



Republic of Liberia  
**Ministry of Public Works**  
South Lynch Street  
Monrovia, Liberia



**LIBERIA URBAN RESILIENCE PROJECT (LURP)**

**P169718**

**Component 2.0 Strengthening Integrated Resilient Urban Development Capacity**

**TERMS OF REFERENCE**

**CONSULTANCY SERVICES**

**FOR**

**SPATIAL DEVELOPMENT & INFRASTRUCTURE INVESTMENT PLANS, INCLUDING FLOOD RISK ASSESSMENT IN  
FIVE URBAN AREAS IN LIBERIA**

# 1.0 Introduction

## 1.1 Country and Sectoral Context

**Liberia's urban population has been rapidly growing in the last six decades, with over 50 percent of the population now living in urban areas<sup>1</sup>.** The share of the population living in urban areas almost tripled from 19 percent in 1960 to 53 percent in 2021. Initially, the urbanization grew steadily till the early 1980s. The urbanization rate over time peaked in 1991 at 58 percent but dropped sharply to 45 percent in a period of less than 5 years thereafter. The share of the urban population peaked during the initial years of the civil war as people sought safety in urban areas and Greater Monrovia became host to numerous Internally Displaced People. Following the mid-1990s, the urbanization is growing at a slower pace than before the civil war period but still rises.

**Liberia has experienced a disproportionate rate of urbanization due to rural-urban migration.** Six counties, out of fifteen, account for more than 75 percent of the population: Montserrado (32%), Nimba (13%), Bong (10%), Lofa (8%), Grand Bassa (6%), and Margibi (6%). The South-Central region is the most densely populated, largely concentrated in Montserrado County which is also home to the nation's capital city Monrovia. Monrovia is considered a primate city and is part of the Greater Monrovia area with 2.6 million people (2020), which consists of the cities of Monrovia, Paynesville, and surrounding townships that form the biggest urban agglomeration in Liberia. There are three primary cities outside of Greater Monrovia: Buchanan (South Central), Gbarnga, and Ganta (North Central), which have populations between 40,000 and 100,00 people. In addition, there are seven secondary cities with populations between 15,000 and 40,000: Foya Kamara, Harbel, Harper, Kakata, Pleebo, Voinjama, and Zwedru. All other settlements are tertiary rural towns or villages with populations below 15,000.

**The urbanized centers in Liberia face huge challenges in terms of deteriorating infrastructure, limited services and maintenance, and regular flooding hampering economic growth and prosperity for its population.** Primary and secondary cities are facing significant infrastructure-related challenges related to transportation, water, sanitation, and hygiene (WASH), solid waste management, electricity, and digital infrastructure. Outside Greater Monrovia there is no government piped water and sewerage system, insufficient paved secondary roads, and engineered drainage systems. These challenges are exacerbated by climate vulnerability, particularly floods. Severe rainfall events can generate significant flooding in these urban environments due to lack of proper drainage systems to store and convey rainwater to non-urbanized areas and also lack of protection from flooding from rivers crossing these urbanized centers. Past events have shown the exposure and impact of existing flood risks. For example, Gbarnga was exposed to heavy rainfalls in 2021 that led to flooding of the Jor river and subsequent damages to houses, roads, and vehicles, leading to displacements. Ganta has also experienced flooding of the St. John River in the past, which has affected businesses and cross-border movement of people in and out of Guinea. Climate change projections suggest that the rainfall in these interior cities may show a slight decrease during monsoon season in contrast to the coastal zone.

