the current technologies for treatment and disposal of HW, the most appropriate technology will be applied, and this would be the most reliable, affordable, and sustainable technology in accordance with the technical, human and financial resources of the promoters. Moreover, the technology would also minimize the immediate public health risks associated with healthcare waste management with the lowest impact on the environment. Several methods are appropriate for infectious waste treatment, depending on the type of waste material. These treatment methods will include one of the options or combination of options: steam sterilization, incineration, thermal inactivation, gas/vapour sterilization, chemical disinfection, and sterilization by radiation, or electromagnetic radiation.

3.8.2.10 Liquid Waste Treatment and Disposal

Liquid contaminated waste like pathological sample, blood, faeces, urine, other body fluids and contaminated fluids, liquid wastes from compounding room, as well as

contaminated liquid wastes from Intensive Care Unit, Outpatient Department, Operating Room and others require special handling. As they may pose an infectious risk to health care workers and the public with contact or handle the waste.

Segregation, minimization, and safe storage of hazardous materials are just as important for liquid wastes as they are for solid wastes. Typically, a system of sewer pipes linked to form a sewerage system will collect wastewater from around a facility and carry it below ground to a central location for treatment within the hospital complex. The treatment plant shall be located at the facility, and wastewater collected from different facilities by pipe system and passed into different units of wastewater treatment units. Liquid wastes generated from the complex, which contains pathogens blood and hazardous chemical, except hazardous chemical, are to be treated with disinfectants, and finally disposed off into liquid waste treatment plant which will be constructed at the facility.

Highly infectious liquid wastes shall be treated using 5 percent sodium hypochlorite (NaClO – bleach) before disposal. Sodium hypochlorite would never be mixed with detergents or used for disinfecting ammonia-containing liquids, because it might form toxic gases. Lime milk (calcium oxide) shall be used to destroy microorganisms in liquid wastes with high organic content requiring disinfection such as stool during a cholera outbreak. Onsite treatment of healthcare sewage will produce a sludge that contains high concentrations of pathogens and should be treated before disposal. All hazardous chemicals used in the hospital such as: formaldehyde, chloroform, phenol, ethyl alcohol, isopropyl alcohol, amyl alcohol and sodium hypochlorite, would not become waste for this facility. Waste fluid generated may need pH adjustment. Effluent from the Park also needs to meet the country standard to be discharged into publicly operated sewage collection and treatment systems.

3.8.2.11 Onsite Waste Treatment for Lagos Medipark

The packaged onsite wastewater treatment system, which will be constructed in the complex, is a combined sludge and clarification plant. This is a self-contained treatment plant with activated sludge primary sedimentation, or septic tanks are installed ahead of the plant to reduce solids and COD loading. A secondary sedimentation tank after the reactor removes the biomass from the treated sewage before it is released to surface water or transported to a centralized treatment/disposal facility.

- **Septic tanks**

The septic tank is the most commonly used wastewater pre-treatment unit for onsite wastewater systems. Tanks may be used alone or in combination with other processes to treat raw wastewater before it is discharged to a subsurface infiltration system. In the MediPark's context, the tanks will be subordinate with other pathogen removal processes. A tank shall provide primary treatment by creating quiescent conditions inside a covered, watertight rectangular, oval, or cylindrical vessel, which is typically buried. In addition to primary treatment, the septic tank stores and partially digests settled and floating organic solids in sludge and scum layers. This can reduce the sludge and scum volumes by as much as 40 percent, and it conditions the wastewater by hydrolyzing organic molecules for subsequent treatment in the soil or by other unit processes.

A septic tank removes many of the settle able solids, oils, greases, and floating debris in the raw wastewater, achieving 60 to 80 percent removal. The solids removed are stored in sludge and scum layers, where they undergo liquefaction. During liquefaction, the first step in the digestion process, acid-forming bacteria partially digest the solids by hydrolyzing the proteins and converting them to volatile fatty acids, most of which are dissolved in the water phase. The nature of liquid waste in a septic tank varies.

- **Sand/Media Filters**

Sand filters are essentially aerobic, fixed-film bioreactors used to treat septic tank effluent. Other very important treatment mechanisms that occur in sand filters include physical processes such as, straining and sedimentation, which remove suspended solids within the pores of the media, and chemical adsorption of dissolved pollutants to media surfaces. The latter phenomenon tends to be finite because adsorption sites become saturated with the adsorbed compound, and it is specific to the medium chosen. Bio slimes from the growth of microorganisms develop as attached films on the sand particle surfaces. The microorganisms in the slimes absorb soluble and colloidal waste materials in the wastewater as it percolates around the sand surfaces. The absorbed materials are incorporated into new cell mass or degraded under aerobic conditions to carbon dioxide and water.

Since most of the biochemical treatment occurs within approximately 6.0 inches (15 centimeters) of the filter surface, wastewater percolates through this active layer, carbonaceous BOD and ammonium-nitrogen are removed. Most of the suspended solids are strained out at the filter surface. The BOD is nearly completely removed if the wastewater retention time in the sand media is sufficiently long for the

microorganisms to absorb and react with waste constituents. With depleting carbonaceous BOD in the percolating wastewater, nitrifying microorganisms can thrive deeper in this active surface layer, where nitrification will readily occur.

- **Continuous-Flow, Suspended Growth Aerobic System**

The aerobic suspended-growth process that maintains a relatively high population of microorganisms (biomass) by recycling settled biomass back to the treatment process. The biomass converts soluble and colloidal biodegradable organic matter and some inorganic compounds into cell mass and metabolic end products. The biomass is separated from the wastewater through settling in a clarifier for recycling or wasting to sludge handling processes. Preliminary treatment to remove settle able solids and floatable materials is usually provided by a septic tank or other primary treatment device. Most onsite designs can provide significant ammonia oxidation and effective removal of organic matter. The basic system is consists of several interrelated components like:

- An aeration tank or basin.
- An oxygen source and equipment to disperse atmospheric or pressurized air or oxygen into the aeration tank at a rate enough to always maintain positive dissolved oxygen.
- A means to appropriately mix the aeration basin and ensure suspension of the biomass (usually accomplished by the aeration system).
- A clarifier to separate the biomass from the treated effluent and collect settled biomass for recycling to the aeration basin.

3.8.2.12 Disposal and Management of Treated Effluent and Sludge

The treated wastewater from MediPark will be released to public drains, only if it fulfils Lagos State and national standard for general standard for all other industrial effluent discharge to inland water and controlled application of effluents to land. If the treated waste fulfils the requirement, it can be also used as greenery and toilet flushing. If it does not fulfil the above criteria, the wastewater would be transported to treatment plants by using sewage trucks that empty septic tanks. Regarding sludge, sludge generated would be transported to the approved site by Lagos State Government. Once a sewer line is constructed to the site, treated wastewater from MediPark will be released to the public water surface.

3.8.2.13 Radioactive Waste Management Options

The Lagos Medipark will generate limited quantities of radioactive waste arising primarily from nuclear medicine, radiotherapy (including iodine-131 therapy), diagnostic imaging, and related laboratory procedures. The management of such waste will be undertaken in strict compliance with applicable national regulations, international best practices, and relevant safety guidelines.

Where feasible, radioactive waste may be returned to the original supplier, subject to applicable transboundary movement controls and in observance of the Basel Convention and other relevant regulatory requirements. Alternative radioactive waste management options to be adopted include:

- Decay-in-Storage (DIS): Radioactive waste will be safely stored in designated and shielded areas until its radiation levels are indistinguishable from background radiation. As a general principle, waste will be stored for a period equivalent to at least ten (10) times the half-life of the longest-lived radionuclide present before disposal as non-radioactive waste, subject to regulatory clearance levels.

- Long-term Storage at Authorized Facilities: Where required, radioactive waste may be transferred to an authorized radioactive waste disposal facility approved by the relevant regulatory authority.
- Prohibition of Inappropriate Treatment Methods: Radioactive solid waste will not be subjected to wet thermal, microwave, or conventional disinfection processes, as these methods are unsuitable for radioactive materials.
- Management of Radioactive Sharps: Disposable syringes containing radioactive residues will be emptied in a designated radioactive liquid waste disposal area. The emptied syringes will then be placed in approved sharps containers and stored to allow for radioactive decay prior to final disposal in accordance with standard sharps management procedures.
- Management of Short Half-Life Radioactive Waste: Higher-level radioactive waste with relatively short half-lives (e.g., iodine-131 therapy residues) and immiscible radioactive liquids such as scintillation counting residues or contaminated oils will be stored in clearly marked, shielded containers (including lead shielding where necessary) until radioactivity levels fall within authorized clearance limits.

- Waste from Spill Response: Radioactive waste generated from spill clean-up or accidental releases will be collected and retained in suitable shielded containers for decay, unless radiation levels are sufficiently low to permit immediate discharge in accordance with regulatory standards.

In addition to the above measures, a standalone Hazardous and Medical Waste Management Plan (HMWMP) has been developed for the Lagos Medipark Project. The HMWMP provides detailed procedures for the segregation, handling, storage, transportation, treatment, and disposal of all waste streams, including radioactive waste. It outlines institutional responsibilities, radiation protection measures, monitoring protocols, emergency response procedures, staff training requirements, and regulatory compliance mechanisms. The HMWMP will guide implementation during both construction and operational phases to ensure effective and safe waste management consistent with national regulatory requirements and international best practice standards.

3.9 General HSE Management Systems and Emergency Plans

Generally, an HSE Officer, will see to the management of the HSE system, as well as the emergency plans in the facility.

- ***Safety in Construction***

Provision shall be made for the maintenance of a high standard of safety. Safety measures to be taken at the project execution stage shall be reviewed. Muster stations shall be provided where workers and visitors would gather during emergency.

- ✓ ***Safety in Operation***

A qualified Health, Safety and Environment (HSE) Officer shall be engaged to oversee all HSE aspects of the project during construction and throughout the operation of key utilities, in compliance with the Lagos State Safety Law. In addition, continuous safety awareness programmes will be implemented across all phases of the project.

All personnel employed by major construction contractors involved in the project shall undergo mandatory basic safety training prior to and during site activities. This will ensure adequate understanding of site-specific hazards, safe work procedures, and emergency response requirements.

Operational safety measures shall include comprehensive fire prevention and emergency response systems. Fire hydrants and hose reels will be provided in

accordance with the requirements of SABS 0400, particularly with respect to equipment quantity, coverage, and spacing. Fire hose reels will be installed within protective cabinets and connected to the sprinkler piping system.

Furthermore, fire hydrants will be connected to a dedicated fire-fighting water storage facility and a booster pump set designed to ensure adequate water pressure and flow during emergency situations. These measures will collectively enhance fire safety preparedness and ensure effective response capabilities within the facility.

- **Maintenance Activities**

This phase shall involve routine inspection and monitoring of all equipment and facility components to ensure optimal performance and compliance with operational standards. It shall also cover activities related to the control and management of environmental releases arising from the operation of the healthcare facility.

Maintenance of all equipment and facilities shall be carried out in accordance with the manufacturers' specified maintenance schedules. This shall include preventive (proactive) maintenance, scheduled manufacturer-recommended servicing, and corrective (breakdown) maintenance, as required. These measures are intended to minimize operational failures, reduce environmental risks, and ensure continuous and safe facility operations.

3.10 Fire Protection and Firefighting Systems

The Lagos Medipark Project will incorporate comprehensive fire prevention, detection, and firefighting systems designed in accordance with applicable Nigerian fire safety regulations, international healthcare facility standards, and relevant building codes. Given the nature of hospital operations—including operating theatres, intensive care units, laboratories, radiotherapy suites, and pharmaceutical storage areas robust fire protection measures are essential to safeguard patients, staff, visitors, and critical medical equipment.

- **Fire Prevention Measures**

Fire risk reduction will be achieved through:

- Proper electrical system design and load management to prevent overloads;
- Installation of fire-rated doors, walls, and compartmentation systems to limit fire spread;
- Safe storage and handling of flammable materials (including medical gases, chemicals, and fuels);
- Controlled access to high-risk areas such as generator rooms and radiation bunkers;

- Routine inspection and preventive maintenance of electrical and mechanical systems.

o **Fire Detection and Alarm Systems**

The facility will be equipped with an automated fire detection and alarm system, comprising:

- Smoke detectors, heat detectors, and flame detectors in strategic locations;
- Manual call points located along escape routes;
- Audible and visual alarm systems to ensure prompt evacuation;
- Fire alarm control panels integrated with the building management system;
- Backup power supply (UPS and generator-supported) to ensure uninterrupted operation of fire safety systems.

Alarms will be clearly distinguishable and audible above ambient noise levels, particularly in clinical and laboratory areas.

o **Firefighting Equipment and Systems**

The firefighting system will include:

- Portable fire extinguishers (ABC dry chemical, CO_2, and foam types) strategically located throughout the facility;
- Fire hose reels installed at designated points within each building block;
- An internal fire hydrant network connected to a dedicated fire water storage tank;
- An automatic sprinkler system in critical areas such as wards, laboratories, and storage rooms;
- Fire-resistant storage cabinets (e.g., EN-certified cabinets) for flammable chemicals.

All firefighting equipment will be clearly marked, regularly inspected, and maintained in serviceable condition.

o **Water Supply for Firefighting**

A dedicated fire water storage system will be provided to ensure adequate pressure and volume during emergencies. The system will include:

- Fire water tanks sized in accordance with building code requirements;
- Fire pumps (duty and standby) to maintain adequate hydrant and sprinkler pressure;
- Clearly marked external fire hydrant points accessible to the State Fire Service.

o **Emergency Preparedness and Response**

The Medipark will develop and implement a Fire Emergency Response Plan, which will include:

- Clearly marked emergency exits and illuminated escape routes;
- Assembly points outside the building;
- Regular fire drills for staff;
- Fire safety training for healthcare and support personnel;
- Coordination procedures with the Lagos State Fire Service and other emergency responders.

Emergency lighting and signage will be provided throughout the facility to guide safe evacuation in the event of power failure.

- **Compliance and Monitoring**

The fire protection system will be designed, installed, and commissioned in accordance with:

- National Building Code requirements;
- Lagos State Fire Service regulations;
- Applicable occupational health and safety standards;
- International healthcare facility fire safety best practices.

Routine inspection, testing, and maintenance schedules will be implemented to ensure ongoing compliance and operational readiness.

The integration of comprehensive firefighting and fire safety systems into the Lagos Medipark design ensures protection of life, property, and critical medical infrastructure. These measures will significantly reduce fire risks and enhance overall safety during both operational and emergency conditions.

3.11 Project Management

To ensure high-quality construction delivered within the planned timeframe, the project will be managed by a firm of experienced Project Managers. The Project Management team will coordinate the activities of all contractors, subcontractors, and site personnel throughout the construction period.

Key responsibilities of the Project Manager will include the preparation of construction methodology statements, construction programmes, and all relevant project documentation. Additional duties will cover the development and implementation of the Project Quality Management Plan, Project Schedule/Programme of Works, and the Project Health, Safety, and Environment (HSE) Plan, among others. The Project

Management firm will oversee the entire construction process, including workforce management, procurement and utilization of equipment and materials, and financial control, to ensure efficient and compliant project delivery.

3.12 Project Users and Accessibility Provisions

As a tertiary healthcare facility, the Lagos Medipark will serve a diverse population of users. The primary user groups will include patients, healthcare professionals, administrative personnel, and visitors. Additional users will comprise researchers, trainees, conference participants, and short- to medium-term residential occupants associated with medical, academic, and professional activities within the facility.

The user population will consist of individuals of varying age groups, genders, physical abilities, and cultural backgrounds. In recognition of this diversity, the facility has been designed to provide inclusive, safe, and functional spaces that accommodate the needs of all categories of users.

Design provisions include:

- Designated parking spaces for staff, visitors, emergency vehicles, and persons with disabilities;
- Barrier-free access routes and ramps;
- Adequate sanitary facilities, including accessible toilets;
- Offices, consultation rooms, waiting areas, and supporting amenities such as kitchenettes and service areas;
- Clearly defined pedestrian walkways to enhance safety and reduce conflicts between vehicular and foot traffic.

Buildings comprising four floors or more, including Hospital I and the Residential Blocks, will be equipped with lifts to enhance accessibility, particularly for persons with mobility challenges, elderly users, and patients requiring assisted movement.

The overall layout promotes efficient circulation between clinical, administrative, residential, and service areas. Special consideration has been given to user comfort, accessibility, safety, and emergency preparedness, including clearly marked escape routes and fire safety systems. The design approach ensures compliance with inclusive development principles and applicable building and safety standards.

3.12 Project Schedule

- **Construction Phase**

The construction activities include site preparation, infrastructure utilities installation. The major activities during construction phase are: civil construction work, vehicular movement, loading and unloading civil items and plant machineries, on site storage of civil items and plant machineries, erection of plant and civil structures, power supply, maintenance of construction machinery and disposal of solid wastes. The construction activity is projected to start in January 2026 and be completed by June 2028.

- **Operation and Maintenance Phase**

Lagos MediPark is expected to start its operation in July 2028 particularly for the Diagnostic and Hospital I that will provide services such as the emergency department, outpatient, Inpatient, Critical care unit, Mother and Child (MCH), Dialysis, Operation rooms, Cath Lab, Endoscopy, radiology, advanced comprehensive laboratory, pathology, radiation therapy, nuclear medicine, pharmacy, and administrative units. It will also include solid and liquid waste management facilities such as incinerators, wastewater treatment plants, and drainage systems. The complementary buildings within the facility, vis – Ancillary Building, Residential Building, as well as the Commercial Building will also be constructed in the second phase of the project.

- **Decommissioning Phase**

Decommissioning activities include the removal of inventory to obtain a state of passive safety, dismantling and removal of the components, systems and equipment including decontamination as appropriate with the aim of re-utilization of facilities for production after construction or to make the facility suitable for any activity after construction. Table 3.7 shows the project programme.

Table 3.5: Project Programme

S/N	Activity	Sept – December 2024	January – December 2025	January – December 2026	January 2027 – December 2027	January 2028 – June 2028	July 2028 – December 2068	January 2069 – April 2069
	Pre-Construction Programme							
P.1	Feasibility Study							
P.2	Engineering Design / Plan							
P.3	EIA Certification							
	Construction Programme							
C.1	Early Works (Clearing and Site Preparation)							
C.2	Building and Civil Works							
C.3	Demobilization and Commissioning							
	Operation Programme							
O.1	Operation and maintenance of Medipark						**Operation is expected to last at least 40 years**	
	Decommissioning	Activity is expected to kick start in 40 years in case of likely closure of the facility						
D.1	Dismantling / Removal of Hazardous Equipment							
D.2	Conduct of Structural Integrity Test on all structures							
D.3	Demolition of Buildings and Surface Structures							

Source: IASO Medipark Limited

CHAPTER FOUR

4.0 ENVIRONMENTAL BASELINE STUDY OF THE PROJECT AREA

4.1 INTRODUCTION

The chapter presents a clear description of the existing environmental and socio-economic conditions of the proposed Lagos Medipark development, located at 1–9 Awolowo Road, Ikoyi, Lagos, adjacent to the Obalende corridor. These existing conditions form the reference point against which all potential impacts of the project are assessed. For the purpose of biophysical and socio-economic data collection, a 500-metre radius around the project site was adopted to capture the surrounding urban environment. The primary objective of the baseline assessment is to identify environmental and social issues that may arise from the proposed development, predict their likelihood, and outline measures to avoid, minimize, or mitigate adverse effects. The environmental components examined include climate and meteorology, noise levels, air quality, soil characteristics, vegetation and urban ecology, water resources (surface and groundwater), socio-economic conditions of the host community, public health, and waste management practices. These components represent the key environmental qualities that could be influenced by the construction and operation of the Lagos Medipark.

The baseline characteristics of the project area were established using a combination of field sampling and measurements, laboratory analysis, review of existing literature and spatial data, consultations with stakeholders, and systematic interpretation of collected information. This integrated approach provides a reliable foundation for evaluating the project's impacts and developing appropriate environmental and social management measures.

4.2 STUDY AREA AND PROPOSED PROJECT'S AREA OF INFLUENCE

The study area for the Environmental and Social Impact Assessment (ESIA) of the proposed Lagos MediPark Hospital, Ikoyi, has been defined to capture the geographical extent within which the project's construction and operational activities may generate direct, indirect, and cumulative environmental and social impacts. The delineation of the study area considers the nature, scale, and duration of the proposed development, as well as the sensitivity of the surrounding physical, biological, and socio-economic environment.

4.2.1 Primary Project Site

The primary study area comprises the project site located at Plots 1–9, Awolowo Road, Ikoyi**,** within Eti-Osa Local Government Area of Lagos State. The site lies within the Ikoyi axis of the Lagos Metropolitan Area and occupies a strategically located urban parcel previously used as a School of Nursing. The site is presently cleared and prepared for redevelopment.

This primary project area represents the zone of direct impact, where project-related activities such as site preparation, construction, installation of infrastructure, and operational activities will occur. Potential impacts within this zone include land-use change, soil disturbance, noise and air emissions during construction, generation of construction waste, occupational health and safety risks, and changes to the immediate built environment.

4.2.2 Immediate Surrounding Environment

The immediate surroundings of the project site form a critical component of the study area and include adjacent residential, commercial, institutional, and mixed-use developments along Awolowo Road and adjoining streets. Land uses in the immediate vicinity are characterized by high-density commercial offices, hotels, fuel stations, residential apartments, embassies, and healthcare-related facilities.

This zone is expected to experience direct and indirect impacts, particularly during the construction phase. These may include increased traffic volumes, temporary access restrictions, elevated noise levels, dust generation, and potential disruptions to pedestrian movement and local businesses. During the operational phase, impacts may include increased vehicular and pedestrian traffic, demand on local infrastructure and utilities, changes in emergency response dynamics, and enhanced access to healthcare services.

4.2.3 Wider Study Area

The wider study area extends beyond the immediate project vicinity to cover parts of Ikoyi, Lagos Island, Victoria Island, and adjoining districts that are functionally connected to the project site through transportation networks, economic activities, and healthcare service utilization patterns. This broader area reflects the expected catchment zone for patients, staff, visitors, service providers, and emergency response services associated with the proposed hospital.

Within this wider study area, the assessment considers impacts related to:

- Traffic and transportation patterns along major access routes, particularly Awolowo Road and connecting arterial roads;

- Interaction with existing healthcare facilities, including public and private hospitals and specialist centres;
- Socio-economic effects such as employment generation, skills development, and indirect business opportunities;
- Community health outcomes and improved access to specialized medical services.

4.2.4 Area of Influence (AoI)

In line with international ESIA best practice, the Area of Influence (AoI) for the proposed Lagos MediPark Hospital encompasses:

- The primary project site, where direct physical and operational activities occur;
- The immediate surrounding environment, where secondary and indirect impacts may arise;
- The broader urban area, where cumulative and induced impacts may be experienced.

The AoI takes into account potential impacts arising from:

- Construction activities, including material transportation, workforce movement, and waste disposal;
- Operational activities such as patient inflow and outflow, ambulance movement, service deliveries, utility consumption, and waste management;
- Cumulative effects resulting from the presence of other major developments and healthcare facilities within Ikoyi and the wider Lagos Island axis.

4.2.5 Rationale for Study Area Delineation

The delineation of the study area and Area of Influence is based on:

- The scale and intensity of the proposed development;
- The urban setting and existing land-use patterns;
- The sensitivity of surrounding communities and infrastructure;
- Regulatory requirements under the Environmental Impact Assessment Act and Lagos State environmental regulations;

- The need to adequately capture potential cumulative and transboundary impacts within the metropolitan context.

By adopting this approach, the ESIA ensures that all significant environmental and social receptors likely to be affected by the proposed project are appropriately identified and assessed, thereby supporting informed decision-making and the development of effective mitigation and management measures.

4.3 STUDY METHODOLOGY

Baseline data acquisition exercise involved a multi-disciplinary approach and executed within the framework of Quality Health, Safety and Environment management system. This approach assured that the required data and samples were collected in accordance with the approved scientific and regulatory requirements using appropriate equipment, materials and personnel.

The approach includes the following:

- Literature review of materials pertaining to the project locations.
- Development of field sampling strategy to meet the scope of the EIA and regulatory requirements.
- Pre-mobilization activities (e.g. calibration of field equipment).
- Mobilization to site for field sampling (sample collection, in-situ measurements; sampling preservation, documentation and storage).
- Transfer of field samples to the laboratory for analyses.

4.3.1 Literature Review

This involved the acquisition and review of relevant background information on the biophysical and socio-economic environment of the project location. Relevant information was sourced from government authorities such as the Nigerian Meteorological Agency (NiMet) and the National Population Commission (NPC). Other sources of secondary information include publications, textbooks, and Academic journal articles.

4.3.2 Reconnaissance Survey and Delineation

The site verification and FMEnv supervised data gathering for the Lagos Medipark project were conducted from 11th to 14th November 2025. A preliminary reconnaissance survey and delineation of the study area were carried out by the project team and the environmental consultants from Labstaff Nigeria Limited. The site verification exercise was anchored by the Federal Ministry of Environment (FMEnv) and took place on 8th of December 2025. Key participants at the verification included the EIA consultants, representatives of FMEnv, Lagos State Ministry of Environment, and members of the Lagos Medipark project team. Visual observations within 2km radius of the project area was made to determine resources, population, land forms, features, ecological characteristics, drainages, biological and human community around the area.

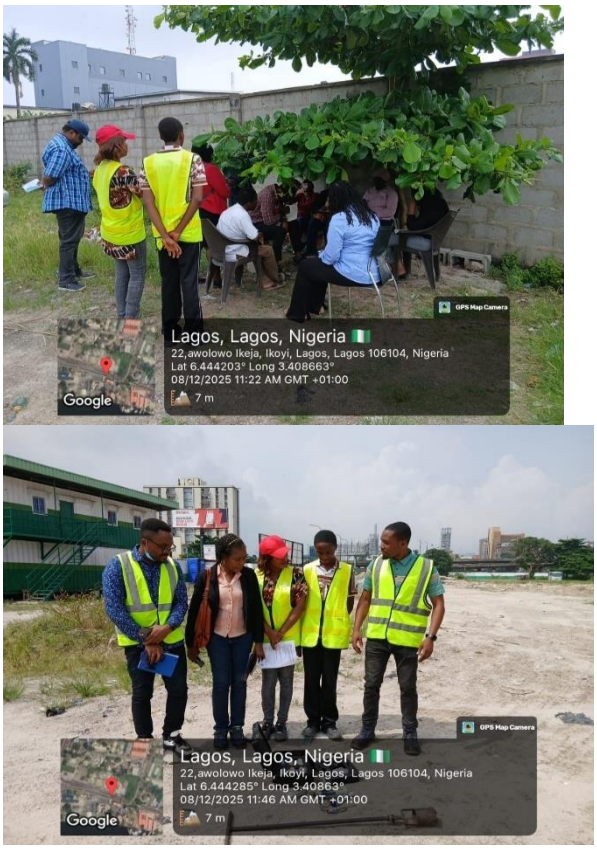


Plate 4.1: Photograph depicting briefing during site verification exercise

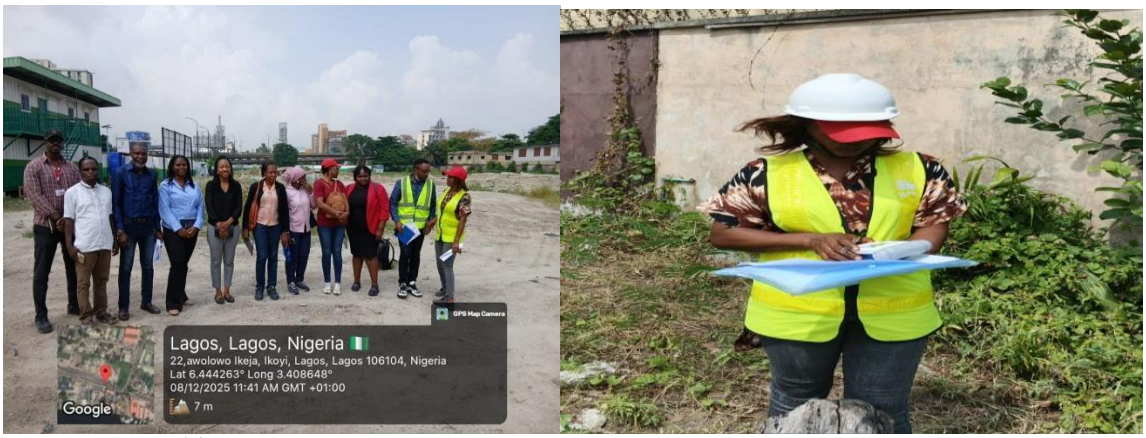


Plate 4.2: EIA Team of Experts with FMEvn and LSMEnv Representatives on the field for site Verification

4.3.3 Scoping Workshop

The scoping workshop for the proposed Lagos Medipark project was held on 8th December 2025. The objectives of the workshop included, among others, ensuring compliance with regulatory requirements for conducting the EIA, engaging leaders and representatives of communities within and around the project area, communicating the proposed project and its anticipated benefits, and evaluating concerns or expectations raised by the communities.

Key highlights of the scoping workshop included:

- Presentation of the EIA framework as it relates to the Lagos Medipark project;
- Outline of the project scope and the rationale for the development;
- Explanation of the importance of the scoping workshop in the EIA process;
- Presentation of the EIA scope, covering biophysical, socio-economic, and health components, as well as impact assessment, environmental management plan, and proposed mitigation measures and recommendations.

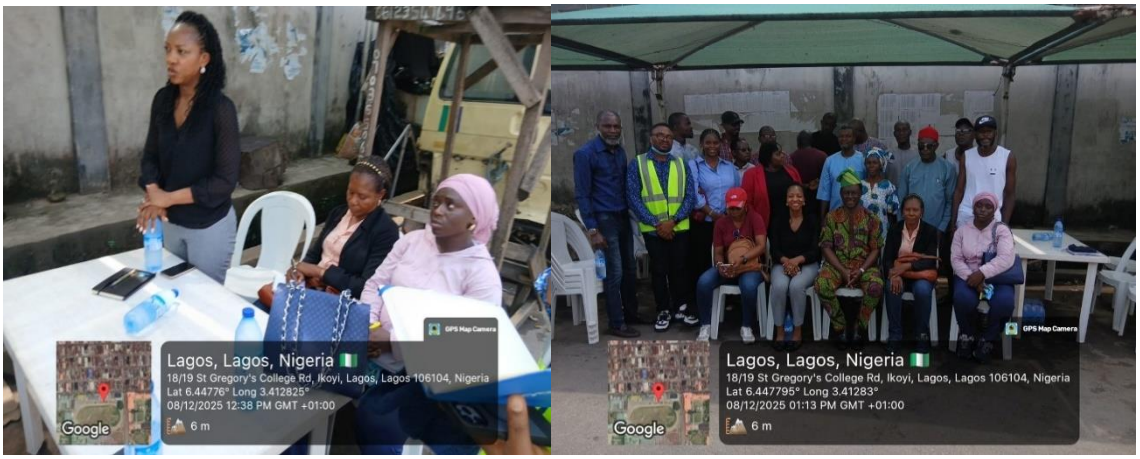


Plate 4.3: Photograph showing FMEnv, LSMEnv and community representatives during the scoping workshop

4.3.4 Consultation with Regulators and Stakeholders

The Federal Ministry of Environment (FMEnv), Lagos State Ministry of Environment, Lagos State Ministry of Physical and Urban Development, and representatives of the host communities around Ikoyi were consulted and informed about the proposed Lagos Medipark project. All suggestions, concerns, and inputs received during these consultations were carefully documented and incorporated into the study to ensure that the project design and environmental management measures address stakeholder expectations.

4.3.5 Field visit and Desktop Research

The baseline study for the Medipark Project was undertaken to assess the existing environmental and socio-economic conditions within the project's zone of influence, extending up to 2 km from the site. Comprehensive field data collection was conducted in November/December by a multidisciplinary EIA team, covering key parameters including air quality, noise levels, soil and water quality, sediment and aquatic life, vegetation and wildlife, land use, socio-economic conditions, and public health.

Data collection methods included field investigations, literature review, stakeholder interviews, and consultations, ensuring a comprehensive understanding of the project environment. Laboratory analyses were carried out in collaboration with experts and a representative of the Federal Ministry of Environment to validate field observations.

Strict adherence to standard methods and internationally accepted analytical procedures was maintained throughout the study. Quality Assurance and Quality Control (QA/QC) measures were implemented for sample collection, labelling, transportation, handling, and laboratory analysis. Samples were logged, cross-checked, and analyzed at Jawura Laboratory (FMEnv-accredited), Lagos, and Labstaff Laboratory, Abuja, ensuring the reliability and integrity of the environmental data for the Medipark Project.

4.3.6 Field Sampling and Secondary Data/Information

For the purpose of this Environmental Impact Assessment (EIA), field data collection for the Medipark Project was conducted from 11 to 14th November 2025, during the Dry season. A multidisciplinary team of experts carried out assessments of soil quality, water quality, air quality, noise levels, and stakeholder consultations. The objectives of the field exercise were to establish baseline environmental conditions for the proposed Medipark facilities and to provide a comprehensive understanding of the integrated environmental context of the project area.

In-situ measurements and laboratory analyses were coordinated by Labstaff Nigeria Limited to ensure accuracy and reliability. Secondary data from the National Population Commission (2006) and the National Bureau of Statistics (2017–2025) were also incorporated to complement field observations, providing a robust foundation for the environmental assessment.

Climate and Meteorology

Information on the climate and meteorology of the study area was obtained from Nigerian Meteorological Agency of the Federal Ministry of Aviation, Abuja; thirty-five (35) years data were used for rainfall, relative humidity, temperature, wind speed and wind direction.

Air Quality and Noise Level

Data on ambient air quality and noise level within and around the project site were directly acquired by in-situ measurement. The following parameters were measured for dry season only:

- Ambient air pollutants including; SO_2, NO_2, CO, CO_2, H_2S, SPM, CH_4 and VOC.
- Noise levels and wind speed

These measurements were taken at each of twelve (12) sample locations (inclusive of control point) within and around the proposed project area using the following instruments:

- The oxides of Nitrogen, carbon, sulphur were measured in parts per million (ppm) using hand held portable *iBrid MX6 (its* calibration was done using a gas/air mixture forced from a gas cylinder at 1.0 psi*).*
- Particulate matters were measured in mg/m^3 using Konamx Handheld lacer Particle counter.
- Noise level was measured in dB(A) using TES Sound Level Meter.
- VOCs were measured using Mini Rae Lite.
- Wind speed was measured using Anemometer vane probe.
- Coordinates were taken using *etrex Legend* GPS.
- At each sampling station, readings were taken between 9am and 5pm. Figure 4.1 present satellite Imagery of the project area with an imposed sampling map for air quality and noise level measurements.

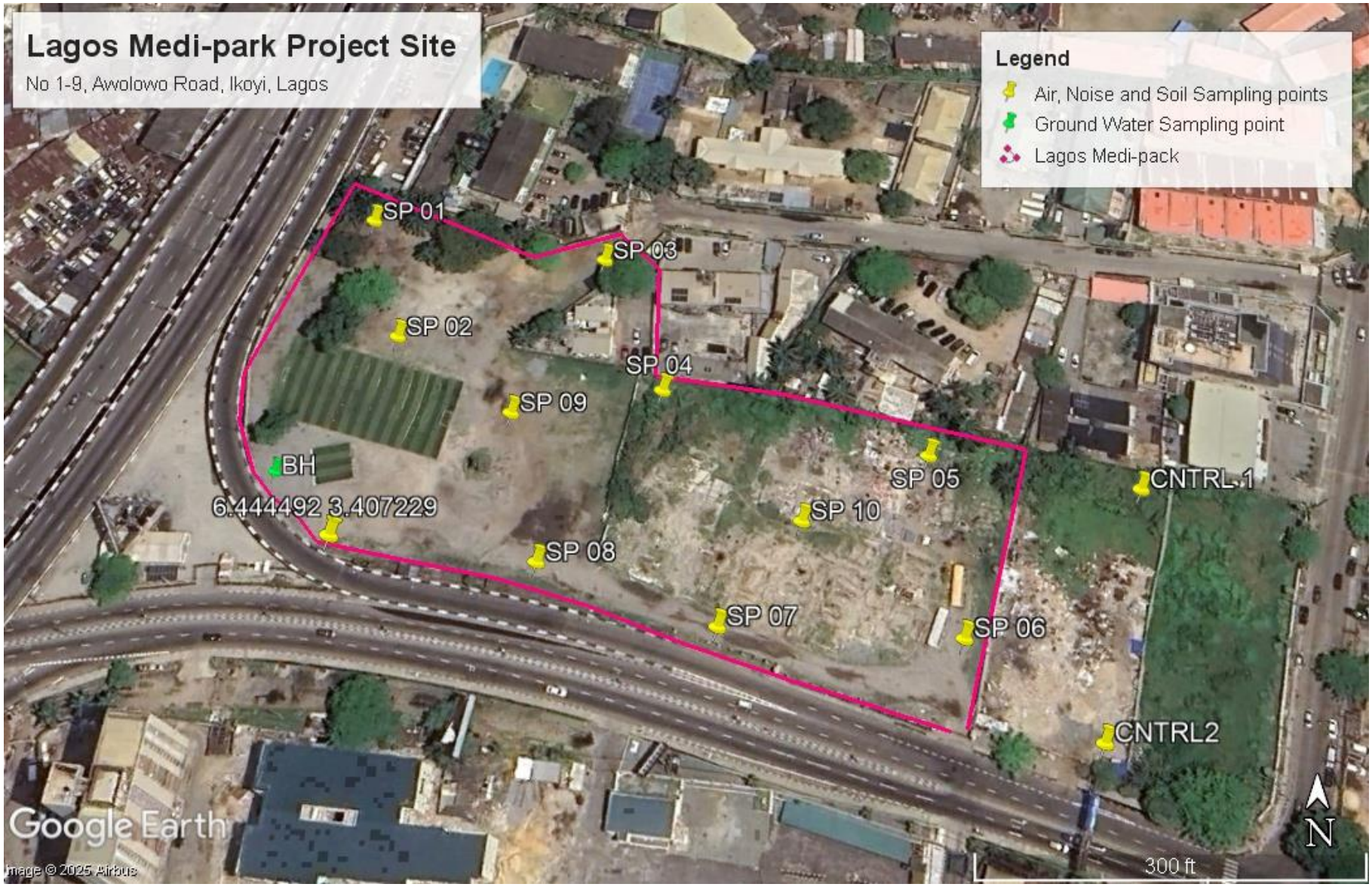


Figure 4.1: Satellite Imagery of the project area with an imposed Sampling map for Air Quality and Noise Level measurements

Water Study

Physico-chemistry and Microbiology

The Lagos Lagoon located about 220m from the project site was sampled at six stations. At each sampling station, grab samples were collected below the surface for water and underneath by divers for sediments. Samples for laboratory analysis were taken and preserved as follows:

- General physico-chemical parameters: Samples were collected into 1 litre polyethylene bottles and bowl for water and sediment respectively. The bottles were previously rinsed with distilled water and with some portion of the surface water prior to sampling.
- For heavy metals- Samples were collected into 1 litre pre-cleaned polythene bottles and preserved by the addition of 2 ml concentrated nitric acid.
- For oil, grease and THC- Samples were collected into 1 litre pre-cleaned glass bottles and preserved by the addition of 2 ml concentrated sulphuric acid.
- COD - Samples were collected into pre-cleaned 500 ml glass bottle and fixed with H_2SO4
- Microbiology- Samples were collected into 25 ml sterilized glass bottles.
- BOD_5 - Samples were collected into 300ml amber-coloured BOD bottles.

Samples collected were stored at 4^0C on the field with aid of ice pack before transportation to the laboratory for further holding at same temperature. In-situ measurements were conducted for temperature, pH, electrical conductivity, total dissolved solids (TDS), colour, turbidity, dissolved oxygen (DO). Plate 4.2 present the sampling plan for the study area.

Phytoplankton and Zooplankton

Planktons (zooplanktons and phytoplanktons) samples were collected by towing plankton net for 3 minutes. During towing, the plankton net sieves the water retaining the plankton inside the net. This allows the planktons to be collected in a 100 ml plastic container. The content is transferred into labelled plankton samples container and preserved in 4% formalin. This activity was repeated in subsequent sampling stations.



Figure 4.2: Satellite Imagery of Lagos Lagoon with an imposed sampling map for surface water and sediments sampling and in-situ measurements

Soil samples

Soil samples were collected at three depths: 0-15cm, 15 – 30cm and 30 – 60cm with the aid of Dutch stainless steel hand auger from ten (10) points at different locations within the proposed project area and two control sites outside the project area. A total number of twelve (12) soil samples were collected. The soil samples were collected in duplicate; those for physical and chemical analysis were packed in black polythene bags, and those for microbial and oil and grease/hydrocarbon analysis wrapped in aluminum foil. The samples were neatly labeled, preserved and taken to the laboratory for analysis. All in-situ observations for colour, presence of roots and lives were recorded in a field notebook. Plate 4.3 presents satellite imagery of project area with an imposed soil sampling map.

Microbiological Analysis

Heterotrophic bacteria and total *coliform* were enumerated by adopting the most probable Number technique for water samples, while standard spread plate technique was used for soil sample. Appropriate dilutions (threefold) of samples were plated out on nutrient agar plates for bacteria and MacConkey Agar plates for total *coliform*. The plates were made in duplicate and incubated aerobically at 37^0C for 24hours (bacteria) while that of *coliform* were incubated aerobically at 37^0C, 48hours. At the end of the incubation periods, the number of colonies on the Agar plates were counted and enumerated after screening. The relative abundance (i.e the population density estimate) of the organism were obtained by multiplying the plate count per ml for each organism by the dilution factor used. The growth on the Agar plates was noted with regards to the following characteristics: form, pigmentation or colour, texture and elevation. Each bacterial culture was identified based on its morphological characteristics using gram reaction as well as confirmatory test.

Vegetation

The vegetation study of the project area was conducted through direct field observation within a 500 m radius of the project site using transect methods. This approach was adopted because the project site is a brownfield location with limited ecological value and sparse natural vegetation. Plant species encountered along each transect were identified in situ where possible. Specimens that could not be readily identified on site were carefully collected, pressed, and preserved for subsequent identification at a herbarium. Information on the economic and local importance of commonly occurring plant species within the project area was obtained through consultations with local residents and site users. The findings confirm

that the vegetation within and around the project site is largely disturbed and composed mainly of ornamental, ruderal, and secondary growth species, with no evidence of rare, threatened, or protected plant species. Secondary data on Vegetation within the study area was sourced to compliment the primary data obtained.

Wildlife Study

The wildlife study for the Lagos Medipark Project was carried out through field observations within a 500 m radius of the project site, complemented by stakeholder consultations and review of existing ecological information for the area. The assessment focused on identifying fauna species likely to occur within the project area and evaluating the potential presence of sensitive or protected species.

The project site is a previously developed brownfield (former School of Nursing) located within a highly urbanized environment in Ikoyi, Lagos State. As a result of prolonged human activities, infrastructure development, and land-use changes, the area supports limited wildlife resources. Observations indicate that fauna species within the project area are largely restricted to common and disturbance-tolerant species such as small mammals, reptiles, amphibians, birds, and invertebrates typically associated with urban and peri-urban environments.

No evidence of critical habitats, wildlife corridors, or the presence of rare, endangered, or protected species was recorded within the project site or its immediate surroundings

Socio-Economic and health

Baseline socio-economic information of the study area was collected during consultation with members of the host Neighborhood. Group consultation and questionnaires were administered to cover the following: governance, demography, education, business activities, social amenities, security situation, and waste management.

Community health status

Information on the community health was determined by interviews with locals and officials of community health officials. Questionnaires were administered to capture inventory and history of ailments.

Table 4.1 Sample Stations and Coordinates

Air Quality and Noise		Soil		Surface water		Sediment		Ground water	
Code	**Coordinate**	**Code**	**Coordinate**	**Code**	**Coordinate**	**Code**	**Coordinate**	**Code**	**Coordinate**
A,N01	6°26'43.09"N 3°24'26.16"E	SS01	6°26'43.09"N 3°24'26.16"E	MMGSW1	6°26'32.14"N 3°24'20.05"E	MMGSW1	6°26'32.14"N 3°24'20.05"E	GW01 (BH)	6°26'38.52"N 3°24'32.25"E
A,N02	6°26'41.96"N 3°24'26.46"E	SS02	6°26'41.96"N 3°24'26.46"E	MMGSW2	6°26'31.53"N 3°24'27.28"E	MMGSW2	6°26'31.53"N 3°24'27.28"E	GW02 (HDW)	6°26'40.55"N 3°24'32.77"E
A,N03	6°26'42.70"N 3°24'28.26"E	SS03	6°26'42.70"N 3°24'28.26"E	MMGSW3	6°26'29.87"N3°24'34.46"E	MMGSW3	6°26'29.87"N3°24'34.46"E		
A,N04	6°26'41.44"N 3°24'28.78"E	SS04	6°26'41.44"N 3°24'28.78"E	MMGSW44	6°26'25.43"N 3°24'40.47"E	MMGSW44	6°26'25.43"N 3°24'40.47"E		
A,N05	6°26'40.86"N 3°24'31.03"E	SS05	6°26'40.86"N 3°24'31.03"E	MMGSW5	6°26'23.40"N3°24'46.02"E	MMGSW5	6°26'23.40"N3°24'46.02"E		
A,N06	6°26'39.33"N 3°24'31.22"E	SS06	6°26'39.33"N 3°24'31.22"E	MMGSW6	6°26'17.78"N3°24'49.07"E	MMGSW6	6°26'17.78"N3°24'49.07"E		
A,N07	6°26'39.43"N 3°24'29.24"E	SS07	6°26'39.43"N 3°24'29.24"E						
A,N08	6°26'39.95"N 3°24'27.76"E	SS08	6°26'39.95"N 3°24'27.76"E						
A,N09	6°26'41.26"N 3°24'27.48"E	SS09	6°26'41.26"N 3°24'27.48"E						
A,N10	6°26'40.30"N 3°24'29.94"E	SS10	6°26'40.30"N 3°24'29.94"E						
CNTRL 1	6°26'40.55"N 3°24'32.77"E		6°26'40.55"N 3°24'32.77"E						
CNTRL,N12	6°26'38.52"N 3°24'32.25"E		6°26'38.52"N 3°24'32.25"E						

Source: Lagos Medipark Field study, 2025

Key: A,N – Air and Noise, SS – Soil sample, SW – Surface Water, SED-Sediment, GW – Ground Water, Cntrl -Control

4.4 BASELINE DATA OF THE PHYSICAL ENVIRONMENT

This Section provides the baseline environmental conditions for the physical environment. It covers meteorology and climate, air quality, Greenhouse Gases (GHG) emissions, surface and groundwater, sediments, noise, geology, soils, and land use.

4.4.1 Climate and Meteorology

4.4.1.1 Overview of the Climate

Nigeria is characterized by the following distinct climatic zones: a tropical wet climate in the south, a tropical savannah climate for most of the central regions, and a Sahelian hot and semi-arid climate in the north of the Country. The Project falls within the tropical wet climatic zone. In the Project location, the mean annual temperature ranges between 23°C to 34°C. During the dry season, Harmattan winds bring dry air from the Sahara Desert to Nigeria, while during the rainy season moist air is brought from the Atlantic Ocean (USAID, 2019).

4.4.1.2 Methodology for Meteorological data collection

The field diurnal meteorological parameters at the proposed project site were measured and recorded from the 6th November to 4th December, 2025. The methodology adopted and employed for meteorological assessment and monitoring was in compliance with standard norms laid down by the Nigerian Meteorological Agency (NiMet). Furthermore, a five year (January 2018 to Dec 2022) historical (35 years: 1989 – 2024) meteorological data were obtained from NiMet for Oshodi, Lagos Station. The micro- meteorological parameters assessed in the project area were temperature, humidity, wind speed and wind direction**.**

4.4.1.2-1 Rainfall

Seasonal variations in rainfall are controlled by the seasonal displacement of the Inter Tropical Convergence Zone (ITCZ). Maximum rainfall occurs in the coastal area where the thickness of the humid southwesterly air mass is greater than 1.5km. This gives rise to two periods of peak rains as this band passes over the coast. The primary peak is in May – June and a secondary peak in July – September, coastal rainfall is additionally modulated by coastal ocean temperature. Lagos has a tropical climate. Most months of the year are marked by significant rainfall. The short dry season has little impact. The area receives an average rainfall range of about 1783 mm/ 70.2 inches. This gives a monthly average of about 148mm. Of the total amount, about 1330mm is recorded during the wet season (April to October) at a monthly average of 190mm. Only 558mm is recorded in the "dry" season (November to

March), at an average of 90.6mm monthly while December to February accounts for the least rainfall in the year. The quasi-stationary ITCZ boundary that separates the Tc from the Tm also modifies the air masses at a micro level. It accounts for occasional and localized rains throughout the Lagos environment all the year round, even at the peak of dry season.

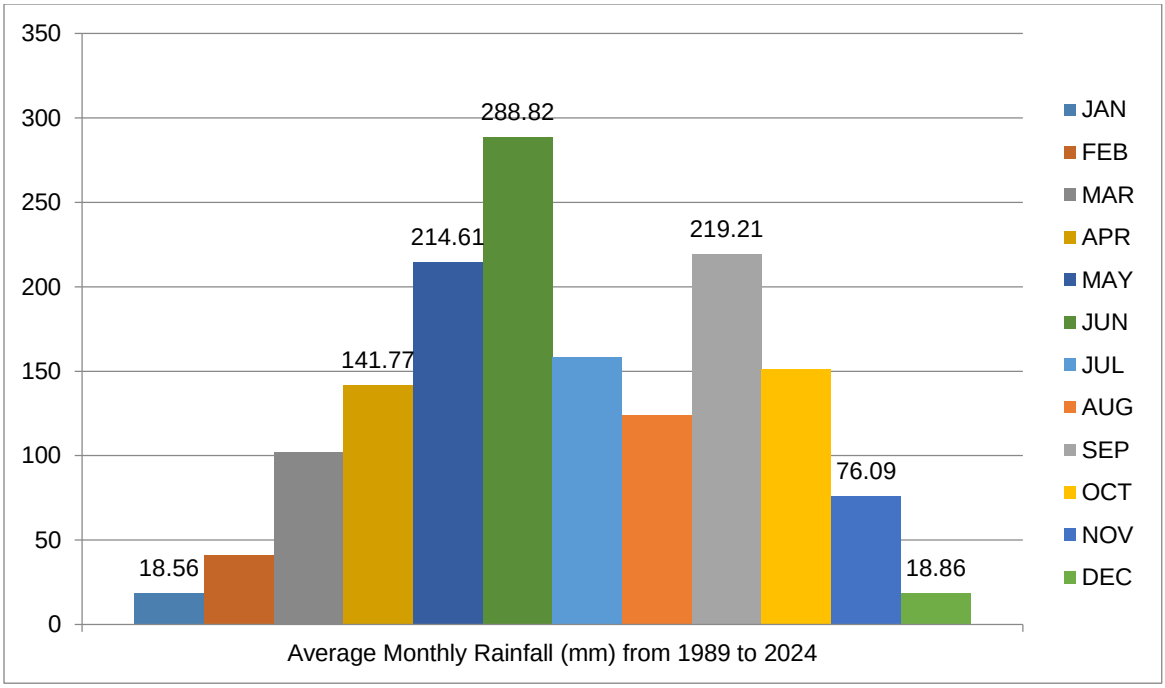


Figure 4.3: Annual Rainfall of the study area

Source: Nigerian Meteorological Agency (NiMeT)

4.4.1.2-2 Air Temperature

In-situ values obtained for temperature during the study was within the range of 27.5°C – 30.1°C. Secondary data from NiMet shows the mean highest values are recorded in February and March which is the onset of the rainy season, with temperatures ranging between 28.8°C and 30.5°C. Lowest temperature ranging between 24.5°C and 26.9°C is recorded in June, July and August, mean value of the annual maximum temperature being 30°C.

Data obtained in 2024 showed that the mean monthly minimum and maximum were about 24.2°C and 32°C respectively. A lowest minimum average of about 23.3°C was recorded during the short rainfall break in August. The highest maximum of 32°C occurred around the peak of the dry season (i.e. about the onset of the rains) in March. The data show the coldest temperature of 21.8°C recorded in January (around the peak of the "Harmattan" season). The warmest of 38.9°C, in April. On the average, the daily range was about 2.7°C. The range between the warmest and the coldest temperature was 16.1°C. None of the

temperature statistics has a standard deviation of up to 3°C.Figure 4.5and 4.6 illustrates the annual average temperature.

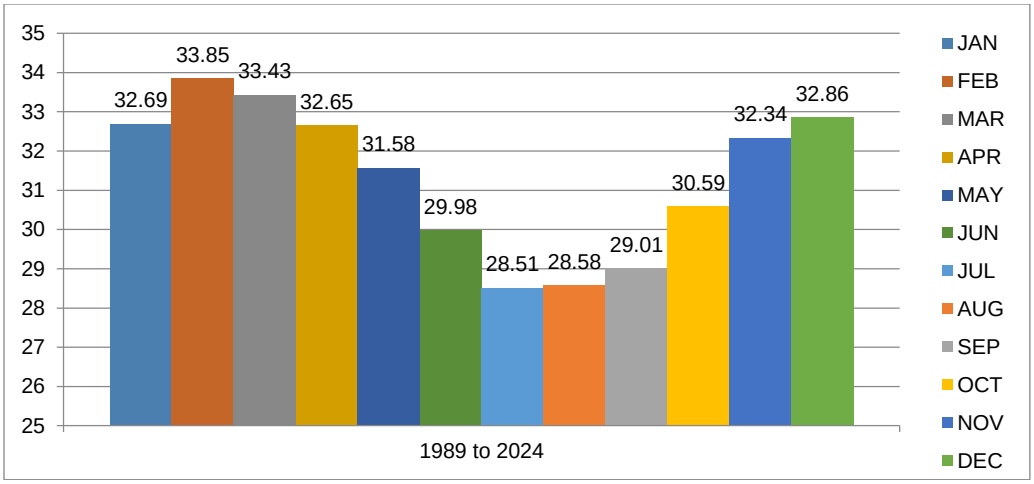


Figure 4.4: Annual Maximum Temperature of the Study Area
Source: NiMet, Oshodi, Lagos State, 2025

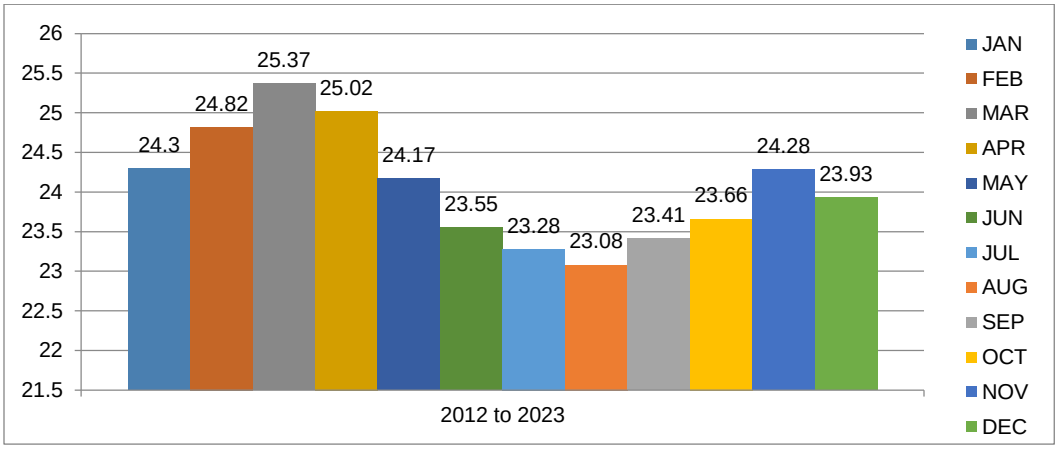


Figure 4.5: Annual Minimum Temperature of the Study Area
Source: NiMet, Oshodi, Lagos State, 2025

4.4.1.2-3 Relative Humidity

Percentage related humidity is the extent of air saturation by water vapor. Humidity in Lagos area was high during the month of August. Therefore, the moisture condition was very high, meaning slow dispersion and transportation of air pollutants. As at the time of this study, the relative humidity value around the area ranged between 49.0% and 55.4% from 07:00 to 16:00 respectively. However, monthly values of 98% and 73% were established for 10:00 hours and 16:00 hours respectively. As opposed to the morning RH that is high all the days of the year, the mean RH at 16.00hrs is more varied and follows the rain pattern more closely. In June,

the average point is about 82%, while it remains at 79% in July and 77% in August through October. It decreases to 70% in November, 69% in December and 62% in January.

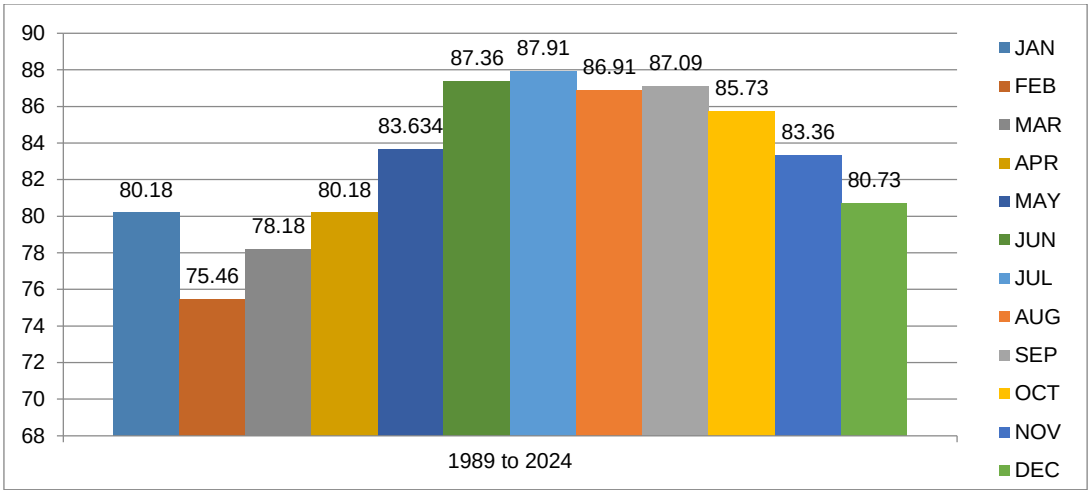


Figure 4.6: Average Relative Humidity of the Study Area

Source: NiMet, Oshodi, Lagos State, 2025

4.4.1.2-4 Wind Speed and Direction

Wind follows the distinctive patterns of the TC (Northeast) and Tm (Southwest) directions depending on the apparent location of the sun and the dominant of the two. The moisture laden and rain bearing southwesterly from the Atlantic predominates during the wet season. It is calmer due to its higher moisture leden. The TC is of less intensity and prevails between December and March. The two major wind patterns are however modified marginally by the warm Benguela Current and the North-East Harmattan winds.

Based on the field measurement conducted, wind speed ranged from 0.1 to 1.8m/s. Secondary data from NiMet revealed that wind velocity is higher over the nights than the days. It ranges mostly between 2ms^{-1} in the morning to about 5ms^{-1} in the night in December. A mean value of 4.72ms^{-1}, force range of 2-3 beautifort and about 32.5% of calm were established for this study. Highest speed is recorded at the onset and offset of seasons when squalls, lightning and thunder accompany torrential rains. Occasionally, this could be in the excess of 10ms^{-1}. Such develops from cyclonic lows that normally develops around the southern end of South Africa and travels towards the low-pressure belt of the West African coastline.

The statistical analysis of the secondary data obtained from NiMet (indicates the prevalence northeast (NE) wind in the dry season months (January, February, and December); while southwest (SW) wind prevails in the rainy season months. The analysis of both the field and

the secondary data shows the dominance of south-westerly (SW) wind in the area, which can be attributed to the long period of rainy season that characterize the area.

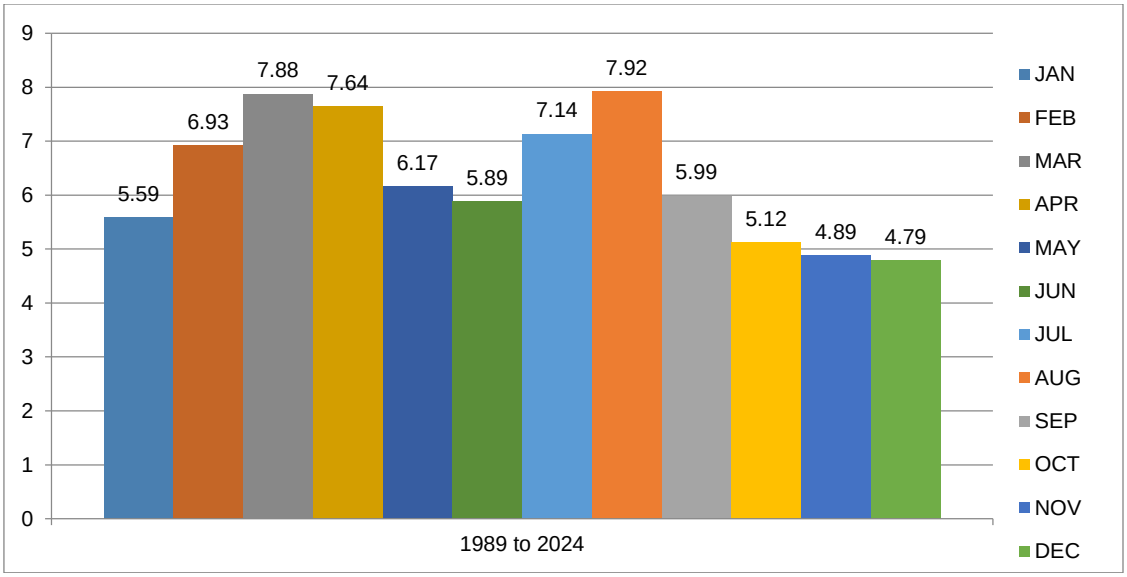


Figure 4.7: Average Wind Speed in the Project Area

Source: NiMet, Oshodi, Lagos State, 2025

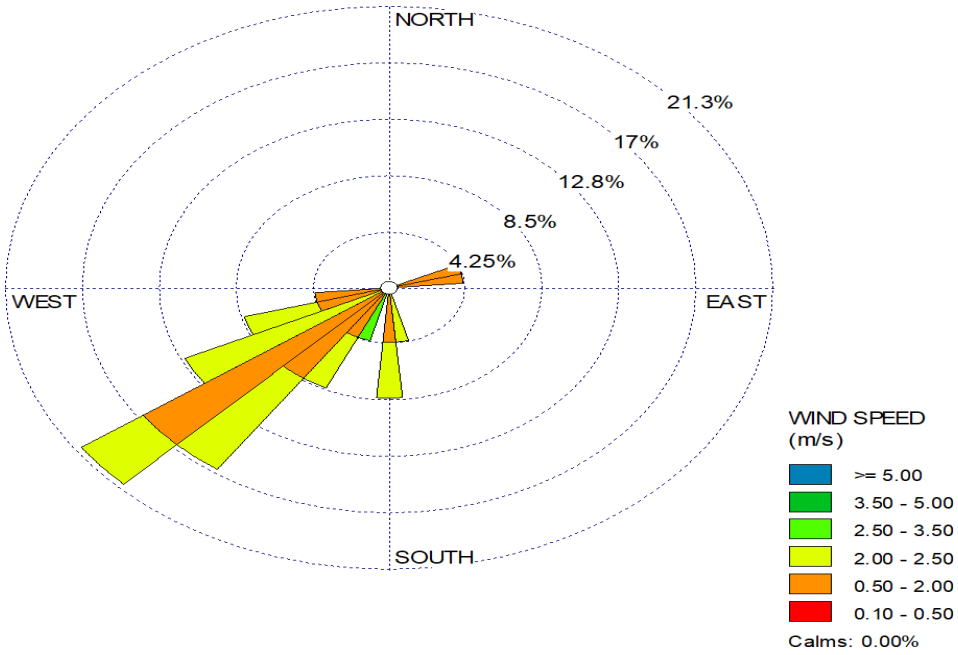


Figure 4.8: Wind rose of secondary meteorological data (1989 – 2024).

Source: NiMet, Oshodi, Lagos State, 2025

4.4.1.2-5 Cloud Cover

In Lagos, the average percentage of the sky covered by clouds experiences significant seasonal variation over the course of the year.

The clearer part of the year in Lagos begins around November and lasts for 3 months, ending around February. The clearest month of the year in Lagos is December, during which on average the sky is clear, mostly clear, or partly cloudy 51% of the time.

The cloudier part of the year begins around February and lasts for 8 months, ending around November. The cloudiest month of the year in Lagos is May, during which on average the sky is overcast or mostly cloudy 87% of the time.

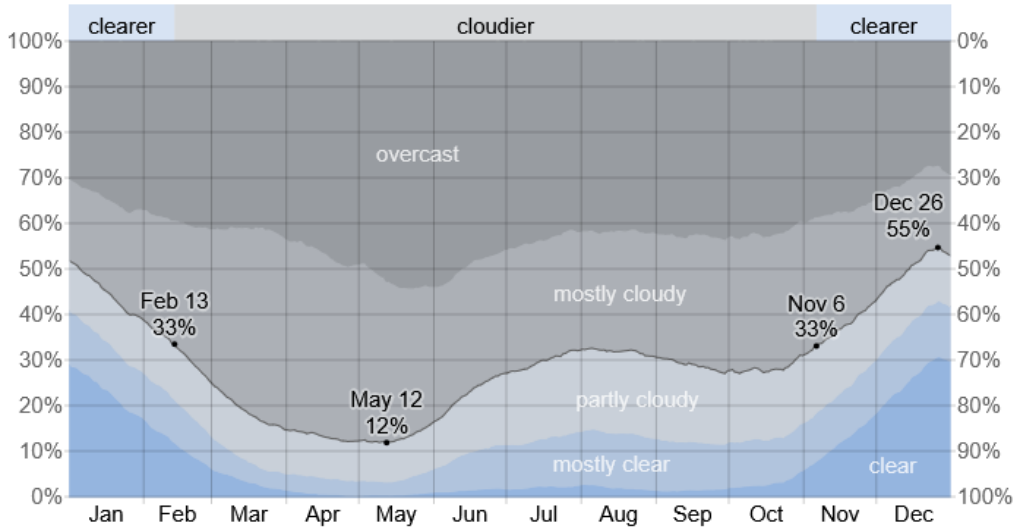


Figure 4.9: Cloud Cover Categories in Lagos Study Area

Source: NiMet, Oshodi, Lagos State, 2025

4.4.1.2-6 Sunshine

According to NiMet record, an average of just 121.8 hours of bright sunlight is recorded annually. This gives an average of about 6 hours of bright sky per day. A further assessment reveals that the dullest months are around the peak of rainy season when about 68.2 hours is recorded monthly at an average of less than 4 hours daily. The brightest months are between March and April just before the onset of the raining season. It has average of 186 hours for the month, an average of 5.09 hours per day.

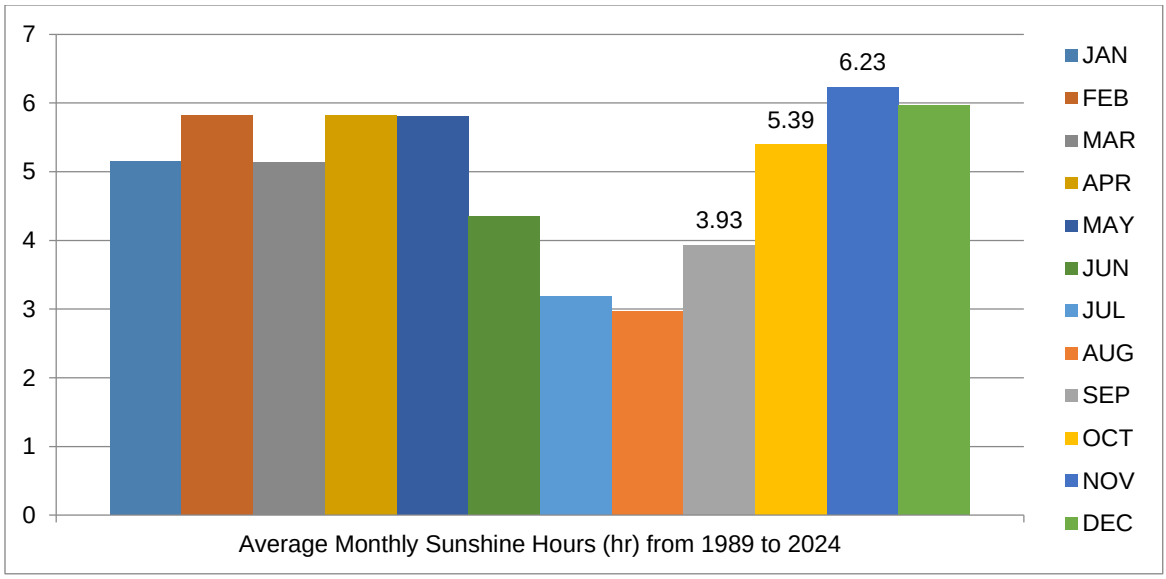


Figure 4.10: Annual Sunshine hours

Source: NiMet, Oshodi, Lagos State, 2025

4.4.2 Climate Risks

4.4.2.1 Introduction

The potential physical impacts that climate change could have on the Project have been considered in this *Section*. This has been undertaken through a high-level scenario analysis, which has assessed the impact of climate change on physical climate-related risks associated with a full list of ERM's identified hazard types (extreme heat, extreme cold, flooding, landslides, wildfires, coastal flooding, water stress & drought and tropical cyclones) in relation to the proposed Project. Only those hazards deemed applicable to the Project have been assessed.

The scenario analysis has utilised a range of the Intergovernmental Panel on Climate Change (IPCC) climate change scenarios under a range of future projected time horizons (2030 and 2050) – which have been selected based upon their relevance to the Project and in alignment with the guidance set out by the Task Force on Climate-Related Financial Disclosures (TCFD). This includes SSP1-2.6[4], which is most closely aligned with the targets made under the Paris Agreement (to aim to keep temperatures increases by 2100 at 2^0C or lower) and SSP5-8.5[5], which is a higher emissions scenario, also referred to as the Business-as-Usual scenario. As a part of this scenario analysis, climate-related risks have been identified under future projected timeframes and scenarios.

The Climate Change Risk Assessment (CCRA) Baseline Data below is for the current and 2030-time horizon which is provided as an insight to the possible climate trends for the construction stage and beginning of the operation stage.

The CCRA Future Climate Projections (Predictions) and risk scores are presented in Section 4.4.2.3 for the future and 2050 period which are used to provide insight to the climate trends towards the later stages of the operational phase.

4.4.2.2 Literature review

Research from USAID (2019) suggests that by 2060, Nigeria's average temperatures may increase between 1.1°C and 2.5°C, with higher rates of warming in the north. Rainfall variability and extreme rainfall events are also projected to increase across most of the country. Coastal areas are expected to experience an increase of 0.4-1.0m in mean sea level by 2100. In addition, there is a projection that the number of cold nights will decrease drastically, even with a projection of close to zero by 2090 while the number of extreme heat days is projected to increase by 2100 to 260 days (it was 10 days in 1990).

The World Bank Group (WBG) (2021) project that temperatures will increase across the country progressively through to the end of the century, with a potential increase in temperatures of between 2.9°C with up to 5.7°C, coupled with an increase in low temperatures and average temperatures are also expected to increase. Night-time temperatures are expected to increase by 4.7°C. By the 2100s, it is expected that the duration of heat waves will increase by an additional 8 to 55 days.

Additionally, there is a projection of heavy rainfall intensifying, plus, during the rainy seasons flooding events due to extreme rainfall, precipitation events and extreme events are expected to impact surface water runoff and rivers. This plus an increase in the intensity and frequency of droughts may lead to an increase in natural disasters. Precipitation quantities are most likely to increase from the end of the rainy season up until the start of the dry season, which will be from September up until December (The World Bank Group, 2021).

"*Nigeria is at risk to numerous natural hazards and prone to floods, storms, ocean surges, droughts, and wildfires. Nigeria's coastal states face extensive risks from storm surge along the entire coast, and inland flooding and wildfires in the Niger Delta region, and negative rainfall anomalies in the southeast*" (WBG, 2021, pg 11). See

The Project Area falls within High to Medium Risk for both aspects of Flooding and Wildfires (Figure 4.9)

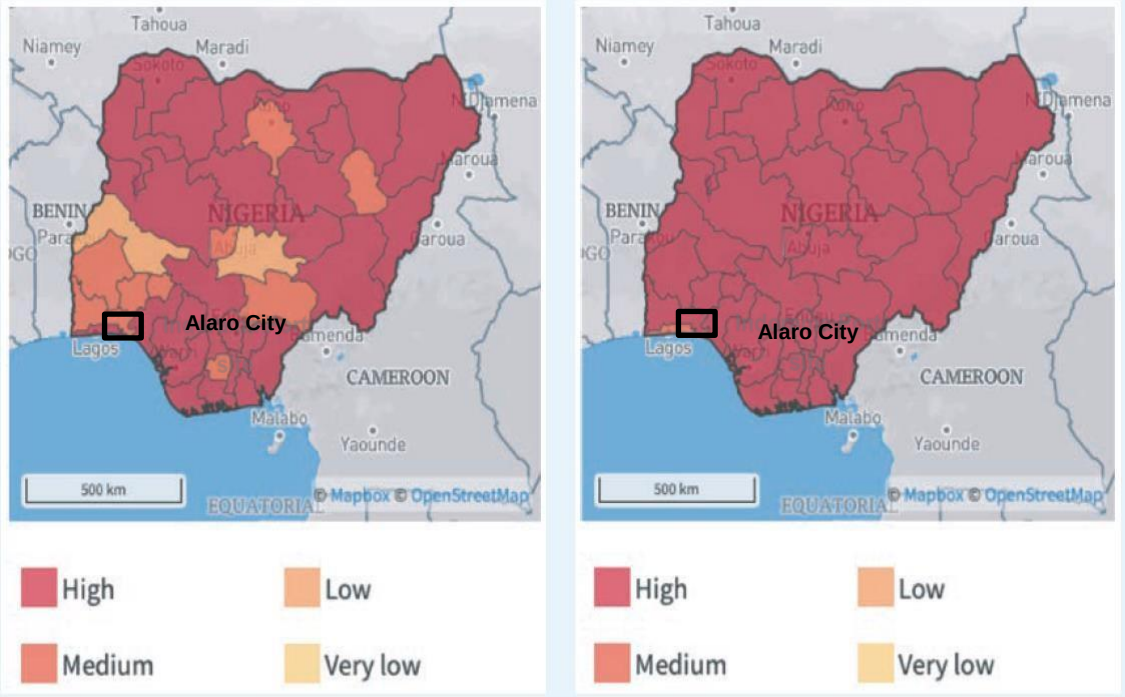


Figure 4.11: Nigeria's Risk of Urban Flood (left) and Risk of Wildfire (right).
Source: The World Bank Group, 2021

The WRI Aqueduct offer projections for 2030 and 2050 under a pessimistic[6] scenario. Results for the Project for drought risk / the projected change in water stress[7] is shown in Table 4.2.

Table 4.2: Projected Water Stress for Alaro City.

Climate Variable / Event	Projection
Drought Risk / Water Stress	2030: Low (<10%) water stress 2050: Low (<10%) water stress

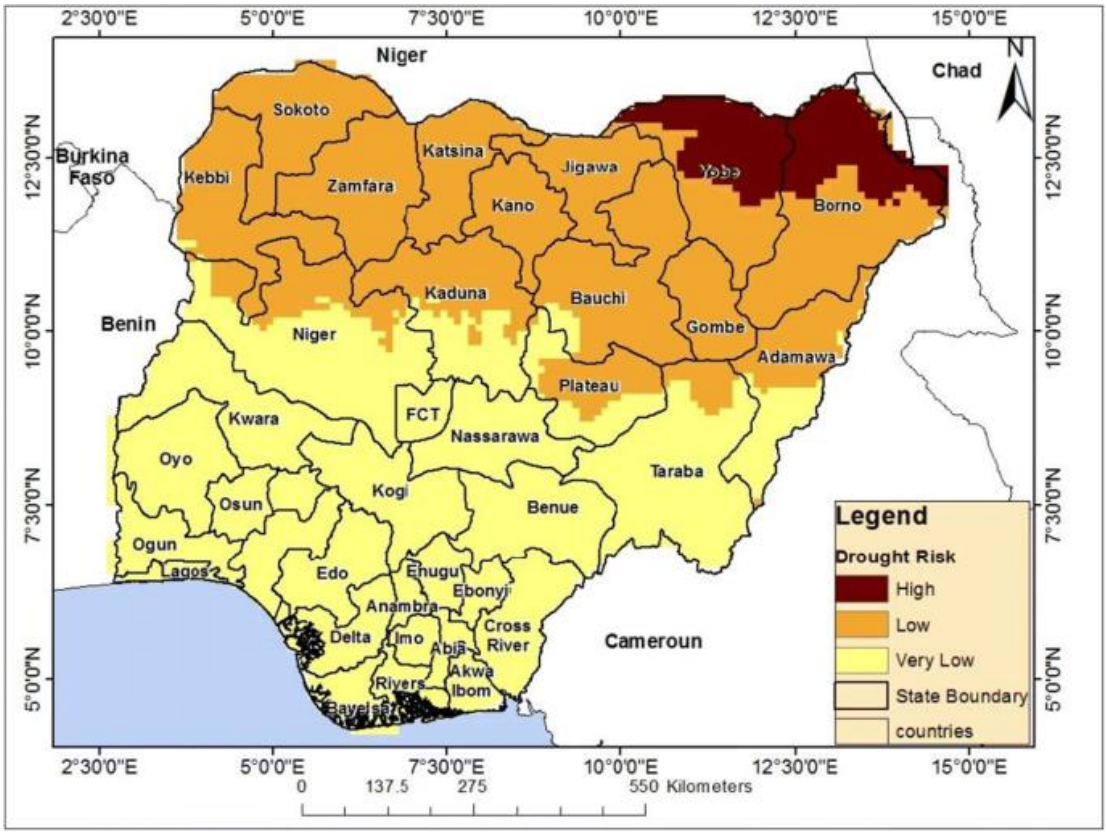


Figure 4.12: Projected Water Stress for Nigeria (2030 & 2050)
Source: WRI (Aqueduct)

4.4.2.3 Risk Scores

Coastal Flood Risk

The Coastal flood risk for Itana FZE is at 'Extremely High (more than 2 in 1,000)' as the location falls within the Atlantic Ocean and the Lekki Lagoon which is a low-lying region and very close to the sea (WRI Aqueduct).

Coastal flood risk measures the percentage of the population expected to be affected by coastal flooding in an average year, accounting for existing flood protection standards. Flood risk is assessed using hazard (inundation caused by storm surge), exposure (population in flood zone), and vulnerability. The existing level of flood protection is also incorporated into the risk calculation. It is important to note that this indicator represents flood risk not in terms of maximum possible impact but rather as average annual impact. The impacts from infrequent, extreme flood years are averaged with more common, less newsworthy flood years to produce the "expected annual affected population." Higher values indicate that a greater proportion of the population is expected to be impacted by coastal floods on average (WRI Aqueduct, 2023).

Asset Risk Score

Climate impacts on the Project are considered based on SSP1-2.6 and SSP5-8.5. Figure 4.11 and Figure 4.12 provide the 'Asset Risk Score' that identifies the potential change in risk profile for the Project. The Project Area is projected to experience a minimal increase in risk because of climate change across both scenarios and for both time horizons (2030 and 2050).

	Asset	Baseline	2030	2050
1	Alaro City 3	0.44, Minimal Asset Risk	0.68, Minimal Asset Risk	0.74, Minimal Asset Risk

Figure 4.13: Asset Risk Score, SSP1-2.6.

Where:

Climate Hazard	Significant Decrease	Moderate Decrease	Minimal Decrease	Minimal Increase	Moderate Increase	Significant Increase

	Asset	Baseline	2030	2050
1	Alaro City 3	0.44, Minimal Asset Risk	0.64, Minimal Asset Risk	0.66, Minimal Asset Risk

Figure 4.14: Asset Risk Score, SSP5-8.5.

Where:

Climate Hazard	Significant Decrease	Moderate Decrease	Minimal Decrease	Minimal Increase	Moderate Increase	Significant Increase

Risk Score Composition

In addition to the above, the key climate change hazards deemed applicable to the Project under scenario **SSP1-2.6** are as follows (also refer to hazard distribution in for the 2030 and 2050 time horizons in Figure 4.13 and Figure 4.14 respectively):

- **Extreme Heat:** the biggest change from the baseline to 2030 and 2050 is a visible increase in extreme heat, with a baseline risk score of 0.24 and then an increase in risk

by 2.28 for 2030 and 2.46 for 2050.

- **Extreme Cold:** extreme cold decreases quite drastically from the baseline (2.08) risk score to 2030 by -0.68 and for 2050 by -0.96.
- **Wildfires:** at the baseline wildfires are at a risk score of 0.88, it increases for 2030 by 0.24 and for 2050 by 0.08.
- **Water Stress & Drought:** increases quite a bit from the baseline risk score which is at 0.40 to 0.64 in 2030 and increases to 1.36 in 2050.
- **Extreme Rainfall Flooding:** increases by 0.08 for both 2030 and 2050 from the baseline risk score of 0.40.

The key climate change hazards deemed applicable to the Project under scenario **SSP5-8.5** are as follows (also refer to hazard distribution in for the 2030 and 2050 time horizons in Figure 4.15 and Figure 4.16 respectively):

- **Extreme Heat:** the same as in the previous scenario, the biggest change from the baseline to 2030 and 2050 is a significant increase in extreme heat, with a baseline risk score of 0.24 and then an increase in risk to 2.76 for 2030 and 4.44 for 2050.
- **Extreme Cold:** there is a significant decrease in extreme cold from a 2.08 risk score at the baseline to a 1.04 risk score for 2030 and no risk score for 2050.
- **Wildfires:** same as above, wildfires baseline risk score is 0.88, it increases for 2030 by 0.16, while 2050 has no risk score.
- **Water Stress & Drought:** for baseline has a risk score of 0.40 and 2030, it increases by 0.16 for 2030 and by quite a bit by 0.64 in 2050.
- **Extreme Rainfall Flooding:** is the same for baseline and 2030 with risk score of 0.40, it then increases by 0.08 in 2050.

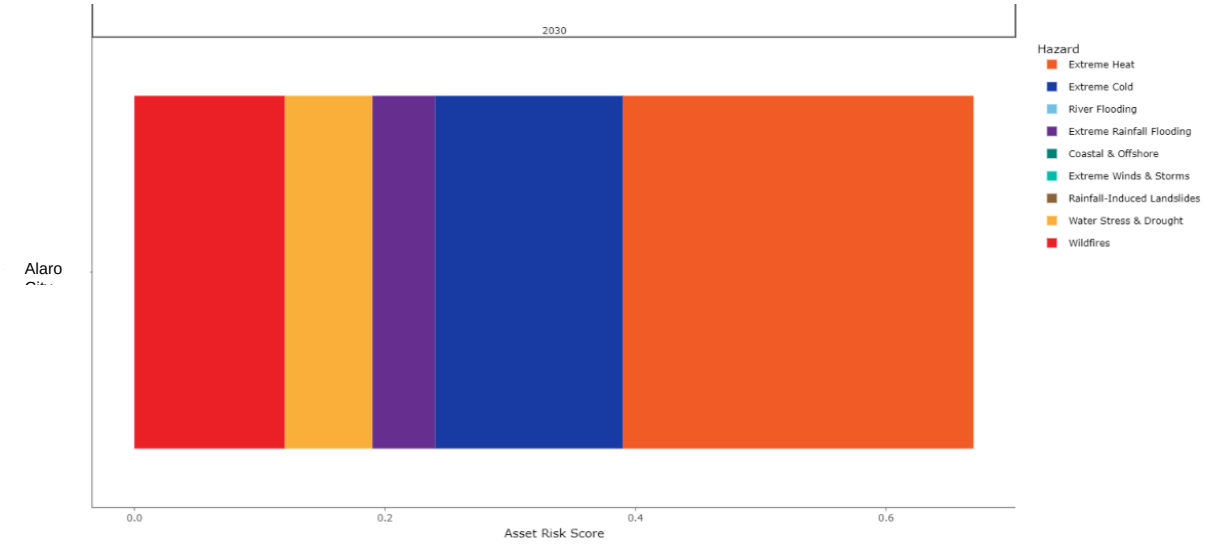


Figure 4.15: Projection Risk Score Composition: SSP SSP1-2.6, 2030.

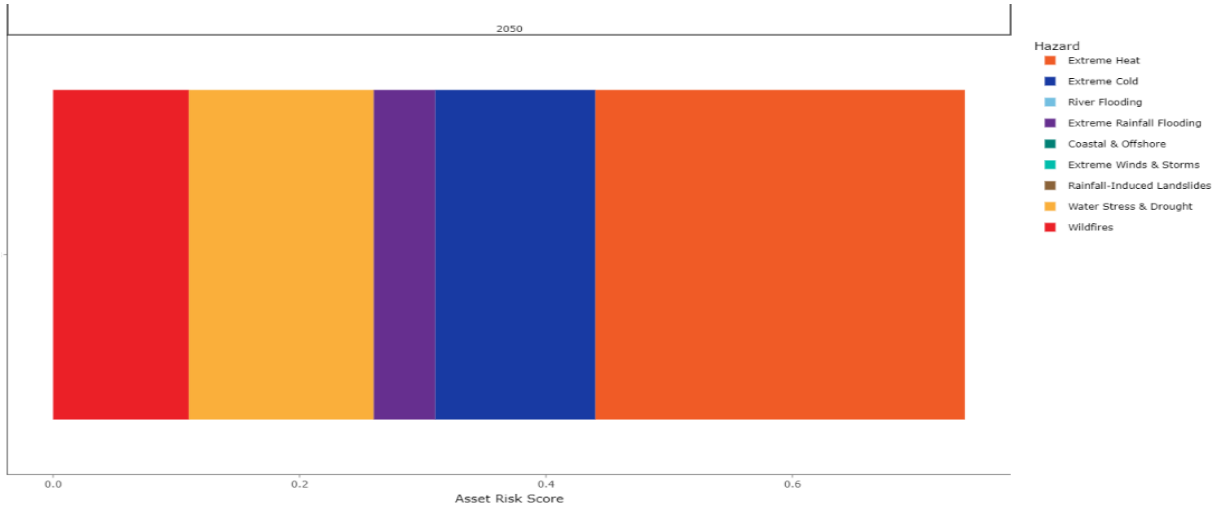


Figure 4.16: Projection Risk Score Composition: SSP SSP1-2.6, 2050.

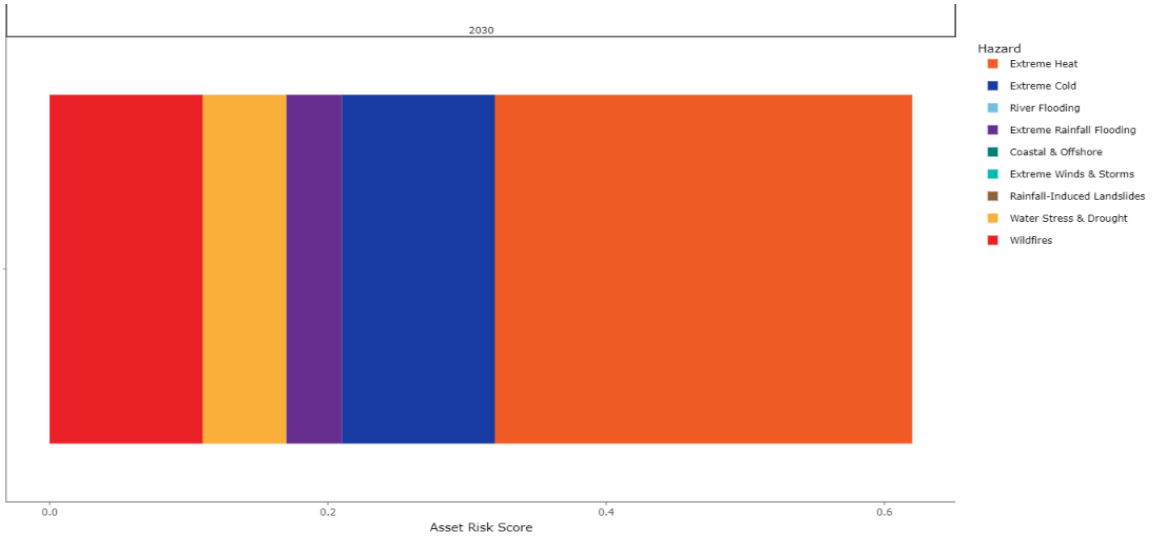


Figure 4.17: Projection Risk Score Composition: SSP SSP5-8.5, 2030.

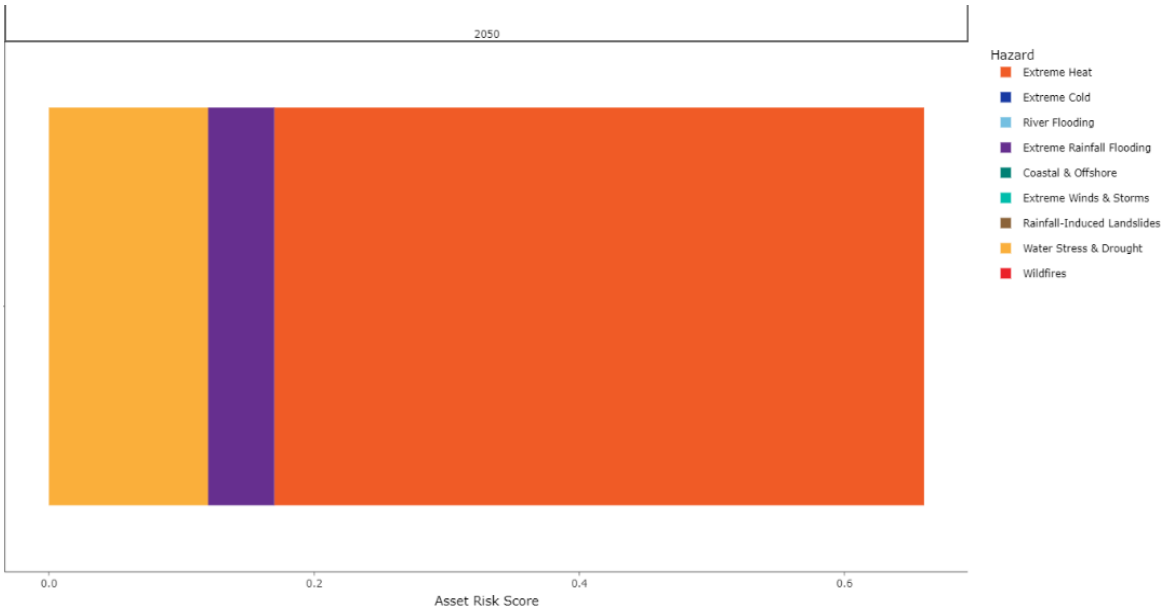


Figure 4.18: Projection Risk Score Composition: SSP SSP5-8.5, 2050.

4.4.2.4 Summary of Key Climate Change Hazards Applicable to the Project

Table 4.3 presents a summary of the potentially material hazards for the Project. Material hazards include:

- Increased extreme heat
- Increased water stress and drought; and
- Increase in both flooding and wildfire events.

Table 4.3: Summary of Prominent Hazards for Baseline and Projections.

Asset: Alaro City	Period									
	Baseline					Projection				
	Prominent Hazards									
SSP1-2.6& SSP5-8.5										
SSP1-2.6 - 2030							T			T
SSP1-2.6 - 2050							T			
SSP5-8.5 - 2030							T			T
SSP5-8.5 - 2050							T	T		T

Key:

Wildfires	Water Stress and Drought	Extreme Rainfall and Flooding	Extreme Cold	Extreme Heat

T – Increase in Hazard for 2030 and 2050.

Note – although wildfires and flooding are not considered a material risk to the Project, these risks have been flagged as a potentially material hazard for the broader Project area. It is important to note that the risk of wildfires is not material in that the actual Project site, as it is situated in an area where year- round relative humidity is in excess of 70% and in an area that has a high annual rainfall. In addition, while portions of the broader Study Area will be susceptible to risks of flooding, the Project area is located at a higher elevation from the Atlantic Ocean.

4.4.3 AIR QUALITY AND NOISE ASSESSMENT OF THE PROJECT AREA

4.4.3.1 Introduction

This section presents the assessment of existing air quality and ambient noise conditions within the study area and the proposed project's area of influence, with the objective of establishing baseline environmental conditions and evaluating potential impacts associated with the construction and operation of the Lagos MediPark Hospital, Ikoyi. The assessment considers current sources of air and noise emissions, including vehicular traffic along Awolowo Road, nearby commercial and institutional activities, and other urban land uses, and evaluates how project-related activities such as site preparation, construction works, increased traffic, and hospital operations may affect ambient air quality and noise levels. The findings provide a basis for predicting potential changes to environmental conditions, assessing compliance with applicable national and international standards, and identifying appropriate mitigation and management measures to minimize adverse impacts on public health, worker safety, and the surrounding community.

4.4.3.2 Air Quality Assessment of the Study Area

Various anthropogenic sources of gaseous emissions and suspended particulate matter were identified around the proposed project site at Medipark, Ikoyi. The key contributors in this urban environment include vehicular traffic along Awolowo Road and surrounding access roads, which generates carbon monoxide (CO), nitrogen oxides (NO_2), and particulate matter ($PM_{2.5}$ and PM_{10}). Additional sources include generator use in nearby residential and commercial buildings, which contributes CO, sulfur dioxide (SO_2), NO_2, and particulate matter to the ambient air. Minor construction and maintenance activities, as well as resuspension of urban dust from roads, also add to particulate levels in the atmosphere. The background air pollution from the wider Lagos metropolitan area, including traffic and industrial emissions from nearby commercial zones, further contributes to the cumulative air-quality profile in Ikoyi.

Natural sources of pollution are minimal within the project vicinity due to the built-up urban character of Ikoyi. Vegetation and open agricultural activity are scarce, and no large-scale waste dump sites or industrial plants are located immediately around the site. Therefore, the dominant sources of gaseous emissions and particulate matter are anthropogenic, as listed above. Collectively, these sources generate CO, NO_2, SO_2, and $PM_{2.5}/PM_{10}$, with there presence confirmed in the atmosphere as revealed by this study. Magnified concentrations of

these pollutants in the atmosphere, when above permissible limits, can adversely affect human health and the surrounding urban environment. The magnitude of these emissions is expected to remain stable or slightly increase over time, primarily due to the continues increase of anthropogenic activities in the area.

4.4.3.3 Noise Level Measurement

The location of the proposed project within a highly urbanized corridor of Ikoyi, ambient noise levels are largely influenced by continuous human and commercial activities. The predominant source of noise is vehicular traffic along Awolowo Road, a major arterial route characterized by high traffic volumes, frequent congestion, and regular use of vehicle horns. Additional traffic-related noise originates from adjoining access roads, parking areas, and the movement of service and delivery vehicles associated with nearby offices, hotels, retail outlets, and fuel stations.

Non-traffic-related noise sources within the area include commercial and institutional activities, particularly the operation of diesel-powered electricity generators, mechanical equipment, and air-conditioning systems commonly used by surrounding developments. Intermittent noise is also generated from construction and renovation activities at nearby sites, as well as from public address systems, street trading, and general pedestrian movement. These combined sources contribute to the existing urban noise environment of the study area and form the baseline conditions against which potential noise impacts from the proposed project are assessed.

Thus, to establish a baseline for the proposed project, in-situ measurements of air quality, noise, and particulate matter were conducted at 12 locations (with control) within and around the site using calibrated handheld digital meters. Oxides of nitrogen and carbon were measured in parts per million (ppm) using a portable iBrid MX6 analyzer, calibrated with a standard gas/air mixture at 1.0 psi. Particulate matter concentrations were recorded in mg/m^3, while noise levels were measured in dB(A). The sampling locations are illustrated in Plate 4.3.



Plate 4.4: In-situ measurements of VOCs, SPM, NO, CO_2, CO, SO2, CH_4, H_2S, Noise Level and Wind Speed

4.4.3.4 Interpretation of Air Quality and Noise Level Results

The results of the in-situ air quality and noise level measurements conducted within the study area are presented in Table 4.4.

Pollutant Gases

Nitrogen dioxide (NO_2) is one of the oxides of nitrogen and a common air pollutant, characterized by a sharp, biting odour and a reddish-brown appearance at higher concentrations. It is primarily generated from combustion processes, especially emissions from motor vehicles. Field measurements conducted within the study area detected NO_2 concentrations ranging from 0.01 to 0.02 ppm at sampling points located close to access roads. In contrast, locations situated away from major access roads recorded 0.00 ppm, indicating negligible NO_2 presence. This distribution confirms that vehicular traffic along the access roads bordering the project site is the principal source of nitrogen dioxide in the area. The recorded NO_2 levels are low and within applicable national and international ambient air quality limits, reflecting a generally good baseline air quality condition within the project area.

Carbon monoxide is a colorless, odorless, non-irritating but very poisonous gas. It is a product of incomplete combustion of fuel such as natural gas, coal or wood. Vehicular exhaust is a major source of carbon monoxide. Field measurements conducted within the study area detected CO concentrations ranging from 2.00ppm to 4ppm at sampling points located close to access roads. In contrast, locations situated away from major access roads recorded 0.00 ppm, indicating negligible CO presence. This distribution confirms that vehicular traffic along the access roads bordering the project site is the principal source of Carbon monoxide in the

area. The recorded CO levels are low and within applicable national and international ambient air quality limits, reflecting a generally good baseline air quality condition within the project area.

Carbon dioxide Carbon dioxide (CO_2) is a naturally occurring gas in the atmosphere and an essential component for living organisms, although it is also released through combustion processes and human activities. Elevated concentrations are commonly associated with vehicular emissions and increased human presence in urban environments. The concentration of CO_2 measured within the study area ranged from 499 ppm to 756 ppm. The Occupational Safety and Health Administration (OSHA) has established a permissible exposure limit of 5,000 ppm averaged over an 8-hour workday. The measured values within the project area are well below this exposure threshold. Comparatively, CO_2 concentrations recorded at control locations ranged from 475 ppm to 483 ppm, which are slightly lower than values obtained within the study area. This variation is attributed to increased vehicular movements and higher levels of human activity within the project area during the period of measurement. The observed CO_2 levels indicate acceptable baseline air quality conditions.

Sulfur oxides especially sulfur dioxide, a chemical compound with the formula SO_2. It is produced by various industrial processes. Since petroleum often contain sulfur compounds, their combustion generates sulfur dioxide. Further oxidation of SO_2, usually in the presence of a catalyst such as NO_2, forms H_2SO_4, and thus acid rain. This is one of the causes for concern over the environmental impact of the use of these fuels as power sources. In this study however, SO_2 concentration was not detected at all the sampling locations.

Volatile organic compounds (VOC): Volatile Organic Compounds (VOCs) are a group of air pollutants commonly emitted from gasoline and natural gas usage, vehicular exhaust, and the combustion of fossil fuels, wood, and waste materials. In the atmosphere, VOCs can react with nitrogen oxides in the presence of sunlight to form tropospheric ozone, a secondary air pollutant with adverse health and environmental effects. The potential health impact of VOCs is largely dependent on their concentration and duration of exposure. Measurements conducted within the study area indicated VOC concentrations ranging from 0.08 to 0.40 ppm. In comparison, values recorded at control locations ranged from 0.004 to 0.007 ppm, reflecting lower levels in less disturbed environments. The maximum concentration of 0.40 ppm was recorded at sampling point AN 01, which is located close to an access road and is therefore attributed primarily to vehicular emissions.

Generally, the recorded VOC levels within the project area are low and fall within applicable national and international ambient air quality standards, indicating a generally good baseline air quality condition.

Suspended particulate matter: Suspended particulate matter across the sampling locations was relatively low. $PM_{2.5}$ across the studied locations ranged from 14.0 to 30.0μg/m^3. PM_{10} ranged from 22.0 to 50.0μg/m^3. The values obtained for $PM_{2.5}$, and PM_{10} are below the NESREA limit of 40μg/m^3 and 150μg/m^3 respectively. These results were within the World Health Organization (WHO) recommended 24-hour exposure limit of 25 μg/m^3, except for values recorded at sampling points 01,02, 07 and 08. Elevated concentrations at these points are attributed to their proximity to the main road, where vehicular traffic and dust generation are significant contributors. The size of particles is directly linked to their potential for causing health problems. Small particles less than 10 micrometers in diameter pose the greatest problems, because they can get deep into the lungs, and some may even get into the bloodstream. Factors contributing to SPM include Climatic factors at the time of monitoring and vehicular movements along the approach roads to the project site. Increased levels of fine particles in the air are linked to health hazards such as malfunctioning of the lung and lung cancer, non-fatal heart attacks, irregular heartbeat, aggravated asthma, and increased respiratory symptoms, such as irritation of the airways, coughing or difficulty breathing.

Methane: Methane gas (CH4) is an odorless gas that is flammable or explosive at concentrations of 5% to 15% by volume of air. Methane is also a very potent greenhouse gas contributing to climate change. The concentrations recorded were below equipment detection limit in all sampled locations.

Noise Level: Measured noise levels ranged from 40.5 dB(A) to 60.0 dB(A). The maximum value of 60.0 dB(A) was recorded along the access road and is attributable to vehicular movement during the period of field measurement. Noise levels recorded within the project site were generally low and remained within the permissible limits stipulated by the Federal Ministry of Environment (FMEnv), which prescribes a maximum of 90 dB(A) for an 8-hour exposure and 105 dB(A) for a 1-hour exposure, as well as the WHO and NESREA permissible noise limits for mixed-use receptors.

Table 4.4: Result of Air Quality and Noise Level Measurement around the Proposed Project Site

Sample Code	Latitude (N)	Longitude(E)	**Time (am/pm)**	$PM_{2.5}$ ($\mu g/m^3$)	PM_{10} ($\mu g/m^3$)	NO_2 (ppm)	NO (ppm)	CO (ppm)	SO_2 (ppm)	CO_2 (ppm)	CH_4 (LEL) (%)	VOC's (ppm)	Noise Level dB(A)	Temp (^oc)	Hum (%)	Wind Speed	Wind Direction
A,N01	6°26'43.09"N	3°24'26.16"E	8:17am	26.0	38.0	0.02	0.01	4.0	0.00	756	0.00	0.40	60.0	29.0	49.0	1.4	NW
A,N02	6°26'41.96"N	3°24'26.46"E	8:35am	28.0	48.0	0.00	0.00	0.0	0.00	617	0.00	0.10	58.0	30.1	53.0	0.1	SW
A,N03	6°26'42.70"N	3°24'28.26"E	9:00am	24.0	35.0	0.00	0.00	0.0	0.00	572	0.00	0.08	44.5	28.3	53.0	1.4	SW
A,N04	6°26'41.44"N	3°24'28.78"E	9:15am	22.0	30.0	0.00	0.00	0.0	0.00	539	0.00	0.09	45.2	28.9	52.0	0.2	SW
A,N05	6°26'40.86"N	3°24'31.03"E	9.25am	23.0	35.0	0.00	0.00	2.00	0.00	499	0.00	0.11	48.9	29.0	51.5	0.3	NW
A,N06	6°26'39.33"N	3°24'31.22"E	9:50am	24.0	40.0	0.01	0.01	2.00	0.00	503	0.00	0.20	50.1	29.9	53.0	0.2	SW
A,N07	6°26'39.43"N	3°24'29.24"E	10:15am	29.0	48.0	0.01	0.01	3.0	0.00	623	0.00	0.35	58.7	28.2	51.0	0.3	SW
A,N08	6°26'39.95"N	3°24'27.76"E	10:25am	30.0	50.0	0.01	0.01	2.0	0.00	689	0.00	0.30	57.5	28.5	51.4	1.1	SW
A,N09	6°26'41.26"N	3°24'27.48"E	10:45am	19.0	30.0	0.00	0.00	0.0	0.00	522	0.00	0.22	45.1	27.9	49.5	1.0	SW
A,N10	6°26'40.30"N	3°24'29.94"E	11:15am	20.0	32.0	0.00	0.00	0.0	0.00	530	0.00	0.15	50.2	28.8	50.4	1.2	SW
A,N Cntrl1	6°26'40.55"N	3°24'32.77"E	4:30pm	16.0	25.0	0.00	0.00	0.0	0.00	475	0.00	0.004	40.5	27.6	55.4	1.5	SW
A,N Cntrl2	6°26'38.52"N	3°24'32.25"E	4:45pm	14.0	22.0	0.00	0.00	0.0	0.00	483	0.00	0.007	41.9	27.5	55.0	1.8	SW
Minimum				14.0	22.0	0.00	0.00	0.0	-	475	-	0.004	40.5	27.5	49.0	0.1	-
Maximum				30.0	50.0	0.02	0.01	4.0	-	756	-	0.40	60.0	30.1	55.4	1.8	-
FMEnv/NESREA Limit				40	150	0.06		10	-	-	-	0.5	55-90				

Source: Lagos Medipark Field study, 2025

4.4.4 GEOLOGY OF THE AREA

4.4.4.1 Geology of Lagos Area

The study area and its environs lie within the extensive Dahomey basin, containing Recent - Cretaceous sediment built-up. The basin (Figure 4.10) extends from the eastern part of Ghana through Togo and Republic of Benin to the western margin of the Niger/Delta basin, just before the Mahin mud coast in Nigeria. The basin is separated from the Benue trough by a basement ridge, a paleographic highland. It is bounded in the east by Benin hinge line, a major regional fault structure marking the western limit of the delta basin (Adegoke, 1969). The sedimentary succession consists of near surface recent alluvial deposits. These deposits are underlain by the coastal plain sands or the Benin Formation. The sediments of the coastal plain, deposited during the Late Tertiary - Early Quaternary (Jones and Hockey, 1964), consist of unconsolidated, coarse to medium sands (Okosun, 1998). The sands are generally moderately sorted and poorly cemented. The Benin Formation is underlain by the Paleocene Akinbo Formation. The formation is predominantly shally. The Akinbo shale is underlain by the continental cretaceous sediments of the Abeokuta Group (Omatsola and Adegoke, 1981). The littoral and lagoon deposit of recent sediment underlies the area. The coastal belt varies from about 8km near the Republic of Benin border to 24 km towards the eastern end of the Lagos Lagoon (Nton, M.E, 2001).

Two stratigraphic units constitute the major aquifer systems in the study area.

(i) **The Alluvial:** This unit occurs as lenses of sands within less permeable beds of silt and clays. Aquifers within occur at shallow depths, with very erratic lateral extent. Alluvial aquifers in this environment are very susceptible to pollution since they occur mostly at shallow depths and in many locations have direct contact with surface runoff and river waters. There is also the likelihood of saline intrusion into alluvial aquifer systems in the area due to the distance of the site to the Lagoon.

(ii) **The Benin Formation:** This stratigraphic unit constitutes the main aquifer system in most parts of the Dahomey Basin. Benin Formation is significantly thick. Its lithologic composition is mostly sand and sandstone (about 90%) while clays and lignitic beds constitute about 10%. The Benin Formation constitutes a large continuous aquifer system with enormous storage capacity. The study area within the coastal plain which is characterized by sand bars and lagoons. Topography of the study area can be characterized as near flat plain with gentle

rolling; the land does not rise very much above sea level anywhere in the proposed site. The highest elevation within the site

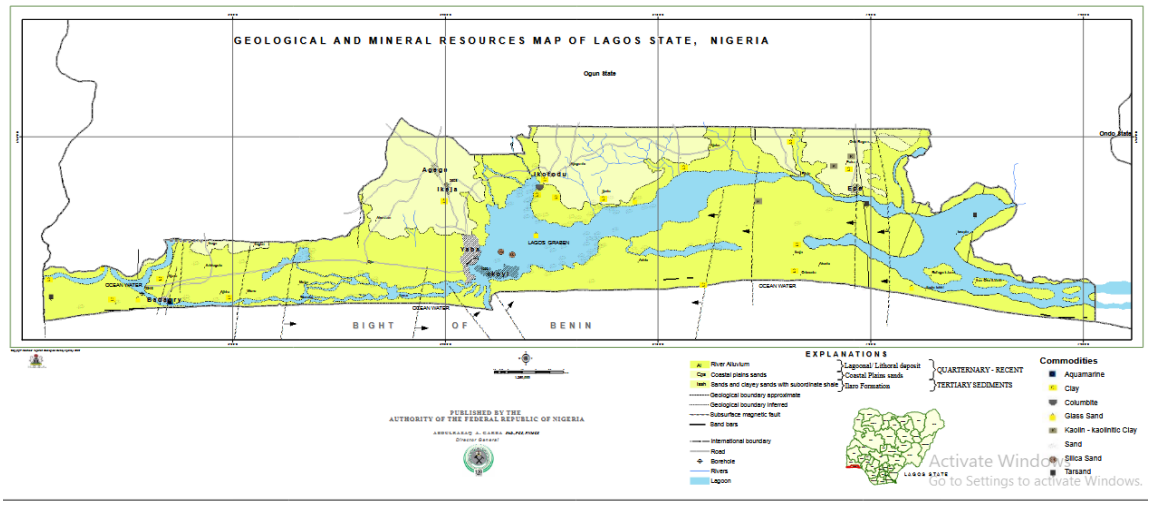


Figure 4.19: Geological Map of Lagos State

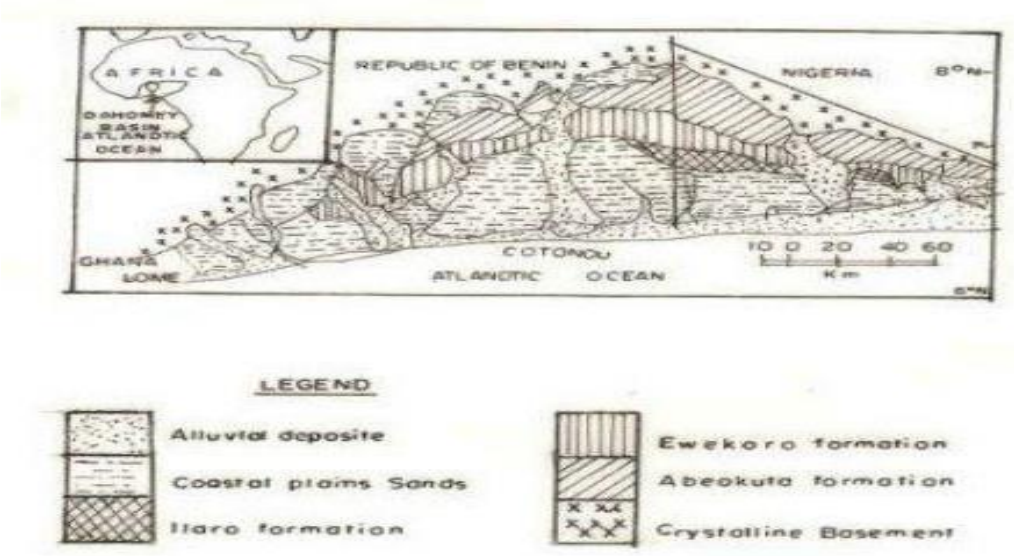


Figure 4.20: Generalized Geological Map of Dahomey Basin

4.4.4.2 Geology of Ikoyi Area

Ikoyi is located within a coastal sedimentary terrain, which forms part of the Dahomey Basin. The geology of the area is dominated by recent and sub-recent sedimentary deposits consisting mainly of unconsolidated sands, silts, clays, and organic materials. These deposits were laid down during the Quaternary period under fluvial, lagoonal, and marine conditions associated with the evolution of the Lagos Lagoon and the Atlantic coastline. The surface geology is typically characterized by coastal plain sands, which overlie alternating layers of clay and sandy clay at varying depths.

The subsurface geological conditions in Ikoyi are generally marked by high groundwater levels and soft to moderately compact soils, particularly in low-lying and reclaimed areas. Clayey layers within the stratigraphy can exhibit low bearing capacity and compressibility, which are important considerations for foundation design and construction activities. The geological characteristics of the Ikoyi area reflect its coastal origin and influence soil behavior, drainage patterns, and engineering properties relevant to infrastructure development and environmental impact assessment within the project area.

4.4.4.3 Geology of The Proposed Medipark Hospital Site

The proposed Medipark Hospital site, located in the Lagos Island–Victoria Island area, lies within the Dahomey (Benin) Basin along Nigeria's southwestern coast. This region is characterized by a passive continental margin underlain by a Precambrian crystalline basement, which is not exposed at the surface. The site itself is dominated by Quaternary coastal and lagoonal deposits, formed through tidal, estuarine, and marine sedimentation processes over the Holocene epoch. These surficial sediments comprise fine to medium sands, silty sands, and clayey layers, often interspersed with organic-rich muds and occasional peat in localized swampy zones.

Beneath these recent deposits, the subsurface is largely composed of Tertiary coastal plain sands of the Benin Formation. These sediments range from loose to moderately compacted sands, with occasional clayey interbeds, and extend to considerable depths before reaching the crystalline basement. The unconsolidated nature of both the Holocene and Tertiary sediments gives rise to a generally low natural bearing capacity, with loose sand layers exhibiting potential for settlement under load. Groundwater is shallow and pervasive within the sandy strata, making the area susceptible to seasonal flooding and saltwater intrusion.

The geological conditions of the proposed site therefore have significant implications for construction. The soft, water-saturated soils indicate a need for careful foundation design, with consideration for pile foundations or ground improvement techniques to mitigate settlement risks. Additionally, engineering measures should account for high compressibility and potential liquefaction in sandy layers, ensuring stability and durability for the development of proposed hospital structure. Overall, the geology reflects a dynamic coastal environment with sediments that require detailed geotechnical assessment prior to development.

4.4.5 Soil Study of Ikoyi Area

The Ikoyi area is underlain by sediments of the Dahomey (Benin) Basin. The soils here are predominantly coastal plain deposits of Holocene to Tertiary age, consisting of fine to medium sands, silty sands, and clayey layers. These soils were deposited through tidal, lagoonal, and estuarine processes, resulting in a landscape of low-lying, poorly drained areas interspersed with reclaimed land. Organic-rich pockets, including silts and occasional peat, are commonly found in depressions or lagoonal zones. The general low density and unconsolidated nature of these soils make the area highly compressible, with shallow groundwater tables and susceptibility to flooding and saltwater intrusion.

4.4.5.1 Soil of the Proposed Medipark Project Site (Based on Geological Features)

The soils within the proposed Medipark project area in Ikoyi are typical of coastal alluvial environments, reflecting the influence of the Lagos Lagoon and the broader sedimentary processes of the Lagos Island–Ikoyi axis. The upper layers consist of soft, loose to medium dense sands interbedded with clayey and silty strata, reflecting sedimentation from past lagoonal and tidal activity. These sediments are generally highly compressible and water-saturated, resulting in low bearing capacity for surface loads. Beneath these surficial deposits lie the Tertiary Benin Formation sands, which are moderately compacted but still unconsolidated. The combination of these soil layers indicates a requirement for careful geotechnical planning, including foundation design with piles or ground improvement, to mitigate settlement risks and ensure stability for hospital structures. Groundwater monitoring and drainage considerations are critical due to the shallow water table and potential for seasonal flooding and saltwater intrusion.

The soil profile observed during field investigation shows a sequence of young, weakly developed alluvial deposits consistent with areas undergoing continuous sedimentation and anthropogenic modification. The topsoil layer (0–15 cm) consists predominantly of dark brown loamy–silt material, interspersed with fine roots from ornamental vegetation typical of the developed urban environment. This horizon is moderately moist, friable, and exhibits good organic content due to landscaping activities and natural litter deposition. The subsurface layer (15–30 cm) transitions into a light brown sandy clay deposit, reflecting a higher sand fraction derived from coastal and lagoonal reworking of sediments. This layer shows moderate compaction and decreased organic content relative to the surface horizon. From 30–60 cm, the underlying material comprises a light mottled clayey–silty sand, characteristic of mixed

alluvial and estuarine deposition. This third zone shows signs of periodic waterlogging and fluctuating groundwater influence, which is typical of the Ikoyi peninsula's shallow aquifer conditions. The soils in the project area are classified as recent alluvial (juvenile) soils, with weakly developed A and C horizons. These depositional soils have not undergone significant pedogenic processes due to the relatively short soil-forming period, continuous sedimentation, and historical land reclamation in parts of Ikoyi. As is common in alluvial environments, the age and composition of the deposits vary spatially across the area.

Plate 4.6 presents photographs of soil sampling activities conducted with a soil auger during the field investigation.



Plate 4.5: Photograph of Soil Sampling and labeling

4.4.5.2 Interpretation of Result of Soil Samples Collected from the Proposed Project Site

Soil samples were collected from ten (10) representative locations within the project area (SS 01–SS 10) at two depth intervals (0–15 cm and 15–30 cm), alongside two control points (SS Ctrl 01 and SS Ctrl 02). The assessment was undertaken to establish baseline soil conditions and evaluate potential sensitivity to project-related disturbances.

Physico-Chemical Characteristics

The soils across the study area exhibited colour variations ranging from dark grey and brown at the topsoil layer to grey and light brown at the subsoil layer, reflecting differences in organic matter content and oxidation state with depth. The darker topsoil colours are indicative of higher organic content and biological activity.

Soil pH values ranged from 6.1 to 6.7, indicating slightly acidic to near-neutral conditions, which are typical of soils within the study region. These values are favourable for nutrient availability and plant growth and do not suggest soil acidification or alkalinity stress. A slight reduction in pH with depth was observed consistently across sampling points, attributable to lower organic matter content in the subsoil.

Electrical conductivity values ranged between 80 and 320 μS/cm, while salinity values ranged from 0.04 to 0.18 ppt, indicating non-saline soils. These low conductivity and salinity levels suggest minimal accumulation of soluble salts and no evidence of salinization that could impair soil productivity or structure.

Textural analysis revealed that the soils are predominantly sandy, with sand content ranging from 80% to 90%, silt between 10% and 20%, and negligible clay content. This sandy texture implies high permeability and low water-holding capacity, making the soils more susceptible to nutrient leaching but favourable for drainage.

Total organic carbon (TOC) values were higher in the topsoil (up to 5.25%) and decreased with depth (as low as 2.45%), reflecting natural organic matter stratification. This pattern indicates active surface biological processes and relatively undisturbed soil conditions.

Bulk density values ranged from 1.14 to 1.45 g/cm³, with higher values generally observed in the subsoil. Corresponding porosity values ranged from 45.8% to 57.3%, indicating good soil structure and aeration. The observed inverse relationship between bulk density and porosity aligns with typical soil physical behaviour.

Nutrient parameters such as nitrate, ammonia-nitrogen, phosphate, sulphate, calcium, and magnesium showed higher concentrations in the topsoil compared to the subsoil. This reflects surface accumulation from organic matter decomposition and limited vertical migration. All nutrient levels fall within ranges expected for uncontaminated soils and do not indicate excessive fertilizer input or nutrient depletion.

Total hydrocarbon content (THC) ranged from 68.5 to 135.8 mg/kg, with higher values recorded in topsoil layers. These concentrations are relatively low and suggest background hydrocarbon presence, likely from natural organic sources rather than petroleum contamination.

Heavy Metals

The concentrations of heavy metals in both topsoil and subsoil were generally low across all sampling points. Iron recorded the highest concentrations (9.1–15.2 mg/kg), which is typical of soils derived from ferruginous parent materials and does not pose environmental concern. Trace metals such as copper, zinc, lead, nickel, chromium, and cadmium were detected at very low concentrations, with values decreasing with depth. This vertical trend suggests surface enrichment from natural weathering processes rather than anthropogenic inputs.

Mercury, arsenic, and barium were below detection limits at all sampling points, indicating the absence of toxic metal contamination. The measured heavy metal concentrations are within internationally accepted background levels for uncontaminated soils, confirming that the project area is not impacted by industrial or hazardous waste pollution.

Microbiological Characteristics

Microbial analysis showed higher microbial populations in the topsoil compared to the subsoil across all locations. Total heterotrophic bacteria (THB) ranged from 0.82×10^3 to 1.90×10^3 CFU/kg, while fungal counts were relatively lower.

The observed decline in microbial counts with depth reflects reduced organic matter and oxygen availability in the subsoil. These microbial levels indicate healthy and biologically active soils, supporting nutrient cycling and soil fertility.

Table 4.5: Physicochemical Properties of soil Samples within and around the project Environment

		SS 01		SS 02		SS 03		SS 04		SS 05	
		6°26'43.09"N	3°24'26.16"E	6°26'41.96"N	3°24'26.46"E	6°26'42.70"N	3°24'28.26"E	6°26'41.44"N	3°24'28.78"E	6°26'40.86"N	3°24'31.03"E
S/N	**PARAMETERS**	**0-15cm**	**15-30cm**	**0-15cm**	**15-30cm**	**0-15cm**	**15-30cm**	**0-15cm**	**15-30cm**	**0-15cm**	**15-30cm**
A	**PHYSICO-CHEMICAL TEST**										
1	Colour	Dark Grey	Grey	Dark Grey	Grey	Brown	Light Brown	Dark Grey	Grey	Brown	Light Brown
2	pH	6.40	6.33	6.5	6.3	6.6	6.4	6.3	6.1	6.7	6.5
3	Conductivity (µS/cm)	275.0	80.0	290	255	310	270	265	235	320	280
4	Salinity (ppt)	0.14	0.04	0.15	0.11	0.17	0.12	0.13	0.09	0.18	0.13
5	Texture	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy
6	Sand (%)	85.0	90.0	83	86	82	85	86	89	80	84
7	Silt (%)	15.0	10.0	17	14	18	15	14	11	20	16
8	Clay (%)	0.0	0.0	0	0	0	0	0	0	0	0
9	TOC (%)	4.65	3.31	4.80	3.25	5.10	3.40	4.50	3.00	5.25	3.55
10	Bulk Density (g/cm³)	1.21	1.14	1.19	1.36	1.18	1.35	1.22	1.40	1.17	1.34
11	Porosity (%)	54.68	57.30	55.1	48.5	55.6	49.1	54.3	47.2	56.0	49.8
12	Alkalinity (mg/kg)	420.0	336.0	435	375	450	390	410	350	465	405
13	Nitrate (mg/kg)	25.24	29.65	27.0	18.9	29.4	20.1	24.1	16.9	31.2	21.3
14	Ammonia-N (mg/kg)	3.78	2.89	4.05	2.60	4.32	2.75	3.55	2.30	4.60	2.95
15	Phosphate (mg/kg)	1.21	1.08	1.35	0.90	1.48	0.98	1.10	0.75	1.60	1.05
16	Sulphate (mg/kg)	51.0	30.0	54.5	45.1	58.0	48.2	49.2	40.5	60.3	50.4
17	Calcium (mg/kg)	44.46	24.06	47.0	38.4	50.5	41.2	42.3	34.6	53.8	43.5
18	Magnesium (mg/kg)	21.48	11.64	22.8	18.2	24.1	19.4	20.6	16.4	25.5	20.1
19	THC (mg/kg)	113.80	92.14	120.4	90.2	128.6	96.1	109.2	82.4	135.8	102.5
B	**Heavy Metals (mg/kg)**										
20	Sodium	180.74	100.51	185.4	160.1	192.6	168.4	176.3	150.5	201.8	172.6
21	Potassium	5.49	3.05	5.62	4.45	5.88	4.68	5.32	4.12	6.10	4.85
22	Iron	12.40	9.50	13.25	10.80	14.10	11.50	11.95	9.80	15.20	12.10
23	Copper	0.360	0.274	0.385	0.300	0.410	0.325	0.345	0.270	0.460	0.360
24	Cadmium	0.0215	0.0180	0.023	0.016	0.025	0.018	0.020	0.014	0.028	0.020
25	Zinc	1.367	2.080	1.45	1.08	1.58	1.18	1.32	0.98	1.65	1.25
26	Lead	0.078	0.082	0.082	0.058	0.090	0.064	0.074	0.052	0.098	0.070
27	Mercury	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
28	Nickel	1.201	0.553	1.28	0.98	1.35	1.05	1.15	0.88	1.42	1.12
29	Chromium	0.190	0.157	0.205	0.155	0.225	0.170	0.180	0.138	0.240	0.185
30	Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
31	Barium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
C	**Microbiology Test (CFU/kg)**										
32	THB	1.55×10^3	1.39×10^3	1.62×10^3	1.10×10^3	1.75×10^3	1.20×10^3	1.48×10^3	0.98×10^3	1.88×10^3	1.30×10^3
33	THF	5.0×10^1	3.6×10^1	5.4×10^1	3.6×10^1	6.0×10^1	4.0×10^1	4.8×10^1	3.0×10^1	6.3×10^1	4.4×10^1
34	THUB	0.81×10^2	1.09×10^2	0.86×10^2	0.55×10^2	0.92×10^2	0.60×10^2	0.78×10^2	0.48×10^2	1.05×10^2	0.70×10^2
35	THUF	0.53×10^1	0.72×10^1	0.56×10^1	0.33×10^1	0.60×10^1	0.36×10^1	0.50×10^1	0.28×10^1	0.65×10^1	0.40×10^1

Table 4.5 Contd: Physicochemical Properties of soil Samples within and around the project Environment

		SS 06		SS 07		SS 08		SS 09		SS 10	
		6°26'39.33"N	3°24'31.22"E	6°26'39.43"N	3°24'29.24"E	6°26'39.95"N	3°24'27.76"E	6°26'41.26"N	3°24'27.48"E	6°26'40.30"N	3°24'29.94"E
S/N	**PARAMETERS**	**0-15cm**	**15-30cm**	**0-15cm**	**15-30cm**	**0-15cm**	**15-30cm**	**0-15cm**	**15-30cm**	**0-15cm**	**15-30cm**
A	**PHYSICO-CHEMICAL TEST**										
1	Colour	Dark Grey	Grey	Brown	Light Brown	Dark Grey	Grey	Brown	Light Brown	Dark Grey	Grey
2	pH	6.4	6.2	6.5	6.3	6.6	6.4	6.3	6.1	6.5	6.3
3	Conductivity (µS/cm)	285	250	300	265	315	275	270	240	295	260
4	Salinity (ppt)	0.15	0.11	0.16	0.12	0.17	0.13	0.14	0.10	0.16	0.12
5	Texture	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy
6	Sand (%)	83	87	81	85	82	86	84	88	83	86
7	Silt (%)	17	13	19	15	18	14	16	12	17	14
8	Clay (%)	0	0	0	0	0	0	0	0	0	0
9	TOC (%)	4.70	3.20	5.00	3.35	5.15	3.45	4.60	3.05	4.90	3.30
10	Bulk Density (g/cm³)	1.20	1.37	1.18	1.35	1.16	1.33	1.23	1.41	1.19	1.36
11	Porosity (%)	54.9	48.0	55.4	48.9	55.8	49.5	54.1	46.8	55.0	48.6
12	Alkalinity (mg/kg)	430	370	445	385	455	395	415	355	440	380
13	Nitrate (mg/kg)	26.3	18.4	28.7	19.6	30.1	20.5	25.0	17.6	27.8	19.0
14	Ammonia-N (mg/kg)	3.90	2.55	4.20	2.70	4.45	2.85	3.70	2.40	4.10	2.65
15	Phosphate (mg/kg)	1.28	0.86	1.45	0.95	1.55	1.00	1.18	0.80	1.38	0.92
16	Sulphate (mg/kg)	53.1	44.3	56.7	47.0	59.4	49.5	50.6	41.8	55.2	46.1
17	Calcium (mg/kg)	46.1	37.8	49.2	40.1	52.0	42.0	43.7	35.9	48.6	39.5
18	Magnesium (mg/kg)	22.3	17.8	23.7	18.9	24.9	19.8	21.2	16.8	23.0	18.5
19	THC (mg/kg)	118.3	88.9	125.4	94.3	132.1	99.0	112.5	84.0	121.6	91.5
B	**Heavy Metals (mg/kg)**										
20	Sodium	187.1	162.4	195.9	169.8	198.3	171.2	178.5	152.3	190.6	165.7
21	Potassium	5.71	4.51	5.95	4.72	6.03	4.80	5.40	4.20	5.78	4.60
22	Iron	13.60	11.10	14.45	11.85	15.05	12.00	12.30	10.00	13.90	11.40
23	Copper	0.395	0.310	0.430	0.335	0.455	0.355	0.370	0.285	0.405	0.320
24	Cadmium	0.024	0.017	0.026	0.019	0.027	0.020	0.022	0.015	0.025	0.018
25	Zinc	1.48	1.10	1.55	1.16	1.62	1.22	1.40	1.05	1.50	1.14
26	Lead	0.086	0.060	0.092	0.066	0.096	0.069	0.080	0.056	0.088	0.062
27	Mercury	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
28	Nickel	1.30	1.00	1.38	1.08	1.45	1.10	1.22	0.94	1.33	1.02
29	Chromium	0.210	0.160	0.230	0.175	0.245	0.182	0.195	0.148	0.220	0.168
30	Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
31	Barium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
C	**Microbiology Test (CFU/kg)**										
32	THB	1.65×10^{3}	1.12×10^{3}	1.80×10^{3}	1.25×10^{3}	1.90×10^{3}	1.35×10^{3}	1.52×10^{3}	1.00×10^{3}	1.70×10^{3}	1.18×10^{3}
33	THF	5.6×10^{1}	3.8×10^{1}	6.1×10^{1}	4.2×10^{1}	6.5×10^{1}	4.6×10^{1}	5.1×10^{1}	3.3×10^{1}	5.8×10^{1}	3.9×10^{1}
34	THUB	0.88×10^{2}	0.58×10^{2}	0.98×10^{2}	0.65×10^{2}	1.08×10^{2}	0.72×10^{2}	0.82×10^{2}	0.50×10^{2}	0.94×10^{2}	0.62×10^{2}
35	THUF	0.58×10^{1}	0.34×10^{1}	0.62×10^{1}	0.38×10^{1}	0.68×10^{1}	0.42×10^{1}	0.54×10^{1}	0.31×10^{1}	0.60×10^{1}	0.36×10^{1}

Table 4.5 Contd: Physicochemical Properties of soil Samples within and around the project Environment

		SS Ctrl 01		SS Ctrl 02		Min	Max
		6°26'40.55"N	3°24'32.77"E	6°26'38.52"N	3°24'32.25"E		
S/N	**PARAMETERS**	**0-15cm**	**15-30cm**	**0-15cm**	**15-30cm**		
A	**PHYSICO-CHEMICAL TEST**						
1	Colour	Dark Grey	Grey	Brownish Grey	Light Brown		
2	pH	6.45	6.25	6.50	6.30	6.1	6.7
3	Conductivity (µS/cm)	245.0	215.0	235.0	205.0	80	320
4	Salinity (ppt)	0.12	0.09	0.11	0.08	0.04	0.18
5	Texture	Sandy	Sandy	Sandy	Sandy		
6	Sand (%)	87.0	90.0	86.0	89.0	80	90
7	Silt (%)	13.0	10.0	14.0	11.0	10	20
8	Clay (%)	0.0	0.0	0.0	0.0		
9	TOC (%)	3.85	2.60	3.70	2.45	2.45	5.25
10	Bulk Density (g/cm³)	1.25	1.42	1.27	1.45	1.14	1.45
11	Porosity (%)	52.8	46.4	52.1	45.8	45.8	57.3
12	Alkalinity (mg/kg)	385.0	335.0	370.0	325.0	325	465
13	Nitrate (mg/kg)	20.4	14.8	19.2	13.9	13.9	31.2
14	Ammonia-N (mg/kg)	3.10	2.05	2.95	1.95	1.95	4.6
15	Phosphate (mg/kg)	0.95	0.65	0.88	0.60	0.6	1.6
16	Sulphate (mg/kg)	46.5	38.2	44.8	36.5	30	60.3
17	Calcium (mg/kg)	39.6	32.1	38.2	31.0	24.06	53.8
18	Magnesium (mg/kg)	18.9	15.2	18.1	14.6	11.64	25.5
19	THC (mg/kg)	95.4	70.8	90.2	68.5	68.5	135.8
B	**Heavy Metals (mg/kg)**						
20	Sodium	165.4	142.8	158.9	136.5	100.51	201.8
21	Potassium	4.95	3.88	4.72	3.65	3.05	6.1
22	Iron	11.20	9.45	10.80	9.10	9.1	15.2
23	Copper	0.320	0.245	0.305	0.230	0.23	0.46
24	Cadmium	0.018	0.012	0.016	0.011	0.011	0.028
25	Zinc	1.12	0.86	1.05	0.80	0.8	2.08
26	Lead	0.065	0.048	0.060	0.045	0.045	0.098
27	Mercury	<0.05	<0.05	<0.05	<0.05		
28	Nickel	1.02	0.78	0.95	0.72	0.553	1.45
29	Chromium	0.165	0.125	0.150	0.118	0.118	0.245
30	Arsenic	<0.05	<0.05	<0.05	<0.05		
31	Barium	<0.05	<0.05	<0.05	<0.05		
C	**Microbiology Test (CFU/kg)**						
32	THB	1.20×10^3	0.82×10^3	1.10×10^3	0.75×10^3	0.82×10^3	1.90×10^3
33	THF	3.8×10^1	2.4×10^1	3.5×10^1	2.2×10^1	3.0×10^1	6.5×10^1
34	THUB	0.60×10^2	0.38×10^2	0.55×10^2	0.35×10^2	0.38×10^2	1.09×10^2
35	THUF	0.38×10^1	0.22×10^1	0.35×10^1	0.20×10^1	0.33×10^1	0.68×10^1

Source: *Field study 2025*

Table 4.6: Microbiological characteristics of soil Samples within and around the Project Environment

Sample Code and Coordinates	Depth (cm)	Total Heterotrophic Bacteria (cfu/g)x10^3	Hydrocarbon Utilizing Bacteria (cfu/g) x 10^3	Predominant bacteria Isolate	Total Heterotrophic Fungi (Spore/g)x 10^3	Hydrocarbon Utilizing Fungi (Spore/g)x 10^3	Predominant Fungi Isolates
SS 01 6°26'43.09"N 3°24'26.16"E	0 -15	1.02	0.28	*Acetobacter aciti, Nitrosomonas sp Bacillus cereus, Klebsiellasp, Cytophaga sp, Priteus vulgaris.*	0.65	0.41	*Penicillium notatum, Mucor mucedo, Aspergillus flavus*
	16-35	1.18	0.74		0.51	0.24	
	36-60	1.20	0.78		0.46	0.21	
SS02 6°26'41.44"N 3°24'28.78"E	0 -15	0.16	1.02	*Bacillus megatarium, Xanthomonas fragariae, Bacillus cereus, Micrococcus leteus*	0.10	0.18	*Goratobotrys simplex, Pleurothecium recurvature*
	16-35	1.08	0.25		0.68	0.23	
	36-60	1.5	0.25		0.69	0.28	
SS03 6°26'39.43"N 3°24'29.24"E	0 -15	0.43	0.05	*Rhizobium trifolii, Lkebsiella sp, Bacillus megatarium, Erwinia amylovora*	0.80	0.24	*Streptomyces sp, Paecilomyces sp, Penicillium notatum*
	16-35	0.48	0.10		0.31	0.09	
	36-60	0.52	0.14		0.31	0.09	
SS 04 6°26'40.30"N 3°24'29.94"E	0 -15	2.31	1.76	*Vibrio sp, Disulfotomarculum ruminis, Escherichia coli, Klebiellarhinoscleromalis*	1.14	0.70	*Actinomyces sp, Penicillium notatum,Sporobolomyces sp, Aspergillus oryzae*
	16-35	2.24	0.86		0.90	0.04	
	36-60	2.15	0.43		0.92	0.01	
SS 05 6°26'42.70"N 3°24'28.26"E	0 -15	1.02	0.28	*Rhizobiumleguminasarum,Azobacter Chronoccum*	0.11	0.02	*Penicillium notatum, Neurospora crassa, Chealopsina flua*
	16-35	0.84	0.32		0.23	0.16	
	36-60	0.60	0.22		0.26	0.18	
SS 06 6°26'39.33"N 3°24'31.22"E	0 -15	1.36	0.43	*Proteus vulgauis, Alcaligenes faecalis, Vibrioanguellarium*	0.58	0.02	*Penicillium notatum, Rhodotorula sp, Geotrichum albidum*
	16-35	0.76	0.42		0.12	0.04	
	36-60	0.53	0.42		0.09	0.03	
SS 07 6°26'41.26"N 3°24'27.48"E	0 -15	2.14	0.94	*Proteus vulyaris, Actimomyces sp., Bacillussubtilis, Bacillus cereus*	1.02	1.19	*Mucormucedo, Histoplasma sp., Varicosporium elodeae Penicillium notatum*
	16-35	1.18	0.28		0.65	0.41	
	36-60	0.08	0.24		0.54	0.32	
SS 08 6°26'41.96"N 3°24'26.46"E	0 -15	1.07	0.74	*Vibriosp, Disulfotomarculumruminis, Escherichia coli, Klebiella rhinoscleromalis, Bacillus subtilis*	0.51	0.24	*Actinomycessp, Penicillium notatum,Sporobolomyces sp*
	16-35	1.13	0.69		0.57	0.21	
	36-60	0.08	0.55		0.21	0.19	
SS 09 6°26'40.86"N 3°24'31.03"E	0 -15	1.56	0.35	*Aeromonassp,Stephylococuaureus, Proteus vulgaris, Bacillus cereus*	0.20	0.13	*Astercomycescrucicetus,Pseudotorula heterospora, Saccharomyces, Penicillium notatum*
	16-35	1.20	0.50		0.16	0.02	
	36-60	1.06	0.24		0.07	0.01	
SS 10 6°26'39.95"N 3°24'27.76"E	0 -15	1.40	0.76	*Aeromonas sp,Stephylococus aureus, Proteus vulgaris, Bacillus subtilis*	0.13	0.08	*Mucor mucedo, Histoplasma sp., Penicillium notatum*
	16-35	0.83	0.36		0.18	0.02	
	36-60	0.30	0.24		0.09	0.01	

Table 4.6: Microbiological characteristics of soil Samples within and around the Project Environment Cont'd

Sample Code and Coordinates	Depth (cm)	Total Heterotrophic Bacteria (cfu/g)x10³	Hydrocarbon Utilizing Bacteria (cfu/g) x 10³	Predominant bacteria Isolate	Total Heterotrophic Fungi (Spore/g)x 10³	Hydrocarbon Utilizing Fungi (Spore/g)x 10³	Predominant Fungi Isolates
	0 -15	1.02	0.28		0.11	0.02	
	16-35	0.84	0.32		0.23	0.16	
	36-60	0.60	0.22		0.26	0.18	
	0 -15	1.56	0.35		0.20	0.13	
	16-35	1.20	0.50		0.16	0.02	
	36-60	1.06	0.24		0.07	0.01	
	0 -15	2.14	0.94		1.02	1.19	
	16-35	1.18	0.28		0.65	0.41	
	36-60	0.08	0.24		0.54	0.32	
CNTRL 1 6°26'40.55"N 3°24'32.77"E	0 -15	1.36	0.43	*Proteus vulgauis, Alcaligenes faecalis, Vibrio anguellarium*	0.58	0.02	*Penicillium notatum, Mucor mucedo, Aspergillus flavus*
	16-35	0.76	0.42		0.12	0.04	
	36-60	0.53	0.42		0.09	0.03	
CNTRL 2 6°26'40.55"N 3°24'32.77"E	0 -15	1.40	0.76	*Aeromonas sp,Stephylococus aureus, Proteus vulgaris, Bacillus subtilis*	0.13	0.08	*Actinomyces sp, Penicillium notatum, Sporobolomyces sp, Aspergillus oryzae*
	16-35	0.83	0.36		0.18	0.02	
	36-60	0.30	0.24		0.09	0.01	
SS Cntrl3	0 -15	1.56	0.35	*Aeromonas sp, Stephylococu aureus, roteus vulgaris, Bacillus cereus*	0.20	0.13	*Mucor mucedo, Histoplasma sp., Varicosporium elodeae Penicillium notatum*
	16-35	1.20	0.50		0.16	0.02	
	36-60	1.06	0.24		0.07	0.01	

Source: Field study 2025

4.4.6 Groundwater Study of the Project Environment

The proposed Medipark project shall be developed within an urbanized and highly built-up district in Ikoyi, Lagos State. Underlain predominantly by alluvial sediments and coastal sands associated with the Lagos Lagoon environment, Groundwater in this part of Ikoyi is typically shallow to moderately deep, with water table levels influenced by tidal variations, precipitation, and seasonal fluctuations. The area falls within the Lagos coastal aquifer system, which is generally recharged by rainfall infiltration, minor runoff from urban surfaces, and lateral flow from adjacent lagoon-connected sediments. Due to the high density of impervious surfaces, including paved roads, residential and commercial developments, and limited green spaces, groundwater recharge within the proposed project vicinity is constrained. This urban setting reduces natural infiltration, resulting in localized water table fluctuations during heavy rains and seasonal flooding. Groundwater in this area is typically fresh to slightly brackish, reflecting both tidal influence from the Lagos Lagoon and interaction with underlying marine sediments. Hydrogeological data from nearby areas indicate that groundwater occurs at depths ranging from 3 m to 10 m below ground level, though site-specific variations may exist. The quality of groundwater in Ikoyi is influenced by urban factors such as sewage discharge, stormwater runoff, and localized human activity, rather than agricultural or industrial contamination, which is minimal in this upscale district.

4.4.6.1 Groundwater Assessment

Groundwater assessment was carried out in the course of this study to evaluate the quality and suitability of subsurface water in the area. Following standard procedures recommended for Environmental and Social Impact Assessment (ESIA) studies, two groundwater samples were collected: one from a nearby borehole and another from a hand-dug well within the vicinity of the site. Prior to sampling, all equipment was properly decontaminated, and samples were collected in pre-cleaned, sterilized containers, labeled, and stored under controlled conditions to prevent contamination or degradation.

Field measurements of temperature, pH, electrical conductivity, turbidity, and dissolved oxygen were recorded in situ using calibrated portable instruments. The collected samples were transported under ice-cold conditions to an accredited laboratory, where they were analyzed for a comprehensive suite of parameters, including physical, chemical, and microbiological indicators, in accordance with WHO (2017) and Nigerian Standard for Drinking Water Quality (NSDWQ, 2007) guidelines.

4.4.6.2 Interpretation of Groundwater Samples collected from the Proposed Project Area

Groundwater quality assessment was carried out using samples collected from two representative sources within the study area, comprising a borehole (GW 01) and a hand-dug well (GW 02). The results were evaluated against the World Health Organization (WHO) drinking water guidelines and the Federal Ministry of Environment (FMEnv) standards to determine suitability for domestic use and to establish baseline conditions prior to project implementation.

Physico-Chemical Characteristics

The pH values recorded for the groundwater samples ranged from 7.5 to 7.8, indicating neutral to slightly alkaline conditions. These values fall within the acceptable limits of both WHO and FMEnv standards (6.5–8.5), suggesting that the groundwater is chemically stable and not corrosive, which is favourable for domestic use and pipeline infrastructure.

Electrical conductivity values ranged between 910 and 942 μS/cm, remaining below the regulatory thresholds of WHO (1,500 μS/cm) and FMEnv (1,000 μS/cm). This indicates moderate mineralization of the groundwater, likely influenced by the local geology rather than anthropogenic activities.

Turbidity values of 7.0–8.1 NTU exceeded the recommended WHO and FMEnv limit of 5 NTU. Elevated turbidity may be attributed to fine suspended particles, particularly in the hand-dug well, and may affect the aesthetic quality of the water as well as interfere with disinfection processes if not treated.

Total dissolved solids (TDS) concentrations ranged from 451 to 472 mg/L, which are within permissible limits and indicate acceptable palatability. Similarly, total hardness values (101–106 mg/L) fall well below the WHO and FMEnv thresholds, classifying the groundwater as moderately soft, which reduces the likelihood of scaling and pipe clogging.

Nitrate concentrations (39.4–40.2 mg/L) were below the guideline value of 50 mg/L, suggesting limited influence from agricultural runoff or sewage contamination. Sulphate and chloride levels were also low and within acceptable limits, further confirming the absence of saline intrusion or industrial pollution.

Dissolved oxygen (DO) values ranged from 3.6 to 3.7 mg/L, which are below the WHO guideline value of 5 mg/L. While low DO is common in groundwater systems due to limited atmospheric interaction, it may indicate reduced natural aeration rather than contamination.

Biochemical oxygen demand (BOD) values (3.1–3.2 mg/L) were within acceptable limits, suggesting low levels of biodegradable organic matter.

Heavy Metals

Iron concentrations ranged from 0.72 to 0.85 mg/L, exceeding the WHO guideline value of 0.3 mg/L but remaining within FMEnv limits. Elevated iron levels are common in groundwater environments and are typically of geogenic origin. Although iron does not pose significant health risks at these concentrations, it may cause staining, taste issues, and aesthetic concerns.

Manganese concentrations (1.82–2.05 mg/L) exceeded both WHO and FMEnv guideline limits, indicating potential long-term health concerns if consumed untreated. Elevated manganese is often associated with reducing groundwater conditions and local geological formations.

Other heavy metals such as lead, cadmium, zinc, and copper were either below detection limits or well within permissible standards, indicating no evidence of toxic metal contamination from anthropogenic sources.

Microbiological Quality

Microbiological analysis revealed high total plate counts (1.5×10^3 – 1.8×10^3 CFU/ml), exceeding WHO and FMEnv standards, which require negligible bacterial presence. Similarly, total coliform counts ranged from 1.1×10^2 to 1.5×10^2 CFU/100 ml, indicating possible contamination from surface infiltration or inadequate protection of water sources.

However, Escherichia coli was not detected in any of the samples, suggesting the absence of recent faecal contamination. Nonetheless, the presence of coliform bacteria implies that the groundwater sources are microbiologically unsafe for direct consumption without treatment.



Plate 4.6: Photograph of ground water Sampling and labeling

Table 4.7: Physico-Chemical Analysis of Ground Water Samples

S/N	PARAMETERS	WHO Standard	FMEnv Standard	GW 01 (Borehole) 6°26'38.52"N 3°24'32.25"E	GW 02 (Hand Dug Well) 6°26'40.55"N 3°24'32.77"E	Min	Max
A	**PHYSICO-CHEMICAL TEST**						
1	pH	6.5–8.5	6.5-8.5	7.8	7.5	7.5	7.8
2	Conductivity (µS/cm)	1,500	1,000	942	910	910	942
3	Turbidity (NTU)	≤5	5	8.1	7.0	7.0	8.1
4	TDS (mg/L)	≤500	500	472	451	451	472
5	Total Hardness (mg/L)	500	200	106	101	101	106
6	Nitrate (mg/L)	50	50	40.2	39.4	39.4	40.2
7	Sulphate (mg/L)	250	500	32	31	31	32
8	Chloride (mg/L)	250	250	41	39	39	41
9	DO (mg/L)	≥5 (guide)	7.5	3.7	3.6	3.6	3.7
10	BOD (mg/L)	≤5		3.1	3.2	3.1	3.2
B	**Heavy Metals**						
11	Iron	0.3	1.0	0.72	0.85	0.72	0.85
12	Lead	0.01	0.05	<0.01	<0.01	-	-
13	Zinc	3.0	5.0	0.54	0.61	0.54	0.61
14	Copper	2.0	0.1	0.43	0.49	0.43	0.49
15	Manganese	0.4	0.05	1.82	2.05	1.82	2.05
16	Cadmium	0.003	0.01	<0.01	<0.01	-	-
C	**Microbiology**						
17	Total Plate Count (CFU/ml)	$\leq 1.0 \times 10^2$	Nil	1.8×10^3	1.5×10^3	1.5×10^3	1.8×10^3
18	Total Coliform (CFU/100ml)	0	Nil	1.5×10^2	1.1×10^2	1.1×10^2	1.5×10^2
19	E. coli	0	Nil	ND	ND	ND	ND

Source: *Lagos Medipark Field study, 2025*

4.4.7 Surface Water Study of the Project Environment

The proposed project area at Ikoyi is drained by the Lagos Lagoon, which lies approximately 150 meters south of the site and eventually flows into the Atlantic Ocean. The Lagoon, as reported by the local neighborhood, is utilized for various purposes, including fishing, recreational activities, and transportation. Understanding the surface water hydrology is essential to assess the movement of potential pollutants from the proposed project via runoff and their interaction with the Lagoon.

The Lagoon is the main inland water body within the project vicinity, exhibiting a perennial flow with a reported flow rate of 0.56 m/s and a seasonal flooding regime affecting parts of Ikoyi. It is navigable throughout the year, making it an important feature for both local transport and ecological connectivity. Any discharge into the Lagoon has the potential to significantly affect water quality, as pollutant inputs can lead to contamination and adversely impact aquatic ecosystems.

The surface of the Lagoon is often covered by water hyacinth, while its banks are characterized by freshwater swamp and evergreen vegetation throughout the year. Plant species commonly observed include raffia palm, Musa species, ferns, and grasses, contributing to the ecological diversity of the Lagoon's immediate environment. As part of the baseline study, water and sediment samples were collected at six (6) points along the Lagoon at 500-meter intervals to evaluate water quality and sediment characteristics (see Plate 4.3 for sampling locations and in-situ measurement activities). The results of these analyses are presented in Table 4.4, providing essential data for assessing potential impacts from the project.

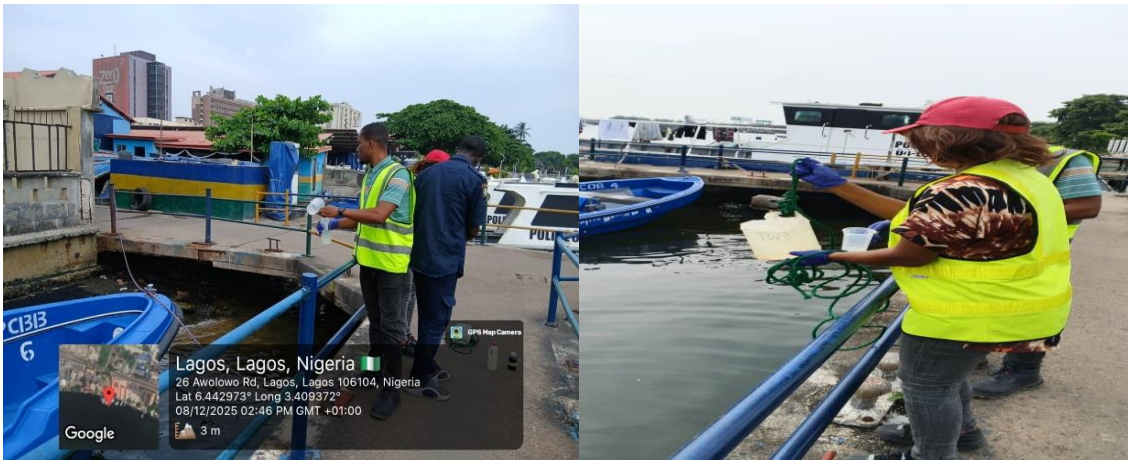


Plate 4.6: Surface water (Lagos Lagoon) sampling and in-situ measurement

4.4.7.1 Surface Water Assessment

The Lagoon, as part of this ESIA study was assessed. The assessment followed standard scientific procedures approved for ESIA studies, ensuring systematic evaluation of water quality, aquatic life, and fisheries resources. Field sampling, laboratory analyses, and ecological surveys were conducted to provide baseline environmental data and inform potential impacts from proposed development activities.

4.4.7.1-1 Physico-Chemical and Microbiological Analyses

Surface water samples were collected from multiple strategic points along the lagoon shoreline near Ikoyi. Sampling was conducted in accordance with standard protocols for ESIA water quality assessments. The following analyses were performed:

- **Physico-Chemical Parameters:** Temperature, pH, dissolved oxygen (DO), turbidity, conductivity, total suspended solids (TSS), biochemical oxygen demand (BOD), chemical oxygen demand (COD), nutrients (nitrate, phosphate, ammonia), and heavy metals (e.g., lead, cadmium, mercury).

- **Microbiological Parameters:** Total coliforms, fecal coliforms, Escherichia coli (E. coli) counts to assess water sanitation and potential health risks.

Interpretation of Results of Water Sampls Collected from the Lagoon

The pH values at 25°C range from 7.5 to 7.8, with most around 7.6–7.8. Neutral to slightly alkaline water. This is generally acceptable for drinking water (pH 6.5–8.5 is often acceptable) Conductivity values ranges from 27,600 to 29,500 μS/cm. Moderate to high ionic content. Could reflect salinity or total dissolved solids.

Turbidity value obtained for samples analyzed ranged from 1.8 to 2.6 NTU which is lower than the FMEnv recommended value of 5.00 NTU.

Total Suspended Solids (TSS) (Row 4) 295 to 335 mg/L. The high TSS values suggest noticeable particulates; may indicate sediment, biofouling, or recent disturbance.

Total Dissolved Solids 13,700 to 14,900 mg/L. The very high TDS is well above typical drinking-water. This suggests highly saline or mineral-rich water; may require treatment or use as non-potable water. values ranged from

Salinity values ranged from 14.8 to 16.7 ppt. The very saline water (sea-water like in the 30–35 ppt range, but here lower). Still high salinity; may be unsuitable for drinking without desalination.

Alkalinity values ranged from 350–395 mg/L High alkalinity, which can buffer pH changes. With pH around 7.5–7.8, this seems consistent; but high alkalinity can complicate coagulation and water treatment chemistry.

Dissolved oxygen values ranged from 3.9–4.6 mg/L. Moderate DO. Not extremely high; acceptable for many surface-water contexts but depends on ecological/industrial requirements.

Biochemical oxygen demand (BOD) values ranged from 245.9 to 290.3 mg/L. High BOD, indicating substantial organic pollution or high biodegradable material. This is a red flag for water quality, potential odor, and treatment burden.

Chemical oxygen demand values ranged from 2,600 to 3,050 mg/L. Also very high, confirming substantial organic load. Often COD > BOD indicates oxidizable material beyond what bacteria can degrade quickly; still suggests polluted/wastewater-influenced water.

Total Hardness values ranged from 100.0 to 175.0 mg/L. Moderate hardness; not extreme.

Chloride values ranged from 560–640 mg/L. High chloride content; may contribute to taste concerns and corrosion. Correlates with high salinity readings.

Nitrate values ranged from 50.1 to 59.6 mg/L. Elevated nitrate. This can be a health concern (especially for drinking water, affecting infants). Many standards set maximum contaminant level around 50 mg/L as nitrate-nitrogen or 10 mg/L as nitrate-nitrogen depending on units; confirm units and standards. Values near or above 50 mg/L warrant attention.

Phosphate values ranged from 1.89 to 3.42 mg/L. Elevated phosphate; could indicate wastewater inputs or fertilizer runoff. Can contribute to eutrophication downstream.

Sulphate values ranged from 315 to 365 mg/L. High sulfate; can affect taste and has health considerations at very high levels. Correlates with high TDS.

Ammonia-N values ranged from 11.2 to 14.5 mg/L. Elevated ammonia, suggesting degradation of organic matter or recent waste input; can contribute to odor and nitrification issues.

Calcium values ranged from 5.49 to 51.32 mg/L Moderate magnesium; consistent with hardness values.

Heavy Metals

Sodium and Potassium values around several hundred mg/L for Na and ~20–25 mg/L for K. Elevated sodium may be a concern for drinking water in terms of taste and health guidelines for sodium intake. Potassium is low-to-moderate.

Iron values ranged from 0.56 to 0.71 mg/L. Reasonable iron levels; can cause staining and taste at higher concentrations. Lead value is <0.01 mg/L across all samples implying below detection/very low; good for health concerns. Zinc values ranged from 1.48 to 1.82 mg/L. Moderate zinc; usually not a health hazard but can affect taste. Copper values ranged from 0.82 to 1.02 mg/L

Elevated copper relative to some drinking-water guidelines (often 1 mg/L or 1.3 mg/L depending on standard). A concern for taste and copper pipe corrosion implications. Cadmium, Chromium are <0.001 mg/L across all; very low/non-detect. Manganese values ranged from 1.31 to 1.62 mg/L Elevated manganese can cause staining and taste issues; often regulated at much lower levels for drinking water. Nickel values ranged from 0.22 to 0.30 mg/L. Higher nickel levels than typical drinking-water guidelines; may require treatment.

Microbiology (CFU/ml)

Total Plate Count values ranged from 1.5×10^3 to 2.0×10^3 CFU/mL. Elevated background microflora; could indicate poor hygiene of sample handling or contamination, or ingress from contamination sources. Total Coliform values ranged from 2.9×10^2 to 4.3×10^2 CFU/mL. Presence of total coliforms is a red flag, indicating possible contamination or leakage pathways. Notably, E. coli is listed as ND (not detected) in all samples, which is good, but the total coliforms presence still requires investigation. E. coli values ranged from ND across all samples. No detectable E. coli, which is positive for fecal contamination risk assessment.

Table 4.8: Physico-Chemical Analysis of Water Samples from Lagos Lagoon

S/N	PARAMETERS	WHO Standard	S W 01	S W 02	S W 03	S W 04	S W 05	S W 06	Min	Max
A	PHYSICO-CHEMICAL TEST		6°26'32.14"N 3°24'20.05"E	6°26'31.53"N 3°24'27.28"E	6°26'29.87"N 3°24'34.46"E	6°26'25.43"N 3°24'40.47"E	6°26'23.40"N 3°24'46.02"E	6°26'17.78"N 3°24'49.07"E		
1	pH @ 25^{0}C	6.5–8.5	7.7	7.6	7.8	7.5	7.7	7.6	7.5	7.8
2	Conductivity (µs/cm)	1,500	27,800	29,200	28,900	27,600	29,500	28,200	27600	29500
3	Turbidity (NTU)	≤5	1.9	2.4	2.2	1.8	2.6	2.0	1.8	2.6
4	TSS (mg/L)	≤30*	295	325	315	300	335	305	295	335
5	TDS (mg/L)	≤500	13,850	14,600	14,450	13,700	14,900	14,050	13700	14900
6	Salinity (ppt)	≤0.5	15.1	16.3	15.9	14.8	16.7	15.4	15	17
7	Alkalinity (mg/L)	≤200	355	385	375	350	395	360	350	395
8	DO (mg/L)	≥5	4.0	4.5	4.3	3.9	4.6	4.1	3.9	4.6
9	BOD (mg/L)	≤5	250.4	280.1	270.6	245.9	290.3	255.7	246	290
10	COD (mg/L)	≤50	2,650	2,950	2,850	2,600	3,050	2,700	2600	3050
11	Total Hardness (mg/L)		165.0	100.0	175.0	148.2	167.4	1.53.2	100	175
12	Chloride (mg/L)	250	570	625	605	560	640	585	560	640
13	Nitrate (mg/L)	50	54.0	51.8	57.2	55.4	50.1	59.6	50.1	59.6
14	Phosphate (mg/L)		2.09	3.42	1.89	2.42	3.39	2.92	1.89	3.42
15	Sulphate (mg/L)	250	320	350	340	315	365	325	320	365
16	Ammonia-Nitrogen (mg/L)	0.5	12.9	11.8	13.7	13.1	11.2	14.5	11.2	14.5

17	Calcium (mg/L)	-	39.07	40.04	48.07	47.30	51.32	55.49	39.07	55.49
18	Magnesium (mg/L)	0.4	15.96	19.68	17.96	21.63	17.82	22.46	15.96	22.46
B	**Heavy Metals (mg/L)**									
19	Sodium	200	780	750	820	790	740	850	740	850
20	Potassium	50	23.1	21.9	24.5	23.8	21.4	25.2	21.4	25.2
21	Iron	0.3	0.63	0.59	0.68	0.65	0.56	0.71	0.56	0.71
22	Lead	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
23	Zinc	3.0	1.61	1.52	1.75	1.66	1.48	1.82	1.48	1.82
24	Copper	2.0	0.89	0.84	0.95	0.91	0.82	1.02	0.82	1.02
25	Cadmium	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
26	Chromium	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
27	Manganese	0.4	1.42	1.36	1.55	1.48	1.31	1.62	1.31	1.62
28	Nickel	0.07	0.25	0.23	0.28	0.26	0.22	0.30	0.22	0.30
C	**Microbiology Test (CFU/ml)**									
29	Total Plate Count		1.7×10^3	1.6×10^3	1.9×10^3	1.8×10^3	1.5×10^3	2.0×10^3	$1.5X10^4$	$2.0X10^3$
30	Total Coliform		3.5×10^2	3.1×10^2	4.0×10^2	3.8×10^2	2.9×10^2	4.3×10^2	$3.1X10^2$	$4.3X10^2$
31	E.coil		ND	ND	ND	ND	ND	ND		

Source: Lagos Medipark Field study, 2025

Table 4.9: Microbiological Characteristics of Water Samples from Lagos Lagoon

Sampling Station	Total Heterotrophic Bacteria (cfu/ml)x 10^3	Coliform Count (MPN/100ml) x 10^3	Hydrocarbon Utilizing Bacteria (cfu/ml) x 10^3	Predominant Bacteria Isolates	Total Heterotrophic Fungi (Spore/ml)x 10^2	Hydrocarbon Utilising Fungi (Spore/ml)x 10^2	Predominant Fungi Isolates
MMGSW01	8.10	6.90	3.59	*Bacillus cereus Aeromonas sp. Proteus morganii*	2.2	1.3	Mucomucedo, Aspergillusniger.
MMGSW2	9.42	9.31	4.50	*Micrococcus luteus, Nitrosomonacuropoca,Pseudomonas syringae*	2.1	1.2	*Aspergillus*niger, *Penicillium*sp.
MMGSW3	7.21	9.85	5.54	*Pseudomonas syringae,Methanobacteriumsoehgenii*	1.6	1.2	*Penicillium*sp. *Aspergillus*niger
MMGSW04	8.11	8.28	3.48	*Planococcuscitreus,Aeromonashydrophila,Citrobacterfreudii*	1.1	0.3	*Penicillium*sp., Yeasts
MMGSW05	6.75	6.94	4.30	*Citrobacterfreudii,Alcoligenesfeacalis*	2.4	1.2	*Penicillium*sp.*Passaloraba cillizera*
MMGSW06	8.95	6.66	3.15	*Escherichiacoli,Thiocapsapfennigii.*	2.3	1.2	*Aspergillus*niger, *Penicillium*sp.

Source: Labstaff Nigeria Limited Field Study 2025

Table 4.10: Physico-Chemical Analysis of Sediment Samples from Lagos Lagoon

Parameters	Units	MMGSW01 6°26'32.14"N 3°24'20.05"E	MMGSW02 6°26'31.53"N 3°24'27.28"E	MMGSW03 6°26'29.87"N 3°24'34.46"E	MMGSW04 6°26'25.43" N3°24'40.47"E	MMGSW05 6°26'23.40"N 3°24'46.02"E	MMGSW06 6°26'17.78"N 3°24'49.07"E	Min	Max
pH		4.40	4.61	5.19	5.12	4.54	5.19	4.40	5.19
EC	µS/cm	1500	1550	1340	1404	1531	1341	1340	1550
Org. C	mgkg^{-1}	5.5	5.5	5.4	4.6	5.5	4.2	4.3	5.5
Total N.	mgkg^{-1}	0.31	0.55	0.38	0.80	0.72	0.58	0.31	0.72
Na	cmolkg^{-1}	9.49	8.63	10.51	9.32	6.82	9.53	6.82	10.51
K	"	3.4	3.19	5.34	3.45	2.90	3.12	2.90	5.34
Ca	"	5.50	9.11	4.82	4.61	3.15	4.87	3.15	9.11
Mg	"	3.93	2.02	4.10	3.18	3.06	4.22	2.01	4.22
Cl^-	mg/kg	98.23	92.50	99.58	95.45	98.74	93.10	92.50	99.58
PO_4^{3-}	"	0.6	0.9	0.5	0.8	0.4	0.6	0.4	0.9
Totol N	"	0.3	0.5	0.6	0.4	0.6	0.5	0.3	0.6
SO_4	"	28.6	30.2	20.0	23.7	24.9	27.3	20.0	30.2
Silt	%	23.8	19.2	13.6	13.6	20.5	19.4	13.6	23.8
Clay	"	2.4	3.8	1.6	3.4	1.9	2.6	1.6	3.8
Sand	"	79.5	81.1	88.6	82.8	84.6	80.1	80.1	88.6
THC	mg/kg	3.2	9.5	4.8	4.6	2.9	3.4	2.9	9.5
Fe	mg/kg	152.4	133.7	104.2	132.4	116.0	129.5	104.2	152.4
Cu	"	2.3	1.3	0.5	0.2	0.9	0.7	0.2	2.3
Mn	"	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Zn	"	14.5	14.6	11.4	13.7	10.0	9.4	9.4	14.6
Cd	"	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Cr	"	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Pb	"	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Ni	"	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
V	"	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Hg	"	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Ba	"	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Source: Labstaff Nigeria Limited Field Study 2025

Table 4.11: Microbiological characteristics of sediment samples

Sampling Station	Total Heterotrophic Bacteria (cfu/ml) x10^4	Hydrocarbon Utilising Bacteria (cfu/ml) x 10^4	Total Heterotrophic Fungi (Spore/ml) x 10^2	Hydrocarbon Utilising Fungi (Spore/ml)x 10^2	Predominant Bacteria Isolates	Predominant Fungi Isolates
MMGSW01 6°26'32.14"N 3°24'20.05"E	0.83	0.36	0.30	0.01	*Bacillus cereus Aeromonas sp. Proteus morganii*	*Aspergillussp, Penicilliumsp*
MMGSW01 6°26'32.14"N 3°24'20.05"E	1.04	0.95	0.2	0.01	*Micrococculuteus, Nitrosomona curopoca, Pseudomonas syringae*	*Aspergillussp, Penicilliumsp*
MMGSW01 6°26'32.14"N 3°24'20.05"E	1.15	1.13	0.15	0.02	*Pseudomonas syringae, Methanobacteriumsoehgenii*	*Aspergillussp, Penicilliumsp*
MMGSW01 6°26'32.14"N 3°24'20.05"E	0.64	0.05	0.2	0.01	*Pseudomonas sp, Aeromonashydrophila, Citrobacterfreudii*	*Aspergillussp, Penicilliumsp*
MMGSW01 6°26'32.14"N 3°24'20.05"E	0.45	0.75	0.02	0.01	*Pseudomonas sp, Alcoligenesfeacalis*	*Aspergillussp, Penicilliumsp*
MMGSW01 6°26'32.14"N 3°24'20.05"E	0.85	0.65	0.02	0.02	*Escherichia coli, Pseudomonas sp,*	*Aspergillussp, Penicilliumsp*

Source: Lagos Medipark Field study, 2025

4.4.7.2 Aquatic Organisms

The aquatic ecosystem of the Lagos Lagoon near Awolowo Road, Ikoyi, was assessed to evaluate biodiversity and ecological health. The study focused on phytoplanktons, zooplanktons, and macro-invertebrates, which serve as important bioindicators of water quality and environmental pressures.

4.4.7.2-1 Phytoplankton

The distribution and abundance of phytoplankton communities sampled from the water body are presented in Tables 4.12. The dominant groups are represented by their relative abundance and distribution. Diatoms represented by *Coscinodisscussp* and *Microspora* sp. are the most dominant taxonomic group. Other species of the *diatoms* occur in patchy forms. The Green Algae occurs as the second most dominant taxonomic group and represented by *Spirogyrasp* as the most dominant species. The Blue – Green Algae occurs as the third most dominant groups and represented by *Oscillatoria, Anabaena* and *Spirulinaspp* Desmid occur in patchy units and represented by *Closterium, Cosmarium* and *Xanthidiumspp*.

The presence of these phytoplankton organisms indicates the rich species diversity of the creek. The phytoplankton are the first trophic level in the food chain, consequently their presence also support rich zooplankton communities.

Table 4.12: Distribution and Abundance of Phytoplankton Communities

S/N	SAMPLE LOCATIONS	MMSW01	MMSW02	MMSW03	MMSW04	MMSW05	MMSW06
Blue Green Algae							
1.	*Oscillatoria SP.*	-	3	7	8	4	5
2.	*Anabaena SP.*	1	4	2	4	1	2
3.	*Spiruliria SP.*	2	1	-	3	3	1
	Green algae.						
4.	*Protococcus SP.*	2	1	14	10	6	4
5.	*Spirogyra SP.*	6	5	8	4	3	5
6.	*Tetraspora SP.*	-	2	-	4	-	-
7.	*Volvox SP.*	-	-	3		-	-
8.	*Ulothrix SP.*	-	1	-	-	-	-
9.	*Euglena SP.*	-	3	4	4	-	-
10.	*Eudorina SP.*	-	2	4	-	-	-
	Desmid						
11.	*Closterium SP.*	-	1	2	-	1	1
12.	*Cosmarium SP.*	-	1	1	-	1	-
13.	*Xanthidium SP.*	-	-	-	-	-	-

	Diatoms						
14.	*Navivla SP.*	-	1	4	-	-	1
15.	*Melosira SP.*	1	-	-	3	-	-
16.	*Coscinodisscus SP.*	10	26	20	23	5	9
17.	*Cyrosigma SP.*	1	1	-	4	-	-
18.	*Perium SP.*	-	9	10	-	1	-
19.	*Microspora SP.*	2	11	18	10	2	7
20.	*Asterionella SP.*	-	2	4	6	1	3
21.	*Tabellaria SP.*	-	5	-	7	2	1
22.	*Biddulphia SP.*	-	1	-	3	-	-
23.	*Thalasiothrix SP.*	-	-	3	8	-	2
24.	*Eunotia SP.*	-	3	10	4	2	-

Source: Lagos Medipark Field study, 2025

4.4.7.2-2 Zooplankton Community

The distribution and abundance of zooplankton species sampled from the water body are presented in Tables 4.13. The zooplankton communities are represented by *Protozoa*, *Cladocera, Ostracoda, Copepode*, larvals forms and fish larvae. Their presence is supported by the rich nutrients and abundant phyto-plankton communities recorded.

Table 4.13: Distribution and Abundance of Zooplankton Communities

S/N	Sample Locations	MMSW01	MMSW02	MMSW03	MMSW04	MMSW05	MMSW06
	Protozoa						
1.	*Phacus SP.*	4	3	2	1	1	2
2.	*Globigenria SP.*	-	-	3	1	-	1
3.	*Tintinoipisi SP.*	8	-	1	4	-	-
	Cladocera						
4.	*Ceriodaphnia SP.*	-	-	-	1	1	-
5.	*OstracodaBosmina*	-	1	1	-	-	1
6.	*CopepodaAcartia SP.*	4	5	3	6	1	2
7.	*Paracalanus SP.*	2	4	1	3	1	4
8.	*Mesocyclops SP.*	2	-	1	-	2	1
9.	*Thermocyclops.*	-	-	2	1	1	1
10.	*Harpacticoid SP.*	-	-	1	-	-	2
11.	Nauplius Larval.	2	7	1	8	3	1
12.	Zooea.	2	-	3	-	-	-
13.	Megalopa Larval	-	2	-	2	-	1
14.	*Copepodid.*	4	-	1	-	1	2

Source: Lagos Medipark Field study, 2025

4.4.7.2-3 Macro-invertebrates

Benthic macro-invertebrates are those organisms which are over 1.0 mm in size, living on or in the substrate. They may be in-fauna (living wholly or partially buried in soft or hard substrates e.g. bottom dwelling *annelids*, *chironomids* and bivalve *molluscs*), or epifauna (living on the surface, either, crawling as mobile benthic inhabitants or attached to different types of substrates. These organisms are economically and ecologically important. They have been used as bio-indicators in pollution/impact assessment studies. The *Annelida*, *Arthropoda* (*Decapoda* and *Insecta*) and Mollusca constitute majority of the benthic macro-invertebrates of water environment.

In this study, 28 benthic macro-invertebrate taxa belonging to the Crustacea (13), Mollusca (6), Annelida (4) and Insecta (5)) were recorded (Table 4.14). Of these, the Crustacea, mainly represented by the decapods, constituted 65% of the total benthic taxa encountered. This was followed by the Mollusca (18%) during the wet season.

Table 4.14: Macro-invertebrates Species composition

Group	Species of Wet and dry Seasons	Common Name
Arthropoda		
Crustacea	*Alpheus pontederiae*	Snapping shrimp
	*Balanus*sp	
	Callinectesamnicola	Swimming crab
	Cardisomaarmatum	Rainbow crab
	*Clibanarius*sp	Hermit Crab
	Sesarmaelegans	Mangrove crabs
	Sesamahuzardi	Mangrove crabs
	Sesarmaalberti	Mangrove crabs
	Ucatangeri	Fiddler crab
Mollusca		
Gastropoda	*Littorina*sp	
	Tympanotonusfuscatus	Mud-flat Periwinkle
Bivalvia	*Crassostreagasar*	Oysters
Annelida: *Polychaeta*	*Capitella*sp	
	Nereispelagica	
	Notomastusaberans	
	Eiseniella tetrahedral	
Insecta	*Baetis*sp	Mayfly Larva
	*Coenagrion*sp	Dragonfly Larva
	*Chironomus*sp	
	*Libellula*sp	
	*Tubifex*sp	

Source: Lagos Medipark Field study, 2025

4.4.7.3 Fisheries

The fisheries resources within the broader Ikoyi environment are primarily associated with the Lagos Lagoon, which forms the nearest significant water body to the project area. Although Ikoyi itself is a highly urbanized district with minimal direct fishing activity, the lagoon supports a small-scale artisanal fishery operated mainly by communities located outside Ikoyi such as Makoko, Ilaje, Oworonshoki, and parts of Lagos Island. These communities depend on the lagoon for subsistence and commercial fishing, and their activities contribute to the local supply of fresh fish within Lagos State. The Lagos Lagoon is known to host diverse fish species, including mullets (*Mugil spp*), tilapia (*Tilapia guineensis*), catfish (*Chrysichthys spp*), clupeids (shrimps and small pelagic species), and some estuarine/brackish-water species adapted to the lagoon's fluctuating salinity. Shellfish such as prawns and periwinkles are also commonly harvested in areas where suitable substrates exist. Seasonal variations in salinity driven by rainfall, tidal influence, and river inflow play a significant role in the distribution and abundance of these species.

Fishing activities are typically carried out using canoes, small engine-powered boats, cast nets, longlines, and basket traps. Although Ikoyi is not a fishing hub, the lagoon adjacent to it serves as part of the wider fishing grounds for lagoon-based fishermen who navigate through various sections of the lagoon system. Fish landing does not occur within Ikoyi; instead, landings are concentrated in designated markets and landing sites outside the district.

Given the urban nature of Ikoyi and the proposed Medipark development, no direct interaction with fisheries activities is expected. However, maintaining good water quality in the Lagos Lagoon remains important, as pollution from urban runoff, domestic wastewater, and dredging activities in other parts of Lagos has historically affected fish abundance and breeding conditions. Ensuring that the proposed project does not contribute to surface runoff contamination will support the ecological integrity of the lagoon and its. fisheries. Table 4.15 shows A list of Fin and Shell Fish from the study area

Table 4.15 List of Some Fin and Shell Fish from the study area

Family	Scientific	Common Name
Fin Fishes		
Cichlidae	*Tilapia Zilli*	Tilapia
Clupeidae	*Ethmalosafimbriata*	Bonga
Mugilidae	*Liza falcipinnis*	Mullets
Sciaenidae	*Pseudotolithussenegalensis*	Croaker

Lutjanidae	*Lutjanusdentatus*	Snapper
Polynemidae	*Galeodesdecadactylus*	Shiny nose
Trichiuridae	*Trichiuruslepturus*	cutlass fish
Sphyraenidae	*Sphyraena barracuda*	Barracuda
Pomadasyidae	*Pristipomajubeleni*	Grunts
Eleotridae	*Bostrycgusafricanus*	Goby/sleeper fish
Bagridae	*Chrysicththyssp*	Catfish
Ariidae	*Arius sp*	Sea catfish
Shell Fishes		
Potamididae	*Tympanotonusfuscatus*	Periwinkle
Thiaridae	*Pachymelaniaaurita*	
Portunidae	*Callinectesamnicola*	
Palaemonidae	*Macrobrachiumvollenhovenii*	
Penaeidae	*Panaeussp*	
Gecarcinidae	*Cardiosomaarmatum*	Amphibious land crab

Source: Field study 2025

In conclusion, both the lagoon and the proposed Medipark Hospital has the potential to impact on themselves. The proposed Medipark Hospital, located approximately 150 m north of Lagos Lagoon, has the potential to impact the lagoon's ecological and water quality conditions. Construction activities, including land clearing, excavation, and increased impervious surfaces, could result in sediment runoff, nutrient loading, and localized pollution entering the lagoon. Additionally, changes in stormwater drainage patterns may alter surface water flow, potentially affecting aquatic habitats, benthic organisms, and the diversity of phytoplankton and zooplankton communities. Proper mitigation measures such as sediment control, buffer zones, and stormwater management will be essential to minimize any adverse effects on the lagoon ecosystem.

Conversely, the Lagoon may also influence the proposed hospital development due to its proximity. Being only 150 m from the shoreline, the site could be affected by flooding during high tides or heavy rainfall events, especially in low-lying areas, as well as by potential surface water contamination from urban runoff. The lagoon's microclimatic conditions, including humidity and cooling effects, may affect building design and site planning. Therefore, flood control measures, proper drainage systems, and ongoing environmental monitoring are recommended to ensure the hospital development remains resilient while preserving the ecological integrity of the adjacent lagoon.

4.4.8 Vegetation Study of the Proposed Project Area

The proposed Medipark project site in Ikoyi falls within a highly urbanized coastal environment characterized by reclaimed land, landscaped greens, and patches of secondary vegetation typical of the Lagos Island–Ikoyi corridor. Unlike the broader coastal belt of Lagos State, true mangrove forests and natural swamp forests are largely absent in Ikoyi due to decades of land reclamation, infrastructure development, and continuous urban modification. Vegetation within the project area is therefore dominated by ornamental species, managed urban greenery, and scattered secondary growth. The immediate surroundings support a mix of:

- Ornamental shrubs and hedges used in residential and institutional landscaping.
- Shade trees such as *Terminalia mantaly*, *Ficus benjamina*, *Gmelina arborea*, and *Delonix regia* commonly planted along streets and property boundaries.
- Grasses and lawn species, maintained across open spaces and private properties.
- Isolated secondary trees including *Elaeis guineensis* (oil palm), *Albizia lebbeck*, and *Polyalthia longifolia*, which occur sporadically as remnants of earlier vegetation or as voluntary regrowth.

Due to the proximity of the Lagos Lagoon, patches of freshwater swamp vegetation occasionally appear in poorly drained depressions and low-lying areas. These consist mainly of sedges, ferns, reeds, and hydrophytic grasses, though not in extensive or natural stands. These fragments represent modified remnants of the original swamp vegetation that once dominated parts of the Ikoyi peninsula before urban development.



Plate 4.7: Vegetation extract around the Proposed Project Area

4.4.8.1 Diversity of Plants on the Proposed Project Area

The project site has been shaped by years of development and everyday human activity, so it no longer reflects its original natural vegetation. Previous construction work, regular movement of people, and ongoing landscaping have gradually altered the plant community. What you see today is a blend of ornamental plants, a few useful economic trees, and pockets of secondary growth typical of an urban area like Ikoyi. The species noted during the site visit reflect this changed environment. The list in table 4.18 below highlights the plants currently present within the project area.

Table 4.16a: Checklist of plant species present in the Project area

S/N	Common/Local Name	Scientific Name	Family	Life Form
1.	Tropical whiteweed	*Argeratum conyzoides* L.	Asteraceae	Herb
2.	Ewe AKintola, Siam weed	*Chromolaena odorata* (L.) R.M.King & H.Rob.	Asteraceae	Herb
3.	Ipil- ipil	*Leucaena leucocephala* (lam.) de Wit	Fabaceae	Tree
4.	Common crabgrass	*Digitaria sangunalis* (L.) Scop	Poaceae	Herb
5.	Perenial grass	*Ehrharta erecta* Lam.	Poaceae	Herb
6.	Bitter gourd/ Ewe Ejirin	*Mormodica charantia* L.	**Cucurbitaceae**	**Creeper**
7.	Sycomore	*Ficus sycomorus* L.	Moraceae	Tree
8.	Peepal tree	*Ficus religiosa* L.	Moraceae	Tree
9.	Cutleaf groundcherry	*Physalis angulata* L.	Solanaceae	Herb
10.	African Bristlegrass	*Setaria sphacelata* (Schumach.) Stapf & C.E.Hubb. ex M. B.Moss	Poaceae	Herb
11.	Japanese Poinsettia	*Euphorbia heterophylla* L.	Euphorbiaceae	Herb
12.	Tete Elegun/ Pigweed	*Amaranthus spinosus* L.	Gentianaceae	Herb
13.	Bush fig	*Ficus sur* Forssk.	Moraceae	Shrub
14.	Stubborn weed/ Isankotu	*Sida acuta* Burm.f.	Malvaceae	Herb
15.	Chickenweed	*Euphorbia hypericifolia* L.	Euphorbiaceae	Herb
16.	Croowfoot grass	*Eleusine indica* (L.) Gaertn.	Poaceae	Herb
17.	Elephant grass	*Pennisetum purpureum* (Schumach.) Morrone	Poaceae	Herb
18.	Ogede/ Plantain	*Musa paradisiaca* L.	Musaceae	Tree
19.	Apple of Sodom	*Calotropis procera* (Aiton) W.T. Aiton.	Apocynaceae	Shrub
20.	Cotton morning glory	*Ipomoea trifidat* (Kunth) G. Don	Convulvulaceae	Creeper
21.	Bermuda grass	*Cynodon dactylon* (L.) Pers.	Poaceae	Herb
22.	Blue commelina	*Commelina erecta* L.	Commelinaceae	Herb
23.	Wild sunflower	*Aspilia Africana* Pers (C.D. Adams)	Asteraceae	Herb
24.	Red natal grass	*Melinis repens* (Willd.) Zizka	Poaceae	Herb
25.	Common nightshade	*Solanum americanum* Mill.	Solanaeceae	Herb
26.	West Indian-pink	*Spigelia anthelmia* L	Loganiaceae	Herb
27.	Indian acalypha	*Acalypha indica* L.	Euphorbiaceae	Herb
28.	Mango	*Mangifera indica* L.	Anarcadiaceae	Shrub
29.	Ewe Iyalode/ tridax	*Tridax procumbens* L.	Asteraceae	Herb
30.	Asthma plant/ Akun esan	*Euphorbia hirta* L.	Euphorbiaceae	Herb
31.	Ogiera	*Eleuthgeranthera ruderalis* (Sw.) Sch.Bip.	Asteraceae	Herb
32.	Atori / Shortleaf Globe mallow	*Glyphae brevis*	Malvaceae	Shrub

33.	Fig tree	*Ficus racemosa* L.	Moraceae	Tree
34.	African Oil Palm tree	*Elaies guineensis* Jacq	Arecaceae	Tree
35.	Dongoyaro/ Neem	*Azadiracta indica* A.Juss	Meliaceae	Tree
36.	Cassava	*Manihot esculenta* Crantz.	Euphorbiaceae	Shrub
37.	Ibepe/ Pawpaw	*Carica papaya* L	Caricaceae	Tree
38.	White costus	*Hellena speciosa* (J.Koenig) S.R.Dutta	Costaceae	
	Crown of thorns	*Euphorbia milii* Des Moul.	Euphorbiaceae	Herb
40	Red hot cat's tail	*Acalypha hispida* Burm.f.	Euphorbiaceae	Herb
	Pineland lantana	*Lantana depressa* Small	Verbaneceae	Herb
	Hibiscus	*Hibiscus rosa-sinensis* L.	Malvaceae	Shrub
	West Indian woodnettle	*Laportea aestuans* (L.) Chew	Urticaceae	Herb
	Cofee weed	*Senna occidentalis* (L.) Link	Fabaceae	Shrub

Source: Field study 2025

Table 4.16b: Checklist of plant species present in the Project area and their IUCN Status

S/N	Common/Local Name	*Scientific Name*	Family	IUCN Status
1.	Tropical whiteweed	*Argeratum conyzoides L.*	Asteraceae	Not Evaluated
2.	Ewe AKintola, Siam weed	*Chromolaena odorata (L.) R.M.King & H.Rob.*	Asteraceae	Not Evaluated
3.	Ipil- ipil	*Leucaena leucocephala (lam.) de Wit*	Fabaceae	Least Concern
4.	Common crabgrass	*Digitaria sangunalis (L.) Scop*	Poaceae	Not Evaluated
5.	Perenial grass	*Ehrharta erecta Lam.*	Poaceae	Not Evaluated
6.	Bitter gourd/ Ewe Ejirin	*Mormodica charantia L.*	Cucurbitaceae	Not Evaluated
7.	Sycomore	*Ficus sycomorus L.*	Moraceae	Least Concern
8.	Peepal tree	*Ficus religiosa L.*	Moraceae	Least Concern
9.	Cutleaf groundcherry	*Physalis angulata L.*	Solanaceae	Least Concern
10.	African Bristlegrass	*Setaria sphacelata (Schumach.) Stapf & C.E.Hubb. ex M.B.Moss*	Poaceae	Least Concern
11.	Japanese Poinsettia	*Euphorbia heterophylla L.*	Euphorbiacea e	Least Concern
12.	Tete Elegun/ Pigweed	*Amaranthus spinosus L.*	Gentianaceae	Not Evaluated
13.	Bush fig	*Ficus sur Forssk.*	Moraceae	Least Concern
14.	Stubborn weed/ Isankotu	*Sida acuta Burm f.*	Malvaceae	Least Concern
15.	Chickenweed	*Euphorbia hypericifolia L.*	Euphorbiacea e	Not Evaluated
16.	Croowfoot grass	*Eleusine indica (L.) Gaertn.*	Poaceae	Least Concern
17.	Elephant grass	*Pennisetum purpureum (Schumach.) Morrone*	Poaceae	No status
18.	Ogede/ Plantain	*Musa paradisiaca L.*	Musaceae	Least Concern
19.	Apple of Sodom	*Calotropis procera (Aiton) W.T. Aiton.*	Apocynaceae	Least Concern
20.	Cotton morning glory	*Ipomoea trifidat (Kunth) G. Don*	Convulvulacea e	Not Evaluated
21.	Bermuda grass	*Cynodon dactylon (L.) Pers.*	Poaceae	Not Evaluated
22.	Blue commelina	*Commelina erecta L.*	Commelinacea e	Least Concern
23.	Wild sunflower	*Aspilia Africana Pers (C.D. Adams)*	Asteraceae	Not Evaluated
24.	Red natal grass	*Melinis repens (Willd.) Zizka*	Poaceae	Least Concern
25.	Common nightshade	*Solanum americanum Mill.*	Solanaceae	Not available

26.	West Indian-pink	*Spigelia anthelmia L*	Loganiaceae	Not Evaluated
27.	Indian acalypha	*Acalypha indica L.*	Euphorbiaceae	Not Extinct
28.	Mango	*Mangifera indica L.*	Anarcadiaceae	Data Deficient
29.	Ewe Iyalode/ tridax	*Tridax procumbens L.*	Asteraceae	Not Evaluated
30.	Asthma plant/ Akun esan	*Euphorbia hirta L.*	Euphorbiaceae	Least Concern
31.	Ogiera	*Eleuthgeranthera ruderalis (Sw.) Sch.Bip.*	Asteraceae	Not Evaluated
32.	Atori / Shortleaf Globe mallow	*Glyphae brevis*	Malvaceae	Least Concern
33.	Fig tree	*Ficus racemosa L.*	Moraceae	Least Concern
34.	African Oil Palm tree	*Elaies guineensis Jacq*	Arecaceae	Least Concern
35.	Dongoyaro/ Neem	*Azadiracta indica A.Juss*	Meliaceae	Least Concern
36.	Cassava	*Manihot esculenta Crantz.*	Euphorbiaceae	No status
37.	Ibepe/ Pawpaw	*Carica papaya L*	Caricaceae	Data deficient
38.	White costus	*Hellena speciosa (J.Koenig) S.R.Dutta*	Costaceae	Least Concern
39.	Crown of thorns	*Euphorbia milii Des Moul.*	Euphorbiaceae	Not Evaluated
40.	Red hot cat's tail	*Acalypha hispida Burm.f.*	Euphorbiaceae	Not Evaluated
41.	Pineland lantana	*Lantana depressa Small*	Verbaneceae	Not Evaluated
42.	Hibiscus	*Hibiscus rosa-sinensis L.*	Malvaceae	Not Evaluated
43.	West Indian woodnettle	*Laportea aestuans (L.) Chew*	Urticaceae	Not Evaluated
44.	Cofee weed	*Senna occidentalis (L.) Link*	Fabaceae	Least Concern

Source: Medipark ESIA Field Survey, 2025

Note: Least Concern indicates that the species is not currently at risk of extinction globally.
Not Evaluated indicates species widespread across the world
Data Deficient indicates not enough information is available to fully assess the species' conservation status.
Endangered: Due to over-harvesting of the plant.

Description: Mature palms are single-stemmed and grow to 20 m tall. The leaves are pinnate and reach 3-5 m long. A young palm produces about 30 leaves a year. Established palms over 10 years produce about 20 leaves a year. The flowers are produced in dense clusters; each individual flower is small, with three sepals and three petals. The palm fruit takes 5–6 months to mature from pollination to maturity. It is reddish, about the size of a large plum, and grows in large bunches. Each fruit is made up of an oily, fleshy outer layer (the pericarp), with a single seed (the palm kernel).

Habitat: Natural forest, ruderal/ disturbed.



4.4.9 Wildlife of the Study Area

Rapid urbanization and the resulting habitat modification have significantly influenced local fauna diversity. These changes tend to reduce native species richness while favoring a small number of highly adaptable species, ultimately reshaping the ecological community. Wildlife plays an important role in the national economy both as a source of animal protein and as a foundation for tourism and recreation. In many Nigerian urban communities, animal meat remains the primary source of protein, with a substantial proportion of residents relying on ruminant meat for household consumption.

Within the project area, the fauna observed include invertebrates predominantly insects and vertebrates such as small mammals, amphibians, reptiles, and birds. The species recorded during the survey are presented in the table below.

Table 4.17: shows the fauna observed or attested for in the project site

S/N	COMMON/ LOCAL NAME	SCIENTIFIC NAME	FAMILY	Population status
1.	Alangba Oloripupa/ Agama Lizard	*Lacerta agama* L	Agamidae	+++
2.	Pink-necked green pigeon	*Treron vernans* L	Columbidae	+++
3.	Eye Odere/ Laughing Dove	*Spilopelia senegalensis* L	Columbidae	++
4.	Freshwater crayfish	*Faxonius limosus* Rafinesque	Cambaridae	++
5.	Akan/ Blue crab	*Callinectes sapidus* Rathbun	Portunidae	++
6.	Eka/ African black ant	*Crematogaster peringueyi* Emery	Formidaceae	+++
7.	Ikan/ Termites	*Macrotermes bellicosus* (Smeathman)	Termitidae	++
8.	Soldier ants	*Eciton burchellii* Westwood	Formicidae	++
9.	Adan/Bats	*Corynorhinus townsendii*	verpertilionidae	+
10.	Eja Shawa/ Bonga fish	*Ethmalosa fimbriata* (Bowdich)	Dorosomatidae	+
11.	Pied kingfishers	*Ceryle rudis* F. Boie	Alcedinidae	+
12.	Epiya/ Redbelly Tilapia	*Coptodon zillii* (Gervais)	Cichlidae	+++
13.	Asa/ Eja Osan/ African Knifefish	*Xenomystus nigri* Gunther	Notopteridae	+
14.	Igbin/ African Giant Snail	*Achatina achatina* L	Achatinidae	++
15.	Red Snapper fish	*Lutjanus campechanus* (Poey)	Lutjanidae	+
16.	Eja Aso/ Bagrid Catfish	*Bagrus bajad*	Bagridae	+++
17.	Water snail	*Bellamya contracta* Haas	Viviparidae	+
18.	Eku ile/ Black Rat	*Rattus rattus* L	Muridae	++
19.	African Elephant fish	*Gnathonemus petersii* (Gunther)	Mormyridae	+
20.	Common Bulbul	*Pycnonotus barbatus* (Desfontaines)	Pycnonotidae	+
21.	Senegal Coucal	*Centropus senegalensis* L.	Cuculidae	+
22.	The piew crow	*Corvus albus*	Covidae	+
23.	Ologbo/ cat	*Felis catus* L.	Felidae	++
24.	Red-eyed dove	*Streptopelia semitorquata*	Columbidae	++
25.	Common hairstreak	*Hypolycaena phillipus* (Fabricius)	Lycaenidae	++

Source: Lagos Medipark Field Survey, 2025

4.4.10 Land Use and Land Cover Change

An assessment of land use and land cover (LULC) within a 2,000 m radius of the proposed project site was conducted to understand existing development patterns and potential impacts from the proposed Medipark Hospital project. The study considered both built-up areas and natural features, including vegetation, water bodies, and open spaces. Understanding LULC provides essential baseline information for planning, environmental management, and mitigation of potential ecological and socio-economic impacts.

4.4.10.1 Land Use

The land use within the 2,000 m radius of the lagoon is predominantly residential and commercial, reflecting Ikoyi's status as a high-density, high-income urban area. Key features include; **r**esidential: high-end housing estates, apartment complexes, and gated communities; **c**ommercial**:** office buildings, retail outlets, and service centers along major roads such as Awolowo Road; recreational and Institutional**:** parks, sports facilities, and educational institutions; and transport and Infrastructure**:** road networks, bridges, and minor ferry access points along the lagoon.

This mix of land uses indicates intensive urbanization, with limited undeveloped or green areas, highlighting the importance of careful planning for new developments like the proposed hospital to minimize conflicts and environmental pressures.

4.4.10.2 Land Cover Change

Land cover analysis indicates notable transformation from natural and vegetated areas to built-up environments over the past decades: vegetation loss**:** patches of mangrove and waterfront vegetation that have been cleared for housing and commercial development; water and wetlands**:** the lagoon remains largely unchanged, but adjacent wetlands have been reduced due to encroachment and land reclamation; impervious surfaces**:** increasing construction, leading to a rise in impervious surfaces, affecting drainage, runoff, and microclimatic conditions.

These land cover changes emphasize the need for sustainable design, stormwater management, and green space integration for the proposed hospital to mitigate urban pressures and maintain ecological functions of the lagoon and surrounding areas.

4.5 Socio-economic Study

4.5.1 Introduction

The Social Impact Assessment study was conducted in the Community on 10th to 14th November 2025 using international best practices. The report is presented below.

The fieldwork for the socioeconomic and health component took place and was aimed at identifying and evaluating the potential socio-economic and health impact of the proposed project on the host communities. It also included the description of settlements, man-made features, economic and historical sites, population, income distribution, religious practice, Community structure, employment, markets and labor supply, income distribution and consumption patterns among respondents. Ikoyi Community was visited during the survey.

4.5.2 The Objectives of Socio-Economic Study

- To increase knowledge on the part of the project proponent and the host Community to be in a better position to understand the broader implications of the proposed project.
- To identify the aspects of the demographic, socioeconomic environment which may be impaired, positively or negatively, by the proposed Medik-park project activities, both in a short, medium and long run.
- To establish and gather baseline data with a view to making such available for respective planning, management and development of proposed Medik-project activities and;
- To recommend appropriate ameliorative measures in consonant with the observed impact project.

4.5.3 Scope of the Survey

Scope and Objective of the Socioeconomic Survey

This socioeconomic survey focuses on the Ikoyi district within the Eti-Osa Local Government Area of Lagos State. The proposed Medical Park project, upon completion, is expected to play a vital role in enhancing local economic development through healthcare-driven job creation and enterprise growth, fostering sustainable urban development, and supporting regional efforts toward improved public health infrastructure and medical service accessibility.

The aim of this survey is to assess and document critical social and economic dimensions of the proposed project, with a focus on:

- The potential impacts positive and negative of the project on the local environment and

social fabric;

- The expected economic value and public benefits of the project for the host and surrounding communities.

The findings will inform decision-making processes and guide the development of appropriate mitigation measures, ensuring that the project delivers sustainable benefits while minimizing adverse effects.

Table 4.18: Scope of ESIA in the Community

S/N	SOCIAL FEATURES	VARIABLES
1	Demography	Population size and distribution (age, gender, ethnic groupings), marital status and educational attainment.
2	Livelihood	Income distribution and consumption patterns, employment status, occupation, poverty profile, land use and tenure system, and other economic activities.
3	Social Infrastructure	Major means of transport; educational institutions, water supply, electricity, recreational facilities, housing (type, pattern and quality) etc.
4	Cultural properties	Value system, social norms, location and spatial distribution of historical sites, archaeological artefacts, shrines, sacred forests/scenic areas; religion, festivals, etc.
6	Perception of the project	Perception of associated project risk and impacts on quality of life, pleasure/displeasure with project, expectations etc.
7	The role of women and children	Rights and privileges, contribution to socio-economic development; activity systems and political organization.
8	Social structure and organization	Ethnic groups, social organization and traditional governance – power and authority structure; history of conflicts and their resolution including the role of women.
9	Social problems	Patterns and trends in criminal activities

Source: Medipark ESIA Field Survey, 2025

4.5.4 Study Approach and Methodology

This report adopts and utilizes recommended guidelines by the appropriate regulatory agencies such as the Federal Ministry of Environment (FMEnv) as contained in the EIA Act CAP E12 LFN 2004. The method adopted involves not only knowing the survey methods or techniques, or how to calculate and develop certain indices, but it also bothers on knowing which of the methods are relevant and applicable in the context of the survey being carried out. The methods adopted in the collection and analysis of information from the field and data bank include but not limited to the following sources of data: research design and sampling techniques and sample size. A purposive sampling procedure was used to select individuals/groups that were sampled for the

survey. Qualitative research of in-depth interviews and focus group discussions to determine baseline information on the current socio-economic and health conditions of the host communities were held. Data was also generated during Community consultations. Other qualitative methods combined to garner information included interviewing key informants in the communities, observations and photography.

4.5.4.1 Sources of Data

Both primary and secondary sources of data collection were adequately utilized in this survey process.

Primary Sources

This aspect bothers on direct medium of sourcing data/information. Thus, interviews, public consultation, questionnaire administration and participant observation were utilized. While interviews and participant observation were used to source information on socio-economic indices, public consultation provided the basis for understanding the attitude, perception and approach of the people to the issues surrounding the project area. Questionnaires with both open and closed ended questions providing data on socio-economic and health indices were utilized.

Secondary Sources

The Secondary sources of data collection were utilized particularly in areas where the primary data sources suffer limitations or constraints. Thus, information was sourced in alignment with the objective of this survey from relevant stakeholders such as National Population Commission, National Bureau of Statistics and National Institute of Social and Economic Research.

Maps and Literature Search

The exercise commenced with identification of leadership in Ikoyi Districts and government organs within the project area. Existing administrative, topographic and street maps were adopted. Extensive literature search relevant to the area and the proposed Medik-park project activities were conducted with a view to acquiring initial information on the characterization of the area. The activity culminated in the generation of a checklist of environmental attributes that may be affected**.**

Research Design

Considering the need to explain the characteristics of the group in discussion, in terms of social, economic and the need to guide against bias and increase the reliability of surveyed

data, *Descriptive Research Design* has been selected to provide in-depth explanation and analysis using Quantitative and *Qualitative* Approaches.

Sampling Techniques and Sampling Size

Simple, random and systematic sampling were used to administer questionnaires and carry out consultations. The population estimate was drawn from a combination of our questionnaire survey, the 1991 and 2006 census figures from the National Population Commission (NPC), and projections based on the 2022 growth rate. These methods were chosen after considering the small and contained size of the project area, the social and cultural characteristics of the host Community, and the Community 's initial reluctance to participate or share information. This helped us determine the most practical sampling approach and an appropriate sample size for the study.

4.5.5 Baseline Information on Socio-Economic

4.5.5.1 Affected Community and People in Lagos State Study Area

Lagos State is essentially a Yoruba environment inhabited by its sub-nationality of Aworis and ogus in Ikeja and Badagry Divisions respectively, with the ogusbeing found mainly in Badagry and Aworis forming the indigeneous population of Lagos where there are, nevertheless, other pioneer immigrant settlers-Edos, Saro, Brazilain, Kannike/Tapa. Etc collectively called Lagosians but more appropriate referred to as the Ekos. For Ikorodu and Epe Divisions, the local populations are mainly the Remos and Ijebus with pockets of Eko-Awori settlers along the entire state coastland and riverine areas. However, despite its Youba indigeneity, the state is a global socio-cultural melting pot attracting Nigerians, Africans and foreigners alike. The situation is attributable to its sound economic base, strategic maritime location and socio-political importance which induced a high rate of immigration to the state.

4.5.5.2 Traditional Governance in Lagos State Study Area

Within Lagos State, the paramount ruler in Lagos State is the Oba of Lagos, who is naturally the head of other traditional rulers in Lagos State. He is the head of Lagos people by virtue of all communities tracing their origin to Lagos (Eko). However, every town under the 20 local government areas has its own traditional ruler. There is basically no difference in the pattern of local governance of these communities with that of the other communities in typical Yoruba clan. According to key informants, the Oba, Baales or CDA (for new layouts) presides over the affairs of communities.

4.5.5.3 Demographic Characteristics for Lagos State Study Area

Lagos State is the smallest state in Nigeria yet, it has the highest urban population, which is 27.4% of the national estimate [UN-Habitat]. According to the 2006 National Census, Lagos State has a population of 9,013,534 in relation to the National count of 140,003,542. However, based on the UN-Habitat and international development agencies' estimates, Lagos State is said to have about 24.6 million inhabitants in 2015. Of this population, Metropolitan Lagos accounts for over 85% on an area that is 37% of the land area of the State, and the fact that Lagos population is growing 10 times faster than that of New York and Los Angeles, and more than the population of 32 African nations combined, the State population is expected to hit the 35 million mark in 2020.