**Outdated zoning laws, inefficient permitting processes, the absence of a land cadaster, and the lack of urban planning capacity and related enforcement exacerbates the challenging situation in these urban centers, resulting in a proliferation of informal settlements, often in low-lying flood plains.** The land cover of Greater Monrovia has almost doubled since 1975. Informal settlements accommodate two-thirds of Greater Monrovia's population, an estimated 70 percent of the built-up area in Greater Monrovia is informally developed. Responsibilities for urban planning, zoning, management, and permitting in Greater Monrovia are

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<sup>1</sup> <https://data.worldbank.org/>

fragmented and capacity is weak. The Japan International Cooperation Agency (JICA) financed a Master Plan for Greater Monrovia in 2009 focused on infrastructure, but it was not adopted, updated, or fully implemented. There is currently no urban planning law and the Liberia Zoning Act stems from 1979. Zoning schemes and their implementation are to be promoted by the Liberia Land Authority (LLA) per the LLA Act (2016) but roles and responsibilities between involved institutions remain unclear. All processes are negatively affected by a general lack of spatial data and infrastructure asset management systems. Outside of Greater Monrovia, MPW attempts to control construction activities, which is challenging due to the centralized nature of the institution. Capacities of local governments in primary and secondary cities to control urban development is low.

**It is evident that there is a clear requirement for boosting resilient urban planning and investing in improving public infrastructure services in Liberia's urban centers.** In response to this, the Liberia Urban Resilience Project (LURP) will finance activities to increase the capacities of relevant stakeholders to develop, maintain and update a climate-resilient spatial development plan for Greater Monrovia, Buchanan, Ganta, and Gbarnga. The plan would be developed through a participatory process involving intensive stakeholder engagement and the output would emphasize the spatial elements needed to guide climate-resilient infrastructure investments and land use in Greater Monrovia as well as primary cities and safeguarding against development on land most vulnerable to climate and flood risk. The plan will also include a climate-resilient infrastructure diagnostic and investment plan, including transport, drainage, ICT, water and sanitation, and market infrastructure identifying priority investment needs with a view toward low carbon and resilient urban development and economic growth trajectory.

**Within this context, understanding and management of disaster and climate risks (particularly floods in Liberia but also coastal erosion) is an essential input for improving urban spatial plans and preparing investment plans for these cities in Liberia to minimize the impacts of natural catastrophes and increase long-term resilience against natural shocks.** The collection and sharing of hazard data and information is a crucial input to that end, contributing to the understanding of the country's disaster risks as well as enabling the incorporation of disaster risk information in development and policy and investment decision-making. For Greater Monrovia, a detailed assessment of flood risk has been carried out in the recent past which is sufficiently detailed to inform spatial planning and has already informed investment priorities now financed under LURP<sup>2</sup>. The study has supported the improved knowledge and understanding of flood risk in Greater Monrovia and contributes to the World Bank's integrated urban development and resilience strategy in the region. This assessment was carried out with detailed topography data and using high-resolution modeling tools. This level of detail has been sufficient to allow pre-feasibility level exploration of mitigation options and also initial estimation of benefits analysis to be carried out. This information can directly feed into the spatial urban planning and investment planning of this assignment.

**For the other urban areas Buchanan, Gbarnga, and Ganta, flood risk is also acknowledged as a significant and growing problem and needs to be addressed in resilient urban planning.** This is also further confirmed by a recent climate risk profile of the country<sup>3</sup>. The underlying analysis of this report, however, is not of sufficient granular to directly feed the planning exercise under LURP. Also, erosion risk is an important hazard to be considered specifically for Buchanan and Greater Monrovia. This phenomenon may have implications and may also require interventions to safeguard the living environment of the communities near the coast. For Monrovia, several interventions have been implemented (e.g. along New Kru Town) or are projected to be implemented (e.g. West Point). However, an integrated assessment of the erosion risk and future projections along the entire coastline of Greater Monrovia and Buchanan does not exist and this baseline information must be developed as part of this assignment.

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<sup>2</sup> World Bank, Deltares (2021): Flood risk profile for Greater Monrovia

<sup>3</sup> Climate Risk Profile: Liberia (2021): The World Bank Group

## 1.2 Targeted Urban areas

The geographical scope of this study focuses on 4 urban areas: Greater Monrovia (covering the cities of Monrovia and Paynesville), Buchanan, Ganta, and Gbarnga in Liberia. Reference is made to Annex 1 for detailed maps and a brief synopsis. The assignment will cover formally 5 cities, 9 townships, and 1 borough. Cities are governed by a Mayor and a City Council appointed by the President and all except Monrovia, are answerable to the Ministry of Internal Affairs. All cities, including Monrovia, are regulated by the Local Government Law of 2018, which has not been fully implemented. The law requires elections for council members by wards, which are yet to be demarcated.

The legal framework around urban planning in Liberia is outdated and limited, there are inefficient development control processes, an absence of a land cadaster, and a lack of urban planning capacity and related enforcement. These conditions exacerbate climate risk, resulting in a proliferation of informal settlements, often in low-lying flood plains. Responsibilities for urban planning, zoning, management, and permitting in Liberia are fragmented and capacity is weak. Urban planning is essential for these cities for increased resilience to flood threats, ensuring future growth, and providing infrastructure, services, sustainable use of land, protected land, green spaces, and public recreational areas.

Flood and erosion hazard and risk assessments must therefore inform the urban planning process and baseline information must be generated as part of this assignment. Each urban area suffers different levels of flood risk and also has different flood mechanisms (fluvial, pluvial, coastal) have different importance. Wind damage during rainfall events and also coastal erosion are relevant (Greater Monrovia, Buchanan). This will require different levels (and priority) of hazard/risk analysis to generate a baseline for the urban planning exercise, however, there are several common features. Many small streams and drainage channels extend through the urbanized and peri-urban areas of the cities, often with natural wetland zones that naturally inundate frequently during the rainy season forming broad active floodplains. Urban growth has resulted in the encroachment of buildings, infrastructure, and activities into these wetland areas, and now consequently suffer from frequent flooding. In addition, the spread of built-up areas associated with the city increases impermeable surfaces, resulting in greater rainfall run-off rates and volumes. Loss of vegetation has also led to greatly increased soil erosion resulting in blockages to drains and streams, made worse by the significant increase in solid waste indiscriminately dumped that tends to end up in the waterways. The many road crossings are a significant pinch point to natural flow paths down the valleys at a number of locations, made worse by the blockages that stem from solid waste and sedimentation.

The complexity and interactions of these flooding mechanisms (compounded by the wind for some of these) with the existing natural and man-made urban footprint require a detailed investigation of the spatial and temporal patterns of flood hazard and risk with sufficient granularity using the most effective practical approach and best readily available data. It is noted that for each of the selected cities relating to drainage and flood hazard, there are no earlier investigations or reports available on the catchment and associated flood risk to our knowledge. Hence, baseline data collection of hazard, exposure, and vulnerability will be an important element of this study. In this context, an essential aspect of the flood modelling will be the availability of a Digital Terrain model (DTM) for the study areas. It is proposed that suitable high-resolution images (satellite or drone images) is purchased or collected by the consultant with sufficient ground truthing to obtain a detailed and accurate representation of the topography of the areas of interest for modeling drainage paths and identification of flood-prone areas.

## 2 Objective of the Assignment

**The Government of Liberia (GoL) is implementing a World Bank-financed Liberia Urban Resilience Project (LURP).** The project has three components: (i) Climate Resilient Infrastructure and Urban Upgrading; (ii) Strengthening Integrated Resilient Urban Development Capacity; and (iii) Project Management. Under Component 2, the project intends to support both national and municipal government institutions responsible for urban planning in institutionalizing and strengthening urban management capabilities critical to efficient revenue generation, planning, and sustainable delivery and management of resilient infrastructure and services. The activities under this component will assist the participating cities to lay the necessary foundation for well-functioning urban centers that are prepared and able to reap the full benefits from subsequent interventions planned for the country and prepare them for second-generation/next-phase urban resilience projects.