(a) Population

Eti-Osa is a residential and commercial Local Government Area of Lagos State, Nigeria. Lagos State Government administers the council area as Ikoyi-Obalende LCDA, Eti-Osa East LCDA, and Iru Victoria Island LCDA. Within Eti-Osa are several important areas of Lagos State, including Lagos' Victoria Island. Before the Nigerian capital moved to Abuja, Eti-Osa Local Government Area served alongside Lagos Island Local Government Area as the seat of the national capital. It has an area of 2,234 km^2 and a population of 283,791, which represents 3.11% of the state's population. 158,858 of the total population are male while the remaining 124,933 are female (NPC, 2006). Eti-Osa people are predominantly from the Awori Yoruba and the Edo subgroup. However, like most parts of Lagos State, it is currently home to a diverse mix of ethnicities from all over the country. The population of the host Local Government Area Council is presented in Table 4.19 below.

Table 4.19: Population of the Host Local Government Area in 2006 Census

LGA	Male	Female	Population
Eti-Osa	158,858	124,933	283,791

Source: *National Bureau of Statistics, 2006*

One of Nigeria's administrative units is the Local Government Area (LGA) and its derivative units known as Local Council Development Areas (LCDAs). The study area falls within the Ikoyi-Obalende LCDA, which was created from the Eti-Osa Local Government Area in Lagos State. Eti-Osa LGA recorded a population of 287,785 in the 2006 National Population Census; however, the census does not provide separate population information for the Ikoyi-Obalende LCDA. Lagos State comprises 20 LGAs and 37 LCDAs, with Ikoyi-Obalende included among the latter. For sampling purposes, according to the Lagos State Independent Electoral

Commission (LASIEC), Ikoyi-Obalende LCDA consists of four electoral wards: Obalende, Lafiaji, Obalende II, and Ilubirin. These officially recognized wards form the appropriate basis for constructing the study's sampling frame.

The average population frame for the LCDA was calculated to be 11,400, for each ward. The average population of the units around the project area 500 persons. Therefore, the population frames of the unit stood at 500 which represent the sample block/frame, hence represents the sampling block for the study. It was used as a sampling frame due to its strategic organization and coordinated leadership Status.

The Community which was used as the research unit represented the district located within close proximity to the proposed project and is considered most exposed and suitable for study. Observations, Interviews, focus group discussions and questionnaire administration were conducted here.

Due to the known population sizes of the various units, there was no need for standard deviation; hence the Yamane Approach was deployed to determine the appropriate Samples which is considered adequate for the population. It is given by the formula

$nYamane = N / (1 + Ne^2)$ where:

n = Sample required N = Population size

e = acceptable error level of 5% (0.05) with a confidence level of 95%

With the population for the affected sample frame given as 204 the calculated samples are given as:

Table 4.20: Sample presentation

Unit	No of samples
Ikoyi Community	50 (50%)

The selection of the unit of population was done based on the knowledge that the elements are the most representative of the population (Anderson, Sweeney, & Williams, 2011; Sekaran & Roger, 2010). Only the Community within the range of 1km meters from the proposed project was selected as it represents the most exposed district. The adoption of this sampling technique is aimed at optimizing the quality of the result since the selected unit will be the most affected by the externalities of the project. The questionnaire was distributed to households. They were followed to their respective households; the research assistants interpreted and filled in their views. The administration of the questionnaire was double-faced - filling of questionnaire and a follow-up

focus group discussion with the families as the tail part of the questionnaire section provided room for writing or jotting their opinions. fifty (50) structured questionnaires were formulated, designed and administered on the Community selected at random, 50 representing one hundred (100%) per cent were returned answered. Therefore, the analysis was done based on the 50-questionnaire retrieved. The target population for the social impact and health consisted of a cross-section of residents in the Community. A combination of clustered and random sampling methods was used in the administration of the instruments.

4.5.5.4 Data Analysis

Information gathered from desktop, consultation, site identification and questionnaire administration were used in categorizing the major areas of concern in the questionnaire design, the social and economic benefits in the area and their respective sampling requirements defined to effectively collect qualitative and quantitative data on the availability of basic social and infrastructural facilities in the host area. The fieldwork covered the administration of fifty (0) questionnaires for firsthand information sourcing encompassing all relevant elements of the socio-economic environments to complement information obtained from desktop studies. This survey was undertaken and aimed at investigating and providing baseline data that bother on the socio-economic and health indices which could be used for the assessment to determine advancement in infrastructural provision and health conditions of the people. Therefore, this section is concerned with the evaluation and statistical presentation of data collected from the field (analysis of administered questionnaire) in frequency distribution tables and charts for accurate judgments, inferences and deductions.

Historical Background of Ikoyi

Ikoyi originated as part of the broader settlement history of Lagos and became prominent during the British colonial era. The area that is now Ikoyi was initially connected to Lagos Island by land, but was separated when the British dug the MacGregor Canal between 1903 and 1904 to drain swamps and support urban development. This created a physical distinction between Ikoyi and the older city core.

During colonial rule, Ikoyi was developed as a residential cantonment for British expatriates and high-ranking colonial officials. Large colonial residences built between the early 1900s and 1950s still stand as architectural reminders of this period. The Ikoyi Club 1938 emerged from this context originally established as a European recreational club, later merging with the Lagos Golf Club to become a symbol of elite leisure and social life. After Nigeria's independence in

1960, Ikoyi evolved into one of the most affluent Community's in Lagos, attracting well-heeled Nigerians, expatriates, and corporate interests. Its cultural identity today blends historical colonial legacies with contemporary urban luxury, reflected in upscale estates, exclusive schools, multinational business presence, and vibrant cultural venues.

Ikoyi contains several sites that reflect the layered history of Lagos, particularly its colonial and post-independence evolution. Notable among these is the Ikoyi Cemetery, which holds colonial-era graves and offers a glimpse into the early social elite of Lagos. The district also retains scattered colonial residential buildings dating back to the early twentieth century, representing the architectural heritage of Ikoyi's role as a colonial administrative and expatriate enclave. Another prominent landmark is Ikoyi Club 1938, originally established during the colonial era and now an enduring social institution that reflects the leisure culture and elite social life that have shaped the area for decades.

Beyond its colonial past, Ikoyi is home to modern sites of historical and cultural interest. The abandoned Federal Secretariat remains a reminder of Nigeria's post-independence administrative period before the capital moved to Abuja. The Lekki–Ikoyi Link Bridge, although a recent addition, has become an iconic landmark due to its engineering design and symbolic status in contemporary Lagos culture. Ikoyi also hosts Omenka Gallery, an important cultural space dedicated to Nigerian and African art, adding a creative heritage dimension to the area's identity.

4.5.6 Baseline Information on Socio-Economic

4.5.6.1 Affected Community and People

(a) The affected Community and persons

The affected Community of the proposed project is Ikoyi LCDA in Eti-Osa LGA of Lagos state. This area is an affluent Community of Lagos, and a well-planned and organized settings with various social, basic amenities and infrastructures (roads, hospitals, schools, drainages etc.).

(b) Religion

Islam and Christianity are the principal and major religions of the people. The people believe in monotheism, their sense of worship is to one God. Typically, it is common belief that reality is not restricted to sense experience alone. The people are generally free to belong to any religion to which they share a common belief with its leader. Hence, the two dominant

religions here are the Christians (49.3%) and Muslim (48.8%). There are also other traditional worshippers in the state.

(c) Occupation

The occupation of the people in the project area is predominantly entrepreneurs, industrialists, professionals, politicians, civil servants, Bankers, educationists, and many more.

4.5.6.1 Social Amenities in Lagos State Study Area

4.5.6.1.1 Available Infrastructure and Their Functional Status

Available infrastructural framework of the study area is dominated by social amenities. The social amenities consist mainly of education, water supply and electrification facilities while the physical amenities comprise mainly of jetties and telecommunications facilities. Public access to the project affected communities is by road, additionally, telecommunication services from GSM service providers are received in all the communities, although these services fluctuate. These physical infrastructural amenities have been provided mostly by the state government.



Lagos Lagoon Hospital



Foster prime school



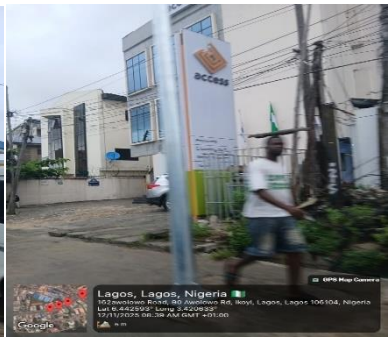
LASWA Building



MTN Building



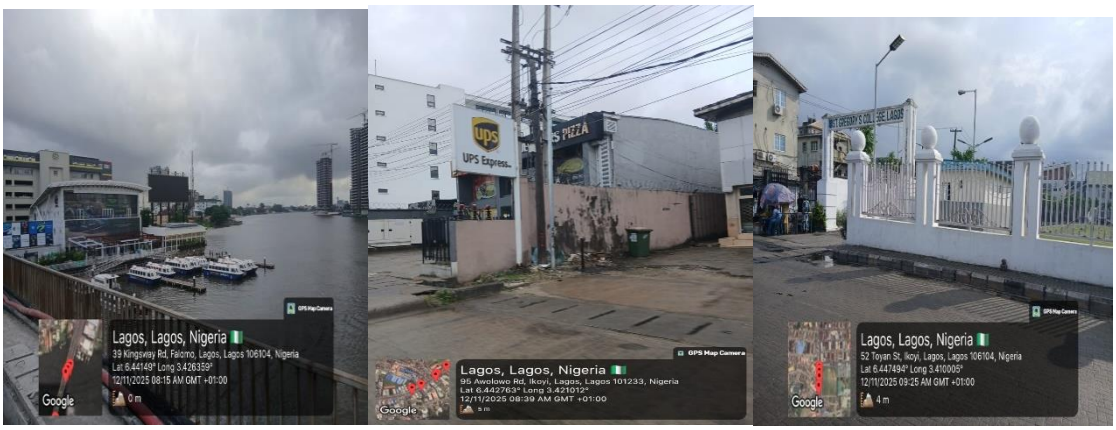
Mobil Fueling Station



Financial Institutions



Good road Network Police Station Organized market place



Lagos Lagoon Electricity St Gregory Secondary School

Plate 4.8: Showing Infrastructure around the proposed project area

Social Infrastructure

Basic social infrastructures in the vicinity of the proposed project area include schools – public and private, as well as health care facilities. There is also large public housing development, and higher educational institutions. For instance, there are 91 primary schools and 63 secondary schools in Eti-Osa Local Government Area.

The schools cater for residents of the Local Government, as well as those from other LGAs, particularly Lagos Island and Mainland Local Government Areas, which share boundary with Eti-Osa LGA. Similarly, some pupils in Eti-Osa Local Government Area also attend schools outside the area. It is believed that the number of schools in the LGA is substantial and therefore, adequate for the area. The district also has the, Nigerian Law School, and the Nigerian College of Marine and Fisheries, among others.

There are also substantial numbers of health facilities in the Local Government Area. These include those owned by the Local Government, the Lagos State Government, the Federal Government and private concerns. Examples are the Military Hospital, Ikoyi, the Lagos

General Hospital, Lagos Island Maternity Hospital, and Massey Hospital, all of which are public facilities. Saint Nicholas Hospital, as well as, Reddington Hospital are notable privately owned first-rate health care facilities.

The private sector has contributed to the growth of health sector in the State, which is a key social infrastructure. Thus, the axis has many, private health care facilities of high standard. As a high-income location, the private healthcare facilities are patronized by people in Ikoyi, other parts of the State and beyond.

There are lot of monuments, historic buildings, and heritage in the district. These include the National Museum, Onikan, the Lagos House, the Cathedral of Christ Marina, the Tafawa Balewa Square, Freedom Park and Lagos Island Club, all of which are located at between one and two kilometers to the site. Generally, the City of Lagos, particularly Lagos Island has the largest concentration of cultural, historic and architectural heritage. They are all being maintained or preserved in order to make them fulfil their purpose.



Plate 4.9: Showing Military Hospital, Awolowo Road, Ikoyi



Plate 4.10 St. Gregory's College, Obalende

Road Transportation

Like most cities in Nigeria, Lagos transportation system is dominated by road. Road transportation, more than any other mode, has continued to play a substantial role in the socio – economic development pattern of the metropolis. The road transport system determines largely the pattern of commuting as well as movement of goods and services. The proposed Medical Park Hospital will operate within the system. As noted earlier, the Awolowo Road, Saint Gregory College Road, Keffi Street and Alfred Rewane Road, are the principal roads that service the project area. They will continue to play substantial roles in transit development in the district, and the entire sub-region. Plate 4.11 shows Alfred Rewane Road.



Plate 4.11: Showing Alfred Rewane Road

It is worthy to note that virtually all roads around the project site, including the arterials or primary roads are in good condition. However, water and rail transport systems are being developed in order to boost the intermodal transport value of Lagos Metropolis. The reconstruction efforts on these and other roads, coupled with the various Traffic System Management embarked upon by the Lagos State

Government have ease traffic flow in most parts of the area. This has had positive impacts on commercial or business activities, as well as social activities.

The pattern of road transportation system around Ikoyi is not different from what obtains in many other parts of Lagos. However, there is a variation in transit infrastructure around Ikoyi as it has opportunities for water and rail transport services. In road transport, minibus constitutes the major means of intra-urban public transportation system. The buses operate between Ikoyi, and other parts of the metropolis. The buses have had their services or operations enhanced with provisions made for bus stations, lay-bys, bus stops and bus stop shelters. A major bus station is located in Falomo. It will serve construction workers, patients, visitors and residents of the proposed development who may choose to use public transport or buses. Plate 4.12 shows Saint Gregory

College Road. The most notable routes plied by the buses, which also dominate the flow matrices in the corridor are:

i. Ikoyi – Lagos Island - Ebute Metta
ii. Ikoyi - Obalende
iii. Ikoyi - Victoria Island
iv. Ikoyi - Oworonshoki
v. Ikoyi - Lekki



Plate 4.12: Showing Saint Gregory's College Road

A noticeable element of traffic on roads in the entire district, and Lagos Metropolis as a whole is private cars. Thus, a considerable number of residents of the metropolis has cars, used for their various journeys. The high volume of private cars, compared to other traffic on streets/roads in the axis, is confirmed by the traffic counts carried out in the area. The Traffic Impact Analysis Report for the Medical Park Hospital revealed the pattern of vehicular traffic around Awolowo Road, and Ikoyi in general, and its implication on the proposed facility. The operation of the Bus

Rapid Transit (BRT) service has activated public transport in the various routes leading into, or out of the project area. Generally, residents, and operators of business in the area rely substantially on commercial buses, and taxis for their mobility needs. There has been increase in the demand for the services of paid online, taxi operators, under various brands.

Similarly, the Five Cowries Creek and Lagos Lagoon, which are around the site offer opportunities for water transport. Thus, there are jetties in Falomo to connect Victoria Island, in the east, as well as communities like Badore and Ikorodu. There are also water transport service facilities built by individuals in the north of Five Cowries Creek, around the Military Hospital, mostly for leisure.



Plate 4.13: Showing Federal Civil Service Club, Ikoyi

Vehicular Traffic

The Traffic Impact Analysis (TIA) for the proposed development reveals the following. The highlight of findings in the TIA are as presented below.

- The assessment of the impact on traffic efficiency established that the project will not overburden, the capacity of roads that are contiguous to the project site.

- The level of service on such roads, during construction and operation, will not change unreasonably when compared to the existing level of service.

- There are a number of road safety issues that shall be addressed prior to the commencement of construction of the project. These include installation of traffic signals, speed limits, and other warning signages.

- There is likely to be dust and noise related elements arising from traffic generated by the development. However, these are expected to be managed through measures highlighted in the management plan in the Environmental and Social Impact Assessment (ESIA) studies for the project.

- The parking spaces provided in the proposed development is adequate, and will effectively reduce the likely negative impact of vehicles movement in the axis and adjoining neighbourhoods.

- Awolowo Road, which the project abuts, and the main access have zero tolerance for on-street parking. This is a disincentive for traffic nuisance arising from the construction and use of the Road. Thus, all traffic destined for the development, especially vehicles that will stay in excess of 15 minutes have to park within the site or facility.

- That a schedule officer to coordinate some activities, vis – a – vis traffic in the hospital is required. Regulation of traffic in and out of the development, and monitoring of activities of motorists, particularly trucks should be a top priority by the proponent.

- The state of traffic in terms of volume and other behavioral characteristics on roads, which are contiguous to the project is acceptable in the short and medium terms. However, this requires reassessment and evaluation in the long term.

For ease of access from Awolowo Road, a slip road is to be built by the proponent. The road will be solely for traffic that has the hospital as destination. Similarly, a purpose designed exit have also been initiated.

4.5.6.2 Demographic Characteristics of the Area

Population size

The National Population Commission has not published disaggregated 2006 census figures for individual communities within Eti-Osa. However, the Commission's official records indicate that Eti-Osa Local Government Area had a population of 287,785 in the 2006 National Population Census. Field observations and survey data collected for this study show that the population structure within the host communities is dominated by middle-aged residents, while the proportion of elderly persons is relatively small.

Age Group

The demographic profile reveals a predominantly working-age population, with 47% between 26–45 years old (26–35: 25%; 36–45: 22%). An additional 20% are aged 46–55, resulting in a 67% concentration within the prime working years of 26–55. This indicates a community with strong purchasing power and significant demand for healthcare services. Only 18% of respondents are over 55 years old, suggesting that geriatric care offerings may require targeted regional outreach beyond the immediate Community. Meanwhile, 40% are under 36 years of age, reflecting a younger demographic with emerging needs in family healthcare, pediatric services, and preventive care.

Table 4.21: Age Distribution of Residents within the Project

Description	Category	Number of Respondents	Percentage (%)
Age Group	18-25 years	15	15
	26-35 years	25	25
	36-45 years	22	22
	46-55 years	20	20
	56-65 years	12	12
	66+ years	6	6

Gender

The significant male majority (58% male vs. 40% female) represents an 18-point gender gap that likely reflects either sampling methodology bias toward household heads or actual residential demographics of Ikoyi's high-cost housing market. This imbalance necessitates deliberate strategies to ensure women's healthcare needs, employment opportunities, and safety considerations are prioritized. The 2% non-disclosure rate, while small, indicates the need for inclusive facility design and non-discriminatory service provision.

Table 4.22: Gender Distribution of Residents within the Project

Category	Number of Respondents	Percentage (%)
Male	58	58
Female	40	40
Prefer not to say	2	2

Marital Status

The majority married population (55%) creates strong demand for family-oriented healthcare services including pediatrics, obstetrics, and family medicine packages. However, the substantial single cohort (35%) reflects Ikoyi's significant young professional, expatriate, and career-focused communities who prioritize convenience, digital access, and flexible scheduling. This 55/35 split requires Medipark to develop dual service streams catering to both family healthcare decision-makers and individual healthcare consumers.

Table 4.23: Marital Status of Respondents

Category	Number of Respondents	Percentage (%)
Single	35	35
Married	55	55
Divorced	6	6
Widowed	4	4

Highest Education

The population is highly educated with 67% holding post-secondary qualifications (20% OND/NCE + 30% Bachelor's + 12% Master's/PhD + 5% Professional). This creates both opportunity and expectation: a deep talent pool for skilled positions but also sophisticated healthcare consumers with high service standards. The limited primary education group (8%) may represent service workers or older residents needing literacy-sensitive health communication and potential skills training for entry-level Medipark roles.

Table 4.24: Educational Qualification of Respondents

Category	Number of Respondents	Percentage (%)
Primary	8	8
Secondary	25	25
OND/NCE	20	20
Bachelor's Degree	30	30
Master's/PhD	12	12
Professional Qualification	5	5

Employment Status

The **dominant formal employment** (60% employed + 25% self-employed = 85% economically active) indicates a community with stable income streams and likely employer-sponsored health insurance. This creates favorable conditions for insurance partnerships but also expectations for corporate-level service standards. The 8% unemployed and 5% students represent important segments for Community health programs and future workforce development initiatives.

Table 4.25: Employment Status of Respondents

Category	Number of Respondents	Percentage (%)
Employed	60	60
Self-Employed	25	25
Unemployed	8	8
Student	5	5
Retired	2	2

Respondents' Occupational Background

The **private sector dominance** (35% private + 20% corporate/financial + 15% self-employed = 70% private economy) aligns perfectly with Medi Park's corporate positioning. The significant diplomatic Community (15%) represents potential for international patient services and medical tourism. The limited public sector (10%) and NGO (5%) presence suggests partnerships may need to extend beyond Ikoyi for comprehensive Community health initiatives

Table 4.26: Occupational Distribution of Survey Respondents

Category	Number of Respondents	Percentage (%)
Public Sector	10	10
Private Sector	35	35
Diplomatic/Mission	15	15
NGO/Development	5	5
Corporate/Financial Services	20	20
Self-Employed/Business	15	15

Respondents' Professional Experience

The Community show strong residential stability with 70% living in Ikoyi for over 4 years (25% at 4-7 years + 30% at 8-15 years + 15% at 16+ years). This established population has deep Community networks and established healthcare patterns, requiring Medipark to offer compelling differentiation from existing providers. The 30% newer residents (10% <1 year +

20% 1-3 years) represent opportunities to capture healthcare decisions before patterns become entrenched.

Table 4.27: Respondents' Professional Experience

Category	Number of Respondents	Percentage (%)
<1 year	10	10
1-3 years	20	20
4-7 years	25	25
8-15 years	30	30
16+ years	15	15

Respondents' Awareness of the Proposed project

The **high proximity rate** (75% living/working near Awolowo Road) indicates most respondents will experience direct impacts from construction and operations. This creates both urgency for comprehensive impact mitigation and opportunity for building strong local patronage. The 25% not in immediate proximity may influence broader perceptions through social and professional networks beyond the immediate area.

Table 4.28: Respondents' Awareness of the Proposed project

Category	Number of Respondents	Percentage (%)
Yes	75	75
No	25	25

Respondents' Household Size

Household sizes show a balanced distribution with nuclear families predominating (45% at 3-4 members), supplemented by significant single/couple households (30% at 1-2 members) and substantial larger families (25% at 5+ members). This requires Medipark to serve diverse household types from individual professionals to extended families, each with distinct healthcare coordination needs and decision-making dynamics.

Table 4.29: Distribution of Respondents by Household Size

Category	Number of Respondents	Percentage (%)
1-2 members	30	30
3-4 members	45	45
5-6 members	20	20
7+ members	5	5

Respondents by Number of Dependents

Half the population (50%) supports 1-2 dependents, indicating moderate family responsibilities, while 25% have no dependents and 25% support 3+ dependents. This creates

a spectrum of healthcare priorities from individual wellness and elective procedures for those without dependents to cost-sensitive family care for those with multiple dependents. The 5% supporting 5+ dependents represent particularly vulnerable households requiring special attention in affordability programming.

Table 4.30: Distribution of Respondents by Number of Dependents

Category	Number of Respondents	Percentage (%)
0	25	25
1-2	50	50
3-4	20	20
5+	5	5

Respondents Monthly Income Level

The Community shows a middle-to-high income profile with 55% earning above ₦500,000 monthly (25% at ₦501k-₦1M + 20% at ₦1M-₦3M + 10% above ₦3M). This supports premium service viability but the significant lower-income segment (45% below ₦500,000) necessitates tiered pricing and payment options. The dual market structure affluent clients for specialized services and middle-income families for core healthcare requires careful service design and communication strategies.

Table 4.31: Distribution of Respondents by Monthly Income Level

Category	Number of Respondents	Percentage (%)
< ₦200,000	15	15
₦200,000 – ₦500,000	30	30
₦501,000 – ₦1,000,000	25	25
₦1,000,001 – ₦3,000,000	20	20
> ₦3,000,000	10	10

4.5.6.3 Sociocultural and Community Dynamics

Familiar with Former Nursing School Site

A **significant majority (65%) are familiar with the site's history** as a former nursing school, indicating strong Community memory and potential nostalgic attachment. This historical awareness creates both opportunity (leveraging the site's healthcare legacy) and risk (heightened expectations for educational/Community benefit continuity). The 35% unaware likely represent newer residents or those less engaged with local history, requiring educational outreach about the site's transformation.

Table 4.32: Respondents' Awareness of the School of Nursing Facility

Category	Number of Respondents	Percentage (%)
Yes	65	65
No	35	35

Heritage Landmarks in Area

The Community shows split awareness of heritage landmarks (50% yes, 50% no), indicating either variable knowledge of local history or differing definitions of "heritage." This balanced recognition suggests that while cultural assets exist, they may not be universally valued or known, requiring careful assessment of which sites warrant protection versus those with limited Community significance.

Table 4.33: Respondents' Perception of Heritage Landmark in the area

Category	Number of Respondents	Percentage (%)
Yes	50	50
No	50	50

Respondents' Response to Cultural Norms/Practices

Less than half the Community (40%) identifies specific cultural norms or practices, suggesting Ikoyi's cosmopolitan character may dilute traditional practices. This relatively low recognition indicates that while cultural sensitivity remains important, the Community may prioritize modern, urban values over traditional customs in the project context. The 60% who see no specific norms represent either acculturated residents or those viewing the area as transcending specific ethnic traditions.

Table 4.34: Analysis of Respondents' Response to Cultural Norms/Practices

Category	Number of Respondents	Percentage (%)
Yes	40	40
No	60	60

Respondents' Response to Informal Rules on Noise/Construction

A slight majority (55%) acknowledges informal Community rules, indicating moderate self-regulation around noise and construction. This suggests expectations exist for considerate development practices, though not universally recognized. The 45% unaware of such rules may represent either newer residents or those in more formally regulated settings, highlighting the need for clear, formalized agreements rather than relying on informal understandings.

Table 4.35: Analysis of Respondents' Response to Informal Rules on Noise/Construction

Category	Number of Respondents	Percentage (%)
Yes	55	55
No	45	45

Respondents' Response to Symbolic/Community -Valued Sites

Only 30% identify specific valued sites, suggesting limited emotional attachment to particular locations or diffuse attachment across the area generally. This relatively low identification of specific valued sites may reduce resistance to change but also indicates the need to proactively identify and protect any truly significant sites that might not be widely recognized but are important to minority groups.

Table 4.36: Analysis of Respondents' Response to Symbolic/Community -Valued Sites

Category	Number of Respondents	Percentage (%)
Yes	30	30
No	70	70

Respondents' Response to Belong to Residents' Association

A strong majority (60%) participates in formal Community structures, indicating high levels of organization and established channels for engagement. This represents a significant asset for structured dialogue but also means opposition could become quickly organized. The 40% non-members may represent renters, newer residents, or those less engaged civically, requiring alternative outreach strategies beyond formal associations.

Table 4.37: Analysis of Respondents' Response to Belong to Residents' Association

Category	Number of Respondents	Percentage (%)
Yes	60	60
No	40	40

Respondents' Association Activity Level

Community associations show moderate to high activity levels with 35% very active and 45% moderately active (80% combined active). This indicates robust civil society infrastructure capable of meaningful partnership. The 20% reporting inactive associations may represent areas with weaker organization or disillusionment with existing structures, suggesting Medipark may need to supplement rather than rely solely on existing associations.

Table 4.38: Analysis of Respondents' Association Activity Level

Category	Number of Respondents	Percentage (%)
Very active	35	35
Moderately active	45	45
Not active	20	20

Respondents' Religious Affiliation

The Community is predominantly Christian (70%) with significant Muslim minority (25%), reflecting broader Lagos religious demographics. This distribution requires consideration of religious holidays, prayer space provisions, and potential dietary restrictions. The 5% "other" category, while small, indicates religious diversity requiring inclusive, non-sectarian approaches to Community health and wellness programming.

Table 4.39: Distribution of Respondents' Religious Affiliation

Category	Number of Respondents	Percentage (%)
Christianity	70	70
Islam	25	25
Other	5	5

Analysis of Respondents' Responses to Valued Public Green Spaces

A clear majority (65%) values public green spaces, indicating strong Community desire for environmental amenities and recreational areas. This support for greenery aligns with the 85% who want tree preservation, suggesting consistent environmental values. The 35% who don't identify valued green spaces may reflect either limited existing quality spaces or differing priorities, but shouldn't diminish the strong majority support for green infrastructure.

Table 4.40: Distribution of Respondents' Response to Valued Public Green Spaces

Category	Number of Respondents	Percentage (%)
Yes	65	65
No	35	35

Analysis of Respondents' Responses to Community Sensitivities

A strong majority (70%) acknowledges Community sensitivities, particularly around traffic, parking, and redevelopment. This high recognition indicates awareness of potential conflict areas and suggests the Community is attuned to development impacts. The 30% who see no specific sensitivities may represent less engaged residents or those in less affected areas, but the dominant concern indicates need for careful, consultative planning processes.

Table 4.41: Distribution of Respondents' Response to Community Sensitivities

Category	Number of Respondents	Percentage (%)
Yes	70	70
No	30	30

4.5.6.4 Livelihood and Economic Activities

Analysis of Respondents' Primary Source of Income

The Community relies primarily on formal employment (60%), supplemented by business income (25%) and consulting/contract work (10%). This heavy dependence on salaried positions indicates stability but also vulnerability to economic downturns affecting corporate sectors. The distribution suggests most residents have employer-provided benefits but may lack flexibility during health crises, highlighting the importance of sick leave policies and continuity of care arrangements.

Table 4.42: Respondents' Primary Source of Income

Category	Number of Respondents	Percentage (%)
Salary/Employment	60	60
Business	25	25
Contracts/Consulting	10	10
Investments	5	5

Analysis of Respondents' Response to Owning Businesses

A substantial minority (40%) operates local businesses, indicating vibrant entrepreneurial activity within the Community. This represents significant potential for procurement partnerships, service contracts, and collaborative ventures. The 60% non-business owners still benefit indirectly through employment, services, and Community vitality, making local business support important for broader economic health beyond direct Medipark impacts.

Table 4.43: Respondents' Response to Owning Businesses

Category	Number of Respondents	Percentage (%)
Yes	40	40
No	60	60

Analysis of Respondents' Participation/Engagement to Work life Dependent on Traffic Situation along Awolowo Road

An overwhelming majority (70%) has livelihood dependency on traffic flow, making congestion mitigation not merely a convenience issue but an economic imperative. This extreme dependency underscores why traffic concerns dominate other issues (80% expressed concern) and indicates that even temporary disruptions could have significant economic consequences for most Community members.

Table 4.44: Respondents' Participation/Engagement to Work life Dependent on Traffic Situation along Awolowo Road

Category	Number of Respondents	Percentage (%)
Yes	70	70
No	30	30

Analysis of Respondents' Response to Work Relies on Corporate Hubs

Nearly two-thirds (65%) depend on corporate hub proximity, confirming Ikoyi's identity as a corporate center. This creates natural alignment with Medi Park's corporate positioning but also suggests vulnerability to broader economic trends affecting corporate Lagos. The 35% less dependent may include retirees, remote workers, or those in non-corporate sectors, representing diversification but minority status.

Table 4.45: Respondents' Response to Work Relies on Corporate Hubs

Category	Number of Respondents	Percentage (%)
Yes	65	65
No	35	35

Analysis of Respondents' whom own Businesses Creating Job Opportunities

The Community shows moderate employer presence with 40% employing staff (25% small + 10% medium + 5% large), while 60% employ no one. This indicates that while many are job creators, most individuals are employees rather than employers. The distribution suggests local hiring initiatives should target both established businesses (for immediate placement) and individuals (for direct Medi Park employment).

Table 4.46: Respondents whom own Businesses Creating Job Opportunities

Category	Number of Respondents	Percentage (%)
Yes (1-5)	25	25
Yes (6-20)	10	10
Yes (20+)	5	5
No	60	60

Analysis of Respondents' Perceptions of Project/Intervention Impact

The Community shows balanced but optimistic expectations with half anticipating positive impact, 20% expecting negative effects, and 30% foreseeing no change. This 50/50 split between expected benefit and neutrality/concern indicates neither overwhelming enthusiasm nor predominant skepticism, but rather conditional optimism dependent on implementation specifics. The significant neutral group (30%) represents persuadable stakeholders whose support could swing based on demonstrated benefits.

Table 4.47: Respondents' Perceived Impact of the Project/Intervention

Category	Number of Respondents	Percentage (%)
Positive	50	50
Negative	20	20
No impact	30	30

Analysis of Respondents' Responses to Interest in Medi Park Jobs/Partnerships

A strong majority (60%) expresses interest in economic opportunities, indicating high Community engagement potential. This interest level, combined with the 20% "maybe" responses, suggests up to 80% could participate given appropriate opportunities and terms. The 20% definite disinterest may represent those in stable careers, retired, or skeptical of

project benefits, but the dominant interest provides strong foundation for local economic integration.

Table 4.48: Respondents' Responses to Interest in Medi Park Jobs/Partnerships

Category	Number of Respondents	Percentage (%)
Yes	60	60
No	20	20
Maybe	20	20

Analysis of Respondents' to interested in Training/Skills acquisition

Training interests show diversified preferences with health services (30%), business/entrepreneurship (25%), and hospitality (20%) as top priorities. This distribution suggests the Community sees opportunities across Medipark's ecosystem, not just in clinical roles. The spread indicates need for multi-track training programs rather than single-focus initiatives, with particular attention to healthcare skills given Medipark's core function and existing nursing training facility plans.

Table 4.49: Respondents' to interested in Training/Skills acquisition

Category	**Number of Respondents**	**Percentage (%)**
Health services	30	30
Hospitality	20	20
ICT	15	15
Business/Entrepreneurship	25	25
Facility management	10	10

4.5.6.5 Housing and Urban Settlement

Analysis of Respondents' Housing Preferences

The Community predominantly lives in multi-unit housing with apartments (50%) and duplexes (15%) totaling 65% in shared building structures. This concentration affects noise sensitivity, parking needs, and Community dynamics. The 20% in detached houses and 10% in BQs/studios represent opposite ends of the housing spectrum, suggesting diverse living conditions and potentially different impact experiences from Medipark operations.

Table 4.50: Respondents' Housing Types

Category	Number of Respondents	Percentage (%)
Apartment	50	50
Detached house	20	20
Duplex	15	15
BQ/Studio	10	10
Serviced apartment	3	3

Analysis of Respondents' Housing Arrangements

The Community shows a **renter majority (55%)** over owners (40%), with 5% in staff accommodation. This tenure distribution has critical implications: renters face displacement risks from property value increases but may benefit from improved services; owners gain asset appreciation but may resist changes affecting property values. The renter majority suggests vulnerability to gentrification pressures requires protective measures.

Table 4.51: Housing/Accommodation Status of Respondents

Category	Number of Respondents	Percentage (%)
Own	40	40
Rent	55	55
Staff accommodation	5	5

Analysis of Respondents' Performance/Quality Ratings of Community Security

Security perceptions show **moderate** satisfaction with 30% rating it excellent and 50% good (80% positive combined), while 20% rate it fair or poor. This indicates generally adequate but imperfect security conditions. Medipark's presence could potentially improve security through increased lighting, surveillance, and security personnel, but could also attract crime if not properly managed, making security planning crucial.

Table 4.53: Respondents' Performance/Quality Ratings of Community Security

Category	Number of Respondents	Percentage (%)
Excellent	30	30
Good	50	50
Fair	15	15
Poor	5	5

Analysis of Respondents' Response about Adequacy of Car Parking Spaces

The Community experiences severe parking constraints with only 25% finds parking adequate versus 75% reporting limited or very limited availability. This existing deficiency means Medipark's additional parking demand will exacerbate an already critical problem. The extreme shortage (25% very limited) indicates parking solutions must be integral to project design, not ancillary considerations.

Table 4.54: Respondents' Response about Adequacy of Car Parking Spaces

Category	Number of Respondents	Percentage (%)
Adequate	25	25

Limited	50	50
Very limited	25	25

Analysis of Respondents' Responses on Noise and Congestion Disturbance

A majority experiences regular disturbance with 40% frequently and 35% occasionally affected (75% total), indicating low tolerance for additional nuisance. This high baseline of existing disturbance suggests the Community has limited capacity to absorb further impacts, requiring exceptional mitigation measures during construction and operations to avoid overwhelming local tolerance thresholds.

Table 4.55: Respondents' Perception of Noise and Congestion Disturbance

Category	Number of Respondents	Percentage (%)
Frequently	40	40
Occasionally	35	35
Rarely	15	15
Never	10	10

Analysis of Needed Urban Infrastructure Improvements

Road improvements dominate Community priorities (70%), significantly outpacing drainage (60%), waste management (50%), and street lighting (40%). This clear hierarchy indicates that while multiple infrastructure deficiencies exist, road conditions represent the most pressing concern. Medi Park's potential contributions to road upgrades could deliver disproportionate Community goodwill by addressing this top-priority issue.

Table 4.56: Respondents' Priorities for Urban Improvements

Category	Number of Respondents	Percentage (%)
Road upgrades	70	70
Drainage	60	60
Street lighting	40	40
Waste management	50	50
Traffic control	55	55

4.5.6.6 Infrastructure and Services

Analysis of Respondents' Main Water Sources

The Community relies on diversified water sources with only 30% using public mains, 50% depending on boreholes, and 20% using treated/packaged water. This distribution indicates limited confidence in public water infrastructure and potential groundwater sustainability

concerns. Medipark's significant water needs must consider this fragile ecosystem, potentially requiring water recycling and conservation measures to avoid depleting local resources.

Table 4.57: Main Water Sources Used by Respondents

Category	Number of Respondents	Percentage (%)
Public mains	30	30
Borehole	50	50
Treated/Packaged water	20	20

Analysis of Respondents' Perceptions of Electricity Reliability

Electricity supply is perceived as unreliable by 80% of respondents (50% fairly reliable + 30% poor), with only 20% considering it very reliable. This widespread perception of energy insecurity means Medipark cannot depend on grid stability and must design robust backup systems. However, heavy generator use could exacerbate noise and air quality concerns, suggesting renewable energy solutions could address multiple Community concerns simultaneously.

Table 4.58: Perceived Reliability of Electricity Supply Among Respondents

Category	Number of Respondents	Percentage (%)
Very reliable	20	20
Fairly reliable	50	50
Poor	30	30

Analysis of Electricity Backup Power Usage Among Respondents

The Community predominantly uses **diesel** generators (60%) for backup power, with 30% using cleaner alternatives (inverter/solar) and 10% having no backup. This heavy generator reliance contributes to local air and noise pollution while indicating acceptance of backup systems as necessity. Medipark's power strategy could model cleaner alternatives, potentially improve local environmental conditions while ensure operational reliability.

Table 4.59: Types of Electricity Backup Power Used by Respondents

Category	Number of Respondents	Percentage (%)
Generator	60	60
Inverter/Solar	30	30
None	10	10

Analysis of Waste Disposal Practices Among Respondents

Formal waste collection serves most residents (70%), with 20% using estate services and 10% other methods. This established waste management infrastructure provides foundation for Medipark's waste handling but also sets expectations for reliable, hygienic service. Medical waste management will require particular attention given Community awareness and concern about waste increases (75% expect more waste).

Table 4.60: Respondents' Waste Disposal Methods

Category	Number of Respondents	Percentage (%)
LAWMA/Private	70	70
Estate service	20	20
Other	10	10

Analysis of Accessibility of Healthcare Facilities

Healthcare access shows moderate satisfaction with 40% finding it very accessible and 45% moderately accessible (85% positive combined), while 15% report poor access. This suggests existing healthcare infrastructure meets basic needs but leaves room for improvement. Medipark's success may depend less on basic accessibility and more on superior quality, specialized services, or better patient experience compared to existing options.

Table 4.61: Respondents' Perception of Accessibility of Healthcare Facilities

Category	Number of Respondents	Percentage (%)
Very accessible	40	40
Moderately accessible	45	45
Not accessible	15	15

Analysis of Respondents' Access to Healthcare Facilities

Most residents enjoy excellent healthcare proximity with 50% within 10 minutes and 30% within 10-20 minutes (80% total under 20 minutes). This existing convenience means Medipark must offer compelling advantages beyond mere proximity to attract patients. The 20% with longer travel times (21+ minutes) represent potential primary beneficiaries of the new facility's location.

Table 4.62: Travel Time to Nearest Hospital Among Respondents

Category	Number of Respondents	Percentage (%)
<10 mins	50	50
10-20 mins	30	30

21-30 mins	15	15
30+ mins	5	5

Analysis of Road Network Conditions Based on Respondent Feedback

Road conditions receive mixed assessments with 30% rating them good, 50% fair, and 20% poor. This distribution indicates generally adequate but deteriorating infrastructure that could be significantly impacted by construction traffic. The 20% poor rating suggests specific trouble spots that Medipark should avoid exacerbating and potentially help address through infrastructure improvements.

Table 4.63: Respondents' Perception of Road Network Conditions

Category	Number of Respondents	Percentage (%)
Good	30	30
Fair	50	50
Poor	20	20

Analysis of Respondents' Perceptions of Drainage and Flood Control Effectiveness

Drainage systems are perceived as inadequate by 85% of respondents (40% fair + 45% poor), with only 15% considering them very effective. This overwhelming concern about flooding (consistent with 60% identifying the area as flood-prone) means Medipark's drainage design must not only protect the site but potentially improve surrounding area drainage to gain Community approval and prevent flood-related conflicts.

Table 4.64: Perceived Effectiveness of Drainage and Flood Control Measures

Category	Number of Respondents	Percentage (%)
Very effective	15	15
Fair	40	40
Poor	45	45

4.5.6.7 Project Perception and Expectations

Analysis of Respondents' Awareness of the Medipark Project

With near-even split awareness (55% aware vs. 45% unaware), the project faces both established recognition and significant information gaps. This polarization suggests communication efforts have reached core stakeholders but missed nearly half the Community,

creating vulnerability to misinformation and opposition. The awareness gap is particularly critical given 75% proximity to the site, indicating even directly affected residents lack project information.

Table 4.65: Awareness of the Medipark Project Among Respondents

Category	Number of Respondents	Percentage (%)
Yes	55	55
No	45	45

Analysis of Respondents' Perception of the Project

Community sentiment shows a balanced but fragile consensus with equal thirds of positive (50%), neutral (30%), and concerned (20%) respondents. This indicates Medipark begins with baseline support but significant persuadable middle ground and notable opposition. The distribution suggests success will depend on converting neutrals through demonstrated benefits while addressing specific concerns of the skeptical 20% who could amplify opposition if their issues remain unaddressed.

Table 4.66: Respondents' Perception of the Project

Category	Number of Respondents	Percentage (%)
Positive	50	50
Neutral	30	30
Concerned	20	20

Analysis of Respondents' Perceived Benefits

Healthcare improvement is the dominant anticipated benefit (70%), significantly outpacing economic opportunities (60%) and property value increases (40%). This prioritization suggests the Community views Medipark primarily through a health services lens rather than as a real estate or economic development project. The strong healthcare focus creates high expectations for service quality, accessibility, and clinical outcomes that must be met to maintain Community support.

Table 4.67: Respondents' Perceived Expected Benefits

Category	Number of Respondents	Percentage (%)
Improved healthcare	70	70
Job opportunities	60	60
Increased property value	40	40
Modern infrastructure	50	50

Analysis of Perceived Benefits from the Project/Initiative

emerges as the overwhelming dominant concern (80%), significantly exceeding other issues like noise (60%), construction impacts (50%), and parking (70%). This extreme focus on traffic indicates it is not merely one concern among many but the primary determinant of Community acceptance. The 20-point gap between traffic concern and the next issue (parking at 70%) underscores that traffic mitigation must be the cornerstone of the Community relations strategy.

Table 4.68: Distribution of Perceived Benefits Among Respondents

Category	Number of Respondents	Percentage (%)
Traffic congestion	80	80
Noise	60	60
Construction impacts	50	50
Parking pressure	70	70

Analysis of Public Concern Regarding Increased Traffic

The intensity of traffic concern is exceptionally high with 70% very concerned and 20% moderately concerned (90% total concerned). This near-universal anxiety indicates traffic impacts could trigger immediate and widespread opposition if not proactively managed. The mere 10% not concerned likely represent those with minimal traffic dependency or alternative transport options, representing a small minority viewpoint.

Table 4.69: Respondents' Concern About Increased Traffic

Category	Number of Respondents	Percentage (%)
Very concerned	70	70
Moderately concerned	20	20
Not concerned	10	10

Analysis of Perceptions on the Impact of Medipark on Healthcare Access

A solid majority (65%) believes Medipark will improve healthcare access, though 15% disagree and 20% are uncertain. This represents reasonably strong confidence in the project's core healthcare mission but leaves room for doubt. The 20% uncertainty suggests need for clearer communication about how Medipark will specifically improve access beyond existing facilities, particularly for different population segments.

Table 4.70: Respondents' Perception on Whether Medipark Will Improve Healthcare Access

Category	Number of Respondents	Percentage (%)
Yes	65	65
No	15	15
Not sure	20	20

Analysis of Respondent Opinions on Prioritizing Local Residents for Jobs

The near-unanimous support for local hiring priority (85% yes vs. 15% no) represents one of the strongest consensus positions in the survey. This overwhelming expectation creates both opportunity (Community goodwill if implemented) and risk (significant backlash if perceived as unmet). The strength of this sentiment suggests local hiring should not be treated as optional CSR but as a fundamental operational requirement for social license.

Table 4.71: Respondents' Support for Prioritizing Local Residents in Employment

Category	Number of Respondents	Percentage (%)
Yes	85	85
No	15	15

Analysis of Preferred Community Amenities

Practical healthcare amenities dominate Community preferences with pharmacy services (80%) and parking (75%) significantly outpacing lifestyle amenities like green areas (70%) and restaurants (60%). This practicality focus suggests the Community prioritizes functional healthcare access over ancillary comforts. The strong pharmacy demand (80%) indicates expectation for integrated pharmaceutical services as a core component rather than optional add-on.

Table 4.72: Desired Community Amenities Among Respondents

Category	Number of Respondents	Percentage (%)
Pharmacy	80	80
Green areas	70	70
Café/Restaurant	60	60
Parking facility	75	75
Short-let apartments	40	40

4.5.6.8 Environmental and Safety Concerns

Analysis of Respondents' Exposure to Noise Pollution

A significant majority (65%) already experiences noise pollution, indicating low tolerance for additional noise from construction or operations. This existing nuisance creates a challenging context for construction activities, requiring exceptional noise control measures. The 35% not experiencing noise pollution may live in quieter pockets or have higher thresholds, but the majority experience establishes noise as a pre-existing Community stressor.

Table 4.73: Respondents' Experience of Noise Pollution

Category	Number of Respondents	Percentage (%)
Yes	65	65
No	35	35

Analysis of Respondents' Perception of Air Quality Impacts

Strong majority concern about air quality (70% concerned) indicates environmental health awareness and specific worry about construction dust and generator emissions. This high concern level necessitates visible, effective dust suppression measures and consideration of cleaner energy alternatives. The 30% less concerned may represent those less affected by air quality issues or with different priorities, but the dominant concern requires proactive air quality management and monitoring.

Table 4.74: Respondents' Concern About Air Quality Impacts

Category	Number of Respondents	Percentage (%)
Yes	70	70
No	20	20
Maybe	10	10

Analysis of Perceived Impact of Development on Waste Generation

An overwhelming majority (75%) expects increased waste generation, indicating clear understanding of development consequences. This expectation creates pressure for superior waste management that not only handles Medipark's waste but potentially improves local waste systems. The 25% who don't anticipate increased waste may underestimate project scale or assume efficient waste management, but the dominant expectation sets a high standard for waste performance.

Table 4.75: Respondents' Perception on Whether Development Will Increase Waste

Category	Number of Respondents	Percentage (%)
Yes	75	75
No	25	25

Analysis of Respondents' Views on Tree/Green Buffer Preservation

The extraordinarily strong support for tree preservation (85% yes vs. 15% no) represents one of the most unified Community positions. This near-consensus indicates that environmental aesthetics and ecosystem services are highly valued. The minimal opposition suggests tree removal would face immediate and widespread resistance, making tree preservation and replacement planning essential for Community approval.

Table 4.76: Respondents' Opinion on the Preservation of Trees/Green Buffers

Category	Number of Respondents	Percentage (%)
Yes	85	85
No	15	15

Analysis of Flood-Prone Areas Based on Respondent Feedback

A clear majority (60%) recognizes flood vulnerability, indicating Community experience with flooding issues. This awareness means Medipark's drainage design will be closely scrutinized, and any perceived exacerbation of flooding will face immediate criticism. The 40% who don't see flooding risk may live in less affected areas or have limited experience, but the majority recognition establishes flooding as a legitimate Community concern requiring serious engineering response.

Table 4.77: Respondents' Perception of Areas Prone to Flooding

Category	Number of Respondents	Percentage (%)
Yes	60	60
No	40	40

Analysis of Recommended Safeguards for Project Management

Community -identified safeguards show remarkable alignment with expressed concerns, with dust control (80%) directly addressing air quality worries (70%) and strict waste management (75%) matching waste increase concerns (75%). This coherence between concerns and solutions indicates the Community has clear, practical expectations for mitigation. The strong

emphasis on operational controls (traffic management 70%, construction hours 65%) over design features suggests focus on daily livability impacts.

Table 4.78: Recommended Safeguards by Respondents

Category	Number of Respondents	Percentage (%)
Dust control	80	80
Strict waste management	75	75
Traffic/parking management	70	70

Source: Medipark ESIA Field Survey, 2025

4.6 Health Assessment

4.6.1 Baseline Health Characteristics

In order to obtain some basic information on the health characteristics of inhabitants in the study area, published articles and other documents on health effects were sourced and reviewed. The source includes journal articles, internet publications and other relevant government publications. The objective was to identify from the published works relevant information to guide the development of an appropriate protocol for correcting the highlighted gaps and deficiencies.

Information was obtained through review of health facility records, walk through surveys in health facilities, in-depth interview of key health informants (the most senior officer in charge of health facility) as well as household survey.

4.6.2 Health Characteristics and Findings for Lagos State Study Area

Health Facilities and Services

In addition to private health facilities, Lagos State has several hospitals, health care centers, maternities and dispensaries spread across the Local Government Areas. There are also specialist hospitals and numerous traditional healing centers. In the rural areas there are various maternity clinic and some primary health centers which are generally not well-equipped compare with those in those in the urban areas.

The study areas have both orthodox and non-orthodox health care providers and facilities. The orthodox facilities comprise general hospital, health centers and health posts while the non-orthodox comprise mainly traditional birth attendants (TBAs). The functional orthodox facilities provide first aid and treatment for minor ailments, as well as immunization services for children and women of child bearing age.



Plate 4.9: Photograph of the lagoon Hospital

Disease Prevalence and Disease Vectors

Interviews in households in the proposed project community revealed that the most frequently reported diseases are malaria (responsible for 68% of outpatient attendance in the public health facilities, 11.8% cause of maternal mortality and up to 20.2% cause of childhood mortality), diarrheal diseases and respiratory tract infections (RTI).

Other prevalence diseases are gastroenteritis, urinary tract infection, upper respiratory tract infection, measles, pneumonia tuberculosis and sexually transmitted diseases.

Table 4.79: Prevalence of Diseases common to Study Area

Disease	<5 years			5-14 years			15-49years			50-64 years			≥65 years			Total
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	
Malaria	4857	4119	8976	1858	1503	3361	2952	5121	8073	1206	2057	3263	186	305	491	24164
Diarrhea	281	202	483	29	25	54	47	51	98	29	29	58	52	46	98	791
Gastroenteritis	353	282	635	59	69	128	145	199	344	37	43	80	59	46	105	1292
Pneumonia	99	84	183	43	33	76	72	42	114	39	40	79	22	18	40	492
Tuberculosis	23	25	48	22	22	44	85	59	144	35	25	60	27	24	51	347
UTI	139	120	259	39	28	67	141	196	337	48	58	106	37	36	73	842
HIV/AIDS	20	23	43	20	18	38	35	38	73	18	19	37	23	22	45	236
Measles	167	134	301	45	55	100	30	31	61	18	18	36	18	18	36	534
URTI	1315	1133	2448	259	251	510	464	639	1103	108	176	284	69	82	151	4496
Cellulites	76	81	157	87	74	161	107	129	236	51	60	111	35	47	82	747
Conjunctivitis	121	111	232	112	122	234	330	407	737	172	224	396	116	125	241	1840
Skin disease	170	223	393	158	152	310	188	251	439	72	104	176	49	42	91	1409

Source: Survey of Health Centers in affected Communities of Lagos State

4.7 Public Consultation/Stakeholder Engagement

4.7.1 Introduction

Chadwick (2012) describe consultation as a structured engagement process involving project proponents, regulators, environmental organizations, and potentially affected populations. The aim is to identify, discuss, and understand the anticipated environmental and social implications of a proposed development. Their definition underscores that consultation is more than an information-sharing exercise; it is a core component of the Impact Assessment process that ensures stakeholders have a genuine opportunity to express concerns and influence project decisions.

In practice, consultation processes differ significantly across countries. Variations in legal frameworks, cultural norms, political conditions, and levels of Community awareness all influence how engagement is conducted. The effectiveness of consultation is further shaped by the strength of local institutions, public trust in government agencies, and the willingness of communities to participate.

Given these differences, a uniform consultation model is neither practical nor effective. Successful engagement must be adapted to the specific cultural, educational, and political context of the host Community to ensure that stakeholders are meaningfully involved and that their contributions are accurately reflected in project planning and decision-making

4.7.2 Levels of Consultation

The consultation process for this impact assessment is structured across four levels to ensure comprehensive stakeholder engagement. The primary objectives of these consultations are to inform and educate, establish cooperation, and identify concerns and needs.

4.7.2.1 Consultation Levels

Institutional Consultation

This level focuses on high-level stakeholders who influence policy, regulation, and strategic alignment. It ensures the project conforms to broader frameworks. Stakeholders Include: Federal and State Ministries of Environment, regulatory bodies, media, corporate shareholders, donor agencies, contractors, suppliers, and environmental experts with a Purpose of to align the project with national, regional, and state development priorities and secure necessary institutional support.

Primary Stakeholders

This level engages groups and individuals who are directly affected by the project's impacts. Stakeholders Include: The directly affected host communities (specifically in Ikoyi Eti-Osa Local Government Area, the Local Government Authority (LGA), the Youth Vanguards, and the project proponent. The primary Purpose is to address direct impacts, incorporate local knowledge, and build consensus with those most affected.

Secondary Stakeholders

This level includes parties who are not directly affected but have a significant interest, influence, or expertise relevant to the project. Stakeholders Include**:** Non-governmental organizations (NGOs), regulatory authorities (federal, state, local), corporate stakeholders, donor agencies, contractors/suppliers, and naturalists with a Purpose to leverage external expertise, address broader societal interests, and manage the project's reputation and regulatory compliance.

Community -Based Organizations (CBOs) and Interest Groups

This level ensures formal and informal groups within the Community have a dedicated channel for participation. Stakeholders Include: Recognized interest groups, local NGOs, naturalists, and affected parties within the communities (whether directly or indirectly impacted). the Purpose is to facilitate grassroots involvement, capture organized Community perspectives, and ensure the assessment process is inclusive and transparent.

4.7.3 Key Objectives of Consultation

The consultation process is designed to achieve the following key objectives:

- Improve the understanding of all involved parties regarding the project's potential impacts, benefits, and processes.
- Foster areas of collaboration and ensure meaningful participation from all stakeholder levels throughout the project lifecycle.
- Proactively identify problems, concerns, and needs raised by stakeholders to effectively address them in the project planning and mitigation strategies.
- Learn and enrich the impact assessment (IA) process through local knowledge
- Evaluate alternatives and seek solution and resolve and prevent conflicts

Table 4.80: Process and Stages of Consultation

Stages /procedure	Goals	Objectives
Project Scoping and Design	• Letter of Intent to FMEnv/Lagos State Regulators • Discuss project design • Ensure compliance with LSMEnv and FMEnv regulations and guidelines	• Adequate consultation with authorities • Reduce conflict areas
Field Consultations	• Consult host Community on Socio- economic aspects • Consult on the impact of the development project generally	• Ensure that the public being the primary stakeholder understands the project and its benefits
Environmental reviews analysis, report	• Present results of field study • Discuss the potential impact/ Mitigation measures with LSMEnv.	• Seek approval of methodologies, results and Environment Management Plan from FMEnv.
Final report	• Bridge the gaps observed at Review	• Implement mechanism to ensure continuous consultation
Implement EMP	• Disclose result of monitoring • Implement public complaints process.	• Implement audit of the Barrack Project • Evaluate lessons that could enhance LSMEnv services to public
Final evaluation	• Assess effectiveness of consultation process • Consult stakeholders for their assessment	• Any lessons learned that might be transferred to other projects.

Source: Lagos Medipark ESIA field work, 2025

4.7.4 Summary of Consultations

The Environmental and Social Impact Assessment (ESIA) team conducted a series of stakeholder consultations for the Lagos Medipark Project to ensure effective information disclosure, transparency, and inclusive participation throughout the project planning process. The consultations were aimed at informing relevant

stakeholders about the proposed development, its scope, and potential environmental and social implications.

Key stakeholders consulted included representatives of the host community, relevant government agencies, community leaders, and other interested parties. These engagements provided a platform for stakeholders to express their views, concerns, expectations, and suggestions regarding the project and its interaction with the surrounding environment.

The consultation process facilitated a two-way communication channel, enabling the project proponents to clarify project details while incorporating stakeholder feedback into project design and environmental management planning where applicable. The consultations helped foster community awareness, build trust, and promote stakeholder ownership of the project, in line with national ESIA requirements and international best practice for stakeholder engagement. Table 4.81 highlights key issues discussed and plates 4.10 to 4.14 shows the photographs of consultation in the Community.

Table 4.81: Summary of Consultation Meetings

Meeting/Date	Stakeholder Description	Location	Issues Discussed
October 2025	Lagos State regulatory bodies	Ministry of environment	○ Project overview and milestones ○ Status of our Environment and Social Impact Assessment
October, 2025	Community residents	Baale's compound	**Key concerns raised by the Community** ○ Affordability & Access to Healthcare The primary worry was that the private, specialized hospital would be financially inaccessible to most residents. The Community sought concrete, transparent mechanisms, beyond general promises for subsidized care, especially for critical treatments. ○ Local Employment & Fair Hiring Practices There was strong emphasis on prioritizing qualified local labor for both construction and operational

			jobs. The Community insisted that safety and qualification standards must not be lowered for the sake of local hiring, requesting fair opportunity paired with clear competency assessments. o Transparent Communication & Trust Participants expressed distrust of informal information channels and "fake news." They formally requested that all project communication and sensitization be channeled through the official Community Development Association (CDA) to ensure accuracy and build trust. o Clarity on Support Systems While a charitable foundation was proposed, the Community demanded specific details: how it would function, clear eligibility criteria for assistance, and a guaranteed prioritization process for local residents in need of critical care support. o Integration with Public Health Insurance Residents required explicit confirmation and practical guidelines on how the hospital would honor national (NHIS) and state health insurance schemes, ensuring these public affordability tools remain effective for Community members. o Holistic Community Benefit Beyond healthcare, the Community expected the project to deliver wider socio-economic value, including job creation, skills training, infrastructure improvements, and a demonstrable commitment to prioritizing locals for both opportunities and medical support.

Source: Medipark ESIA Field Survey, 2025

Stakeholders Consultation Minutes

Date and Venue	8th November 2025
Venue of meeting	Open space at Ikoyi Community center
Participants	Representative of federal Ministry of Environment (EIA Department) EIA Consultant, Representative Commissioner for Environment, Lagos State, Community Head, Youth Leader, Women Leader, Representatives of the Project Proponent (IWOSAN), Community Members and neighboring communities
Introduction	The meeting began with a welcome address. The representative from the Federal Ministry of Environment explained that the Honorable Minister sent them to confirm that the Community was fully aware of the proposed project. The purpose was to understand the Community 's fears, expectations, and concerns at the early stage, so these issues can be incorporated into the Environmental Impact Assessment (EIA) report. He noted that this early consultation helps the Ministry and the project proponents understand what is on ground, identify issues that may hinder the project, and take corrective steps before implementation begins. He also emphasized the need to verify that the project is indeed sited in *Ikoyi* Community and to ensure that the rightful host Community is properly represented. The Ministry representative encouraged participants to freely express any concerns they may have whether related to the environment, the Community, or obligations expected from the project owner. He highlighted that the project ultimately benefits the host Community by creating visibility, employment opportunities for qualified youths, and general socioeconomic upliftment.

Key Concerns raised by Community Members and Responses provided

S/N	Concern Raised by the Community	Official Response Provided
1	Community members questioned where returning foreign-trained medical professionals would reside, noting it was impractical for them to stay in clinical areas. They emphasized the need for dedicated residential facilities.	The project design includes a dedicated residential building within the medical park. This facility will offer rental and purchase options to encourage long-term commitment from medical staff, including diaspora professionals, thereby ensuring service continuity and integration.
2	Significant apprehension was expressed that the public/ private, tertiary-care hospital would be financially inaccessible to the majority of the local Community, creating a two-tier healthcare system.	A multi-faceted approach to affordability was confirmed: Establishment of a Project Foundation to provide needs-based grants for critical/specialist care (e.g., transplants, ICU). Full acceptance of NHIS, NHIA, and the Lagos State Health Scheme). Priority assessment for Community residents applying to the foundation, though full coverage cannot be guaranteed due to demand.
3	While job creation was welcomed, there was a strong dual demand: priority for qualified local hires and an unwavering commitment to professional and safety standards without compromise.	Qualified local candidates will be prioritized for all project phases. • All personnel (e.g., welders, nurses) must meet stringent qualification standards; competency tests may be administered. • Entry-level training programs (e.g., for nursing aides) and horsemanship placements will be developed to enhance local employability.
4	Distrust of informal information channels was high, with specific requests to combat	The proponent agreed to formalize a communication protocol via the CDA. This recommendation will

	"fake news" by establishing official, structured communication through the Community Development Association (CDA).	be escalated to Lagos State partners to ensure proactive, accurate, and consistent Community sensitization throughout the project lifecycle.
5	The Community sought explicit details on the foundation's governance, including application procedures, transparent eligibility criteria, and the decision-making process for subsidies.	Support will be allocated based on assessed medical and financial need, focusing on critical conditions. A transparent review process will be established, with a clear bias towards applicants from the host Community. Detailed operational guidelines will be developed.
6	Questions arose regarding the types of facilities included and a desire to ensure the development remains a dedicated medical park without unrelated commercial diversion.	The Med-Park will consist of three core components: a tertiary hospital, a residential building, and commercial medical suites (e.g., for dentistry, optometry, dermatology). The project charter excludes non-medical commercial entities like banks or general retail to preserve its medical ecosystem integrity.
7	Specific inquiries were made about the involvement of local trade associations (welders, carpenters) and the process for their engagement in the construction phase.	Local artisans and contractors will be engaged subject to rigorous vetting. The project will collaborate with trade associations to identify candidates, but final selection will be contingent on proven competency, certification, and successful completion of project-specific assessments.
8	Clarification was needed on whether the hospital would partner with private Health Maintenance Organizations (HMOs) to broaden patient access options.	The hospital will actively seek partnerships with private HMOs to be listed as a service provider. Patients covered by these HMOs will have access to the facility, expanding financial access options beyond government schemes.
9	A overarching concern was that verbal commitments made during the consultation would not be binding or monitored, leading to unmet expectations.	All concerns and commitments expressed during the engagement will be formally documented and incorporated into the Environmental Impact Assessment (EIA) report. These will form the basis for legally enforceable conditions and will be monitored by regulatory authorities for compliance.

Source: Medipark ESIA Field Survey, 2025

4.7.5 Final Remarks from Stakeholders

Community Representative: "We are not demanding anything excessive. We want transparency, fairness, and assurance that the Medipark Project will bring tangible benefits to our host Community. This land is our heritage, and we expect development that respects our rights and supports our well-being through jobs we can access, healthcare we can afford, and communication we can trust."

Ministry of Environment Representative: "Your concerns are valid, clearly expressed, and have been noted. The Ministry acknowledges all issues raised particularly regarding affordability, accessibility, equity, local benefit, and transparent governance. We will carry out follow-up

assessments and actively engage the project proponents to ensure the Medipark Project not only meets its regulatory obligations but also fulfills its stated commitments to the Community in full compliance with environmental and social standards."

Agreed Action Points and Recommendations:

To translate the dialogue into actionable outcomes, the following steps were unanimously endorsed:

- A targeted follow-up meeting will be convened with Community representatives within to present the detailed design of the Project Foundation and the Local Employment Plan, addressing any outstanding questions.

- The ESIA Consultant is mandated to capture all Community feedback spanning socio-economic, land use, and environmental concerns and integrate them into the final ESIA report with specific, actionable recommendations for mitigation, management, and monitoring.

- A Community Liaison and Grievance Mechanism will be established, with defined roles for the CDA, to ensure ongoing transparency. Furthermore, a framework for independent monitoring of project implementation will be developed to verify compliance with all ESIA commitments and Community benefits.

Conclusion:

This engagement marks a critical step in the project's development. The pathway to successful implementation is now clearly defined: it requires the formal codification of today's commitments into enforceable plans and the establishment of robust, transparent channels for ongoing partnership with the host Community.



Plate 4.14: Community Consultation with FMEnv Regulators

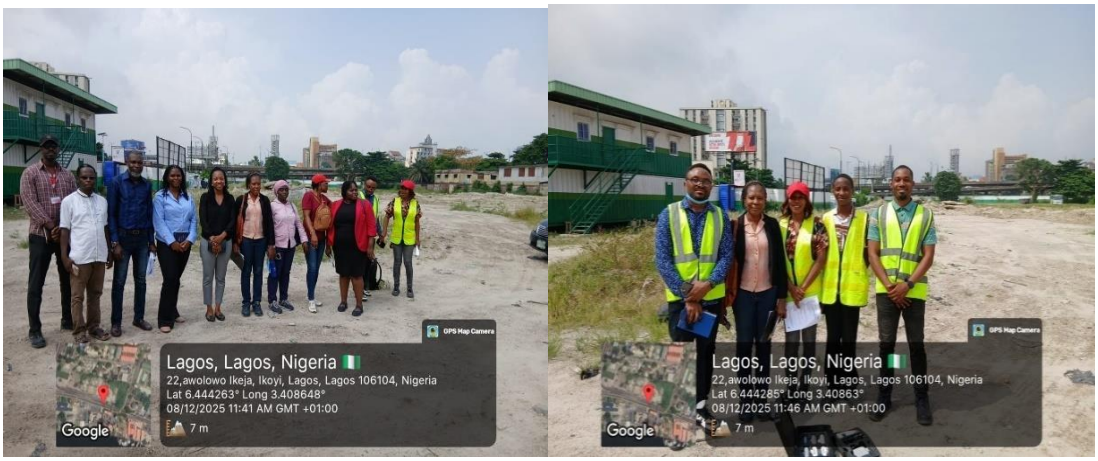


Plate 4.15: Site Verification with FMEnv Regulators

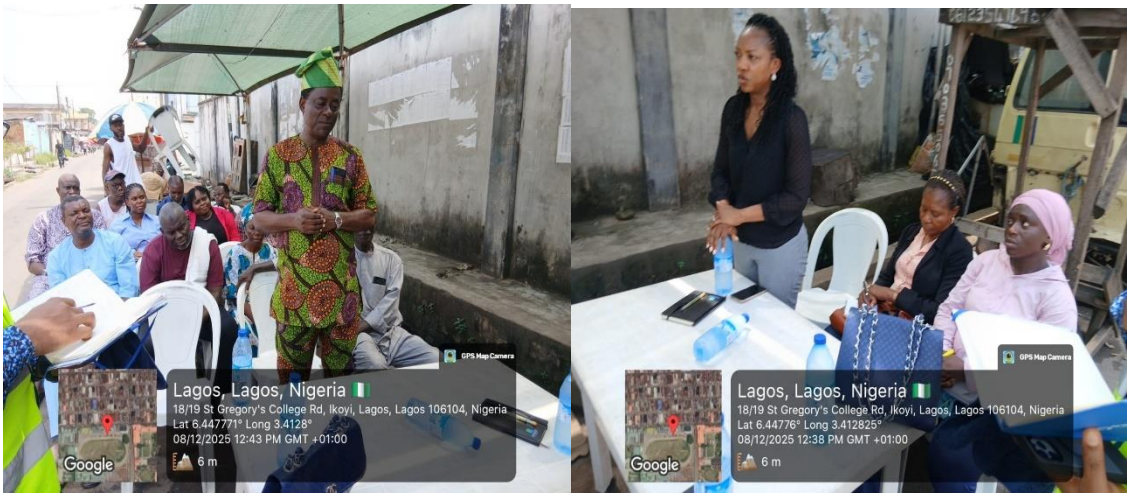


Plate 4.16: Interactive Session with Community Leaders During the Stakeholder Consultation.



Plate 4.17: Project Site Equipment and Compliance Inspection Protocol



Plate 4.18: Photograph during question and answers session

Perceived Benefits of the Medic-Park Project

Across youth groups, women representatives, and broader Community stakeholders consulted, there is a shared sense of optimism regarding the potential socio-economic impact associated with the propose Medical Park development project. The project is widely viewed as a critical opportunity to foster inclusive, Community -centered growth and deliver tangible value directly to the host Community. A key Community perspective is that the project's economic benefits must actively enhance local affordability, thereby complementing the medical foundation and insurance mechanisms to ensure equitable access to the healthcare services.

Key anticipated benefits identified include:

- Strong expectations for access to both skilled and unskilled roles, particularly for local youths, women, artisans, and unemployed graduates within the immediate host Community, supported by transparent recruitment and dedicated training programs.
- Increased commercial activity driven by higher demand for food services, retail activities, hospitality, and small-scale enterprises as project construction and operations commence.
- Prospects for direct and indirect income generation through labour engagement, service provision, and Community -level contracting opportunities, which are seen as essential for improving low-income household financial capacity and overall affordability.
- Anticipated opportunities for indigenous contractors, women-owned businesses, transport operators, suppliers, and informal vendors to be integrated into the project's value chain, ensuring the project stimulates the local economy.
- The collective economic uplift from employment and enterprise is perceived as a vital parallel strategy to improve the Community's ability to afford co-payments, utilize health insurance, and benefit from the project's medical foundation.

These perceived benefits reflect the Community's core expectations for equitable engagement, transparent processes, and a holistic corporate responsibility model by the Medipark project team. The Community explicitly links the realization of these economic opportunities to the

broader goal of making healthcare accessible and affordable, establishing this synergy as a fundamental requirement for securing and maintaining the project's social license.

Community Felt Needs on Accessibility, Affordability, and Employment

Community consultations, revealed that their support for the Medical Park is explicitly linked to actionable solutions for healthcare access, financial inclusion, and equitable economic opportunity.

Key Priority Needs Include:

- Guarantee that the hospital will serve as a seamless provider under the NHIS, NHIA, and Lagos State Health Scheme, with on-site staff to help Community members navigate claims and coverage.

- A non-negotiable demand for contractual commitments in the ESMP to specific percentages of local hires across construction, operational, and support service roles, with transparent reporting.

- Prioritization of vocational training programs directly aligned with confirmed job openings (e.g., nursing aide certification, medical equipment technician courses, hospitality management) for youth and women, not generic skills training.

- Creation of a verified local supplier roster and a dedicated liaison to facilitate contracts for women-owned businesses and youth-led enterprises in catering, sanitation, security, and minor supplies.

Governance, Transparency & Redress:

- Establishment of a joint committee (including youth and women representatives) with the authority to audit hiring practices, foundation disbursements, and Community benefit delivery against published benchmarks.

- A simple, accessible, and culturally appropriate system for reporting and resolving complaints related to employment discrimination, affordability disputes, or accessibility barriers.

The Community's Position:

The Community has expressed a clear readiness to collaborate, but this is explicitly conditional. Their outlined needs on accessibility, affordability, and employment must be

translated into binding social commitments within the ESMP, with clear milestones, dedicated budgets, and a framework for independent verification. Fair representation in monitoring throughout all project phases is essential to build the trust required for successful partnership.

4.7.6 Grievance Redress Mechanism (GRM), Gender-Based Violence (GBV) and Social Risk Management

- **Grievance Redress Mechanism (GRM)**

In order to ensure continuous stakeholder engagement and effective management of concerns throughout the project lifecycle, a formal Grievance Redress Mechanism (GRM) will be established for the Lagos Medipark Project. The GRM will provide an accessible, transparent, and culturally appropriate platform for individuals or groups to raise concerns related to environmental, social, employment, accessibility, affordability, or operational issues.

The GRM will:

- Be accessible to all stakeholders, including community members, workers, suppliers, and vulnerable groups;
- Allow complaints to be submitted through multiple channels, including the Community Development Association (CDA), a designated Community Liaison Officer, suggestion boxes, email, telephone hotlines, and formal written submissions;
- Ensure confidentiality and protection against retaliation;
- Establish clear timelines for acknowledgment, investigation, resolution, and feedback;
- Maintain a grievance register to document all complaints and track resolution status;
- Provide an escalation pathway where grievances are not satisfactorily resolved at the project level.

A Community Liaison Officer will be appointed to coordinate grievance handling and maintain regular communication with the host community. Periodic reports on grievance trends and resolutions will be incorporated into environmental and social monitoring reports to regulatory authorities.

- **Gender-Based Violence (GBV) and Sexual Exploitation and Abuse (SEA) Prevention**

Recognizing the potential social risks associated with large construction projects and workforce influx, the Project Proponent will implement preventive and responsive measures

to address Gender-Based Violence (GBV), Sexual Exploitation and Abuse (SEA), and Sexual Harassment (SH).

Key measures will include:

- Development and enforcement of a Code of Conduct for all workers, contractors, and sub-contractors;
- Mandatory induction training on respectful workplace behavior, anti-harassment policies, and zero tolerance for GBV/SEA;
- Clear disciplinary procedures for violations, including termination and referral to relevant authorities;
- Confidential reporting channels integrated into the GRM;
- Collaboration with local authorities and community leaders to raise awareness and strengthen preventive mechanisms;
- Referral pathways to appropriate support services where incidents occur.

These measures will ensure alignment with national legal frameworks and international good practice, including AfDB safeguard requirements relating to labour conditions and community health and safety.

Other Social Risk Management Measures

In addition to grievance management and GBV prevention, the Project will implement broader social safeguards to address identified community concerns, including:

- Ensure transparent recruitment processes prioritizing qualified candidates from the communities without compromising professional and safety standards.
- Periodic review of the project foundation's operations, insurance integration mechanisms, and community benefit commitments.
- Ensure inclusion of youth and women representatives in periodic stakeholder review meetings.

- Formalized communication protocols through the Community Development Association (CDA) to reduce misinformation and promote trust.

The establishment of a structured Grievance Redress Mechanism, GBV prevention framework, and broader social management measures demonstrates the Project Proponent's commitment to maintaining constructive and transparent relationships with the host Community. These mechanisms will strengthen accountability, support equitable benefit sharing, and enhance the long-term social sustainability of the Lagos Medipark Project.

CHAPTER FIVE

5.0 ASSOCIATED AND POTENTIAL IMPACTS OF THE PROPOSED PROJECT

5.1 Introduction

This chapter discusses the associated and potential impacts of the Lagos Medipark project, Ikoyi, Eti-Osa LGA, Lagos State as described in Chapter 3 of this Report. The impacts are discussed in relation to project interactions with the biophysical, social and health characteristics of the project environment. The chapter presents an overview of the impact assessment methodology as well as results of impact screening followed by detailed qualitative and quantitative impact assessments. Both associated impacts (i.e., those that will occur) and potential impacts (i.e., those that could occur) are assessed.

The impact assessment approach utilizes elements of various impact identification and prediction methods that have been developed and tested over time such as checklists, matrices, flowcharts, networks, mathematical and statistical models, as well as overlays using maps and Geographical Information Systems (GIS).

The approach is a mix of elements drawn from these techniques, and it meets the following criteria for ESIA methodology as identified by SCOPE (1979). The approaches are comprehensive; selective; exclusive; gives confidence limits to the predictions; is objective; and Predicts interactions.

The FMEnv ESIA Procedural Guidelines and the African Development Bank Integrated Safeguard Systems Operational Safeguards, and ISO 14001 approach among other references were used in the identification process.

The impact assessment methodology is discussed further in Section 5.2. The results of the impact assessment are discussed in subsequent sections.

5.2 Methodology

This section discusses the overall methodology used to identify, qualify and quantify the impacts of the Lagos Medipark project, Ikoyi, Eti-Osa LGA, Lagos State on the host environment. The overall methodology comprises five stages (Figure 5.1).

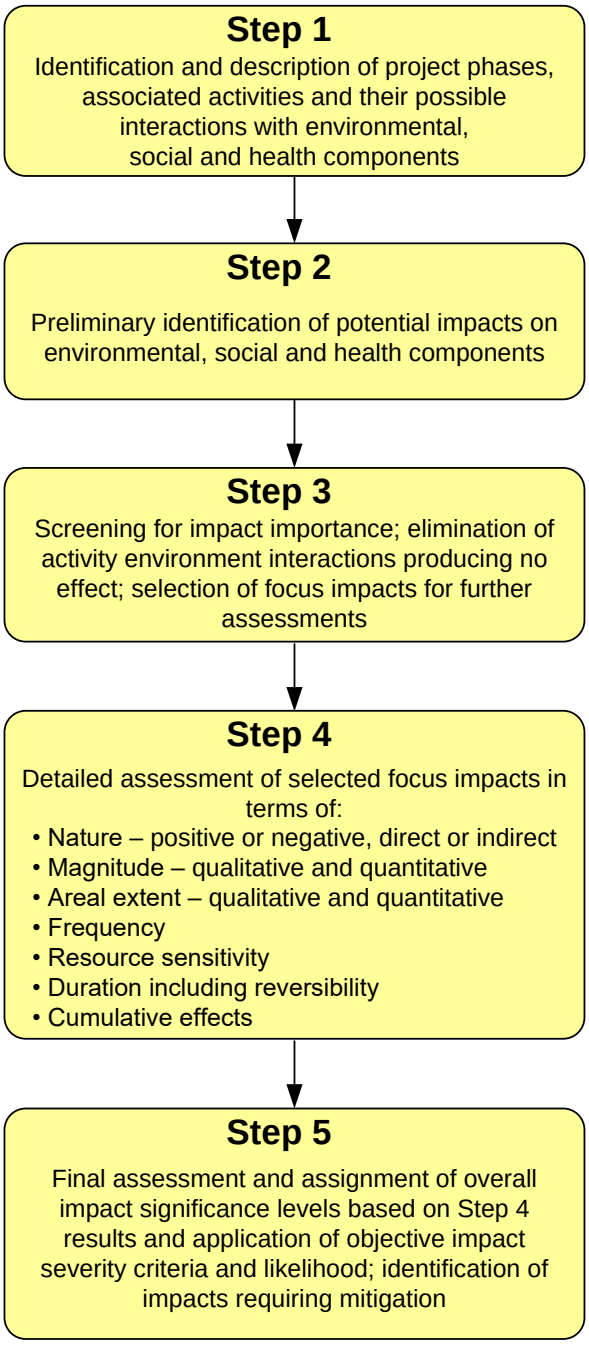


Figure 5.1: Impact Assessment Process

Activities on the Affected Media

The analysis of impacts covers the following project phases and associated activities of the project are

- Site preparation and construction works
- Installation of equipment, infrastructure and other machineries for services
- Commissioning
- Operations
- Decommissioning

For each project phase, potentially affected environmental media are identified and the nature of the effects are qualified and quantified. Chapter 3 provides a summary of the schedule of the proposed activities as well as estimated labour levels.

To aid the impact analyses, individual activities have been identified for each project phase and discussed in relation to their interactions with various environmental components. However, two areas are discussed in the context of all project phases. They are Wastes and emissions handling; and Health effects.

5.3 Preliminary Identification and Screening

In line with recommended impact assessment approaches (FMEnv, 1995; UNEP, 1996; Canter, 1996; Lohani *et al*., 1997) the first level of impact assessment involves the preliminary identification and screening of potential environmental impacts by anticipating activity-environment interactions. This requires a thorough understanding of the project activities (project description), the project setting (the environmental and social characteristics), and the interaction with environmental components. A modified Leopold matrix (Leopold, 1971) was used for the identification and screening. The matrix arrays project activities against environmental (biophysical, social and health) components, and supports a methodical, comprehensive, and objective identification of the impacts that each distinct project activity may have on the biophysical, social, and health components.

Impact identification is based on Wathern (1988), who defines an impact as "having both spatial and temporal components and can be described as the change in an environmental parameter over a specified period within a defined area, resulting from a particular activity compared with the situation which would have occurred had the activity not been initiated".

To further guide the identification and screening of impacts using the matrix, established environmental impact indicators or indices are developed for each of the environmental interaction categories. Impact indicators are the observable or measurable parameters of each environmental component that can be directly or indirectly linked to changes in environmental conditions. Table 5.1 gives the specific environmental components and sub-elements used and a description of the indicators.

The Risk Assessment Matrix (RAM) has been employed in determining risks posed by the identified potential/associated impacts of the project in order to proffer appropriate mitigation measures. In predicting impacts, the experiential/practical 'worst case scenario' approach has been applied to determine the extreme effects of project activities on environmental components, while 'consensus of opinions' has been made use of to determine the importance of affected environmental components. The impact evaluation results make up the pedestal for developing the ESMP of the proposed project.

The integrated impact assessment is conducted with consideration of environmental, social and health elements and has therefore utilized procedures specific to each element where applicable. For example, the health aspects considered procedures of Samuel et al. (1998) and Commonwealth of Australia (2001) in the approach. In general though, the impact identification and assessment methodology has integrated the procedures into a single approach.

Table 5.1: Environmental, Social and Health Components against Impact Indicators

Components	Impact Indicators
Biophysical	
Geology	Changes to geology, geomorphology, topography
Soil	Changes to physical and chemical properties and soil ecology
Surface Water	Changes to water quality indices, (physicochemical properties, hydrocarbons, metals and hydrobiology); Introduction of exotic species, changes in habitat quality, abundance, diversity; Effluent discharge
Hydrobiology/Fisheries	Changes in water quality, changes in fisheries productivity
Vegetation	Changes to vegetation population, health, species abundance and diversity and impact on endangered and economic species, food chain effects
Wildlife	Changes to wildlife assemblages, impact on endangered and economic species, food chain effects
Air	Emissions of NO_x, SO_x, PM, CO, VOC, greenhouse gases (CO_2, CH_4, and N_2O), ozone and changes to ground level concentrations of pollutants
Vibration and Noise	Change in noise or vibration levels at sensitive receptors
Aesthetics	Physical presence of facilities, increased night time light
Groundwater	Contamination of shallow or deep groundwater resources, change in ground water resources
Sediments	River/waterbed morphology, physical and chemical properties, benthic organisms.
Social	

Components	Impact Indicators
Population	Changes in population indices, total population, gender ratio, age distribution
Infrastructure	Improvement or pressure on existing urban/rural infrastructure including waste handling facilities Improved access to resources and services (healthcare and education) Enhanced community infrastructure
Macro and Micro economy	Change in macro and micro economy, employment, standard of living, occupation
Social and Cultural Structure	Disruption in local authority and governance structure; change in social behaviours; intra and inter-ethnic clashes and greater social cohesion
Physical and Economic Displacement	Permanent physical displacement from residence as a result of project land take, or activities; permanent or temporary displacement from land or water based livelihood activities; partial or whole severance from social and cultural networks
Cultural and Archaeological resources	Physical disturbance of shrines, burial grounds, archaeological resources or other desecration
Transportation	Alteration in means of transportation or ability to move efficiently
Education	Change in primary, secondary and tertiary education school enrolment and attendance Improved access to healthcare services and education resources
Health Determinants	
Pollution Related Health Effects	Increase in concentration of, and exposure to non-ionizing radiation, air pollutants of concern (NOx, SOx, VOC, CO, PM), contamination of surface waters and potable ground water, increased vibration and noise beyond regulatory limits, increased night time light beyond acceptable limits.
Communicable and Non Communicable Diseases	Change in incidence of communicable and non-communicable diseases or disease causing factors
Morbidity and Mortality	Change in health of workers and of general public, change in security of the area
Nutritional status	Changes to nutritional status
Health Care/Recreational Facilities	Changes in availability of and access to health care and recreational facilities
Psychosocial factors	Drug use/abuse, communal violence, crime, suicide, depression and prostitution; changing expectations of quality of life
Fertility	Changes to fertility levels, changes in birth rates
Accidents/Fires/Explosions	Changes to rate of occurrence and severity of accidents/fires/explosions

Source: ESIA for Lagos Medipark Project, 2025

5.4 Modified Leopold Matrix Screening

The modified Leopold impact matrix (Table 6.2) consists of a horizontal list of biophysical and social environment components that could be affected by the project activities versus a vertical list of project activities, which represent environmental aspects, or "sources of impact," associated with each sub project phase. Environmental aspects are elements of an activity that can or will interact with the biophysical, social and health conditions within the study area of influence.

Entries in the matrix cells represent the nature and ***preliminary*** ranking of the severity of the impact. Ranking of the severity is based on the following scale and symbols:

Major: 2

Minor: 1

Negligible or no effect: - (*a dash*)
Positive: +

For this preliminary impact assessment stage, the impacts are defined as follows:

- A **Major impact** is one that would affect a large (higher than 40%) amount of a resource and or have a relatively large footprint and persist for a long time or is irreversible.

- A **Minor impact** is one that could either affect a large (as defined above) or moderate (less than 40%) amount of an affected resource, has a mid to long term effect (1 to 10 years) but is most likely reversible.

- A **Negligible impact** is one that may occur but based on experience, available scientific information and expert knowledge will have no measurable effect on the environmental component.

- A **Positive** impact is one that adds a measurable benefit to the immediate and larger project environment including its social, cultural and health dimensions.

All number entries denote negative impacts. Cells with both positive sign (+) and numbers indicate that the specific activity and environment interaction will potentially result in both a positive and negative impact.
All potential impacts, whether likely or unlikely, are also considered at this stage. The likelihood of an impact is further assessed in the *detailed* impact evaluation. The identification and screening of impacts has relied on the following:

- Available knowledge of the project activities;

- Documented impacts of similar projects in similar environments;

- Consultation with experts;

- Discussions with project personnel; and

- Professional judgment.

Spatial boundaries of interactions were decided based on map overlays, specialist knowledge and documented experience of the specific activity-environment interaction.

5.5 Detailed Assessment of Impacts

The preliminary identification and screening of environmental impacts resulted in a group of focus impacts (impacts ranked 1 and 2), which were further assessed in terms of severity and significance. Impact severity and significance criteria used at this next stage relied on a number of resources and tools including the following:

- Federal Ministry of Environment (FMEnv) EIA Guidelines;
- African Development Bank Integrated Safeguard Systems/Operational Safeguards
- Overlaying project components on maps of existing conditions to identify potential impact areas and issues;
- Environmental Baseline Studies conducted specifically for this project;
- Consultation with Nigerian experts and residents;
- Experience from similar projects in Nigeria and worldwide;
- Discussion with design contractors and project engineers;
- Published and unpublished documents (such as *The World Bank Environmental Assessment Sourcebook*, relevant IFC Performance Standards, and other authoritative texts on performing environmental impact assessments) providing guidance on performing impact analysis for industrial development activities;
- UNEP EIA Training Resources Manual (1996); and
- European Commission Guidance on EIA/EIS Review (*European Commission, 2001*).

5.6 Impact Quantification

There are various methodologies for evaluating potential environmental Impact of any project. Each of the methods employs basically the following steps:

a. Identification of Impact

b. Prediction of Impact

c. Evaluation and interpretation of impact, and

d. Communication

For this project, the associated and potential Impact of the proposed Lagos Medipark project, Ikoyi, Eti-Osa LGA, Lagos State was predicted using a combination of Leopold Matrix (Leopold et al 1971), Risk Assessment Matrix and the Rau method (Rau, 1970).

The Rau'Ad Hoc method is expected to indicate whether the impact is beneficial or adverse, whether it is temporal or spatial and whether it is cumulative, spontaneous, and whether it is primary or secondary. The method provides guidance for total impact assessment while suggesting the broad nature of the possible Impact. Using this procedure, it is possible to quickly judge the order of magnitude of effects or Impact: No effect, Positive effect, Negative effect, Beneficial, Adverse, Problematic, Short-term, Long-term, Reversible, Irreversible effects.

This method presents an analysis of field observations and results. It is subjective and depends a lot on the experience of panellists. In some instances, panellists may not agree on specifics so the majority opinion is accepted. However, the panellists used were experts who are familiar with the study area and the decisions were unanimous.

The Leopold Matrix method was used to identify the cause-effect relationships between specific project actions in the environment and potential environment Impact. However, a modified version was adopted. The checklist interaction matrix for environmental impact assessment was obtained by placing identified existing environmental components in the columns and the facility activities in the rows of the matrix. The figures in the cells of the matrix are quantitative estimate of the environmental loss/gain. The inherent subjectivity of judgment brought about by this method was minimized or controlled by setting up a panel of inter-disciplinary experts and each panellist was required to access a given interaction based on their field experience and expertise. The results of such assessment were more reliable because the submissions were guided by the interacting group Decision Making Process and the Delphi technique. The submissions of the experts were subjected to descriptive statistics.

This method is also based on field observations and analysis. It is subjective and therefore calls for the use of experts in scoring and determining levels of impact. Where the panellists disagree on specific issues, majority opinion is taken. This can be very tedious as the dissenting panellists must present a strong defense for any opinion. However final decisions are unanimous.

The checklist presented in Table 5.2 and 5.3 shows a list of environmental conditions and impact indicators that helped to review the possible consequence of the project, based on both the Rau and Leopold matrixes.

Table 5.2: Modified Leopold Matrix

Project Activities / Environmental Condition		Site Acquisition		Site Preparation and Installation							Wastes		Operation and Maintenance				Decommissioning		
		Land Survey	Contract Agreement	Clearing	Transport of Materials	Excavation	Cement Works	Erection of Tower	Mounting of Antenna	Commissioning	Packaging Materials	Cables	Refuelling of Oil Tank & Refueling of EGS	Servicing of Batteries	Ticketing	Noise	Civil & Electrical Work	Transportation	Wastes
Air Quality & Climate	Climate	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SPM	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	1	1	1
	Noise	0	0	0	1	1	0	0	0	2	0	0	0	3	0	4	2	1	3
	Noxious Gas	0	0	0	2	0	0	0	0	2	0	0	1	2	0	0	0	1	0
Water Quality	Tap Water	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2
	Aquatic florae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Aquatic Fauna	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Underground Water	0	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	1
Soil/Land Use	Land Use	3	4	0	0	0	0	0	0	0	1	2	1	4	0	4	0	0	3
	Soil fertility	0	0	0	0	1	1	0	0	0	1	2	3	0	0	0	0	0	1
	Hunting	2	3	1	1	0	0	0	0	3	0	0	0	0	0	5	0	0	0
	Farming	1	1	0	0	0	0	0	0	0	1	2	4	4	0	2	1	0	2
	Fishing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vegetation	Air Space	0	0	0	0	0	0	4	0	3	0	0	0	0	0	0	1	0	0
	Species No	1	1	1	1	1	0	0	0	0	0	0	2	2	0	0	0	0	2
	Density	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2
	Health status	0	0	0	0	1	1	0	0	0	0	0	1	1	0	0	0	0	2
Socio Economics	Land Conflict	3	4	0	0	0	0	0	0	0	2	1	1	1	0	0	0	0	4
	Income to Landlord/Owner	5	5	0	0	0	0	0	0	0	0	0	0	0	3	3	5	0	4
	Archaeology	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Workers Health	0	0	0	1	1	2	4	4	0	0	0	1	0	0	4	4	1	2
	Public Health	0	0	0	0	0	0	2	0	0	0	0	2	4	0	4	1	1	3
	Employment	3	0	3	1	3	3	3	2	2	1	0	1	3	5	0	3	1	2
	Revenue to government	5	5	0	0	0	0	4	0	0	0	0	0	2	5	4	5	0	1

Legend:

0	No impact	1	Negligible
2	Low impact	3	Moderate
4	High	5	Severe

Table 5.3: The Rau' Ad Hoc Method

Impact	No effect	Negative effect	Positive Effect	Beneficial effect	Adverse Effect	Problematic	Short-term	Long-term	Reversible	Irreversible
Disagreement due to land		*				*		*	*	
Disagreement due to sharing of land proceeds		*			*			*	*	
Increase in temperature due to construction activities	*									
General climate change due to construction activities	*									
Reduce air quality due to SPM CO1 CO2 and VOC from electricity Generating set.		*				*	*		*	
Increase noise level due to construction activities		*					*		*	
Increase noise level to electricity generating set		*				*		*	*	
Increase noise level due to the road operation		*				*		*	*	
Damage of water pipes during construction works.		*					*			
Impairment of aquatic life due to construction and maintenance operations.	*									
Impairment of pipe borne water quality due to used/virgin oil contamination	*						*		*	
Impairment of underground water quality due to used/virgin oil contamination		*				*		*	*	
Reduced land use due to construction and operational activities	*									
Reduced land use due to used/spent oil contamination		*			*			*	*	
Reduced soil fertility due to used spent oil contamination		*			*				*	
Habitat change/reduced population of wild life.		*			*			*		*
Loss of vigor and increased susceptibility of plants to diseases	*									
Destruction of vegetation due to construction work.		*			*			*	*	
Dislocation of farmers due to variable land take up	*									
Destruction of archaeology heritage	*									
Increase revenue to government			*	*				*		*
Employment			*	*				*		*
Increase communications			*	*				*		*
Community development and youth empowerment			*	*				*		*
Improved standard of living			*	*				*		*
Income to landlord/owner			*	*				*		*

Source: ESIA for Lagos Medipark Project, 2025

Table 5.4:Screening Matrix for Potential Impacts (Biophysical and Social Impacts)

PROJECT PHASES AND ACTIVITIES	Biophysical Impact Indicators											Social Impact Indicators							
	Geology / Topography	Soil	Surface Water	Hydrobiology and Fisheries	Vegetation	Wildlife	Air /Radiation	Vibration and Noise	Aesthetics	Groundwater	Sediments	Population	Infrastructure	Macro and micro economy	Social and Cultural Structure	Physical and Economic Displacement	Cultural and Archaeological Resources	Transportation	Education
Excavation and Site Preparation Activities																			
Physical Presence of Workers, Equipment and Materials on Site	-	1	1	-	-	-	-	1	-	1	-	1	1	1	1	2	1	1	1
Transportation of Workers and Materials	-	-	1	1	-	-	1	-	-	-	-	-	-	+, 1	-	+, 1	-	1	-
Site Clearing	-	1	1	1	2	2	1	1	-	-	-	-	-	+	1	1	1	1	-
Excavation	2	-	2	2	-	-	1	1	-	-	2	-	-	2	-	2	-	1	-
Wastes and Emissions Handling and Disposal	2	1	2	2	2	1	1	1	-	-	2	-	1	2	-	2	-	-	-
Onsite Construction Works																			
Physical Presence of Workers, Equipment and Materials on site	-	-	1	1	-	-	1	1	-	1	1	1	1	+, 1	1	1	1	-	1
Transportation of Workers and Materials	-	-	1	1	-	-	1	1	-	-	-	-	-	+, 1	-	1	-	1	-
Wastes and Emissions Handling and Disposal	-	1	1	1	-	-	1	-	-	1	1	-	-	+, -	-	-	-	-	-

Table 5.4:Screening Matrix for Potential Impacts (Biophysical and Social Impacts)

PROJECT PHASES AND ACTIVITIES	Biophysical Impact Indicators											Social Impact Indicators							
	Geology / Topography	Soil	Surface Water	Hydrobiology and Fisheries	Vegetation	Wildlife	Air /Radiation	Vibration and Noise	Aesthetics	Groundwater	Sediments	Population	Infrastructure	Macro and micro economy	Social and Cultural Structure	Physical and Economic Displacement	Cultural and Archaeological Resources	Transportation	Education
Construction Activities																			
Excavation	1	1	-	-	2	-	1	1	-	-	-	-	-	+, 1	-	1	1	1	1
Civil Works	-	1	-	-	2	-	1	1	-	-	-	-	-	+, 1	-	1	1	1	1
Track laying	-	-	1	1	-	-	1	1	-	1	-	-	-	+, 1	-	-	-	-	1
Installation and Commissioning																			
Wastes and Emissions Handling and Disposal (Hydrotest)	-	-	1	1	-	-	-	-	-	-	1	-	-	1	-	1	-	-	-
Operations																			
Road transportation	-	-	-	-	-	-	2	2	2	1	1	-	+	+	-	+	-	-	+
Road transportation and operation	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-
Wastes and Emissions Handling and Disposal	-	-	1	1	-	-	2	2	-	-	-	-	1	+	-	-	-	-	-
Decommissioning																			
Removal of Installed Facilities	1	1	1	1	1	-	1	1	-	1	1	-	-	+, 1	-	+,1	-	+, 1	-

Table 5.4:Screening Matrix for Potential Impacts (Biophysical and Social Impacts)

PROJECT PHASES AND ACTIVITIES	Biophysical Impact Indicators											Social Impact Indicators							
	Geology / Topography	Soil	Surface Water	Hydrobiology and Fisheries	Vegetation	Wildlife	Air /Radiation	Vibration and Noise	Aesthetics	Groundwater	Sediments	Population	Infrastructure	Macro and micro economy	Social and Cultural Structure	Physical and Economic Displacement	Cultural and Archaeological Resources	Transportation	Education
Wastes and Emissions Handling and Disposal	-	1	1	1	-	-	1	1	-	1	1	-	-	+, 1	-	+,1	-	-	-

Source: Field Work 2025

5.7 Impact Severity Evaluation

During detailed assessment, five criteria were used to assess the severity of the environmental (biophysical, social, and health) impacts that were not screened out in the earlier steps.

The severity criteria set forth in this section are applicable to all types of impacts identified, including impacts that can be expected from the project and impacts resulting from emergencies. Several types of potential consequences (or impacts) were considered for all project stages where applicable:

1. Biological and physical environment
2. Social environment
3. Health and Safety of the public or workers

The detailed assessment of impacts involved evaluating the potential effects of project activities on the impact indicators but in greater detail. Impacts were assessed as to whether they are positive (beneficial) or negative (detrimental). Only negative impacts were given detailed assessment.

Evaluation Criteria

Five impact severity evaluation criteria were applied in this study: Magnitude, Duration, Frequency, Areal Extent, and Sensitivity of the Receptor. Within these five criteria, impacts were also evaluated as to whether they might result in cumulative effects or indirect (secondary) effects. The overall impact evaluation considers not only the potential severity of the impact but also the likelihood of its occurrence.

Note that characterization of an impact includes the criteria for negligible. This would be applied when an impact characteristic either does not apply or when it is so low so as not to be noticed. In general, impact effects need to be observed to pass the initial screening but negligible is used in some instances and a negligible rating would be considered in deriving the overall impact severity. The term is omitted from the impact assessment matrix table that follows this section, but the criteria are described in the preceding text.

The following describes the severity rating criteria.

I. Magnitude

Magnitude is defined as the quantitative intensity of the impact, and can be measured as the percentage of a resource or a population within the study area of influence that may be affected by an impact. The definitions of "high," "medium" and "low" with respect to

magnitude may vary depending upon the specific receptor. The magnitude of an impact is characterized as follows:

- High - large amount of the resource or population is affected; easily observable and measurable effect
- Medium - moderate amount of the resource or population is affected; generally measurable and observable effect
- Low – small amount of the resource or population is affected; low magnitude impact may be within the range of normal variation of background conditions
- Negligible – amount of resource or population affected is unnoticeable or immeasurably small

Magnitude may also be defined with respect to quantitative or semi-quantitative criteria, if available and applicable, (e.g., level of noise as decibels). The magnitude of an impact is characterized as follows:

High – greater than the quantitative or semi-quantitative criteria

Medium – at the quantitative or semi-quantitative criteria

Low – less than the quantitative or semi-quantitative criteria

Negligible – impact not detected or at background conditions

II. Duration

Duration is defined as the time that is estimated for a population or resource to return to baseline conditions (i.e., before the impact). The duration is calculated from the time the impact begins, which may coincide with the start of the activity that causes the impact. The duration of an impact is characterized as follows:

High – long-term impact (recovery would not occur within ten years)

Medium – moderate-term impact (recovery time between one year and ten years)

Low – short-term impact (recovery time within or less than one year)

Negligible – impact or recovery time is very short or immediate.

Characterization of the duration of an impact as low, medium, or high includes consideration of the degree of reversibility of the impact. Impacts for which the duration is classified as high, as defined above, are considered irreversible impacts.

III. Frequency

Frequency is defined as the number of times an impact is expected to occur over the life of the project. The frequency of an impact is characterized as follows:

- High – impact will occur continuously throughout the life of the project (e.g., continuous process wastewater discharge)
- Medium – impact will occur intermittently over the life of the project (e.g., blow down, flaring and venting)
- Low - impact will occur rarely or a very limited number of times (e.g., construction impacts)

There is no "negligible" category for frequency because impacts with no frequency would not occur, and were screened out.

IV. Extent

Areal Extent refers to the potential geographic range of an impact, and may be quantified in units of area affected (e.g., hectares). The areal extent is characterized as follows:

- High – impact has influence well beyond the project environment to the regional or even global environment
- Medium – impact limited to the general vicinity of the project site or study area
- Low – impact limited to the immediate area of the activity or occurrence
- Negligible – impact limited to a very small part of the activity area

V. Sensitivity

Sensitivity refers to economic, social, and/or environmental/ecological relevance of the receptor, including the intrinsic sensitivity of the resource, reliance on the receptor by people for sustenance, livelihood, cultural significance or economic activity, and to the importance of direct impacts to persons associated with the resource.