This 3-year assignment under Component 2 of LURP aims at strengthening integrated urban planning and development control practices in five urban areas in Liberia (Greater Monrovia, including Monrovia and Paynesville, Buchanan, Ganta, Gbarnga) through a cohesive approach involving a combination of policy dialogue, capacity development via learning by doing, surveys, modeling and analytics, mainstreaming of affordable technologies, plan making, and public awareness.

Specific objectives for the geographical areas under consideration are to:

1. Include capacity building as a streamlined approach across all activities through learning-by-doing methods;
2. Establish guidelines to support urban planning and enforcement;
3. Mainstream the use of affordable spatial data technology in urban planning practice;
4. Develop a legacy of digitized baseline data with future projections of urban environments and the natural hazards for urban planning purposes;
5. Support government to develop and commence implementation of long-term spatial urban plans that include zoning maps, define future development and growth, and establish these as best practice examples for future planning processes;
6. Identify environmentally important and flood/erosion hazard-prone areas that require protection and strict no-build enforcement;
7. Develop infrastructure investment plans for the Greater Monrovia Districts (including the cities of Monrovia and Paynesville), Buchanan, Ganta and Gbarnga;
8. Capacity development and support to strengthen institutional ongoing dialogue on policy, legal and institutional framework for urban planning.

This Terms of References sets out the context, activities, deliverables, planning and resources for this assignment. The Consultant is invited to make recommendations deemed necessary to propose suggestions for successfully achieving the above objectives of this program.

Additional capacity building assignments will commence in parallel to this assignment on the topics of urban development, municipal revenue generation and financial management as well as geographical information systems. The Consultant is expected to take these interfaces into account when carrying out this assignment.

## 3. Scope of the Assignment

The services included in this study are to be conducted in accordance with generally accepted international standards and professional practices acceptable to the Local Government representatives of Greater Monrovia, Buchanan, Gbarnga, and Ganta, as well as the World Bank. The scope of work will cover all activities necessary

to accomplish the objectives of the consultancy, whether or not a specific activity is cited in these Terms of Reference (TOR). A participatory and consultative approach is essential in the conduct of the services.

The consultant shall engage project stakeholders, including the institutions listed under Institutional Framework (section 4) through workshops for project updates, stakeholder input, and review and validate each deliverable. Spatial plans are expected to include but not limited to:

1. Overall GIS layers of current urban environment, hazardous areas, environmentally sensitive and protected areas, industrial areas, population density, etc.,
2. Definition of overall strategic aspirations of the city, in line with strategic documents or plans the cities may have and in line with national development plan,
3. The identification of potential growth poles and main transport routes,
4. Definition of residential, industrial and commercial zones,
5. Delineation of environmentally sensitive and protected areas,
6. Delineation of high risk areas for no new development and corridors for current/future drainage and protection against coastal/riverine flooding and erosion, and
7. Identification of immediate investment priorities for the next 5 years & 10 years.

The objective of the urban spatial plan for each urban environment is to inform immediate infrastructure investment priorities and inform approaches to enhance strategic and resilient development control objectives. The planning process shall be structured as a government and community led exercise that is built incrementally while building capacity and understanding. As part of this planning process, the Consultant is expected to develop baseline information with sufficient granularity for these urban settings of the existing footprint and potential future growth scenarios. This baseline information shall also include the development of current and future hazard / risk maps for floods (all urban environments except for Greater Monrovia) and erosion (Greater Monrovia and Buchanan).