The sensitivity criterion also refers to potential impacts to Environmentally Sensitive Areas (ESAs) and impacts on species, including loss of endangered species, effects of introduction of invasive species, and similar environmental/ecological impacts. The intrinsic sensitivities of a receptor species and actions that alter the function of the receptor are also considered. Sensitivity is characterized as follows:

- High – receptor is of high economic, social, and/or environmental relevance and or has an intrinsic sensitivity (including vulnerability and exposure) to the specific impact (e.g., fresh water resources and mangroves).

- Medium – receptor is of moderate economic, social, and/or environmental relevance and is not particularly vulnerable and/or exposed to the impact.

- Low – receptor is of low economic, social, and/or environmental relevance and is not vulnerable and/or exposed to the specific impact.

- Negligible – receptor is not of economic, social, and/or environmental relevance or is not sensitive to impact.

5.8 Impact Significance

The following section describes the method by which the overall impact severity rating and associated impact significance is derived.

5.8.1 Impact Severity Rating

To reach an overall impact severity rating for each impact assessed, the five impact severity criteria above are aggregated using impact severity matrices. Aggregation is at three levels. First, magnitude and areal extent are combined to arrive at a rating for the Impact Quantum while duration and frequency are aggregated to give the overall Temporal Effects. Impact Quantum and Temporal Effects are then combined and their resulting aggregate assessed in terms of sensitivity to arrive at the overall impact severity. Table 5.6, Table 5.7, and Table 5.8 show the aggregation process.

5.8.2 Impact Likelihood

To further assess the significance of the severity associated with each potential negative impact identified in the previous section, a likelihood criterion is applied to each negative impact. The likelihood criteria are used to determine whether negative impacts can be prevented or mitigated or if they are unavoidable.

It should be noted that the likelihood criteria are applied to the likelihood of the impact occurring and not of the activity occurring. Thus the overall severity rating (significance) of a negative environmental impact is a function of its severity as earlier defined and the likelihood of occurrence as defined in the table. For example, a moderate impact that has a high likelihood of occurrence would be more severe than a major impact with a very low likelihood of occurrence. Assigning a significance ranking and a likelihood ranking to each

impact allows for semi-quantitative evaluation of the severity of the impact. The colour coded impact severity matrix presented in (Table 5.9) illustrates the application of the impact severity and likelihood. The likelihood ranking is placed in the y-axis and the impact significance ranking in the x-axis. The colour codes are also used in the text discussing each impact assessed using this method.

5.8.3 Overall Impact Significance

The overall impact significance level is indicated by the position on the impact significance matrix. For example, impacts placed within the red boxes have a high likelihood of occurrence and serious consequence; thus they have a high significance rating. These high-significance impacts become high priority for further evaluation or management action (e.g., design change or mitigation). Impacts in the yellow category are moderate impacts, with medium priority; impacts in green boxes are lower priority. Impacts identified by the white boxes indicate positive or beneficial impacts. The criteria and severity matrix set forth in this section are applicable to all the types of events and impacts identified.

Table 5.5:Impact Assessment of Spatial Effects

SPATIAL EFFECTS			
Magnitude	**Areal Extent**		
	Low	**Medium**	**High**
Low	Low	Medium	Medium
Medium	Low	Medium	High
High	Medium	High	High

Source: ESIA for Lagos Medipark Project, 2025

Table 5.6:Impact Assessment of Temporal Effects

TEMPORAL EFFECTS			
Frequency	**Duration**		
	Low	**Medium**	**High**
Low	Low	Low	Medium
Medium	Low	Medium	High
High	Medium	High	High

Source: ESIA for Lagos Medipark Project, 2025

Table 5.7: Impact Assessment of Combined Spatial and Temporal Effects

COMBINED SPATIAL AND TEMPORAL EFFECTS			
TEMPORAL EFFECTS	**SPATIAL EFFECTS**		
	Low	**Medium**	**High**
Low	Low	Low	Medium
Medium	Low	Medium	High
High	Medium	High	High

Source: ESIA for Lagos Medipark Project, 2025

Table 5.8: Overall Impact Assessment Severity (Combined Spatial and Temporal Effects and Sensitivity)

IMPACT ASSESSMENT AND SENSITIVITY			
SENSITIVITY	**COMBINED SPATIAL AND TEMPORAL EFFECTS**		
	Low	**Medium**	**High**
Low	Minor	Minor	Moderate
Medium	Minor	Moderate	Major
High	Moderate	Major	Major

Source: ESIA for Lagos Medipark Project, 2025

Table 5.9: Overall Impact Significance

OVERALL SIGNIFICANCE				
LIKELIHOOD	**SEVERITY**			
	Positive	**Minor**	**Moderate**	**Major**
Low	BENEFICIAL	LOW	LOW	MODERATE
Medium	BENEFICIAL	LOW	MODERATE	HIGH
High	BENEFICIAL	MODERATE	HIGH	HIGH

Source: ESIA for Lagos Medipark Project, 2025

Table 5.10: Summary of Impact Severity

	SPATIAL EFFECTS		TEMPORAL EFFECTS		SENSITIVITY	LIKELIHOOD
	Magnitude	**Areal Extent**	**Frequency**	**Duration**	**Receptor**	**Likelihood**
High	Large amount of resource or population affected; easily measurable; or greater than the quantitative or semi-quantitative criteria	Impact to the national, regional, or global environment	Impact will occur continuously throughout the life of the project	Impact is long-term; recovery would not occur within ten years	Receptor is of high economic, social, and/or environmental relevance; has very high intrinsic sensitivity	Impact is likely to occur during normal operations (i.e., greater than 70% likelihood of occurring or has been known to result routinely, though not necessarily in all similar circumstances)
Medium	Moderate amount of resource or population affected; generally measurable or observable; or at the quantitative or semi-quantitative criteria	Impact to the general vicinity of the project site or study area	Impact will occur intermittently over the life of the project	Impact is moderate-term and recovery will occur between one year and ten years	Receptor is of moderate economic, social, and/or environmental relevance; has moderate intrinsic sensitivity	Impact could occur infrequently during construction or normal operations, but could occur more readily if safeguards and controls breakdown (i.e., between approximately 20% to 70% likelihood of occurring or impact has been known to result in similar circumstances)
Low	Small amount of resource or population affected; or less than the quantitative or semi-quantitative criteria; may be in the range of normal	Impact limited to the immediate vicinity of the activity or occurrence	Impact will rarely occur or will occur on a limited number or occasions	Impact is short-term and recovery will occur in less than one year	Receptor is of low economic, social, and/or environmental relevance; has low intrinsic sensitivity.	Impact highly unlikely, given the controls in place (i.e., between approximately 2% to 20% likelihood of occurring or impact has been known to result, but only very rarely, in similar circumstances
Negligible	Amount of resource or population affected is unnoticeable or immeasurably small; or impact not detected or at background conditions	Impact limited to a very small part of the activity area	Impact never occurs or impact is not possible	Impact is very short term and recovery is nearly immediate	Receptor is not of economic, social, and/or environmental relevance; has no sensitivity to impact	Impact has approximately less than 2% likelihood of occurring; impact unknown to have previously occurred in similar circumstances

Source: ESIA for Lagos Medipark Project, 2025

Table 5.11: Negative impact significance levels and criteria

Significance criteria	Physicochemical environment	Biological environment	Socioeconomic environment	Health and safety (personnel and public)
Negligible (negative)				
Temporal	Very temporary effect, even less significant than periodic stress by nature. The duration of the effect is likely to be totally reversible, naturally, within a short term (less than one week). The frequency of the impact is extremely low (less than two times/year).	The duration of the effect is likely to be totally reversible, naturally, within a short term (less than one week). The frequency of the impact is extremely low (less than two times/year).	Temporary influence (impact discernable for less than one week). The effects are totally reversible and of extremely low frequency (less than two times/year).	No discernable health effects for any period of time.
Areal	The impact to the land, air, and water is localized, existing only within and around the various facilities boundary.	Some impact localized on a community or organism level by not distinguishable from natural background perturbation.	Localized, isolated change in socioeconomic conditions or commercial activities; not affecting persons other than project personnel.	No discernable health effects in any area.
Magnitude	Little or no change in physical environment, barely measureable above background conditions (less than 5% change from background). Concentration at receptor points is below identified industry benchmark level	Little or no change in biodiversity, habitat availability, or community structure and function in comparison to background levels.	Unlikely to have any measurable impact.	No discernable health effects to any part of the population.
Minor (negative)				
Negligible (negative)				
Temporal	Measureable change lasting on a few days to a few months before recovery, with no observable residual effects. The duration of the impact is likely to be totally reversible, naturally or by intervention within six months and have a moderate frequency of impact (from twice to five times/year)	Short-term (less than a few months) local change of species or population abundance or distribution, habitat availability, or community structure and function. The duration of the effect is likely to be totally reversible, naturally or by intervention within six months and have moderate frequency of impact (from twice to five times/year)	For single events, duration is one week to six months, with no observable residual effects outside of the duration of impact. Effects are reversible over time. For recurrent events, duration of each impact is brief (less than 2 weeks) with no observable residual effects outside of the duration of impact. Frequency of impact is moderate (from twice to five times/year)	For single events, duration is one week to six months, with no observable residual effects outside of the duration of impact. Effects are reversible over time. For recurrent events, duration of each impact is brief (less than 2 weeks) with no observable residual effects outside of the duration of impact. Frequency of impact is moderate (from twice to five times/year)
Areal	Localized, relatively isolated change in physicochemical environment. Impact consequence is realized within 100m of facility boundary.	Local change of species or population abundance or distribution, habitat availability, or community structure and function within 100m of facility boundary.	Localized relatively isolated change in socioeconomic conditions or commercial activities affecting population immediately adjacent to the project boundaries.	Impact is localized to project personnel and local population living within 100m of facility boundary
Magnitude	Some measurable change to the affected environment, up to 10% increase/decrease over background conditions when applicable (i.e, some factors do not have associated existing background levels).	No impact at species, population, or community level but health of individual, organisms is negatively impacted, including where organisms avoid project areas as habitat.	Some measurable change in socioeconomic conditions, livelihood, living conditions, or social structure, likely to result in only minor hardships for a small minority of the populations	Minor injury or illness affecting a small portion of the affected population (<15%) with some cases of very brief lost time from work (1-2days)

	Concentration at receptor points is equivalent to identified industry benchmark levels.		of the affected communities. Effects can be largely overcome with existing individual r community resources.	Injuries or illness requiring, minor physician's care such as outpatient services.
Minor (negative)				
Temporal	The duration of the effect is more than six months but less than five years and reversible within that period of time. Frequency of impact may occur from five to ten times per year.	The duration of the effect is more than six months but less than five years and reversible within that period of time. Frequency of impact may occur from five to ten times per year.	For single events, duration of the effect is more than six months but less than 5 years, and fully reversible after that period of time. For recurrent events, duration of each event is no more than a month, impacts are reversible after each event, and frequency of impact is from five to eight times per year.	For single events, duration of the effect is more than six months but less than 5 years, and fully reversible after that period of time. For recurrent events, duration of each event is no more than a month, impacts are reversible after each event, and frequency of impact is from five to eight times per year.
Areal	Localized, relatively isolated change in physicochemical environment. Impact consequence is realized up to 500m from facility boundary.	Local to widespread change in habitat availability or quality, likely to modify abundance or distribution of species. Impact consequence is realized up to 500m from facility boundary.	Impacts affecting not only project personnel but also surrounding population, local communities/public up to 500m from facility boundary.	Impacts affecting no only project personnel but also surrounding population (public) up to 500m from facility boundary.
Magnitude	Local modification of considerable severity in atmospheric, surface, or subsurface conditions. Significant measurable change from baseline conditions (10 to 20% change from baseline). Concentration at receptor points is 20% greater than identified industry benchmark levels.	Impact evident at community or population level, significant change in population density (e.g., decline in fish species abundance), habitat quality, etc	Pronounced change in socioeconomic conditions, livelihood, living conditions, or social structure, likely to result insignificant hardships or reduction in living standards for a significant portion (but less than half) of the affected community population. Impacts too sever to be overcome or ameliorated within existing individual or community resources.	Injury or illness affecting less than half of the affected population to a greater or lesser degree, with a few cases requiring hospitalization and/or resulting in long term disability.
Major (negative)				
Significance criteria	**Physicochemical environment**	**Biological environment**	**Socioeconomic environment**	**Health and safety (personnel and public)**
Negligible (negative)				
Temporal	The duration of the effect is long-term (greater than 5 years) or is not reversible (permanent). Frequency of the impact may occur more than 10times/year	Long-term (greater than 5 years). Modification will persist beyond the duration of the project or is not reversible. Frequency of the impact may occur more than 10 times/year.	The effect is long-term or likely to last more than 5 years, or is not reversible. For recurrent events, duration of each event is greater than a month, impact frequency is high (more than eight time/year) and impact durations may overlap	Effects are of long-term duration (more than 5 years) or permanent, i.e., not reversible. For recurrent events, duration of each event is greater than a month, impact frequency is high (more than eight times/year) and impact durations may overlap.
Areal	Widespread modification of considerable severity in atmospheric, surface, or subsurface conditions. Areal extent of impact consequence is realized beyond 500m of facility boundary.	Widespread change in habitat availability or quality, which would likely modify natural abundance or	Widespread (possibly even beyond study area communities).	Impacts affecting not only project personnel but also surrounding population (public) more than 500m

		distribution of species beyond 500m of facility boundary.		from facility boundary; may cause regional effects.
Magnitude	Modification of considerable severity in atmospheric, surface, or subsurface conditions. Significant, measurable change from baseline conditions (more than 20% change from baseline when applicable). Concentration at receptor points is 50% of greater than identified industry benchmark levels.	Impact to affect organisms at or above the ecosystem level.	Very pronounced change is socioeconomic conditions, livelihood, living conditions, or social structure, likely to affect the majority of people in the majority of people in the affected communities and result in serious hardships, reduction in living standards, or impoverishment. Impacts overwhelm the ability of individuals or communities to recover or overcome	Impacts affect a large portion or even the majority of the affected population to a greater or lesser degree, with some cases of permanently disabling injury/illness; chronic and irreversible health impacts that may shorten life expectancy, or immediate fatalities.
Minor (negative)				

Source: ESIA for Lagos Medipark Project, 2025

Note: A physic-chemical and biological impacts are considered "localized" if they are likely to occur only within 100m of the impact source (e.g. construction equipment).

5.9 PROJECT ASSOCIATED AND POTENTIAL IMPACTS

The associated (i.e., known) and potential impacts discussed in the following sections are those activity-environment interactions in the impact matrix, which have entries as either "1", "2" or "+" and therefore were not screened out.

For easier reading and to avoid repetition, the discussion of the detailed impact analyses is presented under project phases and key project activities. Impact identification prefixes have also been assigned to each impact discussion for ease of reference. Impacts are discussed under two main phases:

- **Pre-Operations Impacts** – these are those impacts that are applicable to all project activities, which take place prior to the commissioning and operations of the project. Project Activities under Pre-operations are:
    - PP = Physical Presence of Workers and Equipment
    - TR = Transportation of Workers and Materials to Site
    - SC = Site Clearing and Preparation
    - CR = Onsite Construction Works;
    - DR = Excavation
    - HC = Hook Up and Commissioning;
    - WE = Wastes and Emissions Handling and Disposal
- **Operations Impacts**– these are impacts applicable only to the operations phase. Project activity impacts discussed under this phase are:
    - OM = Operations and Maintenance
    - TR = Road
    - WE = Wastes and Emissions Handling and Disposal

Beneficial (Positive) and Health impacts are further discussed in the context of the entire project and cover both pre-operations and operations activities. Their applicable impact identification prefixes are:

- B = Beneficial Impact (+ve)
- H = Health Impacts

Other project-environment interactions and associated or potential negative impacts that are peculiar to individual activities are discussed under the applicable project activity.

The following sections and tables describe positive and negative impacts of the Lagos Medipark development activities as discussed in Chapter 3. The positive impacts relate mostly to increased employment, improved income and associated gains.

Table 5.12: Impact Significance Evaluation

Criteria	Consideration	Ranking
Legal/ regulatory requirements (L)	There is no legal/regulatory requirement	0
	There is a legal/regulatory requirement	3
	There is a permit required	5
Impact frequency (F)	Low frequency	1
	Medium/intermediate frequency	3
	High frequency	5
Importance (I)	Low importance	1
	Medium/intermediate importance	3
	High importance	5
Public perception (P)	Low perception and interest	1
	Medium/intermediate perception and interest	3
	High perception and interest	5
Risk Level (R)	Low risk	1
	Medium/intermediate risk	3
	High risk	5

The significant potential Impacts of the Lagos Medipark project, Ikoyi, Eti-Osa LGA, Lagos State were identified as those Impacts to which the following conditions apply.

(L+R+F+I+P) ≥ 15: Sum of weight of legal requirements, risk factor, frequency of occurrence, importance and public perception greater than or equal to the benchmark (15).

(F + I) is > 6 Sum of weights of frequency of occurrence and importance of affected environmental component exceeds the benchmark (6).

P = 5: The weight of the public perception/interest in the potential impact is equal to the benchmark (5).

Table 5.13 shows the potential and associated Impact Significance and Rankings.

Table 5.13: Impacts Identification, Qualification and Rating for pre-construction, construction, Operation and maintenance

Project Phase	Project Activity	Description of Impact	Impact Qualification								Impact Quantification							Impact Rating
			Positive	Negative	Direct	Indirect	Short term	Long term	Reversible	Irreversible	L	R	F	I	P	Total	F+I	
Pre-Construction	Land Acquisition	Conflicts arising from Land acquisition		√	√		√		√		3	3	3	1	1	11	4	M
		Conflict& Socio-cultural differences		√	√		√		√		3	3	3	1	1	11	4	M
	Site Clearing	Loss of Flora and Fauna		√	√		√		√		3	3	3	1	1	11	4	M
		Creation of Jobs	√		√		√		√		1	1	1	5	5	10	6	P
		Change in Land use		√	√		√		√		3	3	3	1	1	11	4	M
Construction	Transport activities (Movement of Personnel and equipment)	Increase in road traffic and accidents		√	√		√		√		3	3	3	1	1	11	4	M
	Excavation, Casting and block-works	Waste generation: Littering of site with used cement bags, wood and metal offcuts, packaging materials and excavated materials welding racks.		√	√		√		√		3	3	3	3	1	13	6	M
		Impairment of air quality – emission from Construction Machines and increased suspended particulate matter		√	√		√		√		3	3	3	3	1	13	6	M
		Increased Noise level during the construction stage: • Earth excavation, particularly in preparation for the foundation of the new buildings • Clearing and grubbing (debris and vegetative covers from previously demolished structures)		√	√		√		√		3	3	3	3	1	13	6	M

		• Operations and routine maintenance of machinery (e.g. excavator, bull dozers), and equipment (vibrators, hampers, vehicles) • Workers' camp																
		Occupational Health and safety issues resulting from construction activities such as trip and fall, shocks, accidents due to equipment malfunction and wildlife attacks, oil spill and influx of workers		√	√	√	√	√	√		0	5	5	5	5	20	10	H
		Respiratory / health hazards to onsite personnel due to the release of fumes from construction equipment (bulldozers, excavators) and inhalation of cement dust		√	√		√		√		3	3	3	3	1	13	6	M
		Alteration of hydrological pattern leading to soil erosion		√	√		√		√		3	3	3	1	1	11	4	M
		Damage to underground public utility pipes and cables during excavation activities.		√	√		√		√		3	3	3	1	1	11	4	M
		Water pollution from accidental leakage/spillage of fuel, oil, lubricants and other hazardous materials from earth moving equipment that will be used during construction.		√	√		√		√		3	3	3	1	1	11	4	M
	Work at heights during construction activities, Installation of roofs/glazes/ power generators Hooking up equipment and other cables	Occupational Health and safety issues resulting from work at height such as trip and fall, shocks, accidents due to equipment malfunction during installation		√	√	√	√	√	√		0	5	5	5	5	20	10	H
		Visual intrusion and aesthetic quality resulting from erecting of structures		√	√		√		√		3	3	3	1	1	11	4	M
	Backfilling	Respiratory / health hazards to onsite personnel due to the release of dust and fumes from construction equipment (bulldozers, excavators) and inhalation of cement dust		√	√		√		√		3	3	3	3	1	13	6	M
	Painting	Soil pollution from disposal of paint cans, absorbent materials, etc		√	√		√		√		3	3	3	3	1	13	6	M
		Air pollution from release of volatile organic carbons (VOCs)		√	√		√		√		3	3	3	3	1	13	6	M

		Health hazards from use of paint containers for domestic purposes		√	√		√		√		3	3	3	3	1	13	6	M
	Test running the installed equipment	Occupational Health and safety issues resulting from Unauthorized access into sites, trip and fall, shocks, accidents due to equipment malfunction		√	√	√	√	√	√		0	5	5	5	5	20	10	H
Operation/ Maintenance		Waste Generation (Generation of non-hazardous waste and hazardous materials such as infectious, pathological, chemical, pharmaceutical, and radioactive wastes)		√	√		√		√		3	3	3	3	1	13	6	M
		Improper handling and disposal of wastes leading to soil, water, and air contamination, posing risks to public health and the environment		√	√		√		√		3	3	3	3	1	13	6	M
		Emissions from use of generators, vehicular movements, and waste incineration impairing on air quality		√	√		√		√		3	3	3	3	1	13	6	M
		Noise pollution arising from the operation of the facility(Ambulances, large volume of people, operation of equipment, yelling during emergencies)		√	√		√		√		3	3	3	3	1	13	6	M
		Increased Energy and Resource Consumption		√	√		√		√		3	3	3	3	1	13	6	M
		Occupational Health Risks arising from exposure of health care workers, waste handlers and other staff to injury and disease from exposure to pathogens (e.g., needle-stick injuries), hazardous chemicals, and radiation		√	√	√	√	√	√		0	5	5	5	5	20	10	H
		Patient and Caregiver Stress arising from poor environmental conditions within the facility, such as lack of privacy, unhygienic conditions, and overcrowding, leading to stress, fear of infection, and dissatisfaction among patients and caregivers		√	√		√		√		3	3	3	1	1	11	4	M
		Community Disruption due to high traffic volumes, limited parking spaces, and noise		√	√		√		√		3	3	3	3	1	13	6	M
		Improvement of healthcare services around the study area	√		√			√	√		5	1	3	5	5	19	8	P
		Creation of jobs and job opportunities/ Revenue generation for government agencies	√		√		√		√		1	1	1	5	5	10	6	P

		Security threat and the threat from major accidents related to the fires and explosions at the facility and potential accidental releases of diesel when refilling the storage tank		√	√	√	√	√	√		0	5	5	5	5	20	10	H
		Collapse of structures resulting from poor foundation, corrosion etc leading to property damage, injury/death.		√	√	√	√	√	√		0	5	5	5	5	20	10	H
		Electrocution from direct contact with electricity or from contact with tools, vehicles, ladders, or other devices that are in contact with electricity		√	√		√			√	0	5	5	5	5	20	10	H
		Thermal effects due to exposure to radiation and radiative materials		√	√		√		√		3	3	3	3	1	13	6	M
	Operation of installed equipment/Generator running	Generation of noise and impairment of Air, Soil and Water through the use of diesel generators and equipment		√	√		√		√		3	3	3	1	1	11	4	M
		Oil and chemical spills from generator/equipment operations		√	√		√		√		3	3	3	1	1	11	4	M
	Transport activities during operation	Road traffic accidents		√	√	√	√	√	√		0	5	5	5	5	20	10	H
	Unequal hospital access by vulnerable group	▪ Limited infrastructure accessibility ▪ Inadequate service provision for persons with disabilities or elderly ▪ Language, cultural, or financial barriers ▪ Discrimination or unintentional exclusion		√	√		√		√		3	3	3	3	1	13	6	M
	Sexual Exploitation and Abuse (SEA), Sexual Harassment (SEA/SH)	Increased interaction (operation stage) with other hospitals – when there is increased interaction among patients, hospital staff, visitors, and hospital's contractors and service providers		√	√	√	√		√		3	3	3	1	1	11	4	M
	Maintenance	Air emission during Maintenance/servicing of equipment and ancillaries		√	√		√		√		3	3	3	1	1	11	4	M
		Threat of kidnapping during Maintenance / servicing of equipment		√	√	√	√	√	√		0	5	5	5	5	20	10	H

		Waste generation from general maintenance activities, maintenance of power systems such as solar panels, inverters and batteries. Maintenance of Medical equipment and specialized machines		√	√	√	√		√		3	3	3	1	1	11	4	M
		Oil and chemical spills from generator/equipment maintenance		√	√	√	√		√		3	3	3	1	1	11	4	M

Key: *L= Legal/Regulatory, R = Risk, F= Frequency, I = Importance, P = Public Interest/ Perception*
Source: Lagos Medipark Field work, 2025

Table 5.14: Potential Impacts Identification, Qualification and Rating –Decommissioning

Project Phase	Project Activity	Description of Impact	Impact Qualification								Impact Quantification							Impact Rating
			Positiv	Negati ve	Direct	Indirec t	Short term	Long term	Reversi ble	Irrevers ible	L	R	F	I	P	Total	F+I	
Decommissioning	Demolition and Evacuation	Possible impact on biodiversity		√	√		√		√		3	3	3	1	1	11	4	M
		Interference with road transportation		√	√		√		√		3	3	3	1	1	11	4	M
		Noise and vibration nuisance		√	√		√		√		3	3	3	1	1	11	4	M
		Impairment of air quality		√	√	√	√		√		3	3	3	1	1	11	4	M
		Contamination of Groundwater & soil		√	√		√		√		3	3	3	1	1	11	4	M
		Solid waste generation and impact on disposal facility		√	√	√	√		√		3	3	3	1	1	11	4	M
		Loss of job		√	√			√		√	3	3	3	1	1	11	4	M
		Kidnapping of workers		√	√		√		√		0	5	5	5	5	20	1	H
		Injury/fatalities in workforce /communities		√	√		√		√		0	5	5	5	5	20	1	H
		Re-vegetation& Restoration of site	√		√		√		√		3	3	5	3	3	17	8	P

Key: *L= Legal/Regulatory, R = Risk, F= Frequency, I = Importance, P = Public Interest/ Perception*
Source: Lagos Medipark Field work, 2025

5.10 Risk Assessment

In accordance with the risk assessment matrix, a checklist of project activities and description of potential and associated Impact was developed. In addition, the Impacts are characterized as minor, major, slight, or low, medium and high in accordance with the EIA Procedural Guidelines (FEPA, 1995). The degree of risks associated with the Impact was determined using the Risk Assessment Matrix (Table 5.15).

Table 5.15: Risk Assessment Matrix

CONSEQUENCE IMPACT					INCREASING PROBABILITY				
					A	B	C	D	E
Severity	People (health)	Asset Damage	Environmental Effect	Reputation (impact)	Never occurs in the project industry	has occurred in road site	Has occurred in all Road locations	Happens several time/yr in some locations of Industry	Happens several times in road industry
0	No injury	None	None	None					
1	Slight injury	Slight	Slight	Slight					
2	Minor injury	Minor	Minor	Limited					
3	Major injury	Localised	Localised	Considerable					
4	Single fatality	Major	Major	National					
5	Multiple fatalities	Extensive	Massive	Inter-national					

Risk Ranking

Low	Medium	High
(1)	(2)	(3)

It is important to identify both positive and Negative Impacts associated with the Proposed Medipark project, Eti-Osa LGA, Lagos State. These impacts are hereby identified at three distinct phases of the project; Construction Phase, Operation Phase and Decommissioning Phase. The project being a development agenda in the transport sector has immense benefits that could save the country losses in terms of accidents, poor service delivery, time losses and loss of government revenue. However poor planning of the project could also affect the environment that supports millions of Nigerians through the potential hazards that the project could pose to the public like pollution of water and atmospheric resources. The project impacts are classified as positive or adverse. However, the study goes further to categorize the

impacts in terms of their magnitude, significance, time of occurrence, extent, reversibility and scope of the impacts. The methodology adopted for evaluation of the impact as well as the results obtained are discussed hereunder.

5.11 Expert's Assessment

5.11.1 Assessment of Impacts

The aim of the Scoping Phase is to identify, record and describe the issues that have been identified and/or raised by stakeholders and specialists with regard to the proposed development. This enables the specialist studies to be clearly focused on aspects of significant concern. It also provided a framework for the assessment of the impacts that the proposed project will have on the environment, and the impacts the environment will have on the proposed project.

The description of all environmental issues that were identified during the Scoping Phase of the ESIA process, an assessment of the significance of each issue and an indication of the extent to which the issue could be addressed by the adoption of mitigation measures have been considered in this section of the document and the associated draft ESMP.

The cumulative impacts anticipated for the proposed development have also been considered in this section.

From these various sources, the following potential environmental (biophysical, social and cultural) impacts were identified. Mitigation measures proposed have been included in the assessment and draft ESMP.

- Biophysical impacts:
  - Biodiversity Impacts, including impacts on passive open space;
  - Impact on Water Resources, includes impacts on soils erosion;
  - Topographical Impacts;
  - Climatological Impacts;
- Socio-economic impacts:
  - Social impacts, including impact on the visual integrity;
  - Impact on Traffic;
  - Impact on Heritage Resources; and
- Potential issues not included in the broad categories listed above.

The specialist information was considered in terms of a formal quantification of the impact as per facets of the specific field highlighted by the specialists. In each case the specialist's recommendations were converted into potential mitigation measures and linked in the ESMP. The mitigation measures are summarised in the impact tables.

It should be noted that these are only the key mitigation measures and that in order to effect mitigation to the maximum level possible that all of the mitigation measures must be implemented as relevant to all facets of the environment. It is further indicated that the ESMP is a live document, the first revision thereof to be carried out post-certification so as to integrate the conditions by the proponent.

5.11.2 Aquatic and Terrestrial Biodiversity Impacts

The drainage lines are still natural for no present day impacts on these systems, no illegal dumping, no modified beds due to the installation of bulk services (water and sewer lines) and alien plant infestation.

No natural aquatic fauna or flora (i.e. riparian habitat) is contained in the drainage systems, and contribute little in terms of ecosystems services, biodiversity support and corridor creation. The Ecological Importance and Sensitivity scores would be LOW for all the aquatic systems.

The various habitats (vegetation & aquatic systems) were ranked in terms of their sensitivity to development, using the following criteria, listed in order of importance, i.e. the habitat or vegetation unit:

- Contained Species of Special Concern (SSC)
- Was protected under a form of legislation
- Exhibited a high degree of biodiversity
- Exhibited a no degree of degradation
- Did not represent a unique habitat within the region; and
- Provided an important ecosystem role or support system, e.g. ecological corridor.

This was then used to rate against observed vegetation units/habitats:

- Habitats containing high densities of SSC or exhibit high levels of species abundances were rated as HIGH.

- All intact vegetation units or unimproved vegetation types are still able to contribute at the landscape level towards ecosystem function and/or assist in the maintenance of ecological corridors, were rated as MODERATE.
- All modified, transformed or man-made systems were rated as LOW. These systems have limited restoration/rehabilitation potential.

Loss of Vegetation

Loss of vegetation primarily occurs during the initial construction and land clearance phase, leading to environmental impacts such as soil degradation and biodiversity loss. The main cause of vegetation loss is the initial site development for the healthcare facility and associated infrastructure (e.g., internal road network, parking lots, material storage areas). Heavy construction work requires the removal of existing plant life and soil cover to prepare the site for building foundations and utilities. The movement of heavy machinery and storage of materials can compact soil, making it difficult for vegetation to recover or new plants to grow. Clearance of forests or green spaces removes natural habitats for local flora and fauna, reducing biodiversity.During the operational phase, loss of vegetation could be attributed to encroachment into passive open space, development of landscaped gardens and active open spaces.

Table 5.16: Biodiversity: Loss of vegetation

Theme	**Terrestrial Biodiversity**		
Impact focal point	**Loss of Vegetation**		
Phase	**Construction Phase**	**Operational Phase**	**"No go"**
Nature and status	Clearing of vegetation for construction activities; Direct, Negative	Soil compatibility due to regular vehicular movement and heavy machinery. Encroachment into passive open space Direct, Negative	Dumping of wastes indiscriminately on the ground(unpaved area Direct, Negative
Extent	Local(1)	Local(1)	Regional(1)
Duration	Permanent (5)	Permanent (5)	Permanent (5)
Intensity	Medium (6)	Medium (6)	Medium (6)
Probability	Likely (3)	Likely (3)	Likely (3)
Confidence	High		High
Level of significance	(3+5+6)*3=42	(3+5+6)*3=42	(3+5+6)*3=42
	Medium(-)	Medium(-)	Medium(-)
Reversibility	No	No	No
Replaceability	No	No	No
Cumulative	None	None	None
Mitigation measures	Clearing of vegetation should be kept to a minimum, keeping the width and length of the earth works to a minimum and the open space areas (passive and steep slope areas) should be retained within the development footprint in its current start. Re-vegetation as part of a development plan is advocated. It is suggested that the shallow topsoil layer be stockpiled separately from		

	the subsoil layers, should the excavation exceed 0.5m. When the construction has been completed, then the topsoil layers, which contain seed and vegetative material, should be reinstated last thus allowing plants to rapidly re-colonise the bare soil areas. No stockpiling within 32 m of a drainage line. Vehicular movements should be restricted to designated access routes. Provide adequate parking bays to avoid vehicles parking at non designated areas Awareness raising regarding the impacts of illegal dumping of waste.		Awareness raising regarding the impacts of illegal dumping of waste. Enforcement of no Waste dumping on the bare soil
Level of significance with mitigation	**Low**(-)	**Low**(-)	**Low**(-)

The construction phase would have the greatest impact on the vegetation resulting in the disturbance of the vegetation and soils within the site. The operational phase of the project would also have limited impact on the surrounding vegetation once the plants are allowed to re-establish themselves in any remaining areas. This is also coupled to the increased spread of illegal dumping that usually occurs with urban development and the development of landscaped gardens and formal open spaces. An additional aspect considered is the increased vehicular movement and parking during the operational phase. With the mitigation measures in place, the impact on the vegetation would remain localised as some proportion of the site will remain as open space, resulting in a low impact.

Loss of Habitat containing Protected Species or Species of Special Concern

The focal point considers the loss of habitat especially areas containing protected species or SSC. No area was identified to contain protected species or SSC, resulting in high sensitive areas, hence, there are no species of special concern within the project site.

Table 5.17: Biodiversity: Loss of habitat containing protected species or SSCs

Theme	**Terrestrial Biodiversity**		
Impact focal point	**Loss of habitat containing protected species or SSCs**		
Phase	**Construction Phase**	**Operational Phase**	**"No go"**
Nature and status	Clearing of protected species and SSC during construction; **Not applicable to the project**	Loss of protected species and SSC from associated operational activities; **Not applicable to the project**	Loss of protected species and SSC from current activities; **Not applicable to the project**
Extent	Regional (3)	Regional (3)	Regional (3)
Duration	Not likely to occur (0)	Not likely to occur (0)	Not likely to occur (0)
Intensity	low(1)	Low (1)	Low (1)
Probability	Not Likely (0)	Not Likely (0)	Not Likely (0)

Confidence	Low		Low
Level of significance	(3+0+1)*0=0	(3+0+1)*0=0	(3+0+1)*0=0
	Low(-)	low(-)	Low(-)
Reversibility	No		No
Replaceability	No		No
Cumulative	None	None	None
Mitigation measures	No mitigation measures		No mitigation measures
Level of significance with mitigation	**Low**(-)	**Low**(-)	**Low**(-)

Given the specialist's input and professional consideration, and contextualised within the impact assessment as presented in above, loss of protected species and SSC is not associated with this project as there are no sensitive areas in the site.

Potential Spread of Alien Vegetation

Areas within the drainage line, along the main access roads bordering the site contain alien plants and the potential of alien plants spreading is likely if not managed. This is also linked to the spread of exotic garden plants that escape from landscape areas and home gardens during the operational phase.

Table 5.18: Biodiversity: Potential spread of alien vegetation

Theme	**Terrestrial Biodiversity**		
Impact focal point	**Potential spread of alien vegetation**		
Phase	**Construction Phase**	**Operational Phase**	**"No go"**
Nature and status	Spread of alien vegetation; Direct, Negative	Spread of alien vegetation; Direct, Negative	Spread of alien vegetation into grassy areas; Direct, Negative
Extent	Site (2)	Site (2)	Site (2)
Duration	Permanent (5)	Permanent (5)	Permanent (5)
Intensity	Medium (6)	Medium (6)	Medium (6)
Probability	Probable (2)	Probable (2)	Likely (3)
Confidence	Low		Medium
Level of significance	(2+5+6)*2=26	(2+5+6)*2=26	(2+5+6)*3=39
	Low (-)	Low (-)	Medium(-)
Reversibility	Yes		Yes
Replaceability	Yes		Yes
Cumulative	None	None	None

Mitigation measures	Disturbed areas should be kept to a minimum, keeping the width and length of the earth works to a minimum. Re-vegetation as part of a development plan is advocated. It is suggested that the shallow topsoil layer be stockpiled separately from the subsoil layers, should the excavation exceed 0.5m. When the construction has been completed, then the topsoil layers, which contain seed and vegetative material, should be reinstated last thus allowing plants to rapidly re-colonise the bare soil areas. No stockpiling within 32 m of a drainage line, Alien plant growth is to be monitored on-site by the Contractor's Environmental Officer and any such species to be removed either by physical or chemical means by the Contractor. Alien plant growth to be monitored and area to be kept free of Alien invasive and noxious plants .		Alien plant growth to be Monitored and area to be kept free of alien invasive and noxious plants by the LASEPA.
Level of significance with mitigation	**Very Low**(-)	**Very Low**(-)	**Low**(-)

With the mitigation measures in place, the impact on the indigenous vegetation would remain localised, with natural re-vegetation happening within a short time period, resulting in a low risk and very low impact significance.

Changes to the hydrological regime and increased potential for soil erosion

The focal point considers changes to the hydrological regime and potential for soil erosion. Un-vegetated soils within the site will be susceptible to erosion when subjected to high flows (high volumes and velocities), and head-cut scan readily form within the drainage lines.

Table 5.19: Aquatic Biodiversity: Changes to the hydrological regime and potential for soil erosion

Theme	**Aquatic Biodiversity**		
Impact focal point	**Changes to the hydrological regime and potential for soil erosion**		
Phase	**Construction Phase**	**Operational Phase**	**"No go"**
Nature and status	Changes to the hydrological regime and potential for erosion during construction; Direct, Negative	Changes to the hydrological regime and potential for erosion during operations; Direct, Negative	No change in status
Extent	Site (2)	Site (2)	
Duration	Long term (4)	Long term (4)	
Intensity	Medium (6)	Low (2)	
Probability	Highly Likely (4)	Likely (3)	
Confidence	High		
Level of significance	(2+4+4)*4=40	(2+4+2)*3=24	
	Medium (-)	Low (-)	Neutral
Reversibility	Yes		
Replaceability	Yes		
Cumulative	Medium	None	

Mitigation measures	Stormwater and any runoff generated by the hard surfaces should be discharged into retention swales detention ponds. These could be used to enhance the sense of place, if they are planted with indigenous vegetation. No stockpiling within 30m of a drainage line. Anti-erosion measures, e.g. energy dissipation structures, to be placed in a manner that flows are managed prior to being discharged back into the natural water courses, thus not only preventing erosion.		No change in status
Level of significance with mitigation	**Low**(-)	**Low**(-)	**Neutral**

Given professional consideration, and contextualized within the impact assessment, the potential loss of changes to the hydrological regime (i.e. drainage lines) is considered to be low. Due to the nature of the topography, only bulk services (i.e. one sewer line adjacent to the southern drainage line, stormwater to flow over land and three stormwater detention ponds) shall be located within the drainage lines or 32m thereof, however these services will be located in certain areas with steep gradients, increasing the risk of erosion.

Increased velocity of surface water flows

Construction activities such as site clearing, excavation, and grading will increase surface water runoff velocity, leading to erosion and sedimentation in nearby drainage channels and receiving water bodies, with potential disturbance to aquatic habitats and organisms.

Table 5.20: Aquatic Biodiversity: Increased velocity of surface water flows

Theme	**Aquatic Biodiversity**		
Impact focal point	**Increased velocity of surface water flows**		
Phase	**Construction Phase**	**Operational Phase**	**"No go"**
Nature and status	Increased velocity of surface water flows during construction; Direct, Negative	Increased velocity of surface water flows during operations; Direct, Negative	No change in status
Extent	Local (3)	Local (3)	Local (3)
Duration	Short term (3)	Long term (4)	Long term (4)
Intensity	Low-Medium (4)	Low-Medium (4)	Low-Medium (4)
Probability	Likely (3)	Likely (3)	Likely (3)
Confidence	High		High
Level of significance	(3+3+4)*3=30	(3+4+4)*3=33	(3+4+4)*3=33
	Medium (-)	Medium (-)	Medium (-)
Reversibility	Yes		
Replaceability	Yes		
Cumulative	None	Medium	
Mitigation measures	• Installation of erosion and sediment control measures (silt fences, sediment traps, and temporary drainage controls) • Phased site clearing to limit exposed surfaces		No change in status

	• Controlled discharge of runoff and regular inspection of drainage systems • No stockpiling within 32 m of a drainage line,		
Level of significance with mitigation	**Low**(-)	**Low**(-)	**Neutral**

Given the specialist's input and professional consideration, and contextualised within the impact assessment, the increase velocity of surface water flows are considered to be low. The project will implement effective erosion and sediment control measures, including temporary drainage controls, sediment traps, silt fences, controlled discharge points, and phased site clearing. These measures will help reduce runoff velocity, minimize sediment transport, and protect downstream aquatic habitats during the construction phase.

Impact of Changes to Water Quality

The improper siting of stockpiles and storage of sand, gravel, cement, and others, at the construction sites could lead to fine materials being washed away, during heavy rainfall events, into the drainage system, and ultimately into the adjacent marine environment. This would not only represent a waste of materials but would also contribute to turbidity and sedimentation with consequent negative impacts on water quality and possibly the ecology of adjoining water bodies.

Hazardous and flammable materials (such as paints, thinner, solvents, and other) improperly stored and handled on the site are potential health hazards for construction workers. Besides, spilled chemicals would have the potential to contaminate soil and inhibit plant growth around Awolowo Road and Obadeyi Close. It is anticipated that refueling or maintenance of some equipment will take place on the construction site, and therefore, there will be a requirement to store fuel and lubricants in a safe manner on the site.

During construction, various materials such as sediments, diesel, oils and cement, could exacerbate the current levels of pollution and pose a threat to the continued functioning downstream areas, if by chance it is dispersed via surface run-off, or are allowed to permeate into the groundwater.

During the operation phase considering the proposed development is situated in a highbrow environment, without an adequate sewage and wastewater disposal system, it has the potential

to exert a significant negative impact on the natural surroundings. Discharging wastewater directly from laboratories, clinics, theatres, showers, and kitchens into the environment, particularly in public drainages, can lead to a decline in water quality. It can also lead to obnoxious odours pervading the environment. It is expected that the proposed hospital will be operated within the context of an efficient environmental management system. Nevertheless, the mitigation stated below shall be pursued

Table 5.21: Aquatic Biodiversity: Changes to Water Quality

Theme	**Aquatic Biodiversity**		
Impact focal point	**Impact of Changes to Water Quality**		
Phase	**Construction Phase**	**Operational Phase**	**"No go"**
Nature and status	Changes to Water Quality during construction; Direct, Negative	Changes to Water Quality during operations; Direct, Negative	Indirect, Negative Changes to Water Quality due to current illegal dumping of waste within drainage line;
Extent	Local (3)	Local (3)	Local (3)
Duration	Long term (4)	Long term (4)	Long term (4)
Intensity	Low-Medium (4)	Low-Medium (4)	Low-Medium (4)
Probability	Likely (3)	Likely (3)	Likely (3)
Confidence	High		High
Level of significance	(3+4+4)*3=33	(3+4+4)*3=33	(3+4+4)*3=33
	Medium (-)	Medium (-)	Medium (-)
Reversibility	Yes		Yes
Replaceability	Yes		Yes
Cumulative	Medium	Low	None
Mitigation measures	Chemicals used for construction must be stored safely on site and surrounded by lined bunds. Chemical storage containers must be regularly inspected so that any leaks are detected early. Littering and contamination of water sources during construction must be prevented by effective construction camp and site management. Emergency plans must be in place in case of spillages onto road surfaces and drainage lines. No stockpiling within 32 m of a drainage line. All stockpiles must be protected from erosion, stored on flat areas where run-off will be minimised, and be surrounded by bunds. Erosion and sedimentation into drainage lines must be minimised through the effective stabilisation (gabions and Reno mattresses) and the re-vegetation of the drainage lines and constructed areas. The construction camp and necessary (including temporary) ablution facilities meant for construction workers must be beyond 32m of any drainage line.		Enforcement of waste management by-law and awareness raising.
Level of significance with mitigation	**Low**(-)	**Low**(-)	**Low**(-)

Given the specialist's input and professional consideration, and contextualised within the impact assessment. The impacts to the change in water quality are considered to be low if all mitigation measures have been implemented.

Loss of Wetland Type Habitat

The focal point considers impacts to the wetland type habitat occurring within the drainage line. No natural aquatic fauna or flora (i.e., riparian habitat) is contained in the drainage systems, and contribute little in terms of ecosystems services, biodiversity support and corridor creation. Wetland plant species (*Phragmitesaustralis* reed/*Typhacapensis*,) are supported therein, however these are not classified as natural wetland areas, although referenced as an artificial wetland in the specialist study.

Table 5.22: Aquatic Biodiversity: Loss of Wetland Type Habitat

Theme	**Aquatic Biodiversity**		
Impact focal point	**Loss of Wetland Type Habitat**		
Phase	**Construction Phase**	**Operational Phase**	**"No go"**
Nature and status	Increase in surface water run-off or any services that may cross the associated drainage line; Indirect, Negative	Increase in surface water run-off or any services that may cross the associated drainage line; Indirect, Negative	No change in status
Extent	Site (2)	Site (2)	
Duration	Long term (4)	Long term (4)	
Intensity	Low (2)	Low-Medium (4)	
Probability	Likely (3)	Likely (3)	
Confidence	High		
Level of significance	(2+4+2)*3=24	(2+4+2)*3=24	
	Low (-)	Low (-)	Neutral
Reversibility	Yes		
Replaceability	Yes		
Cumulative	None	None	
Mitigation measures	Storm water retention ponds occurring within the drainage lines to be considered as wet ponds and be re-vegetated with aquatic species. Littering and contamination of water sources during construction must be prevented. Emergency plans must be in place in case of spillages onto road surfaces and drainage lines. No stockpiling within 32 m of a drainage line. Erosion and sedimentation into drainage lines must be minimised through the effective stabilisation (gabions and Reno mattresses) and the re-vegetation of any disturbed drainage line banks. The construction camp and necessary (including temporary) ablution facilities meant for construction workers must be beyond 32m of the drainage line.		No change in status
Level of significance with mitigation	**Low**(-)	**Low**(-)	**Neutral**

Given the specialist's input and professional consideration, and contextualised within the impact assessment, the loss of wetland type habitat is considered to be low. The Ecological

Importance and Sensitivity scores are low for all the aquatic systems. The drainage areas have largely been excluded from the development area.

5.11.3 Heritage Resources Impacts

Loss of Heritage Resources

This focal point relates to the possible loss of cultural heritage resources, including archaeological and paleontological artefacts.

Table 5.23: Heritage: Loss of cultural heritage resources

Theme	**Heritage**		
Impact focal point	**Possible loss of cultural heritage resources including archaeological and paleontological Artefacts**		
Phase	**Construction Phase**	**Operational Phase**	**"No go"**
Nature and status	Loss of / damage to artefacts due to construction and associated activities; Direct, Negative	Loss of / damage to artefacts due operational activities; Direct, Negative	Loss of / damage to artefacts due to construction of informal settlement Direct, Negative
Extent	Footprint(1)	Footprint(1)	Footprint(1)
Duration	Permanent (5)	Permanent (5)	Permanent (5)
Intensity	Medium - High (8)	Medium - High (8)	Medium - High (8)
Probability	Not likely to occur (0)	Not likely to occur (0)	Not likely to occur (0)
Confidence	High		High
Level of significance	(1+5+8)*0=0	(1+5+8)*0=0	(1+5+8)*0=0
	Low (-)	Low (-)	Low (-)
Reversibility	No	No	No
Replaceability	No	No	No
Cumulative	None	None	None
Mitigation measures	No cultural heritage resources was identified on site, should any archaeological cultural heritage resources including human remains/graves or fossil remains be identified during the course of development, the developer should immediately cease operation in the vicinity of the find and report the site to the LASEPA. The area will be fenced off with a radius of 20m around the unearthed item, demarcated as a no-go area and access will be prohibited. Human remains confirmed younger than 60 years are to be reported directly to the nearest police station.		There are no mitigation measures.
Level of significance with mitigation	**Very Low**(-)	**Very Low**(-)	**Low**(-)

Given the specialist's input and professional consideration, and contextualised within the impact assessment, the potential loss of heritage artefacts are considered to be low, especially with appropriate mitigation measures being implemented in addition to the fact that none was identified during the assessment.

5.11.4 Social Impacts

Inflow and Outflow of Workers, Job Seekers and Service users

This impact relates to the influx of workers, job seekers and service users during the construction and operation phases and the potential repercussions from this on the Ikoyi residents close to the proposed development site. The presence of workers on the site for infrastructure development and construction related activities, irrespective of whether or not they are local, may create an increased safety and security risk to local households in the area. In addition, any changes in the local crime rates are likely to be attributed to the influx of construction workers, whether such changes can be attributed to their presence or not.

Table 5.24: Social: Inflow and Outflow of Workers, Job Seekers and Service users

Theme	**Population Impacts**		
Impact focal point	**Inflow And Outflow Of Temporary Workers**		
Phase	**Construction Phase**	**Operational Phase**	**"No go"**
Nature and status	Impacts of an influx of workers and job seekers during the construction phase and the potential repercussions from this on the host community; Indirect, Negative	Impacts of an influx of workers and service users during the operation phase and the potential repercussions from this on the host community; Indirect, Negative	No change in status
Extent	Local (3)	Local (3)	
Duration	Short – Medium Term (2)	Short – Medium Term (2)	
Intensity	Medium (6)	Medium (6)	
Probability	Definite (5)	Definite (5)	
Confidence	High	High	
Level of significance	(3+2+6)*5=55	(3+2+6)*5=55	
	Medium(-)	Medium(-)	Neutral
Reversibility	Yes	Yes	
Replaceability	Yes	Yes	
Cumulative	Medium	Medium	
Mitigation measures	Ensure by means of contractual specification that: • contractors drawn from within the area of jurisdiction; • workers will be drawn from the local resident resource base; • use of local contractors and SMEs be maximised, as feasible. Provide clear contractual guidelines on the: • numbers of jobs; • specific skills sets; • mechanisms for the selection of workers; • required reference checking process. Ensure strict adherence to the safety and security specifications as per the ESMP. Issue distinctive work gear to workers and compel them to wear identification badges at all times. Consult regularly and formally with the Community Security Forum (or associated structure). The overall purpose will be to proactively prevent an increase in crime in the area and to counter automatic attribution by the community that there are changes in the crime rate directly as a result of construction workers being in the immediate area: • share crime statistics, including crime incidents; and		No change in status

	• proactively develop mechanisms for monitoring and addressing project related crime and safety aspects. Consult formally and regularly with Ward Councillors and Resident Associations and proactively share: • construction procedures, schedules, difficulties; • safety and security concerns.		
Level of significance with mitigation	**Low(+)**	**Low(+)**	**Neutral**

It can be concluded from that the impact in terms of inflow of workers into the surrounding area can be mitigated to a low positive. The intention is to use local labour.

Opportunistic Influx of Individuals/Households

A significant positive aspect of the proposed development is the fact that existing informal settlements will be taken down and that the potential for the mass influx of informal settlers into the existing undeveloped space will be prevented.

Table 5.25: Social: Opportunity Influx of Individuals/Households

Theme	**Population Impacts**		
Impact focal point	**Opportunistic Influx of Individuals/Households**		
Phase	**Construction Phase**	**Operational Phase**	**"No go"**
Nature and status	The recruitment of workers will entail movement of households into the area which creates the potential for the opportunistic influx of 'new settlers' into the area; Indirect, Negative	The expected impacts resulting from the demographic change processes will have ramifications across the board for existing residents as well as for the new occupants of the area; Indirect, negative	Increase in informal settlement area; Indirect, negative
Extent	Footprint(1)	Local (3)	Local (3)
Duration	Long Term (4)	Long Term (4)	Long Term (4)
Intensity	Medium - High (8)	Medium - High (8)	Medium - High (8)
Probability	Likely (3)	Likely (3)	Likely (3)
Confidence	High		High
Level of significance	(3+4+8)*3=45	(3+4+8)*3=45	(3+4+8)*3=45
	Medium (-)	Medium (-)	Medium (-)
Reversibility	Yes		Yes
Replaceability	Yes		Yes
Cumulative	Medium	Medium	None
Mitigation measures	**Construction Phase** Agreements that clearly set out the conditions for recruitment are provided to each of the workers, clearly explained, and formally agreed to and enforced in consultation with legal experts. Such agreements should at minimum include the fact that neither sub-letting of any given space nor the erection of additional structures on any given space will be tolerated. Adequate mechanisms for monitoring and enforcement are in place. This could include: • more visible policing; • use of citizen volunteers (in collaboration with police) • support of the community policing forum (assist with the establishment if not in place)		

	Operational Phase Phased implementation over the course of a number of years as this will serve to disperse population change related impacts over an extended period of time, allow for other proposed developments to come to fruition and hopefully aid in the process of integration. Households from *informal settlements* should be informed long before they have to move and be provided with detailed information about the area into which they will be moving, including how to access support services such as community care and social services. Otherwise, informal settlement be treated within the context of established Nigerian laws.		No mitigation measures
Level of significance with mitigation	**Low(-)**	**Low(-)**	**Low(-)**

Introduction of People Dissimilar in Demographic Profile

During the construction phase, potential population changes correspond with the need to house contractors and/or staff on site. It is intended that a construction camp/materials storage depot will be situated within the footprint of the proposed development area. No contractors or workers will be housed on site. However, it is anticipated that guards will be at the facility over night for security purposes. The construction camp manned by security guards will manifest till the end of the construction phase.

This focal point considers the perceived differences between the current residents within Ikoyi and the new comers during the operational phase.

Table 5.26: Social: Similar/Dissimilar in Demographic Profile

Theme	**Population Impacts**		
Impact focal point	**Influx of People Dissimilar in Demographic Profile**		
Phase	**Construction Phase**	**Operational Phase**	**"No go"**
Nature and status	Potential population changes commensurate with the need to house contractors and/or staff on site; Indirect, Negative	The perceived differences between the current residents within Ikoyi, the Newcomers and the service users and the associated impacts Indirect, negative	Increase in informal settlement area dissimilar to current profile; Indirect, negative
Extent	Footprint(1)	Local (3)	Footprint(1)
Duration	Short-Medium Term (2)	Long Term (4)	Short-Medium Term (2)
Intensity	Low (2)	Medium (5)	Low (2)
Probability	Definite (5)	Definite (5)	Definite (5)
Confidence	High		High
Level of significance	(1+2+2)*5=25	(3+4+5)*5=60	(1+2+2)*5=25
	Medium ( )	Medium ( )	Medium ( )
Reversibility	Yes	Yes	Yes
Replaceability	Yes	Yes	Yes
Cumulative	Low	High	None
Mitigation measures	If possible, the site for the construction camp/ materials storage depot is selected in consultation with Lagos State Development Plan. Adequate security systems are in place at the site. After hour guards will be employed at the construction camp / materials storage depot.		

	Flow of materials into the area is handled according to the ESMP. Functional human and vehicular traffic flow and visual impacts are considered in respect of decisions regarding the siting of the facility. The land use plan as approved by Lagos State Ministry of Physical Planning and Urban Development introduces specific spatial mitigation measures, including topography related. These recommendations should be implemented. Visual impacts should be addressed as per the ESMP. In respect of socio-economic differences, particularly as the very low income facet is concerned, concerted socio-economic development, job creation and skills training, particularly aimed at those with low skills/incomes are key imperatives.		No mitigation measures
Level of significance with mitigation	**Low(-)**	**Low(-)**	**Low(-)**

Given the specialist's input and professional consideration, and contextualised within the impact assessment, the potential influx of people dissimilar in demographic profile can be mitigated to a low impact.

Impact on Job Opportunities

During the construction phase, funds will be invested in the development which has direct as well as indirect job creation potential. Direct jobs will be created. While jobs will be created indirectly through the backward linkages in the supply chain, i.e. the manufacturing of drain pipes, electricity cable, road building materials, cement, operational equipment etc.

The intention of IASO Medipark is to systematically use infrastructure and service delivery as well as Local Economic Development (LED) initiatives to promote sustainable employment opportunities. The intended provision of facilities and services in respect of schools, clinics, transport services as well as the need to ensure operations and maintenance as part of an integrated asset management approach, further promotes opportunities for job creation.

While the exact scale of opportunities cannot be calculated at present, it is anticipated that an environment could be created that could offer a significant number of opportunities for individuals and SMEs over time, especially if coupled with appropriate training and skills development.

Table 5.27: Social: Job Opportunities/Creation

Theme	Socio-economic Impacts		
Impact focal point	**Job Opportunities / Creation**		
Phase	**Construction Phase**	**Operational Phase**	**"No go"**
Nature and status	The creation of temporary and permanent employment through the proposed Medical Park development would represent a significant positive social benefit if the labour is sourced at local level; Indirect, Positive	An environment would be created that could offer a significant number of job opportunities for individuals and SMEs over time Indirect, Positive	No change in status
Extent	Local (3)	Local (3)	
Duration	Medium Term (3)	Medium Term (3)	
Intensity	Low-Medium (4)	Medium-High (8)	
Probability	Definite (5)	Highly Likely (4)	
Confidence	High		
Level of significance	(3+3+4)*5=50	(3+3+8)*4=56	
	Medium(+)	Medium(+)	Neutral
Reversibility	Yes		
Replaceability	Yes		
Cumulative	Medium (+)	Medium (+)	
Mitigation measures	**Construction Phase:** The use of local labour should be contractually specified as a critical conditional requirement in calls for tenders related to the proposed development. The sustainability of employment opportunities can be significantly enhanced by contractually specifying the requirement for up skilling of local labour (preferably outcomes based). An appropriate exit strategy must be developed by the Contractor in line with the relevant socio-economic focus within the affected communities. This could focus on developing the basic life skills of unskilled and semi-skilled workers. Develop a single and coherent message in respect of employment opportunities for host communities: • Number and type of jobs; • Period of time planned for the construction work; • Essential criteria for the appointment of individuals. The usual proliferation of informal food vendors at construction site can be addressed by providing formalised site for cooking and catering by women in the area. This can lead to additional job opportunities.		No change in status
Level of significance with mitigation	**High**(+)	**High**(+)	**Neutral**

Given the specialist's input and professional consideration, and contextualised within the impact assessment, the opportunities for the creation of jobs can be increased from a medium positive to a high positive with the implementation of the mitigation measures.

Occupational Health and Safety

This focal point refers to occupational health and safety during the construction phase.

Table 5.28: Social: Occupational Health and Safety

Theme	Health and Safety Impacts		
Impact focal point	**Occupational Health and Safety**		
Phase	**Construction Phase**	**Operational Phase**	**"No go"**
Nature and status	Environmental health and safety impacts related to construction; Indirect, Negative	Occupational Health impacts related to the operation phase	No change in status
Extent	Local (3)	Local (3)	
Duration	Medium Term (3)	Medium Term (3)	
Intensity	Medium-High (8)	Medium-High (8)	
Probability	Definite (5)	Definite (5)	
Confidence	High	High	
Level of significance	(3+3+8)*5=70	(3+3+8)*5=70	
	High (-)	High (-)	Neutral
Reversibility	Yes	Yes	No change in status
Replaceability	Yes	Yes	
Cumulative	Medium	Medium	
Mitigation measures	All safety and health regulation aspects must be adhered to, as well as the contractual specification and the requirements of the ESMP. On a detailed level, the following aspect should be addressed: • Prevent unauthorised persons gaining access (e.g. no children allowed). • Any excavations, open manholes and any other site on the construction site that can cause significant harm or even death, should be appropriately barricaded. • Ideally, all workers should be trained on how to "Apply Health and Safety to a Work Area". • Materials storage should be undertaken in a manner that does not create obstructions or potential health or environmental hazards. • Designated official resting places should be provided that provides protection from rain and sunshine. • A full-time Health and Safety Officer should be appointed during the construction and operation period. This person may not share the responsibilities of the Environmental Control Officer.		
Level of significance with mitigation	**Low** (-)	**Low** (-)	**Neutral**

Given the specialist's input and professional consideration, and contextualised within the impact assessment, the impact related to occupational health and safety can be mitigated to a low impact.

Community Health and Safety Impacts

Traffic

Traffic is expected to increase in the project area and especially along Awolowo Road. Based on observations made during site traffic survey, Awolowo Road will conveniently support this traffic increase without significantly contributing to congestion and/or disturbance to the surrounding communities compared to the baseline scenario. However, the Obadeyi Close needs to be carefully management to avoid negative impacts on the residents. The

project design takes into consideration that more of the patients and workers in the facility are expected to reach the hospital using private vehicles and have thus increased the required parking spaces in the allocated hospital parking area.

Security

The unauthorized access of community members to the medical park during this phase of the project may expose them to various health and safety hazards cuts and burns from equipment and machines, and an increased risk of infection. Unauthorized access of community members may also disturb the staff and patients, and expose the site to the risk of theft and tampering with equipment.

- Train security to perform regular patrols of the site
- Check IDs of all persons before entering the medical park to ensure they are either patients, staff or workers.
- Maintain visitor logs at all entrances and exits
- Ensure all equipment is securely stored with restricted access
- Adhere strictly to Traffic Management Plan adopted for the park's operations

This focal point refers to Community health and safety during the construction phase.

Table 5.28: Social: Community Health and Safety

Theme	**Health and Safety Impacts**		
Impact focal point	**Community Health and Safety**		
Phase	**Construction Phase**	**Operational Phase**	**"No go"**
Nature and status	Community health and safety impacts related to construction; Indirect, Negative	Community Health impacts related to the operation phase	No change in status
Extent	Local (3)	Local (3)	
Duration	Medium Term (3)	Medium Term (3)	
Intensity	Medium-High (8)	Medium-High (8)	
Probability	Definite (5)	Definite (5)	
Confidence	High	High	
Level of significance	(3+3+8)*5=70	(3+3+8)*5=70	
	High (-)	High (-)	Neutral
Reversibility	Yes	Yes	No change in status
Replaceability	Yes	Yes	
Cumulative	Medium	Medium	
Mitigation measures	All safety and health regulation aspects must be adhered to, as well as the contractual specification and the requirements of the ESMP. On a detailed level, the following aspect shall be addressed: • Prevent unauthorised persons gaining access (e.g. no children allowed).		

Theme	Health and Safety Impacts		
Impact focal point	**Community Health and Safety**		
	• Any excavations, open manholes and any other site on the construction site that can cause significant harm or even death, should be appropriately barricaded. • Ideally, all workers should be trained on how to "Apply Health and Safety to a Work Area". • Materials storage should be undertaken in a manner that does not create obstructions or potential health or environmental hazards. • Designated official resting places should be provided that provides protection from rain and sunshine. • A full-time Health and Safety Officer should be appointed during the construction and operation period. This person may not share the responsibilities of the Environmental Control Officer. • Develop an infection control procedure for the project defining responsibilities, resources and management/ mitigation measure for potential infection risks within the Project • Ensure only experienced and qualified staff are supervising the use of all equipment and machines • Hazardous waste must be disposed of using techniques appropriate to the situation asper the Waste Management Plan. The HSE Manager must identify an approved waste treatment and disposal site. • Hazardous waste bins must be clearly marked and stored in a contained area (or located on an impermeable surface) and covered with a lid • All areas and surfaces are to be cleaned and sanitized frequently according to a pre-established schedule • Provide spill kits, first-aid kits and fire extinguishers to handle any spill • Ensure all gas cylinders are properly secured in a well-ventilated and protected area away from heat and the sun		
Level of significance with mitigation	**Low** (-)	**Low** (-)	**Neutral**

Given the specialist's input and professional consideration, and contextualised within the impact assessment, the impact related to community health and safety can be mitigated to a low impact

Noise Pollution

The focal point with respect to noise impacts relates simply to potential changes in the nuisance impacts from noise generation from the site, specifically during the construction and operation phases.

Table 5.29: Social: Noise Pollution

Theme	Intrusion Impacts		
Impact focal Point	**Noise Pollution**		
Phase	**Construction Phase**	**Operational Phase**	**"No go"**
Nature and Status	Noise pollution of some level is anticipated during the construction phase as well as once the project becomes operational; Indirect, Negative	Noise pollution of some level is anticipated during the operation phase	No change in status
Extent	Local (3)	Local (3)	
Duration	Long Term (4)	Long Term (4)	
Intensity	Low-Medium (4)	Low-Medium (4)	
Probability	Definite (5)	Definite (5)	
Confidence	High	High	
Level of Significance	3+4+4)*5=55	3+4+4)*5=55	
	Medium(-)	Medium(-)	Neutral
Reversibility	Yes	Yes	No change in status
Replaceability	Yes	Yes	
Cumulative	Medium	Medium	
Mitigation measures	The focus should be on reducing noise levels at source. Design alternatives as well as development options should pay attention to the placement and location of the proposed development in a manner so as to limit noise intrusions. Limit intrusive construction activity to daylight hours and normal working days. Ensure that there is regular and thorough maintenance of operating machinery and vehicles. This includes ensuring that all machinery is in good order as far as silencers are concerned and that equipment in general complies with generally accepted noise levels. Putting in place proper construction planning and scheduling techniques. Strictly adhere to the noise regulations, project specification and aspects indicated in the ESMP. Paying heed to the impacts of the volume and speed of construction vehicles. During operation phase; architectural solutions (e.g., sound-absorbing materials), equipment modifications (e.g., quieter machinery, sound proof machines, visual alerts), administrative controls (e.g., quiet hours, staff training), and environmental changes (e.g., nature-inspired designs). These strategies address both the sources of noise and how it travels and impacts patients and staff, aiming to improve the healing environment and patient recovery		
Level of significance with mitigation	Low(-)	Low(-)	Neutral

Given the specialist's input and professional consideration, and contextualised within the impact assessment, the impact related to noise during the construction and operation phases can be mitigated to a low impact.

Dust and Air Pollution

The focal point with respect to dust and air pollution impacts during construction related activities, poorly maintained construction vehicles and burning materials or incineration of medical waste.

In relation to operational phase activities, the impact relates mainly to internal activities like medical procedures, cleaning, equipment and material use, and external factors like traffic and internal human and vehicular movements.

Table 5.30: Social: Dust and Air Pollution

Theme	**Intrusion Impacts**		
Impact focal Point	**Dust and Air pollution**		
Phase	**Construction Phase**	**Operational Phase**	**"No go"**
Nature and Status	Concerns about air pollution during the construction phase relate to dust and air emissions emanating from construction related activities on site; Direct, Negative	Concerns about air pollution during the operational phase relate to dust from gravel roads; Direct, Negative	No change in status
Extent	Local (3)	Local (3)	
Duration	Medium Term (3)	Medium Term (3)	
Intensity	Low-Medium (4)	Low-Medium (4)	
Probability	Definite (5)	Definite (5)	
Confidence	High		
Level of Significance	(3+3+4)*5=50	(3+3+4)*5=50	
	Medium(-)	Medium(-)	Neutral
Reversibility	Yes		
Replaceability	Yes		
Cumulative	Medium	Low	
Mitigation measures	**Construction Phase** The specifications and the ESMP should be strictly adhered to. Dust suppression measures are required. This should include ensuring that: - Internal gravel roads are wetted on a regular basis. - Vehicles transporting sand and building materials are fitted with tarpaulins and covers. - Strict speed limits are enforced by Traffic Police. Vegetation clearing should only commence when soil stripping is required and re-vegetation, where undertaken, should commence immediately after construction is completed. IASO Medipark Limited should promote the 'smokeless stove' and 'green city' initiatives. **Operational Phase** All internal roads to be tarred together and be mixed in with small scale retail, open space and other amenities as 'buffer'. Where at all possible, large tracts of similar housing forms should be avoided. Improve ventilation system within the buildings and ensure adequate air circulation.		No change in status
Level of significance with mitigation	Low(-)	Low(-)	Neutral

Given the specialist's input and professional consideration, and contextualised within the impact assessment, the dust and air pollution impacts can be mitigated to a low impact.

Waste Generation

Solid waste generated during site preparation and construction work would include cut vegetation and typical construction waste like wooden scaffolding and forms, bags, waste earth materials, and others. This waste would negatively impact the site, and surrounding environment if not properly managed and disposed of at an approved dumpsite. Cleared vegetation burned onsite would generate smoke, possibly impacting negatively on ambient air

quality and human health. Pooling of water, in turn, would create conditions conducive to the breeding of nuisance and health-threatening pests such as mosquitoes. Poor construction waste management constitutes a short-term, possibly long-term, negative impact. It is however, expected that the main contractor will deploy its waste management strategies in this regard.Generation of non-hazardous waste and hazardous materials such as infectious, pathological, chemical, pharmaceutical, and radioactive wastes during the operation phase of the project relates with environmental, health, and socio-economic impacts associated with this project. Waste generation during the operation phase has severe impacts on public health and the environment, primarily through the spread of infectious diseases from improper disposal of hazardous waste like sharps and bio-contaminated materials. Environmental consequences include the contamination of soil and water, air pollution from uncontrolled incineration, and the release of greenhouse gases.

Table 5.30: Social: Waste Generation

Theme	**Intrusion Impacts**		
Impact focal Point	**Waste Generation**		
Phase	**Construction Phase**	**Operational Phase**	**"No go"**
Nature and Status	Concerns about waste generation during the construction phase relate to different waste streams emanating from construction related activities on site; Direct, Negative	Concerns about waste generation during the operation phase relate to different waste streams emanating from operation related activities on site; Direct, Negative	No change in status
Extent	Local (3)	Local (3)	
Duration	Medium Term (3)	Medium Term (3)	
Intensity	Low-Medium (4)	Low-Medium (4)	
Probability	Definite (5)	Definite (5)	
Confidence	High	High	
Level of Significance	(3+3+4)*5=50	(3+3+4)*5=50	
	Medium(-)	Medium(-)	Neutral
Reversibility	Yes		
Replaceability	Yes		
Cumulative	Medium	Low	
Mitigation measures	**Construction Phase** The specifications and the ESMP should be strictly adhered to. Develop and implement a comprehensive waste management plan that addresses waste management across all phases of the project. This should include ensuring that: - The services of a certified third-party waste disposal is engaged - Unsuitable excavated materials shall be systematically carried away from site and disposed at a Lagos state Ministry of Environment-approved disposal site - waste materials wherever possible are reused and use a The Mitigation strategies adopted by IASO Medipark Limited for waste generation primarily focus on source reduction, proper segregation, and reuse/recycling to minimize the volume of hazardous and non hazardous waste and ensure safe disposal. **Operational Phase** IASO Medipark Limited shall establish clear, official policies and procedures for handling all waste streams, which is crucial for regulatory compliance and safety. The World Health Organization (WHO), NNRA and Lawma guidance for developing such plans within healthcare settings shall be fully adopted.		No change in status
Level of significance with mitigation	Low(-)	Low(-)	Neutral

Given the specialist's input and professional consideration, and contextualised within the impact assessment, the waste generation impacts can be mitigated to a low impact.

5.11.5 Impacts on Infrastructure and Services

This focal point refers to impacts on infrastructure and services. Increased traffic, demand for housing, and use of local utilities (e.g., water, energy, waste management) can strain existing community infrastructure if not adequately planned for. New medical practices might conflict with existing traditional medicine practices or cultural beliefs, requiring careful community engagement to integrate new and existing systems effectively.A negative public perception (e.g., due to concerns about quality, high costs, or past issues with private healthcare operations) can hinder community acceptance and utilization of the facility's services.

Table 5.31: Social: Impacts on Infrastructure and Services

Theme	**Impacts on Community Infrastructure**		
Impact focal Point	**Impacts on Infrastructure and Services**		
Phase	**Construction Phase**	**Operational Phase**	**"No go"**
Nature and Status	Variable refers to impact the project may have on infrastructure and services during construction; Indirect, Negative	The impact that the additional demand for infrastructure and services may have on existing infrastructure and services, and to what level these must be improved; Direct, Negative	No change in status
Extent	Local (3)	Local (3)	
Duration	Long Term (4)	Long Term (4)	
Intensity	Medium-High (8)	Medium-High (8)	
Probability	Highly Likely (4)	Highly Likely (4)	
Confidence	High		
Level of Significance	(3+4+8)*4=60	(3+4+8)*4=60	
	Medium (+)	Medium (+)	Neutral
Reversibility	Yes		
Replaceability	Yes		
Cumulative	Low	High	
Mitigation measures	A pre-construction survey must be conducted by the Contractor prior to the commencement of the construction works to locate existing services.Adequately plan for utilities to avoid stress on existing utilities. Effective community engagement and a commitment to continually review and manage social impacts are crucial to ensure the project's long-term social soundness and sustainability.		No change in status
Level of significance with mitigation	Very Low(-)	Medium (+)	Neutral

The health care facility is expected to install its water supply and electricity, as against reliance on supply by the Lagos Water Corporation. The main source of water will be generated by groundwater, and for electricity, reliance will be majorly on power generators. Relying only on

groundwater extraction can cause reduction of ground water level and might disturb the spring water resources which can impact on biodiversity as in consequence. The exhaust gas emission from generators can cause air quality degradation.

Given the specialist's input and professional consideration, and contextualised within the impact assessment, the impacts on infrastructure and services during construction can be mitigated to very low and during operation to a medium positive impact, with the implementation of the mitigation measures.

5.11.6 Topographical Impacts

The topographical impacts on the project site include influences on design, construction costs, and risk. Topography dictates the orientation and layout of structures, necessitates site preparation like grading, and can lead to issues like drainage problems or structural damage if not properly addressed. Understanding a site's topography early is crucial for cost-effective planning, risk mitigation, and ensuring regulatory compliance.

Table 5.32: Topographical impacts

Theme	**Topographical impacts**		
Impact focal Point	**Topographical impacts**		
Phase	**Construction Phase**	**Operational Phase**	**"No go"**
Nature and Status	Influences on design, construction costs, and risk; Direct, Negative	Drainage related issues, structural damage and regulatory complaince issues; Direct, Negative	No change in status
Extent	Footprint (1)	Footprint (1)	
Duration	Long Term (4)	Long Term (4)	
Intensity	Low-Medium (4)	Low-Medium (4)	
Probability	Likely (3)	Likely (3)	
Confidence	High		
Level of Significance	(1+3+6)*4=40	(1+3+6)*4=40	
	Medium(-)	Medium(-)	Neutral
Reversibility	Yes	Yes	No change in status
Replaceability	Yes	Yes	
Cumulative	Medium	Medium	
Mitigation	Undertake a topographical survey/study of the site prior to project design to determine the orientation and layout of structures.		
Measures	The slope and elevation of the land shall influence the design, height, and layout of structures to ensure they are functional and harmonize with the natural landscape. The site's contours and natural features shall reveal drainage patterns and flood-prone areas, which will inform the design of proper drainage systems and flood control measures for the project.		
Level of significance with mitigation	Low(-)	Low(-)	Neutral

To ensure structural integrity of the project, the soil's stability, which is influenced by topography, is vital for designing stable foundations and avoiding structural damage from

settling, hence, the mitigation measures proffered will effectively address the impacts to a low level of significance.

5.11.7 Climatological Impacts

The climatological impacts of this project can be direct (e.g., extreme weather affecting construction) or indirect (e.g., greenhouse gas emissions from the project contributing to climate change). Direct impacts include delays from heavy or prolonged rainfall, damage to exposed materials from heat and rain, and increased costs due to weather-related problems. Indirect impacts are the project's contribution to climate change through activities like burning fossil fuels, which can have long-term effects such as sea-level rise, more severe storms, and food insecurity.

Table 5.33: Climatological impacts

Theme	**Climatological impacts**		
Impact focal Point	**Climate Conditions**		
Phase	**Construction Phase**	**Operational Phase**	**"No go"**
Nature and Status	Extraction of Construction materials, use of fossil fuel, Extreme weather affecting construction Direct, Negative	Greenhouse gas emissions from the project contributing to climate change Indirect, Negative	No change in status
Extent	Footprint (1)	Footprint (1)	
Duration	Long Term (4)	Long Term (4)	
Intensity	Medium (6)	Medium (6)	
Probability	Likely (3)	Likely (3)	
Confidence	High		
Level of Significance	(1+4+6)*3=33	(1+4+6)*3=33	
	Medium(-)	Medium(-)	Neutral
Reversibility	Yes	Yes	No change in status
Replaceability	Yes	Yes	
Cumulative	Medium	Medium	
Mitigation Measures	Revegetation of site, provision for rainwater harvesting, integrating a renewable energy source to meet the energy requirement of the project thereby cutting down on fossil fuel use.Using Ozone friendly gases during operation.Installation of water saving measures, e.g. duel flush toilets, aerated taps. Implementation of a potable water leak detection programme. Immediate fixing of any leaks or broken potable water pipes Using energy efficient equipment		
Level of significance with mitigation	Low (+)	Low (+)	Neutral

5.12 Cumulative Impact Assessment

Cumulative impacts are defined as impacts that act simultaneously, including those arising from existing or foreseeable third-party activities, and have an effect on the same valued ecosystem receptor as the proposed Project. Therefore, cumulative impacts are those which act in a way that the sum is larger than that of any individual impact on its own. This section of the ESIA considers the cumulative impacts that would result from the combination of the Project and other existing or foreseeable developments in the broader Project area.

Based on the significance of the residual impacts during construction and operation the following impacts have been considered in this assessment:

- Ambient Air
- Noise
- Energy, Water and Wastewater
- Waste
- Traffic

Cumulative impact significance is based on expert judgement, taking into consideration that cumulative effects are difficult to predict as they are the result of complex interactions between multiple projects or activities. In this case, many of the foreseeable projects are not definitely known. It is also important to note that the mitigation and management measures of cumulative impacts are beyond the ability of the proponent, and therefore the mitigation measures included in Chapter 6 of this ESIA have focused on the measures that IASO Medipark Limited can take to avoid or control impacts from its Project. Lastly, health and safety cumulative impacts have been excluded as these will be managed individually by the Project.

5.12.1 Existing and/or Foreseeable Developments

Based on visual observations and a review of available documentation for the project, commercial and residential buildings were present in the area surrounding the project location.

5.12.2 Ambient Air Cumulative Impacts

During Construction

The construction of the medical park in combination with neighbouring developments, both existing and foreseeable, will result in increased dust and gaseous emissions in the project area. Emissions will result from earthwork and vehicular movement on unpaved surfaces, mainly. This cumulative impact is anticipated to be temporary in nature and localized. This impact is predicted to be minor.

During Operation

No negative cumulative impacts during the operation phase of the medical park are anticipated given the nature of the project and surrounding developments (existing and foreseeable), which do not constitute air emissions. This impact is predicted to be insignificant.

5.12.3 Noise Cumulative Impacts

During Construction

The construction of the Park, in addition to noise generated by the development of foreseeable projects is likely to cause an increase in noise emissions in project areas. Noise emissions will be the result of the use of heavy equipment and machinery on construction sites. However, noise generated by the Project and that of foreseeable Projects is anticipated to be temporary in nature and localized. This impact is predicted to be minor.

During Operation

Noise emissions during operations are anticipated to be limited to the boundaries of the site given they are predominantly a result of human interaction, medical equipment and ventilation systems as opposed to the operation of high noise emitting equipment/machines. Equipment/machine use onsite will be limited to emergencies and future maintenance (not yet planned), therefore limiting the extent of noise emissions beyond the site boundaries. This impact is predicted to be insignificant.

5.12.4 Waste Cumulative Impacts

During Construction

Waste generated by the project in addition to waste anticipated to generated from foreseeable developments and those existing is likely to have an impact on the municipal waste management systems, whereby the amount of waste landfilled is likely to increase. This impact is predicted to be minor.

During Operation

The cumulative impact of waste during the operation is similar to that of the construction phase, except waste quantities are likely to increase given the presence of more people within the facilities such as patients and their families. Additionally, an increase in the generation of hazardous waste from the area is expected, which adds pressure on treatment facilities such as incinerators. This impact is predicted to be moderate.

5.12.5 Energy, Water and Wastewater Cumulative Impacts

During Construction

The construction phase of the medical park is not anticipated to apply significant pressure on municipal services given that the number of workers on each site is considerably insignificant in comparison to the demand of other projects. Energy consumption will also be primarily attributed to the use of fossil fuels for the operation of heavy equipment and generators onsite, while low voltage energy usage will be used for power tools. Energy consumption during this phase is temporary. This impact is predicted to be minor.

During Operation

Existing and foreseeable developments, in addition to the medical park are likely to increase the demand for the delivery of municipal services, such as the provision of energy, potable water and sewerage. However, it has been observed that the infrastructure in all project areas is well established and fully functional. With regards to energy consumption and its result in GHG emissions, every source of GHG emissions is a source of cumulative impact and ultimately a contributor to the same impact. The mitigation measures, if properly implemented, will contribute to reducing the Project's GHG emissions. This impact is predicted to be moderate.

5.12.6 Gender Based Violence, Illicit Behaviour and Crime Cumulative Impacts

During Construction

Gender based violence, illicit behaviour and crime during the construction phase of the Project may be a result of multiple workforces present in residential areas, which may cause conflict with residents found in the Project areas. Furthermore, the presence of workers during the construction phase exposes the community to a potential increase in criminal activity given that some of the Project surrounding areas are empty plots that are not fully developed, therefore offering a quiet and easily accessible environment. This impact is predicted to be moderate.

During Operation

The operation of the medical park in combination with already existing institutions is not expected to cause a notable increase in gender-based violence, illicit behaviour or crime. This would be a result of implementing the facility's code of conduct and the fact that employees will be engaged for the operation phase on a full-time basis compared to the temporary employment of construction workers.

Full-time employees are less likely to engage in illicit or violent behaviour out of fear of losing their jobs. This impact is predicted to be minor.

5.13 Summary of Impacts

The overall impact after mitigation allows a reduction in impact varying from significantly lowering negative impacts to changing negative impacts to positive ones, with mitigation measures being success fully implemented by the Contractor during the construction phase and by IASO Medipark Limited during the operational and maintenance phase of the Lagos Medipark project, Ikoyi, Eti-osa LGA, Lagos State.

CHAPTER SIX

6.0 MITIGATION MEASURES

6.1 Introduction

Mitigation measures are actions taken to enhance positive impacts and to minimize negative ones. They aim to improve the environmental sustainability of a project. Depending on the nature of the impact they seek to ameliorate, they can be applied during the design or implementation stage of the project. Mitigation measures are implemented on a continuous basis through the project's life-cycle.

This chapter summarizes mitigation measures that will be taken by the project proponent and contractors to assure environmental sustainability of the proposed project and its related activities.

6.1.1 Specific and General Mitigations

Specific mitigation measures have been identified during the course of the environmental impact assessment to reduce the negative effects of those impacts identified through detailed analysis. Specification of mitigations focused on impacts identified as high or medium overall impact significance ("HIGH" and "MODERATE" in Chapter 5). Mitigations are however also identified for "LOW" impacts in order to keep them at acceptable levels.

Mitigation measures developed as part of the ESIA or related processes during the pre-construction phase are discussed as Specific Mitigation Measures. Specific mitigation measures are aimed at reducing negative impacts to acceptable levels and where possible, enhancing positive ones. The impacts are therefore re-assessed to determine the effect of each of these specific mitigation measures and the residual impacts presented.

In order to meet the HSE performance objectives of the project, a number of mitigation measures are built into the pre-construction and operating philosophy as specifications for environmental, social and health performance. General Mitigation Measures are those that IASO Medipark Limited or its contractors have already adopted and built into their standards, designs, and plans. In addition, operational best practices will be followed for the implementation phase (post-construction). Since IASO Medipark Limited has committed itself and its contractors to these mitigation measures, they are expected to significantly improve the environmental sustainability of the project. When it was known that the general mitigations were part of the project plan, they were accounted for when assessing the potential impacts presented in Chapter 5.

6.1.2 Implementation of Mitigations

Mitigations are presented in relation to specific project activities. However, in practice, they will be implemented as part of overall operational plans and procedures to be used by IASO Medipark Limited and its contractors to control their work and ensure compliance with protective measures. Throughout this chapter, reference is made to a particular plan or set of plans that will address the specific impact and mitigation. The organization of the plans and procedures is the subject of the Environmental and Social Management Plan (ESMP) that is described in Chapter 7.

As part of its sustainability commitment, IASO Medipark Limited will be committed to requiring that its contractors and sub-contractors comply with their obligations, in a manner consistent with the Environmental, Social and Health Management Plans and/or the sustainability commitment. Mitigation measures shall be required of all contractors through contractual obligation. Each contractor shall be required to develop a specific Environmental and Social Management Plan (ESMP) to support this ESIA, particularly the overall ESMP. They shall also be required to provide formal plans, procedures, and other submissions to ensure proper implementation of protective measures and of the specific mitigation requirements identified by the ESIA.

Each Contractor will be required to submit the following plans for review by IASO Medipark Limited in order to determine adherence to requirements of the project's overall HSE management plans. The plans that must be approved by the IASO Medipark Limited before work commences are Environmental Management Plan; Waste Management Plan; Emergency Response Plan; and Security Plan.

IASO Medipark Limited will also develop plans such as the Influx Management Plan; Labour Plan (including Job Rules); Compensation Plan; Community Development Plan; and Transportation and Journey Management Plan.

The ESMP presented in Chapter 7 provides specific requirements to monitor the effectiveness of mitigation measures. IASO Medipark Limited shall revisit and to the extent possible, develop alternatives for any mitigation measures that are not resulting in the intended outcome.

6.2 Specific Mitigation Measures

Mitigations specific to activities and the activity's impacts were identified during the ESIA to address impacts not minimized by the General Mitigation Measures. These specific mitigation measures are presented for each impact category in Table 7.1 following the format used in Chapter 5.

The consultants have developed mitigations working within the framework of Best Available Technology Not Entailing Excessive Cost (BATNEEC) with the goal of reducing impacts or the risk of impacts to "As Low as Reasonably Practicable" (ALARP). In determining whether to implement a mitigation measure, especially for those recommended by the ESIA, factors to be considered are Feasibility; Ease of implementation; Local suitability; Institutional requirements; Training requirements; Monitoring requirements; Cost (capital and operating); and Cost-effectiveness.

The residual impact ratings presented were reached by re-assessing the impacts and the effect of the mitigation on the impact severity criteria and likelihood. For instance, implementing an influx plan will address most impacts associated with population increase in the communities. Similarly project support to self-help initiatives and awareness campaigns on solid waste management practices, such as waste collection and proper storage, will reduce, but not eliminate, the magnitude of influx-related increase in solid wastes.

It is noted however that some impacts by their very nature may not be readily mitigated to low significance levels. For some of these, in-kind or compensatory measures will be taken as mitigation. One example is land-take and economic displacement, which will be addressed through the compensation procedures developed for the project (if any). Some social impacts may require wider-reaching government action for effective mitigation (e.g., provision of basic infrastructure). In this regard, IASO Medipark Limited will through advocacy and continuous engagement, work with communities and the Government of Nigeria to bring about the desired outcomes.

The following section highlights the necessary mitigation measures that will be adopted to prevent or minimize significant negative environmental, health and safety impacts associated with the activities of this project during its construction, operation and decommissioning phases. Mitigation measures for this project were developed in consideration of baseline environmental conditions at the proposed sites and the environmental impacts of the project, based on available information, followed by discussions with relevant government agencies and different stakeholders, the best mitigation practices and mechanisms have been proposed. This was done in clear demonstration of IASO Medipark Limited's commitment to Environmental Management and Sustainable Development.

6.3 Mitigation of Construction Phase Impacts

6.3.1 Land Acquisition and Economic Displacement

The project site was voluntarily allocated by the Lagos State Government for the proposed development. As such, the project does not require additional land acquisition and does not result in physical or economic displacement of individuals, households, or businesses. No land, structures, or livelihood assets will be affected.

The impact significance is Negligible (no displacement or loss of assets).

Mitigation Measures do not apply, as no land acquisition or economic displacement is involved. There will be a continuous engagement with relevant government authorities to maintain compliance and transparency. The project is fully compliant with national land administration requirements and AfDB resettlement principles, as it involves voluntary land provision with no compensation, resettlement, or livelihood restoration requirements.

6.3.2 Habitat loss, alteration and fragmentation

The Lagos Medipark Project is located on a previously developed brownfield site (former School of Nursing) that had been evacuated and abandoned prior to demolition. Construction activities may result in minor habitat alteration due to site clearing and ground disturbance; however, the site currently supports limited or no natural vegetation and does not constitute a sensitive or ecologically significant habitat. No critical habitats, protected species, or wildlife corridors will be affected by the project. Impact Significance is Low (localized, non-significant, and largely reversible). Mitigation Measures include:

- Restriction of construction activities strictly within the approved project footprint
- Preservation of any remaining trees or vegetation where feasible
- Landscaping with native or adaptive plant species during site reinstatement
- Implementation of good site management practices to prevent unnecessary disturbance

Given the brownfield nature of the project site and the absence of sensitive ecological receptors, the Lagos Medipark Project is not expected to result in significant habitat loss, alteration, or fragmentation. The impact is considered minimal and fully compliant with national environmental regulations and AfDB biodiversity conservation principles (OS 6-Habitat and Biodiversity Conservation).

6.3.3 Disturbances to public utilities

Construction activities associated with the Lagos Medipark Project, including excavation, piling, and installation of underground services, may temporarily disrupt existing public utilities such as water supply lines, electricity cables, telecommunications infrastructure, and drainage systems within and around the project site. Such disturbances could affect nearby businesses, residences, and road users if not properly managed.

Mitigation Measures:

- Identification and mapping of all existing public utilities prior to commencement of construction works
- Engagement and coordination with relevant utility service providers (electricity, water, telecommunications, and drainage authorities)
- Use of approved excavation methods and protective measures around utility corridors
- Provision of temporary utility diversions where necessary
- Prompt repair and restoration of any damaged utilities

With appropriate planning, coordination, and implementation of mitigation measures, disturbances to public utilities are expected to be minimal, temporary, and adequately managed, in compliance with national regulations and AfDB environmental and social performance requirements.

6.3.4 Water Demand

The Lagos Medipark Project will generate increased water demand during both the construction and operational phases. Construction activities will require water for concrete works, dust suppression, and domestic use by workers, while the operational phase will require reliable water supply for medical services, sanitation, cleaning, and landscaping. Increased demand may place temporary pressure on municipal water supply if not adequately managed.

The proponent shall ensure:

- Connection to Lagos State Water Corporation supply with on-site storage facilities
- Provision of supplementary borehole(s) as backup water source
- Installation of water-efficient fixtures and fittings

- Adoption of water conservation and leak detection measures

- Monitoring of water consumption during construction and operation

With the implementation of water efficiency measures and backup supply systems, the project's water demand will be adequately managed without significant adverse impacts on existing water users, in compliance with national regulations and AfDB resource efficiency principles.

6.3.5 Soil Conservation

Construction activities for the Lagos Medipark Project, including excavation, grading, and foundation works, may disturb topsoil and expose soil surfaces, increasing the risk of erosion, compaction, and loss of soil quality if not properly managed.

The project may require use of available spoil/borrow pits for structural fill. Licensed borrow pits shall be used for this project. Topsoil from the borrow pits will be removed and set aside. When borrowing from the pit ceases, the areas will be reinstated accordingly to the project engineers' approval. Agreements between the contractor and owners of material and dumping sites shall be brought to the attention of the Client representative/Project Engineers who shall ensure implementation of the Environmental Management Plan for these sites.

All steep cuts will be benched accordingly. Special attention will be given to ensuring that watercourses are not blocked and material stockpiles will be designed so that runoff will not induce sedimentation of waterways. In addition the following mitigation measures shall be adopted:

- Stripping, stockpiling, and protection of topsoil for reuse during landscaping

- Implementation of erosion control measures such as silt fences, sediment traps, and temporary drainage

- Limiting the extent and duration of exposed soil surfaces

- Scheduling earthworks to avoid peak rainfall periods where practicable

- Prompt site stabilization and re-vegetation after construction activities

6.3.6 Slope Failure

Earthworks associated with the Lagos Medipark Project, including excavation, grading, and foundation construction, may temporarily alter natural ground profiles and slope stability within the project site. If not properly managed, these activities could increase the risk of localized slope instability or minor slope failure, particularly during heavy rainfall events.

Proposed mitigation measures include:

- Conduct of geotechnical investigations to inform design and construction methods
- Implementation of engineered slope stabilization measures where required
- Provision of adequate drainage systems to prevent water accumulation and soil saturation
- Controlled excavation and backfilling in accordance with approved engineering designs
- Regular inspection and monitoring of slopes during construction, especially during the rainy season on sections likely to experience slope failure is to incorporate rehabilitation of the slopes measures through grass and tree planting.

With appropriate geotechnical design, drainage control, and construction management, the risk of slope failure is expected to be minimal and adequately controlled.

6.3.7 Efficient Sourcing and Use of Raw Materials

The proponent will source building materials such as sand, asphalt, bitumen and hard core from registered quarry and sand mining firms, whose projects have undergone satisfactory environmental impact, assessment/audit and received FMEnv/NESREA approval. Since such firms are expected to apply acceptable environmental performance standards, the negative impacts of their activities at the extraction sites are considerably well mitigated. To reduce the negative impacts on availability and sustainability of the materials, the proponent will only order for what will be required through accurate budgeting and estimation of actual construction requirements. This will ensure that materials are not extracted or purchased in excessive quantities. Moreover, the proponent will ensure that wastage, damage or loss (through run off, wind, etc) of materials at the construction site is kept minimal, as these would lead to additional demand for and extraction or purchase materials. In addition to the above measures, the proponent shall consider reuse of recycled building materials. This will lead to reduction in the amount of raw materials extracted from natural resources as well as reducing impacts at the extraction sites.

6.3.8 Earth works

Excavation of overburden will be required before construction begins. The proponent will undertake the following:

- Demarcation and fencing-off of the project area within which construction works will take place
- Earth and limited moving machinery and construction vehicles shall only operate on designated haulage routes.
- The Excavated soil during the construction will not be disposed. It is recommended that part of the topsoil excavated from the proposed construction site be re -spread in areas to be landscaped.
- The excavated spoil material shall be stored in such a manner to prevent wash away by rain.
- Cut slopes from excavation shall be stabilized by planting with suitable, slope stability reinforcing grasses.
- Construction and excavation works shall be undertaken during dry periods, as far as possible.
- Leveling of the project site will be undertaken in such a manner as to reduce surface runoff velocity and permit increased infiltration.
- Ensure that earth-moving vehicles are restricted to designated roads to avoid soil compaction within the project site.
- Ensure that any compacted areas are ripped up to reduce run-off.
- Site excavation works shall be planned in such a manner that a section is completed and configured before work begins on another section.
- Water shall be sprinkled on exposed dusty surfaces to reduce dust generation by construction activities.
- Earthworks shall be avoided in extremely dry conditions.
- Ensure strict compliance with on-site speed limits.
- Topsoil shall be stockpiled for use in the rehabilitation of borrow pits where extraction of gravel has been exhausted; and
- Each borrow pit must be rehabilitated each time gravel extraction has been exhausted or at the end of the contract.

6.3.9 Minimization of Vegetation Disturbance

Project construction activities may result in limited disturbance to existing vegetation within the project site. However, the Lagos Medipark Project is located on a previously developed brownfield site with sparse vegetation and no ecologically sensitive plant species. Potential impacts are expected to be localized and minor.

Mitigation Measures include:

- Restriction of site clearing strictly to the approved project footprint
- Retention and protection of any existing trees or vegetation where practicable
- Avoidance of unnecessary vegetation removal during site preparation
- Landscaping and site restoration using native or adaptive plant species
- Implementation of good construction practices to prevent off-site vegetation damage

With effective planning and site management, vegetation disturbance will be minimal and short-term, and post-construction landscaping will enhance the visual and ecological quality of the project site in line with national regulations and AfDB biodiversity conservation principles

6.3.10 Minimization of Storm Water Run-off and Soil Erosion

The project proponent will put in place some measures aimed at minimizing soil erosion and associated sediment release from the project site during construction. These measures will include terracing and leveling the project site to reduce run -off velocity and increase infiltration of rainwater into the soil. In addition, construction vehicles will be restricted to designated areas to avoid soil compaction within the project site, while any compacted area will be ripped to reduce run-off. Increased runoff from paved grounds and expansive roofs causing extreme flooding and overflows of drainage systems shall be mitigated. A storm water management plan that minimizes impervious area infiltration by use of recharge areas and use of detention and/or retention with graduated outlet control structures will be designed. Excavations at the site will be restricted to the sections where the drainage channels and footpaths will be. Excavated earth will be held away from trenches and on locations of the site not susceptible to surface runoff of storm water. The earth removed for external disposal will require to be deposited on sites without the risk of being washed down during rains and where it will not compromise other land use activities in those areas. Caution will be required during construction at times of heavy rains.

- Re-vegetate exposed areas around the site so as to mitigate erosion of soil by storm water runoff.
- The final site grade shall facilitate drainage and avoid flooding and pooling. A site drainage plan shall be developed to protect against erosion.
- Installation of drainage trenches, construction of runoff and retention ponds is necessary.
- Minimization of disturbances and scarification of the surface shall be observed to reduce erosion impacts.
- All slopes and working surfaces shall be returned to a stable condition and topsoil on the final site would be graded and planted as appropriate.

6.3.11 Minimization of Construction Waste

It is recommended that demolition and construction waste is recycled to ensure that materials that would otherwise be disposed of as waste are diverted for productive uses. In this regard, the proponent is committed to ensuring those construction materials leftover at the end of construction will be used in other projects rather than being disposed of. In addition drainage or wasted construction materials including metals will be recovered for refurbishing and use in other projects. Such measures will involve the sale or donation of such recyclable/reusable materials to construction companies, local community groups, institutions and individual residents or homeowners. The proponent will put in place measures to ensure that construction materials requirements are carefully budgeted and to ensure that the amount of construction materials left on site after construction is kept minimal. It further recommended that the proponent shall consider the use of recycled or refurbished construction materials. Recovered construction materials will lead to financial savings and reduction of the amount of construction debris disposed of as waste. Additional recommendations for minimization of solid waste during construction of this project include:

a) Use of durable, long- lasting materials that will not need to be replaced as often, thereby reducing the amount of construction waste generated over time;
b) Provision of facilities for proper handling and storage of construction materials to reduce the amount of waste caused by damage or exposure to the elements;
c) Use of construction materials that have minimal packaging to avoid the generation of excessive packaging waste;
d) Use of construction materials that have been refurbished, renewed or recycled.

e) Apply an integrated solid waste management system through a hierarchy of options i.e.) source reduction; ii) recycling; iii) composting and reuse; iv) combustion; v) sanitary land filling.
f) Rationalized materials procurement in terms of the right sizes and quantities, rather than having to cut them to size or having large quantities of residual materials.
g) Ensure that construction materials left over at the end of construction will be used in other projects rather than being thrown away
h) Ensure that damaged or unused construction materials such as metals, and lighting fixtures will be retained for use in other projects
i) Wherever possible, donate recyclable/reusable or residual materials to local community groups, institutions and individual local residents or home owners
j) Use durable, long-lasting materials that need less frequent replacement, thus reducing amounts of solid waste generated over the construction period
k) Dispose waste responsibly by dumping at designated/approved sites
l) Designate waste aggregation sites on the construction site
m) Contract only licensed waste disposal companies or firms when disposing solid waste from the site.

6.3.12 Reduction of Dust Generation and Emission

Dust emission during construction will be minimized through strict enforcement of onsite speed controls as well as limiting unnecessary traffic within the project site. In addition; it is recommended that excavation works be carried out in wet weather; and traffic routes on site be sprinkled with water regularly to reduce amount of dust generated by the construction trucks. More, proper planning of transportation of materials to ensure that vehicle fills are increased in order to reduce the number of trips done or the number of vehicles on the road shall be adopted. In addition, truck drivers will be sensitized to avoid unnecessary racing of vehicle engines at loading/offloading areas, and to switch off or keep vehicle engines at these points. Construction plant and equipment shall be well maintained to reduce emission of noxious gases while vehicle idling time shall be minimized. Discourage vehicle re -fueling in the afternoon and insist on the utilisation of low-sulphur diesels as fuel.

6.3.13 Minimization of Noise and Vibration

Noise and vibration will be minimized in the project site and surrounding areas through sensitisation of construction truck drivers to switch off vehicle engines while offloading

materials. In addition, they will be instructed to avoid running of vehicle engines or hooting especially when passing through sensitive areas such as churches, residential areas and hospitals. In addition, construction machinery shall be kept in good condition to reduce noise generation. It is recommended that all generators and heavy-duty equipment be insulated or placed in enclosures to minimize ambient noise levels. Noisy construction activities will be undertaken during the day when neighbours are least sensitive to noise.

6.3.14 Liquid waste generation

Provide containment means of adequate design and capacity for collection of domestic liquid effluent generated by site workers (mobile toilets).Ensure domestic effluent (black water) is collected by licensed firms and disposed of by Lagos State Wastewater Office (LASWAMO) licensed effluent treatment facilities. Provide appropriate means of adequate capacity for collection and storage of grey water liquid effluent generated by site workers. Ensure grey water effluent is collected by authorized firms and disposed of at an approved effluent treatment facilities.

6.3.15 Controlling Oil Spills during Construction Phase

The proponent of the proposed project will control the dangers of oil spills during construction by maintaining the machinery in specific areas designed for this purpose hence might not be a serious impact as a result of the construction of the project structures

6.3.16 Minimization of Water Use

The proponent shall ensure that water is used efficiently at the site by sensitizing construction staff to avoid irresponsible water usage.

6.3.17 Reduction of Risks of Accidents and Injuries to Workers

The proponent shall provide appropriate personal protective equipment, as well as ensure a safe and healthy environment for construction workers.

6.3.18 Emergency preparedness & evacuation procedures

The proponent shall deploy appropriate emergency preparedness measures including evacuation procedures in case of emergency. Ensure that the most current emergency telephone numbers are prominently and strategically displayed on posters within the campsite. Ensure that all the workers are insured according to The Workmen's compensation Act. Before embarking on work in dangerous situations, like working at heights or in confined spaces, a work permit must be issued and the activity under surveillance in accordance with recommended practice. Ambulance shall be on standby in the site and medical kits or first aid kits provided in case of injuries and minor illnesses among the construction workers.

6.3.19 Fire hazards

Install at strategic points fire-fighting equipment and ensure their performance through regular inspection. Signs such as "No Smoking" must be prominently displayed within the construction site, especially where inflammable materials are stored.

6.3.20 Electrical safety

The contractor shall ensure that circuits are not overloaded. Distribution board switches must also be clearly marked to indicate respective circuits. There shall be no exposed live connections on the site and all electrical equipment must be earthed.

6.3.21 Occupational Safety and Health (OSH)

The contractor hired must be compliant with the Nigerian Road Safety, Health and Environment (SHE) Policy.

- Workers shall be provided with appropriate personal protective equipment, such as coveralls, boots, mittens, gloves, goggles, dust and fume masks, all of which must be regularly replaced
- A general register shall be kept within the work areas.
- Ensure that incidents, accidents and near misses during construction are reported using prescribed forms.
- Ensure that duties in dangerous places i.e. confined spaces and heights are performed only after issuance of a work permit.
- Well-stocked first aid box which is easily available and accessible shall be provided within the construction site, and arrangements must be made for deployment of persons trained in first aid, evidenced by a certificate issued by a recognized body.

6.3.22 Workers Welfare

Ensure that all site personnel are provided with an adequate supply of safe drinking water, which shall be at accessible points at all times.

- Provide conveniently accessible, clean, orderly, adequate and suitable washing facilities within the site.
- The contractor will screen susceptible workers before employment.
- At the end of the construction phase all construction workers will undergo occupational health examination.
- Ensure all employees involved in construction are insured within the existing provisions of the Injuries & Benefits Act (Nigerian Government).
- The contractor will ensure the formation of a Safety & Health Committee at the construction site, on which they are represented by a senior member.
- Suitable, efficient, clean, well-lit and adequate sanitary conveniences shall be provided for construction workers.
- All ladders and scaffolds used in construction works must be of sound construction and quality material.
- Permit the vending of legal consumables within the work site.
- Provide shelters for the vendors and consumers of such goods within the work site.
- Promote check-off system for payment of such petty trade transactions.

6.3.23 Reduction of Energy Consumption

The proponent shall ensure responsible electricity use at the construction site through sensitization of staff to conserve electricity by switching off electrical equipment or appliances when they are not being used. In addition, proper planning of transportation of materials will ensure that fossil fuels (diesel, petrol) are not consumed in excessive amounts. Complementary to these measures, the proponent shall monitor energy use during construction and set targets for reduction of energy use. Ensure electrical equipment, appliances and lights are switched off when not in use and provide energy saving lighting instead of the incandescent bulbs, which consume more energy.

6.3.24 Ergonomics

- Ensure that equipment and work tasks are adapted to fit workers and their ability including protection against physical and mental strain
- Hand tools must be of appropriate size and shape for easy and safe use.

6.3.25 Machinery/equipment safety

- Ensure that construction plant and machinery undergoes statutory periodic examination
- Ensure that all dangerous moving parts of machinery are guarded
- Ensure quality checks are carried out with regard to personal protective equipment, appliances and hand tools used in construction do comply with prescribed safety and health standards.
- Statutory reports of examinations must be presented in prescribed forms, signed by the examiner and attached to the general register.

6.3.26 Site Organization

- Develop a clear site organization plan and construction schedule
- Procure and store materials at appropriate locations
- Hire the right calibre of workers with clear work schedules and appropriate reporting hierarchy.

6.3.27 Personal health

- Conducting an awareness campaign for all workers and the host communities on matters of HIV/AIDS; and distributing condoms to construction equipment operators and local residents in the project area. The impacts on local communities associated with the borrow pits shall be lowered to low significance levels by implementing the following mitigation measures:

- Regularly watering access roads and borrow pit sites in close proximity to human settlements during the dry season in order to suppress dust generation and particulate settlement;
- Sensitizing local communities not to allow children to play in flooded borrow pits during the rainy season;
- Conducting indoor spraying for mosquitoes;
- Conducting an awareness campaign covering construction equipment operators at borrow pits and the local community on matters of HIV/AIDS; and

6.3.28 Scavengers and Vermin

Adopt solid waste management systems that deter scavengers i.e. animals and birds.

6.3.29 Increased Pressure on Infrastructure

Liaise with key agencies and institutions that have provided existing infrastructure at the project area. Participate in the upgrade of existing infrastructure and services, to accommodate the new loads and demands caused by the project.

6.4 Mitigation of Operation Phase Impacts

6.4.1 Interference of physical cultural resources

The proponent will ensure preservation of the cultural resources as per the provisions of AfDB OS 8(Cultural Heritage). The policy considers Physical Cultural Resources (PCR) to be resources of archeological, paleontological, historical, architectural, and religious (including graveyards and burial sites), aesthetic or other cultural significance. There is no such resources identified around the site in the course of this study. No graves are likely to be affected by the project as established through consultations with the host community and individual home owners.

6.4.2 Interaction with other cultures

This is due to influx of workers during the project operation. The local communities would slowly acquire practices from the new populations in the area. The community and proponent shall therefore develop programmes to enhance cohesion between project employees and the local community.

6.4.3 Flooding, surface run off

Poorly designed drainage systems will trigger flooding which may in turn be a health problem to the communities around the road corridor. Well-designed drainage system and re-afforestation of the site will minimize such impacts.

6.4.4 Ensuring Efficient Solid Waste Management

There will be domestic waste from the proposed project's users. The proponent will be responsible for efficient management of solid waste generated by the project during its operation. In this regard, the proponent will provide waste handling facilities such as waste bins and skips for temporarily holding of waste generated at the site. In addition, the proponent will ensure that such, is disposed of regularly and appropriately. An integrated solid waste management system is recommendable. First, the proponent will give priority to reduction at source of the materials. Recycling, reuse and compositing of the waste will be the second alternative in priority. This will call for a source separation programme to be put in place. The third priority in the hierarchy of options is combustion of the waste

that is not recyclable in order to produce energy. Finally, sanitary land filling will be the last option for the proponent to consider.

Key Mitigation Strategies for Solid Waste Management during Operation Phase

- Develop Comprehensive Waste Management Policies: IASO Medipark Limited shall establish clear, official policies and procedures for handling all waste streams, which is crucial for regulatory compliance and safety. The WHO, NNRA, NESREA and LAWMA provide resources and guidance for developing such plans within healthcare settings.
- Implement Rigorous Waste Segregation: Sorting waste at the point of generation is the most critical step.
- Use color-coded receptacles to differentiate between general, infectious, sharp, chemical, pharmaceutical, and radioactive waste.
- Provide clear, instructive posters and guidelines in all areas to assist staff in proper disposal.
- Correct segregation significantly reduces the volume of waste requiring expensive hazardous treatment, potentially saving costs.
- Conduct Ongoing Staff Training and Awareness Programs: A lack of awareness among staff is a major problem.
- Provide regular, mandatory training sessions for all healthcare personnel on the proper handling, segregation, and risks of different waste types.
- Training shall be updated regularly to incorporate new trends and efficient practices.

Prioritizing Waste Minimization and Source Reduction:

- "Green Procurement": IASO Medipark Limited shall select products with less and ecological packaging, minimal shipping, and a longer lifecycle.
- Switch to Reusables: When safe and viable, IASO shall employ the use of reusable instruments, gowns, and containment systems (e.g., sharps containers) instead of single-use disposable items to reduce plastic waste.
- Reduce Pharmaceutical Waste: IASO shall implement rational prescribing practices, order/receive pharmaceuticals based on documented need, and use smaller packaging sizes to minimize expired or unused medications.

- Conduct Regular Waste Audits: IASO shall periodically assess current waste management practices to identify inefficiencies, sources of waste generation, and areas for improvement. Audits help monitor compliance and ensure everyone is using the correct disposal containers.

Explore Sustainable Treatment and Disposal Technologies:

- Autoclaving/Microwaving: IASO shall adopt safe and environmentally sound treatments like autoclaving (pressurized steam) or microwaving over incineration for biohazardous waste when possible, to minimize harmful air emissions.
- Waste-to-Energy: Utilize advanced incineration with strict emission controls to convert treated waste into energy (electricity/heat) for the facility, reducing landfill reliance and dependency on traditional energy sources.
- Enzymatic Treatments: Explore innovative enzymatic treatments that decompose biohazardous waste into non-toxic materials, which can then be repurposed (e.g., for agricultural use).
- Optimize Internal Logistics: Map the flow of waste within the hospital to ensure efficient and safe collection, transportation, and storage in designated areas, minimizing human touch and potential contamination.

6.4.5 Minimization of Sewage Release

The proponent will ensure that there are adequate means for handling the large quantities of sewage generated during the operation phase of the project. The project shall be connected to a sewage system as soon as practicable and provide adequate and safe means of sewage handling. It will be ensured that sewage pipes are not blocked or damaged since such vices can lead to release of the effluent, resulting in land and water contamination. Such blockages or damages will be fixed expeditiously. Fouling of the road corridor by human waste shall be prohibited.

6.5 Ensure Efficient Energy Consumption

The proponent plans to install an energy-efficient street lighting system for the proposed project which will contribute immensely to energy saving during the operational phase of the project. To complement these measures, it will be important to monitor energy use during the operation of the project and set targets for efficient energy use. Renewable energy source such as solar energy will be integrated into the energy system of the project.

6.5.1 Ensure Efficient Water Use

The proponent will install water-conserving automatic taps and toilets in the project. Moreover, any water leaks through damaged pipes and faulty taps will be fixed promptly by qualified staff. In addition, the project staff will be sensitized to use water efficiently.

6.5.2 Encroachment on Privacy

Mitigation measures for encroachment on privacy in Lagos Medipark project require a multi-layered approach involving technical, administrative, and ethical safeguards to ensure patient data remains confidential, secure, and used only for approved purposes. Key strategies include data de-identification, strict access controls, and compliance with appropriate regulations.

There is also the need to address the issue of encroachment on privacy of those residing within the vicinity of the project. Fencing of the project site, planting of trees that will grow to the required height to prevent encroachment on privacy shall be adopted.

6.5.3 Public health

Mitigation strategies for public health impacts focus on infection prevention, waste management, environmental control, and emergency preparedness.

Infection Prevention and Control (IPC)

- **Hand hygiene:** Consistently practice and monitor hand washing with antiseptic soaps or alcohol-based rubs as the single most effective measure to prevent infection transmission during operation phase.
- **Personal Protective Equipment (PPE):** Ensure the correct and consistent use of gloves, gowns, masks, and eye protection to prevent the spread of microorganisms between patients and healthcare workers.
- **Surveillance and Reporting:** Implement active surveillance programs to monitor rates of healthcare-associated infections (HAIs) and promptly investigate and manage potential outbreaks. In line with the WHO guidelines, reporting of specific infections shall be done to aid in the broader surveillance system.
- **Isolation Precautions:** The use of standard precautions for all patients and transmission-based precautions (contact, droplet, airborne) when necessary for patients with known or suspected infections to prevent transmission.

- **Education and Training:** Provide ongoing education and training for all staff (clinical and non-clinical) on infection prevention protocols, proper PPE use, and hand hygiene techniques.

Environmental Management

- **Cleaning and Disinfection:** Establish rigorous protocols for the cleaning and disinfection of patient rooms, medical equipment, and high-touch surfaces, using WHO approved chemical germicides.
- **Air Quality and Ventilation:** Ensure proper air circulation, filtration, and ventilation systems (including negative pressure isolation areas for severe respiratory illnesses) to control airborne pathogen spread.
- **Waste Management:** Minimize waste generation and ensure safe and environmentally sound handling, storage, transport, treatment, and disposal of healthcare waste to prevent the release of pathogens and toxic pollutants.
- **Sustainable Practices:** Adopt "greener" practices, such as improving energy efficiency with LED lighting and high-efficiency HVAC, conserving water with low-flow fixtures, and using renewable energy sources, which also have public health co-benefits.

Operational and Systemic Strategies

- **Risk Assessment:** Regularly conduct risk assessments to identify potential hazards (e.g., patient falls, cybersecurity breaches, staffing shortages) and prioritize mitigation actions based on impact and likelihood.
- **Policy and Leadership:** Develop and enforce clear, evidence-based policies and standards of practice, backed by strong administrative support and a culture of safety, to ensure consistent implementation.
- **Antimicrobial Stewardship:** Implement programs to ensure the appropriate use of antibiotics, track resistance patterns, and guide well-informed prescription decisions to combat antimicrobial resistance.
- **Community Engagement:** Engage with the community and multiple stakeholders to address population health needs, build trust in institutions, and coordinate a more effective public health response.

- **Technological Integration:** Leverage technology like telemedicine to provide remote care, reduce overcrowding, and minimize infection risks while also potentially reducing the facility's carbon footprint.
- **Workforce Support:** Ensure adequate staffing levels, provide psychological support, and offer necessary welfare facilities (e.g., break times, childcare during emergencies) to maintain the well-being and resilience of healthcare workers.

6.5.4 Accidents

Display warning and cautionary signs at all potential incident sites and establish a near – miss incident recording system and investigation procedure. Construct level crossings, foot bridges at spots where people have a need to cross. More especially areas of human traffic jam.

6.5.5 Odour

Potential sources of odour (putrefying solid wastes) shall be effectively and efficiently removed from the road paths.

6.5.6 Noise pollution

Mitigation strategies for noise pollution during the operation phase involve a multifaceted approach combining architectural design, administrative controls (policies and behavioral changes), and technological solutions. The goal is to reduce noise at its source, along its path, and at the receiver (patient/staff).

Architectural and Engineering Controls

These interventions shall focus on the physical environment and are most effective for long-term noise reduction. They include:

- **Soundproofing and Acoustic Design:** The use of sound-absorbing materials like acoustic ceiling tiles, wall panels, and soft rubber flooring to reduce sound reflection and transmissionin critical areas prone to high level noise.
- **Layout and Zoning:** Designating specific "quiet zones" and place noisy utility areas (e.g., Generators, pneumatic tube stations, and soiled utility rooms) away from patient rooms and quiet areas. Single-patient rooms are also effective at reducing noise.
- **Barriers and Enclosures:** The use of solid walls and doors instead of curtains to block sound. Acoustic enclosures shall be built around loud, stationary equipment such as sound proofing all power generators to be used during the operation phase.

- **Window Insulation:** IASO shall consider Installation of double-glazed windows to minimize outdoor noise intrusion from traffic and external activities.

Administrative Controls and Behavioral Changes

These strategies focus on changing practices and behaviors to foster a quieter environment during project operation.

- **Staff Education and Awareness:** IASO shall conduct regular training sessions for staff on the impact of noise on patient recovery and well-being. Encourage staff to speak in hushed tones, close doors gently, and minimize unnecessary conversations in patient areas.
- **Quiet Hours:** Implement and strictly enforce designated "quiet times" (e.g., afternoon and overnight periods) when non-essential activities are minimized, lights are dimmed, and patient care tasks are coordinated to allow for uninterrupted rest.
- **Communication Protocols:** Replace overhead paging systems with personal wireless devices, text messaging, or vibrating pagers to reduce sudden, loud announcements.
- **Maintenance and Operations:** Regularly inspect and maintain equipment like carts, beds, and door hardware to fix squeaks and other mechanical noises. Schedule disruptive activities like restocking supplies or floor cleaning during the evening rather than at night.

Technological and Equipment Solutions

These strategies involve selecting and managing technology to reduce noise emissions.

- **Quieter Equipment**: IASO will ensure that when purchasing new medical devices, models with lower noise emissions are prioritized.
- **Alarm Management:** IASO will optimize medical device alarm settings to appropriate, individualized patient levels to reduce the frequency of false alarms and combat "alarm fatigue".
- **Noise Monitoring Systems:** IASO shall install visual noise-alert systems (e.g., devices that resemble a traffic light, changing from green to yellow to red when noise levels exceed a set decibel limit) in key areas like nurses' stations and ICUs to provide real-time feedback and promote awareness.

- **White Noise/Sound Masking:** Use white noise machines or play soft, soothing background music in certain areas to mask disruptive sounds and promote a calming atmosphere.
- **Patient Aids:** Provide patients with earplugs, sleep masks, and headsets for personal electronic devices to help them manage external noise and improve sleep quality when such external noise cannot be properly managed.

6.5.7 Radioactive, Electric and Magnetic Fields (REMF)

Adverse effects of radioactive, electric and magnetic field on human health will be mitigated as follows:

- Set personal exposure monitoring equipment to warn of exposure levels that are below occupational exposure reference levels (e.g. 50 percent).
- Limit exposure time through work rotation.
- Increase the distance between the harmful source and the worker, when feasible, or the use of shielding materials
- Ensure there is restricted access to the high-risk areas such as imaging devices
- Prepare and implement an REMF safety program including the following components:
  - ✓ Identification of potential exposure levels in the workplace
  - ✓ Surveys of exposure levels in new projects and the use of personal monitors during working activities.
  - ✓ Training of workers in the identification of occupational REMF levels and hazards
  - ✓ Develop a release form for liquid/ solid hazardous materials to track quantities used and ensure proper/safe disposal
  - ✓ Establishment and identification of safety zones to differentiate between work areas

6.6 Mitigation of Decommissioning Phase Impacts

Just as in the case during the construction and operation phase, the negative impacts of the decommissioning phase of the proposed project can be mitigated as follows:

6.6.1 Efficient Solid Waste Management

Solid waste resulting from demolition or dismantling works associated with the proposed development during decommissioning phase will be managed as follows:

- Use of durable, long-lasting materials that will not need to be replaced as often, thereby reducing the amount of demolition waste generated during decommissioning phase
- Provision of facilities for proper handling and storage of demolition materials to reduce the amount of waste caused by damage or exposure to the elements
- Adequate collection and storage of waste on site and safe transportation to the disposal sites and disposal methods at designated area shall be provided.

6.6.2 Reduction of Dust Concentration

High levels of dust concentration resulting from demolition or dismantling works will be minimized as follows:

- Watering all active demolition areas as and when necessary to lay dust.
- Cover all trucks hauling soil, sand and other loose materials or require all trucks to maintain at least two feet of freeboard.

6.6.3 Minimization of Noise and Vibration

Significant impacts on the acoustic environment will be mitigated by the project proponent, by putting in place several measures that will mitigate noise pollution arising during the decommissioning phase. The following noise-suppression techniques will be employed to minimize the impact of temporary destruction noise at the project site.

- Use quiet equipment (i.e. equipment designed with noise control elements).
- Limit vehicles and other small equipment with engines to a minimum idling time and observe a common-sense approach to vehicle use, and encourage workers to shut off vehicle engines whenever possible.
- Demolish mainly during the day, a time with minimal noise disturbance.

6.6.4 Site Rehabilitation after Decommissioning

After gravel extraction has been exhausted or the contract has ended, borrow pits need to be decommissioned. Decommissioning requires that each borrow pit be rehabilitated. Requirements for the rehabilitation of the borrow pits under the contract have been included in the Environmental Management Plan (EMP). The project operator shall on decommissioning of the project, restore the site to its original status as far as practicable and plant trees at the site.

6.7 Environmental Risks to the Project

For this proposed project, the following environmental risks were identified and some recommendations to reduce their occurrence are outlined

6.7.1 General Road Operational Safety

The most significant safety issue potentially affecting road users is the threat of serious injury or the potential loss of life due to vehicle collisions with other vehicles and road users or accidents as well as the possibility of vehicles skipping of the road and any other operational causes. Recommended management actions include:

- Implementation of road operational safety procedures aimed at reducing the likelihood of vehicle collisions.
- Regular inspection and maintenance of the roads and facilities to ensure road stability and integrity in accordance with national and international road safety standards;
- Implementation of an overall safety management program that is equivalent to internationally recognized road safety programs.

6.7.3 Transport of Dangerous Goods

Dangerous goods are frequently transported in bulk or packaged form by road, representing a potential risk of release to the environment in the event of accidents on a number of other causes. Examples include valve leakage or safety valve releases in pressurized and general-service tank cars or other hazardous material containers (e.g. covered hoppers, intermodal trailers and containers, or portable tanks). In intermodal containers, spills and leaks may result from improper packing and resultant load shifting during transport. Additionally, there is a potential for the release of diesel during fuelling operations. The recommended measures to prevent minimize, and control releases of hazardous materials during road transportation and use include the following:

- Implementation of a system for the proper screening, acceptance, and transport of dangerous goods. Since these materials may be provided by third parties, the screening and acceptance process shall confirm accordance with international standards applicable to packaging, marking, and labeling of containers;
- Use of cars that meet national and international standards (e.g. thermal protection and puncture resistance) appropriate for the cargo being carried, and implementing a preventive maintenance program;
- Preparation of spill prevention and control, and emergency preparedness and response plans, based on an analysis of hazards, including the nature, consequence, and probability of accidents. Based on result of the hazard analysis, implementation of prevention and control measures which may include:
- Routing and timing of hazardous materials transport to minimize risk to the community (e.g. restricting transport of hazardous materials on some routes)
- Limiting vehicle speed in developed areas
- Construction of protective barriers and other technical measures (e.g. drainage/ receptacle provisions) at sensitive locations (e.g. water resources and settlements)
- Dissemination of emergency preparedness and response information to the potentially affected communities (e.g. emergency notification systems and evacuation procedures);
- Implementation of a hazardous material security plan and security awareness training, including provisions for personnel security, prevention of unauthorized access, and measures to reduce risks during storage and transport of hazardous materials;
- Use of standardized fuel spill prevention system for vehicle fueling, including automatic shut-off systems.

6.7.4 Fire Hazards

Mitigation strategies for fire hazards during project operational phase include a combination of robust prevention measures, installation of active and passive fire protection systems, comprehensive emergency planning, and rigorous staff training. The following Mitigation strategies will be employed to minimize the impact of Fire during the operation phase:

Fire Prevention and Hazard Control

- **Regular Risk Assessments:** Conduct routine, facility-wide fire risk assessments to identify potential hazards like faulty wiring, improper storage of flammable materials, or overloaded circuits.
- **Electrical Safety:** Regularly inspect and maintain all electrical systems and equipment to prevent short circuits or overheating. Avoid using extension cords as permanent solutions and ensure all equipment is in good condition.
- **Safe Material Handling and Storage:** Store flammable materials, such as medical gases (oxygen, nitrous oxide), alcohol-based sanitizers, and cleaning agents, in designated, fire-resistant areas away from ignition sources.
- **Kitchen Safety**: Given that kitchens are a common source of fires, ensure all cooking equipment, including grills and ducts, is cleaned regularly to prevent grease buildup. Install and maintain fire suppression systems in kitchen areas.
- **Strict Smoking Policies:** Enforce a complete no-smoking policy within the facility and manage designated outdoor smoking areas carefully with appropriate, deep ashtrays, far from oxygen supplies.
- **Good Housekeeping:** Prevent the accumulation of combustible waste and rubbish, and ensure all waste is disposed of correctly in designated containers.
- **Equipment Maintenance:** Implement a planned maintenance program for all heat-producing equipment, medical devices, and the HVAC system to prevent malfunctions and overheating.

Fire Protection Systems

- **Active Systems:** Install and regularly test fire detection and alarm systems, smoke detectors, and automatic wet-pipe sprinkler systems. Voice alarm systems are particularly useful for providing clear instructions to occupants. Provide adequate fire extinguishers and strategically position them where they can be easily accessed when needed. Ensure all fire extinguishers are regularly serviced.
- **Passive Systems:** Utilize fire-resistant walls, ceilings, and fire-rated doors to create fire compartments that slow the spread of fire and smoke. Install elevator smoke curtains to seal elevator shafts and prevent smoke from traveling between floors.

- **Emergency Lighting:** Ensure all escape routes have emergency lighting and clear signage to guide people safely to exits during a power outage or fire.

Emergency Preparedness and Training

- **Comprehensive Fire Safety Plan:** Develop a written plan that outlines clear, actionable procedures for staff during a fire emergency, including specific roles and responsibilities.
- **Staff Training and Drills:** Conduct regular, unannounced fire drills and training sessions for all staff (full-time, part-time, temporary) on how to report a fire, use a fire extinguisher, and follow evacuation procedures. Staff should know the R.A.C.E. (Rescue, Alarm, Confine, Extinguish/Evacuate) acronym.
- **Patient-Specific Evacuation Plans:** Create Personal Emergency Evacuation Plans (PEEPs) for patients who may need additional assistance due to mobility issues or cognitive difficulties. Display the Fire Service Phone numbers at designated areas.
- **Accountability:** Assign specific fire marshals or safety leads for each shift and area to ensure accountability for fire safety measures.

Table 6.1: Summary of Impacts, Mitigations and Residual Impacts of the Proposed Project

Impact ID	Project Activity & Phase	Impact Category	Environmental Impacts	Impact Significance	Mitigation Measures	Residual Impact	Estimate Cost (₦)
PP	**Impacts Associated With Physical Presence of Workers and Equipment**						
PP1	Pre-Operation Phase	Physical Presence of Workers and Equipment	**Impacts on Infrastructure** In-migration of workers and job seekers putting pressure on existing infrastructure.	**Moderate**	IASO Medipark Limited shall ✓ Develop and implement an influx management plan to look into specific options to address anticipated pressure on existing infrastructure such as housing, roads, hospitals, educational facilities in the communities ✓ Employ casual/unskilled labour primarily from local communities. ✓ Give priority consideration to qualified local community for hiring of workers. ✓ Shall handle the hiring of and payment to immigrant workers off location to discourage migrating job seekers. ✓ Shall provide closed camp with adequate facilities for construction workers, so that they do not interfere with local facilities	Low	₦45,000,000 (Influx Plan + Workers Camp Setup)
PP2			**Impacts on Macro and Micro Economy** Increase in the prices of food, goods and services as result of population increase coupled with increased in demand for food, goods and services. Un-employment boom-bust resulting in tension and conflicts	**Moderate**	IASO Medipark Limited shall: ✓ Develop and implement an influx management plan, which will look into specific options to address anticipated increase in prices of food, medicine, transportation, recruitment of workers, community expansion, housing plan, inflation reduction, security and other general goods and services ✓ Maintain an up- to-date food basket survey. ✓ Adopt workers disengagement plans to address boom-bust effects ✓ Strengthen existing cooperatives societies together with the establishment of new ones to engage in various commercial activities that will reduce inflation.	Low	₦15,000,000 /year (Socio-economic monitoring & cooperatives support)

Table 6.1: Summary of Impacts, Mitigations and Residual Impacts of the Proposed Project

Impact ID	Project Activity & Phase	Impact Category	Environmental Impacts	Impact Significance	Mitigation Measures	Residual Impact	Estimate Cost (₦)
					✓ Employ casual/unskilled labour primarily from local communities. ✓ Give priority consideration to qualified local community for hiring workers.		
PP3			**Impacts on Social and Cultural Structure** Marginal increase in population within the project area will lead to an increase in negative vices such as prostitution (commercial sex work) and crime thereby affecting social and cultural systems through a negative change in value systems.	**Moderate**	IASO Medipark Limited shall ✓ Conduct periodic STD and HIV/AIDs and general safe sex awareness campaigns in the project area ✓ Consider keeping a percentage and certain category of jobs for females ✓ Support initiatives including educational programmes aimed at preserving the local language, cultural structures and traditions	Low	₦12,000,000 /year (Health awareness & gender inclusion programs)
PP4			**Impacts on Cultural and Archaeological Resources** Non-natives living or working in the area may not be conversant with traditional religious practices and rules on shrines and so may inadvertently break traditional religious rules by living in sacred areas or engaging in culturally unacceptable behaviour.	**Low**	IASO Medipark Limited shall: ✓ Require that Contractors conduct induction programs to educate staff and contractors with the aid of the community elders on traditional religious practices, rules on shrines, culturally acceptable behaviour, and acquaint them with the sacred areas in the communities of the project area. ✓ Ensure work ceases if remains or artifacts are discovered on site during earthworks, and the contractor shall immediately inform the company's representatives and contact the relevant authority.	**Low**	₦5,000,000 (Cultural induction & chance-find protocol)
PP5			**Impacts on Education** The attraction to earn income could potentially, either directly from the project, or through some other indirect income generating enterprises, cause young people to abandon or suspend their education.	**Low**	IASO Medipark Limited shall: ✓ Make sure no underage/school age children is or are involved in any paying job or non - paying job on the project, hence shifting their attention from the opportunities in the project.	Low	₦3,000,000/ year (Child labour compliance monitoring)
PP6			**Impacts on Ground Water**	**Moderate**	IASO Medipark Limited shall:	Low	₦20,000,000 (Impermeabl

Table 6.1: Summary of Impacts, Mitigations and Residual Impacts of the Proposed Project

Impact ID	Project Activity & Phase	Impact Category	Environmental Impacts	Impact Significance	Mitigation Measures	Residual Impact	Estimate Cost (₦)
			Wash down of oil and grease and any chemicals/soluble hazardous materials stored or used.		✓ Implement non-permeable lay-down areas for project machinery equipment ✓ Make sure that chemicals and all hazardous substances shall be kept within contained areas ✓ Ensure that all spent oil and hazardous chemicals are properly containerised for proper disposal.		e surfaces & containment systems)
Impacts Associated With Transportation of Workers and Material							
TR1	Pre-Operation Phase	Transportation of Workers and Material	**Impacts on Transportation** Increased vehicular traffic in the area could lead to longer commuting time for existing road users.	**Moderate**	IASO Medipark Limited shall: ✓ Ensure that as much as possible, all heavy duty trucks working on the project move at off peak hours.	Low	₦4,000,000 (Traffic scheduling & logistics planning)
TR2			**pollution from vehicle emissions, increased noise levels, and potential traffic congestion**	**Moderate**	✓ IASO Medipark Limited shall ensure that all project vehicles adopt journey Hazard Management plans, which shall include maximum allowable speed when travelling. ✓ IASO Medipark Limited shall ensure that all vehicular movement adopt normal transportation routes following regulated corridors to minimise the interface with other road users ✓ IASO Medipark Limited shall conduct prior consultation and notification of communities to be affected for the development of a procedure to address any income or net losses ✓ IASO Medipark Limited shall Use fuel-efficient vehicles and machinery to reduce the project's carbon footprint. ✓ IASO Medipark Limited shall Maintain vehicles and transport infrastructure (like bus stops) to ensure a safe and comfortable environment	Low	₦18,000,000 /year (Driver training, maintenance & emissions control)

Table 6.1: Summary of Impacts, Mitigations and Residual Impacts of the Proposed Project

Impact ID	Project Activity & Phase	Impact Category	Environmental Impacts	Impact Significance	Mitigation Measures	Residual Impact	Estimate Cost (₦)
					✓ Implement comprehensive training programs for drivers on safety protocols and emergency procedures ✓ Establish clear emergency response plans for accidents, spills, or other incidents. ✓ Plan the most efficient routes and schedules to minimize travel time and reduce fuel consumption and congestion.		
Impacts Associated With Site Clearing And Preparation Activities							
SC1	Pre-Operation Phase	Site Clearing and Preparation	**Impacts on Soil Ecology** Removal of dry lowland rainforest vegetation, freshwater swamp forest and some of the top soil from the project site will result in loss of soil fertility, and near annihilation of soil ecology in the affected areas	**Moderate**	IASO Medipark Limited shall: ✓ Limit site clearing to the needed portions only and leave as much green area as possible. ✓ Ensure excavated soils are backfilled and properly levelled out to prevent the creation of ruts and the associated pond ✓ Ensure that the topography excavated and non-build areas are restored to pre-site clearing status.	Low	₦25,000,000 (Soil restoration & landscaping)
SC2			**Impacts on Surface Water Quality, Hydrobiology and Sediment** Run off from the site into nearby rivers and streams resulting in increased turbidity and total suspended which may affect plankton communities, benthic organisms and fisheries in rivers and streams.	**Moderate**	IASO Medipark Limited shall: ✓ Construct drainage lines where necessary on the site ✓ Ensure runoff from the site shall be channeled through sediment/silt traps before discharge into nearby water bodies ✓ Backfill and properly compact trenches to minimize impact on surface waters as a result of highly turbid runoff inputs	Low	₦35,000,000 (Drainage & sediment control structures)
SC3			**Impacts on Flora and Fauna** Loss of trees, shrubs, and climbers as well as associated fauna within the area to be taken up for the project	**Moderate**	IASO Medipark Limited shall: ✓ Keep site clearing to a minimum and leave as much vegetation as possible within project areas. ✓ Encourage the use of existing cleared or disturbed areas for the Contractor's Camp, stockpiling of materials etc. ✓ Trim rather than remove vegetation wherever possible.	Low	₦10,000,000 (Biodiversity protection & demarcation)

Table 6.1: Summary of Impacts, Mitigations and Residual Impacts of the Proposed Project

Impact ID	Project Activity & Phase	Impact Category	Environmental Impacts	Impact Significance	Mitigation Measures	Residual Impact	Estimate Cost (₦)
					✓ Strictly control clearing and preparation activities where it occurs in close proximity to indigenous/primary forest. ✓ Ensure that the limits of clearing and preparation activities must be clearly demarcated as per the Environmental Specifications to reduce unnecessary site clearing ✓ Prohibit contractors and staff from removal or harvesting of trees or medicinal plants, and from poaching (through trapping, poisoning or shooting) or otherwise harm wild animals in the area. ✓ Prohibit harvesting/ use of indigenous/primary plants as firewood and other uses unless they are obtained from approved cleared areas. ✓ Ensure a slow and "systematic clearing method" to give room for the escape of the fauna ✓ Prohibit the killing of wildlife for food by the contractor/project personnel.		
SC4			**Impacts on Culture and Archaeological Resources** Unauthorized clearing by the people near project facilities for construction of housing by people not associated with the project, hence leading to loss of shrines, burial grounds and other archaeological resources.	**Moderate**	IASO Medipark Limited shall: ✓ Implement an influx management plan to address the preservation of cultural and archaeological structures and resources where such exist.	Low	Included under PP1
SC5			**Physical and Economic Displacement Impacts** Loss of farm land and forage to site clearing and construction activities	**Moderate**	IASO Medipark Limited shall: ✓ Provide livelihood enhancement support for affected persons ✓ Implement a grievance procedure to ensure all livelihood complaints about enhancement benefits are handled in a structured and timely manner and to resolve conflicts ✓ Monitor, document and evaluate livelihood enhancement process	Low	₦30,000,000 (Livelihood enhancement program)
SC6			**Impacts on transportation** Increased traffic activities along the project area leading to longer	**Moderate**	IASO Medipark Limited shall:	Low	₦6,000,000 (Traffic

Table 6.1: Summary of Impacts, Mitigations and Residual Impacts of the Proposed Project

Impact ID	Project Activity & Phase	Impact Category	Environmental Impacts	Impact Significance	Mitigation Measures	Residual Impact	Estimate Cost (₦)
			commuting time for existing road users		✓ Implement a method statement for site clearing to reduce impacts on transportation ✓ Avoid as many roads currently used by pedestrians and road users in the project area ✓ Provide alternative routes to pedestrians if existing roads are blocked off ✓ Notify communities of plans to block roads ✓ As much as possible, avoid peak periods to transport supplies and equipment during project implementation.		management measures)
SC7			**Vibration and Noise Impacts** Increased noise and vibration generated by heavy equipment use for land clearing	**Moderate**	IASO Medipark Limited shall: ✓ Ensure all contractors avoid night time work as much as possible ✓ Pre-notify affected parties of their activities and shall provide ear muffs for people working with or near noise generating equipment ✓ Ensure that project staff are not exposed to more than nine hours at a go on any equipment generating noise level of more than 90 dBA	Low	₦8,000,000/ year (Noise PPE & monitoring)
Impacts Associated With Construction Activities							
CR1	Pre-Operation Phase	Construction Activities	**Vibration and Noise Impacts** Increased noise and vibration generating activities like carpentry/joinery, block work, cement batching plant, lifting machinery operations and general vehicular movement.	**Moderate**	IASO Medipark Limited shall: ✓ Ensure that project staff are not exposed to more than nine hours at a go on any equipment generating noise level of more than 90 dBA ✓ Limit construction works to daytime	Low	₦10,000,000 /year
CR2			**Impacts on Human Movement** Disruptions to trekking paths will negatively impact people's movement and could affect social, economic and livelihood networks in the area.	**Moderate**	IASO Medipark Limited shall: ✓ Avoid as many existing roads currently used by pedestrians and road users in the project area	Low	₦7,000,000

Table 6.1: Summary of Impacts, Mitigations and Residual Impacts of the Proposed Project

Impact ID	Project Activity & Phase	Impact Category	Environmental Impacts	Impact Significance	Mitigation Measures	Residual Impact	Estimate Cost (₦)
					✓ As much as possible, avoid peak periods to transport supplies and equipment during project implementation. ✓ Provide alternative routes to pedestrians if existing roads are blocked off ✓ Notify communities of plans to block roads ✓ As much as possible, avoid peak periods to transport supplies and equipment during project implementation		
Impacts Associated with Wastes and Emissions Handling							
WE1.1	**Pre-Operations**	**Waste and Emissions Generation and Disposal**	**Air Emissions Impacts** Emissions of air pollutants during the operation of combustion engines, burning of organic material from site clearing, and dust during site clearing and grading.	Moderate	IASO Medipark Limited shall: ✓ Service all equipment regularly, and shall use low emission equipment ✓ Require that all contractors maintain their equipment in good condition ✓ Require that engines are turned off when not required ✓ Reduce burning of organic material to the barest minimum	Low	₦12,000,000 /year
WE1.2	**Pre-Operations**	**Waste and Emissions Generation and Disposal**	**Solid Waste Impacts** Illegal disposal of waste in open dump areas and waterways.	Moderate	✓ IASO Medipark Limited shall implement a waste minimization and utilization strategy as much as possible to reduce the amount of wastes to be generated ✓ IASO Medipark Limited shall develop and implement an approved waste management plan for all project phases in line with regulatory requirements ✓ IASO Medipark Limited shall ensure proper waste manifesting for all non-incinerated wastes and all other construction wastes taking off the plant site for disposal ✓ IASO Medipark Limited shall contract only with approved and permitted waste handling firms and technologies ✓ IASO Medipark Limited shall monitor its waste contractors	Low	₦25,000,000 /year

Table 6.1: Summary of Impacts, Mitigations and Residual Impacts of the Proposed Project

Impact ID	Project Activity & Phase	Impact Category	Environmental Impacts	Impact Significance	Mitigation Measures	Residual Impact	Estimate Cost (₦)
WE1.3	Pre-Operations	Waste and Emissions Generation and Disposal	**Liquid Wastes and Discharge Impacts** Generation of organically-loaded effluents from sinks, showers, laundries activities and sewage during the site preparation and construction in the worker's project office.	Moderate	IASO Medipark Limited shall: ✓ Ensure sewage generated at the temporary project yard, will be collected in a closed system comprising a conservancy tank,which is then piped to a holding tank. ✓ IASO Medipark Limited shall engage the services of a certified third-party waste disposal contractor to collect waste from the tanks on a regular basis and treat the sanitary waste offsite. ✓ Implement a public training program to increase awareness of basic sanitation ✓ Extend project sanitary waste handling to potentially affected communities(if any) during construction	Low	₦40,000,000 (Temporary sewage containment system)
Construction Phase CAPEX							**≈ ₦350 – ₦450 Million**
Impacts Associated With Physical Presence of Plant							
OM1.1	Operations	Physical Presence of Plant	**Visual Impacts** Fundamental change in the appearance of the landscape as a result of the project	Moderate	IASO Medipark Limited shall: ✓ Use natural screening to minimise the extent of change of view to the water's edge, using natural vegetation (such as tall trees) where possible; and ✓ Implement a "down" lighting strategy to minimise the potential for light emissions to pass beyond the project boundary	Low	₦15,000,000
OM1.2	Operations	Generation and Transmission	**Impacts of Radioactive, Electric and Magnetic Fields** Adverse effects of radioactive, electric and magnetic field on plant, animal species, and on human health.	**Moderate**	IASO Medipark Limited shall; ✓ Set personal exposure monitoring equipment to warn of exposure levels that are below occupational exposure reference levels (e.g. 50 percent). ✓ Limit exposure time through work rotation ✓ Increase the distance between the EMF source and the worker, when feasible, or the use of shielding materials ✓ Prepare and implement an EMF safety program including the following components: o Identification of potential exposure levels in the workplace	Low	₦22,000,000 (Radiation & EMF safety systems)

Table 6.1: Summary of Impacts, Mitigations and Residual Impacts of the Proposed Project

Impact ID	Project Activity & Phase	Impact Category	Environmental Impacts	Impact Significance	Mitigation Measures	Residual Impact	Estimate Cost (₦)
					○ Surveys of exposure levels in new projects and the use of personal monitors during working activities ○ Training of workers in the identification of occupational EMF levels and hazards ○ Establishment and identification of safety zones to differentiate between work areas with expected elevated EMF levels compared to those acceptable for public exposure, limiting access to properly trained workers ○ Implementation of action plans to address potential or confirmed exposure levels that exceed reference occupational exposure levels developed by international organizations such as the International Commission on Non-Ionizing Radiation Protection (ICNIRP),		
OM1.3	Operations	Physical Presence of Transmission Lines	**Impacts on Wildlife** Collision of birds with street lightings and electrocution of bats as well as the danger of coating chemicals and pesticides.	**Moderate**	✓ Avoid the use of pesticides that fall under the World Health Organization Recommended Classification of Pesticides by Hazard Classes 1a and 1b ✓ Apply pesticides based on criteria (e.g. field observations, weather data, time of treatment, and dosage) and maintain a pesticide logbook to record such information ✓ Avoid flight paths of birds when finalizing street lighting routes.	Low	₦5,000,000/ year
OM1.4	Operations	Waste and Emissions	**Operations Solid Waste Impacts** In addition to solid waste generated and managed by the project, there will be an increase in solid waste in the communities and surrounding areas due to influx of project workers and non-project related migrants. Excess waste may accumulate in the communities or the surrounding areas.	Moderate	IASO Medipark Limited shall: ✓ Pursue a waste minimization and utilization strategy ✓ Develop and implement an approved waste management plan for operations also ✓ Ensure proper waste manifesting for all project related wastes ✓ Engage government approved and reputable waste management firms in waste handling and disposal	Low	₦40,000,000 /year

Table 6.1: Summary of Impacts, Mitigations and Residual Impacts of the Proposed Project

Impact ID	Project Activity & Phase	Impact Category	Environmental Impacts	Impact Significance	Mitigation Measures	Residual Impact	Estimate Cost (₦)
					Implement waste management auditing ✓ Work with communities to develop and implement basic waste handling procedures among residents ✓ Implement a public training program to increase awareness of basic sanitation ✓ Strictly follow the approved medical waste handling strategies		
OM1.5	Operations	Waste and Emissions	**Air Emissions Impacts** The increment of the greenhouse gases in the atmosphere resulting from the operations in the facility.	**Moderate**	IASO Medipark Limited shall: ✓ As much as possible ensure the use of modern equipment that minimize emissions of pollutant gases during operation ✓ Ensure proper maintenance of combustion equipment to ensure efficient combustion ✓ Monitor the air-quality continuously as a mitigative step to ensure that the overall significance does not increase	Low	₦18,000,000 /year
OM1.6	Operations	Waste and Emissions	**Effluent Handling and Disposal Impacts** Generation of sewage (black water); "grey" water from sinks, showers, and laundries; and other organic laden effluents from personnel, patients and caregivers during the operation phase.	**Moderate**	IASO Medipark Limited shall: ✓ Ensure sewage generated at the living area of staff, will be collected in a closed system comprising a conservancy tank to separate solid materials from liquid wastes. The liquids would then be piped to a holding tank. ✓ IASO Medipark Limited shall engage the service of a certified third-party waste disposal contractor to collect waste from the tanks on a regular basis and treat the sanitary waste offsite.	Low	₦35,000,000 /year
Health Impacts							
H1.1	All Projects	Pollution Related Health Effects	**Sanitary and Solid Waste Health Effects** Untreated sanitary waste and other effluents as well as solid waste can increase the existing prevalence of water and vector borne diseases and other disease vectors in the project area.	**Moderate**	IASO Medipark Limited shall; ✓ Implement a Contractors Sanitation Plan for the project ✓ Support health enlightenment campaigns, which provide guidelines and tips for improved sanitary conditions in the communities ✓ Support indigenes to establish commercial sanitary services that will serve the project area ✓ Require its contractors to provide HSE induction training to all workers engaged on the project	Low	₦10,000,000 /year

Table 6.1: Summary of Impacts, Mitigations and Residual Impacts of the Proposed Project

Impact ID	Project Activity & Phase	Impact Category	Environmental Impacts	Impact Significance	Mitigation Measures	Residual Impact	Estimate Cost (₦)
H1.2	Operations	Pollution Related Health Effects	**Noise and Vibration Impacts** Increase in noise and vibration during the implementation of various activities associated with the project.	**Moderate**	IASO Medipark Limited shall: ✓ Implement a noise abatement plan ✓ Adopt noise attenuation measures such as installation of acoustic mufflers on large engines and equipment; ✓ Provide hearing protection to all workers on site ✓ Avoid loud noise at night time work as much as possible	Low	₦12,000,000 /year
H1.3a	Pre-Operations	Pollution Related Health Effects	**Air Emission Impacts** Burning of cleared vegetation and other organic wastes on site together with emissions from combustion engines will lead to an increase in air pollutants.	**Moderate**	IASO Medipark Limited shall: ✓ Service all equipment regularly, and shall use low emission equipment ✓ Require that all contractors maintain their equipment in good condition ✓ Require that engines are turned off when not required ✓ Reduce burning of organic material to the barest minimum	Low	₦8,000,000/ year
H1.3b	Operations	Pollution Related Health Effects	**Air Emission Impacts** Facility Operations will result in releases of pollutant gases like nitrogen oxides, sulphur oxides, carbon monoxide, Volatile Organic Compounds (VOC) and particulates.	**Moderate**	IASO Medipark Limited shall ✓ Service all equipment regularly, and shall use low emission equipment ✓ Monitor operations emissions to ensure pollutants are kept within regulatory limits ✓ Ensure adequate air circulation within the buildings	Low	₦15,000,000 /year
H2.1	Pre-Operations and Operations	Influx Related Health Effects	**Communicable and Non-Communicable Diseases** Influx of people into the area as a result of the project could lead to outbreak of Communicable and Non-Communicable Diseases among the populace.	**Moderate**	IASO Medipark Limited shall: ✓ Conduct periodic health awareness campaigns for STDs especially AIDS, and support safe sex initiatives ✓ Support indigenes to establish commercial sanitary services that will serve the area ✓ Through advocacy, encourage State and Local Governments to improve housing and other facilities in the area ✓ Provide adequate medical facilities for all construction workers.	Low	₦20,000,000 /year

Table 6.1: Summary of Impacts, Mitigations and Residual Impacts of the Proposed Project

Impact ID	Project Activity & Phase	Impact Category	Environmental Impacts	Impact Significance	Mitigation Measures	Residual Impact	Estimate Cost (₦)
H2.2	Pre-Operations and Operations	Influx Related Health Effects	**Impacts on Fertility** The possibility of activities that could increase STD, stress and fertility-threatening lifestyles.	**Moderate**	IASO Medipark Limited shall: ✓ Monitor this health determinant as a mitigative step to ensure that the overall significance does not increase	Low	₦5,000,000/ year
H2.3	Pre-Operations and Operations	Influx Related Health Effects	**Impacts on Quality of Health Care** Inadequate health care system and medical facilities in the area for the populace. Improved Access to healthcare services as a positive impact of the project which shall be enhanced	Moderate	✓ As part of its social development plan, IASO Medipark Limited will embark on health care interventions to improve general health awareness and the availability of health care facilities in the area ✓ IASO Medipark Limited shall periodically sponsor cultural and recreational activities such as festivals and sports competitions. ✓ IASO Medipark Limited workers in the community shall have access to the medical facilities that will be provided in the project area. Adequate medical facilities shall be provided for all construction workers and those employed to operate the medical facility ✓ IASO Medipark Limited shall conduct periodic health awareness campaigns for STDs especially AIDS and also support safe sex initiatives ✓ The mitigation measures shall be implemented in phases from pre operations to operations	**High positive**	₦50,000,000 /year (Community health interventions)
H2.4	Pre-Operations and Operations	Influx Related Health Effects	**Psychosocial Factors** Strain on the social, religious and cultural structure from influx of people to the area could lead to psychosocial factors.	**Moderate**	IASO Medipark Limited shall; ✓ Inculcate induction training into its employment program to intimate new intake with the culture and religious belief of the people. ✓ Maintain and implement a Drug and Alcohol Policy for all aspects of the project ✓ Support anti-drug crusades and campaigns in the area	Low	₦6,000,000/ year

Table 6.1: Summary of Impacts, Mitigations and Residual Impacts of the Proposed Project

Impact ID	Project Activity & Phase	Impact Category	Environmental Impacts	Impact Significance	Mitigation Measures	Residual Impact	Estimate Cost (₦)
					✓ Ensure that its contractors develop and implement a workers disengagement plan to address the potential boom-bust impacts		
H2.5	Pre-Operations and Operations	Influx Related Health Effects	**Accidents, Spills, and Fires Impacts** Accidents including spills (fuel and hazardous chemicals), fires, vehicle navigation accidents are hazards that may be linked to the project activities in the environments	High	IASO Medipark Limited shall: ✓ Require that all its Contractors develop and implement HSE Plans for their activities ✓ Review all contractor HSE plans prior to contract award. ✓ Ensure that all contractors and workers comply with IASO Medipark Limited's occupational health and safety guidelines and standards for general work practices, hours of work, air emissions, noise and light. ✓ Carry out routine safety checks on the working equipment in line with standard safety procedures and IASO Medipark Limited's Operating Controls. ✓ Ensure all contractors staff are trained on basic safety procedures and emergency response procedures and environmental issues. ✓ Require that contractors maintain emergency and first aid facilities at strategic locations throughout the project area ✓ Develop and maintain an emergency, oil and chemical spill prevention and response/counter measures plans for all phases of the project ✓ Require that all contractors maintain a journey hazard management plan	Moderate	₦30,000,000 (Emergency response system setup)
Occupational Health Impacts							
H4	General Infrastructure Developments	Health Hazards	Over exertion	High	IASO Medipark Limited shall: ✓ Ensure the use of mechanical assists to eliminate or reduce exertions required to lift materials, hold tools and work objects, and requiring multi-person lifts if weights exceed thresholds ✓ Select and design of tools that reduce force requirements and holding times, and improve postures ✓ Provide user adjustable work stations ✓ Incorporate rest and stretch breaks into work processes, and conducting job rotation	Low	₦35,000,000

Table 6.1: Summary of Impacts, Mitigations and Residual Impacts of the Proposed Project

Impact ID	Project Activity & Phase	Impact Category	Environmental Impacts	Impact Significance	Mitigation Measures	Residual Impact	Estimate Cost (₦)
					✓ Implement quality control and maintenance programs that reduce unnecessary forces and exertions ✓ Consider additional special conditions where required suchas for left handed persons		

Table 6.1: Summary of Impacts, Mitigations and Residual Impacts of the Proposed Project

Impact ID	Project Activity & Phase	Impact Category	Environmental Impacts	Impact Significance	Mitigation Measures	Residual Impact	Estimate Cost (₦)
			Slips and falls	High	IASO Medipark Limited shall and require that contractors implement the following slip and fall prevention and protection measure for all workers exposed to the hazard: ✓ Training and use of temporary fall prevention devices, such as rails or other barriers able to support a weight of 200 pounds, when working at heights equal or greater than two meters or at any height if the risk includes falling into operating machinery, into water or other liquid, into hazardous substances, or through an opening in a work surface ✓ Training and use of personal fall arrest systems, such as full body harnesses and energy absorbing lanyards able to support 5000 pounds (also described in this section in Working at Heights above), as well as fall rescue procedures to deal with workers whose fall has been successfully arrested. The tie in point of the fall arresting system shall also be able to support 5000 pounds ✓ Use of control zones and safety monitoring systems to warn workers of their proximity to fall hazard zones, as well as securing, marking, and labeling covers for openings in floors, roofs, or walking surfaces ✓ Delineate work zones so as to separate workers from traffic and from equipment as much as possible ✓ Reduce allowable vehicle speeds in work zones ✓ Use of high-visibility safety apparel for workers in the vicinity of traffic	Low	₦25,000,000

Table 6.1: Summary of Impacts, Mitigations and Residual Impacts of the Proposed Project

Impact ID	Project Activity & Phase	Impact Category	Environmental Impacts	Impact Significance	Mitigation Measures	Residual Impact	Estimate Cost (₦)
			Confined Spaces and Excavations	**Moderate**	IASO Medipark Limited shall require that all contractors implement the following prevention and protection measures for all work areas with this hazard exposure: ✓ Control site-specific factors which may contribute to excavation slope instability including, for example, the use of excavation dewatering, side-walls support, and slope gradient adjustments that eliminate or minimize the risk of collapse, entrapment, or drowning ✓ Provide safe means of access and egress from excavations, such as graded slopes, graded access route, or stairs and ladders ✓ Avoid the operation of combustion equipment for prolonged periods inside excavations areas where other workers are required to enter unless the area is actively ventilated ✓ Implement a permit to work procedure for all work in confined spaces	Low	₦12,000,000

Table 6.1: Summary of Impacts, Mitigations and Residual Impacts of the Proposed Project

Impact ID	Project Activity & Phase	Impact Category	Environmental Impacts	Impact Significance	Mitigation Measures	Residual Impact	Estimate Cost (₦)
			Struck by Objects	High	IASO Medipark Limited shall require that contractors implement the following prevention and protection measure for all workers exposed to the hazard: ✓ Using a designated and restricted waste drop or discharge zones, and/or a chute for safe movement of wastes from upper to lower levels ✓ Conducting sawing, cutting, grinding, sanding, chipping or chiseling with proper guards and anchoring as applicable ✓ Maintain clear traffic ways to avoid driving of heavy equipment over loose scrap ✓ Use temporary fall protection measures in scaffolds and out edges of elevated work surfaces, such as hand rails and toe boards to prevent materials from being dislodged ✓ Evacuate work areas during blasting operations, and use blast mats or other means of deflection to minimize fly rock or ejection of demolition debris if work is conducted in proximity to people or structures ✓ Ensure use of appropriate PPE, such as safety glasses with side shields, face shields, hard hats, and safety shoes ✓ Delineate work zones so as to separate workers from traffic and from equipment as much as possible ✓ Reduce allowable vehicle speeds in work zones ✓ Use of high-visibility safety apparel for workers in the vicinity of traffic	Low	₦18,000,000

Table 6.1: Summary of Impacts, Mitigations and Residual Impacts of the Proposed Project

Impact ID	Project Activity & Phase	Impact Category	Environmental Impacts	Impact Significance	Mitigation Measures	Residual Impact	Estimate Cost (₦)
			Moving Machinery	**Moderate**	IASO Medipark Limited shall and require that contractors implement the following prevention and protection measures for all work areas with this hazard exposure: ✓ Plan and segregate the location of vehicle traffic, machine operation, and walking areas, and controlling vehicle traffic through the use of one-way traffic routes ✓ Establish and enforce speed limits, and on-site trained flag-people wearing high-visibility vests or outer clothing covering to direct traffic ✓ Ensure the visibility of personnel through their use of high visibility vests when working in or walking through heavy equipment operating areas, and training of workers to verify eye contact with equipment operators before approaching the operating vehicle ✓ Ensure moving equipment is outfitted with audible back-up alarms ✓ Use inspected and well-maintained lifting devices that are appropriate for the load, such as cranes, and securing loads when lifting them to higher job-site elevations.	Low	₦15,000,000

Table 6.1: Summary of Impacts, Mitigations and Residual Impacts of the Proposed Project

Impact ID	Project Activity & Phase	Impact Category	Environmental Impacts	Impact Significance	Mitigation Measures	Residual Impact	Estimate Cost (₦)
			Working at height	High	IASO Medipark Limited shall require that contractors implement the following fall prevention and protection measure for all workers exposed to the hazard of falling while working at height: ✓ Test structures for integrity prior to undertaking work ✓ Implement a fall protection program that includes training in climbing techniques and use of fall protection measures; inspection, maintenance, and replacement of fall protection equipment; and rescue of fall-arrested workers, among others ✓ Establish criteria for use of 100 percent fall protection (typically when working over 2 meters above the working surface. The fall protection system shall be appropriate for the tower structure and necessary movements, including ascent, descent, and moving from point to point; ✓ Install fixtures on tower components to facilitate the use of fall protection systems ✓ Provide adequate work-positioning device system for workers. ✓ Ensure proper rating for hoisting equipment ✓ Ensure proper maintenance of hoisting equipment and properly trained hoist operators ✓ Use Safety belts that are not less than 16 millimeters (mm) (5/8 inch) two-in-one nylon or material of equivalent strength. ✓ Replace rope safety belts before signs of aging or fraying of fibers become evident ✓ When operating tools at height, require that workers use a second (backup) safety strap; Remove signs and other obstructions from poles or structures prior to undertaking work.	Low	₦28,000,000

Table 6.1: Summary of Impacts, Mitigations and Residual Impacts of the Proposed Project

Impact ID	Project Activity & Phase	Impact Category	Environmental Impacts	Impact Significance	Mitigation Measures	Residual Impact	Estimate Cost (₦)
			Electric and magnetic field	**Moderate**	IASO Medipark Limited shall, and require that contractors implement the following measures to address occupational EMF exposure: ✓ Prepare and implement an EMF safety program including the following components: o Identification of potential exposure levels in the workplace o Surveys of exposure levels in new projects and the use of personal monitors during working activities o Training of workers in the identification of occupational EMF levels and hazards o Establishment and identification of safety zones to differentiate between work areas with expected elevated EMF levels compared to those acceptable for public exposure, limiting access to properly trained workers o Implementation of action plans to address potential or confirmed exposure levels that exceed reference occupational exposure levels developed by international organizations such as the International Commission on Non-Ionizing Radiation Protection (ICNIRP), ✓ Set personal exposure monitoring equipment to warn of exposure levels that are below occupational exposure reference levels (e.g. 50 percent). ✓ Limit exposure time through work rotation Increase the distance between the EMF source and the worker, when feasible, or the use of shielding materials.	Low	₦20,000,000

Table 6.1: Summary of Impacts, Mitigations and Residual Impacts of the Proposed Project

Impact ID	Project Activity & Phase	Impact Category	Environmental Impacts	Impact Significance	Mitigation Measures	Residual Impact	Estimate Cost (₦)
			Exposure to chemicals	**Moderate**	IASO Medipark Limited shall and require contractors to implement the following mitigating measures for occupational chemical exposure health hazards associated with solid waste handling facilities: ✓ Provide adequate personnel facilities, including washing areas and areas to change clothes before and after work ✓ Ventilate enclosed processing areas (e.g., dust in waste size reduction areas), ✓ Monitor breathing zone air quality in work areas at processing and transfer facility using direct-reading instruments that measure methane and oxygen deficiency Prohibit eating, smoking, and drinking except in designated areas	Low	₦10,000,000
Annual Operational Environmental & Social Budget					**≈ ₦250 – ₦320 Million per annum**		
Cumulative Impact							
CU	All Project	Cumulative Impact	- Land Take - Loss of Biodiversity and Increase in Ambient Temperature - Increased Run Off	**Moderate**	✓ IASO Medipark Limited shall advocate working with the State Government to develop green belts and conservation areas within the area. ✓ IASO Medipark Limited revegetate the site as much as possible	Low	₦25,000,000
			Influx	**Moderate**	✓ IASO Medipark Limited shall work with the State Government to develop and implement a Master Plan that addresses the negative impacts of population growth in the entire area.	Low	₦10,000,000 /year
Impacts Associated With Decommissioning							
D1	Decommissioning	All Categories	Transportation of Workers and Materials	**Moderate**	Impacts will be further assessed during development of substantive decommissioning and abandonment plan		₦150,000,000 (Provisional Allowance)
D2			Wind Down Operations	**Moderate**			
D3			Physical Removal of Installed Facilities	**Moderate**			
D4			Remediation and Restoration Activities	**Moderate**			
D5			Wastes and Emissions, Generation and Handling	**Moderate**			

Table 6.1: Summary of Impacts, Mitigations and Residual Impacts of the Proposed Project

Impact ID	Project Activity & Phase	Impact Category	Environmental Impacts	Impact Significance	Mitigation Measures	Residual Impact	Estimate Cost (₦)
Decommissioning Provision					**≈ ₦150 Million (Escrow/Reserve recommended)**		

Source: ESIA of Lagos Medipark Field Survey, 2025

Note: The above cost estimates are indicative and based on planning-level projections for a tertiary healthcare facility of this scale in Lagos. Final costs shall be refined during detailed engineering design and incorporated into the Environmental and Social Management Plan (ESMP) implementation budget.

6.8 General Mitigation Measures

General mitigation measures encompass those measures built into the engineering design or operational design of the project. These measures are environmental, social, and health best practices, most already in use by the project sponsors in their operations or proposed as operational controls during the project execution. Some mitigation is however specific to impacts associated with particular activities of the various project activities.

Numerous mitigation measures have been developed and adopted by the project before the commencement of the ESIA process. Therefore, the impact assessments have already applied by them in assessing the project impacts. Furthermore these measures were incorporated into the project-design considerations and project implementation planning as part of the overall operational controls and ESMP for the project.

These mitigations will be incorporated into plans and procedures that contractors will follow to ensure the protection of the environment. The measures will be implemented by IASO Medipark Limited or its contractors directly and passed on through contractual commitments to its contractors, subcontractors and suppliers. Further details about the content of each plan and operational control are provided in Chapter 7.

6.8.1 Livelihood Enhancement Plan

IASO Medipark Limited shall implement a livelihood enhancement plan for land users affected by the footprint taken up for project facilities. It is noted that land users and owners had been previously compensated by the State Government and so no compensation is due to them. The enhancement plan is to ensure that affected persons are positively impacted by the project and will be pursued under IASO Medipark Limited's overarching community relations and development plan.

6.8.2 IASO Medipark Limited Community Development Plan

IASO Medipark Limited shall develop the framework for a community development plan that will be used as a vehicle for social intervention in some of the communities within the project area. The plan will seek to address the effects of the project on the local area, while also addressing other development needs of the local communities. In this regard, some areas of social intervention have been identified. These include but are not limited to improvements in the area of income generation, health; education (primary, secondary, tertiary and vocational) and infrastructure.

Additionally, the plan seeks to give priority to indigenes of the local area on employment by the project. IASO Medipark Limited will implement a short-term development activities focused on mitigating local impacts associated with project activities. The plan will incorporate the specific mitigations identified to reduce specific impacts (Table 7.1). This plan will be further developed in consultation with the local communities.

CHAPTER SEVEN

7.0 ENVIRONMENTALAND SOCIAL MANAGEMENT PLAN (ESMP)

7.1 Introduction

An Environmental and Social Management Plan (ESMP) is organizational plan or programme used in the management of operations to ensure environmental sustainability. The ESMP is the component of an ESIA that provides the procedures and processes that can be incorporated into the organization's activity, to measure and check in a continuous mode the compliance with and effectiveness of the mitigation measures recommended for minimizing or eliminating the identified negative impacts of the planned project throughout its life cycle. In addition to this, the ESMP is also often used to ensure compliance with statutory requirements and corporate safety, social and environmental policies attached to the organization's operations.

The application of the ESMP resulting from an ESIA usually starts from the project planning phase, when all the mechanisms required for effective implementation of recommended mitigation measures are put in place. Other components of the ESMP usually find application during the project operational phase, as monitoring tools for the compliance of specific environmental attributes with required operational regulatory standards.

The ESMP developed in this section of the ESIA report has taken into consideration, all known project activities and plans including those relating to site clearing, construction and operations; predicted impacts of the proposed Medical Park project Ikoyi as contained in Chapter 5; and the prescribed mitigation measures to control or completely eliminate the negative impacts of the proposed Medical Park project Ikoyi as contained in Chapter 5.

IASO Medipark Limited shall incorporate this ESMP into all the stages of the proposed Medical Park project Ikoyi activities to manage, monitor and control all the potential and associated impacts of the project on the bio-physical and socio-economic characteristics, as well as, the health and safety of the workers and the public in the project area. The implementation of the ESMP by IASO Medipark Limited or its contractors as the project progresses shall be in accordance with the Nigerian and other applicable international HSE standards and regulations.

IASO Medipark Limited shall maintain this comprehensive ESMP to achieve its health, safety, and environmental (HSE) regulatory compliance objectives, in line with institutional responsibilities (e.g., AfDB Integrated Safeguard Systems, World Bank and IFC Performance Standards), and other related commitments. The ESMP is a component of

the project's overall Environmental and Social Management System (ESMS) which is the programme used to ensure environmental, social and health performance.

With respect to the significant impacts identified by the ESIA, the ESMP identifies the linkage between each significant impact (high or moderate significance); the relevant mitigation measures; and the monitoring approach. Further, through this ESMP, significant impacts are referenced to:

- Applicable regulatory requirements, institutional responsibilities and other commitments;
- Relevant IASO Medipark Limited's operational controls (e.g., management best practices, construction and operation specifications, procedures, and work instructions); and
- Mitigation and regulatory monitoring of institutional roles.

This ESMP applies to all the IASO Medipark Limited's activities covered by this ESIA.

7.2 Policies

IASO Medipark Limited has developed an HSE Policy and a Sustainability Commitment which together state the company's commitment to conducting business in a socially responsible and ethical manner, and to protecting health, safety and the environment.

In its HSE Policy, IASO Medipark Limited is committed to:

- Integrate health, safety and environmental matters into every aspect of its activities and set objectives to drive continual improvement;
- Comply with all relevant health, safety and environmental laws and regulations;
- Initiate and maintain effective arrangements for communication within the organisation, with contractors, the public or its agents and other stakeholders regarding health, safety and environmental matters;
- Apply relevant standards, good engineering practices and principles of risk management to protect health, safety and the environment and to ensure the integrity, reliability and efficiency of IASO Medipark Limited facilities;
- Exhibit socially responsible leadership, demonstrate exemplary health, safety and environmental performance and publicly report performance;

- Conserve IASO Medipark Limited assets and natural resources, and minimise the impact of its activities on the environment, by conducting impact assessments, and ensuring responsible management of emissions, discharges and waste streams. This includes efficient use of energy in its operations;

- Identify present or future potential health, safety and environmental hazards resulting from IASO Medipark Limited's operations, conduct risk assessments and select and implement appropriate measures to manage the risks;

- Develop and implement a health, safety and environment plan which includes implementation of prioritised procedures to form a complete management system;

- Maintain adequate emergency preparedness and response capabilities;

- Effectively communicate IASO Medipark Limited health, safety and environmental requirements to all contractors and subcontractors and require them to manage HSE in accordance with IASO Medipark Limited's Policy;

- Ensure conformity with this policy by a comprehensive compliance program including audits; and

- Adequately resource health, safety and environment functions throughout the business.

The primary vehicles through which IASO Medipark Limited shall meet the commitments in the HSE Policy are its comprehensive HSE Management System and the associated planning documents. The planning documents include this ESMP, and others associated with it.

7.3 Planning

7.3.1 Management Programme

This ESMP is intended to meet the management programme requirements of AfDB Integrated Safeguard Systems World Bank OP 4.01 and IFC Performance Standard 1 Social and Environmental Assessment and Management Systems to establish and manage a programme of mitigation and performance-improvement measures and actions that address the identified social and environmental risks and impacts.

7.3.2 Environmental and Social Management Plan

The goal of this ESMP is to ensure full compliance with IASO Medipark Limited's HSE Policy and with mitigation and other commitments made in the ESIA. It outlines the actions necessary to attain this goal, and describes the means, time frames, and designation of responsibility required for compliance and conformance.

IASO Medipark Limited has taken a systematic approach to the ESMP and its content and organization is designed to meet the requirements of *International Organization for Standardization 14001: 2003 Technical Specification and Guidance for Use*.

This ESMP organizes HSE philosophies, policies, plans and procedures, and attributes roles and responsibilities for each systematically. This ESMP has priority over and states the guidelines and instructions for the preparation of the engineering Contractors' ESMPs that will provide the detail of exactly what, where, and when they apply mitigation and monitor for effectiveness. IASO Medipark Limited will maintain a "road map" of HSE documentation.

The IASO Medipark Limited ESMP incorporates a number of associated plans that provide additional detail on the processes and procedures that IASO Medipark Limited will use to comply with specific HSE requirements. Some of these plans are already in place while others are being developed and will be in place prior to commencement of works that require their use. Plans specifically related to this ESMP are HSE Management Plan (Safety Plan); Waste Management Plan; Emergency Response Plan; Influx Management Plan; Labour Plan (including Job Rules); Social Management Plan including Community Relations and Development Plan; and Journey Management Plan.

Other plans that will support IASO Medipark Limited's activities but are not specific to this ESMP include Health Management Plan; and Compliance and Permitting Plan.

Engineering Contractor Management Plan(s)

IASO Medipark Limited will engage engineering contractors to implement the project works. The engineering contractors are responsible for performing all work as deem fit by IASO Medipark Limited's management.

- In compliance with relevant national and international HSE legislation and regulations, and with other requirements to which IASO Medipark Limited subscribes;
- In conformance with IASO Medipark Limited's Health, Safety and Environmental Management System; and
- In accordance with IASO Medipark Limited's technical and quality specifications.

IASO Medipark Limited will provide specifications for environmental compliance and performance (through this ESIA and ESMP and the associated plans) and, as a contractual requirement, the engineering Contractor must develop and provide to IASO Medipark Limited its own specific management plans, incorporating:

- Health, Safety and Environment Policy Statements, Programs, and Management Systems;
- Health, Safety, and Environment Organization;
- Health, Safety, and Environment Responsibilities;
- HSE Procedures;
- Employee HSE Training Programs;
- Waste Management Plans;
- Emergency Response/Evacuation Plans;
- Land Transportation Safety Management System;
- Hazardous Materials Management Program;
- Industrial Hygiene and Medical Protection Plans.

The Engineering Contractors must also provide documentation detailing their plans for implementing the measures required in the ESIA and this ESMP; Local Content; Logistics; Security; and Community Relations.

The Engineering Contractor's management plans must conform to the requirements of IASO Medipark Limited's overarching plans. The engineering contractor's plans will be reviewed and approved by IASO Medipark Limited and incorporated to form part of IASO Medipark Limited's overall ESMP.

Contractors will be required to self-monitor against their plan and the contractor's compliance with the plan will be routinely monitored by IASO Medipark Limited directly or by third-parties and in conjunction with environmental regulators. Contractors will be required to submit regular reports of monitoring activities and IASO Medipark Limited will review these on a regular basis.

The Engineering Contractor will be contractually required to provide sufficient resources to manage HSE aspects of the work to be performed. This includes providing resources to ensure sub-contractor compliance and a process for emergency stop-work orders in response to monitoring triggers.

Table 7.1: ESMP Key Plans

S/N	Plan Name	Includes	Plan Owner
1	Project Overall ESMP	Overarching plan linking all the other plans to the project ESMP	IASO Medipark Project coordinator
2	Occupational Health and Safety Management Plan	A set of policies, procedures and plans that systematically manages health and safety at work and can help to minimise the risk of injury and illness from workplace operations	HSE Manager
3	Environmental Monitoring Plan	Groundwater monitoring, routine effluent and discharge monitoring and air quality monitoring, noise monitoring	HSE Manager /Consultant
4	Waste Management Plan	Project-related waste handling procedures for hazardous and non-hazardous solid wastes. Including chemical handling procedure	HSE Manager /Coordinator
5	Emergency Preparedness and Response Plan	Administration (policy, purpose, distribution, definitions, etc.), organization of emergency areas	E and S safeguard officer
6	Traffic Management Plan	routes, driver training, vehicle maintenance, speed restrictions, appropriate road safety signage, and vehicle loading and maintenance measure	Transport Manager
7	Stakeholder Engagement /Community Development Programme;	Management of all stakeholder	Government /Community Relation Officer/Manager
8	Human Resources Policies and Procedures	Management of all staff	Human Resources Manager

Source: ESIA of Lagos Medipark Project, 2025

7.4 Implementation

7.4.1 Management Organization

In accordance with regulatory requirements, IASO Medipark Limited will establish an HSE organization structure that defines roles, responsibilities and authority to put into practice an effective HSE Management System, including undertaking any training necessary to do so. The specific roles of the key positions in the structure are described in Table 7.1.

During pre-operations activities, all instructions and official communications regarding environmental matters shall follow the generic organogram shown in Figure 7.1. The organizational structure identifies and defines the authority structure, and the communication structure for the various parties involved in the construction of the proposed development. The structure may require revision as the project unfolds.

The roles and responsibilities of each category of persons or group of persons involved in the implementation of this ESMP are further described below.

IASO Medipark Limited HSE Manager

IASO Medipark Limited's HSE Manager shall:

- Be responsible for the implementation, administration and enforcement of the ESMP within IASO Medipark Limited's project area and other areas where work is carried out under the authority of IASO Medipark Limited.
- Be bound by the conditions, responsibilities and provisions contained therein;
- Ensure that the ESMP is regularly updated in light of experience, monitoring findings and best practice; and in light of the findings of the ESIA.
- Ensure that the ESMP specifications are included in all tender documents issued for building works and activities, and shall ensure that the prospective tenders/contractors abide by the provisions thereof;
- Appoint an HSE Supervisor to monitor implementation of and compliance with the ESMP for the duration of construction activities;

Notify the Management and Board of Directors of IASO Medipark Limited of the commencement of any construction operations as well as compliance with provisions of the ESMP as set out in this document; and

- Be liable/accountable to the relevant authority, for any contravention of the Environmental Impact Statement Authorization or non-compliance by any Contractor under their supervision.

The HSE Manager shall work closely with a Constructions Manager to be appointed for the project.

Technical Advisory Committee

The role of the Technical Advisory Committee will be to provide IASO Medipark Limited's comments and input on the following:

- The contents of the ESMP and the need for its updating;
- The design and construction of facilities;
- Compliance with ESMP and other regulatory permit conditions; and Documentation produced as part of the ESMP.

It should be noted that the Committee shall not interfere with the administrative function of IASO Medipark Limited or with the professional duties of staff; nor shall they impair the ability of staff to implement IASO Medipark Limited's policy decisions. The Committee is merely an advisory forum with no legal standing other than matters related to the ESMP. The Technical Advisory Committee may be part of the audit committee on invitation by IASO Medipark Limited.

The HSE Supervisor

The HSE Supervisor will be appointed for the duration of all on site pre-operations activities. He will be responsible for monitoring, reviewing and verifying compliance with the ESMP by Contractors appointed to undertake any of the pre-operations works.

The HSE Supervisor shall:

- Be appointed by the Management IASO Medipark Limited to monitor compliance with and assist in implementing the ESMP on site;
    - Visit the work sites regularly, to ascertain the level of compliance of works, as well as attend regular contractor meetings and monthly site meetings with the project management team. It is recommended that the supervisor be resident on site or close by during implementation of the pre-operations activities.

- Assist the Contractor in ensuring that the necessary environmental authorizations and permits have been obtained;
- Monitor and verify that the ESMP is adhered to at all times and take action if the specifications are not followed;
- Monitor and verify that environmental impacts are kept to a minimum;
- Review and approve construction method statements together with the Consultants/Engineers Representative and Advisory Committee;
- Assist the Contractor in finding environmentally responsible solutions to problems;
- Report back on the environmental issues at the monthly site meetings and other meetings that may be called regarding environmental matters;
- Keep records of all activities/incidents concerning the environment on Site in the Site Diary;
- Keep a register of complaints in the Site Office and recording and dealing with any community comments or issues;
- Monitor the undertaking by the Contractor of environmental awareness training for all new personnel coming to site; or undertake environmental awareness courses themselves;
- Advise on the removal of person(s) and/or equipment not complying with the specifications (done via the Consultant/Engineers Representative/IASO Medipark Limited);
- Ensure that activities on site comply with legislation of relevance to the environment;
- Compile and complete HSE performance checklists as necessary;
- Keep a photographic record of progress on Site from an environmental perspective;

- Internal review of the ESMP and submit a report to the Management IASO Medipark Limited and Technical Advisory Committee at various stages of the project and upon completion of pre-operations activities; and
- Assist in creating environmental awareness and training of Contractor personnel.

The Community Liaison Officer (CLO)

The Community Liaison Officer (CLO) shall:

- Be the main contact between community representatives and IASO Medipark Limited (through the HSE Supervisor, Construction Manager and External Relations Director).
- Assist in resolving all disputes between IASO Medipark Limited and/or Contractors and the communities

The Contractor

IASO Medipark Limited shall ensure that all Contractors engaged shall:

- Appoint a person responsible for HSE matters on site;
- Ensure that all Employees, co-contractors and sub-contractors Employed comply with the requirements and provisions of the ESMP;
- Notify the HSE Supervisor of the anticipated programme of works and fully disclose all details of activities involved;
- Complete and submit all requisite information, in terms of the ESMP, for approval prior to the onset of activities;
- Notify the HSE Supervisor of all incidents, accidents and transgressions on site with respect to HSE management as well as requirements of the ESMP and corrective actions/remedial action taken;
- Inform the HSE Supervisor of any complaints received; and
- Be responsible for HSE awareness and training of all staffs on site.

Consultants/Construction Manager

The Consultant/Construction Manager shall:

- Ensure the pre-operations activities are all carried out in accordance with the Contract specifications; and
- Assist the HSE Supervisor as necessary in ensuring that Contractors comply with the provisions of the ESMP.

Stakeholders

Stakeholders shall assist in the general environmental management and monitoring of the area by providing comments/reports to IASO Medipark Limited and/or the environmental authorities, the Contractor etc., as necessary.

Table 7.2: ESMP Roles and Responsibilities

Position	Responsibility
Managing Director	Oversee and coordinate all activities pertaining to the activities; ultimately responsible for HSE during the construction phase.
HSE Manager	Ensure that IASO Medipark Limited and all its contractors operate in accordance with applicable regulatory environmental requirements and its HSE plans, while also assisting line management in performing their line duties.
HSE Supervisor	Ownership of HSE issues. Ensure that environmental regulatory requirements are met and that recommendations in the ESIA to mitigate against project impacts are properly implemented. Visits work sites regularly to monitor HSE compliance issues and supervise 3rd party HSE performance audits.
Community Liaison Officer	Responsible for liaising with the host communities and regulators on IASO Medipark Limited behalf; ensure contractor's compliance with IASO Medipark Limited labour protocols. Management of Community Liaison among contractors. Supervise compensation and land acquisition issues. Monitor, report and ensure the efficient working conditions of all IASO Medipark Limited facilities on site
HSE Manager/Supervisor	Ensure that environmental regulatory requirements are met and that recommendations in the ESIA to mitigate against project impacts are properly implemented
Community Relations Manager / Community Liaison Officer	Oversee interaction with communities and other stakeholders in line with IASO Medipark Limited Community Relations Plan and ESMP
Human Resources Manager	Oversee contractor's worker Employment procedures in line with IASO Medipark Limited labour protocols. Monitor performance against contractor local content targets.

Source: ESIA of Lagos Medipark Project, 2025

7.4.2 Institutional Framework for Implementation of the ESMP

Responsibilities in the implementation and monitoring of the ESMP are shared between multiple stakeholders, including regulatory and concerned agencies, the AfDB, AfDB-PIU, the Proponent and contractors. The key roles and responsibilities for the implementation of the ESMP are presented below.

IASO Medipark Limited through the project contractors will have principal responsibility for all measures outlined in the ESMP for the construction and operation phases. IASO Medipark Limited may delegate responsibility to its contractors, where appropriate. In cases where other individuals or organizations have responsibility for mitigation or enhancement measures, this is clearly indicated in Tables 7.3 and 7.4. Capacity building and training requirements are also described, where these relate to specific skills required to deliver the ESMP action in question.

Project Implementation Unit (PIU) will manage the project. The PIU shall hire and manage contractors to monitor and evaluate the implementation of the ESMP to a certain extent. The Proponent and contractors are responsible for implementation of the ESMP. Overall regulatory agencies at National, State and Local Government levels are responsible for the implementation of ESMP.

IASO/PIU is responsible for the overall project planning and execution, including preparation of bidding documents, hiring of project management consultants, project contractors and supervision of the works. This approach includes to ensure proper implementation of the environmental and social management measures contained in the ESMP and their surveillance and monitoring.

Regulatory Agencies and Other Concerned Authorities

The Federal Ministry of Environment (FMEnv) has the responsibility for the implementation of the ESIA in line with the EIA Act CAP E12 LFN 2004. Furthermore, Lagos State Ministry of Environment and affected LGA Eti-Osa, have certain oversight roles, which they perform under coordination of the FMEnv.

Federal Ministry of Environment

The Federal Ministry of Environment is responsible for the overall environmental policy of the Country. It has the responsibility for ESIA approval and implementation, in accordance with the EIA Act. It has developed certain guidelines and regulations to protect the environment and promote sustainable development. It will monitor the

implementation of mitigation measures, when the project commences. And they can issue directives to the project on specific actions related to the environment in the project area. The Ministry normally involves the states and local governments in this responsibility depending on the specific activity.

Lagos State Ministry of Environment and Water Resources (LSMEnv)

Lagos State Ministry of Environment is charged with the obligation of developing and implementing environmental policies, programs and legislation, environmental protection and control, environmental technology including efficient implementation of research and development within Lagos State.

7.4.3 Capacity Building

IASO Medipark Limited shall identify, plan, monitor, and record HSE training needs for personnel whose work may have a significant adverse impact upon the environment or social conditions. IASO Medipark Limited recognizes that it is important that Employees and Contractors at each relevant function and level are aware of IASO Medipark Limited environmental, social, and health policy; potential impacts of their activities; roles and responsibilities in achieving conformance with the policy and procedures.

This will be achieved through a formal HSE training process. It is expected that Employee training will include awareness of and competency with respect to:

- Environmental and social impacts that could potentially arise from their activities;
- Necessity of conforming to the requirements of the ESIA and ESMP, in order to avoid or reduce those impacts; and
- Roles and responsibilities to achieve that conformity, including with regard to change management and emergency response.

The HSE Manager is responsible for coordinating the training, maintaining Employee-training records, and ensuring that these are monitored and reviewed on a regular basis. The HSE Manager will also periodically verify that staffs are performing competently through discussion and observation.

Employees responsible for performing site inspections shall receive training drawing on external resources as necessary. Training will be coordinated by the HSE Manager and/or Community Relations Officer prior to the beginning of field activities. Upon completion of training and once deemed competent in the requirements, staff will be allowed to train other people.

Similarly IASO Medipark Limited shall require that each of the Contractors institute training for its personnel. Each Contractor is responsible for site HSE awareness training for personnel working on the job sites. The Contractor is also responsible for identification of any additional training requirements to maintain required competency levels.

The Contractor training program will be subject to approval by IASO Medipark Limited and it will be audited to ensure that:

- Training programs are adequate;
- All contractor personnel requiring training have been trained; and
- Contractor has periodically verified that its personnel perform competently after training.

7.4.4 Communication

The IASO Medipark Limited HSE Manager is responsible for communications with the public and with public stakeholder organizations. The Community Relations Officer is also responsible for interactions with communities and the general public. The IASO Medipark Limited Community Relations Plan will follow formal written procedures to document these communications.

With regard to HSE issues, the company's Managing Director will facilitate dissemination of information necessary to mitigate impacts through coordinating public notifications (e.g., meetings, media announcements, written postings) and through stakeholder interaction.

The HSE Manager is responsible for communication of HSE issues to and from regulatory authorities. The Managing Director is kept informed of such communications. Pertinent information arising from such interactions shall be communicated to the Contractors.

Communications also occur between various levels of the project and federal and state regulatory authorities during the activities. These meetings may occur as needed to accommodate field visits and discuss scheduling and planning issues. These discussions would likely address areas of concern, emerging HSE issues, and environmental and social performance based on the analysis of internal audits and field reports. Meetings can also be expected to include discussion of upcoming work plans and coordination issues. Whereas it is anticipated that the Contractor HSE staff may interact with representatives from regulatory authorities on an informal, day-to-day basis regarding routine matters, the IASO Medipark Limited HSE Manager shall be the point of contact for formal communications. The IASO Medipark Limited HSE Manager shall be responsible for

communicating any pertinent information arising from such discussions to appropriate Contractors.

IASO Medipark Limited will maintain a written register of stakeholder interactions to effectively track communications and so that commitments made to follow up actions can be tracked and implemented. This includes grievances that are also tracked through the formal grievance procedure and communications that come through the Community Liaison activities.

7.4.5 Documentation

IASO Medipark Limited will control HSE documentation, including plans (e.g., the ESMP); associated procedures, checklists, forms, and reports through a formal company procedure. The document control procedure also describes the processes that IASO Medipark Limited and the Contractor will Employ for official communication (hardcopy and electronic) of documents. In addition, it describes the requirement for electronic filing and posting and for assignment of a document tracking and control number (including revision codes).

IASO Medipark Limited will appoint a senior member of its staff as Document Control Manager, who shall be responsible for maintaining a master listing of applicable documents, including HSE documents, and making sure that this list is communicated to the appropriate parties. IASO Medipark Limited HSE Manager will be responsible for providing notice to the affected parties of changes or revisions to documents, for issuing revised copies and for checking that the information is communicated within that party's organization appropriately.

The Contractor shall be required to develop a system for maintaining and controlling its own HSE documentation and describe these systems in their respective HSE Plans and Site-Specific HSE Plans.

7.5 IASO Medipark Limited Environmental and Social Management System (ESMS)

According to the ISO 14001, an Environmental and Social Management System (ESMS) is that part of the overall management system which includes organizational structure, planning activities, responsibilities, practices, procedures, processes and resources for developing, implementing, achieving, reviewing and maintaining the Environmental Policy. What this definition connotes is that, for an ESMS to be put in place in an organization, the organization must already have an Environmental Policy. In the case of IASO Medipark Limited, a combined health, safety and environmental policy already exists

(refer to Chapter 1). The importance of an EMS is that it assists an organization in achieving excellence in sustainable environmental development.

IASO Medipark Limited HSEMS provides a number of key policies and documentation to ensure HSE Performance of the company. The HSE Document Plan is as follows:

A. **Primary Documents:** (Health & Safety Policy; Environmental Policy; Driving Policy; Harassment, Violence & Abuse Policy; Alcohol, Drug & Substance Abuse Policy; Contractor's HSE Policy and Management of Change Policy.

B. **Primary Supporting Documents:** (HSE-MS Manual; Contractor's HSE Manual; Employees HSE Handbook; and Office HSE Manual.

C. **Programs & Plans:** (Short Service Employees Program; Hazard Communication Program; Lock Out Tag Out Program; Waste Management Plan; Commitment, Training, Targets & Recognition Program; Incident & Investigation Program; Emergency Response Plan; Behaviour Based Safety Program; Inspection, Audit & Compliance Program; Journey Management Program; Alcohol, Drug and Smoking Program; Risk Assessment & Management Program; and Ergonomics.

7.6 Environmental and Social Monitoring Plan

An Environmental and Social Monitoring Plan is the systematic schedule for collection of environmental and social data through a series of repetitive measurements. UNEP (1996) describes three known types of environmental monitoring within the conceptual ESIA framework as follows:

- *Baseline monitoring:* This refers to the measurements of environmental parameters during the pre-project period;

- *Effects monitoring:* This involves the measurements of environmental parameters during project construction and implementation so as to detect changes in these parameters which can be attributed to the project; and

- *Compliance monitoring:* It is the periodic or continuous measurement of environmental parameters or discharges to ensure that regulatory requirements and standards are met. Compliance monitoring can further be broken down into:

    - Mitigation measures monitoring, which relates to the prescribed mitigation measures put in place by the pre-project ESIA to the existing operational structure of the project, and

- Regulatory compliance monitoring, which compares the regulatory monitoring requirements to the existing operational, occupational and environmental parameters.

IASO Medipark Limited shall adopt a systematic monitoring schedule that will comprise both effects and compliance monitoring plans for the implementation of the proposed Medical Park project Ikoyi. Baseline requirements are already embodied in Chapter 4 of this report and are therefore not considered in this chapter. The monitoring schedule prescribed by this ESIA shall be implemented as the Post-ESIA Monitoring Programme by IASO Medipark Limited.

7.6.1 Objectives of Post-ESIA Environmental Monitoring

The Post-ESIA Environmental Monitoring Plan described in this report has the broad goals of demonstrating whether an environmental change will occur that is adducible to the site preparation, construction and operations activities of the project so as to forewarn the company's management and staff of unanticipated adverse impacts or changes in impact trends. Other specific objectives of the Post-ESIA environmental monitoring plan are to:

- Check the effectiveness of suggested mitigation measures
- Ensure that the project activities (pre-construction, construction and operation) are carried out in accordance with the prescribed mitigation measures and existing compliance regulatory procedures, and
- Provide an early warning system such that prompt action can be taken whenever an impact indicator signifies a potentially critical influence on the receiving environmental parameters.

Impact indicators are defined in terms of carrying capacity, threshold levels, and regulation/enforcement standards. The implementation of the suggested ESMP will allow IASO Medipark Limited to potentially control and manage the timing, location and level of impacts as well as potentially provide the cause and effect data for the Empirical verification or validation of various predictive models of action/impact relationships.

7.6.2 Scope of the Environmental and Social Monitoring Plan

The Environmental and Social Monitoring Plan shall cover two types of monitoring activities as follows,

a. Monitoring of compliance with

   i. mitigation measures during site preparation and construction activities,

ii. mitigation measures during operations plus equipment performance standards,

b. Effects environmental and social monitoring, which includes sampling and analyses of discharges and the recipient environmental and social components during site preparation, construction and operational activities.

The monitoring programme under the plan shall establish the specifics of the environmental and socio-economic monitoring parameters for each component of the environment that will be affected by the proposed Medical Park project Ikoyi. The components are Air quality and Noise; Water quality (surface and sub-surface water qualities); Hydrology, Hydrobiology and fisheries; Vegetation and wildlife; Sediment quality; Waste management; Traffic and transport; Personnel health and safety; Public health and safety; and Socioeconomic impact.

Based on the project activities, predicted impacts and recommended mitigation measures, the monitoring programme described below is considered adequate for the project.

Proposed Environmental and Social Monitoring Programme

For all project phases and activities, regular data collection, audits, inspections, and related monitoring activities will be required for each impact category at a pre-determined frequency, either based on the schedule established in the regulations for Regulatory Monitoring or based on the Post-ESIA monitoring schedule established in this Chapter for specific project activities.

Reports will be submitted to the FMEnv, and to other regulatory agencies as may be required. All monitoring components will be subject to internal audits by IASO Medipark Limited and externally by the Nigerian regulatory authorities. Each monitoring programme will follow the established schedule; monitoring may be performed daily, weekly, quarterly, semi-annually, annually, biennially, or continuously, depending upon the resource, regulatory specifications for monitoring, and the project-specific requirements for other Post-ESIA Monitoring programmes.

The detailed monitoring plan will follow the Nigerian regulatory requirements, AfDB Integrated Safeguard Systems as well as the World Bank's *Environmental Performance Monitoring and Supervision Guidelines* (World Bank *Update to the Environmental Assessment Sourcebook* No. 14, June 1996 and updates). For each affected resource area, the following items identified in the World Bank guidelines will be described:

Monitoring objectives

Parameters to be measured, methods employed, sampling locations and frequency as well as definition of thresholds that will indicate the need for remedial actions

Institutional responsibilities and timescales for monitoring
Reporting requirements
Costs and financing provisions

Monitoring Schedule and Parameters to be monitored

IASO Medipark Limited has developed a schedule for Post-ESIA Monitoring that includes both compliance and effects monitoring. The monitoring program provides details of various parameters to be monitored periodically.

After the first six months of project operation, the Post-ESIA Monitoring program will be reviewed, and monitoring frequencies, other than those explicitly identified in the regulations, may be adjusted based on prior measurements. If sampled levels have been consistently low for some parameters, monitoring of those parameters may become infrequent or be eliminated from the Post-ESIA Monitoring Programme. Table 7.3, 7.4 and 7.5 summarize the recommended mitigation, monitoring, and training for each category of environmental resources and impacts.

However, IASO Medipark Limited will retain the responsibility for all Regulatory Compliance Monitoring and other Post-ESIA Monitoring Activities and for oversight of contractors working closely with other parties and regulators.

IASO Medipark Limited will submit reports of the Post-ESIA Monitoring Programme to the FMEnv periodically as may be prescribed in ESIA approval permits and documentation.

Regulatory Approval Process

IASO Medipark Limited shall incorporate a number of measures in its project implementation procedure to ensure that all necessary regulatory approvals are received for all aspects of the project as required by the national and local regulations. The regulatory approval process shall require FMEnv ESIA approval prior to commencement of onsite project activities.

Table 7.3: Summary of Impacts, Mitigations, Effects Monitoring Requirements and Residual Impacts

S/N	Project Activity & Phase	Impact Category	Environmental Socio-economic Impacts Impacts	Mitigation Measures	Effects and Mitigation Compliance Monitoring	Monitoring Frequency
	Impacts Associated With Physical Presence of Workers and Equipment					
	Pre-Operation Phase	Physical Presence of Workers and Equipment	**<u>Impacts on Infrastructure</u>** In-migration of workers and job seekers putting pressure on existing infrastructure.	IASO Medipark Limited shall ✓ Develop and implement an influx management plan to look into specific options to address anticipated pressure on existing infrastructure such as housing, roads, hospitals, educational facilities in the communities ✓ Employ casual/unskilled labour primarily from local communities. ✓ Give priority consideration to qualified local community for hiring of workers. ✓ Shall handle the hiring of and payment to immigrant workers off location to discourage migrating job seekers. ✓ Shall provide closed camp with adequate facilities for construction workers, so that they do not interfere with local facilities	Collect demographic information for the communities in the area and analyze for the following parameters: Community infrastructure, health records, waste inventory, e.t.c. Monitor Compliance with mitigation measures	<u>Effects Monitoring</u> Twice a year during site preparation and construction**;** <u>Mitigation Compliance Monitoring</u> Once every month <u>Effects Monitoring</u> Twice a year during site preparation and construction**;**
PP2			**<u>Impacts on Macro and Micro Economy</u>** Increase in the prices of food, goods and services as result of population increase coupled with increased in demand	IASO Medipark Limited shall: ✓ Develop and implement an influx management plan, which will look into specific options to address anticipated increase in prices of food, medicine, transportation, recruitment of workers, community expansion, housing plan,	Monitor prices of food, transport and other services. Monitor Compliance	<u>Mitigation Compliance Monitoring</u> Once every month <u>Effects Monitoring</u> Twice a year during site preparation and construction;

S/N	Project Activity & Phase	Impact Category	Environmental Socio-economic Impacts Impacts	Mitigation Measures	Effects and Mitigation Compliance Monitoring	Monitoring Frequency
			for food, goods and services.	inflation reduction, security and other general goods and services	with mitigation measures	
			Un-Employment boom-bust resulting in tension and conflicts	✓ Maintain an up- to-date food basket survey. ✓ Adopt workers disengagement plans to address boom-bust effects ✓ Strengthen existing cooperatives societies together with the establishment of new ones to engage in various commercial activities that will reduce inflation. ✓ Employ casual/unskilled labour primarily from local communities. ✓ Give priority consideration to qualified local community for hiring workers.	Monitor Employment related grievances and incidents Monitor compliance with mitigation measures	<u>Mitigation Compliance Monitoring</u> Once every month
PP3			**<u>Impacts Social and Cultural Structure</u>** Marginal increase in population within the project area will lead to an increase in negative vices such as prostitution (commercial sex work) and crime thereby affecting social and cultural systems through a negative change in value systems.	IASO Medipark Limited shall ✓ Conduct periodic STD and HIV/AIDs and general safe sex awareness campaigns in the project area ✓ Consider keeping a percentage and certain category of jobs for females ✓ Support initiatives including educational programmes aimed at preserving the local language, cultural structures and traditions	Collect demographic information and analyze for the following parameters: Prostitution, crime, and conflicts. Monitor Compliance with Mitigation Measures	<u>Effects Monitoring</u> Once before construction, every 6 months thereafter and once, 6 months after construction ends. <u>Mitigation Compliance Monitoring</u> Once every month

S/N	Project Activity & Phase	Impact Category	Environmental Socio-economic Impacts Impacts	Mitigation Measures	Effects and Mitigation Compliance Monitoring	Monitoring Frequency
PP4			**Impacts on Cultural and Archaeological Resources** Non-natives living or working in the area may not be conversant with traditional religious practices and rules on shrines and so may inadvertently break traditional religious rules by living in sacred areas or engaging in culturally unacceptable behaviour.	IASO Medipark Limited shall: ✓ Require that Contractors conduct induction programs to educate staff and contractors with the aid of the community elders on traditional religious practices, rules on shrines, culturally acceptable behaviour, and acquaint them with the sacred areas in the communities of the project area. ✓ Ensure work ceases if remains or artifacts are discovered on site during earthworks, and the contractor shall immediately inform the company's representatives and contact the relevant authority.	Monitor cultural violations and archaeological finds in the project area. Monitor Compliance with mitigation measures	Effects Monitoring Once every 6 months during site clearing and construction and once, 6 months after construction ends. Mitigation Compliance Monitoring Once, 3 months
PP5			**Impacts on Education** The attraction to earn income could potentially, either directly from the project, or through some other indirect income generating enterprises, cause	IASO Medipark Limited shall: ✓ Make sure no underage/school age children is or are involved in any paying job or non-paying job on the project, hence shifting their attention from the opportunities in the project.	Monitor school attendance in primary and secondary schools of the project area. Monitor compliance with	Effects Monitoring Once every 6 months during construction and once 6 months after construction ends.