The main tasks required inter alia to successfully accomplish the assignment are as follows:

#### **Phase I: Mobilization, data collection, review, and inception report [2 months]**

Initial project preparation and planning, data and information review, and production of a concise inception report and proposal for a platform/tool for urban spatial planning. The following subtasks shall be implemented:

1. Prepare presentation and participate in Kick Off meeting to be held upon contract signing;
2. Conduct desk and field visits and research, data collection and review, and stakeholder interviews/focus groups in the five urban areas and consultations with relevant National Government, Local Government and LURP team, key knowledge holders to inform Inception Report [Deliverable A] which will cover detailed methodology and timetable for all activities of this assignment and be presented as a written draft one week prior to the inception meeting, and presented to stakeholders in the Inception Meeting within 4 weeks of assignment commencement; and
3. Evaluate and choose among existing platforms and tools for urban planning with GIS functionality for spatial data (and non-spatial data) management and digital access to proposed spatial plan/zoning code. The tool should be open source, designed and hosted in accordance with country standards for cyber security and data sharing. It should be integrated with field data collection technologies. [Deliverable B]

Formal approval of this project stage with LURP agreement of the detailed proposed methodology and project plan will be required before the project can progress to the next tasks.

## **Phase II: Existing Situation Analysis and Strategy Development [3 months]**

This phase shall develop various baseline documents and plans to be implemented during this assignment based on analysis of the existing situation. The following tasks shall be conducted:

- i. Engage a wide range of stakeholders in central and local government, academic and training institutions, and civil society in a dialogue that assesses the existing state of urban planning policy and practice and proposes a strategy for developing effective institutional capacity and an enabling environment for urban planning implementation. The strategy should cover a 30 -year period and its development should be participatory involving a series of interviews, focus groups, and workshops that engage representatives from all key sectors to which urban planning is relevant (land, public works, architecture/designers, builders, education, agriculture, environment, economy, tourism, natural resources, real estate, etc.). The resulting State of Urban Planning and Way Forward Report [Deliverable C] should:
- ii. Identify tangible objectives relating to the overall goal of establishment of an effective practice of urban planning and enforcement;
- iii. Detail an approach for addressing the following critical elements:
  - policy and legal/regulatory framework
  - human resource (number and needed skills)
  - tools (equipment and data)
  - institutional arrangements for planning and implementation/enforcement
  - cross-institutional partnerships
  - role of academic/training institutions
  - political sensitization and buy-in
  - public awareness and compliance
  - professional associations; and
- iv. Map stakeholders and resources required to implement the strategy.
- v. Guided by the findings and way forward identified in Deliverable C, global best practice for urban plan development, and what is possible according to the existing legal framework, the consultant shall again deeply engage stakeholders in the development of an Urban Planning Handbook [Deliverable D] which outlines the scope, process, roles of various stakeholders, data requirements, and quality assurance steps for producing urban plans and local area plans. The handbook should be easily digestible and highly visual so that it is a useful tool for stakeholders who may not have familiarity with urban planning.
- vi. Through stakeholder engagement in user needs requirements and user acceptance testing, the Urban Planning Tool selected during Phase I shall be used to conduct training to operationalize in subsequent phases [Deliverable E], to develop an online municipal geospatial data portal that can accommodate data from other assignments, such as revenue mobilization, for plan development as well as support to urban plan implementation and enforcement.
- vii. Guided by Deliverables C and D, the consultant shall again engage stakeholders in the development of a Training and Technical Assistance Plan for capacity building (of current practitioners), training of future workforce (apprenticeships in local and central government institutions and internships to support data collection and planning in Phases III and IV), and sensitization (to high level officials and politicians) [Deliverable F]. The plan should elaborate on the skill development and sensitization initiatives to be

undertaken over the course of this Phase I assignment, as will have been preliminarily overviewed in the Inception Report; it should also elaborate on the initiatives that should be undertaken following the conclusion of Phase I. Training Plan should include robust job placement program (i.e. training future practitioners through apprenticeship) which will be implemented through this program and should thus be included in Consultant's financial proposal. Training plan should also include one south-south knowledge exchange tour of 5 days including a minimum of 5 high level officials from various ministries, agencies, municipalities, etc.