S/N	Project Activity & Phase	Impact Category	Environmental Socio-economic Impacts Impacts	Mitigation Measures	Effects and Mitigation Compliance Monitoring	Monitoring Frequency
			young people to abandon or suspend their education.		mitigation measures.	Mitigation Compliance Monitoring Once every month
PP6			Exposure to infectious diseases (e.g. HIV/AIDS, COVID- 19)	✓ Provision of functional hygiene facilities, wearing of nose masks and implementation of basic infection prevention measures during site clearing works	Monitor Hygiene facilities and implementation of infection Prevention measures	Daily--Prior to mobilization to site / site clearing and construction
			GBV (sexual harassment, intimate partner violence, poor working conditions)	IASO Medipark Limited shall: ✓ Implement the GBV Action Plan for the Project ✓ All workers shall be required to undergo regular training and refreshers on GBV ✓ All workers on the project shall be required sign a code of conduct to prohibit any form of Gender Based Violence/ Sexual Exploitation and Abuse (GBV/ SEA) ✓ GBV sensitive channels for reporting in GRM shall be implemented for the Project ✓ Hire a Gender/ GBV officer for full implementation and monitoring of the GBV Action Plan	Evidence to show implementation of GBV action plan Monitor records of regular training and attendance on GBV Monitor records of ongoing engagement and consultation with GBV service providers and GRM records Inspection of facilities to ensure adequacy	Monthly during construction

S/N	Project Activity & Phase	Impact Category	Environmental Socio-economic Impacts Impacts	Mitigation Measures	Effects and Mitigation Compliance Monitoring	Monitoring Frequency
				✓ Collaborate with appropriate government institutions or GBV service providers on potential GBV case management ✓ Provide separate facilities for men and women and add GBV-free signage at the project site		
PP7			**Impacts on Ground Water** Wash down of oil and grease and any chemicals/soluble hazardous materials stored or used.	IASO Medipark Limited shall: ✓ Implement non-permeable lay-down areas for project machinery equipment ✓ Make sure that chemicals and all hazardous substances shall be kept within contained areas Ensure that all spent oil and hazardous chemicals are properly containerized for proper disposal.	Sample ground water resources in the project area from community wells and monitoring boreholes Monitor compliance with mitigation measures	Effects Monitoring Once, every 3 months during construction and once 6 months after construction ends. Mitigation Compliance Monitoring Once every month
TR1	Pre-Operation Phase	Transportation of Workers and Material	**Impacts on Transportation** Increased vehicular and traffic in the area could lead to longer commuting time for existing road users.	IASO Medipark Limited shall: ✓ Ensure that as much as possible, all heavy duty trucks working on the project move at off peak hours.	Conduct traffic survey along major and minor roads used by the project particularly those around communities Monitor compliance with mitigation measures.	Effects Monitoring Once every 3 months during construction and once 6 months after construction ends. Mitigation Compliance Monitoring Once every month

S/N	Project Activity & Phase	Impact Category	Environmental Socio-economic Impacts Impacts	Mitigation Measures	Effects and Mitigation Compliance Monitoring	Monitoring Frequency
SC1	Pre-Operation Phase	Site Clearing and Preparation	**Impacts on Soil Ecology** Removal of dry lowland rainforest vegetation, freshwater swamp forest and some of the top soil from the project site will result in loss of soil fertility, and near annihilation of soil ecology in the affected areas	IASO Medipark Limited shall: ✓ Limit site clearing to the needed portions only and leave as much green area as possible. ✓ Ensure excavated soils are backfilled and properly levelled out to prevent the creation of ruts and the associated pond ✓ Ensure that the topography excavated and non-build areas are restored to pre-site clearing status.	Monitor compliance with mitigation measures	Mitigation Compliance Monitoring Once every 3 months
SC2			**Impacts on Surface Water Quality, Hydrobiology and Sediment** Run off from the site into nearby rivers and streams resulting in increased turbidity and total suspended which may affect plankton communities, benthic organisms and fisheries in rivers and streams.	IASO Medipark Limited shall: ✓ Construct drainage lines where necessary on the site ✓ Ensure runoff from the site shall be channelled through sediment/silt traps before discharge into nearby water bodies ✓ Backfill and properly compact trenches to minimize impact on surface waters as a result of highly turbid runoff inputs	Monitor water quality in receiving waters of the project area. Parameters: Turbidity, TSS, oil & grease, heavy metals, microbiology, plankton, and water physico chemical properties. Monitor compliance with mitigation measures	Effects monitoring will be once every 3 months during site clearing and construction once 3-6 months thereafter. Mitigation Compliance Monitoring Once every month during activity

S/N	Project Activity & Phase	Impact Category	Environmental Socio-economic Impacts Impacts	Mitigation Measures	Effects and Mitigation Compliance Monitoring	Monitoring Frequency
SC3			**Impacts on Vegetation and Wildlife** Loss of wildlife, trees, shrubs, and climbers as well as associated fauna within the area of the forest to be taken up for the project	IASO Medipark Limited shall: ✓ Keep site clearing to a minimum and leave as much vegetation as possible within project areas. ✓ Encourage the use of existing cleared or disturbed areas for the Contractor's project office, stockpiling of materials etc. ✓ Ensure that the indigenous/primary forests are not to be removed unless required for construction purposes, nor shall new access routes be cut through indigenous vegetation. ✓ Trim rather than remove vegetation wherever possible. ✓ Strictly control clearing and preparation activities where it occurs in close proximity to indigenous/primary forest. ✓ Ensure that the limits of clearing and preparation activities must be clearly demarcated as per the Environmental Specifications to reduce unnecessary site clearing ✓ Prohibit contractors and staff from removal or harvesting of trees or medicinal plants, and from poaching (through trapping, poisoning or shooting) or otherwise harm wild animals in the area. ✓ Prohibit harvesting/ use of indigenous/primary plants as firewood and other uses unless they are obtained from approved cleared areas. ✓ Ensure a slow and "systematic clearing method" to give room for the escape of the wildlife	Monitor compliance with mitigation measures	Mitigation Compliance Monitoring Once every 3 months during activity

S/N	Project Activity & Phase	Impact Category	Environmental Socio-economic Impacts Impacts	Mitigation Measures	Effects and Mitigation Compliance Monitoring	Monitoring Frequency
				✓ Prohibit the killing of wildlife for food by the contractor/project personnel.		
SC4			**Impacts on Culture and Archaeological Resources** Unauthorized clearing by the people near project facilities for construction of housing by people not associated with the project, hence leading to loss of shrines, burial grounds and other archaeological resources.	IASO Medipark Limited shall: ✓ Implement an influx management plan to address the preservation of cultural and archaeological structures and resources.	Monitor cultural violations and archaeological finds in the project area. Monitor Compliance with mitigation measures	Effects Monitoring Once every 6 months during site clearing and construction and once, 6 months after construction ends. Mitigation Compliance Monitoring Once every 3 months
SC5			**Physical and Economic Displacement Impacts** Loss of farm land and forage to site clearing and construction activities	IASO Medipark Limited shall: ✓ Provide livelihood enhancement support for affected persons ✓ Implement a grievance procedure to ensure all livelihood complaints about enhancement benefits are handled in a structured and timely manner and to resolve conflicts ✓ Monitor, document and evaluate livelihood enhancement process	Review grievance records and compensation implementation. Conduct grievance survey Monitor compliance with mitigation measures	Effects Monitoring Once every 6 months during site clearing and construction and once in 6 months after construction ends. Mitigation Compliance Monitoring Once every 3 months
SC6			**Impacts on transportation**	IASO Medipark Limited shall:	Conduct traffic survey along major and minor roads used by	Effects Monitoring

S/N	Project Activity & Phase	Impact Category	Environmental Socio-economic Impacts Impacts	Mitigation Measures	Effects and Mitigation Compliance Monitoring	Monitoring Frequency
			Increased traffic activities along the project area leading to longer commuting time for existing road users	✓ Implement a method statement for site clearing to reduce impacts on transportation ✓ Avoid as many roads and tracks currently used by pedestrians and road users in the project area ✓ Provide alternative routes to pedestrians if existing roads and tracks are blocked off ✓ Notify communities of plans to block roads or tracks ✓ As much as possible, avoid peak periods to transport supplies and equipment during project implementation.	the project particularly those around communities Monitor compliance with mitigation measures.	Once every 3 months during site clearing and once 6 months after it ends <u>Mitigation Compliance Monitoring</u> Once every month
SC7			**<u>Vibration and Noise Impacts</u>** Increased noise and vibration generated by heavy equipment use for land clearing	IASO Medipark Limited shall: ✓ Ensure all contractors avoid night time work as much as possible ✓ Pre-notify affected parties of their activities and shall provide ear muffs for people working with or near noise generating equipment ✓ Ensure that project staff are not exposed to more than nine hours at a go on any equipment generating noise level of more than 90 dBA .	Conduct noise sampling (daytime and night time noise) in the project area Monitor Compliance with mitigation measures	<u>Effects Monitoring</u> Once every 3 months during site clearing and once 6 months after it ends. <u>Mitigation Compliance Monitoring</u> Once every 3 months during activity
CR1	Pre-Operation Phase	Construction Activities	**<u>Vibration and Noise Impacts</u>** Increased noise and vibration generating activities like	IASO Medipark Limited shall: ✓ Ensure that project staff are not exposed to more than nine hours at a go on any equipment generating noise level of more than 90 dBA	Conduct noise sampling (daytime and night time noise) in the project area	<u>Effects Monitoring</u> Once every 3 months during construction and once in 6 months after construction ends. <u>Mitigation Compliance Monitoring</u>

S/N	Project Activity & Phase	Impact Category	Environmental Socio-economic Impacts Impacts	Mitigation Measures	Effects and Mitigation Compliance Monitoring	Monitoring Frequency
			carpentry/joinery, block work, cement batching plant, lifting machinery operations and general vehicular movement.		Monitor Compliance with mitigation measures	Once every 3 months during activity
CR2			**Impacts on Human Movement** Disruptions to trekking paths will negatively impact people's movement and could affect social, economic and livelihood networks in the area.	IASO Medipark Limited shall: ✓ Avoid as many existing roads and tracks currently used by pedestrians and road users in the project area ✓ As much as possible, avoid peak periods to transport supplies and equipment during project implementation. ✓ Provide alternative routes to pedestrians if existing roads and tracks are blocked off ✓ Notify communities of plans to block roads or tracks ✓ As much as possible, avoid peak periods to transport supplies and equipment during project implementation	Conduct traffic survey along major and minor roads used by the project particularly those around communities Monitor compliance with mitigation measures.	Effects Monitoring Once every 3 months during construction and once in 6 months after construction ends. Mitigation Compliance Monitoring Once every month
DR1.3			**Change in Topography** Influences on design, construction costs, and risk Drainage related issues, structural damage and	✓ IASO Medipark Limited shall ensure that project activities do not alter the natural topography in the area and where necessary, maintain or restore water and nutrient flow. ✓ IASO Medipark Limited shall require that contractors working on project areas maintain a plan that maintains natural topography in the area	Conduct Topographic survey of the site prior to design and construction	Effects Monitoring Once every 3 months during construction and once in 6 months after construction ends. Mitigation Compliance Monitoring Once every 3 months during activity

S/N	Project Activity & Phase	Impact Category	Environmental Socio-economic Impacts Impacts	Mitigation Measures	Effects and Mitigation Compliance Monitoring	Monitoring Frequency
			regulatory complaince issues	✓ IASO Medipark Limited shall ensure that the slope and elevation of the land shall influence the design, height, and layout of structures to ensure they are functional and harmonize with the natural landscape. ✓ IASO Medipark Limited shall ensure that the site's contours and natural features are studied to reveal drainage patterns and flood-prone areas, which will inform the design of proper drainage systems and flood control measures for the project.		
WE1.1	Pre-Operations	Waste and Emissions Generation and Disposal	**Air Emissions Impacts** Emissions of air pollutants during the operation of combustion engines, burning of organic material from site clearing, and dust during site clearing and grading.	IASO Medipark Limited shall: ✓ Service all equipment regularly, and shall use low emission equipment ✓ Require that all contractors maintain their equipment in good condition ✓ Require that engines are turned off when not required ✓ Reduce burning of organic material to the barest minimum	Conduct ambient air monitoring for pollutant gases (NOx, SOx, VOCs, CO) and particulates Monitor Compliance with Mitigation Measures	Effects Monitoring Once every 3 months during site clearing and construction and once 3 months after construction ends. Mitigation Compliance Monitoring Every 3 months from site clearing through construction
WE1.2	Pre-Operations	Waste and Emissions Generation and Disposal	**Solid Waste Impacts** Illegal disposal of waste in open dump areas and waterways.	✓ IASO Medipark Limited shall implement a waste minimization and utilization strategy as much as possible to reduce the amount of wastes to be generated ✓ IASO Medipark Limited shall develop and implement an approved waste management plan for all project phases in line with regulatory requirements	Monitor Compliance With Mitigation Measures	Mitigation Compliance Monitoring Every 3 months from site clearing through construction

S/N	Project Activity & Phase	Impact Category	Environmental Socio-economic Impacts Impacts	Mitigation Measures	Effects and Mitigation Compliance Monitoring	Monitoring Frequency
				✓ IASO Medipark Limited shall ensure proper waste manifesting for all non - incinerated wastes and all other construction wastes taking off the plant site for disposal ✓ IASO Medipark Limited shall contract only with approved and permitted waste handling firms and technologies ✓ IASO Medipark Limited shall monitor its waste contractors		
OM1.1	Operations	Physical Presence of Plant	**Visual Impacts** Fundamental change in the appearance of the landscape as a result of the project	IASO Medipark Limited Shall: ✓ Use natural screening to minimise the extent of change of view to the water's edge, using natural vegetation (such as tall trees) where possible; and ✓ Implement a "down" lighting strategy to minimise the potential for light emissions to pass beyond the project boundary and be reflected by open water	Monitor Compliance With Mitigation Measures.	Mitigation Compliance Monitoring Once in 6 months for the space of 3 years
OM1.2	Operations	Generation and Transmission	**Impacts of Radiation, Electric and Magnetic Fields** Adverse effects of radiation, electric and magnetic field on plant, animal species, and on human health.	IASO Medipark Limited shall; ✓ Set personal exposure monitoring equipment to warn of exposure levels that are below occupational exposure reference levels (e.g. 50 percent). ✓ Limit exposure time through work rotation ✓ Increase the distance between the EMF source and the worker, when feasible, or the use of shielding materials	Monitor Compliance with Mitigation Measures	At the design stage, and prior to commissioning of facility and every 2 years during Audit

S/N	Project Activity & Phase	Impact Category	Environmental Socio-economic Impacts Impacts	Mitigation Measures	Effects and Mitigation Compliance Monitoring	Monitoring Frequency
				✓ Prepare and implement an EMF safety program including the following components: o Identification of potential exposure levels in the workplace o Surveys of exposure levels in new projects and the use of personal monitors during working activities o Training of workers in the identification of occupational EMF levels and hazards o Establishment and identification of safety zones to differentiate between work areas with expected elevated EMF levels compared to those acceptable for public exposure, limiting access to properly trained workers o Implementation of action plans to address potential or confirmed exposure levels that exceed reference occupational exposure levels developed by international organizations such as the International Commission on Non-Ionizing Radiation Protection (ICNIRP),		
OM1.3	Operations	Waste and Emissions	**Operations Solid Waste Impacts** In addition to solid waste generated and managed by the project, there will be an increase in solid waste in the communities and surrounding areas due to influx of	IASO Medipark Limited shall: ✓ Develop and Implement the Waste Management Plan which covers all types of wastes to be generated in the facility ✓ Adopt a waste minimization and utilization strategy ✓ Provide proper solid waste receptacles and storage containers for different kind	Monitor Compliance With Mitigation Measures	Mitigation Compliance Monitoring Every 3 months from site clearing through operation

S/N	Project Activity & Phase	Impact Category	Environmental Socio-economic Impacts Impacts	Mitigation Measures	Effects and Mitigation Compliance Monitoring	Monitoring Frequency
			project workers and non-project related migrants. Excess waste may accumulate in the communities or the surrounding areas.	of wastes from the operation phase including biohazard boxes. ✓ Ensure proper waste manifesting for all project related wastes ✓ Engage government approved and reputable waste management firms in waste handling and disposal Implement waste management auditing ✓ Work with communities to develop and implement basic waste handling procedures among residents ✓ Implement a public training program to increase awareness of basic sanitation		
			<u>Operations E-Waste Impacts</u> E-waste generation and Disposal	✓ Training shall be provided for workers on on safe storage, use and handling of e-waste on site ✓ E-wastes shall be stored at appropriate locations generated shall be stored I ✓ prior to recycling; consignment notes will be maintained ✓ Spent batteries and inverters including spent medical equipment shall be sent to manufacturers in line with the Extended Producer Responsibility (EPR) policy. ✓ Other e-waste such as used computers, discs, machines that can not ne recycled	Monitor Compliance With Mitigation Measures	<u>Mitigation Compliance Monitoring</u> Every 3 months during operation

S/N	Project Activity & Phase	Impact Category	Environmental Socio-economic Impacts Impacts	Mitigation Measures	Effects and Mitigation Compliance Monitoring	Monitoring Frequency
				shall be disposed Via approved Waste management contractors in Lagos state		
OM1.4	Operations	Waste and Emissions	**Air Emissions Impacts** The increment of the greenhouse gases in the atmosphere resulting from the operations in the facility.	IASO Medipark Limited shall: ✓ As much as possible ensure the use of modern equipment that minimize emissions of pollutant gases during operation ✓ Ensure proper maintenance of combustion equipment to ensure efficient combustion ✓ Monitor the air-quality continuously as a mitigative step to ensure that the overall significance does not increase	Conduct ambient air monitoring for pollutant gases (NOx, SOx, VOCs, CO) and particulates Monitor Compliance with Mitigation Measures	Effects Monitoring Once every 3 months during site clearing and construction and once 3 months after construction ends. Mitigation Compliance Monitoring Every 3 months from site clearing through construction
H1.1	All Projects	Pollution Related Health Effects	**Sanitary and Solid Waste Health Effects** Untreated sanitary waste and other effluents as well as solid waste can increase the existing prevalence of water and vector borne diseases and other disease vectors in the project area.	IASO Medipark Limited shall; ✓ Implement a Contractors Sanitation Plan for the project ✓ Support health enlightenment campaigns, which provide guidelines and tips for improved sanitary conditions in the communities ✓ Support indigenes to establish commercial sanitary services that will serve the project area ✓ Require its contractors to provide HSE induction training to all workers engaged on the project ✓ Strictly follow the approved medical waste handling procedure and strategies	Conduct community health survey in the project area including improvements in sanitary conditions Monitor Compliance with Mitigation Measures	Effects monitoring Every 6 months from site clearing through construction. Mitigation Measures Compliance Monitoring Once every 6 months during site clearing and construction
H1.2	Operations	Pollution Related Health Effects	**Noise and Vibration Impacts** Increase in noise and vibration during the implementation of	IASO Medipark Limited shall: ✓ Implement a noise abatement plan ✓ Adopt noise attenuation measures such as installation of acoustic	Conduct community health survey in the project area including improvements in	Effects monitoring Every 6 months from site clearing through construction. Mitigation Measures Compliance Monitoring

S/N	Project Activity & Phase	Impact Category	Environmental Socio-economic Impacts Impacts	Mitigation Measures	Effects and Mitigation Compliance Monitoring	Monitoring Frequency
			various activities associated with the project.	mufflers on large engines and equipment; ✓ Provide hearing protection to all workers on site ✓ Avoid night time work as much as possible	sanitary conditions Monitor Compliance with Mitigation Measures	Once every 6 months during site clearing and construction.
H1.3a	Pre-Operations	Pollution Related Health Effects	**Air Emission Impacts** Burning of cleared vegetation and other organic wastes on site together with emissions from combustion engines will lead to an increase in air pollutants.	IASO Medipark Limitedshall: ✓ Service all equipment regularly, and shall use low emission equipment ✓ Require that all contractors maintain their equipment in good condition ✓ Require that engines are turned off when not required ✓ Reduce burning of organic material to the barest minimum	Conduct ambient air monitoring for pollutant gases (NOx, SOx, VOCs, CO) and particulates Monitor Compliance with Mitigation Measures	Effects Monitoring Once every 3 months during site clearing and construction and once 3 months after construction ends. Mitigation Compliance Monitoring Every 3 months from site clearing through construction.
H1.3b	Operations	Pollution Related Health Effects	**Air Emission Impacts** Operations will result in releases of pollutant gases like nitrogen oxides, sulphur oxides, carbon monoxide, Volatile Organic Compounds (VOC) and particulates.	IASO Medipark Limited shall ✓ Service all equipment regularly, and shall use low emission equipment ✓ Monitor operations emissions to ensure pollutants are kept within regulatory limits	Conduct ambient air monitoring for pollutant gases (NOx, SOx, VOCs, CO) and particulates Monitor Compliance with Mitigation Measures	Effects Monitoring Once every 3 months. Mitigation Compliance Monitoring Every 3 months
H2.1	Pre-Operations and Operations	Influx Related Health Effects	**Communicable and Non-**	IASO Medipark Limited shall:	Conduct community health survey in the project area	Effects monitoring Every 6 months from site clearing through construction and operations.

S/N	Project Activity & Phase	Impact Category	Environmental Socio-economic Impacts Impacts	Mitigation Measures	Effects and Mitigation Compliance Monitoring	Monitoring Frequency
			Communicable Diseases Influx of people into the area as a result of the project could lead to outbreak of Communicable and Non-Communicable Diseases among the populace.	✓ Conduct periodic health awareness campaigns for STDs especially AIDS, and support safe sex initiatives ✓ Support indigenes to establish commercial sanitary services that will serve the area ✓ Through advocacy, encourage State and Local Governments to improve housing and other facilities in the area ✓ Provide adequate medical facilities for all construction workers.	including improvements in sanitary conditions, HIV incidences etc. Monitor Compliance with Mitigation Measures	Mitigation Measures Compliance Monitoring Once every 6 months during site clearing, construction and operations.
H2.2	Pre- Operations and Operations	Influx Related Health Effects	**Impacts on Fertility** The possibility of activities that could increase STD, stress and fertility-threatening lifestyles.	IASO Medipark Limited shall: ✓ Monitor this health determinant as a mitigative step to ensure that the overall significance does not increase	Conduct community health survey in the project area including improvements in sanitary conditions	Effects monitoring Every 6 months from site clearing through construction and operations.

S/N	Project Activity & Phase	Impact Category	Environmental Socio-economic Impacts Impacts	Mitigation Measures	Effects and Mitigation Compliance Monitoring	Monitoring Frequency
H2.3	Pre-Operations and Operations	Influx Related Health Effects	**Impacts on Quality of Health Care** Inadequate health care system and medical facilities in the area for the populace.	✓ As part of its social development plan, IASO Medipark Limited will embark on health care interventions to improve general health awareness and the availability of health care facilities in the area ✓ IASO Medipark Limited shall periodically sponsor cultural and recreational activities such as festivals and sports competitions. ✓ IASO Medipark Limited workers from the community shall have access to the medical facilities that will be provided in the project area. Adequate medical facilities shall be provided for all construction workers and those Employed to operate the plant. ✓ IASO Medipark Limited shall conduct periodic health awareness campaigns for STDs especially AIDS and also support safe sex initiatives ✓ The mitigation measures shall be implemented in phases from pre operations to operations	Conduct community health survey in the project area including improvements in sanitary conditions, health care adequacy etc. Monitor Compliance	Effects monitoring Every 6 months from site clearing through construction and operations Mitigation Measures Compliance Monitoring Once every 6 months during site clearing, construction and operations.
H2.4	Pre-Operations and Operations	Influx Related Health Effects	**Psychosocial Factors** Strain on the social, religious and cultural structure from influx of people to the area could lead to psychosocial factors.	IASO Medipark Limited shall; ✓ Inculcate induction training into its Employment program to intimate new intake with the culture and religious belief of the people. ✓ Maintain and implement a Drug and Alcohol Policy for all aspects of the project ✓ Support anti-drug crusades and campaigns in the area	Conduct community health survey in the project area including substance use. Monitor Compliance	monitoring Every 6 months from site clearing through construction and operations. Mitigation Measures Compliance Monitoring Once every 6 months during site clearing, construction and operations.

S/N	Project Activity & Phase	Impact Category	Environmental Socio-economic Impacts Impacts	Mitigation Measures	Effects and Mitigation Compliance Monitoring	Monitoring Frequency
				✓ Ensure that its contractors develop and implement a workers disengagement plan to address the potential boom-bust impacts	with Mitigation Measures	
H2.5	Pre-Operations and Operations	Influx Related Health Effects	**Accidents, Spills, and Fires Impacts** Accidents including spills (fuel and hazardous chemicals), fires, vehicle navigation accidents are hazards that may be linked to the project activities in the environments	IASO Medipark Limited shall: ✓ Require that all its Contractors develop and implement HSE Plans for their activities ✓ Review all contractor HSE plans prior to contract award. ✓ Ensure that all contractors and workers comply with IASO Medipark Limited occupational health and safety guidelines and standards for general work practices, hours of work, air emissions, noise and light. ✓ Carry out routine safety checks on the working equipment in line with standard safety procedures and IASO Medipark Limited Operating Controls. ✓ Ensure all contractors staff are trained on basic safety procedures and emergency response procedures and environmental issues. ✓ Require that contractors maintain emergency and first aid facilities at strategic locations throughout the project area ✓ Develop and maintain an emergency, oil and chemical spill prevention and response/counter measures plans for all phases of the project ✓ Require that all contractors maintain a journey hazard management plan	Monitor Compliance with Mitigation Measures	Mitigation Measures Compliance Monitoring Once every 6 months during site clearing, construction and operations
H4	General Infrastructure Developments	Health Hazards	Over exertion	IASO Medipark Limited shall: ✓ Ensure the use of mechanical assists to eliminate or reduce exertions required	Monitor Compliance with Mitigation Measures	Once every 6 months during site clearing and construction and once annually during operations.

S/N	Project Activity & Phase	Impact Category	Environmental Socio-economic Impacts Impacts	Mitigation Measures	Effects and Mitigation Compliance Monitoring	Monitoring Frequency
				to lift materials, hold tools and work objects, and requiring multi-person lifts if weights exceed thresholds ✓ Select and design of tools that reduce force requirements and holding times, and improve postures ✓ Provide user adjustable work stations ✓ Incorporate rest and stretch breaks into work processes, and conducting job rotation ✓ Implement quality control and maintenance programs that reduce unnecessary forces and exertions ✓ Consider additional special conditions where required such as for left handed persons		
			Slips and falls	IASO Medipark Limited shall and require that contractors implement the following slip and fall prevention and protection measure for all workers exposed to the hazard: ✓ Training and use of tESMPorary fall prevention devices, such as rails or other barriers able to support a weight of 200 pounds, when working at heights equal or greater than two meters or at any height if the risk includes falling into operating machinery, into water or other liquid, into hazardous substances, or through an opening in a work surface ✓ Training and use of personal fall arrest systems, such as full body harnesses and energy absorbing lanyards able to support 5000 pounds (also described in this section in Working at Heights above), as well as fall rescue procedures to deal with workers whose fall has been successfully	Monitor Compliance with Mitigation Measures	Once every 6 months during site clearing and construction and once annually during operations

S/N	Project Activity & Phase	Impact Category	Environmental Socio-economic Impacts Impacts	Mitigation Measures	Effects and Mitigation Compliance Monitoring	Monitoring Frequency
				arrested. The tie in point of the fall arresting system should also be able to support 5000 pounds ✓ Use of control zones and safety monitoring systems to warn workers of their proximity to fall hazard zones, as well as securing, marking, and labeling covers for openings in floors, roofs, or walking surfaces ✓ Delineate work zones so as to separate workers from traffic and from equipment as much as possible ✓ Reduce allowable vehicle speeds in work zones ✓ Use of high-visibility safety apparel for workers in the vicinity of traffic		
			Confined Spaces and Excavations	IASO Medipark Limited shall and require that contractors implement the following prevention and protection measures for all work areas with this hazard exposure: ✓ Control site-specific factors which may contribute to excavation slope instability including, for example, the use of excavation dewatering, side-walls support, and slope gradient adjustments that eliminate or minimize the risk of collapse, entrapment, or drowning ✓ Provide safe means of access and egress from excavations, such as graded slopes, graded access route, or stairs and ladders ✓ Avoid the operation of combustion equipment for prolonged periods inside excavations areas where other workers are required to enter unless the area is actively ventilated	Monitor Compliance with Mitigation Measures	Once every 6 months during site clearing and construction and once annually during operations

S/N	Project Activity & Phase	Impact Category	Environmental Socio-economic Impacts Impacts	Mitigation Measures	Effects and Mitigation Compliance Monitoring	Monitoring Frequency
				✓ Implement a permit to work procedure for all work in confined spaces		
			Struck by Objects	IASO Medipark Limited shall and require that contractors implement the following prevention and protection measure for all workers exposed to the hazard: ✓ Using a designated and restricted waste drop or discharge zones, and/or a chute for safe movement of wastes from upper to lower levels ✓ Conducting sawing, cutting, grinding, sanding, chipping or chiseling with proper guards and anchoring as applicable ✓ Maintain clear traffic ways to avoid driving of heavy equipment over loose scrap ✓ Use tESMPorary fall protection measures in scaffolds and out edges of elevated work surfaces, such as hand rails and toe boards to prevent materials from being dislodged ✓ Evacuate work areas during blasting operations, and use blast mats or other means of deflection to minimize fly rock or ejection of demolition debris if work is conducted in proximity to people or structures ✓ Ensure use of appropriate PPE, such as safety glasses with side shields, face shields, hard hats, and safety shoes ✓ Delineate work zones so as to separate workers from traffic and from equipment as much as possible ✓ Reduce allowable vehicle speeds in work zones ✓ Use of high-visibility safety apparel for workers in the vicinity of traffic	Monitor Compliance with Mitigation Measures	Once every 6 months during site clearing and construction and once annually during operations.

S/N	Project Activity & Phase	Impact Category	Environmental Socio-economic Impacts Impacts	Mitigation Measures	Effects and Mitigation Compliance Monitoring	Monitoring Frequency
			Moving Machinery	IASO Medipark Limited shall and require that contractors implement the following prevention and protection measures for all work areas with this hazard exposure: ✓ Plan and segregate the location of vehicle traffic, machine operation, and walking areas, and controlling vehicle traffic through the use of one-way traffic routes ✓ Establish and enforce speed limits, and on-site trained flag-people wearing high-visibility vests or outer clothing covering to direct traffic ✓ Ensure the visibility of personnel through their use of high visibility vests when working in or walking through heavy equipment operating areas, and training of workers to verify eye contact with equipment operators before approaching the operating vehicle ✓ Ensure moving equipment is outfitted with audible back-up alarms ✓ Use inspected and well-maintained lifting devices that are appropriate for the load, such as cranes, and securing loads when lifting them to higher job-site elevations.	Monitor Compliance with Mitigation Measures	Once every 6 months during construction and once annually during operations
			Working at height	IASO Medipark Limited shall, and require that contractors implement the following fall prevention and protection measure for all workers exposed to the hazard of falling while working at heights: ✓ Test structures for integrity prior to undertaking work ✓ Implement a fall protection program that includes training in climbing techniques and use of fall protection	Monitor Compliance with Mitigation Measures	Once every 6 months during construction and once annually during operations.

S/N	Project Activity & Phase	Impact Category	Environmental Socio-economic Impacts Impacts	Mitigation Measures	Effects and Mitigation Compliance Monitoring	Monitoring Frequency
				measures; inspection, maintenance, and replacement of fall protection equipment; and rescue of fall-arrested workers, among others ✓ Establish criteria for use of 100 percent fall protection (typically when working over 2 meters above the working surface. The fall protection system shall be appropriate for the tower structure and necessary movements, including ascent, descent, and moving from point to point; ✓ Install fixtures on tower components to facilitate the useof fall protection systems ✓ Provide adequate work-positioning device system for workers. ✓ Ensure proper rating for hoisting equipment ✓ Ensure proper maintenance of hoisting equipment and properly train hoist operators ✓ Use Safety belts that are not less than 16 millimeters (mm) (5/8 inch) two-in-one nylon or material of equivalent strength. ✓ Replace rope safety belts before signs of aging or fraying of fibers become evident ✓ When operating power tools at height, require that workers use a second (backup) safety strap; Remove signs and other obstructions from poles or structures prior to undertaking work.		
			Electric and magnetic field	IASO Medipark Limited shall, and require that contractors implement the following measures to address occupational EMF exposure:	Monitor compliance with mitigation measures	<u>Mitigation Compliance Monitoring</u> At the commencement of operations of power lines and 1-year into operation.

S/N	Project Activity & Phase	Impact Category	Environmental Socio-economic Impacts Impacts	Mitigation Measures	Effects and Mitigation Compliance Monitoring	Monitoring Frequency
				✓ Prepare and implement an EMF safety program including the following components: o Identification of potential exposure levels in the workplace o Surveys of exposure levels in new projects and the use of personal monitors during working activities o Training of workers in the identification of occupational EMF levels and hazards o Establishment and identification of safety zones to differentiate between work areas with expected elevated EMF levels compared to those acceptable for public exposure, limiting access to properly trained workers o Implementation of action plans to address potential or confirmed exposure levels that exceed reference occupational exposure levels developed by international organizations such as the International Commission on Non-Ionizing Radiation Protection (ICNIRP), ✓ Set personal exposure monitoring equipment to warn of exposure levels that are below occupational exposure reference levels (e.g. 50 percent). ✓ Limit exposure time through work rotation Increase the distance between the EMF source and the worker, when feasible, or the use of shielding materials.		Audit facility every 2 years
			Exposure to chemicals	IASO Medipark Limited shall and require contractors to implement the following mitigating measures for occupational	Conduct periodic medical examination on	Effects Monitoring

S/N	Project Activity & Phase	Impact Category	Environmental Socio-economic Impacts Impacts	Mitigation Measures	Effects and Mitigation Compliance Monitoring	Monitoring Frequency
				chemical exposure health hazards associated with solid waste handling facilities: ✓ Provide adequate personnel facilities, including washing areas and areas to change clothes before and after work ✓ Ventilate enclosed processing areas (e.g., dust in waste size reduction areas), ✓ Monitor breathing zone air quality in work areas at processing and transfer facility using direct-reading instruments that measure methane and oxygen deficiency Prohibit eating, smoking, and drinking except in designated areas	staff exposed to chemicals Monitor Compliance with Mitigation Measures	Every 6 months from construction through operations. <u>Mitigation Measures Compliance Monitoring</u> Once every 6 months during construction and once annually during operations
			<u>GBV (sexual harassment, intimate partner violence, poor working conditions)</u>	IASO Medipark Limited shall: ✓ Implement the GBV Action Plan for the Project ✓ All workers shall be required to undergo regular training and refreshers on GBV ✓ All workers on the project shall be required sign a code of conduct to prohibit any form of Gender Based Violence/ Sexual Exploitation and Abuse (GBV/ SEA) ✓ GBV sensitive channels for reporting in GRM shall be implemented for the Project ✓ Hire a Gender/ GBV officer for full implementation and monitoring of the GBV Action Plan ✓ Collaborate with appropriate government institutions or GBV service	Evidence to show implementation of GBV action plan Monitor records of regular training and attendance on GBV Monitor records of ongoing engagement and consultation with GBV service providers and GRM records Inspection of facilities to ensure adequacy	Monthly during Operation

S/N	Project Activity & Phase	Impact Category	Environmental Socio-economic Impacts Impacts		Mitigation Measures	Effects and Mitigation Compliance Monitoring	Monitoring Frequency
					providers on potential GBV case management ✓ Provide separate facilities for men and women and add GBV-free signage at the project site		
CU	All Project	Cumulative Impact	Land Take	Loss of Biodiversity and Increase in Ambient Temperature	✓ IASO Medipark Limited shall advocate working with the State Government to develop green belts and conservation areas within the area.	Monitoring to be handled as part of larger regional plans with State Government	IASO Medipark Limited and the State Government shall fix the frequency as deemed fit
				Increased Run Off			
			Influx		✓ IASO Medipark Limited shall work with the State Government to develop and implement a Master Plan that addresses the negative impacts of population growth in the entire area.		
D1	Decommissioning	All Categories	Transportation of Workers and Materials		Impacts will be further assessed during development of substantive decommissioning and abandonment plan		
D2			Wind Down Operations				
D3			Physical Removal of Installed Facilities				
D4			Remediation and Restoration Activities				
D5			Wastes and Emissions, Generation and Handling				

Source: ESIA of Lagos Medipark Project, 2025

Monitoring Schedule and Parameters to be monitored

IASO Medipark Limited has developed a schedule for Post-ESIA Monitoring that will be implemented in addition to the Compliance Monitoring that is based on monitoring requirements established in the regulations.

Six months after the project commission, the Post-ESIA Monitoring Programme will be reviewed, and monitoring frequencies may be fixed based on statutory regulations, corporate rules or as the need arises. Environmental parameters that are more impacted would be regularly monitored, and commensurate mitigation mechanisms applied, while those that are least affected would be less frequently monitored.

Table 7.2 summarizes the recommended mitigation techniques, monitoring, and training for each category of environmental resources and impacts.

However, IASO Medipark Limited accepts full responsibility for all Regulatory Compliance Monitoring and other Post-ESIA Monitoring Activities.

Construction phase Environmental and Social Management Plan

The necessary objectives, activities, mitigation measures and responsibilities pertaining to prevention, minimization and monitoring of significant negative impacts and maximization of positive impacts associated with the construction phase of the proposed Medical Park Project, Ikoyi are outlined in Table 7.3 below.

Table 7.3: Construction phase Environmental and Social Management Plan for the Proposed Medipark Project, Ikoyi, Eti-Osa LGA, Lagos State

IMPACT	MITIGATION MEASURES	RESPONSIBLE PARTY	FREQUENCY
Loss of property and Assets	• Provide prompt and effective compensation at full replacement cost for losses of assets attributable directly to the project	IASO Medipark Limited	Once-off during project planning phase
Traffic diversions and risk to existing buildings	• Advance information on traffic circulation change; • Provide Road signs and some stationed on strategic points to help during the diversions	IASO Medipark Limited FRSC	Throughout construction period
Disruptions of public Utilities	• Involvement and continuous consultation of key stakeholders with respect to water, sewerage, pipelines, electricity, roads, etc., at all stages of the project cycle • Compensation and re-locations • Use of an integrated approach in planning public utilities by sharing most transport corridors for roads, pipelines, water, sewerage, electricity lines, etc	IASO Medipark Limited	During project planning phase and throughout construction period
Habitat loss, alteration and fragmentation	• Avoid fragmentation or destruction of critical terrestrial and aquatic habitats by siting project yard, support facilities, and maintenance areas to avoid such locations or by utilizing existing facilities whenever possible • Minimize the clearing of vegetation during construction; • Ensure proper demarcation and delineation of the project area to be affected by construction works.	IASO Medipark Limited FMEnv LSMEnv	Throughout construction period

	• Specify locations for trailers and equipment, and areas of the alignment which should be kept free of traffic, equipment, and storage • Designate access routes and parking within the construction sites • Design and implement an appropriate landscaping programme to help in re-vegetation of part of the project area after construction		
Disturbances to bore holes, water piping and storage systems	• Evaluation of the location of these boreholes and the accompanying piping and storage systems to reduce activities on these points or relocation of the same or compensation	IASO Medipark Limited FMEnv LSMEnv	Once-off during project planning phase
Occupational health and safety issues	• Management must ensure that fire extinguishers are located in strategic and visible places • Ensure that all vehicles and equipment are under control of competent personnel • Provide adequate facilities to treat staff emergencies. Employees need to be informed on the necessary safety procedures and be competent in the work they are Employed to do safety procedures and be competent in the work they are Employed to do • All necessary safety regulations must be abided by including building codes and fire practice requirements • Inspection of material and harmonization to the occupational health and safety standards. • Organize provision of adequate security for workers during construction, • Sensitize workers to operate in teams • Ensure that a rapid response unit is on call in case of any incidents	Contractor	Continuous
Oil Spillage	• Proper storage of liquids on site, such as oil, diesel and solvents. • Proper maintenance of construction vehicles and equipment. • Containment of Oil spills	IASO Medipark Limited FMEnv LSMEnv	Continuous
Increase in HIV/AIDs infection Incidence	• Provide counseling and testing for HIV/AIDS to incoming construction personnel • Strengthen advocacy through awareness training in HIV/AIDS and other STDs; • Encourage the use of preventive measures like condoms by availing condom dispensers to construction staff	IASO Medipark Limited	Continuous
Increased crime rates/ culture erosion	• Provide community awareness programmes	IASO Medipark Limited	Continuous
Increased water demand and changes in water quality	• Install water conserving taps that turn-off automatically when water is not being used within the project yard. Promote recycling and reuse of water as much as possible • Sensitize staff to conserve water by avoiding unnecessary water use	IASO Medipark Limited	Continuous
Disposal of excavation materials and equipment	• All these materials needs to be collected, transported and recycled or disposed off appropriately in approved designated areas. It is encouraged that other alternative uses of these materials should be found so that they can be turned into economic value and use	IASO Medipark Limited	Continuous
Soil Erosion	• Construction of cross drains • Avoid bare, disturbed surfaces for long periods (e.g. re-vegetation of stockpiled soils).	IASO Medipark Limited FMEnv LSMEnv	Continuous

	• Avoid undue storm-water concentration (e.g. construct run-off measures according to soil conservation of stockpiled soils). • Areas of localized fill and hill wash are to be avoided. • Where pipelines have been excavated, the areas must be returned to pre-construction state. • Subsoil must be returned to trenches after all pipes and other public utility facilities have been installed. • Topsoil must be reinstated and rehabilitated on top of sub soil. • All excavation works must be properly backfilled and compacted. • Rip compacted areas to reduce runoff and improve re-vegetation where required		
Slope destabilization	• Incorporate rehabilitation of the slopes measures through grass and tree planting. Alternative is to build concrete embankments.	IASO Medipark Limited FMEnv LSMEnv	Continuous
Generation of exhaust Emissions	• FMENV/ WHO environmental air emission standards should always prevail controlling black smoke, suspended particles of matter, Sulphur II oxide, Nitrogen II oxide and other parameters	IASO Medipark Limited FMEnv LSMEnv	Continuous
Dust emissions to air	• Spray stock piles of earth with water • Avoid pouring dust materials from elevated areas to the ground • Cover all trucks hauling soil, sand and other loose materials • Provide dust screen where necessary • Suitable wet suppression techniques need to be utilized in all exposed areas • All unnecessary traffic must be limited • Strict on-site speed controls are to be enforced • Wet suppression techniques will need to be undertaken, as necessary • Phasing of all earth moving activities must occur • Exposed areas not for farming or any other use must be re-vegetated at the earliest possible time	IASO Medipark Limited FMEnv LSMEnv	Continuous
Hydrology and water quality degradation	• Create diversion channels to ensure that no water flows across rehabilitated area until it is stable • Minimize reduction of channel length and preserve some meanders of the Rivers. • Control surface runoff by diverting run-off around the work areas • Construction of sedimentation retention ponds (if necessary) • In areas which are likely to experience increased runoff as a result of gradient and excessive clearing it will be necessary to construct silt traps. • Measures such as the use of hay bales in drainage lines or elsewhere • Use of gravel and geo textile silt barriers. • All diverted and pumped water shall be discharged at locations on the surface from which it cannot re-enter the works and in a manner which does not cause erosion, pollution or nuisance.	IASO Medipark Limited FMEnv LSMEnv	Continuous
Solid Waste Generation	• Use of an integrated solid waste management system i.e. through a hierarchy of options: - Source reduction - Recycling - Composting and reuse • Through accurate estimation of the sizes and quantities of materials required, order materials in the sizes and quantities they will be needed rather than	IASO Medipark Limited FMEnv, LSMEnv, LAWMA	Continuous

	cutting them to size, or having large quantities of residual materials • Ensure that construction materials left over at the end of construction will be used in other projects rather than being disposed off. • Ensure that damaged or waste construction materials will be recovered for refurbishing and use in other projects • Donate recyclable/reusable or residual materials to local community groups, institutions and individual. • Provide facilities for proper handling and storage of construction materials to reduce the amount of waste caused by damage or exposure to the elements • Use construction materials that have minimal or no packaging to avoid the generation of excessive waste • Running an educational campaigns amongstEmployees, e.g. through use of posters, to encourage reuse or recycling of the solid waste • Adequate measures to collect, remove and safely dispose of waste must be implemented during each stage of the proposed development from site preparation to final construction.		
Noise and Vibrations	• Sensitize workforce including drivers of construction vehicles • Install sound barriers for pile driving activity • Install portable barriers to shield compressors and other small stationary equipment where necessary • Maintain all equipment • Workers in the vicinity of high level noise to wear safety and protective gear • The planning of construction activities (Construction site) must endeavour to minimize the noise impact on adjacent communities. • In this regard vehicles should idle as little as possible, construction schedule times must be encouraged to keep noise to a minimum on site; • All generators and heavy duty equipment are to be insulated and /or placed within buildings to minimize the ambient noise levels	IASO Medipark Limited FMEnv LSMEnv	Continuous

Source: ESIA of Lagos Medipark Project, 2025

Operational Phase ESMP

The necessary objectives, activities, mitigation measures, and allocation of responsibilities pertaining to prevention, minimization and monitoring of significant negative impacts and maximization of positive impacts associated with the operational phase of the railway rehabilitation project are outlined in the table below:

Table 7.4: Operational phase Environmental and Social Management plan

IMPACT	MITIGATION MEASURES	RESPONSIBLE PARTY	FREQUENCY
Disruption and change of local livelihoods / outward migrations	• Employment of locals and considerations in job allocations especially for activities requiring unskilled labor • Re-training of directly affected person into railway related careers • Commissioning of other potential income generating activities along the rail line, e.g. revitalization of large-scale agricultural	IASO Medipark Limited	Continuous

	activities, mining, livestock farming, tourism, etc.		
Interference with cultural-set up of communities	• Ensure preservation of the cultural resources as per the provisions of AfDB OS 8	**IASO Medipark Limited**	**Continuous**
Increased crime rates/ culture erosion	• Develop programmes to enhance cohesion between project Employees and the local community.	**IASO Medipark Limited**	**Continuous**
Road safety	• Measures to slow down traffic shall be put in place • Ensure provision of appropriate road signage and pavement markings that are visible to road users. • Pay attention to road accident black spots on the road.	**IASO Medipark Limited/FRSC**	**Continuous**
Emissions to air	• Fuel-efficient and less pollution equipment shall be used where feasible • Consider the reduction and control of combustion source emissions • Consider the reduction and control of fugitive Emissions • Engine idling time shall be minimized • Equipment shall be properly tuned and maintained	**IASO Medipark Limited**	**Continuous**
Solid waste Management	• Use of an integrated solid waste management system i.e. through a hierarchy of options: Source reduction, Recycling and reuse • Ensure that solid waste generated is regularly disposed off appropriately at authorized dumping sites • Donate redundant but serviceable equipment to charities and institutions • cleaning contractors to segregate waste by the road side. • Waste storage, collection, transportation and disposal as per Waste Management Regulations. • Follow strictly NNRA Radioactive waste management regulations	**IASO Medipark Limited LAWMA FMEnv LSMEnv NNRA**	**Continuous**
Waste water Management	• Conduct regular inspections for pipe blockages or damages and fix them appropriately • Ensure regular monitoring of the drainages to avoid blockages. • Sensitize the public to avoid throwing refuse into the roadside drains as this can obstruct the free flow of storm water in the drains • Comply with the provisions of the Water Quality Regulations	**IASO Medipark Limited FMEnv LSMEnv**	**Continuous**
Pollution on vegetation	• Removal of blow down and other high-hazard fuel accumulations;	**IASO Medipark Limited FMEnv LSMEnv**	**Continuous**
Noise pollution	• Implementation of noise reduction or prevention measures at the source • Installation of noise controls at the source for improved sound-proofing, and other noise reducing features	**IASO Medipark Limited FMEnv LSMEnv**	**Continuous**
Fire risks	• Install adequate signage against activities that may cause accidental fires	**IASO Medipark Limited FMEnv LSMEnv**	**Continuous**

	• Provide and strategically place fire extinguishers within the buildings and sensitive areas • Train IASO Medipark Limited's personnel on firefighting techniques		
Health and Safety	• Implement all necessary measures to ensure health and safety of workers and the general public during operation phase.	**IASO Medipark Limited**	Continuous
Environmental compliance	• Undertake an environmental audit within 2 years after operation commences as required by law	**IASO Medipark Limited** **FMEnv** **LSMEnv**	Every two years

Source: ESIA of Lagos Medipark Project, 2025

Decommissioning phase ESMP

In addition to the mitigation measures provided in tables 6.3 and 6.4, it is necessary to outline some basic mitigation measures that will be required to be undertaken once all operational activities of the proposed Medical Park project Ikoyi have ceased. The necessary objectives, mitigation measures, allocation of responsibilities, time frames and prevention, minimization and monitoring of all potential impacts associated with the decommissioning and closure phase of the project are outlined in the table 7.5 below.

Table 7.5: Decommissioning phase Environmental and Social Management Plan

Impact	Mitigation Measures	Responsible Persons	Frequency
Demolition waste	- Use of an integrated solid waste management system i.e. through a hierarchy of options: 1. Source reduction 2. Recycling 3. Reuse - All buildings, machinery, equipment, structures such as guardrails and others that will not be used for other purposes must be removed and recycled/reused as far as possible - All foundations must be removed and recycled, reused or disposed of at an approved disposal site - Where recycling/reuse of the machinery, equipment, implements, structures, partitions and other demolition waste is not possible, the materials should be taken to an approved waste disposal site - Donate reusable demolition waste to charitable organizations, individuals and institutions	Contractor	Throughout the demolition
Noise and Vibration	- Sensitize workforce including drivers of construction vehicles - Install sound barriers for pile driving activity - Install portable barriers to shield compressors and other small stationary equipment where necessary - Proper maintenance of all equipment - Workers in the vicinity of high level noise to wear safety and protective gear (ear mug)	Contractor	Throughout demolition
Dust	- Spray demolished piles of earth with water - Avoid pouring dust materials from elevated areas to ground - Cover all trucks hauling soil, sand and other loose materials - Provide dust screen where necessary	Contractor	Throughout demolition
Site degradation	- Implement an appropriate re-vegetation programme to restore the site to its original status as much as possible. - Consider use of indigenous plant species in re-vegetation	(IASO Medipark Limited) and contractors	Throughout the demolition.

Source: ESIA of Lagos Medipark Project, 2025

Table 7.6: Environmental Monitoring Plan for the Lagos Medical Park project

Environmental Component	Impacts/Parameters to be monitored	Points to be monitored	Frequency of Monitoring	Requirement (materials/equipment)	Responsibility
Vegetation	Vegetation growth within the site	Project site	Continuous	Clearing equipment, Camera	Contractor and (IASO Medipark Limited)
Water quality	pH, Conductivity, Total Suspended Solids (TSS) and Total Dissolved Solids (TDS), heavy metals, COD, BOD and oils	Water bodies along the road corridor	Quarterly	Sampling bottles. Access to a FMEnv/NESREA Accredited Laboratory	Contractor and (IASO Medipark Limited) FMEnv LSMEnv
Occupational Health and Safety risks	Safety training for workers, accident reports, Number and types of accidents, causes, etc	Construction Points.	Continuous	Incidents log-book	Contractor and (IASO Medipark Limited)
HIV/AIDs Incidence	Training programmes, number of incidences, Numbers of condoms distributed, seminars, participants trained, etc	Project office, Construction sites.	Quarterly	Office Supplies	Contractor and (IASO Medipark Limited)
Soil Erosion	Soils eroded, Turbidity in storm water, sources and causes, etc	Steep slopes within the project	Continuous	Camera, field Vehicle	Contractor and (IASO Medipark Limited) FMEnv LSMEnv
Air quality	TSP, NOx, SO2, CO, Dust particles, particulate matter, etc	construction sites	Continuous during the project cycle	Air sampling Equipment	Contractor and (IASO Medipark Limited) FMEnv LSMEnv
Noise pollution	Levels of pollutions/ decibels	construction sites	Continuous during the project cycle	Noise measurement Equipment	Contractor and (IASO Medipark Limited) FMEnv LSMEnv
Solid Waste Generation	Slag, domestic refuse, metallic scraps, sludge, waste composition, treatment methods, etc	Construction sites, site Offices	Monthly	Office Supplies Waste sampling bins/ plastic bags/ boxes Weighing machines	Contractor and (IASO Medipark Limited) LAWMA, NNRA
Environmental Risks/ Hazards	Earthquakes/ tremors occurrences, fire outbreaks, rock falls, collision of materials, etc	Possible hazardous areas only	Continuous during operation stage	Field inspections and information from lead agencies	(IASO Medipark Limited) FMEnv LSMEnv

Source: ESIA of Lagos Medipark Project, 2025

7.7 Hazards and Effects Management Process

The management of hazards and effects of activities is central to effective Project Environmental Management. Hazard and Effect Management Process (HEMP) ensures that hazards and potential effects are fully evaluated. Environmental Impact Assessment Emphasizes the HEMP. The four stages of the process as applied in Environmental Management are;

- Identify hazards associated with project activity and the environment;
- Assess hazards and effects through assessment of magnitude and significance of the hazards and effects;
- Control hazards and effects, through implementing techniques to eliminate, lesson severity of effects, and manage the hazard;
- Recover from effects by developing plans to manage the consequences of events.

The above form the fundamental principles of the management and control of the environmental impact and the effect on the ESIA process. The impacts are enumerated based on hazard identification, risk assessment and application of preventive measures. Figure 7.3 shows the details of the HEMP. This process will be fully incorporated in the Environmental Management Plan of this project.

7.7.1 Safety and Hazard Identification

The aim of managing the HSE risks associated with a system is to reduce them to a level as low as reasonably practicable (ALARP).

The objectives for assessing these risks are to:

- Eliminate the hazard;
- Reduce the probability of hazardous events occurring;
- Minimize the consequences, in the event of the occurrence of the events

The activities involved in the construction/operation/decommissioning phases of the proposed Medical Park project Ikoyi are essentially; land take, site preparation (pilling, sand filling grading, concreting), construction (Road project), power generation for the street lighting, maintenance of the roads and ancillary facilities during operations, dismantling of the roads and associated structures and waste management during decommissioning. The associated HSE risks were considered and addressed.

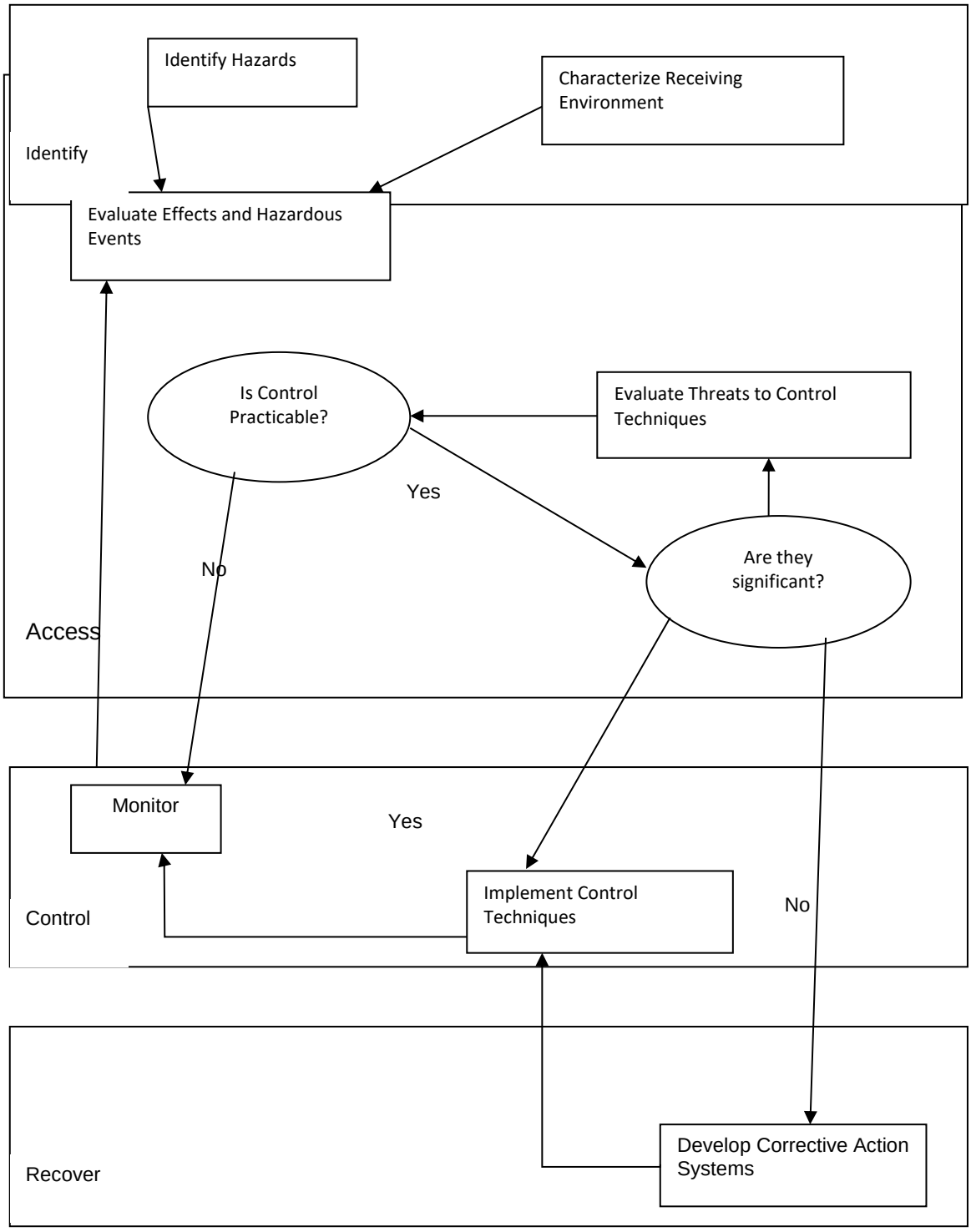


Figure 7.1: Hazards and Effects Management Process

7.8 Occupational Health and Safety Plan

The project proponent will implement a robust occupational health and safety procedures, which will be managed by senior personnel. However, it should appoint a Health, Safety, and Environment (HSE) Coordinator for health, safety and environment issues throughout the lifespan of the Hospital. The Environmental and Social Engaging Committee shall be responsible for the implementation and monitoring of the Environmental and Social Management Plan (ESMP) and Monitoring Plan, as well as coordinating with the proponent, government agencies, and the community at large.

HSE matters are a line management responsibility requiring active participation of all levels of management and supervision. The Management of the hospital should provide visible, strong and pro-active leadership and commitment to develop, implement, measure and improve the HSE Management System. This is to be achieved through active participation in safety practices, such as Management HSE walkthroughs, safety toolbox meetings, accident / Incident investigation, risk assessment, work site training and others.

The Operations Manager shall be responsible for:

- Approving and endorsing the HSE Plan,
- Ensuring that resources are available to execute the HSE Plan,
- Monitoring and adjusting the HSE Plan.
- The Social and Environmental Welfare Manager, as custodian of the HSE Plan has the responsibilities for:
- Developing the HSE Plan.
- Monitoring the HSE Plan and reporting its status, deviations and any need for adjustments.
- Enforcing and coordinating the overall workings of the HSE Plan.
- Training all HSE Representatives and Managers on the HSE Plan, procedures and notifying all changes.
- Keeping the Managing Director/Chief Medical Director immediately informed at all times on the occurrence of all accidents and anomalies together with all other HSE matters.

The Operation/ Site Manager has the responsibilities for:

- Enforcing an accident-free work environment.

- Enforcing the overall workings of the HSE Plan.
- Ensuring that the HSE Manager follows his/her responsibilities.
- Calling with immediate effect, for an accident and HSE investigation meeting with all personnel involved.

The Environmental and Social Engaging Committee will be the highest body that enforces the implementation of the HSE programme and meets not less than once every six months and/or when there is an emergency. It shall:

- Formulate amend, and review HSE Plan and the HSE Manual.
- Review the enforcement of the HSE Plan.
- Review all legal and statutory matters of HSE Plan.
- Review training and performance of HSE representatives and workforce.
- Review investigations of occupational accidents/incident and injuries.
- Consider employee safety suggestions.
- Appoints new HSE Representatives.
- Appoints HSE Officer.

In addition, IASO HSE policy shall be elaborated to meet the following objectives:

- Develop and pursue, through all stages of construction and operation, a systematic approach to risk reduction;
- Co-ordinate all health / safety/ environment objectives considering economical constraints;
- Include all activities within the general Sustainable Development Objectives of HSE;
- Ensure that all requirements are fully met, all hazards associated with each employee's job description is systematically identified and evaluated, as well as ensure the carrying any related risk reducing measures; and
- The overall goal is to reduce residual risks to a level that is As Low as Reasonably Practicable with respect to:
    i. Protection of human life
    ii. environmental impacts
    iii. safeguarding of assets

IASO Medipark Limited will continue to ensure adherence to laws and regulations related to HSE for the hospital project. These are:

- National laws and regulations;
- International laws and regulations; and
- Industry guidelines and codes of practice.

7.8.1 Occupational Health and Safety Action Plan

The proponent in addition to its SOP will implement the following:

- Adopt a policy of "Zero Tolerance" on accidents;
- Clearly define HSE line management responsibilities and objectives;
- Identify and assess all significant HSE risks and place measures which eliminate or minimize these risks to a level, which is feasibly as low as reasonably practicable;
- Employ trained and qualified people; provide effective supervision, personnel performance appraisals and supplementary training as necessary to enable all employees to work safely;
- Take action when safety concerns are raised and to support anyone who stops the work if they believe it is unsafe;
- Visibly imbibe safety through behaviour, implement regular HSE tours, and communicate effectively all HSE messages; and
- Promote open dialogue with personnel, and others with a view to achieving continuous improvement.

An effective and open communication/reporting system shall also be enhanced in order to ensure the correct implementation and constant improvement of the HSE Management System, including safety signs, notice boards, and awards. Moreover, HSE monthly meeting, weekly HSE representative meeting, and daily tool box meeting should be carried out to ensure HSE manners for the project. The practices stated below shall also be implemented by the project proponent:

Personal Protective Equipment (PPE): A list of PPE requirements shall be placed on noticeboards. Enforcement of PPE procedure is to be done by the HSE Manager and the HSE Representatives.

Medical Facilities: As a hospital, IASO shall evolve a global standard healthcare facilities of immense standards.

Medical Fitness: In order to maintain a healthy and productive work force, every prospective employee must undergo a pre-employment medical check to ascertain state of health and medical fitness prior to employment. Periodic medical checks will also be carried out on old employees. In both categories, an employee shall be issued a certificate of fitness which must be stamped and signed by a certified medical practitioner. This shall be a value adding service by the hospital for all employees.

First Aid: At the Construction Phase, First Aid trained representatives at ratio 1 to 30 employees shall be maintained. For severe cases, while the First Aid treatment is administered, the medical facility is notified and transportation is provided.

Drug and Alcohol Abuse: Use of alcohol and drugs is forbidden.

Smoking: Smoking is permitted only in designated smoking areas

Material and Safety Datasheet (MSDS): All MSDS used for construction and operation are recorded into a Safety Data Sheet Register and made available to First Aiders for reference in the case of an emergency. MSDS shall be pasted on the HSE Notice board in the facility. It is the responsibility of the HSE department to collate and keep MSDS sheets up to date

7.8.2 Emergency Preparedness and Response Plan (EPRP)

This emergency preparedness and response plan is to address unexpected occurrence within or adjacent to the proposed Medical Park project Ikoyi which could give rise to any or several of the following consequences. It is a good plan to anticipate every eventuality or combination of circumstances during the implementation of this project, therefore the following foreseeable emergency situations that may occur are critical to the project:

- Serious Personal Injury
- Confined Space Injury or Incident
- Loss of Life
- Fire
- Flooding: Storms, blocked drains, product spills, etc.

- Pollution: Escape of products, fuel, oil, gas, etc into adjacent premises, surface or foul water drains, river etc.

- Structural failure : Instability or collapse

- Severe project site interruption: Bomb threats, protesters etc

An emergency may be the result of a malfunction of normal operation procedures, plant or human error, but may also be caused by uncontrolled outside influences such as: Severe thunderstorm, flooding, Aircraft crash and emergencies outside the site or at adjacent premises.

The following accident and emergency procedures have been devised for dealing with such circumstances.

- The project contractor on site shall assess the scale of the emergency.
- The personnel shall alert emergency services if required.
- IASO Medipark Limited representative meets the Ambulance/Fire Brigade at the emergency site entrance with sentries along the route to direct them to the incident scene.
- The safety of personnel shall be secured by evacuating non-essential workers from the affected area and facilitate containment of the incident.
- Casualties receive medical attention as quickly as possible.
- Missing persons are checked and all persons on site are accounted, as applicable.
- All matters associated with the emergency will be dealt with by IASO Medipark Limited.
- IASO Medipark Limited takes appropriate action to control the site, to reduce potential for injury to persons and releases to air, water and ground.
- In the case of an environmental incident with potential for ground water contamination, all affected drains shall be sealed off and outlet valves around the site are shut off.
- If necessary contaminated waste removal specialists shall be called in.

- IASO Medipark Limited shall instigate effective liaison with the families of affected persons.
- IASO Medipark Limited shall advise personnel operating outside the affected area of any development and if appropriate inform any farm or other sensitive sites around the proposed Medical Park project Ikoyi.
- IASO Medipark Limited shall liaise with emergency services to contain/curtail the incident and provide advice and information as required.
- IASO Medipark Limited shall direct the shutting down and evacuation of the project site and all its ancillary facility, taking steps to minimize loss of material, property damage and transportation service interruption.
- IASO Medipark Limited shall arrange for the relief of personnel where the emergency is prolonged.
- IASO Medipark Limited shall preserve evidence that would facilitate any subsequent inquiry into the cause and circumstances of the emergency.
- IASO Medipark Limited authorized spokesperson shall be kept aware of the situation, subsequent developments and any approaches for information.
- IASO Medipark Limited shall arrange for re-entry of the area after the emergency has ceased.
- IASO Medipark Limited shall complete relevant check lists and relevant organization report forms.

7.8.3 Advance Planning For Evacuation

The requirement for shutting down processes and isolating machines or materials in the event of an emergency shall be reviewed as far as possible in advance as part of risk assessment, bearing in mind that individual safety is the priority and anything that may be left should be left. Areas of responsibility for verifying evacuation shall be allocated, with assembly points. Everyone in the project site shall be aware of the action they must take when the alarm is raised.

7.8.4 Emergency Response Planning Requirements

IASO Medipark Limited shall incorporate necessary safety measures into the engineering design of the proposed Medical Park project Ikoyi to ensure that the release of products, hazards, incidents, near misses and accidents are minimized, if not completely eliminated. Given the fact that accidents do occur due to human error, equipment failure or sabotage, there is a need to put in place sound and effective emergency response and contingency plans that can be promptly activated to minimize losses due to such accidents. Such contingency plans shall cover all project facilities and ancillary services.

IASO Medipark Limited shall implement best in class procedures to curtail leaks and emergency situations. These procedures shall promote the confidence of asset owners, operators and the general public and also greatly minimizes the potential risk of any spills, leakages or accidents.

7.8.5 Fire Prevention, Preparedness and Response

Diesel oil will be stored in the project compound for the generator use. It is worthy to note that without proper storage, these petroleum products as volatile substances can be very dangerous if they are not looked after carefully. Therefore, it is important to adopt proper procedures when handling or storing them. Oil storage shall be kept at room temperature and away from all heat sources. Ensure that a container is tightly sealed to avoid spillage. Oil should always be stored in secure areas with safety precautions. Fire drills will be conducted regularly, and firefighting teams also need well trained and organized. Fire alarms, fire hoses and hydrants, fire extinguishers, and evacuation routes should be inspected and properly maintained.

The emergency preparedness plan for fire hazards are:

- Keep the use and storage of combustibles to a minimum.
- Store flammable liquids in approved containers in well-ventilated storage areas.
- Strictly / prohibit smoking near storage area of flammable liquids.
- Place oily oil-soaked rags or waste in covered metal cans.
- Store adequate quantity of water for firefighting

Fire extinguishers should be provided at the project site. It is a very effective life-saving tools, if they are used properly. Fire extinguishers come in different varieties. It is important to choose the right kind of extinguishers for putting out different types of fire.

In case of fire, the following emergency response plan shall be implemented:

i. Alert other people through fire alarm

ii. If small case of fire, control by using an extinguisher or fire hose reel

iii. Contact the Lagos State Fire Services, if not under immediate control

iv. Attend to human life in immediate danger

v. Turn off power before fighting in the case of an electrical fire

vi. "DO NOT USE WATER" rather use fire extinguisher for oil and lubricant fire

vii. Once out of the building, employees, visitors and guests to stay out. Do not allow people to go back into the burning building to collect valuables. While exiting the building, doors are to be closed (but not to be locked) to slow down the spread of fire

viii. Obey all instructions

ix. Proceed to emergency evacuation area

x. First-aid measures should be followed to all injured persons and transfer to hospital if necessary.

xi. All emergency contacts, such as Lagos State Emergency Management Agency, Lagos State Fire Service, Lagos State Ambulance Services and others, should be identified and displayed in the facility

7.9 Inspection and Correction

The objective of the inspection and monitoring activities described in this section is to verify compliance with the ESMP. The inspection and monitoring approach will also be reflected in Contractor's HSE procedures. Engineering Contractors will be responsible for implementing IASO Medipark Limited environmental and social commitments in the field on a daily basis. Auditing of the monitoring and inspection activities by the Contractor and by IASO Medipark Limited provides the mechanism by which IASO Medipark Limited ensures that it remains compliant with regulatory commitments as well as its own HSE standards and policies.

The *inspection* activities described in this ESMP refer to qualitative monitoring, e.g., visual inspections. The *monitoring* activities described in this ESMP refer to effects and regulatory monitoring, some of which are Empirical.

7.9.1 Inspection

Inspection shall be conducted by the Contractor's HSE department on a daily basis. The results of the inspection and monitoring activities shall be made available to IASO Medipark Limited HSE Supervisor on a weekly basis or more frequently if requested by the, HSE Manager.

7.9.2 Monitoring

Monitoring will be conducted to ensure compliance with regulatory requirements as well as to evaluate the effectiveness of operational controls and other measures intended to mitigate potential impacts.

With respect to the significant impacts identified in the ESIA, IASO Medipark Limited has developed a program to monitor the effectiveness of the mitigation measures and also comply with regulatory monitoring requirements. The program has been discussed in earlier sections.

7.9.3 Remediation Plans after Decommissioning

The incorporation of remediation plans into the overall project planning is essential because it allows IASO Medipark Limited to understand the need for restoring the environment into its original, or near its original status when abandonment plans are being conceptualized. Operating projects beyond the designed lifespan makes it economically unproductive as returns from such investment become unattractive. Therefore, investors make appropriate plans for either temporarily or permanent closures of facilities after the expiration of the project useful life. The useful life of any project is determined by a number of factors, among which are:

- Specifications of materials;
- Durability of equipment and machinery;
- Profitability of the proposed Medical Park project Ikoyi; and
- Importance of the end product.

IASO Medipark Limited has estimated that the proposed Medical Park project Ikoyi has a life cycle of over 50 years. The activities to be carried out during the decommissioning phase shall include the following:

- Dismantling of the facility and other ancillary equipment and
- Removal of all structures.

The potential impacts that might result from the decommissioning phase of the proposed Medical Park project Ikoyi have been earlier identified and discussed in Chapter 5.

The strategy to be adopted for site remediation shall depend on the prevailing biophysical and social environmental attributes and the attendant impacts that may result from such an action.

7.10 Mitigation Measures and Monitoring Implementation Budget

The mitigation measures and associated training and monitoring activities identified in Table 7.3, 7.4 and 7.5 have been included in the IASO Medipark Limited's project budget considerations by the company. These shall be refined throughout project implementation phases to reflect reality at time of implementation.

7.11 Corporate Social Responsibility Plan

In line with established global Corporate Social Responsibility (CSR) policies, the management of the hospital will also implement and donate a percentage of its net profit per year for Corporate Social Responsibility (CSR) and Employee Welfare Arrangement. Indeed, the CSR Plan will be a reinvigoration of the proponents, who has given a commitment to Lagos State Government, its partner on the project is to devote twenty percent of bed spaces in the hospital to the community. Table 7.7 highlights some of these plans.

Table: 7.7. Corporate Social Responsibility Plan

Area	Priority Item	Detailed Targets
Community Involvement and Development	Donation to Local Community	• Donate to local non-governmental organization with a worthy cause • Actively participate in community events • Encourage staff to participate, and to form a community engagement team to actively support community events • Embedding understanding and consciousness about human rights issues among the employees • Development of sexual harassment and "power harassment" (workplace

		bullying and harassment) prevention efforts
Sustainable Environment	Implementation of ESMP and BMP	• Replanting of trees • Water quality control • Raise awareness training • Implement monitoring and management plan • Implement clean-up activities
Human Rights	Raising awareness of human rights	• Establish a workplace culture where human rights issues do not arise.
Compliance to Law	CSR Procurement	• Sharing values regarding the promotion of CSR activities with business partners and avoiding procurement risks with key partners • Effect extensive compliance and adherence to laws and regulations about procurement tasks • Continuous compliance to environmental Regulations

Source: ESIA of Lagos Medipark Project, 2025

7.12 Grievance Redress Mechanism

IASO Medipark Limited will set up a project-specific Grievance Redress Mechanism (GRM) for people to report concerns or complaints, if they feel unfairly treated or are affected by any of their projects, especially if significant E&S issues including Gender Based Violence (GBV) / Sexual Exploitation and Abuse (SEA) or land disagreements are identified or may be a potential. The residents' associations of the Saint Gregory College Sector of Obalende, Ikoyi, southwest area, the MDAs of the State and the traditional rulers are important in this regard. The Eti-Osa Local Government Community Development Association, which is fully aware of the project and have been engaged in various meetings. The mechanism will amongst other things:

(a) Provide information about project implementation

(b) Provide a forum for resolving grievances and disputes at the lowest level

(c) Resolve disputes relatively quickly before they escalate to an unmanageable level

(d) Facilitate effective communication between the project and affected persons

(e) Win the trust and confidence of project beneficiaries and stakeholders and create productive relationships between the parties.

The mechanism is envisaged to be at multiple levels and will address such complaints, including logging, tracking, and resolving grievances promptly during and after the implementation of the Project.

IASO Medipark Limited has dedicated unit to be responsible for setting up and maintaining the GRM that allows general public in the project area and affected communities or individuals to file complaints and to receive responses in a timely manner. The system will also record and consolidate complaints and their follow-up. This system is designed for handling complaints perceived to be generated by the project or its personnel. It may also include disagreements about land acquisition and other related matters.

The GRM includes the following elements:

- Different ways in which users can submit their grievances, which may include submission in person, by phone, text message, mail, email or via a website including confidential channels for GBV /SEA complaint reporting;
- A log where grievances are registered in writing and maintained as a database;
- Publicly advertised procedures, setting out the length of time users can expect to wait for acknowledgement, response, and resolution of their grievances;
- Transparency about the grievance procedure, governing structure and decision makers; and
- Appeals process to which unsatisfied grievances may be referred when resolution of grievance has not been achieved.

Table 7.8: Grievance Management Process

Process	Description	Time Frame	Other Information
Identification of grievance	• Face to face; phone; letter; mail; e-mail; website; recorded during public/ community interaction; • The responsible party to receive the grievances will be the project proponent • The grievance can also be passed through other parties, such as the community traditional ruler's office because the host communities/public are more conversant with this office. • The grievance receiver would then pass the complaint to IASO Medipark Limited contact person	1 Day	Email address; hotline number: -
Grievance assessed and logged	• Significance assessed and grievance recorded or logged (i.e., in a log book) • It will be prudent to have a grievance record book where the grievances are recorded for follow up	3-6 Days	Significance criteria: • Level 1 –one off event; • Level 2 – complaint is widespread or repeated; • Level 3- any complaint (one off or repeated) that indicates breach of law/ policy or this ESMP provisions
Grievance is acknowledged	Acknowledgement of grievance through appropriate medium	3 Days	
Development of response	• Grievance assigned to appropriate party for resolution • Response development with input from management/ relevant stakeholders	4-8 Days	
Response signed off	Redress action approved as appropriate	8-15 Days	
Implementation /communication of response	Redress action implemented and update of progress on resolution communicated to complainant(s)	5-9 Days	

Source: ESIA of Lagos Medipark Project, 2025

If complainants are not satisfied with the grievance process, even after arbitration, the affected persons will still have the right to present their complaint through the court system.

7.13 Stakeholder Engagement Plan

The process of engagement and consultation in the project spans the entire lifetime of the project, from inception to its closure. The goal of the project's Stakeholder Engagement Plan is to promote and provide means for effective, inclusive, accessible and meaningful engagement with project-affected parties throughout the project life-cycle on issues that could potentially affect them during implementation of the various project activities. While advancing effective, inclusive and meaningful engagement with project- affected parties, IASO with support from implementing agencies and partners shall conduct consultations that will ensure two-way communication processes. The objective of the engagement and consultations plan under the project is to:

a) Begin early in the project planning process to put together initial views on the project proposal and inform project design;

b) Encourage stakeholder feedback, particularly as a way of informing project design and engagement by stakeholders in the identification and mitigation of environmental and social risks and impacts;

c) Ensure that stakeholders understand how the project is likely to affect them;

d) Ensure consistency in messaging;

e) Continue engagement on an ongoing basis as risks and impacts arise and manage stakeholders' expectations;

f) Ensure prior disclosure and dissemination of relevant, transparent, objective, meaningful and easily accessible information in a timeframe that enables meaningful consultations with stakeholders in a culturally appropriate format, in relevant local language(s) and is understandable to stakeholders;

g) Consider and responds to feedback;

h) Support active and inclusive engagement with project-affected parties;

i) Ensure that consultation(s) is/ are free of external manipulation, interference, coercion, discrimination, and intimidation; and

j) Ensure consultation (s) is/are documented and disclosed.

7.13.1 Summary of Project Stakeholder Needs and Methods, Tools, and Techniques for Stakeholder Engagement

Different engagement methods are proposed to address the diverse needs of stakeholders involved in the proposed project. The methods, tools, and techniques for stakeholder engagement are tailored to ensure effective communication, participation, and feedback from all stakeholders. These methods include:

Structured Agenda

- **Description:** Meetings and consultations will follow structured agendas to ensure all key topics are covered and discussions remain focused.
- **Stakeholder Needs Addressed:** Ensures organized and productive meetings, allowing stakeholders to prepare and participate effectively.
- **Methods Used:** Formal meetings, community consultations, and focus group discussions.

Focus Group Meetings/Discussions

- **Description:** Small group discussions will be held with specific stakeholder groups to gather detailed feedback and address specific concerns.
- **Stakeholder Needs Addressed:** Provides an opportunity for in-depth discussions and input from targeted groups, including vulnerable populations.
- **Methods Used:** Focus group meetings, community consultations, and one-on-one interviews.

Community Consultations:

- **Description:** Open meetings will be held within communities to provide project updates, gather feedback, and address any concerns.
- **Stakeholder Needs Addressed:** Ensures transparency, inclusiveness, and broad-based community participation.
- **Methods Used:** Public meetings, village gatherings, and information sessions.

Formal Meetings

- **Description:** Scheduled meetings with government entities, project partners, and key stakeholders to discuss project progress and strategic issues.
- **Stakeholder Needs Addressed:** Facilitates formal dialogue, decision-making, and coordination among key stakeholders.

- **Methods Used:** Formal meetings, roundtable discussions, and strategic planning sessions.

One-on-One Interviews

- **Description:** Individual interviews with key stakeholders to gather detailed and confidential feedback.
- **Stakeholder Needs Addressed:** Allows for personalized engagement and the collection of sensitive or detailed information.
- **Methods Used:** Personal interviews, telephone interviews, and face-to-face discussions.

Site Visits

- **Description:** Visits to project sites to observe progress, engage with local stakeholders, and address site-specific issues.
- **Stakeholder Needs Addressed:** Provides firsthand insight into project implementation and allows for direct interaction with affected communities.
- **Methods Used:** Site inspections, walkthroughs, and on-site consultations.

7.13.2 Examples of Stakeholder Engagement Activities:

- Government Entities: Correspondence by phone/email, formal meetings, and roundtable discussions.
- Local Communities and Vulnerable Groups: Letters to village leaders, traditional notifications, community meetings, focus group discussions, and outreach activities.
- Project Updates and Information Dissemination: Public notices, press releases, project website updates, consultation meetings, information leaflets, and brochures.

Language and Accessibility:

- Information will be disclosed in local languages to ensure accessibility for all stakeholders.
- Documents will be available in culturally appropriate formats and distributed through accessible channels.

Stakeholder Engagement Plan

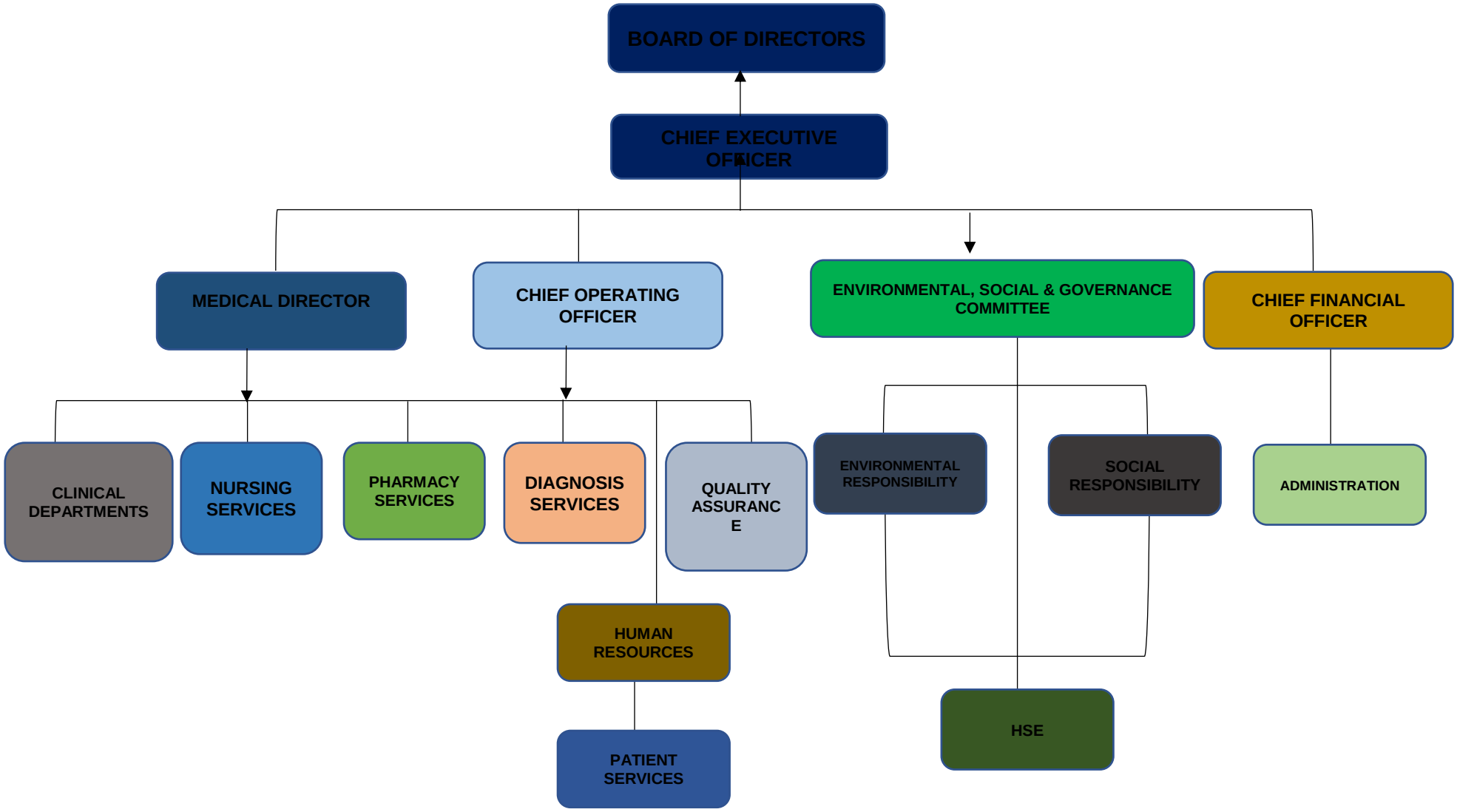
The following table outlines the stakeholder engagement plan for the proposed Lagos Medipark project, the plan ensures that all relevant stakeholders, especially vulnerable groups, are consulted and engaged throughout the project stages.

Table 7.9. Stakeholders Engagement Plan for Lagos Medipark Project

Project Stage	Topic of Consultation/Message	Method Used	Target Stakeholders	Responsibilities
Inception Phase	Introduction to the project and its objectives	Correspondence by one/email; formal meetings	Government entities, local government authorities	E&S Specialist, Project Manager
Baseline Data Collection	Current socio-economic conditions and challenges	One-on-one interviews; focus group discussions	Local communities, vulnerable groups (e.g., poor women, persons with disabilities)	Field Assessment Team
Needs Assessment	Identification of community needs and priorities	Community meetings; letters to village leaders	Community leaders, local NGOs	Community Liaison Officer, Project Manager
Draft Development	Proposed stakeholder engagement strategies	Disclosure of project documentation; public hearings	General public, environmental and social NGOs	Project Manager, E&S Specialist
Capacity Building	Training on engagement methods and communication strategies	Training workshops; outreach activities	Government officials, community representative s	Training Coordinator, E&S Specialist
Feedback & Review	Review of draft Stakeholder Engagement Plan	Focus group discussions; formal meetings	Government entities, local government authorities, local communities	E&S Specialist
Final SEP Presentation	Final SEP presentation and feedback	Formal meetings; community meetings; public hearings	General public, local communities, government officials	Project Manager, E&S Specialist
Implementatio n	Continuous stakeholder engagement and feedback	Surveys; periodic reviews; feedback mechanism	All stakeholders	E&S Specialist and Monitoring & Evaluation unit

Source: ESIA of Lagos Medipark Project, 2025

7.14 Organization Structure



CHAPTER EIGHT

8.0 DECOMMISSIONING AND CLOSURE PLAN

8.1 Overview of Decommissioning

Although the Lagos Medipark Project is designed as a long-term tertiary healthcare facility, it is recognized that at some future date certain components of the development may require major rehabilitation, upgrading, repurposing, or eventual decommissioning. Decommissioning may occur either partially, where specific facilities or infrastructure reach the end of their operational life, or fully in the unlikely event of permanent closure. Given the specialized nature of the facility including diagnostic laboratories, radiation units, medical waste handling systems, power generation systems, and wastewater treatment infrastructure decommissioning activities must be carefully planned and executed to prevent environmental contamination, public health risks, and occupational hazards.

The decommissioning strategy described in this ESIA is based on current Best Available Technology (BAT) and prevailing regulatory standards. A detailed Decommissioning and Abandonment Plan (DAP) will be developed closer to the time of closure and submitted to the Federal Ministry of Environment and other relevant authorities for review and approval prior to implementation.

8.2 Institutional and Regulatory Framework

Decommissioning activities shall be undertaken in consultation with, and under the supervision of, relevant Federal and State regulatory agencies. These may include the Federal Ministry of Environment, Lagos State Ministry of Environment, radiation protection authorities, health regulatory agencies, and approved waste management bodies.

All statutory approvals, permits, and notifications required at the time of decommissioning shall be obtained before commencement of works. The regulatory process will ensure that environmental and social safeguards are maintained and that closure activities are conducted in accordance with national environmental legislation and applicable international standards.

8.3 Scope of Decommissioning Activities

The scope of decommissioning will depend on the nature and scale of closure activities at the time. However, the following activities are anticipated.

8.3.1 Structural Rehabilitation, Renovation, and Deconstruction

Where renovation or reconstruction is required, existing structures may be modified or partially dismantled. In cases where buildings or structural elements are to be removed, controlled deconstruction methods shall be employed to minimize dust generation, noise impacts, and safety risks.

Concrete works may be dismantled systematically, with rubble either transported to approved disposal facilities or reused for backfilling and rehabilitation where technically feasible. Reinforcement steel and other salvageable materials shall be segregated and recycled where possible in order to minimize waste generation.

All demolition and reconstruction activities will be undertaken in accordance with occupational health and safety standards, and measures will be implemented to protect nearby communities from nuisance impacts such as dust and excessive noise.

8.3.2 Utilities and Infrastructure Systems

At the time of decommissioning, water supply systems, power infrastructure (including generators and solar installations), wastewater facilities, drainage systems, internal roads, and fencing may require removal, replacement, or upgrading.

Fuel storage systems, transformers, battery banks, and electrical equipment will be carefully decommissioned in accordance with hazardous materials management requirements. Any residual oils, fuels, or chemical substances shall be drained, containerized, and disposed of through licensed contractors.

Where boreholes or wastewater facilities are to be permanently abandoned, proper sealing and stabilization procedures shall be undertaken to prevent groundwater contamination or future environmental risk.

8.3.3 Hazardous Materials and Medical Equipment

Due to the healthcare nature of the project, special attention will be given to hazardous and sensitive materials during decommissioning. These may include laboratory chemicals,

pharmaceutical products, cytotoxic substances, radioactive materials, and medical waste handling equipment.

All radioactive sources associated with nuclear medicine or diagnostic equipment shall be returned to licensed suppliers or transferred to authorized disposal facilities in accordance with national radiation safety regulations. Chemical inventories shall be audited, and unused or expired materials shall be safely neutralized or disposed of through certified hazardous waste handlers.

Medical waste treatment systems such as incinerators or autoclaves shall be decontaminated prior to dismantling. Storage tanks and pipelines shall be drained, cleaned, and inspected for contamination before removal.

8.3.4 Soil and Groundwater Protection

During decommissioning, all exposed surfaces and subsurface areas shall be assessed for signs of contamination from fuels, lubricants, chemicals, wastewater, or medical residues. If contamination is suspected, environmental sampling of soil and groundwater shall be undertaken. Where contamination is confirmed, remediation measures such as excavation, containment, or treatment shall be implemented in accordance with regulatory requirements. Post-remediation verification sampling shall be conducted to confirm that environmental quality standards have been restored to acceptable levels.

8.3.5 Waste Management During Decommissioning

Decommissioning activities will generate construction debris, scrap metal, electrical and electronic waste, hazardous waste, and potentially residual medical waste. A dedicated Decommissioning Waste Management Plan shall be prepared to guide waste segregation, storage, transportation, recycling, and disposal.

All wastes shall be handled by licensed waste management contractors, and waste manifest documentation shall be maintained to ensure traceability and regulatory compliance. Efforts shall be made to maximize recycling and reuse in order to reduce the volume of waste requiring final disposal.

8.3.6 Occupational Health and Safety

Decommissioning activities may pose elevated occupational risks including exposure to dust, hazardous materials, confined spaces, working at height, and equipment-related hazards. A site-specific Health, Safety and Environment (HSE) Plan shall therefore be implemented.

This plan will include worker induction training, provision of appropriate personal protective equipment, emergency response preparedness, permit-to-work systems, and continuous supervision to ensure safe work practices.

8.3.7 Environmental Restoration

Following dismantling or renovation works, disturbed areas shall be restored to stable and environmentally acceptable conditions. Restoration measures may include regrading of surfaces, replacement of topsoil, revegetation with suitable plant species, and stabilization of drainage channels.

The objective will be to ensure that the site does not pose ongoing environmental or safety risks and that land use remains compatible with surrounding developments.

8.4 Stakeholder Engagement During Decommissioning

Prior to and during decommissioning activities, stakeholders including host community representatives, regulatory authorities, and affected parties shall be informed of planned activities. The grievance redress mechanism established during the operational phase shall remain active throughout the decommissioning period to address any concerns that may arise. Where closure results in workforce reductions, a structured disengagement and transition plan shall be implemented in accordance with labour regulations.

8.5 Post-Decommissioning Reporting

Upon completion of decommissioning activities, a Post-Decommissioning Report (PDR) shall be prepared and submitted to the Federal Ministry of Environment.

The report shall provide a comprehensive account of closure activities, including the facilities decommissioned, methodologies adopted, waste disposal documentation, remediation measures implemented, stakeholder engagement records, and the final environmental condition of the site. The report shall demonstrate compliance with all

regulatory requirements and confirm that the site has been left in a safe and environmentally sound condition.

8.6 Financial Provision

Provision shall be made within the long-term financial planning of the project to accommodate decommissioning and restoration costs. This may include the establishment of a decommissioning reserve or financial assurance mechanism to ensure that adequate resources are available when closure activities become necessary.

The Lagos Medipark Project is committed to ensuring that any future decommissioning activities are conducted responsibly, safely, and in full compliance with national environmental standards. Through careful planning, regulatory coordination, environmental protection measures, and stakeholder engagement, the project aims to ensure that closure or rehabilitation activities do not result in adverse environmental or social impacts.

CHAPTER NINE

CONCLUSIONS AND RECOMMENDATIONS

The consideration of environmental, social, health and safety issues associated with the Proposed Lagos Medipark Project was integrated into project planning from the conceptual stage, in line with the requirements of the Federal Ministry of Environment (FMEnv) and the African Development Bank (AfDB) Integrated Safeguards System (ISS). Multidisciplinary teams of experts undertook sustainability-based value engineering and impact assessments, which will continue to guide decision-making throughout the construction, operation, and long-term management phases of the project. The ESIA has been prepared in accordance with applicable Nigerian regulations and consistent with international best practice.

Baseline environmental quality assessments, including ambient air quality, noise levels, surface runoff, and groundwater quality, were conducted and evaluated against National Environmental Quality (Emission) Guidelines, World Health Organization (WHO) drinking water standards, and other relevant international benchmarks. The results indicate that baseline environmental conditions are generally within acceptable limits, and that with the implementation of recommended mitigation measures, potential adverse impacts on biophysical, social, and health receptors are expected to be low and manageable.

The proposed project will deliver significant positive socio-economic and public health benefits. It will enhance access to high-quality tertiary healthcare services, reduce reliance on outbound medical tourism, and strengthen the healthcare resilience of Lagos State, particularly in responding to public health emergencies. In addition, the project will generate substantial direct and indirect employment opportunities during the construction, operation, and maintenance phases, thereby contributing positively to local and regional economic development.

While the development is expected to result in localized and largely temporary pressures on infrastructure and environmental resources such as increased traffic volumes along sections of Awolowo Road and the conversion of a previously underutilized site into an active urban facility. These impacts have been assessed as minor to moderate and are considered manageable. Appropriate design measures, scheduling controls, and infrastructure management plans have been incorporated to mitigate such effects.

As a Public–Private-Partnership (PPP) initiative, the Lagos Medipark Project has the potential to deliver measurable macro- and micro-economic benefits to Lagos State and Nigeria at large. All identified adverse impacts will be addressed through integrated design controls, operational procedures, and clearly defined commitments and action plans. Compliance with regulatory requirements and adherence to international lender standards will ensure that impacts assessed as low remain within acceptable and tolerable limits.

Potential impacts assessed as moderate or high prior to mitigation will be eliminated or reduced through the implementation of appropriate, phase-specific mitigation measures. These include a comprehensive waste management system for healthcare and non-healthcare waste, resource efficiency measures, traffic and transport management, emergency preparedness and response arrangements, and occupational health and safety controls. The proponent's commitment to environmental sustainability, efficient resource management, and robust health and safety policies is expected to significantly enhance the effectiveness of these mitigation measures.

To support effective implementation, this ESIA provides a comprehensive Environmental and Social Management Plan (ESMP), supported by subsidiary plans, including but not limited to:

- Waste Management Plan;
- Traffic and Transportation Management Plan;
- Emergency Response and Fire Safety Plan;
- Corporate Social Responsibility and Community Development Plan; and
- Decommissioning Plan.

The Traffic and Transportation Management Plan, which has been reviewed and approved by the Lagos State Ministry of Transportation, will play a critical role in mitigating traffic-related impacts. IASO Medipark Limited is committed to implementing the ESMP and associated action plans in a safe, environmentally responsible, and socially inclusive manner. In line with AfDB and FMEnv requirements, the proponent will continue to engage proactively with Federal, State, and Local Government authorities, host communities, and other stakeholders throughout the project lifecycle.

Based on the findings of this Environmental and Social Impact Assessment (ESIA), the proposed Lagos Medipark Project has been systematically evaluated in accordance with

applicable national environmental legislation, the guidelines of the Federal Ministry of Environment, and relevant international standards, including the African Development Bank (AfDB) Environmental and Social Safeguards framework.

The assessment has identified potential environmental and social impacts associated with the pre-construction, construction, operational, and decommissioning phases of the Project. Appropriate mitigation measures, monitoring programmes, and institutional arrangements have been developed and incorporated into the Environmental and Social Management Plan (ESMP) to ensure that identified risks are avoided, minimized, mitigated, or managed to acceptable levels.

Subject to full implementation of the ESMP, adherence to regulatory requirements, and continuous monitoring and reporting, the residual impacts of the Project are expected to be minor to moderate and manageable within established environmental standards. No irreversible or unmitigable adverse impacts of significant magnitude have been identified.

The Project is anticipated to deliver substantial long-term positive outcomes, including improved access to specialized healthcare services, enhanced medical infrastructure capacity, employment generation, skills development, strengthened local economic activity, and overall socio-economic advancement within Ikoyi and the wider Lagos Metropolis. In addition, the integration of sustainable design features, renewable energy systems, modern waste management practices, and robust occupational health and safety frameworks further enhances the Project's environmental performance and resilience.

Accordingly, it is the professional opinion of this ESIA that, provided all recommended mitigation, monitoring, stakeholder engagement, and institutional measures are diligently implemented and maintained throughout the Project lifecycle, the Lagos Medipark Project is environmentally and socially viable and consistent with the principles of sustainable development.

The Project is therefore recommended for approval by the Federal Ministry of Environment and is considered aligned with the environmental and social safeguard requirements of the African Development Bank, subject to ongoing compliance, supervision and reporting as stipulated in this ESIA.

REFERENCES

Alden, P., Estes, R, Schlitter, D. and McBride, B. (1995). *Guide to African Wildlife.* Happer Collins. London

American Public health Association (1995). *Standard methods for the examination of water and wastewater* 19th ed.

Awosika, L. F., and Ibe,A. C, (1994). Geomorphic features of the Gulf of Guinea shelf and littoral drift dynamics. In Proc. International symposium on the results of the first TOCEA cruise in the Gulf of Guinea, 17-20 May 1994.

Chapman Deborah (1992). "Water Quality Assessments", Published by Chapman and Hall Ltd, London

Clason, EW.I-I., Tellegen,B.D.H.,FriijIink, H.C,Thijsse, J.Th.,Jansen,P.Ph .and 5chijf,J.B (1954). Report on the Western Niger Delta by the Netherlands Engineering Consultants to the Government *of* Nigeria. Lagos: The Hague; NEDECO.143p

Egborge, AB.M (1988). Water hyacinth - a biological museum. *Proceeding International Workshop on Water Hyacinth.* Oke, 5.0., Imevbore A.M.A and Farri, T.A (eds.)

Elgood, J.H., Heigham, J. B., Moore, A. M., Nason,' A. M., Sharland, R. E. & Skinner, N. J. (1994). *The Birds of Nigeria: An annotated checklist.* B.O.U., Tring, Herts. 2nd ed.

FEPA (1991). *National Environmental Protection (effluent Limitation) Regulations.* Federal Environmental Protection Agency, Nigeria.

FEPA (1991). National Guidelines and Standard for Environmental Pollution in Nigeria.

Gilbert D. A. E. (1969). Ltd *A map book of West Africa.* Macmillan Co. (Nig.)

Government (2017). Lagos State Environment Management Law (2017).

Harrison, M.K (1982). Pollution, Causes Effects and Control. Special Publication No. 44, based on the paper given at a Residential school organized by the continuing Education committee of the royal society of Chemistry, University of Lancaster J 3 - 15 Spt, 1982.

Hayman, P., Marchant, J. & Prater, T. (1986). *Shorebirds: An identification Guide to Waders of the World.* Helm, London.

IITA (1979). Methods of Soils and Plant Tissue Analysis (International Institute for Tropical Agriculture (IIT A), Ibadan, 1979).

Jefferson, A T., Leatherwood, S. and Webber, M. A. (1993). *Marine Mammals* of *the World.* FAO Species Identification Guide. FAO Rome.

Lagos State Government (2011),Alimosho Model City Plan 2010-2020.
Lagos State Government (2011) Lagos State Public Private Partnership Law, 2011

Mackworth-Praed, *C.W.,* & Grant, C.H.B. (1970-1973). *African Handbook of Bird Series, Series Ill. Birds of West Central and Western Africa.* 2 Vols. Longman, London.

Maclaren, P. 1. R. (1952). The sea and creek birds of Nigeria: Part 1. *Niger. Fld.,* 17:160-174.

MDS/MOA Planners Limited (2024). E.I.A for the Proposed New Festac Town Development.

Ministry of Environment, Lagos State (2011). Lagos State Adaptation Project, Cluster B, Final Report. Beachland Resources Limited.

MOA Planners Limited (2016). Environmental Impact Assessment Studies for Leadway Office Development (18 Floors), Victoria Island, Lagos.

NAPCA, (1969). Air Quality criteria for SPM U.S. Dept of Health, Education and Welfare, National Air Pollution Control Administration Washington D.C, NAPCA Publication NOAP 49.

Ogunleye, M. and Awomosu, T. (2011). "Lagos as a region" in State of the Environment Report – 2010 in Ogunleye and Alo (eds), Ministry of the Environment, Lagos State and Beachland Resources Limited.

Olaniyan, C. I. O. (1975). *An introduction to West Africa Animal Ecology.* 2nd ed. Heinemann Educational Books Ltd. London and Ibadan.

Papadakis, J. (1965). *Crop ecologic survey in West Africa (Liberia, Ivory Coast, Ghana,Togo, Dahomey, Nigeria)* Vol. II - Atlas, FAO.

Soboyejo, A. B. O. (1975). Extreme winds in West Africa. *Journal of the West Africa Science Association Vol.20 (no 1) pp.:* 53-74.

Thompson, B. W. (1975). Africa; *The climatic background - Studies in the development of African resources.* Oxford University Press. Ibadan.

United States Department of Agriculture and National Resources Conservation Services (1998). Keys to Soil Taxonomy. 7th Edition. United States Government printing Office, Washington D.C.

DIRECTOR
ENVIRONMENTAL ASSESEMENT
DEPARTMENT
13 NOV 2025
Name:
Sign

RC: 493538
LABSTAFF NIGERIA LIMITED

MINISTRY OF ENVIRONMENT ABUJA
13 NOV 2025
Sign

12th November, 2025

The Honourable Minister,
Federal Ministry of Environment,
Federal Secretariat,
Mabushi,
Abuja.

The Hononourable Minister, Sir,

NOTIFICATION TO CONDUCT ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA) FOR THE PROPOSED LAGOS MEDIPARK PROJECT IN IKOYI, ETI-OSA LGA, LAGOS STATE

Kindly refer to the above named subject matter.