- viii. Public Awareness Campaign Plan and Package (with goal of getting support and engagement in planning process but also implementation and enforcement once plans are in place) [Deliverable G]. In addition to detailing the project stakeholder engagement plan, the consultant shall develop a plan for engaging the public through various levels of technology that ensure messages have a wide range of accessibility (audio, visual and internet). Audio engagement may include radio broadcasts and in person community engagements. Visual engagements may include television and signage. Internet engagements may include social media platforms and a customized platform for sharing public information from municipalities.

### **Phase III: Plan Initiation, Data Assembly and Skill Building [6 months]**

- i. Conduct stakeholder analysis by grouping stakeholders based on issues and conducting a series of consultative meetings (one for each target urban area) that include discussion of stakeholders' roles, mandates and responsibilities.
- ii. Carry out ongoing skill building according to Training and Technical Assistance Plan produced during Phase II, and summarize activities, engagement, and outcomes in quarterly progress reports to be submitted to the PMU and shared with stakeholders.
- iii. Stakeholder engagement, preparation activities, and training/technical assistance activities during Phase III shall be summarized in quarterly progress reports to be submitted to the PMU and shared with stakeholders which will be a communication tool that is not associated with incremental payments but which will ultimately be compiled as annexes to Deliverable M (quarterly summary reports).
- iv. Collect and assemble relevant spatial and sectoral data using different types of tools and instruments for physical and socio-economic surveys. Spatial data should include at a minimum: existing relevant networks, ongoing/planned infrastructure works, municipal boundaries, digital terrain model, natural resources, natural features and hazards such as floods and erosion. Existing land use mapping should cover: informal urban economy, industry and commerce, traffic, transportation networks, real estate/housing, drainage, solid waste management, environment, infrastructure (roads, water, sewerage, power, railways, airports, telecommunications, health and education facilities), tourism and recreation. All layers and attribute tables and the resulting maps for each urban area shall be availed to local as well as central government upon submission of deliverable. [Deliverable H]

### **Phase IV: Detailed flood and erosion hazard and risk assessments [3 months]**

This phase shall develop a flood hazard and erosion risk analysis for Ganta, Gbarnga, and Buchanan, and erosion hazard and risk assessments for Buchanan and Greater Monrovia. A detailed flood risk assessment for Greater Monrovia has already been developed and can be found here: <https://www.gfdr.org/en/publication/flood-risk-profile-greater-monrovia-final-and-summary-report> These flood and erosion hazard/risk assessments may require different approaches depending on data availability and relevance and may rely heavily on downsizing from regional or global data. It is noted that this Phase IV can run partly in parallel to Phase III relying in part on the data collection of the previous phase. The following subtasks are required:

- i. Collect, collate, and analyse all/any available rainfall and river flow/level and tidal records and existing coastline data for the area, and consider alternative substitute data sources, such as modelled rainfall (or tides) global and regional or modelled as a means of extending short periods of local records or corroborating or adjusting records of uncertain quality. Use this information to develop relevant combinations of rainfall, runoff (and tide where necessary) for the return periods under consideration by taking into account the joint probability of events and determine hydrological conditions of future scenarios, including the likely impact of climate change. The time horizon for climate change is anticipated to be 2070, although this will be confirmed during the inception phase.
- ii. Modelling software selection criteria will be explained through the response to this ToR, and will be finalised during the project inception phase, where any amendments will be fully documented and will require approval prior to commencement of the model development phase. The modelling software should be freely and openly available (i.e. no ongoing licence costs for continued use) with a sufficient level of documentation and user guidance to allow an experienced and technically competent practitioner to repeat the work. It is essential that the software, model set up files, and model data will be made available following completion of the project through organised handover workshops, training and provision of technical assistance to support future use of the models by one or more agreed organisation or institute in Liberia. Short-term support must be offered, and with reasonable expectations of continued longer-term support to be made an option if required, with upgrades and support for an extended period of at least 5 years.
- iii. Build a flood model schematization for the three urban areas to ensure the relevant flood dynamics are captured to map the flood hazard. For the areas of interest, a straightforward 2D approach with high resolution (e.g. 5 meters) is deemed sufficient for this assignment. Calibrate/validate the model based on expert judgement and any field data and/or local evidence available. Map flood hazard for different return periods (e.g. 1yr, 10yr, 100yr to be agreed during project inception) for both existing and future scenarios. Map existing and future coastline trends in Greater Monrovia and Buchanan using open source data and expert judgement.
- iv. Set up exposure and vulnerability models for the five urban areas of interest. The exposure model shall include all relevant assets including residential, commercial, public buildings, infrastructure such as roads, water infrastructure (e.g. wells), electricity infrastructure, etc. Develop asset-specific vulnerability curves and use appropriate proxy valuation methods to estimate asset values where locally sourced data are unavailable or insufficient. Generate also future exposure models based on urban growth scenarios.
- v. Map the economic damage and affected population, including the impact of such factors as poverty and resilience in order to present a comprehensive view of flood (Buchanan, Ganta, Gbarnga) and erosion risk (Buchanan, Greater Monrovia). The risk model shall allow as a minimum, for the calculation of annual average damage for each individual element in the exposure inventory or grouping of elements, distributed by sector (health, education, public, private, etc.), as well as the whole, and the gridded data should be at an agreed spatial resolution (potentially 10m by 10m) that can easily be aggregated to specific neighborhoods. They must provide sufficient granularity to assess the effects of factors such as poverty and local resilience on aspects such as recovery rate, and how these may influence the distribution of flood risk. The resulting risk shall be verified against expert knowledge and also local experience based on past events.

This phase shall be concluded with a technical report [Deliverable I] to accompany the data analysis and resulting data sets from the hazard and risk modeling. This technical report shall target experience professionals that provides full details of the model schematisation and technical features, assumptions,

sources of uncertainties, all modelling logs, and methodology for professionals to replicate the work. All data and models shall be structured in a database [Deliverable J] for handover to the client.

### **Phase V: Planning and Skill Building [12 months]**

- i. Through a consultative process that deeply engages all key stakeholders (at local level and in central government) through an approach that emphasizes inclusion of women and vulnerable people, and according to the guidance developed in Phase III and outlined in the Urban Planning Handbook, produce four Spatial and Infrastructure Investment Plans covering a 30-year period, one for each of the following urban areas:
  - *Greater Monrovia* (composed of the 12 local governments that compose the urban area: Monrovia City, Paynesville City, New Kru Town Borough, Barnesville Township, Caldwell Township, Congo Town Township, Dixville Township, Garnersville Township, Garwolohn Town Township, Johnsonville Township, New Georgia Township, West Point Township) [Deliverable K]
  - *Gbarnga City* [Deliverable L]
  - *Buchanon City* [Deliverable M]
  - *Ganta City* [Deliverable N]
- ii. Develop 2 model 30-year climate change local area development/growth plans for pilot areas to be identified with local government authorities in Greater Monrovia (Monrovia or Township/Borough and Paynesville).
- iii. Activities will use existing and future climate risk maps for the Greater Monrovia District and the cities of Buchanan, Gbarnga and Ganta to orient and inform resilient urban growth, inform on providing and maintaining climate resilient infrastructure and provide capacity building of municipalities and other institutions on resilient urban development planning and control. The flood and erosion hazard/risk assessment results from Phase IV shall be used actively in these planning activities. All activities are intended to contribute to better resilient planning and development control, integrating gender-informed urban design, ensuring fiscal responsibility, and improved coordination.
- iv. Spatial Plans are expected to include maps and narrative reports illustrating the existing situation in selected cities and realistic development expectations spanning a 50-year period with clearly identified land-uses and restrictions as well as Infrastructure Investment Plans detailing activities and related investment requirements, identifying possible financial resources and actors to achieve the development expectations.
- v. The plans should:
  - Carry out a situation analysis for each city to include natural constrains (e.g. flood-prone areas, natural pathways of flood waters, areas with high risk of erosion), socioeconomic diagnostics and establish baseline conditions for key sectors;
  - Provide a framework for Municipalities to manage growth and development;
  - Link spatial development and economic development of the beneficiary municipalities, by providing short, medium, and long term infrastructure investment strategies and implementation plans;