This is to inform the Ministry of the intention of IASO Medipark Limited to conduct Environmental and Social Impact Assessment (ESIA) of her proposed project, titled and hereinafter called "LAGOS MEDIPARK PROJECT". The project will be located on a parcel of land measuring approximately 1.6Ha, plot no. 1 – 9, Awolowo Road, Ikoyi, Eti-Osa LGA of Lagos State.

The proposed Lagos Medipark project is a modern, 140-bed multi-specialist healthcare facility to be developed by IASO Medipark Limited in partnership with Lagos State Government, through a Public-Private Partnership (PPP) model.

This ESIA will comply with EIA Act CAP E12, LFN 2004, Lagos State Environmental Protection Laws, African Development Bank's Environmental and Social Assessment Procedures (ESAP, 2021) and all extant laws relevant to the study and the project implementation. Details of study scope are contained in the attached Terms of Reference (ToR) and ESIA registration form. Also attached is Remita Receipt of N50,000.00 (fifty thousand naira only) being evidence of payment for ESIA registration.

While thanking the Honourable Minister for co-operation, please do have the assurances of our highest regard, Sir.

For: Labstaff Nigeria Limited

Simon ODAUDU
Chief Technical Consultant

Abuja Office: Suites G03-8 Millipat Plaza by Abuja City Gate, Umaru Musa Yar'dua Way (Formerly Airport Road) FCT.
Tel: +234 (0) 929 18071, +234 809 592 6550, +234 803 589 9609 E-mail: labstaffnigeria@yahoo.com
Environmental Resource Managers

TERMS OF REFERENCE (ToR)

for

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA)

for the proposed

LAGOS MEDIPARK PROJECT, IKOYI, ETI-OSA LGA, LAGOS STATE

By

IASO MEDIPARK LIMITED
Mansard Place, 4th Floor Wing B,
Plot 927-928, Bishop Aboyade Cole Street,
Victoria Island, Lagos state.

Submitted to

FEDERAL MINISTRY OF ENVIRONMENT,
FEDERAL SECRETARIAT,
MABUSHI, ABUJA.

12TH NOVEMBER, 2025

1.0 INTRODUCTION

IASO Medipark Limited commissioned Labstaff Nigeria Limited to conduct Environmental and Social Impact Assessment (ESIA) of its proposed Lagos Medipark project ("the project") located at No. 1–9 Awolowo Road, Ikoyi in Eti-Osa Local Government Area, Lagos State. The aim of the ESIA is to meet Federal Ministry of Environment's certification and AfDB requirements.

The proposed Medipark project is a modern, 140-bed multi-specialist healthcare facility to be developed by IASO Medipark Limited in partnership with the Lagos State Government through a Public-Private Partnership (PPP) model.

Strategically situated at Plot 1–9 Awolowo Road, Ikoyi, Eti-Osa LGA, Lagos State, this is a visible and accessible location suitable for premium healthcare delivery. The master plan includes: a State-of-the-Art 140 Bed Multi-Specialist Hospital, Nurse training facilities, an Office Building incorporating Doctors' and other office suites, Residential Short-Let apartments for medical tourism and the local community, Retail shops (Medical and non-medical), a Restaurant, Conference and seminar facilities, and Parking lots. Supporting infrastructure such as road, drainage, power, and water systems are integral parts of the proposed project. The site layout allocates: 37% – internal access road; 24.51% – green areas; 20.24% – medical facilities; 9.44% – parking and services; 3.91% - Commercial spaces and 3.91% - mixed-use spaces.

IASO Medipark Ltd, in her determination to meet environmental and social impact laws decided to undertake this Environmental and Social Impact Assessment (ESIA) for the proposed Medipark Project in accordance with EIA Act CAP E12, LFN 2004. The Act states that no project proponent shall undertake a project in any part of Nigeria, without carrying out EIA/ESIA. The limit of this provision is contained in the schedule of the Act under the "mandatory EIA study list". According to the Act, all developmental projects "must be subjected to EIA."

The ESIA report will identify and predict impacts of the project on social, biophysical, human and socio-economic characteristics of the project environment in line with the Environmental Impact Assessment Act, Lagos State Environmental Protection Agency Laws, and the Ikoyi Master Plan (in line with Urban and Regional Planning Regulations of Lagos State). The ESIA

will propose mitigation measures to be incorporated in to the project design. The main thrusts of the ToR are as follows:

- Conduct a baseline study of the existing environment.
- Discuss the types of project alternatives to be considered.
- Undertake consultation with relevant stakeholders.
- Assess the significance of positive and negative impacts, by weighting them against local conditions and established limits to acceptable change, as defined by legislation.
- Assess detailed project descriptions, including general layout & physical descriptions.
- Undertake health & safety, environmental and socio-economic impact assessments that include qualitative and quantitative risk assessments, among other tools and techniques.
- Recommend practical and cost effective mitigation measures to limit or completely eliminate negative impacts from the implementation of the project.
- Develop an Environmental and Social Management Plan that appropriately incorporates monitoring, mitigation and management systems that are consistent with identified impacts and that provide a contingency for unforeseen impacts.
- Prepare a detailed ESIA report which will form the basis for the issuance of the Environmental Impact Statement (EIS) by FMEnv.

2.0 PROJECT LOCATION

The proposed Medipark Project is situated at a prime location on plot No 1 – 9, Awolowo Road, Ikoyi, Eti-Osa Local Government Area of Lagos State. It has an area of 16,000m^2 (1.6 hectares). The Revised Ikoyi-Victoria Island Model City Plan recognizes the Medipark project site as institutional land use, with adjoining properties being a mix of commercial, institutional/public and residential uses. The proposed project is specifically situated within lat**.** 6.444389°N and long. 3.408722°E along Awolowo Road in Ikoyi of Eti-Osa Local Government Area, Lagos State. It lies on the southern flank of Awolowo Road, a major arterial route connecting Ikoyi to Lagos Island and other adjoining districts. The site falls within the core Ikoyi district, a premium area of Metropolitan Lagos renowned for its institutional, residential, and commercial significance. The site is bordered by commercial and institutional buildings including banks, offices, and hospitality facilities. It is directly accessible from Awolowo Road located south of the site as shown in figure 2.1.



Figure 2.1: Google Earth image showing proposed Lagos Medipark Project

Source: Google Earth, 2025

3.0 The Project Proponent

The corporate office of IASO Medipark Limited is located at Mansard Place, 4th Floor Wing B, Plot 927 – 928, Bishop Aboyade Cole Street, Victoria Island, Lagos. IASO Medipark Ltd is a special-purpose vehicle (SPV) formed to deliver the flagship healthcare project, known as the Lagos Medipark, in partnership with the Lagos State Government under a public-private-partnership (PPP) model. The proposed Medipark project will be located at Plot 1-9 Awolowo Road, Ikoyi, Eti-Osa LGA, Lagos State. The initiative is facilitated and led by Iwosan Investments Limited (a Nigerian healthcare-investment company) in conjunction with IASO Medipark Limited.

4.0 PROJECT ACTIVITIES

The project activities shall include: land acquisition, site survey, planning and Architectural/Engineering designs, site preparation (clearing, leveling, setting out, excavation and foundation); construction of a 140 bed hospital building, short-let residential apartments,

commercial facilities, and parking lots; and installation of medical/diagnostic equipment, offices, and training and conference equipment. Green spaces with diverse trees and flowers will be planted for aesthetics and to contribute to the carbon sink. The Medipark project is designed to maximize natural light and ensure good air quality. The project will also provide rehabilitation areas, waste management services and accessible and well connected pathways for easy navigation by individuals using wheelchairs, walkers and/or hospital beds, etc.

5.0 OBJECTIVES OF THE ESIA

The objective of this study is to assess all actions that may result in significant, chemical, bio-physical, socio-economic, health impacts to the existing natural environment and persons within the proposed project area. This ESIA shall evaluate all the potential environmental and social impacts of the project's activities. It shall be a management tool that provides fore-knowledge of likely adverse impacts from the project.

The specific objectives of this ESIA are:

ix. To gather relevant background data/information on the general environmental (bio-physical, chemical, cultural, socio-economic and health) and social components of the proposed project that are likely to be impacted by the project in the project area;

x. To analyze the data obtained and characterize the present environmental and social statuses of the study area prior to the proposed project activities, with particular reference to all the environmental components significant to such infrastructure development; and

xi. To identify adverse and potential environment and social impacts that may arise from the proposed project activities in the study area and recommend appropriate mitigation measures as well as integrate ESMP for their amelioration and monitoring.

xii. Comply with the national and international ESIA guidelines and other environmental statutes and regulations on major development projects.

xiii. Identify the best practicable environmental option, alternative processes and most environmentally suitable options at early stages; and

xiv. Demonstrate to all stakeholders, management of the Proponent's resolve and readiness to protect the environment while carrying on its economic activities in the project area.

xv. To ensure that no environmental laws and any other laws relevant to this project are broken.

The above-stated objectives are dictated by requirements of the Federal Ministry of Environment (FMEnv), National Environmental Standards and Regulations Enforcement Agency (NESREA), Lagos State Environmental Protection Laws, African Development Bank (AfDB), international protocols, conventions and regulations that Nigeria is signatory to.

6.0 Legislative and Regulatory Framework

The Federal Ministry of Environment (FMEnv)

The ministry has a mandate to co-ordinate environmental protection and conservation of natural resources for sustainable development in Nigeria. The specific responsibilities of the ministry are to:

- monitor and enforce environmental protection measures;
- enforce international laws, conventions, protocols and treaties on the environment;
- prescribe standards and make regulations on air quality, water quality, pollution and effluent limitations, the atmosphere and ozone layer protection, control of toxic and hazardous substances; and
- promote cooperation with similar bodies in other countries and international agencies connected with environmental protection.

Environmental Impact Assessment EIA Act Cap E12 LFN 2004

The EIA Act Cap E12 LFN 2004 stipulates that the public or private sector of the economy shall not embark on, undertake or authorize projects or activities without prior consideration. The Act prescribes the procedure for conducting and reporting EIA based on well referenced statute books, including the following:

- National Policy on Environment 2016
- The Harmful Wastes (Criminal Provisions) Act Cap H1 2004
- National guidelines and standard for Environmental Pollution Control in Nigeria, Regulations S.1.8; S.1.9 & S.1.15
- National Guideline on Environmental Audit in Nigeria, 1999;
- National Guideline on Environmental Management Systems (EMS) 1999

- Pollution Abatement in Industries and Facilities Generating Wastes, Regulation, S.1.9 of 2004
- Waste Management Regulations S.1.15 of 1991

National Policy on Environment (Revised 2016)

The policy provides the strategic policy direction for environmental protection in Nigeria. Its objectives include:

- Promoting environmental sustainability across all sectors.
- Ensuring that all development projects undergo environmental assessment.
- Encouraging public participation and sustainable use of natural resources.

National Health Act of 2014

Defines the legal framework for the health sector, mandating:

- Safe and sustainable healthcare infrastructure.
- Proper management of health-related waste and protection of workers from occupational hazards.
- Licensing requirements for health facilities based on compliance with environmental and safety standards.

National Health Policy (2016)

The National Health Policy emphasizes the need for safe, efficient, and sustainable healthcare delivery systems. It mandates that health infrastructure development must comply with environmental and occupational health standards, including waste management, water safety, and infection control.

National Environmental Standards and Regulations Enforcement Agency (NESREA) Act, 2007

The NESREA Act established by the National Environmental Standards and Regulations Enforcement Agency (NESREA) is in place to enforce all environmental laws and standards. NESREA's mandate includes:

- Ensuring compliance with environmental regulations.

- Enforcing provisions related to air, water, and waste pollution.
- Overseeing waste management in healthcare facilities.

For the medical project, NESREA's role is particularly relevant to healthcare waste management, effluent discharge control, and air quality monitoring.

National Environmental (Healthcare Waste Control) Regulation, 2021

The regulation provides comprehensive guidelines and standards for the handling, collection, storage, transportation, treatment and disposal of medical wastes. The provisions include:

- Prohibition of open burning of medical waste.
- Mandatory treatment of waste to permissible limits before discharge into the environment.
- Requirements for segregation of waste at the source (e.g., general, infectious, pathological, sharps, pharmaceutical).
- Penalties for non-compliance, including fines and imprisonment.

National Environmental (Sanitation and Wastes Control) Regulations, 2009 (S.I. No. 28)

These regulations provide guidelines for the collection, treatment, and disposal of various categories of waste. They also specify procedures for waste handling, segregation, storage, and transportation.

Healthcare facilities are required to:

- Prepare a Waste Management Plan (WMP).
- Ensure safe disposal of hazardous and non-hazardous wastes.
- Maintain records of waste generation and disposal methods.

National Environmental (Healthcare Waste Management) Regulations, 2013 (S.I. No. 79)

These regulations are specific to the healthcare sector. They prescribe:

- Segregation of healthcare waste at the point of generation using colour-coded containers.
- Proper treatment and disposal of infectious and pathological waste.
- Mandatory training of healthcare staff in waste management practices.

- Establishment of waste treatment facilities such as autoclaves or incinerators.

Compliance with these regulations will ensure that waste from the proposed hospital project is safely managed to prevent adverse environmental and health impacts.

Lagos State Environmental Protection Laws

The Lagos State Ministry of the Environment and Water Resources (LSMEnv) has environmental guidelines and set standards in place for pollution indices in Lagos State. The guidelines and standards were set up to ensure that industrial activities and waste management practices are compatible with the overall goal of bequeathing a sustainable, clean, safer and more prosperous environment. Lagos State Environmental Protection Agency (LASEPA), with its edict passed by the State Assembly in 1995, is responsible for the management of the environment. Other Lagos State laws on the environment are:

- Lagos State Environmental Sanitation Law, CAP 44 of 1985, repealed in 2001
- Lagos State Urban and Regional Planning and Development Law of 2010
- Lagos State Environmental Pollution Law, CAP 46 of 1989
- Lagos State Waste Management Authority Law, CAP 107 of 1991
- Lagos State Waterfront Infrastructural Development Law, 2008
- Road Traffic Law Cap 172 of Lagos State of Nigeria 2000
- Lagos State Safety Commission Law, 2011
- Lagos State Infrastructure Maintenance and Regulatory Agency Law 2004

The Lagos State Ministry of Environment was established in 1979. The Ministry is responsible for formulation of policies on: Waste Management, Environmental Sanitation and Protection Services; Pollution Control, Ecological and Conservation matters, Control and regulation of Outdoor Advertisements, Drainage services, Flood and erosion control, among others.

Lagos State Environmental Protection Agency (LASEPA)

The Lagos State Environmental Protection Agency (LASEPA) is charged with the responsibility for the protection and management of the environment.

- The LASEPA's specific functions include but are not limited to:

Enforcement of all environmental legislations and abatement of all forms of environmental degradation, nuisance and minimization of impact on the physical development on the ecosystem, and others including:

- Preservation, conservation and restoration to pre-impact status of all ecological processes essential for the preservation of biological diversity.
- Registration and monitoring of development projects in Lagos State with the view to monitoring, controlling, disposal of wastes generated from such projects.
- Protection and improvement in air, water, land, forest and wildlife in the ecology of Lagos State.
- Municipal liquid and solid waste collection and Disposal/Sanitation Management Services
- Pollution control and Environment Health, Fumigation and Vector Control Services.
- Environmental management systems, including ESIA, EAu, and erosion/flood control

Lagos State Environmental Management and Protection Law (2017)

This law establishes the institutional framework for environmental protection and management within Lagos State. It provides for the establishment of the Lagos State Environmental Protection Agency (LASEPA), which enforces compliance with environmental standards, including noise, air, and water quality.

Lagos State Ministry of Physical Planning and Urban Development (MPP&UD)

This Ministry is responsible for granting development and building permits. It requires that all major developments, including healthcare infrastructure, obtain environmental clearance (through FMEnv or LASEPA) as part of the approval process.

African Development Bank Environmental and Social Assessment Procedures (ESAP, 2021)

The Environmental and Social Assessment Procedures (ESAP, 2021) of the African Development Bank (AfDB) provide the detailed operational framework for implementing the Bank's Integrated Safeguards System (ISS). The ESAP outlines the mandatory steps, roles, and

responsibilities to ensure that AfDB-financed projects are planned and executed in an environmentally and socially sustainable manner.

The main objectives of the AfDB's ESAP are to:

- Integrate environmental and social sustainability considerations into all stages of the project cycle from identification, preparation, appraisal, implementation to decommissioning.
- Ensure compliance with the Bank's Integrated Safeguards System (ISS), international environmental agreements and national regulations.
- Enhance stakeholder engagement and promote transparency through consultations, disclosure and grievance redress mechanisms.
- Promote preventive and mitigation measures to avoid, minimize or offset adverse environmental and social impacts.

  Strengthen borrower capacity for environmental and social management, monitoring and reporting.

African Development Bank (AfDB) Integrated Safeguards System (ISS, 2013)

The following Operational Safeguards (OS) form the core of AfDB's safeguard policy framework and are directly applicable to the Project:

- **Operational Safeguard 1 (OS1):** Environmental and Social Assessment – establishes the process for identifying environmental and social risks, determining project category, and developing appropriate management plans.
- **Operational Safeguard 2 (OS2):** Involuntary Resettlement – Land Acquisition, Population Displacement and Compensation – applies to any physical or economic displacement of people due to project activities.
- **Operational Safeguard 3 (OS3):** Biodiversity, Renewable Resources and Ecosystem Services – ensures conservation of biodiversity, protection of natural habitats, and sustainable management of ecosystem services.
- **Operational Safeguard 4 (OS4):** Pollution Prevention and Control, Greenhouse Gases, Hazardous Materials and Resource Efficiency – promotes cleaner production, waste minimization, efficient energy use and control of hazardous substances.

- **Operational Safeguard 5 (OS5):** Labour Conditions, Health and Safety – safeguards workers' rights and ensures safe and healthy working environments, consistent with ILO standards.

The proposed Medipark aligns with these safeguards by promoting safe construction practices, minimizing pollution, and ensuring efficient waste management.

International Finance Corporation (IFC) Performance Standards (2012)

The IFC Performance Standards guide private sector development projects on environmental and social sustainability. Relevant standards include:

- **PS1:** Assessment and Management of Environmental and Social Risks and Impacts
- **PS2:** Labour and Working Conditions
- **PS3:** Resource Efficiency and Pollution Prevention
- **PS4:** Community Health, Safety, and Security

These standards are consistent with both AfDB and Nigerian ESIA frameworks and form the benchmark for international best practices.

International Guidelines and Frameworks

Nigeria is a signatory to a number of international treaties and conventions. These include those on climate, waste, oil and chemical pollution and others. These conventions and their years of adoption are given below.

United Nations Convention on Climate Change

The convention on climate change was signed in 1992 during the Rio Earth Summit, and put into force in 1994. Its aim is to limit Green House Gas (GHG) emissions, which contribute to global warming.

Convention on Conservation of Migratory Species of Wild Animals

This convention, also known as the Bonn Convention of 1979, stipulates actions for the conservation and management of migratory species through habitat conservation and other methods.

Vienna Convention for the Protection of the Ozone Layer

The convention was instituted in 1985 and places general obligations on countries to make appropriate measures to protect human health and the environment against adverse effects resulting from human activities which tend to modify the ozone layer.

Montreal Protocol on Substances that Deplete the Ozone Layer 1987

The Montreal Protocol remains the universal multilateral treaty to phase out ozone-depleting substances (ODS). It has been amended several times and remains in force. The Kigali Amendment (2016) that adds control obligations for hydrofluorocarbons (HFCs) entered into force on 1 January 2019 and has been widely ratified. The Kigali Amendment is relevant to refrigeration, air-conditioning and certain fire-suppression agents used in buildings and mechanical systems

Convention Concerning the Protection of Workers against Occupational Hazards (ILO Convention No. 148, 1977)

The instrument commonly referred to in ESIA documents is ILO Convention No. 148 (1977): Convention Concerning the Protection of Workers against Occupational Hazards in the Working Environment Due to Air Pollution, Noise and Vibration. It sets standards for identification of hazards and for protective measures, exposure limits, and consultation with workers and competent authorities.

World Health Organization (WHO) Guidelines

WHO provides technical guidance on healthcare facility safety**,** infection control**,** and medical waste management. These include:

- Safe Management of Wastes from Healthcare Activities (WHO, 2014).
- Water, Sanitation and Hygiene (WASH) standards for healthcare facilities
- These guidelines complement Nigerian regulations to ensure environmental and occupational safety.

Table 1.1: Summary of Key International Environmental Agreements

Treaty, Convention, Regulation	Year Adopted
Framework Convention on Climate Change	1994
United Nations (UN) Convention on Biological Diversity	1994
Protocol on Substances that deplete the Ozone Layer (Montreal Protocol)	1989
Convention for the Protection of the Ozone Layer (Vienna Convention)	1989
Convention on the Conservation of Migratory Species (CMS)	1987
African Convention on Conservation of Nature and Natural Resources	1968
Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)	1974
International Union for Conservation of Nature and Natural Resources	2017/2020

International Labour Laws

Nigeria is party to a number of labour related conventions. The most relevant ones are highlighted in the Table 1.1. Although other labour standards exist, four labour standards are internationally accepted as the "core" labor standards (CLS).

i. Effective Abolition of Child Labor
ii. Elimination of Discrimination in Employment and Occupation
iii. Elimination of All Forms of Forced or Compulsory Labor
iv. Freedom of Association and the Effective Recognition of the Right to Collective Bargaining

The standards are a set of internationally recognized basic rights and principles at work. There is a global recognition that the CLS are generally applicable to all countries including Nigeria. They do not establish a particular level of working conditions, wages, or health and safety standards to be applied internationally nor do they seek to change the comparative advantage of any country.

There are basic rights that have been repeatedly articulated in international human rights instruments and declarations, such as the Universal Declaration of Human Rights in 1948 and the Convention on the Rights of the Child, 1989.

IASO Medipark Ltd's Health, Safety and Environment (HSE)

Policy Statements and Objectives, as to whether

IASO Medipark Ltd – commits to a Company's Corporate Environmental Policy statement that:

- provides a safe working environment;

- ensures the safety and health of workforce and contractors working within company's direct areas of operations;
- protects the public from injury or ill health and prevent properties from loss or damage resulting from its activities
- safeguards the conservation of the environment; and
- complies with applicable environmental standards and legislation in Nigeria

IASO Medipark Ltd is also committed to reviewing at intervals, its HSE policy to reflect the reality of the prevailing situations and legislations.

Safety Health and Environmental Targets

In taking steps to ensure a healthy and safe working environment, the Company, its contractors and their employees aim for the following goals:

- no fatalities;
- prevention of lost time and any significant accidents;
- prevention of occupational disease and environmental degradation.

Implementation Protocol by IASO Medipark Ltd by this ESIA

- Guide the Lagos Medipark Project through the complete Federal ESIA process up to certification.
- Ensure compliance with FMEnv, LSMEnv and AfDB environmental and social standards.
- Conduct stakeholder consultations, baseline environmental and socio-economic studies, and prepare mitigation and management plans to secure FMEnv approval.
- Guide the Lagos Medipark Project through the delivery of the ESIA documents including.
    - Environmental and Social Management System (ESMS)
    - Emergency Preparedness and Response Plan (EPRP)
    - Stakeholders Engagement Plan (SEP)
    - Hazardous/Medical Waste Management Plan (HWMP)

- Environmental and Social Policy and Procedure and Assessment Report (ESPPAR).

7.0 ESIA Methodology

Field data collection shall be carried out in line with Federal Ministry of Environment Guidelines on ESIA. The Methodology to be adopted for ESIA data acquisition for each of the environmental components and the impact indicators are described below.

Sampling Plan

Field data gathering shall be designed to ensure that the ecology of the proposed fuel dump area and the socio-economic/health profile of the host community will be adequately covered. A summary of the sampling for the various environmental attributes soil, ground water, vegetation, air and noise are as follows. Five (5) soil samples at three depths (0-15cm, 16 – 35cm and 36 – 60cm) from locations within the project area will be collected. Two (2) groundwater (from the project area) samples will be collected from existing boreholes. Three (3) surface water samples will be collected from nearest water body around the project area. Measurements of air quality will be taken within the project area. Socio-economic studies will be carried out around Ikoyi and from the adjoining neighboring facilities. All sampling stations will be geo- referenced using *etrax* Germin Global Positioning System (GPS).

Topology

The survey and area maps were studied by team members and based on the map with sampling points coordinates, sampling stations were established.

Climate and Meteorology

35 years of meteorological data of the project will be obtained from NiMeT, Abuja for rainfall, relative humidity, temperature, wind speed and wind direction. To complement the data, maximum/minimum thermometer will be used to monitor temperate at different locations of the project area. Portable handheld Hannah model thermometer is held with the bulb exposed continuously in air for at least 5 minutes before taking reading.

Air Quality and Noise Level

The ambient air quality of the project area for wet season will be determined by in-situ measurement at twenty (20) different points for the following parameters SO_2, NO_2, CO, CO_2, H_2S, NH_3, NH_4 and Suspended Particulate Matter (SPM). Some of the calibrated instruments to be used are:

- The oxides of Nitrogen, Carbon, Sulphur to be measured in parts per million (ppm) using hand held portable *iBrid MX6 (its* calibration will be done using a gas/air mixture forced from a gas cylinder at 1.0 psi*);*
- Particulate matters will be measured in mg/m^3 using Konamx Handheld lacer Particle counter
- Noise level will be measured in dB(A) using TES Sound Level Meter
- VOCs will be measured using Mini Rae Lite
- Wind speed will be measured using Anemometer vane probe
- Coordinates will be taken using *etrex Legend* GPS
- At each sampling station, readings will be taken between 9am and 5pm.

Vegetation

The vegetation study of the project area will be conducted by observation within and around project site using transects. Plants within each transects will be identified, those that could not be identified onsite will be collected and pressed for herbarium.

Soil Samples

Soil samples will be collected from the project area for wet season. Soil samples will be collected at three depths: 0-15cm, 16 – 35cm and 36 – 60cm with the aid of Dutch stainless-steel hand auger. A total number of three (3) soil samples and 2 controls will be collected. The soil samples will be collected in duplicate; those for physical and chemical analysis will be packed in black polythene bags, and those for microbial and oil and grease/hydrocarbon analysis wrapped in aluminum foil. Soil samples will be collected in appropriately labeled and selected polythene bags in accordance with Standard Procedures of ASTM (Anon, 1994), FMEnv (1991) and APHS (1975), and kept away in a large "Ghana-must-go" bag in the field vehicle. Samples for physical analysis will be dried in a dust free environment.

The soil types in the area will be ascertained from maps from Federal Survey Department, Lagos. All in-situ observations for colour, presence of roots and lives will be recorded in a field notebook.

Microbiological Analysis

Heterotrophic bacteria and total *coliform* will be enumerated by adopting the most probable Number technique for water samples, while Standard Spread plate technique was used for soil

sample. Appropriate dilutions (three-fold) of samples will be plated out on Nutrient Agar plates for bacteria and MacConkey Agar plates for total *coliform*. The plates will be made in duplicate and incubated aerobically at 37^0C for 24hours (bacteria) while that of *coliform* will be incubated aerobically at 37^0C, 48hours. At the end of the incubation periods, the number of colonies on the Agar plates will be counted and enumerated after screening. The relative abundance (i.e the population density estimate) of the organism will be obtained by multiplying the plate count per ml for each organism by the dilution factor used. The growth on the Agar plates will be noted with regards to the following characteristics: form, pigmentation or colour, texture and elevation. Each bacterial culture was identified based on its morphological characteristics using gram reaction as well as confirmatory test.

Laboratory Analysis

The method, guideline and standards used are those acceptable by Federal Ministry of Environment Standard. The quality control of laboratory analysis is in accordance with NESREA recommended method and includes blank analyses to establish analytic level, duplicate analysis to establish analytical precision, spiked and blank samples analyses to determine analytical accuracy. In-situ measurement of some unstable physico-chemical parameters like pH, dissolved Oxygen, temperature and conductivity will be carried out. This is to ensure reliability and accuracy of the analysis. All field instruments will be regularly cleaned and recalibrated. Laboratory activities will be coordinated by Labstfaff and Searchgate Laboratory, Lagos state, for the in-situ measurement of air quality and noise level, analysis of both soil, sediment, planktons and water samples. The Federal Ministry of Environment shall witness the sampling activities.

Vegetation

The vegetation biodiversity survey/inventory of the project area was conducted by observation of the study area as well as few transects. The plants collected will be identified. Rare plants will be photographed and pressed for herbarium collection. A habitat map was inspected during the onset of the survey. A species list of common plant found at each transect was produced. The locals will be asked of economic importance of the plant to them. The plant's common names will be recorded and samples will be collected for identification using the Nigerian Plants Identification Manual on getting back to the base.

Land Use Pattern

Land use in the project area, from reliable information on the land use pattern, resources and cover. Land use of the area is commercial, residential, institutional, transportation, agricultural, educational.

Archeology

Consultation and interviews with residents and locals will be used to identify and describe the social anthropology of the area; shrines, burial sites and various aspects of the local culture, customs, religious beliefs, social taboos and sacred place.

Geology and Hydrogeology

The regional and local geology, as well as the geomorphology of the area, will be derived from literature reviews and geological maps obtained from the Federal Survey Department, Ikeja, detailing the geology and landforms of Lagos State in the South-West region of Nigeria.

Specific Objectives of the data gathering exercise

S/N	Objectives	Scope
1	Evaluate ambient air quality and noise level	*In-situ* measurement of ambient air quality conditions and noise levels at sample stations
2	Evaluate the physico-chemistry and biological characteristics of groundwater	Sampling and *in-situ* measurements at 2 ground water stations
3	Evaluate the physico-chemistry and biological characteristics of surface water	Sampling and *in-situ* measurements at 3 points (upstream, midstream and downstream)
3	Evaluate the physico-chemistry and biologicalcharacteristics of soil in the area	Profile (0-15cm, 16-35cm and 36-60cm) sampling at 5 soil stations
4	Evaluate vegetation type and plant species diversity and abundance in the study area	Evaluation of specie richness and diversity as well as enumeration of population
5	Determine wildlife species diversity and abundance in the study area	Wildlife studies within the area
6	Determine the socio-economic/health conditions in the area	Sampling and data collection from the host community

8.0 Scope of the ESIA

The ESIA study activities to be carried out by Labstaff Nigeria Limited are outlined in Tasks 1-7. It is expected that in line with the FMEnv ESIA procedures, site verification will be carried out at the start of the study to define the main areas of focus and Scope of the ESIA. Accordingly, the study shall take into account findings of recently conducted project-related studies and perform the following tasks:

Task 1. Description of the proposed project

The study shall obtain detailed project description from the proponent, IASO Medipark Limited. The information to be provided shall include: location; general layout of facility at project site; design, size, capacity, pre-operation activities, schedule, facility and services; operation and maintenance activities.

Task 2. Legislative and Regulatory Framework

The study shall identify and briefly discuss pertinent regulations and standards governing environmental quality, health and safety; protection of sensitive areas, protection of endangered species, etc, at international, national, regional and local levels.

Task 3. Description of Environmental and Social Baseline

The Study shall assemble and evaluate baseline data on the environmental and social characteristics of the study area, including information of changes anticipated before the project commences. These shall include geology and hydrology, soil quality, water resources and water quality, and meteorology of the area. Where applicable and as approved by FMEnv, secondary data will be employed.

(a) *Physical environment*: geology, topography; soils; monthly average temperatures, rainfall and runoff characteristics; ambient air quality; surface and ground water hydrology; identity of streams, ponds etc.

(b) *Biological environment*: flora and fauna; rare or endangered species within or in areas adjacent to project-related development site; sensitive habitats, including wetlands, parks or reserves terrestrial communities in areas likely to be affected by construction, facility siting, land application or disposal; aquatic, communities in affected waters; significant natural habitats; species of commercial importance in land application site and receiving waters.

(c) *Socio-cultural environment:* Assessment and documentation of the baseline socio-economic characteristic of persons likely to be impacted by the project. The study shall document the baseline occupation, income and demographic features, cultural properties; vulnerable groups, customs and aspirations; significant natural, cultural or historic site of the relevant population. Social infrastructure will be studied including education, means of livelihood, poverty and literacy levels, arts and culture, festivals, mode of living, etc. The study shall also document existing health situations with particular emphasis on areas of poor health or

sanitary conditions. The assessment will also focus on health services options in the region such that immediate care can be provided to those suffering health impacts from project activities. Baseline health considerations that would be reviewed include:

- Prevalent illnesses and diseases in the area
- Illness and disease associated with sanitary conditions (example dysentery)
- Socially transmitted disease, and other sexually transmitted diseases due to the interactions of workers and the communities.

Task 4. Determination of Potential Impacts of the Proposed Project

Assessment of the impacts from changes that will be brought about by the project on the relevant baseline environmental conditions as described above under Task 3.

The assessment shall distinguish between significant positive and negative impacts, direct and indirect impacts, immediate and long-term impacts and cumulative impacts in relation to other associated projects. It shall also include indirect impacts from the project and any potential legacy issues. Identification of impacts shall include those which may occur due to accidental events as well as impacts which are unavoidable or irreversible (e.g., spillage of toxic materials). As possible, impacts shall be described quantitatively, in terms of environmental costs and benefits and assigned economic values when feasible.

The study shall include determination of potential positive/beneficial impacts such as the project's contribution to environmental quality. The impact analysis shall be divided between construction impacts and operation impacts. The study shall characterize the extent and quality of available data, explaining significant information deficiencies and any uncertainties associated with predictions of impact. *In addition, the study shall identify Cumulative Impacts including aggregate, Incremental and synergistic impacts with other projects and activities in the area. The Study shall also identify potential social and economic impacts of the project.*

All engineering activities shall be carried out, responsive to "best practice" to ensure that potential negative environmental impacts are minimized (e.g., through measures to prevent soil erosion, to ensure proper drainage, and provide for waste disposal such as used oil, spoil and borrow area restoration; avoidance/control resettlement, etc.). The ESIA shall focus on the potential for negative environmental and social impacts caused by planned and unplanned (spontaneous) in-migration of people if any.

Special attention shall be given to:

- Air quality: air pollution from dust; noise from equipment.
- Land resources: loss of habitat; foreclosure of other land uses; landslides; erosion; roadside litter.
- Hydrology: foreclosure of other land uses; erosion; modifications to natural drainage patterns and groundwater elevation.
- Water quality: stream; use of pesticides; fuel and oil spills; water pollution from spills or accumulated contaminants from the project execution.
- Biological: land clearance and loss of habitat; impacts on biodiversity caused by facilitation of access to and natural areas; impacts on coastal/wetland management.
- Socio-economic: loss of livelihood or other social disruption; threat to cultural and historical sites or artifacts; demographic changes.

Task 5. Analysis of Alternatives to the Proposed Project

The ESIA shall include the analysis of reasonable alternatives to meet ultimate project objective. This analysis may suggest options that are more sustainable from an environmental, (i.e., natural resource, socio-cultural and economic) point of view than the originally proposed project. The analysis shall include the "no action" or "no project" alternative (i.e. not implementing the proposed project) in order to demonstrate environmental conditions without it. The study shall describe alternatives that were examined in the course of developing the proposed project and identify other alternatives that would achieve the same objectives. The concept of alternatives extends to siting and design that satisfies project objectives. Such objectives include construction technology, operation, maintenance procedures and environmental management. Compare alternatives in terms of potential environmental impacts, land and energy requirements, capital and operating costs (including mitigation measures and their monitoring), reliability, suitability under local conditions, and institutional, and monitoring requirements. When describing the impacts, the study shall indicate which are irreversible or unavoidable and which may be mitigated. To the extent possible, quantify the costs and benefits of each alternative, incorporating the estimated costs of any associated mitigating measures; this shall include the alternative of not constructing the project to demonstrate environmental conditions without it.

Task 6. Public Consultation and Stakeholder Engagement

Stakeholders include people, community members, institutions, private commercial sector, civil society groups. The study shall conduct stakeholder mapping that will enable IASO Medipark Ltd. to gain an appreciation of who is interested and may be involved, how they may be involved, and nature of interrelationships between stakeholder groups. Information to be derived through a stakeholder analysis include household socio-economic data, ethnic mix and interactions, cultural traditions, gender issues, decision-making and conflict resolution mechanism. To this end, formal and informal meetings will be utilized in the preparation of the ESIA.

Task 7. Development of Environmental and Social Management Plan (ESMP)

One key element of the study includes application to the Federal Ministry of Environment (FMEnv) to undertake a detailed ESIA as a major and consequential component of ESIA process. Once approved, all the components of ESIA study will be executed and reported. Environmental and Social Management Plan (ESMP) will be developed and used as a tool in the project to minimize and mitigate significant negative impacts from the project. The ESIA shall focus on significant adverse impacts with a view to avoiding, reducing or mitigating them as far as possible to acceptable levels. Components of the Environmental Management Plan shall include monitoring, documentation, evaluation, prediction, warning, prevention, control and reduction of impacts identified during the study. The ESMP shall include activities intended to enhance the positive environmental, safety and socio-economic aspects of the project. The ESMP shall provide means to ensure that legal air and water standards are complied with and that proper waste minimization and waste management processes are implemented. Ecological mitigation measures shall be included in the ESMP addressing impacts to, aquatic and terrestrial ecosystems and bio-diversity. The ESMP will provide means to assess the effectiveness of mitigation measures that will be proffered. Particularly for surveillance and monitoring, specific measurement parameters will be recommended, including measurement methods, locations, frequency and action thresholds.

Waste Management: Detailed waste management plan for the project activities will be well presented to show how wastes (solid, liquid, gaseous and hazardous wastes resulting from construction and utilization activities) will be handled.

Decommissioning Plan

At the end of the project's life cycle, either as a result of obsolete technology, equipment or government policy on fossil fuel due to climate change, the project will be deactivated, decommissioned and replaced.

Most development projects have useful lives, beyond which they are no longer economically viable either as a result of depleted feedstock or competing technology. Upon the completion of useful life cycle, there is a need to abandon and/or decommission such projects. Some of the factors that drive the longevity of a project are:

- Availability of serving parts for equipment.
- Durability of equipment and machinery.
- Profitability of the project.
- Usefulness and acceptability of end product

It is also possible that situations and circumstances may arise that could force premature termination of this project before its actual life span expires. The project life span is 50years. However, it is expected that a time will come when the project is either out-dated or the system is no longer economically viable. At such a point, IASO Medipark Ltd will need to decommission the facility. While this is not expected to happen within the next 50 years, there is a need to start planning, at this stage, for the closure stage, when the use of the facility has to be discontinued. For this reason, therefore, this section of the report shall discuss succinct plans for the closure/decommissioning of the proposed fuel dump.

During the planning of any project, it is important to put in place plans to recover and/or restore the project site to its original state (or near to it) after the project is closed or decommissioned. This requires the good understanding of all the project activities and environmental components of the project on the ecosystem during its lifespan and the decommissioning stage. It is therefore environmentally wise to take into cognizance this component during the planning stage.

- Remediation/Cleanup

Generally, remediation stands to ensure that contaminated sites are cleaned up and restored to environmentally healthy state. The nature of the proposed project activity would require that the site be restored. Thus, the remediation measures will check the resultant negative impacts of the operation phase and the decommissioning phase of the project on the environment. The clean-up process which shall be conducted in compliance with relevant

national and international guidelines, shall involve the removal of the waste resulting from the demolition of the site at the end of the project lifespan.

- Post Abandonment Site Review (Site Review)

A post impact site survey/assessment shall be undertaken to ensure that no waste or contaminant is left behind.

- Site's Remediation Plan after Closure/Decommissioning

The proposed project, as conceived, is not expected to have any significant long-term negative effects on the environment, especially after closure/decommissioning. A number of safety measures/devices have been built into the project, such that it will operate at minimum risk. However, the following measures need to be planned for implementation after closure/de commissioning:

- The materials used for the waste Incinerator facility shall be dismantled or transfer for other exercise and sold at scrap value.
- Generators and other project facilities and equipment shall either be sold or transferred for other uses.
- Contaminated soils, where they occur, shall be restored, using various options such as chemical and/or biological remediation.
- All pits and excavations shall be reclaimed and re-vegetated.
- Buildings used for administrative purposes shall be leased out or used for other productive ventures.

It is expected that if these measures are implemented, an excellent sites restoration after closure/de commissioning can be achieved.

Task 8. Development of Monitoring Plan

The study shall prepare a detailed plan to monitor the implementation of mitigating measures and the impacts of the project during site preparation, construction and operation phases.

9.0 REPORT

The report shall contain an environmental and social assessment that is concise and limited to environmental and social issues. The main text shall focus on findings, conclusions and recommended actions, supported by summary of data collected and citations for any references used in interpreting those data. The contents of the Environmental Impact Assessment report shall be in accordance with the following:

- Executive Summary

- Chapter One: Contains relevant background information about IASO Medipark Limited; ESIA objectives, scope, Legal and Administrative Framework for ESIA in Nigeria.
- Chapter Two: Contains project justification, needs, value, benefits of the project, alternatives / options including sustainability.
- Chapter Three: Project description that includes layout, pre-project activities, site clearing, construction work, finishing, equipment installation and operational phase of the project.
- Chapter Four: Contains description of environmental baseline of the project area including socio-economic, health, landuse, flora and fauna, soil, water, air quality/ noise level, etc.
- Chapter Five: Contains associated and potential environmental impacts of the project.
- Chapter Six: Contains mitigation measures against the identified impacts
- Chapter Seven: Detailed Environmental and Social Management Plan that shall be implemented throughout the project life cycle.
- Chapter Eight: Conclusion and Recommendations
- References
- Appendix

10.0 REVIEW

The report shall be reviewed by the Federal Ministry of Environment according to laid down review procedures which will lead to Certification (Environmental Impact Assessment Certificate).

ENVIRONMENT AND SOCIAL IMPACT ASSESSMENT (ESIA)
REGISTRATION/NOTIFICATION FORM

Title of the proposed project: APPLICATION FOR ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA) CERTIFICATION FOR THE PROPOSED LAGOS MEDIPARK PROJECT, IKOYI, ETI-OSA LOCAL GOVERNMENT AREA, LAGOS STATE

Name of Project Proponent: IASO MEDIPARK LIMITED

Contact GSM number: 08036271242/08035899609 e-mail: idowuadebiyi@iwosanhealth.com
Address of the project proponent: 4 Onisiwo Road, Unit C, Ikoyi, Lagos
Location of the proposed project (State, Local Government Area, etc): Plot 1 – 9 Awolowo Road, Ikoyi, Eti-Osa LGA, Lagos State

Brief description of the project:
The proposed Lagos Medipark is a modern 140-bed, multi-specialist hospital development to be built on a parcel of land measuring 1.6 hectares at No. 1–9 Awolowo Road, Ikoyi, Lagos State. The project includes a State-of-the-Art 140 Bed Multi-Specialist Hospital building, Nurse training facilities, Office building incorporating Doctors' and other office suites, Residential short-let apartments for medical tourism and local community, Retail shops (Medical and non-medical), Restaurant, Conference and seminar facilities, and Parking lots.

The project activities shall include land acquisition, site survey, planning and Architectural/Engineering designs, site preparation (clearing, leveling, setting out, excavation and foundation); construction of 140 bed hospital building, short-let residential apartment, commercial facilities, and parking lots; installation of medical/diagnostic equipment, office, training and conference equipment. Diverse trees and flowers will be planted for aesthetics and carbon sink. The Medipark project is designed to maximize natural light and ensure good air quality; accessible and well connected pathways for easy navigation by individuals using wheel chairs, walkers or hospital beds, rehabilitation areas, waste management, etc.

Sources of raw materials: Local and foreign
Type of Sector/Sub-Sector applicable to project: Health Sector
Expected Lifespan of the project: Over 50 years
ESIA preparers (Consultant): Labstaff Nigeria Limited
Address and GSM no. of the Consultant(s): Suite G03 - G08, Millipat Plaza by Abuja City Gate/Stadium Roundabout, Umaru Musa Yar'Adua Expressway, Abuja. GSM No: 08035899609; 07038679400

Non-refundable Registration Fee of Fifty Thousand Naira (N50,000.00) only, in Bank Draft payable to the Federal Ministry of Environment.

Simeon Oduniyi
Chief Technical Consultant

Name, Signature, designation and official stamp
(For and on behalf of Lagos Medipark Ltd)

FOR FMENV EIA DIVISION USE ONLY
Assigned project Registration Number:……..

HEAD
EIA DIVISION

DIRECTOR
ENVIRONMENTAL ASSESSMENT

IASO MEDIPARK LTD

Lagos Medipark PMO, Mansard Place,
4th Floor Wing B, Plot 927 – 928,
Bishop Aboyade Cole Street, V/I, Lagos

11th November, 2025

The Director,
Environmental Assessment Department,
Federal Ministry of Environment,
Abuja.

Dear Sir,

LABSTAFF NIGERIA LIMITED – An Introduction

We wish to introduce **LABSTAFF NIGERIA LIMITED** as the Consultant for Environmental and Social Impact Assessment (ESIA) of the **Lagos MediPark Project.**

Attached are the ESIA Registration/Notification Form and Terms of Reference (ToR) as required by the ESIA/EIA procedural guidelines.

As we solicit the support of the Ministry for a hitch free ESIA of the Project, it is our plea that the Honourable Minister and the ministry to take note of the introduction.

Kindly accept the assurances of our highest regard, sir.

For: IASO Medipark Ltd.

Director
Folashade Laoye

Director
Tatiana Moussalli Nouri

FEDERAL MINISTRY OF ENVIRONMENT - HQTRS - 053500100100

Payment Receipt
Generated on 13/11/2025

Remita Retrieval Reference (RRR)
1213-7307-6624

PAYER INFORMATION

NAME	IASO MEDIPARK LIMITED
EMAIL	idowuadebiyi@iwosanhealth.com
PHONE NUMBER	234 803 627 1242

PAYMENT DETAILS

PAYMENT DATE	PAYMENT REF	SERVICE DESCRIPTION	AMOUNT (NGN)	CHARGE (NGN)	VAT on Charges (NGN)	TOTAL (NGN)
13/11/2025	121373076624	ENVIRONMENTAL IMPACT ASSESSMENT (EIA) REVENUE	50,000.00	150.00	11.25	50,161.25
		TOTAL PAID	50,000.00	150.00	11.25	50,161.25
		TOTAL AMOUNT				50,161.25
		BALANCE DUE				0.00

Being payment in respect of ENVIRONMENTAL IMPACT ASSESSMENT (EIA) REVENUE

ITEM	QUANTITY	UNIT PRICE (NGN)	AMOUNT (NGN)
Eia Application/Registration Fee	1	50,000.00	50,000.00
		Charges	150.00
		VAT On Charges	11.25
		TOTAL	50,161.25

BILLER-REQUIRED INFORMATION

ITEM	DESCRIPTION
Description	ESIA CERTIFICATION FOR THE PROPOSED LAGOS MEDIPARK PROJECT AT IKOYI IN ETI-OSA LGA OF LAGOS STATE

You can contact Remita Support at support@remita.net or on +234 1 280 5182, 0803 555 5051

remita Valid only upon verification at www.remita.net FEDERAL MINISTRY OF ENVIRONMENT - HQTRS - 053500100100

FEDERAL MINISTRY OF ENVIRONMENT

Environment House
Independence Way South, Central Business District, Abuja -FCT.
Email: info@ead.gov.ng. www.ead.gov.ng, www.eia@ead.gov.ng

ENVIRONMENTAL ASSESSMENT DEPARTMENT

FMEnv/EA/EIA/9225/VOI.1/35
27th November, 2025.

The Managing Director,
IASO Medipark Limited,
4 Onisiwo Road, Unit C,
Ikoyi,
Lagos State.

RE: ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA) FOR THE PROPOPOSED LAGOS MEDIPARK PROJECT IN IKOYI, ETI-OSA LOCAL GOVERNMENT AREA, LAGOS STATE.

Please refer to your letter to the Ministry through Labstaff Nigeria Limited dated 12th November, 2025 on the above project.

2. I am directed to acknowledge the receipt of your letter and evidence of payment of Fifty Thousand Naira (₦50,000.00) only with Remita Retrieval Reference (RRR) No. 1213-7307-6624 dated 12th November, 2025 as the EIA registration fee for the proposed project.

3 Following the evaluation of the submission, I am further directed to inform you that the ToR has been adjudged adequate for the next stage of the EIA process which is Site verification exercise and will be carried out by officials of the Ministry and Lagos State Ministry of the Environment & Water Resouces. Kindly ensure adequate samples are collected with the following minimum for the baseline study of the project area as shown in the table below:

S/N	Environmental Parameters	PARAMETERS DETAILS	NUMBER OF SAMPLES DISTRIBUTION	PARAMETERS TO BE MONITORED
i	Air Quality		20 + 5 controls	Total suspened particulate matter, NO_2, NO, SO^2, NH3, CO, VOCs, H_2S, CH_4.
ii.	Ambient Noise	Noise level	20 + 5 controls	Db(A)
iii.	Soil Samples (Top and Subsoil)	Physico-chemical microbial.	20 + 5 controls	Temperature, Colour, pH, Turbidity, Salinity, hardness, heavy metals- Zn, Pb, Fe, Hg, Ba etc. DO. BOD. COD, THC, Electrical conductivity, Phosphate, SO_2, NO_2, TSS, TDS, BTEX, TPH, grain size distribution etc.
iv.	Surface Wate/Sediment	Physico-chemical microbial.	8 +3 controls	Water depth/width/flow rate direction/sediment transport, river bank erosion. Temperature, Colour, pH. Turbidity,

				Salinity, hardness, heavy metals- Zn, Pb, Fe, Hg, Ba etc. DO, BOD, COD, THC, Electrical conductivity, Phosphate, SO_2, NO_2, TSS, TDS, BTEX, TPH, grain size distribution etc.
v.	Ground Water	Physico-chemical microbial.	6 + 3 controls	Temperature, Colour, pH, Turbidity, Salinity, hardness, heavy metals- Zn, Pb, Fe, Hg, Ba etc. DO, BOD, COD, THC, Electrical conductivity, Phosphate, SO_2, NO_2, TSS, TDS, BTEX, TPH, grain size distribution etc.
vi.	Climate/Meterology			Rainfall pattern, Relative humidity and Temperature, Wind speed, direction and visibility and their local effects.
vii.	Socio-Econmic/ Healths Characteristics	Project area/adjacent community (ies)		

4. Consequently, you are to pay the sum of Nine Hundred and Nine Thousand, Five Hundred Naira (₦909,500.00) only for the exercise. You are also requested to kindly provide necessary logistics and Technical personnel on site to ensure a hitch free exercise.

5. You may wish to contact the undersigned on GSM number 0803-973-0654 or Mrs. Augusta Obi on 0803-265-8246 to confirm the receipt of this letter and for any clarification, please.

Engr. (Mrs.) Charity B. Malgwi
For: Honourable Minister

FEDERAL MINISTRY OF ENVIRONMENT

Environment House
Independence Way South, Central Business District, Abuja -FCT.
Email: info@ead.gov.ng. www.ead.gov.ng, www.eia@ead.gov.ng
ENVIRONMENTAL ASSESSMENT DEPARTMENT

FMEnv/EA/EIA/9225/VOl.1/37
27th November, 2025.

The Managing Director,
IASO Medipark Limited,
4 Onisiwo Road, Unit C,
Ikoyi,
Lagos State.

RE: ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESiA) FOR THE PROPOPOSED LAGOS MEDIPARK PROJECT IN IKOYI, ETI-OSA LOCAL GOVERNMENT AREA, LAGOS STATE.

Please refer to your letter to the Ministry through Labstaff Nigeria Limited dated 12th November, 2025 on the above project.

2. I am directed to inform you that the officials of the Ministry and other stakeholders at state level shall participate in the Scoping Workshop.

3. Consequently, you are to pay the sum of Two Hundred and Fifty Thousand Naira (₦250,000.00) only for the exercise. You are also requested to kindly provide necessary logistics and Technical personnel on site to ensure a hitch free exercise.

4. You may wish to contact the undersigned on GSM number 0803-973-0654 or Mrs. Augusta Obi on 0803-265-8246 to confirm the receipt of this letter and for any clarification, please.

5. Thank you for your co-operation.

Engr. (Mrs.) Charity B. Malgwi
For: Honourable Minister

FEDERAL MINISTRY OF ENVIRONMENT

Environment House
Independence Way South, Central Business District, Abuja -FCT.
Email: info@ead.gov.ng. www.ead.gov.ng, www.eia@ead.gov.ng

ENVIRONMENTAL ASSESSMENT DEPARTMENT

FMEnv/EA/EIA/9082/VOl.1/36
27th November, 2025.

The Managing Director,
IASO Medipark Limited,
4 Onisiwo Road, Unit C,
Ikoyi,
Lagos State.

RE: ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA) FOR THE PROPOPOSED LAGOS MEDIPARK PROJECT IN IKOYI, ETI-OSA LOCAL GOVERNMENT AREA, LAGOS STATE.

Please refer to your letter to the Ministry through Labstaff Nigeria Limited dated 12th November, 2025 on the above project.

2. I am directed to inform you that the officials of the Ministry shall participate in the Data gathering and Laboratory Analyses Witnessing exercise.

3. Consequently, you are to pay the sum of Five Hundred Thousand Naira (₦500,000:00) only for the exercises. You are also requested to kindly provide necessary logistics to ensure a hitch free exercise.

4. You may wish to contact the undersigned on GSM number 0803-973-0654 or Mrs. Augusta Obi on 0803-265-8246 to confirm the receipt of this letter and for any ciarification, please.

5. Thank you for your co-operation.

Engr. (Mrs.) Charity B. Malgwi
For: Honourable Minister

FEDERAL MINISTRY OF ENVIRONMENT

Environment House
Independence Way South, Central Business District, Abuja -FCT.
Email: info@ead.gov.ng. www.ead.gov.ng, www.eia@ead.gov.ng

ENVIRONMENTAL ASSESSMENT DEPARTMENT

FMEnv/EA/EIA/9225/VOl. 1/56
24th December, 2025

The Managing Director,
IASO Medipark Limited,
4 Onisiwo Road, Unit C,
Ikoyi,
Lagos State.

RE: ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA) FOR THE PROPOSED LAGOS MEDIPARK PROJECT IN IKOYI, ETI-OSA LOCAL GOVERNMENT AREA, LAGOS STATE.

Please refer to your letter to the Ministry through Labstaff Nigeria Limited dated 12th November, 2025 on the above subject.

2. Following the conclusion of the Site verification, Scoping workshop and Data gathering exercises, I am directed to inform you that the Ministry has approved the One (1) season baseline and placed the proposed project in EIA Category One (1). A report of the Scoping workshop incorporating issues raised should be submitted to the Ministry for evaluation.

3. Furthermore, you are to proceed with the Laboratory Analysis of the samples collected which should be carried out in a FMEnv accredited Laboratory and witnessed by the officials of the Ministry. You are to ensure Quality Assurance/ Quality Control (QA/QC) in line with International Standard Practices and notify the Ministry in good time to enable adequate participation in the exercise.

4. The following should be forwarded to the Federal Ministry of Environment before the submission of the draft EIA report: -

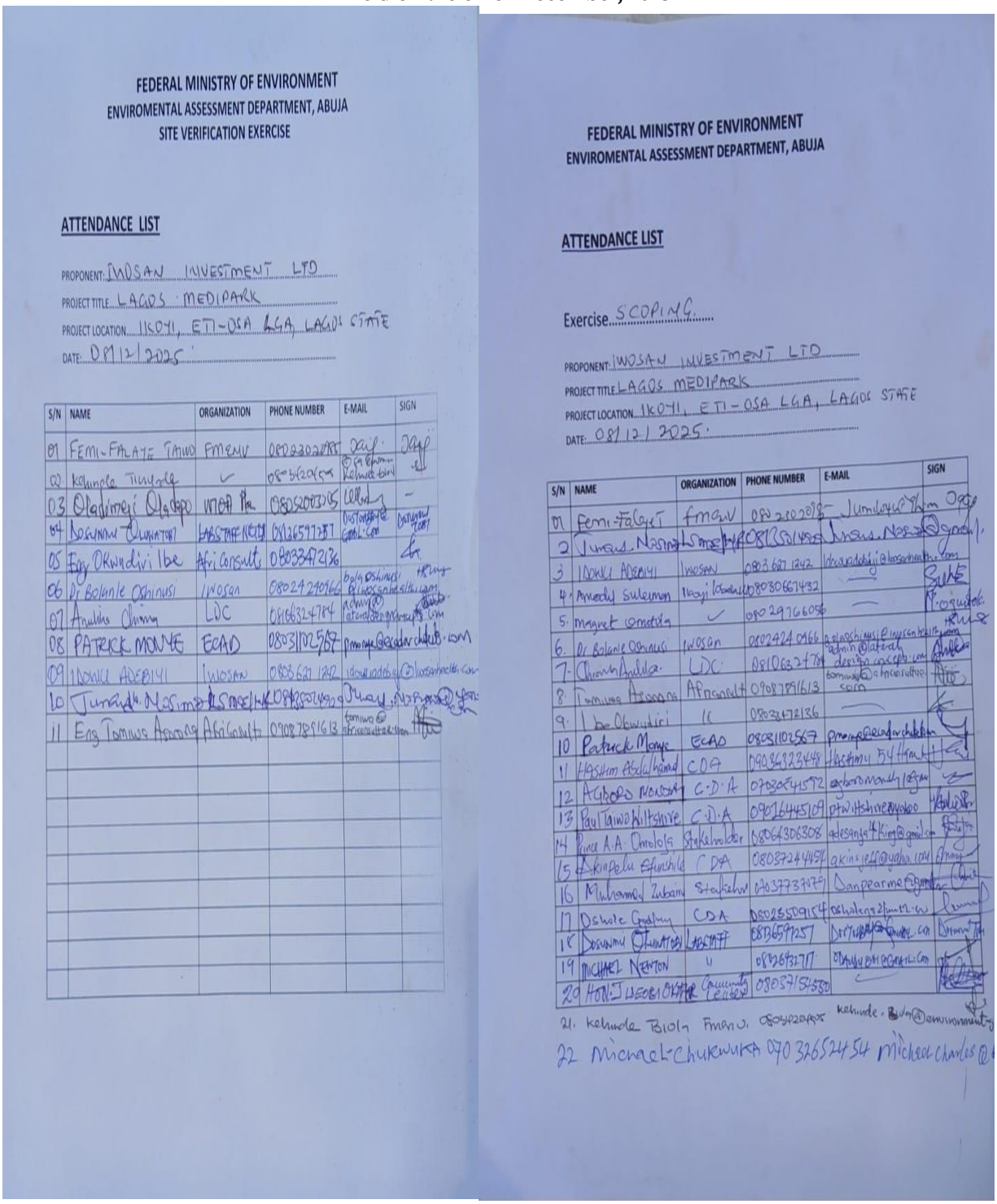
i. Evidence of laboratory accreditation with the Federal Ministry of Environment where the analysis of sample would be carried out.
ii. Chain of Custody for the samples collected.
iii. Certificate of samples analysis duly stamped and signed by the Laboratory Manager.
iv. Evidence of Laboratory analysis witnessing by the Federal Ministry of Environment.

5. Upon completion of the EIA study, you are required to submit to the Ministry Two (2) hard and two (2) electronic copies of the draft ESIA report and email a copy to eia@ead.gov.ng and info@ead.gov.ng. Furthermore, additional hard copies should be placed at relevant public display centres, Lagos State Ministry of Environment, Federal Ministry of Environment, Lagos State office and the relevant Local Government Area affected by the project.

6. Thank you for your co-operation.

Engr. (Mrs.) Charity B. Malgwi
For: Honourable Minister

Site Verification, Scoping Workshop and Sampling Exercise with Representatives of Federal Ministry, Lagos State Ministry of Environment and Water Resources and IASO Medipark Limited Project Team held on the 8th of December, 2025



FEDERAL MINISTRY OF ENVIRONMENT
ENVIROMENTAL ASSESSMENT DEPARTMENT, ABUJA
SITE VERIFICATION EXERCISE

ATTENDANCE LIST

PROPONENT: IWOSAN INVESTMENT LTD
PROJECT TITLE LAGOS MEDIPARK
PROJECT LOCATION IKOYI, ETI-OSA LGA, LAGOS STATE
DATE: 08/12/2025

S/N	NAME	ORGANIZATION	PHONE NUMBER	E-MAIL	SIGN
01	FEMI-FALAYE TAIWO	FMENV	08023020285		
02	kehinde Tinuade	✓	08056204504		
03	Oladimeji Olagbo	MOE Pln.	08052003315		
04	Nosiruu Olumoori	LABSTAFF NIG	08126597257		
05	Eng Okwudiri Ibe	Africonsult	08033472136		
06	Dr Bolanle Oshinusi	Iwosan	08024249066		
07	Amaka Chima	LDC	08166324784		
08	PATRICK MONYE	ECAD	08031102567		
09	IDOWU ADEBIYI	Iwosan	08036211242		
10	Junaid Nasiru	Iwosan	08035014982		
11	Eng Tomiwa Asaolu	Africonsult	09087891613		

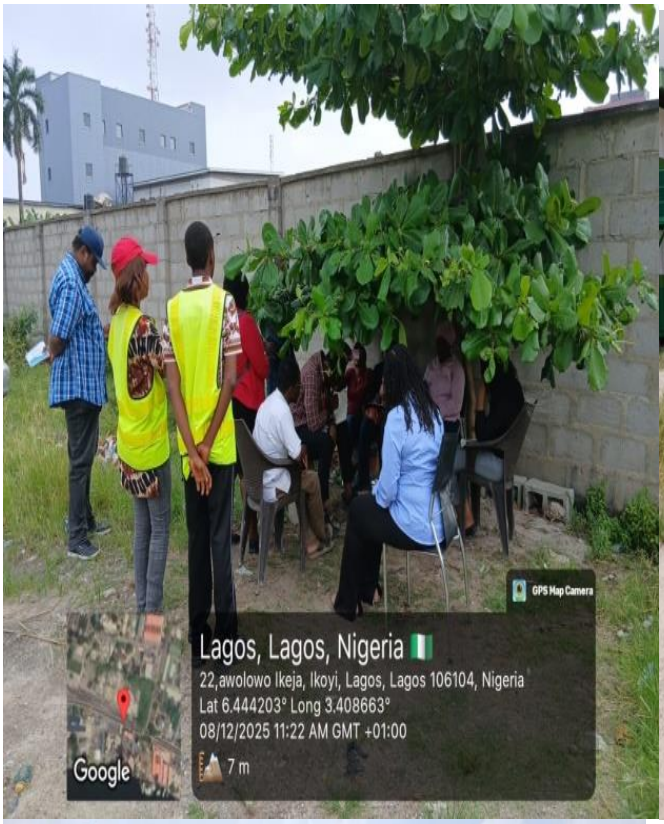
FEDERAL MINISTRY OF ENVIRONMENT
ENVIROMENTAL ASSESSMENT DEPARTMENT, ABUJA

ATTENDANCE LIST

Exercise SCOPING.

PROPONENT: IWOSAN INVESTMENT LTD
PROJECT TITLE LAGOS MEDIPARK
PROJECT LOCATION IKOYI, ETI-OSA LGA, LAGOS STATE
DATE: 08/12/2025.

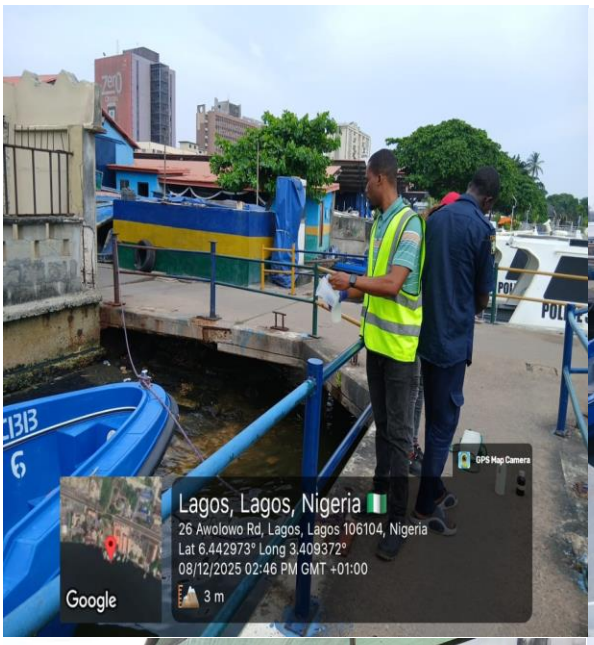
S/N	NAME	ORGANIZATION	PHONE NUMBER	E-MAIL	SIGN
01	Femi-Falaye	fmenv	08023020285		
2	Junaid Nasiru	Iwosan	08035014982		
3	IDOWU ADEBIYI	Iwosan	08036211242		
4	Amudy Suleiman	Iwosan	08030671432		
5	Magret Omotoya	✓	08029766056		
6	Dr Bolanle Oshinusi	Iwosan	08024249066		
7	Chima Amaka	LDC	08166324784		
8	Tomiwa Asaolu	Africonsult	09087891613		
9	Ibe Okwudiri	11	08033472136		
10	Patrick Monye	ECAD	08031102567		
11	HASSAN Abdulhamid	CDA	09036823448		
12	Agbobo Nwosu	C.D.A	07030745572		
13	Paul Taiwo Wiltshire	C.D.A	09016445109		
14	Prince A.A. Omololu	Stakeholder	08064306308		
15	Akinpelu Efunshile	CDA	08037244574		
16	Muhammad Zubair	Stakehol	07037737279		
17	Oshole Godwin	CDA	08025509154		
18	Nosiruu Olumoori	LABSTAFF	08126597257		
19	MICHAEL NEWTON	U	08126937717		
20	HON. IDEOBI OLUFAR	Community Leader	08037151580		
21	kehinde Biola	Fmenv.	08056204504		
22	Michael-Chukwuka	07032652454	Michael-charles@		


GPS Map Camera
Lagos, Lagos, Nigeria
22,awolowo Ikeja, Ikoyi, Lagos, Lagos 106104, Nigeria
Lat 6.444203° Long 3.408663°
08/12/2025 11:22 AM GMT +01:00
Google
7 m

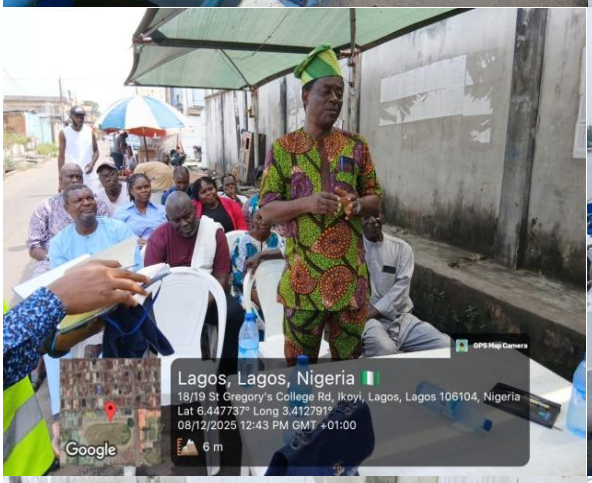

GPS Map Camera
Lagos, Lagos, Nigeria
22,awolowo Ikeja, Ikoyi, Lagos, Lagos 106104, Nigeria
Lat 6.444285° Long 3.40863°
08/12/2025 11:46 AM GMT +01:00
Google
7 m

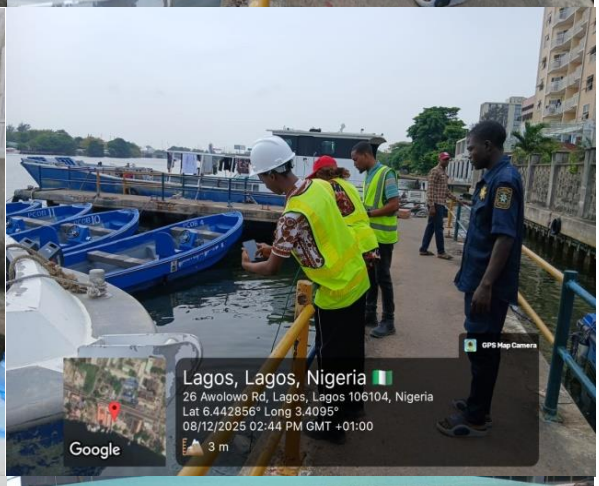

GPS Map Camera
Lagos, Lagos, Nigeria
22,awolowo Ikeja, Ikoyi, Lagos, Lagos 106104, Nigeria
Lat 6.444263° Long 3.408648°
08/12/2025 11:41 AM GMT +01:00
Google
7 m


GPS Map Camera
Lagos, Lagos, Nigeria
22,awolowo Ikeja, Ikoyi, Lagos, Lagos 106104, Nigeria
Lat 6.444285° Long 3.40863°
08/12/2025 11:46 AM GMT +01:00
Google
7 m


GPS Map Camera
Lagos, Lagos, Nigeria
26 Awolowo Rd, Lagos, Lagos 106104, Nigeria
Lat 6.442973° Long 3.409372°
08/12/2025 02:46 PM GMT +01:00
Google
3 m


GPS Map Camera
Lagos, Lagos, Nigeria
26 Awolowo Rd, Lagos, Lagos 106104, Nigeria
Lat 6.442964° Long 3.409369°
08/12/2025 02:44 PM GMT +01:00
Google
3 m

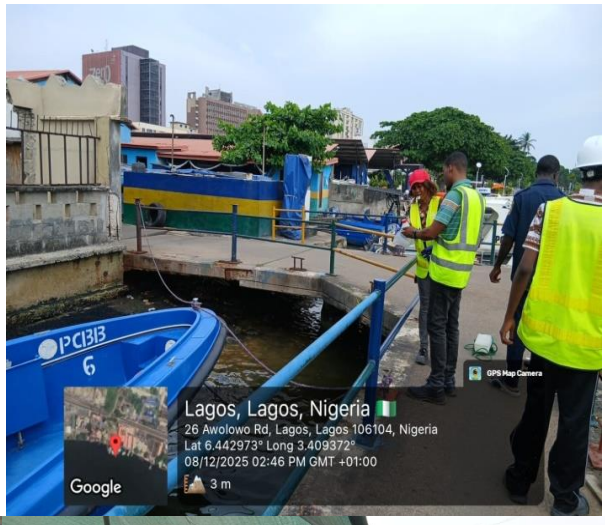

GPS Map Camera
Lagos, Lagos, Nigeria
18/19 St Gregory's College Rd, Ikoyi, Lagos, Lagos 106104, Nigeria
Lat 6.447737° Long 3.412791°
08/12/2025 12:43 PM GMT +01:00
Google
6 m

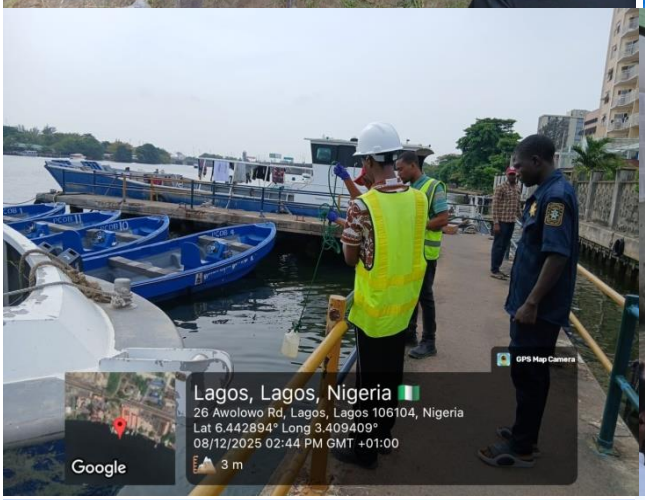

GPS Map Camera
Lagos, Lagos, Nigeria
26 Awolowo Rd, Lagos, Lagos 106104, Nigeria
Lat 6.442856° Long 3.4095°
08/12/2025 02:44 PM GMT +01:00
Google
3 m


GPS Map Camera
Lagos, Lagos, Nigeria
18/19 St Gregory's College Rd, Ikoyi, Lagos, Lagos 106104, Nigeria
Lat 6.447804° Long 3.412819°
08/12/2025 12:38 PM GMT +01:00
Google
6 m

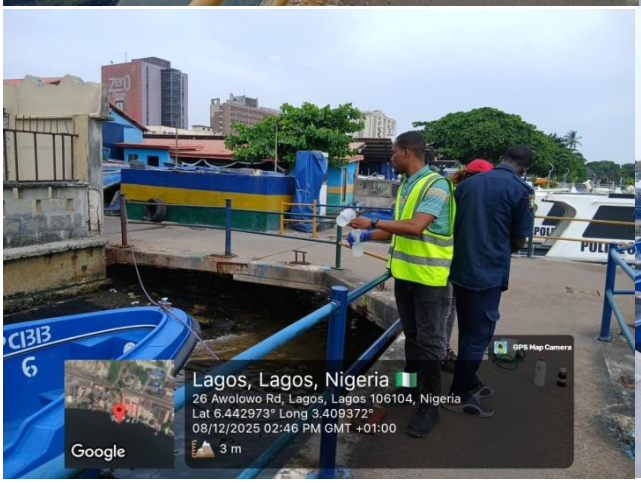

GPS Map Camera
Lagos, Lagos, Nigeria
18/19 St Gregory's College Rd, Ikoyi, Lagos, Lagos 106104, Nigeria
Lat 6.447795° Long 3.41283°
08/12/2025 01:13 PM GMT +01:00
Google
6 m

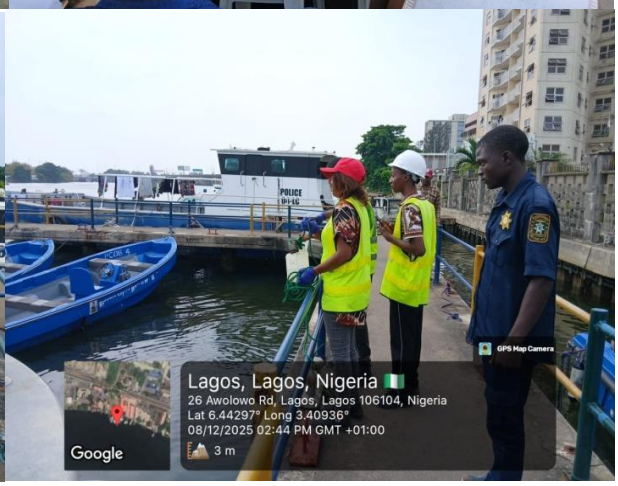

Lagos, Lagos, Nigeria
22,awolowo Ikeja, Ikoyi, Lagos, Lagos 106104, Nigeria
Lat 6.444213° Long 3.40868°
08/12/2025 11:22 AM GMT +01:00
7 m
Google


Lagos, Lagos, Nigeria
26 Awolowo Rd, Lagos, Lagos 106104, Nigeria
Lat 6.442973° Long 3.409372°
08/12/2025 02:46 PM GMT +01:00
3 m
Google


Lagos, Lagos, Nigeria
26 Awolowo Rd, Lagos, Lagos 106104, Nigeria
Lat 6.442894° Long 3.409409°
08/12/2025 02:44 PM GMT +01:00
3 m
Google


Lagos, Lagos, Nigeria
18/19 St Gregory's College Rd, Ikoyi, Lagos, Lagos 106104, Nigeria
Lat 6.447803° Long 3.412859°
08/12/2025 12:38 PM GMT +01:00
6 m
Google


Lagos, Lagos, Nigeria
26 Awolowo Rd, Lagos, Lagos 106104, Nigeria
Lat 6.442973° Long 3.409372°
08/12/2025 02:46 PM GMT +01:00
3 m
Google


Lagos, Lagos, Nigeria
26 Awolowo Rd, Lagos, Lagos 106104, Nigeria
Lat 6.44297° Long 3.40936°
08/12/2025 02:44 PM GMT +01:00
3 m
Google

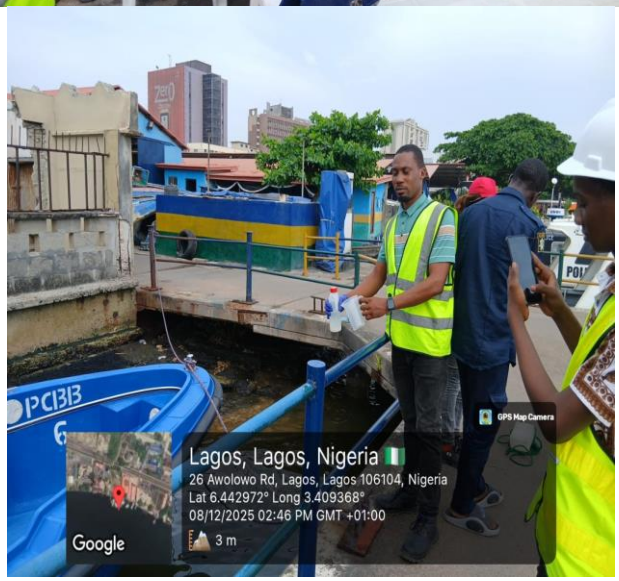

GPS Map Camera
Lagos, Lagos, Nigeria
18/19 St Gregory's College Rd, Ikoyi, Lagos, Lagos 106104, Nigeria
Lat 6.4478° Long 3.41284°
08/12/2025 12:38 PM GMT +01:00
6 m
Google

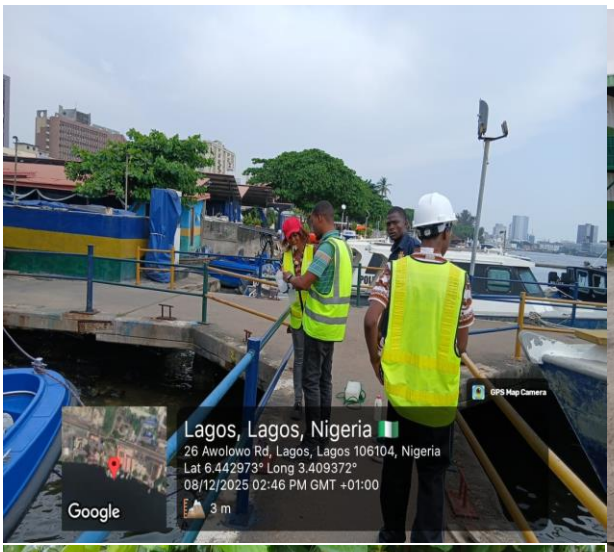

GPS Map Camera
Lagos, Lagos, Nigeria
22,awolowo Ikeja, Ikoyi, Lagos, Lagos 106104, Nigeria
Lat 6.444263° Long 3.408648°
08/12/2025 11:41 AM GMT +01:00
7 m
Google


GPS Map Camera
Lagos, Lagos, Nigeria
18/19 St Gregory's College Rd, Ikoyi, Lagos, Lagos 106104, Nigeria
Lat 6.44776° Long 3.412825°
08/12/2025 12:38 PM GMT +01:00
6 m
Google


GPS Map Camera
Lagos, Lagos, Nigeria
18/19 St Gregory's College Rd, Ikoyi, Lagos, Lagos 106104, Nigeria
Lat 6.447771° Long 3.4128°
08/12/2025 12:43 PM GMT +01:00
6 m
Google


GPS Map Camera
Lagos, Lagos, Nigeria
18/19 St Gregory's College Rd, Ikoyi, Lagos, Lagos 106104, Nigeria
Lat 6.447795° Long 3.41283°
08/12/2025 01:13 PM GMT +01:00
6 m
Google

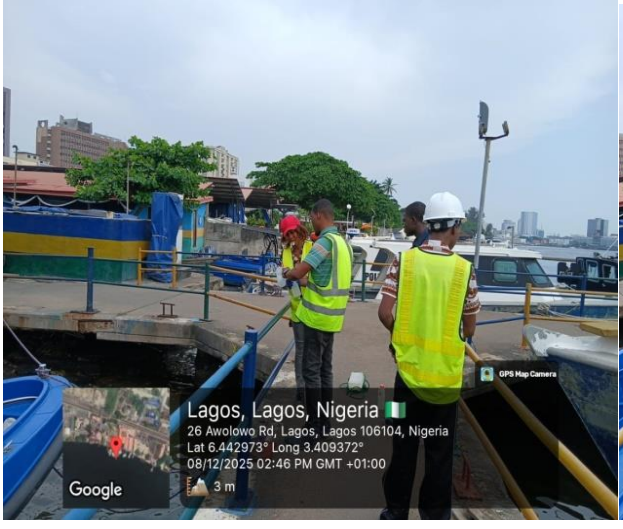

PC313
GPS Map Camera
Lagos, Lagos, Nigeria
26 Awolowo Rd, Lagos, Lagos 106104, Nigeria
Lat 6.442972° Long 3.409368°
08/12/2025 02:46 PM GMT +01:00
3 m
Google

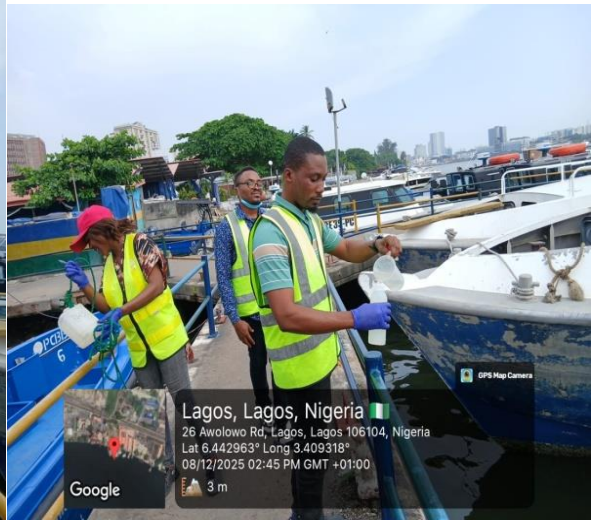

GPS Map Camera
Lagos, Lagos, Nigeria
26 Awolowo Rd, Lagos, Lagos 106104, Nigeria
Lat 6.442973° Long 3.409372°
08/12/2025 02:46 PM GMT +01:00
3 m
Google

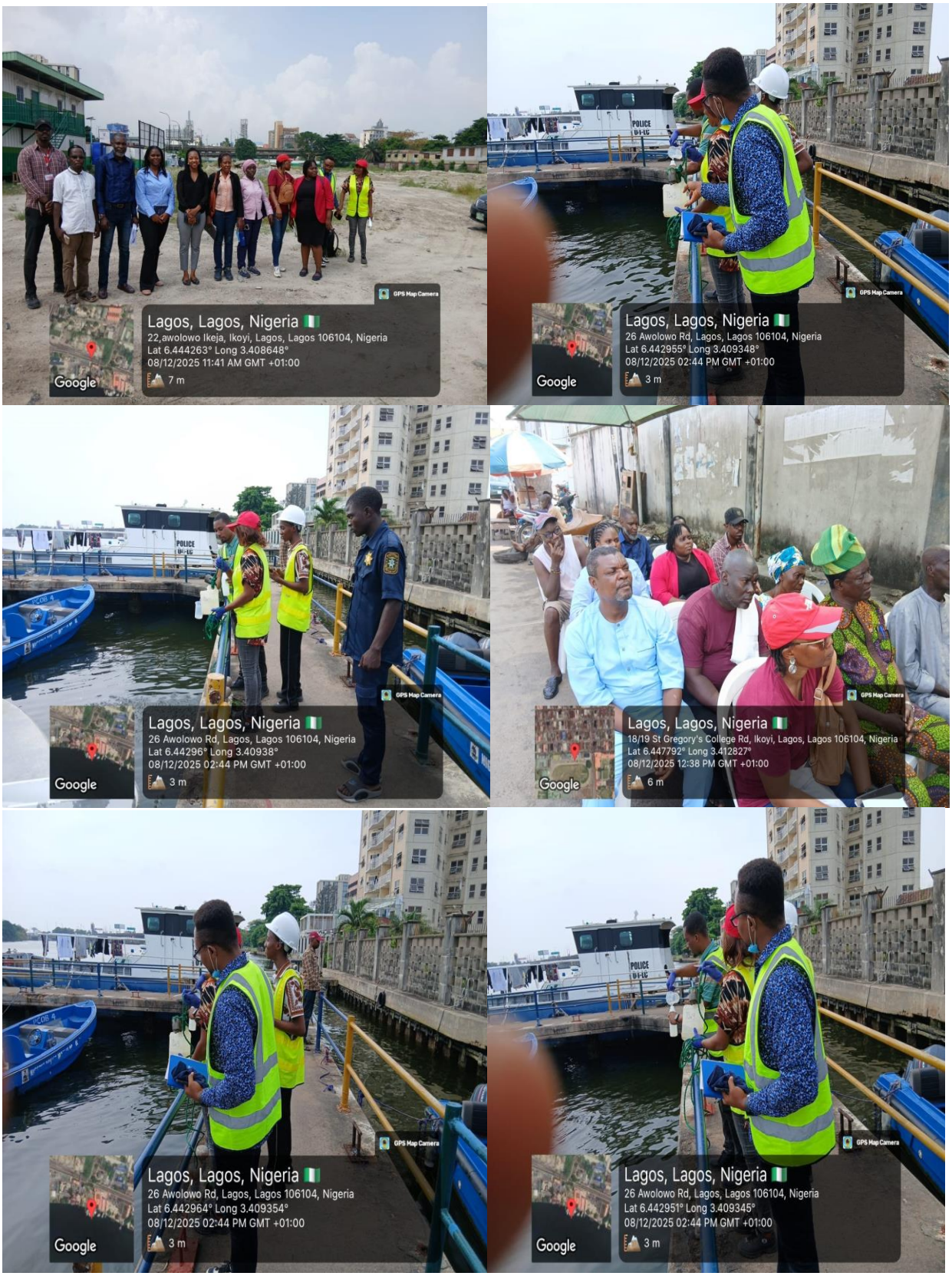

GPS Map Camera
Lagos, Lagos, Nigeria
22,awolowo Ikeja, Ikoyi, Lagos, Lagos 106104, Nigeria
Lat 6.444263° Long 3.408648°
08/12/2025 11:41 AM GMT +01:00
7 m
Google


GPS Map Camera
Lagos, Lagos, Nigeria
22,awolowo Ikeja, Ikoyi, Lagos, Lagos 106104, Nigeria
Lat 6.444213° Long 3.40868°
08/12/2025 11:22 AM GMT +01:00
7 m
Google


GPS Map Camera
Lagos, Lagos, Nigeria
22,awolowo Ikeja, Ikoyi, Lagos, Lagos 106104, Nigeria
Lat 6.444285° Long 3.40863°
08/12/2025 11:46 AM GMT +01:00
7 m
Google


GPS Map Camera
Lagos, Lagos, Nigeria
26 Awolowo Rd, Lagos, Lagos 106104, Nigeria
Lat 6.442973° Long 3.409372°
08/12/2025 02:46 PM GMT +01:00
3 m
Google


GPS Map Camera
Lagos, Lagos, Nigeria
26 Awolowo Rd, Lagos, Lagos 106104, Nigeria
Lat 6.442963° Long 3.409318°
08/12/2025 02:45 PM GMT +01:00
3 m
Google


Lagos, Lagos, Nigeria
22,awolowo Ikeja, Ikoyi, Lagos, Lagos 106104, Nigeria
Lat 6.444263° Long 3.408648°
08/12/2025 11:41 AM GMT +01:00
7 m
Lagos, Lagos, Nigeria
26 Awolowo Rd, Lagos, Lagos 106104, Nigeria
Lat 6.442955° Long 3.409348°
08/12/2025 02:44 PM GMT +01:00
3 m
Lagos, Lagos, Nigeria
26 Awolowo Rd, Lagos, Lagos 106104, Nigeria
Lat 6.44296° Long 3.40938°
08/12/2025 02:44 PM GMT +01:00
3 m
Lagos, Lagos, Nigeria
18/19 St Gregory's College Rd, Ikoyi, Lagos, Lagos 106104, Nigeria
Lat 6.447792° Long 3.412827°
08/12/2025 12:38 PM GMT +01:00
6 m
Lagos, Lagos, Nigeria
26 Awolowo Rd, Lagos, Lagos 106104, Nigeria
Lat 6.442964° Long 3.409354°
08/12/2025 02:44 PM GMT +01:00
3 m
Lagos, Lagos, Nigeria
26 Awolowo Rd, Lagos, Lagos 106104, Nigeria
Lat 6.442951° Long 3.409345°
08/12/2025 02:44 PM GMT +01:00
3 m

ESIA for Medipark

Sampling Chain of Custody

Project Title: ESIA for the Proposed Lagos Medipark Project
Project Location: Ikoyi
Local Government Area: Eti-Osa
State: Lagos State

Sample Type: Surface Water

Sample ID	Latitude	Longitude	Sampling Date	Sampling Time	Name of River/Stream/Pond	Name of Sampler
SW 1	6°26'32.14"N	3°24'20.05"E	08/12/2025	8:35am	Lagos Lagoon	Dosumu Oluwatobi
SW 2	6°26'31.53"N	3°24'27.28"E	08/12/2025	9:00am	Lagos Lagoon	Dosumu Oluwatobi
SW 3	6°26'29.87"N	3°24'34.46"E	08/12/2025	9:15am	Lagos Lagoon	Dosumu Oluwatobi
MSW 1	6°26'32.14"N	3°24'20.05"E	08/12/2025	9.25am	Lagos Lagoon	Dosumu Oluwatobi
SW Control 1	6°26'17.78"N	3°24'49.07"E	08/12/2025	9:50am	Lagos Lagoon	Dosumu Oluwatobi

In-Situ Measurement

Parameters	SW1	SW2	SW3	MSW1	SW Control 1
Appearance	normal	Normal	Normal	Normal	Normal
Colour	Colourless	Colourless	Colourless	Colourless	Colourless
Odour	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable
Temperature	28.43	28.22	27.95	24.23	28.27
pH	7.7	7.6	7.8	4.40	7.6
E.Conductivity	27,800	29,200	28,900	1500	28,200
Turbidity	1.9	2.4	2.2	2.3	2.0

Ex-situ Measurement

Method of Shipment to Laboratoy	Analysis Required
Packaged in ice box and transported via Laboratory vehicle to searchgate laboratory.	**General:** DO, BOD, COD, TDS, Salinity, TSS, Total Hardness, **Exchangeable Cations:** Na^+, K^+, Mg^{2+}, and Ca^{2+} **Exchangeable Anions:** SO_4^{2-}, PO_4^{2-}, NO_3^-, and Cl^-; **Heavy Metals:** Fe, Pb, Zn, Cu, Ni, Hg, Cr, Al, Mn, Cd **Organics:** Oil & Grease **Microorganisms:** Total coliform count, Heterotrophic bacteria count, Total fungi count, total yeast count, E.Coli, Salmonella, Shigella

Delivered by:	Date	Time	Received by:	Date	Time
Dosumu Oluwatobi	08/12/2025	1:00 pm	Lafeefat	08/12/2025	3:30 pm

Sample Type: Ground water

Sample ID	Latitude (N)	Longitude (E)	Sampling Date	Sampling Time	Borehole/Well	Name of Sampler
GW1	6°26'38.52"N	3°24'32.25"E	08/12/2025	11:00am	Borehole	Dosumu Oluwatobi

In-Situ Measurements

Parameters	SW1	Method of Shipment to Laboratory	Analysis Required
Colour	Colourless	Packaged in an Ice Chest and Delivered by Road	**General:** DO, BOD, COD, TDS, Salinity, TSS, Total Hardness, **Exchangeable Cations:** Na^+, K^+, Mg^{2+}, and Ca^{2+} **Exchangeable Anions:** SO_4^{2-}, PO_4^{2-}, NO_3^-, and Cl^-; **Heavy Metals:** Fe, Pb, Zn, Cu, Ni, Hg, Cr, Al, Mn, Cd **Organics:** Oil & Grease **Microorganisms:** Total coliform count, Heterotrophic bacteria count, Total fungi count, total yeast count, E.Coli, Salmonella, Shigella
Odour	Unobjectionable		
Temperature (°c)	26.2		
pH	7.8		
E. Conductivity (Ms/cm)	94.2		
Turbidity (NTU) (mg/L)	8.1		
Coliform (MPN/100ml)	Nil		

Sample Type: Soil

Sample ID	Latitude (N)	Longitude (E)	Sampling Date	Sampling Time	Name of Sampler
SS01	6°26'43.09"N	3°24'26.16"E	08/12/2025	8:45am	Newton Odaudu
SS02	6°26'41.96"N	3°24'26.46"E	08/12/2025	9:02am	Newton Odaudu
SS03	6°26'42.70"N	3°24'28.26"E	08/12/2025	9:35am	Newton Odaudu
SS04	6°26'41.44"N	3°24'28.78"E	08/12/2025	10:10am	Newton Odaudu
SS05	6°26'40.86"N	3°24'31.03"E	08/12/2025	10:45am	Newton Odaudu
SS06	6°26'39.33"N	3°24'31.22"E	08/12/2025	11:24am	Newton Odaudu
SS Cntrl1	6°26'40.55"N	3°24'32.77"E	08/12/2025	12:03pm	Newton Odaudu
SS Cntrl2	6°26'38.52"N	3°24'32.25"E	08/12/2025	12:45pm	Newton Odaudu

Method of Shipment to Laboratory	Analysis Required
Packaged in aluminum foil wraped, labeled with masking tape and transported via Laboratory vehicle to searchgate laboratory.	**General**: pH, Particle size, Porosity, Bulk density, moisture content **Exchangeable Cations:** $Na+$, $K+$, Mg^{2+}, and Ca^{2+} **Exchangeable Anions:** SO_4^{2-}, PO_4^{2-}, NO_3^-, and Cl^-; **Heavy Metals:** Fe, Pb, Zn, Cu, Ni, Hg, Cr, Cd, **Organics**: Oil & Grease/THC **Microorganisms**: Heterotrophic bacteria count, Hydrocarbon Utilizing Bacteria, Predominant bacteria Isolate, Total Heterotrophic Fungi, Hydrocarbon Utilizing Fungi, Predominant Fungi Isolates

Delivered by:	Date	Time	Received by:	Date	Time
Newton Odaudu	08/12/2025	1.00pm	Lateefat	08/12/2025	3.30pm

Sample Type: Plankton

Sample ID	Latitude	Longitude	Sampling Date	Sampling Time	Name of River/Stream/Pond	Name of Sampler
Plankton 1	6°26'32.14"N	3°24'20.05"E	08/12/2025	09:45am	Lagos Lagoon	Dosumu Oluwatobi
Plankton 2	6°26'32.14"N	3°24'20.05"E	08/12/2025	10:25am	Lagos Lagoon	Dosumu Oluwatobi

Method of Shipment to Laboratory	Analysis Required
Packaged in ice box and transported via searchgate laboratory vehicle to Searchgate Laboratory	**Phytoplankton** **Chlorophyceae (Green algae):** Spirogyra insignis, Spirogyra communis, Chlorella ellipsoidea, Aphanocapsa elachista, Scenedemus quaricauda,Hydrodictyon reticulatum, Ulothrix tenissima, Synedra spp ,Volvox barberi,Oedoganium grande,Chrysophyceae,Fragillaria spp **Cyanophyceae (Blue green algae)**: Merismpedia spp ,Polycystis spp, Nostoc spp, Anabaena spiroides ,Coelosphaerium spp , **Bacillariophyceae (Diatoms):** Navicula spp, Synedra spp., Aulacoseira spp., Cyclotella spp., Coscinodiscus.spp., Melosira spp **ZOOPLANKTON** **ROTIFERS:** Trichocerca cylindrica,Trichocerca elongate, Brachionus angularis,Brachionus falcatus, Brachionus calyciforus,Keratella cochlearis, Keratella tropica, Filinia opoliensis ,Lecane decipiens Asplanchna spp,Polyarthra delicoptera, Ptygra melicenta **CLADOCERANS:** Daphnia longispina, Ceriodapnia cornuta,Bosmina longirostris, Diaphanosoma exisum, Moina micrura, Nauplius spp **COPEPODA:**Calanoid spp, Copepodites spp ,Cyclopoid spp Limnocalans spp, Diaptomus spp

Delivered by:	Date	Time	Received by:	Date	Time
Dosumu Oluwatobi	08/12/2025	1.00pm	Lateefat	08/12/2025	3.30pm

Sample Type: Sediment

Sample ID	Latitude	Longitude	Sampling Date	Sampling Time	Name of Sampler
Sediment 1	6°26'31.53"N	3°24'27.28"E	08/12/2025	9:20am	Lagos Lagoon
Sediment 2	6°26'29.87"N	3°24'34.46"E	08/12/2025	9:55am	Lagos Lagoon
Sediment 3	6°26'31.53"N	3°24'40.47"E	08/12/2025	10.40am	Lagos Lagoon

Method of Shipment to Laboratory	Analysis Required
Packaged in ice box and transported via searchgate laboratory vehicle to Searchgate Laboratory	**General**: pH, Particle size, Porosity, Bulk density, moisture content **Exchangeable Cations:** $Na+$, $K+$, Mg^{2+}, and Ca^{2+} **Exchangeable Anions:** SO_4^{2-}, PO_4^{2-}, NO_3^-, and Cl^-; **Heavy Metals:** Fe, Pb, Zn, Cu, Ni, Hg, Cr, Cd, **Organics**: Oil & Grease/THC **Microorganisms**: Heterotrophic bacteria count, Hydrocarbon Utilizing Bacteria, Predominant bacteria Isolate, Total Heterotrophic Fungi, Hydrocarbon Utilizing Fungi, Predominant Fungi Isolates

Delivered by:	Date	Time	Received by:	Date	Time
Ezekiel Kalu	08/12/2025	1.00pm	Lateefat	08/12/2025	3.30pm

CLIENT: LABSTAFF NIGERIA LIMITED
SAMPLE TYPE: Air Quality and Noise Level Measurement
DATE OF RECEIPT: 8th December, 2025.
PERIOD OF ANALYSIS: 8th December, 2025.
QA/QC CHECK DATE: 12th January, 2026.
Water Sample Result Table: $pm_{2.5}$, PM_{10}, NO_2, NO, and CO

Sampling Code	Latitude N)	Longitude (E)	Time (am/pm)	$PM_{2.5}$ ($\mu g/m^3$)	PM_{10} ($\mu g/m^3$)	NO_2 (ppm)	NO (ppm)	CO (ppm)
A, N01	6°26'43.09"N	3°24'26.16"E	8:17am	26.0	38.0	0.02	0.01	4.0
A, N02	6°26'41.96"N	3°24'26.46"E	8:35am	28.0	48.0	0.00	0.00	0.0
A, N03	6°26'42.70"N	3°24'28.26"E	9:00am	24.0	35.0	0.00	0.00	0.0
A, N04	6°26'41.44"N	3°24'28.78"E	9:15am	22.0	30.0	0.00	0.00	0.0
A, N05	6°26'40.86"N	3°24'31.03"E	9.25am	23.0	35.0	0.00	0.00	2.00
A, N06	6°26'39.33"N	3°24'31.22"E	9:50am	24.0	40.0	0.01	0.01	2.00
A, N07	6°26'39.43"N	3°24'29.24"E	10:15am	29.0	48.0	0.01	0.01	3.0
A, N08	6°26'39.95"N	3°24'27.76"E	10:25am	30.0	50.0	0.01	0.01	2.0
A, N09	6°26'41.26"N	3°24'27.48"E	10:45am	19.0	30.0	0.00	0.00	0.0

CLIENT: LABSTAFF NIGERIA LIMITED
SAMPLE TYPE: Air Quality and Noise Level Measurement
DATE OF RECEIPT: 8th December, 2025.
PERIOD OF ANALYSIS: 8th December, 2025.
QA/QC CHECK DATE: 12th January, 2026.
Water Sample Result Table: $pm_{2.5}$, PM_{10}, NO_2, NO, and CO

Sampling Code	Latitude N)	Longitude (E)	Time (am/pm)	$PM_{2.5}$ ($\mu g/m^3$)	PM_{10} ($\mu g/m^3$)	NO_2 (ppm)	NO (ppm)	CO (ppm)
A, N10	6°26'40.30"N	3°24'29.94"E	11:15am	20.0	32.0	0.00	0.00	0.0
A, N Cntrl1	6°26'40.55"N	3°24'32.77"E	4:30pm	16.0	25.0	0.00	0.00	0.0
A, N Cntrl2	6°26'38.52"N	3°24'32.25"E	4:45pm	14.0	22.0	0.00	0.00	0.0
Minimum value				0.02	BDL	BDL	14.0	22.0
Maximum value				0.03	0.01	BDL	30.0	50.0
FMEnv Limit				0.25	0.06	-	40	150

CLIENT: LABSTAFF NIGERIA LIMITED

SAMPLE TYPE: Air Quality and Noise Level Measurement

DATE OF RECEIPT: 8th December, 2025.

PERIOD OF ANALYSIS: 8th December, 2025.

QA/QC CHECK DATE: 12th January, 2026.

Water Sample Result Table: SO_2, CO_2, CH_4, VOCs and Noise Level

Sampling Code	Latitude N)	Longitude (E)	Time (am/pm)	SO_2 (ppm)	CO_2 (ppm)	CH_4 (LEL) (%)	VOC's (ppm)	Noise Level dB(A)
A, N01	6°26'43.09"N	3°24'26.16"E	8:17am	0.00	756	0.00	0.40	60.0
A, N02	6°26'41.96"N	3°24'26.46"E	8:35am	0.00	617	0.00	0.10	58.0
A, N03	6°26'42.70"N	3°24'28.26"E	9:00am	0.00	572	0.00	0.08	44.5
A, N04	6°26'41.44"N	3°24'28.78"E	9:15am	0.00	539	0.00	0.09	45.2
A, N05	6°26'40.86"N	3°24'31.03"E	9.25am	0.00	499	0.00	0.11	48.9
A, N06	6°26'39.33"N	3°24'31.22"E	9:50am	0.00	503	0.00	0.20	50.1
A, N07	6°26'39.43"N	3°24'29.24"E	10:15am	0.00	623	0.00	0.35	58.7
A, N08	6°26'39.95"N	3°24'27.76"E	10:25am	0.00	689	0.00	0.30	57.5
A, N09	6°26'41.26"N	3°24'27.48"E	10:45am	0.00	522	0.00	0.22	45.1

CLIENT: LABSTAFF NIGERIA LIMITED

SAMPLE TYPE: Air Quality and Noise Level Measurement

DATE OF RECEIPT: 8th December, 2025.

PERIOD OF ANALYSIS: 8th December, 2025.

QA/QC CHECK DATE: 12th January, 2026.

Water Sample Result Table: SO_2, CO_2, CH_4, VOCs and Noise Level

Sampling Code	Latitude N)	Longitude (E)	Time (am/pm)	SO_2 (ppm)	CO_2 (ppm)	CH_4 (LEL) (%)	VOC's (ppm)	Noise Level dB(A)
A, N10	6°26'40.30"N	3°24'29.94"E	11:15am	0.00	530	0.00	0.15	50.2
A, N Cntrl1	6°26'40.55"N	3°24'32.77"E	4:30pm	0.00	475	0.00	0.004	40.5
A, N Cntrl2	6°26'38.52"N	3°24'32.25"E	4:45pm	0.00	483	0.00	0.007	41.9
Minimum value				-	475	-	0.004	40.5
Maximum value				-	756	-	0.40	60.0
FMEnv Limit				-	-	-	0.5	55-90

CLIENT: LABSTAFF NIGERIA LIMITED

SAMPLE TYPE: Air Quality and Noise Level Measurement

DATE OF RECEIPT: 8th December, 2025.

PERIOD OF ANALYSIS: 8th December, 2025.

QA/QC CHECK DATE: 12th January, 2026.

Water Sample Result Table: Temp, R. Hum, Wind Speed, and Wind Direction

Sampling Code	Latitude N)	Longitude (E)	Time (am/pm)	Temp (°c)	R. Hum (%)	Wind Speed	Wind Direction
A, N01	6°26'43.09"N	3°24'26.16"E	8:17am	29.0	49.0	1.4	NW
A, N02	6°26'41.96"N	3°24'26.46"E	8:35am	30.1	53.0	0.1	SW
A, N03	6°26'42.70"N	3°24'28.26"E	9:00am	28.3	53.0	1.4	SW
A, N04	6°26'41.44"N	3°24'28.78"E	9:15am	28.9	52.0	0.2	SW
A, N05	6°26'40.86"N	3°24'31.03"E	9.25am	29.0	51.5	0.3	NW
A, N06	6°26'39.33"N	3°24'31:22"E	9:50am	29.9	53.0	0.2	SW
A, N07	6°26'39.43"N	3°24'29.24"E	10:15am	28.2	51.0	0.3	SW
A, N08	6°26'39.95"N	3°24'27.76"E	10:25am	28.5	51.4	1.1	SW
A, N09	6°26'41.26"N	3°24'27.48"E	10:45am	27.9	49.5	1.0	SW

CLIENT: LABSTAFF NIGERIA LIMITED

SAMPLE TYPE: Air Quality and Noise Level Measurement

DATE OF RECEIPT: 8th December, 2025.

PERIOD OF ANALYSIS: 8th December, 2025.

QA/QC CHECK DATE: 12th January, 2026.

Water Sample Result Table: SPM, NO_2, CH_4, CO and CO_2

Sampling Code	Latitude N)	Longitude (E)	Time (am/pm)	Temp (°c)	R. Hum (%)	Wind Speed	Wind Direction
A, N10	6°26'40.30"N	3°24'29.94"E	11:15am	28.8	50.4	1.2	SW
A, N Cntrl1	6°26'40.55"N	3°24'32.77"E	4:30pm	27.6	55.4	1.5	SW
A, N Cntrl2	6°26'38.52"N	3°24'32.25"E	4:45pm	27.5	55.0	1.8	SW
Minimum value				27.5	49.0	0.1	-
Maximum value				30.1	55.4	1.8	-
FMEnv Limit				-	-	-	-

CLIENT: Labstaff Nigeria Limited

SAMPLE TYPE: Soil

DATE OF RECEIPT: 8th December, 2025.

PERIOD OF ANALYSIS: 9th – 22nd December, 2025.

QA/QC CHECK DATE: 12th January, 2026.

Sample Results Table: SS 1 to SS 4

		SS 01 6°26'43.09"N 3°24'26.16"E		SS 02 6°26'41.96"N 3°24'26.46"E		SS 03 6°26'42.70"N 3°24'28.26"E		SS 04 6°26'41.44"N 3°24'28.78"E	
S/N	PARAMETERS	0-15cm	15-30cm	0-15cm	15-30cm	0-15cm	15-30cm	0-15cm	15-30cm
A	PHYSICO-CHEMICAL TEST								
1	Colour	Dark Grey	Grey	Dark Grey	Grey	Brown	Light Brown	Dark Grey	Grey
2	pH	6.40	6.33	6.5	6.3	6.6	6.4	6.3	6.1
3	Conductivity (µS/cm)	275.0	80.0	290	255	310	270	265	235
4	Salinity (ppt)	0.14	0.04	0.15	0.11	0.17	0.12	0.13	0.09
5	Texture	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy
6	Sand (%)	85.0	90.0	83	86	82	85	86	89
7	Silt (%)	15.0	10.0	17	14	18	15	14	11
8	Clay (%)	0.0	0.0	0	0	0	0	0	0
9	TOC (%)	4.65	3.31	4.80	3.25	5.10	3.40	4.50	3.00
10	Bulk Density (g/cm³)	1.21	1.14	1.19	1.36	1.18	1.35	1.22	1.40
11	Porosity (%)	54.68	57.30	55.1	48.5	55.6	49.1	54.3	47.2
12	Alkalinity (mg/kg)	420.0	336.0	435	375	450	390	410	350
13	Nitrate (mg/kg)	25.24	29.65	27.0	18.9	29.4	20.1	24.1	16.9
14	Ammonia-N (mg/kg)	3.78	2.89	4.05	2.60	4.32	2.75	3.55	2.30
15	Phosphate (mg/kg)	1.21	1.08	1.35	0.90	1.48	0.98	1.10	0.75
16	Sulphate (mg/kg)	51.0	30.0	54.5	45.1	58.0	48.2	49.2	40.5
17	Calcium (mg/kg)	44.46	24.06	47.0	38.4	50.5	41.2	42.3	34.6
18	Magnesium (mg/kg)	21.48	11.64	32.8	18.2	24.1	19.4	20.6	16.4

CLIENT: Labstaff Nigeria Limited

SAMPLE TYPE: Soil

DATE OF RECEIPT: 8th December, 2025.

38, Diya Street, Ifako, Gb

PERIOD OF ANALYSIS: 9th – 22nd December, 2025.

QA/QC CHECK DATE: 12th January, 2026.

Sample Results Table: SS 1 to SS 4

		SS 01 6°26'43.09"N 3°24'26.16"E		SS 02 6°26'41.96"N 3°24'26.46"E		SS 03 6°26'42.70"N 3°24'28.26"E		SS 04 6°26'41.44"N 3°24'28.78"E	
S/N	PARAMETERS	0-15cm	15-30cm	0-15cm	15-30cm	0-15cm	15-30cm	0-15cm	15-30cm
19	THC (mg/kg)	113.80	92.14	120.4	90.2	128.6	96.1	109.2	82.4
B	**Heavy Metals (mg/kg)**								
20	Sodium	180.74	100.51	185.4	160.1	192.6	168.4	176.3	150.5
21	Potassium	5.49	3.05	5.62	4.45	5.88	4.68	5.32	4.12
22	Iron	12.40	9.50	13.25	10.80	14.10	11.50	11.95	9.80
23	Copper	0.360	0.274	0.385	0.300	0.410	0.325	0.345	0.270
24	Cadmium	0.0215	0.0180	0.023	0.016	0.025	0.018	0.020	0.014
25	Zinc	1.367	2.080	1.45	1.08	1.58	1.18	1.32	0.98
26	Lead	0.078	0.082	0.082	0.058	0.090	0.064	0.074	0.052
27	Mercury	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
28	Nickel	1.201	0.553	1.28	0.98	1.35	1.05	1.15	0.88
29	Chromium	0.190	0.157	0.205	0.155	0.225	0.170	0.180	0.138
30	Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
31	Barium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
C	**Microbiology Test (CFU/kg)**								
32	THB	1.55×10^3	1.39×10^3	1.62×10^3	1.10×10^3	1.75×10^3	1.20×10^3	1.48×10^3	0.98×10^3
33	THF	5.0×10^1	3.6×10^1	5.4×10^1	3.6×10^1	6.0×10^1	4.0×10^1	4.8×10^1	3.0×10^1
34	THUB	0.81×10^2	1.09×10^2	0.86×10^2	0.55×10^2	0.92×10^2	0.60×10^2	0.78×10^2	0.48×10^2
35	THUF	0.53×10^1	0.72×10^1	0.56×10^1	0.33×10^1	0.60×10^1	0.36×10^1	0.50×10^1	0.28×10^1

CLIENT: Labstaff Nigeria Limited

SAMPLE TYPE: Soil

DATE OF RECEIPT: 8th December, 2025.

PERIOD OF ANALYSIS: 9th – 22nd December, 2025.

QA/QC CHECK DATE: 12th January, 2026.

Sample Results Table: SS 05 to SS 08

		SS 05 6°26'40.86"N 3°24'31.03"E		SS 06 6°26'39.33"N 3°24'31.22"E		SS 07 6°26'39.43"N 3°24'29.24"E		SS 08 6°26'39.95"N 3°24'27.76"E	
S/N	PARAMETERS	0-15cm	15-30cm	0-15cm	15-30cm	0-15cm	15-30cm	0-15cm	15-30cm
A	PHYSICO-CHEMICAL TEST								
1	Colour	Brown	Light Brown	Dark Grey	Grey	Brown	Light Brown	Dark Grey	Grey
2	pH	6.7	6.5	6.4	6.2	6.5	6.3	6.6	6.4
3	Conductivity (µS/cm)	320	280	285	250	300	265	315	275
4	Salinity (ppt)	0.18	0.13	0.15	0.11	0.16	0.12	0.17	0.13
5	Texture	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy
6	Sand (%)	80	84	83	87	81	85	82	86
7	Silt (%)	20	16	17	13	19	15	18	14
8	Clay (%)	0	0	0	0	0	0	0	0
9	TOC (%)	5.25	3.55	4.70	3.20	5.00	3.35	5.15	3.45
10	Bulk Density (g/cm³)	1.17	1.34	1.20	1.37	1.18	1.35	1.16	1.33
11	Porosity (%)	56.0	49.8	54.9	48.0	55.4	48.9	55.8	49.5
12	Alkalinity (mg/kg)	465	405	430	370	445	385	455	395
13	Nitrate (mg/kg)	31.2	21.3	26.3	18.4	28.7	19.6	30.1	20.5
14	Ammonia-N (mg/kg)	4.60	2.95	3.90	2.55	4.20	2.70	4.45	2.85
15	Phosphate (mg/kg)	1.60	1.05	1.28	0.86	1.45	0.95	1.55	1.00
16	Sulphate (mg/kg)	60.3	50.4	53.1	44.3	56.7	47.0	59.4	49.5
17	Calcium (mg/kg)	53.8	43.5	46.1	37.8	49.2	40.1	52.0	42.0
18	Magnesium (mg/kg)	25.5	20.1	[illegible]	17.8	23.7	18.9	24.9	19.8

CLIENT: Labstaff Nigeria Limited

SAMPLE TYPE: Soil

DATE OF RECEIPT: 8th December, 2025.

PERIOD OF ANALYSIS: 9th – 22nd December, 2025.

QA/QC CHECK DATE: 12th January, 2026.

Sample Results Table: SS 05 to SS 08

		SS 05 6°26'40.86"N 3°24'31.03"E		SS 06 6°26'39.33"N 3°24'31.22"E		SS 07 6°26'39.43"N 3°24'29.24"E		SS 08 6°26'39.95"N 3°24'27.76"E	
S/N	PARAMETERS	0-15cm	15-30cm	0-15cm	15-30cm	0-15cm	15-30cm	0-15cm	15-30cm
19	THC (mg/kg)	135.8	102.5	118.3	88.9	125.4	94.3	132.1	99.0
B	**Heavy Metals (mg/kg)**								
20	Sodium	201.8	172.6	187.1	162.4	195.9	169.8	198.3	171.2
21	Potassium	6.10	4.85	5.71	4.51	5.95	4.72	6.03	4.80
22	Iron	15.20	12.10	13.60	11.10	14.45	11.85	15.05	12.00
23	Copper	0.460	0.360	0.395	0.310	0.430	0.335	0.455	0.355
24	Cadmium	0.028	0.020	0.024	0.017	0.026	0.019	0.027	0.020
25	Zinc	1.65	1.25	1.48	1.10	1.55	1.16	1.62	1.22
26	Lead	0.098	0.070	0.086	0.060	0.092	0.066	0.096	0.069
27	Mercury	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
28	Nickel	1.42	1.12	1.30	1.00	1.38	1.08	1.45	1.10
29	Chromium	0.240	0.185	0.210	0.160	0.230	0.175	0.245	0.182
30	Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
31	Barium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
C	**Microbiology Test (CFU/kg)**								
32	THB	1.88×10^3	1.30×10^3	1.65×10^3	1.12×10^3	1.80×10^3	1.25×10^3	1.90×10^3	1.35×10^3
33	THF	6.3×10^1	4.4×10^1	5.6×10^1	3.8×10^1	6.1×10^1	4.2×10^1	6.5×10^1	4.6×10^1
34	THUB	1.05×10^2	0.70×10^2	0.88×10^2	0.58×10^2	0.98×10^2	0.65×10^2	1.08×10^2	0.72×10^2
35	THUF	0.65×10^1	0.40×10^1	0.58×10^1	0.34×10^1	0.62×10^1	0.38×10^1	0.68×10^1	0.42×10^1

CLIENT: Labstaff Nigeria Limited

SAMPLE TYPE: Soil

DATE OF RECEIPT: 8th December, 2025.

PERIOD OF ANALYSIS: 9th – 22nd December, 2025.

QA/QC CHECK DATE: 12th January, 2026.

Sample Results Table: SS 09 to SSCtrl 02

		SS 09 6°26'41.26"N 3°24'27.48"E		SS 10 6°26'40.30"N 3°24'29.94"E		SS Ctrl 01 6°26'40.55"N 3°24'32.77"E		SS Ctrl 02 6°26'38.52"N 3°24'32.25"E		Min	Max
S/N	PARAMETERS	0-15cm	15-30cm	0-15cm	15-30cm	0-15cm	15-30cm	0-15cm	15-30cm		
A	**PHYSICO-CHEMICAL TEST**										
1	Colour	Brown	Light Brown	Dark Grey	Grey	Brown	Light Brown	Dark Grey	Grey		
2	pH	6.3	6.1	6.5	6.3	6.5	6.3	6.6	6.4	6.1	E
3	Conductivity (µS/cm)	270	240	295	260	300	265	315	275	80	320
4	Salinity (ppt)	0.14	0.10	0.16	0.12	0.16	0.12	0.17	0.13	0.04	0.18
5	Texture	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy		
6	Sand (%)	84	88	83	86	81	85	82	86	80	90
7	Silt (%)	16	12	17	14	19	15	18	14	10	20
8	Clay (%)	0	0	0	0	0	0	0	0		
9	TOC (%)	4.60	3.05	4.90	3.30	5.00	3.35	5.15	3.45	2.45	5.25
10	Bulk Density (g/cm³)	1.23	1.41	1.19	1.36	1.18	1.35	1.16	1.33	1.14	1.45
11	Porosity (%)	54.1	46.8	55.0	48.6	55.4	48.9	55.8	49.5	45.8	57.3
12	Alkalinity (mg/kg)	415	355	440	380	445	385	455	395	325	465
13	Nitrate (mg/kg)	25.0	17.6	27.8	19.0	28.7	19.6	30.1	20.5	13.9	31.2
14	Ammonia-N (mg/kg)	3.70	2.40	4.10	2.65	4.20	2.70	4.45	2.85	1.95	4.6
15	Phosphate (mg/kg)	1.18	0.80	1.38	0.92	1.45	0.95	1.55	1.00	0.6	1.6
16	Sulphate (mg/kg)	50.6	41.8	55.2	46.1	56.7	47.0	59.4	49.5	30	60.3
17	Calcium (mg/kg)	43.7	35.9	[illegible]	39.5	49.2	40.1	52.0	42.0	24.06	53.8
18	Magnesium (mg/kg)	21.2	16.8	[illegible]	18.5	23.7	18.9	24.9	19.8	11.64	25.5

CLIENT: Labstaff Nigeria Limited
SAMPLE TYPE: Soil
DATE OF RECEIPT: 8th December, 2025.
PERIOD OF ANALYSIS: 9th – 22nd December, 2025.
QA/QC CHECK DATE: 12th January, 2026.
Sample Results Table: SS 09 to SSCtrl 02

		SS 09 6°26'41.26"N 3°24'27.48"E		SS 10 6°26'40.30"N 3°24'29.94"E		SS Ctrl 01 6°26'40.55"N 3°24'32.77"E		SS Ctrl 02 6°26'38.52"N 3°24'32.25"E		MIN	MAX
S/N	PARAMETERS	0-15cm	15-30cm	0-15cm	15-30cm	0-15cm	15-30cm	0-15cm	15-30cm		
19	THC (mg/kg)	112.5	84.0	121.6	91.5	125.4	94.3	132.1	99.0	68.5	135.8
B	**Heavy Metals (mg/kg)**										
20	Sodium	178.5	152.3	190.6	165.7	195.9	169.8	198.3	171.2	100.51	201.8
21	Potassium	5.40	4.20	5.78	4.60	5.95	4.72	6.03	4.80	3.05	6.1
22	Iron	12.30	10.00	13.90	11.40	14.45	11.85	15.05	12.00	9.1	15.2
23	Copper	0.370	0.285	0.405	0.320	0.430	0.335	0.455	0.355	0.23	0.46
24	Cadmium	0.022	0.015	0.025	0.018	0.026	0.019	0.027	0.020	0.011	0.028
25	Zinc	1.40	1.05	1.50	1.14	1.55	1.16	1.62	1.22	0.8	2.08
26	Lead	0.080	0.056	0.088	0.062	0.092	0.066	0.096	0.069	0.045	0.098
27	Mercury	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		
28	Nickel	1.22	0.94	1.33	1.02	1.38	1.08	1.45	1.10	0.553	1.45
29	Chromium	0.195	0.148	0.220	0.168	0.230	0.175	0.245	0.182	0.118	0.245
30	Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		
31	Barium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		
C	**Microbiology Test (CFU/kg)**										
32	THB	1.52×10^3	1.00×10^3	1.70×10^3	1.18×10^3	1.80×10^3	1.25×10^3	1.90×10^3	1.35×10^3	0.82×10^3	1.90×10^3
33	THF	5.1×10^1	3.3×10^1	5.8×10^1	3.9×10^1	6.1×10^1	4.2×10^1	6.5×10^1	4.6×10^1	3.0×10^1	6.5×10^1
34	THUB	0.82×10^2	0.50×10^2	0.94×10^2	0.62×10^2	0.98×10^2	0.65×10^2	1.08×10^2	0.72×10^2	0.38×10^2	1.09×10^2
35	THUF	0.54×10^1	0.31×10^1	0.60×10^1	0.36×10^1	0.62×10^1	0.38×10^1	0.68×10^1	0.42×10^1	0.33×10^1	0.68×10^1

CLIENT: LABSTAFF NIGERIA LIMITED

SAMPLE TYPE: Water (Groundwater)

DATE OF RECEIPT: 8th December, 2025.

PERIOD OF ANALYSIS: 9th – 7th December, 2025.

QA/QC CHECK DATE: 12th January, 2026.

Water Sample Result Table:

S/N	PARAMETERS	WHO Standard	FMEnv Standard	GW 01 (Borehole) 6°26'38.52"N 3°24'32.25"E	GW 02 (Hand Dug Well) 6°26'40.55"N 3°24'32.77"E	Min	Max
A	**PHYSICO-CHEMICAL TEST**						
1	pH	6.5–8.5	6.5-8.5	7.8	7.5	7.5	7.8
2	Conductivity (µS/cm)	1,500	1,000	942	910	910	942
3	Turbidity (NTU)	≤5	5	8.1	7.0	7.0	8.1
4	TDS (mg/L)	≤500	500	472	451	451	472
5	Total Hardness (mg/L)	500	200	106	101	101	106
6	Nitrate (mg/L)	50	50	40.2	39.4	39.4	40.2
7	Sulphate (mg/L)	250	500	32	31	31	32
8	Chloride (mg/L)	250	250	41	39	39	41
9	DO (mg/L)	≥5 (guide)	7.5	3.7	3.6	3.6	3.7
10	BOD (mg/L)	≤5		3.1	3.2	3.1	3.2
B	**Heavy Metals**						
11	Iron	0.3	1.0	0.72	0.85	0.72	0.85
12	Lead	0.01	0.05	<0.01	<0.01	-	-
13	Zinc	3.0	5.0	0.54	0.61	0.54	0.61
14	Copper	2.0	0.1	0.43	0.49	0.43	0.49
15	Manganese	0.4	0.05	1.82	2.05	1.82	2.05
16	Cadmium	0.003	0.01	<0.01	<0.01	-	-
C	**Microbiology**						
17	Total Plate Count (CFU/ml)	$\leq1.0\times10^2$	Nil	1.8×10^3	1.5×10^3	1.5×10^3	1.8×10^3
18	Total Coliform (CFU/100ml)	0	Nil	1.5×10^2	1.1×10^2	1.1×10^2	1.5×10^2
19	E. coli	0		ND	ND	ND	ND

CLIENT: Labstaff Nigeria Limited

SAMPLE TYPE: Water (Surface water)

DATE OF RECEIPT: 8th December, 2025.

PERIOD OF ANALYSIS: 9th – 7th December, 2025.

QA/QC CHECK DATE: 12th January, 2026.

Water Sample Result Table:

S/N	PARAMETERS	WHO	S W 01	S W 02	S W 03	S W 04	S W 05	S W 06	Min	Max
A	PHYSICO-CHEMICAL TEST	Standard	6°26'32.14"N 3°24'20.05"E	6°26'31.53"N 3°24'27.28"E	6°26'29.87"N 3°24'34.46"E	6°26'25.43"N 3°24'40.47"E	6°26'23.40"N 3°24'46.02"E	6°26'17.78"N 3°24'49.07"E		
1	pH @ 25°C	6.5–8.5	7.7	7.6	7.8	7.5	7.7	7.6	7.5	7.8
2	Conductivity (µs/cm)	1,500	27,800	29,200	28,900	27,600	29,500	28,200	27600	29500
3	Turbidity (NTU)	≤5	1.9	2.4	2.2	1.8	2.6	2.0	1.8	2.6
4	TSS (mg/L)	≤30*	295	325	315	300	335	305	295	335
5	TDS (mg/L)	≤500	13,850	14,600	14,450	13,700	14,900	14,050	13700	14900
6	Salinity (ppt)	≤0.5	15.1	16.3	15.9	14.8	16.7	15.4	15	17
7	Alkalinity (mg/L)	≤200	355	385	375	350	395	360	350	395
8	DO (mg/L)	≥5	4.0	4.5	4.3	3.9	4.6	4.1	3.9	4.6
9	BOD (mg/L)	≤5	250.4	280.1	270.6	245.9	290.3	255.7	246	290
10	COD (mg/L)	≤50	2,650	2,950	2,850	2,600	3,050	2,700	2600	3050
11	Total Hardness (mg/L)		165.0	100.0	175.0	148.2	167.4	1.53.2	100	175
12	Chloride (mg/L)	250	570	625	605	560	640	585	560	640
13	Nitrate (mg/L)	50	54.0	51.8	57.2	55.4	50.1	59.6	50.1	59.6
14	Phosphate (mg/L)		2.09	3.42	1.89	2.42	3.39	2.92	1.89	3.42
15	Sulphate (mg/L)	250	320	350	340	315	365	325	320	365
16	Ammonia-Nitrogen (mg/L)	0.5	12.9	11.8	13.7	13.1	11.2	14.5	11.2	14.5
17	Calcium (mg/L)	-	39.07	40.04	48.07	47.30	51.32	55.49	39.07	55.49
18	Magnesium (mg/L)	0.4	15.96	19.68	17.96	21.63	17.82	22.46	15.96	22.46

CLIENT: Labstaff Nigeria Limited

SAMPLE TYPE: Water (Surface water)

DATE OF RECEIPT: 8th December, 2025.

PERIOD OF ANALYSIS: 9th – 7th December, 2025.

QA/QC CHECK DATE: 12th January, 2026.

Water Sample Result Table:

S/N	PARAMETERS	WHO	S W 01	S W 02	S W 03	S W 04	S W 05	S W 06	Min	Max
A	PHYSICO-CHEMICAL TEST	Standard	6°26'32.14"N 3°24'20.05"E	6°26'31.53"N 3°24'27.28"E	6°26'29.87"N 3°24'34.46"E	6°26'25.43"N 3°24'40.47"E	6°26'23.40"N 3°24'46.02"E	6°26'17.78"N 3°24'49.07"E		
B	Heavy Metals (mg/L)									
19	Sodium	200	780	750	820	790	740	850	740	850
20	Potassium	50	23.1	21.9	24.5	23.8	21.4	25.2	21.4	25.2
21	Iron	0.3	0.63	0.59	0.68	0.65	0.56	0.71	0.56	0.71
22	Lead	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
23	Zinc	3.0	1.61	1.52	1.75	1.66	1.48	1.82	1.48	1.82
24	Copper	2.0	0.89	0.84	0.95	0.91	0.82	1.02	0.82	1.02
25	Cadmium	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
26	Chromium	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
27	Manganese	0.4	1.42	1.36	1.55	1.48	1.31	1.62	1.31	1.62
28	Nickel	0.07	0.25	0.23	0.28	0.26	0.22	0.30	0.22	0.30
C	Microbiology Test (CFU/ml)									
29	Total Plate Count		1.7×10^3	1.6×10^3	1.9×10^3	1.8×10^3	1.5×10^3	2.0×10^3	$1.5X10_4$	$2.0X10_3$
30	Total Coliform		3.5×10^2	3.1×10^2	4.0×10^2	3.8×10^2	2.9×10^2	4.3×10^2	$3.1X10_2$	$4.3X10_2$
31	E.coil		ND	ND	ND	ND	ND	ND		

CLIENT: Labstaff Nigeria Limited

SAMPLE TYPE: Water (Surface water)

DATE OF RECEIPT: 8th December, 2025.

PERIOD OF ANALYSIS: 9th – 7th December, 2025.

QA/QC CHECK DATE: 12th January, 2026.

Water Sample Result Table:

Sampling Station	Total Heterotrophic Bacteria (cfu/ml) x 10^3	Coliform Count (MPN/100ml) x 10^3	Hydrocarbon Utilizing Bacteria (cfu/ml) x 10^3	Predominant Bacteria Isolates	Total Heterotrophic Fungi (Spore/ml)x 10^2	Hydrocarbon Utilising Fungi (Spore/ml)x 10^2	Predominant Fungi Isolates
S W01	8.10	6.90	3.59	*Bacillus cereus Aeromonas sp. Proteus morganii*	2.2	1.3	Mucomucedo, Aspergillusniger.
S W2	9.42	9.31	4.50	*Micrococcus luteus, Nitrosomonacuropoca,Pseudomonas syringae*	2.1	1.2	*Aspergillus*niger, *Penicillium*sp.
S W3	7.21	9.85	5.54	*Pseudomonas syringae,Methanobacteriumsoehgenii*	1.6	1.2	*Penicillium*sp. *Aspergillus*niger
S W04	8.11	8.28	3.48	*Planococcuscitreus,Aeromonashydrophila,Citrobacterfreudii*	1.1	0.3	*Penicillium*sp., Yeasts
S W05	6.75	6.94	4.30	*Citrobacterfreudii,Alcoligenesfeacalis*	2.4	1.2	*Penicillium*sp.*Passalorabacillizera*
S W06	8.95	6.66	3.15	*Escherichiacoli,Thiocapsapfennigii.*	2.3	1.2	*Aspergillus*niger, *Penicillium*sp.

CLIENT: Labstaff Nigeria Limited

SAMPLE TYPE: Water (Sediment)

DATE OF RECEIPT: 8th December, 2025.

PERIOD OF ANALYSIS: 9th – 7th December, 2025.

QA/QC CHECK DATE: 12th January, 2026.

Water Sample Result Table:

Parameters	Units	MMGSW01 6°26'32.14"N 3°24'20.05"E	MMGSW02 6°26'31.53"N 3°24'27.28"E	MMGSW03 6°26'29.87"N 3°24'34.46"E	MMGSW04 6°26'25.43" N3°24'40.47"E	MMGSW05 6°26'23.40"N 3°24'46.02"E	MMGSW06 6°26'17.78"N 3°24'49.07"E	Min	Max
pH		4.40	4.61	5.19	5.12	4.54	5.19	4.40	5.19
EC	µS/c`m	1500	1550	1340	1404	1531	1341	1340	1550
Org. C	Mgkg`-1	5.5	5.5	5.4	4.6	5.5	4.2	4.3	5.5
Total N.	$mgkg^{-1}$	0.31	0.55	0.38	0.80	0.72	0.58	0.31	0.72
Na	$cmolkg^{-1}$	9.49	8.63	10.51	9.32	6.82	9.53	6.82	10.51
K	º	3.4	3.19	5.34	3.45	2.90	3.12	2.90	5.34
Ca	º	5.50	9.11	4.82	4.61	3.15	4.87	3.15	9.11
Mg	º	3.93	2.02	4.10	3.18	3.06	4.22	2.01	4.22
Cl^-	mg/kg	98.23	92.50	99.58	95.45	98.74	93.10	92.50	99.58
PO_4^{3-}	º	0.6	0.9	0.5	0.8	0.4	0.6	0.4	0.9
Totol N	º	0.3	0.5	0.6	0.4	0.6	0.5	0.3	0.6
SO_4	º	28.6	30.2	20.0	23.7	24.9	27.3	20.0	30.2
Silt	%	23.8	19.2	13.6	13.6	20.5	19.4	13.6	23.8
Clay	º	2.4	3.8	1.6	3.4	1.9	2.6	1.6	3.8
Sand	º	79.5	81.1	88.6	82.8	84.6	80.1	80.1	88.6
THC	mg/kg	3.2	9.5	4.8	4.6	2.9	3.4	2.9	9.5
Fe	mg/kg	152.4	133.7	104.2	132.4	116.0	129.5	104.2	152.4

CLIENT: Labstaff Nigeria Limited

SAMPLE TYPE: Water (Sediment)

DATE OF RECEIPT: 8th December, 2025.

PERIOD OF ANALYSIS: 9th – 7th December, 2025.

QA/QC CHECK DATE: 12th January, 2026.

Water Sample Result Table:

Parameters	Units	MMGSW01 6°26'32.14"N 3°24'20.05"E	MMGSW02 6°26'31.53"N 3°24'27.28"E	MMGSW03 6°26'29.87"N 3°24'34.46"E	MMGSW04 6°26'25.43" N3°24'40.47"E	MMGSW05 6°26'23.40"N 3°24'46.02"E	MMGSW06 6°26'17.78"N 3°24'49.07"E	Min	Max
Cu	"	2.3	1.3	0.5	0.2	0.9	0.7	0.2	2.3
Mn	"	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Zn	"	14.5	14.6	11.4	13.7	10.0	9.4	9.4	14.6
Cd	"	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Cr	"	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Pb	"	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Ni	"	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
V	"	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Hg	"	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Ba	"	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

CLIENT: Labstaff Nigeria Limited

SAMPLE TYPE: Water (Sediment)

DATE OF RECEIPT: 8th December, 2025.

PERIOD OF ANALYSIS: 9th – 7th December, 2025.

QA/QC CHECK DATE: 12th January, 2026.

Water Sample Result Table:

Sampling Station	Total Heterotrophic Bacteria (cfu/ml) $x10^4$	Hydrocarbon Utilising Bacteria (cfu/ml) $x\ 10^4$	Total Heterotrophic Fungi (Spore/ml) $x\ 10^2$	Hydrocarbon Utilising Fungi (Spore/ml)$x\ 10^2$	Predominant Bacteria Isolates	Predominant Fungi Isolates
MMGSW01 6°26'32.14"N 3°24'20.05"E	0.83	0.36	0.30	0.01	*Bacillus cereus Aeromonas sp. Proteus morganii*	*Aspergillussp, Penicilliumsp*
MMGSW01 6°26'32.14"N 3°24'20.05"E	1.04	0.95	0.2	0.01	*Micrococculuteus, Nitrosomona europoca, Pseudomonas syringae*	*Aspergillussp, Penicilliumsp*
MMGSW01 6°26'32.14"N 3°24'20.05"E	1.15	1.13	0.15	0.02	*Pseudomonas syringae, Methanobacteriumsoehgenii*	*Aspergillussp, Penicilliumsp*
MMGSW01 6°26'32.14"N 3°24'20.05"E	0.64	0.05	0.2	0.01	*Pseudomonas sp, Aeromonashydrophila, Citrobacterfreudii*	*Aspergillussp, Penicilliumsp*
MMGSW01 6°26'32.14"N 3°24'20.05"E	0.45	0.75	0.02	0.01	*Pseudomonas sp, Alcoligenesfeacalis*	*Aspergillussp, Penicilliumsp*
MMGSW01 6°26'32.14"N 3°24'20.05"E	0.85	0.65	0.02	0.02	*Escherichia coli, Pseudomonas sp,*	*Aspergillussp, Penicilliumsp*

CLIENT: Medipark

SAMPLE TYPE: Soil

DATE OF RECEIPT: 8th December, 2025.

PERIOD OF ANALYSIS: 9th – 22nd December, 2025.

QA/QC CHECK DATE: 12th January, 2026.

Sample Results Table: Sample 1 to 4

Sample Code	Depth (cm)	pH	Particle Size %			THC (%)	Nitrate (mg/kg)	Total Phosphate (mg/kg)
			Sand	Silt	Clay			
SS 01	0 -15	6.23	70.18	19.62	10.20	2.60	2.15	1.71
6°26'43.09"N	16-35	6.06	76.33	13.54	10.13	1.82	1.04	0.64
3°24'26.16"E	36-60	4.57	73.82	14.15	12.03	0.91	0.72	0.30
SS02	0 -15	5.62	78.61	12.74	8.65	0.69	5.86	5.28
6°26'41.44"N	16-35	4.49	81.75	10.20	8.05	1.75	6.20	3.06
3°24'28.78"E	36-60	4.24	74.54	14.22	11.24	1.43	3.72	2.59
SS03	0 -15	6.46	73.65	23.08	3.27	1.14	2.26	6.63
6°26'39.43"N	16-35	5.50	74.46	18.44	7.10	3.80	1.98	5.18
3°24'29.24"E	36-60	4.48	82.32	13.28	4.40	1.33	0.21	2.51
SS 04	0 -15	6.68	78.66	18.60	2.74	4.18	6.14	3.08
6°26'40.30"N	16-35	5.57	82.50	4.63	1.91	1.15	5.02	2.14
3°24'29.94"E	36-60	4.60	92.54	6.87	1.73	0.41	2.09	1.03

CLIENT: Medipark

SAMPLE TYPE: Soil

DATE OF RECEIPT: 8th December, 2025.

PERIOD OF ANALYSIS: 9th – 22nd December, 2025.

QA/QC CHECK DATE: 12th January, 2026.

Sample Results Table: Sample 1 to 4

Sample Code	Exchaneable Cations (cmol/100g)				CEC (cmol/100g)	Base Saturation %
	K^+	Na^+	Ca^{2+}	Mg^{2+}		
SS 01	0.10	0.30	3.72	1.54	3.63	84.29
6°26'43.09"N	0.18	0.36	1.40	1.46	3.10	84.90
3°24'26.16"E	0.18	0.32	1.41	1.42	3.08	83.96
SS02	0.06	0.26	1.20	0.80	2.47	81.93
6°26'41.44"N	0.05	0.21	1.40	0.77	2.10	78.16
3°24'28.78"E	0.04	0.21	1.52	0.73	2.07	80.01
SS03	0.09	0.63	2.13	1.27	2.00	78.14
6°26'39.43"N	0.04	0.49	2.03	1.06	1.83	80.92
3°24'29.24"E	0.03	0.06	1.95	0.7	1.51	78.54
SS 04	0.4	1.23	15.16	5.65	3.13	85.00
6°26'40.30"N	0.3	0.65	12.54	4.18	2.79	87.31
3°24'29.94"E	0.08	0.19	9.69	2.41	156	92.56

CLIENT: Medipark

SAMPLE TYPE: Soil

DATE OF RECEIPT: 8th December, 2025.

PERIOD OF ANALYSIS: 9th – 22nd December, 2025.

QA/QC CHECK DATE: 12th January, 2026.

Sample Results Table: Sample 5 to 8

Sample Code	Depth (cm)	pH	Particle Size %			THC (%)	Nitrate (mg/kg)	Total Phosphate (mg/kg)
			Sand	Silt	Clay			
SS 05	0 -15	6.00	80.16	18.02	2.07	0.32	3.26	0.84
6°26'42.70"N	16-35	4.86	79.20	12.18	1.98	0.21	2.18	0.61
3°24'28.26"E	36-60	4.43	80.53	4.33	1.05	0.15	2.02	0.43
SS 06	0 -15	6.19	77.18	29.01	13.10	0.59	7.01	5.63
6°26'39.33"N	16-35	5.02	80.10	12.50	7.11	0.62	4.63	5.18
3°24'31.22"E	36-60	4.64	78.40	3.6	2.60	0.47	1.60	2.51
SS 07	0 -15	5.26	79.63	21.86	1.27	0.64	5.64	0.45
6°26'41.26"N	16-35	4.40	86.40	14.61	2.55	0.40	5.18	0.29
3°24'27.48"E	36-60	4.33	74.65	6.05	1.08	0.28	2.42	0.14
SS 08	0 -15	6.50	78.03	17.15	4.11	0.59	4.98	0.84
6°26'41.96"N	16-35	4.90	80.75	11.00	2.28	0.51	3.55	0.36
3°24'26.46"E	36-60	4.51	77.62	5.80	1.85	0.37	1.76	0.18

CLIENT: Medipark

SAMPLE TYPE: Soil

DATE OF RECEIPT: 8th December, 2025.

PERIOD OF ANALYSIS: 9th – 22nd December, 2025.

QA/QC CHECK DATE: 12th January, 2026.

Sample Results Table: Sample 5 to 8

Sample Code	ExchaneableCations (cmol/100g)				CEC (cmol/100g)	Base Saturation %
	K^+	Na^+	Ca^{2+}	Mg^{2+}		
SS 05	0.10	0.30	3.72	1.54	3.63	84.29
6°26'42.70"N	0.18	0.36	1.40	1.46	3.10	84.90
3°24'28.26"E	0.18	0.32	1.41	1.42	3.08	83.96
SS 06	0.06	0.65	7.68	3.00	2.16	78.00
6°26'39.33"N	0.03	0.49	5.42	2.52	1.87	83.68
3°24'31.22"E	0.03	0.23	4.74	1.74	0.98	92.51
SS 07	0.4	1.23	15.16	5.65	3.13	85.00
6°26'41.26"N	0.3	0.65	12.54	4.18	2.79	87.31
3°24'27.48"E	0.08	0.19	9.69	2.41	156	92.56
SS 08	0.06	0.65	7.68	3.00	2.16	78.00
6°26'41.96"N	0.03	0.49	5.42	2.52	1.87	83.68
3°24'26.46"E	0.03	0.23	4.74	1.74	0.98	92.51

CLIENT: Medipark
SAMPLE TYPE: Soil
DATE OF RECEIPT: 8th December, 2025.
PERIOD OF ANALYSIS: 9th – 22nd December, 2025.
QA/QC CHECK DATE: 12th January, 2026.
Sample Results Table: Sample 9 to 10

Sample Code	Depth (cm)	pH	Particle Size %			THC (%)	Nitrate (mg/kg)	Total Phosphate (mg/kg)
			Sand	Silt	Clay			
SS 09	0 -15	6.30	72.80	8.50	1.01	1.84	1.83	3.47
6°26'40.86"N	16-35	5.72	82.80	4.00	1.60	1.25	1.31	1.85
3°24'31.03"E	36-60	5.90	86.04	3.06	0.52	0.68	0.50	0.54
SS 10	0 -15	6.15	79.62	23.27	4.15	0.83	4.66	0.84
6°26'39.95"N	16-35	5.22	82.26	13.44	2.17	0.62	2.84	0.61
3°24'27.76"E	36-60	4.15	78.38	2.05	6.85	0.40	1.97	0.43

CLIENT: Medipark
SAMPLE TYPE: Soil
DATE OF RECEIPT: 8th December, 2025.
PERIOD OF ANALYSIS: 9th – 22nd December, 2025.
QA/QC CHECK DATE: 12th January, 2026.
Sample Results Table: Sample 9 to 10

Sample Code	ExchaneableCations (cmol/100g)				CEC (cmol/100g)	Base Saturation %
	K^+	Na^+	Ca^{2+}	Mg^{2+}		
SS 09	0.32	0.72	4.22	2.65	0.62	84.00
6°26'40.86"N	0.17	0.53	3.61	2.07	0.45	79.43
3°24'31.03"E	0.09	0.19	1.45	0.62	0.16	88.81
SS 10	0.40	0.26	6.27	0.93	4.16	76.00
6°26'39.95"N	0.37	0.12	4.30	0.62	3.09	85.20
3°24'27.76"E	0.14	0.09	2.54	0.42	2.02	89.19

LAGOS MEDIPARK SOCIO-ECONOMIC QUESTIONNAIRE

Project Location: 1–9 Awolowo Road, Ikoyi, Lagos
Confidentiality: All responses will be treated with strict confidentiality and used solely for planning and impact mitigation purposes.

SECTION A – DEMOGRAPHIC INFORMATION

S/N	Question	Response Options
1	Age Group	☐ 18–25 ☐ 26–35 ☐ 36–45 ☐ 46–55 ☐ 56–65 ☐ 66+
2	Gender	☐ Male ☐ Female ☐ Prefer not to say
3	Marital Status	☐ Single ☐ Married ☐ Divorced ☐ Widowed
4	Highest Educational Qualification	☐ Primary ☐ Secondary ☐ OND/NCE ☐ Bachelor's ☐ Master's/PhD ☐ Professional Qualification
5	Employment Status	☐ Employed ☐ Self-Employed ☐ Unemployed ☐ Student ☐ Retired
6	Work Sector	☐ Public ☐ Private ☐ Diplomatic ☐ NGO ☐ Corporate ☐ Self-Employed ☐ Other: _____
7	Primary Occupation	_____
8	How long have you lived/worked in Ikoyi?	☐ <1 ☐ 1–3 ☐ 4–7 ☐ 8–15 ☐ 16+ years
9	Reside/work near Awolowo Road corridor?	☐ Yes ☐ No
10	Household Size	☐ 1–2 ☐ 3–4 ☐ 5–6 ☐ 7+
11	Number of Dependents	☐ 0 ☐ 1–2 ☐ 3–4 ☐ 5+
12	Monthly Household Income	☐ <₦200k ☐ ₦200k–₦500k ☐ ₦501k–₦1m ☐ ₦1m–₦3m ☐ >₦3m

SECTION B – SOCIOCULTURAL & URBAN LIFESTYLE

S/N	Question	Response Options
13	Familiar with former nursing school site?	☐ Yes ☐ No
14	Historical/heritage landmarks?	☐ Yes (specify) ☐ No
15	Cultural norms/practices?	☐ Yes (specify) ☐ No
16	Informal rules on noise/construction?	☐ Yes ☐ No
17	Symbolic/community-valued sites nearby?	☐ Yes (describe) ☐ No
18	Member of Residents' Association?	☐ Yes ☐ No
19	Community association activity level	☐ Very active ☐ Moderate ☐ Not active
20	Religion	☐ Christianity ☐ Islam ☐ Other
21	Valued public spaces/green buffers?	☐ Yes ☐ No
22	Sensitivities around traffic/redevelopment?	☐ Yes (explain) ☐ No

SECTION C – LIVELIHOOD & ECONOMIC ACTIVITIES

S/N	Question	Response Options
23	Main source of income	☐ Salary ☐ Business ☐ Consulting ☐ Investments ☐ Other
24	Run a business in Ikoyi?	☐ Yes ☐ No
25	Type of business	☐ Retail ☐ Hospitality ☐ Professional ☐ Consulting ☐ Food ☐ Other
26	Depend on Awolowo traffic flow?	☐ Yes ☐ No
27	Rely on corporate hubs proximity?	☐ Yes ☐ No
28	Employ staff?	☐ 1–5 ☐ 6–20 ☐ 20+ ☐ None
29	Will project affect livelihood?	☐ Positive ☐ Negative ☐ No impact
30	If yes, how?	_____
31	Interested in MediPark jobs?	☐ Yes ☐ No ☐ Maybe
32	Preferred training programs	☐ Health ☐ Hospitality ☐ ICT ☐ Business ☐ Facility management ☐ Other

SECTION D – HOUSING & URBAN SETTLEMENT

S/N	Question	Response Options
33	Housing type	☐ Apartment ☐ Detached ☐ Duplex ☐ Studio ☐ Serviced ☐ Gated estate
34	Own or rent?	☐ Own ☐ Rent ☐ Staff accommodation
35	Neighborhood security	☐ Excellent ☐ Good ☐ Fair ☐ Poor
36	Parking availability	☐ Adequate ☐ Limited ☐ Very limited
37	Experience disturbance?	☐ Frequently ☐ Occasionally ☐ Rarely ☐ Never
38	Urban improvements needed	☐ Road ☐ Drainage ☐ Lighting ☐ Waste ☐ Traffic ☐ Other

SECTION E – INFRASTRUCTURE & SERVICES

S/N	Question	Response Options
39	Main water source	☐ Public ☐ Borehole ☐ Packaged ☐ Estate
40	Electricity reliability	☐ Very reliable ☐ Fairly reliable ☐ Poor
41	Backup power used	☐ Generator ☐ Inverter ☐ Solar ☐ None
42	Waste disposal method	☐ LAWMA ☐ Private ☐ Estate ☐ Other
43	Healthcare accessibility	☐ Very accessible ☐ Moderate ☐ Not accessible
44	Travel time to hospital	☐ <10 ☐ 10–20 ☐ 21–30 ☐ 30+ mins
45	Condition of roads	☐ Good ☐ Fair ☐ Poor
46	Drainage/flood control	☐ Very effective ☐ Fair ☐ Poor

SECTION F – PERCEPTION OF THE LAGOS MEDIPARK PROJECT

S/N	Question	Response Options
47	Aware of MediPark redevelopment?	☐ Yes ☐ No
48	Perception of project	☐ Positive ☐ Neutral ☐ Concerned
49	Expected benefits	☐ Healthcare ☐ Jobs ☐ Property value ☐ Infrastructure ☐ Tourism ☐ Other
50	Possible concerns	☐ Traffic ☐ Noise ☐ Construction ☐ Parking ☐ Waste ☐ Security ☐ None
51	Concern about traffic increase?	☐ Very ☐ Moderate ☐ Not concerned
52	Will it improve healthcare access?	☐ Yes ☐ No ☐ Not sure
53	Prioritize locals for jobs?	☐ Yes ☐ No
54	Desired amenities	☐ Pharmacy ☐ Green areas ☐ Café ☐ Parking ☐ Short-let ☐ Retail

SECTION G – ENVIRONMENTAL & SAFETY CONCERNS

S/N	Question	Response Options
55	Experience noise pollution?	☐ Yes ☐ No
56	Concern about air quality?	☐ Yes ☐ No ☐ Maybe
57	Increase waste pressure?	☐ Yes ☐ No
58	Preserve trees/green buffers?	☐ Yes ☐ No
59	Area prone to flooding?	☐ Yes ☐ No
60	Recommended safeguards	☐ Dust control ☐ Waste mgmt ☐ Traffic mgmt ☐ Controlled hours ☐ Green buffers ☐ Other

DECLARATION

I hereby confirm that the information provided in this questionnaire is true and accurate to the best of my knowledge.

Signature: _____

Date: _____

For Official Use Only

Questionnaire ID: _____

Data Entry Date: _____

Verified By: _____

Ground Breaking Ceremony of the Proposed Project on December 14, 2024 by the Governor of Lagos State, Mr Babajide Sanwo-Olu





SUMMARY OF STAKEHOLDERS' CONSULTATION/MEETING

MEETING HELD WITH IKOYI / OBALENDE, COMMUNITY DEVELOPMENT COUNCIL AND COMMUNITY DEVELOPMENT ASSOCIATIONS

1.0 DATE AND VENUE

The meeting was held on Thursday, November 7, 2024 at the Residence of No. 12, Moshalasi Street, Obalende

2.0 ATTENDANCE

Mr. Yemisi Shodipo	-	Chairman
Mr.	-	Vice Chairman
Mr.	-	Secretary
Chief.	-	Treasurer
Mr. Seyi Onigbanjo	-	Youth Association Representative
Mr. James Nwaokocha	-	MOA Planners Limited
Mr. Oladimeji Oladotun	-	MOA Planners Limited
Dr. Moses Ogunleye	-	MOA Planners Limited

3.0 OPENING

The meeting commenced at 11:57am with a prayer by Mr. Onigbanjo. The Community Development Associations (CDA) / Community Development Council (CDC), covers Obalende and South West Ikoyi under the Chairmanship of Mr. Yemisi Shodipo. The two communities, and especially Obalende being the closest indigenous community to the site, have been aware of the intended use of the site previously occupied by the School of Nursing. The relocation of the School of Nursing to Igondo in Alimosho Local Government Area has been a sore issue with the community at large, especially the ease with which their wards get trained as a qualified nurse. This has made the CDC / CDA become keenly interested in the facility to replace the School with. Accordingly, members of the CDA / CDC were pleased when the signboard for the development of the Lagos Medical Park site was erected. Indeed, this information is already widely known by representatives of the community prior to this interaction. Further confirmation of the intention of the Proponent in partnership with Lagos State Government and various components of the project was shared by the EIA team.

4.0 REACTION AND EXPECTATIONS

The community believes the proposed development will impact positively on the Obalende / Ikoyi, as well as the entire State. The Chairman requested that they should be properly integrated into the proposed development.

They opined concern about securing jobs for artisans and craftsmen while the construction is underway. This relates to skilled workers residing in the Obalende coverage areas. Indeed, the CDA also requested that there are capable suppliers of building materials from the project environment which will further endear the community to the project if some quotas of supply of materials and labour can be sourced from the community.

The CDC / CDA stated that regardless of the quality of the proposed development as (world-class facility) and the decision to devote certain number of hospital bed to the communities, indigent residents should be granted subsidized medical outreach at intervals.

5.0 CLOSING

The project community, believed the proposed Lagos Medical Park will bring further positive development to them. Hence, they are ready to support its take - off and completion. The residents reiterated that the site is not being contested for ownership with the community, so it is free for Lagos State Government to use as it deems fit. Thus, the community recognizes that the project is ultimately to their benefit. The meeting ended at 1:37pm.

MEETING HELDWITH IKOYI /OBALENDE ARTISAN GROUPS/ASSOCIATION

1.0 DATE AND VENUE

The consultation was held on Thursday, November 7, 2024 at the Secretariat of Obalende Welders Association, Toyan Street, Obalende.

2.0 ATTENDANCE

Mr. Oba Olanrewaju	-	Chairman, Welders Association
Mr. Ibrahim Bello	-	Representative, AC technician
Mr. Ayo Bamgbose	-	Vice Chairman, Bricklayers Association, Obalende.
Mr. John Achimugu	-	Representative, Tailors Association
Mr. James Nwaokocha	-	MOA Planners Limited
Mr. Oladimeji Oladotun	-	MOA Planners Limited
Dr. Moses Ogunleye	-	MOA Planners Limited

3.0 OPENING

The meeting commenced at 2:00pm. The project team provided information on the proposed Lagos Medical Park project. It highlighted the project objectives, as well as the strategies to be adopted by that proponent in achieving the objectives. The purpose of the ESIA was also highlighted. The role expected of the stakeholders like artisans, CDAs, CDCs including traditional / community leaders, civil society organisation in the EIA process was also explained.

4.0 ARTISANS' EXPECTATIONS

The group expressed support the proposed medical facility. They were delighted that the proposed development will not deviate from the initial use – School of Nursing. The entire Obalende community have hitherto been made to believe that site is to be used as parking facility by the State Government. The proposed use is acceptable to the group.

The artisan group's chief concern was the provision of jobs for various
members represented. Indeed, they are very expectant on the value of the project in providing jobs for them at both the construction and operational stages. They actually considered the proposed project as one that could provide jobs for all categories of people in the employment markets, including traders.

Members of the artisans' groups, especially as most of them operates in the Obalende community, wants the Lagos State Government, whom they recognize as part of the project, to reconstruct drainage network in the Obalende community. It is indeed seen that apart from the canal which drains the project immediate areas, most of the tertiary drains in surrounding communities are heavily silted. Most of the artisans, who manages the road shoulders to ply their trade are easily dislodged by storm water, especially after rain. The group therefore, expect that the proposed project will facilitate the repairs.

5.0 CLOSING

The summary of the prayers of the community is that the EIA team assists in the realization of regularization of the land presently occupied by the community. They want this to be part of recommendations in the EIA Report. The meeting came to an end at 3:24pm.

MINUTES OF THE FOCUS GROUP DISCUSSION HELD WITH ETI - OSA TRADERS ASSOCIATION

1.0 OPENING

The consultation was held on Friday, November 8, 2024 at the Secretariat of Iyaloja of Eti – Osa General, Obada Market, Keffi, Ikoyi. It commenced at 11:00am.

2.0 ATTENDANCE

Alhaja Jokotade Logun	-	Iyaloja General
Mrs. Laitan Oyetola	-	Market Leader
Mrs. Ajike Ogunlowo	-	Chairperson, Obalende Traders Association
Alhaja Rasidat Okunlaja	-	Member, Obada Market Association
Mr. Emmanuel Adekunle	-	MOA Planners Limited
Mr. James Nwaokocha	-	MOA Planners Limited
Mr. Oladimeji Oladotun	-	MOA Planners Limited
Dr. Moses Ogunleye	-	MOA Planners Limited
Miss Naomi Mamalor	-	MOA Planners Limited

The project team provided information on the proposed Lagos Medical Park project. It highlighted the project objectives, as well as the strategies to be adopted by the proponent in achieving the objectives. The purpose of the ESIA was also highlighted. The roles expected of the stakeholders like the various market groups, community associations, as well as community leaders in the EIA process were also explained to the gathering.

3.0 REACTION AND EXPECTATIONS

The group welcomes the proposed medical facility. They are also satisfied that the use of the land is not for commercial parking venture as it has been rumored within the community/metropolis.

The traders are not so convinced that the project will be of direct benefit to an average trader. The likely cost of accessing treatment in the Medical Park is assumed be out of reach to most members of the group. The group, is looking forward to the new Massey Children Hospital, Adeniji Adele which is also within the district to meet their needs, rather than the proposed hospital. The group suggested that the Lagos State Government establishes a well - planned rebate structure to members of various trade groups, especially the vulnerable groups to have access to the facility when it becomes operational.

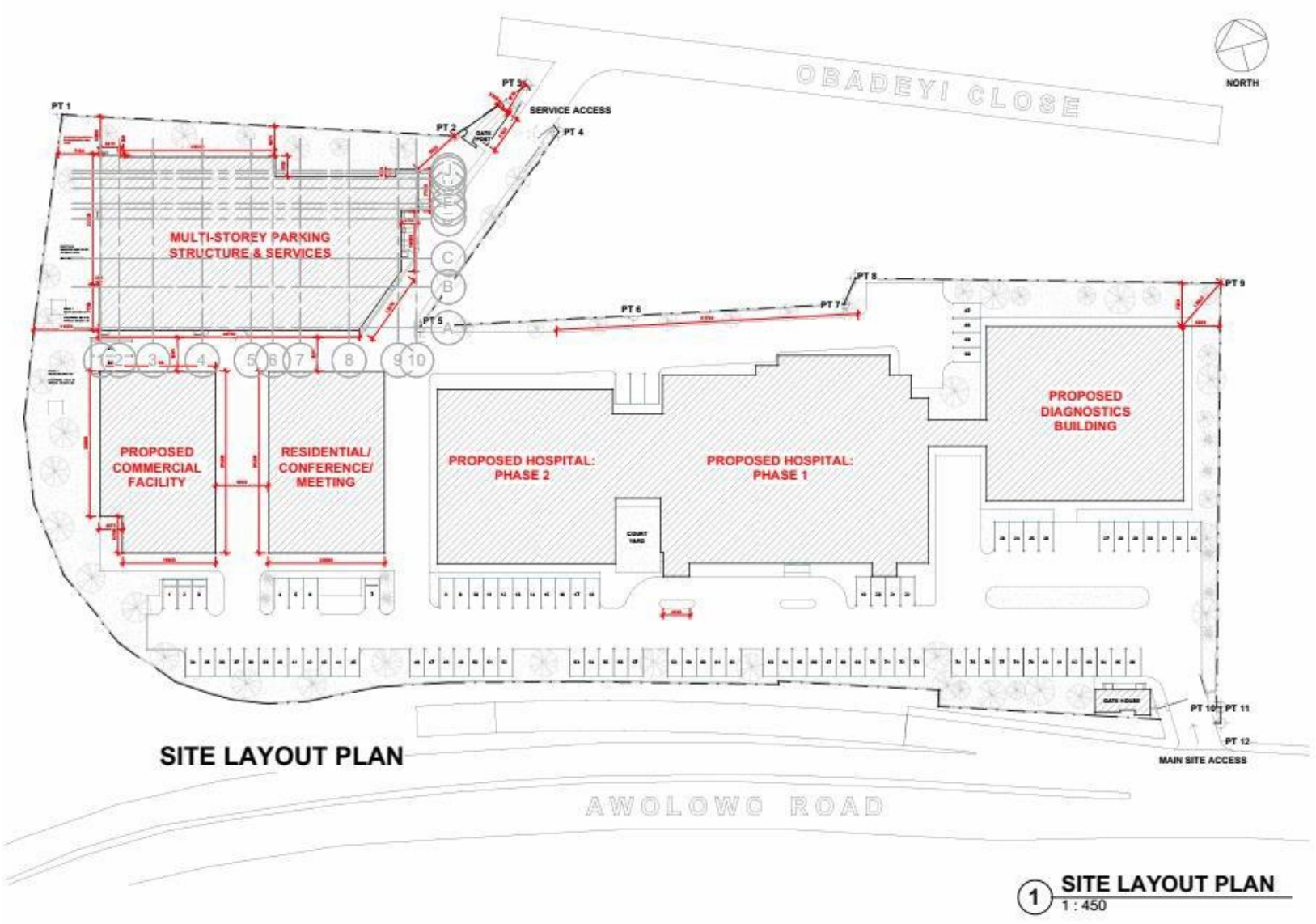
The traders group also expresses readiness to supply needed materials to the hospital especially at the operational stage. They are ready to supply foodstuffs, among other, to the cafeteria to be established in the facility at wholesale prices.

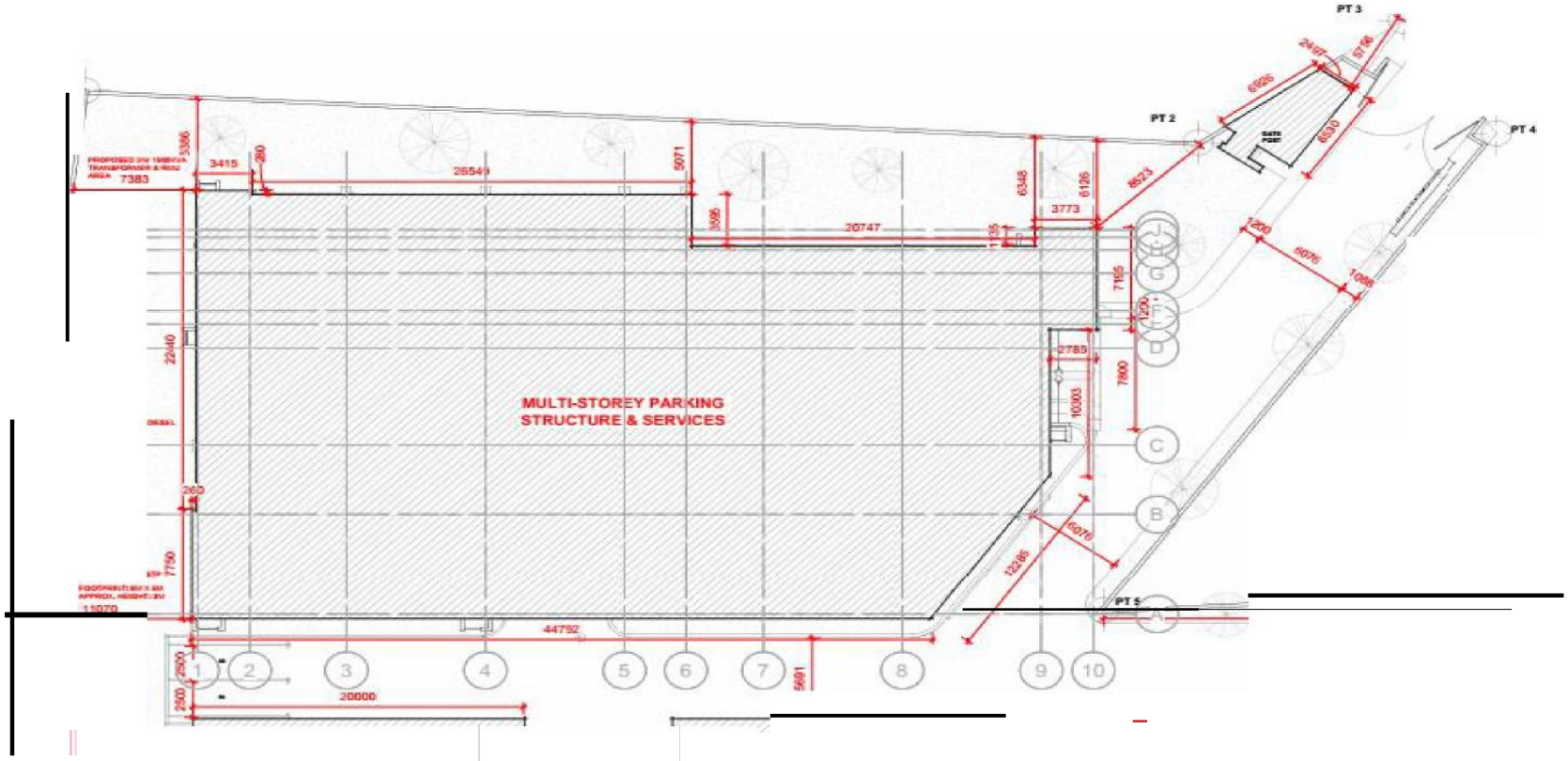
The traders, especially as most of them operates in the Obada market, want the Lagos State Government, whom they recognize as part of the project, to reconstruct drainage network in Obalende community. They stated that apart from the canal which drains the project immediate areas, most of the tertiary drains in surrounding communities are heavily silted.

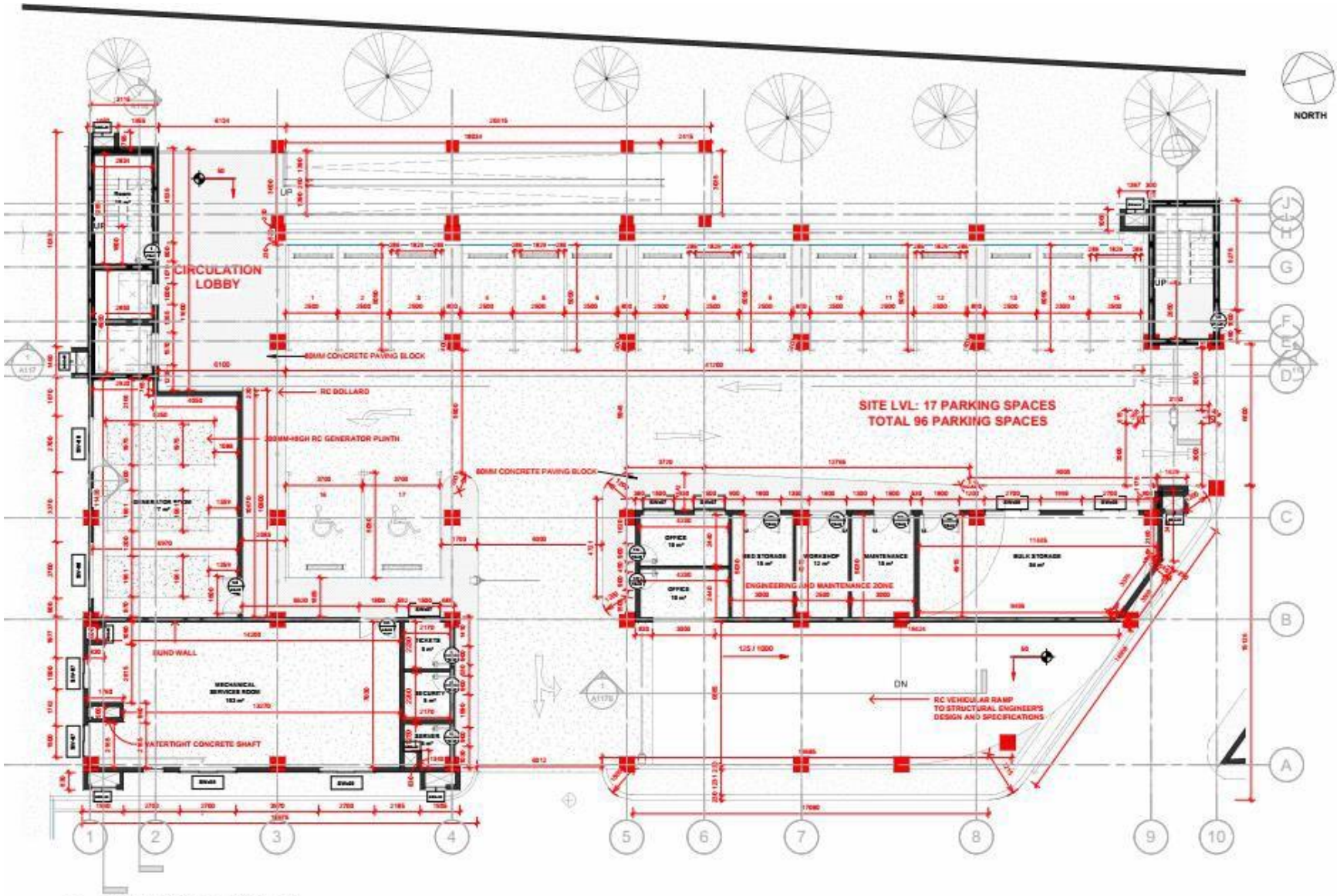
4.0 CLOSING

The summary of the prayers of the traders' group is that the project be completed and put to use in reasonable time. The group also look forward to absence of social stratification profiling when attending to patients at the facility. They want this to be part of recommendations in the EIA Report. The meeting ended at 12:15pm.

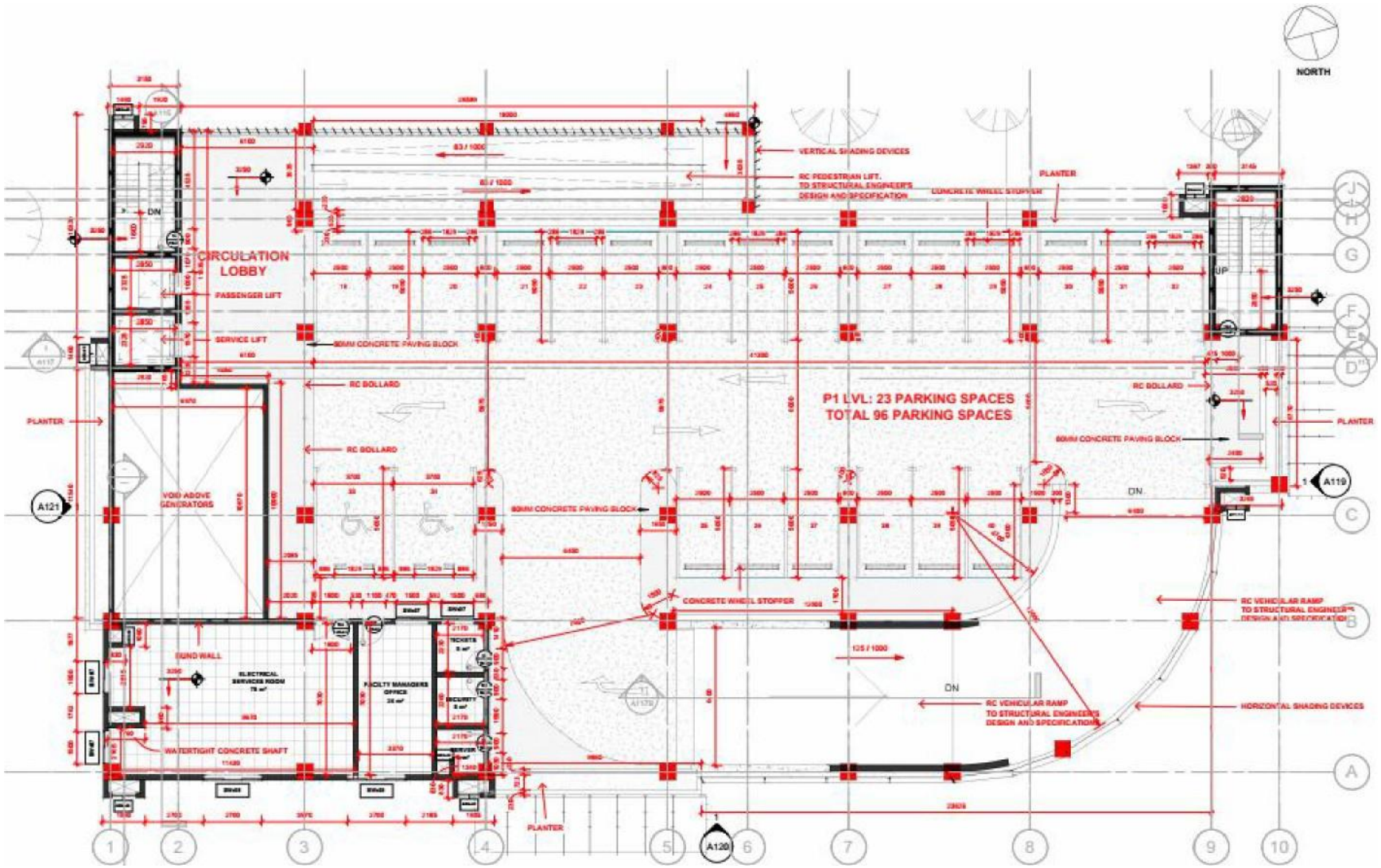
ARCHITECTURAL DRAWING – ANCILLARY BUILDING

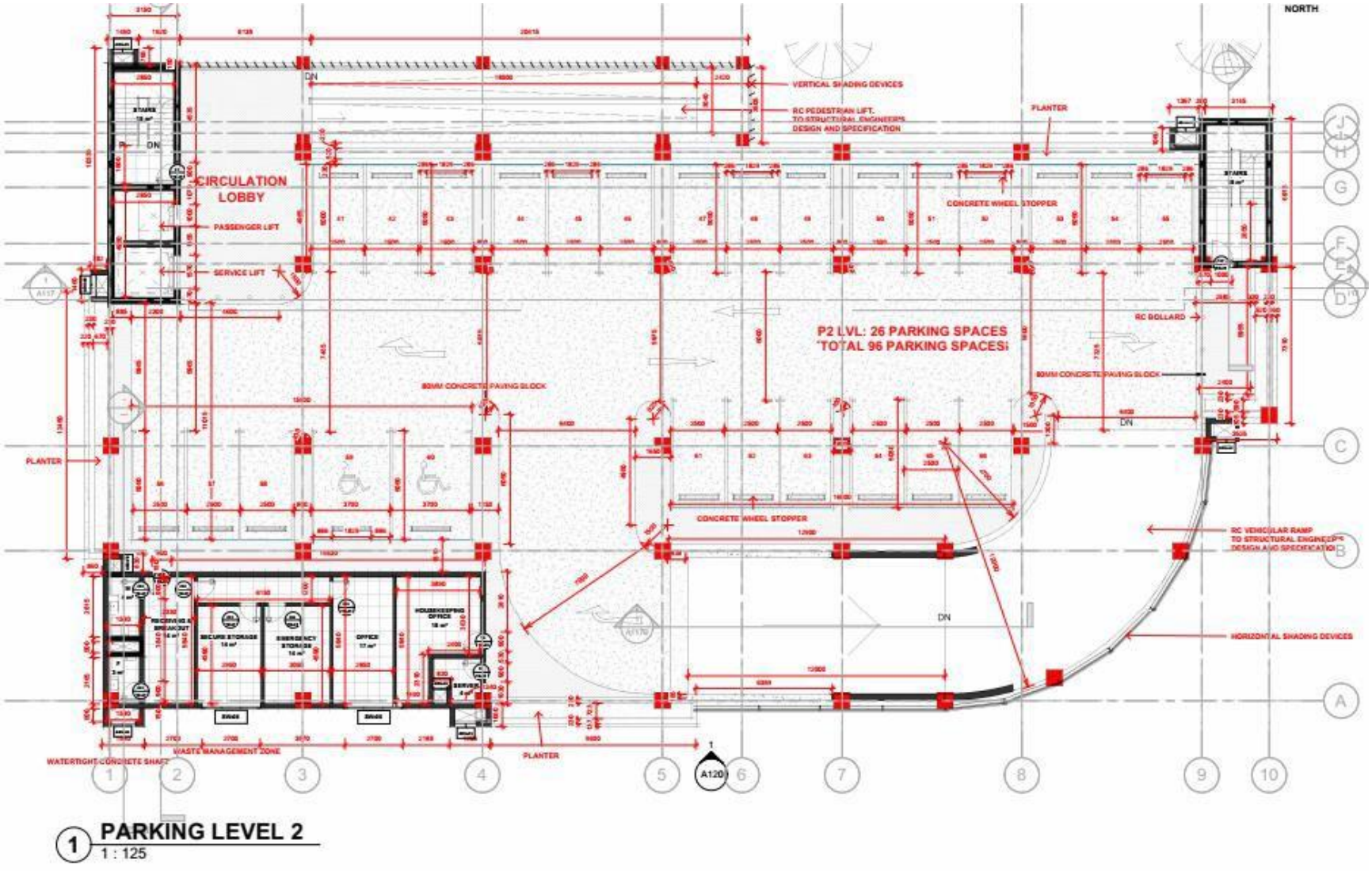


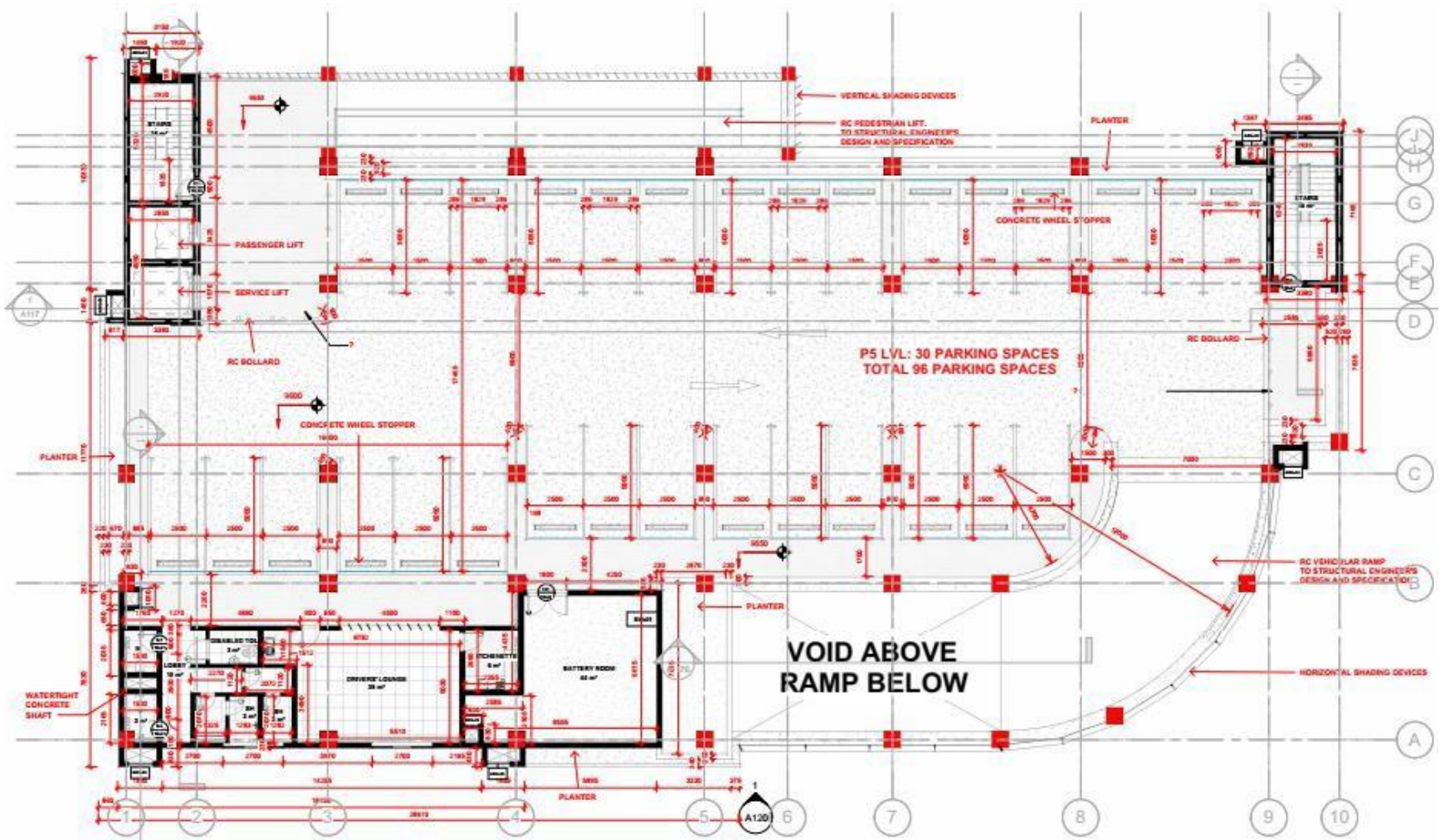

MULTI-STOREY PARKING
STRUCTURE & SERVICES
PT 2
PT 3
PT 4
PT 5
GATE POST
44792
20000
25549
20747
3773
6126
6348
5071
3415
7383
22440
7750
7165
7800
10003
2755
6076
12285
6926
6930
2497
5796
8523
1200
5076
1088
5991
1135
3595
5396
280
260
2500
1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
G
J

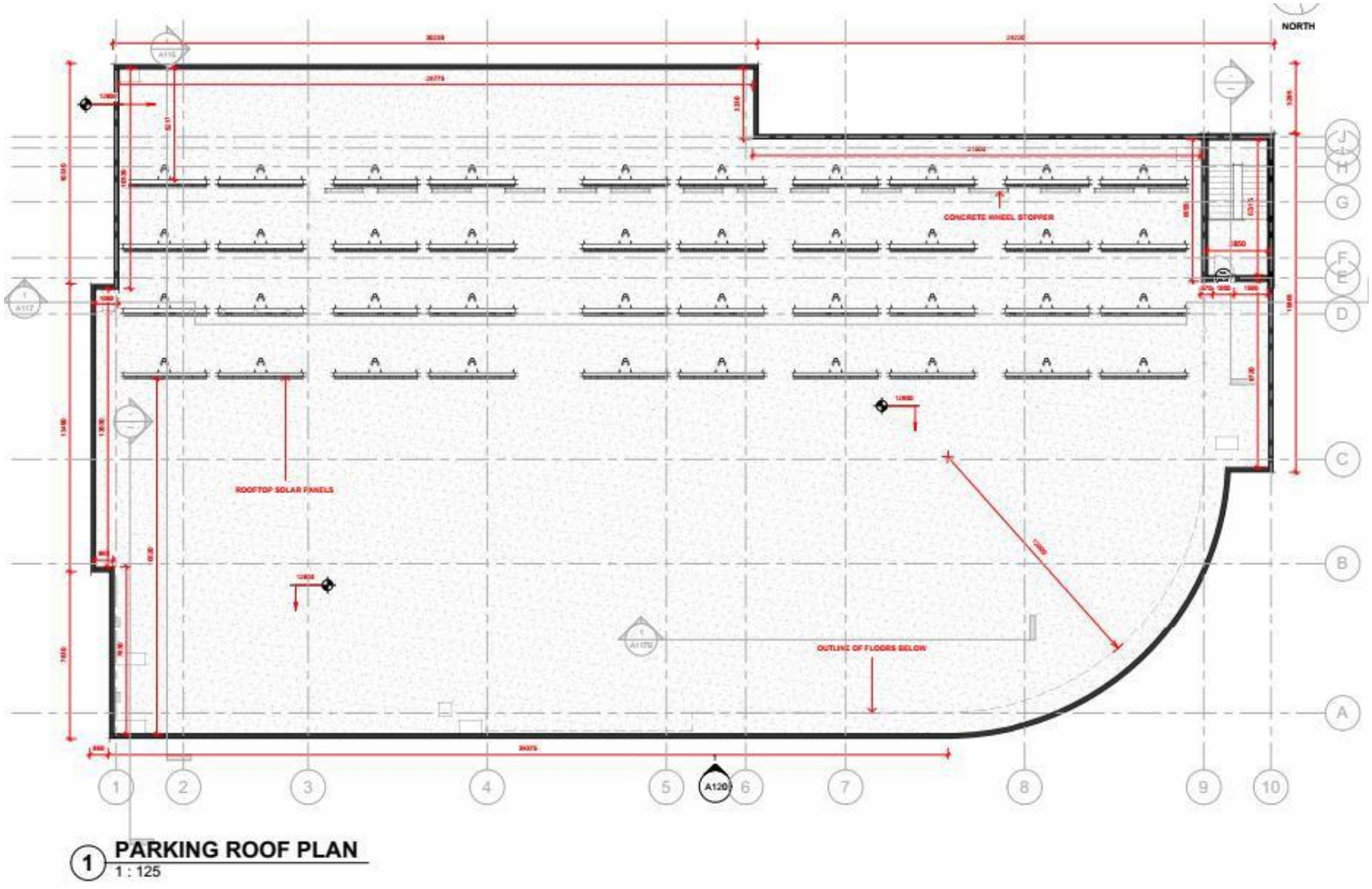


1 PARKING LEVEL 0
1 : 125


NORTH
CIRCULATION LOBBY
PASSENGER LIFT
SERVICE LIFT
VERTICAL SHADING DEVICES
RC PEDESTRIAN LIFT. TO STRUCTURAL ENGINEER'S DESIGN AND SPECIFICATION
CONCRETE WHEEL STOPPER
PLANTER
80MM CONCRETE PAVING BLOCK
RC BOLLARD
P1 LVL: 23 PARKING SPACES
TOTAL 96 PARKING SPACES
VOID ABOVE GENERATORS
RETAINING WALL
ELECTRICAL SERVICES ROOM
FACILITY MANAGERS OFFICE
WATERTIGHT CONCRETE SHAFT
RC VEHICULAR RAMP TO STRUCTURAL ENGINEER'S DESIGN AND SPECIFICATIONS
HORIZONTAL SHADING DEVICES
UP
DN
A121
A119
A120
1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
G
H
J


NORTH
CIRCULATION LOBBY
PASSENGER LIFT
SERVICE LIFT
VERTICAL SHADING DEVICES
RC PEDESTRIAN LIFT. TO STRUCTURAL ENGINEER'S DESIGN AND SPECIFICATION
PLANTER
CONCRETE WHEEL STOPPER
RC BOLLARD
P2 LVL: 26 PARKING SPACES
TOTAL 96 PARKING SPACES
80MM CONCRETE PAVING BLOCK
RC VEHICULAR RAMP TO STRUCTURAL ENGINEER'S DESIGN AND SPECIFICATION
HORIZONTAL SHADING DEVICES
WASTE MANAGEMENT ZONE
WATERTIGHT CONCRETE SHAFT
A120
1 PARKING LEVEL 2
1 : 125


VERTICAL SHADING DEVICES
RC PEDESTRIAN LIFT. TO STRUCTURAL ENGINEER'S DESIGN AND SPECIFICATION
PLANTER
CONCRETE WHEEL STOPPER
PASSENGER LIFT
SERVICE LIFT
RC BOLLARD
P5 LVL: 30 PARKING SPACES
TOTAL 96 PARKING SPACES
RC BOLLARD
CONCRETE WHEEL STOPPER
PLANTER
RC VEHICULAR RAMP TO STRUCTURAL ENGINEER'S DESIGN AND SPECIFICATION
PLANTER
VOID ABOVE
RAMP BELOW
HORIZONTAL SHADING DEVICES
WATERTIGHT CONCRETE SHAFT
PLANTER
A120
1 PARKING LEVEL 3
1 : 125

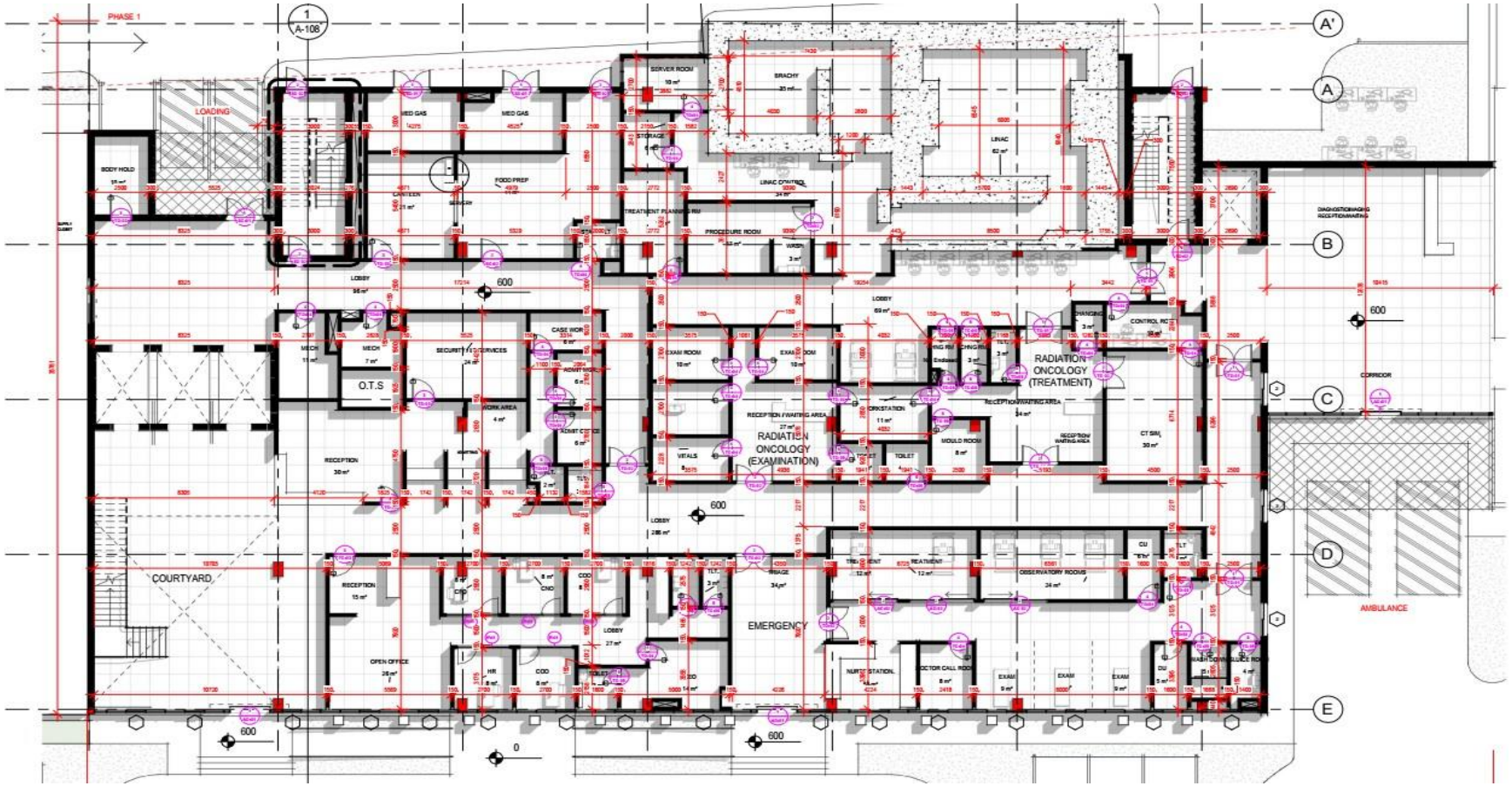


1 PARKING ROOF PLAN
1 : 125

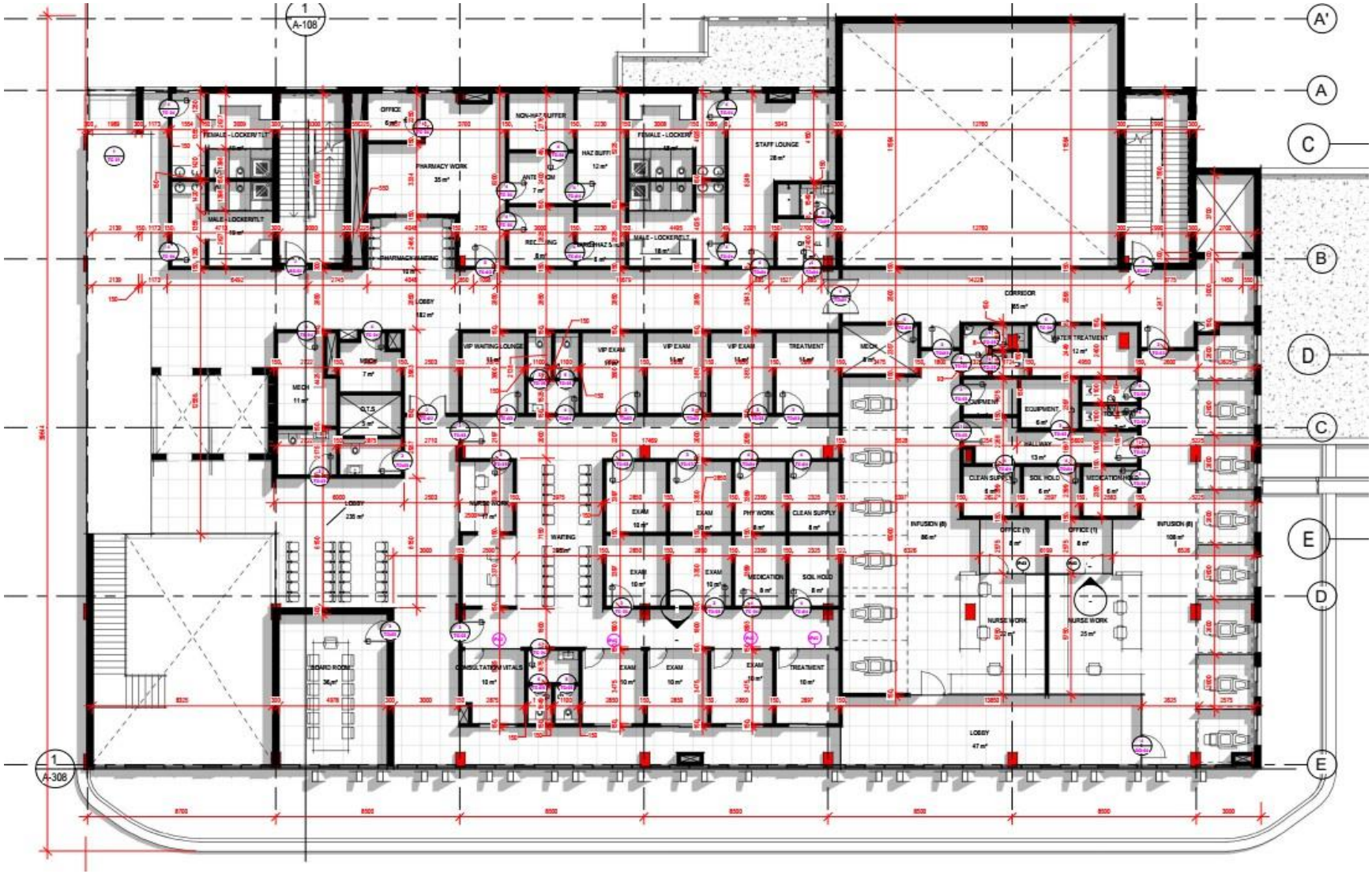


1 CAR PARK 1

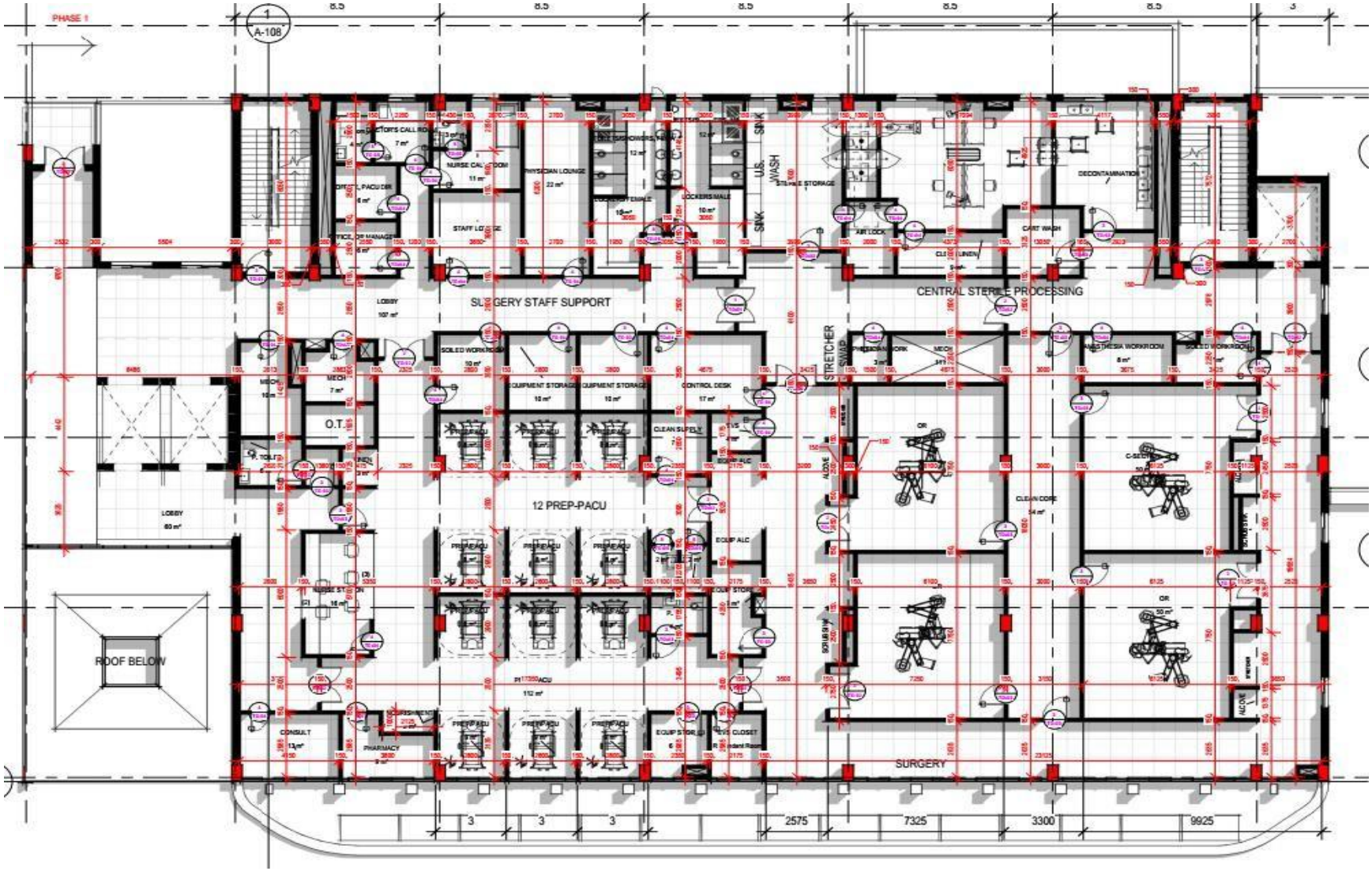
ARCHITECTURAL DRAWING – THE HOSPITAL BUILDING I



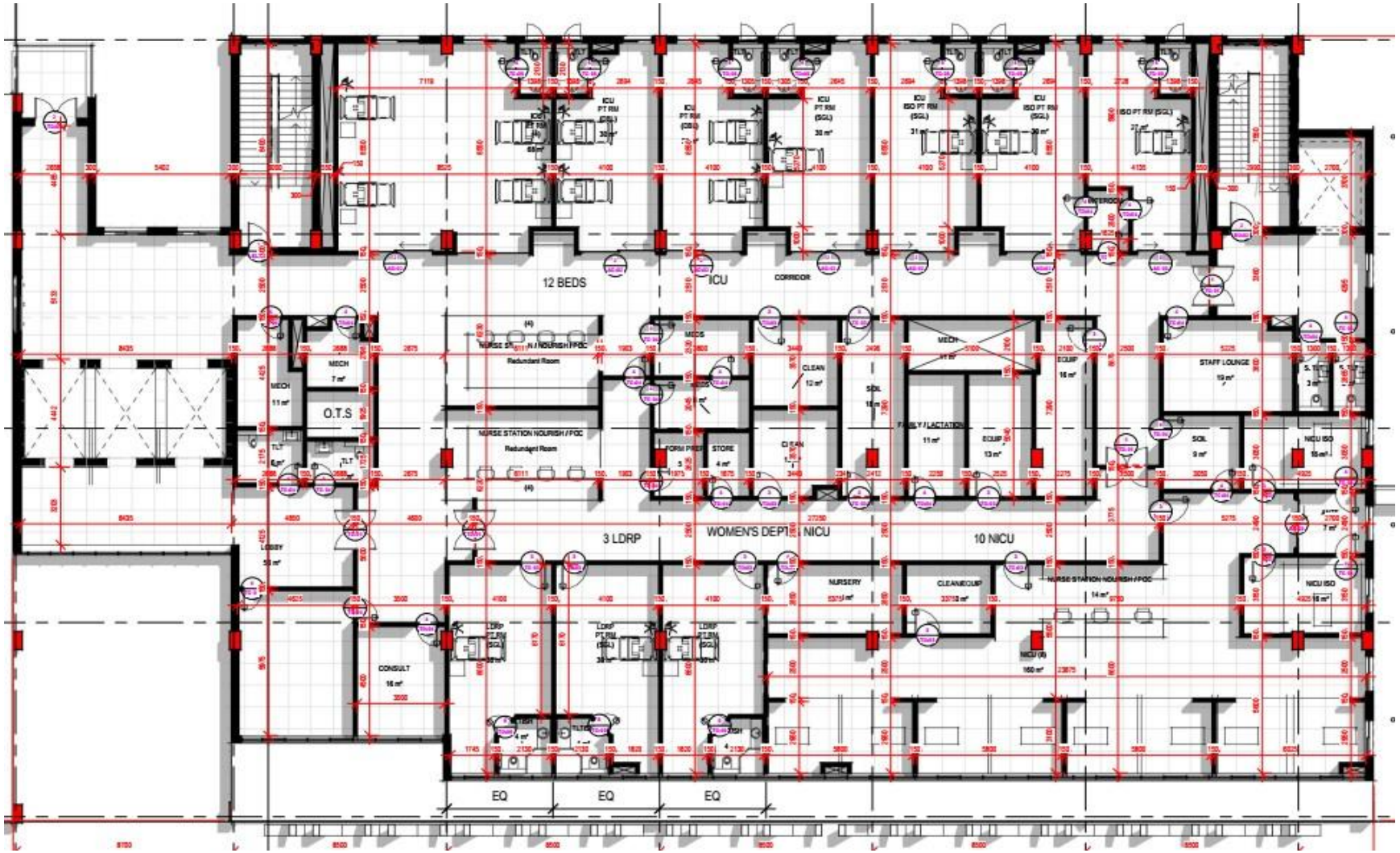
Ground Floor Plan



First Floor Plan



Second Floor Plan



Third Floor Plan



Fifth Floor Plan