- Provide short, medium, and long term strategies for enhanced resilient development of the selected municipalities, including the identification of environmentally important areas that require protection and strict no-build enforcement (e.g. zones with a very high probability of flooding or erosion);
  - Provide recommendations based on the technical and institutional capacity of other local municipal governments to prepare, update and implement spatial plans;
  - Ensure that citizens' views, especially those of women and poor/vulnerable community members, are reflected in the plans through participative consultation processes; and
  - Ensure that there is continued collaboration with multiple stakeholders to ensure maximum buy-in from entities involved in the eventual implementation of the plans.
- vi. At a minimum, each Spatial and Infrastructure Investment Plan shall include easily visible maps, illustrations of key proposed changes (long and short-term) resulting from the plan, animations of how the areas will look in the future and succinctly summarized in Executive Summary early in the document:
- Main land use zones including mixed-use commercial nodes, e.g. CBD and neighborhood nodes, social services centers and small light industrial nodes; major industrial zones, production, and logistics/warehousing areas (existing and proposed);
  - Main movement lines (roads and public transport routes), utility corridors to have space for existing and emerging utility amenities;
  - Indicative development density zones and their development conditions;
  - Open space networks and no-build zones such as waterways and drainage pathways, steep slopes, setback zones along the coast to allow for sea level rise and natural variability, and environmentally sensitive areas considering also climate change and further densification of the urban centers;
  - Growth management mechanisms such as an urban edge;
  - Priority zones for providing services in a phased approach (e.g. zones for providing services near nodes and along public transport routes) and the alignment of main services lines (e.g. bulk water pipes) requiring wayleaves;
  - Areas requiring detailed thematic planning (e.g. special economic zones, coastal strips, wetlands, green belts and heritage areas);
  - A Capital Investment Plan (CIP) that outlines prioritization and phasing for proposed infrastructure, indicating indicative cost and responsible implementing entity;
  - Identification of Catalytic Investments to stimulate local economic development and job creation (including pre-feasibility studies and implementation strategies for 3-4 of the identified catalytic projects); and
  - Strategic Environmental Assessment (SEA).
- vii. The content sections of the plans should include:
- Review of Planning Context
    - *Historical Growth Analysis of the Planning Area*: This provides an overview of how the City or District has developed over time giving prominence to key population, planning, residential, economic, and infrastructure developments and growth drivers over time;

- *Assessment of the Planning Area*: Assess the status quo and changes over time of the population, informal urban economy, industry, and commerce, traffic, transportation cost and networks and drainage, household incomes, real estate markets/housing and land prices, solid waste management environment, infrastructure (roads, water, sewerage, power, railways, airports, telecommunications), education & health infrastructure, tourism and recreation.
- *Existing Situation, Principles and Vision*: This must state the spatial vision, and analyze the status quo, challenges, capacity, opportunities, and constraints to show the link between proposals and the status quo focusing on the availability of infrastructure relative to the provision of services and the status of protected lands.
- Infrastructure Analysis
  - *Gap Analysis*: Analyzing the condition and availability of infrastructure in each municipality against provisions stipulated in the Local Government Act and other relevant legislative frameworks/instruments. The gap analysis should check the compliance of existing development plans (national plans/policies, county development plans) with the legal and institutional framework).
- Gender and Social Equality Framework: A framework for addressing gender issues should be developed which focuses on how the plans will impact both women and men given their different roles and responsibilities in society.
- Spatial Development Strategies: Strategize with local government to develop strategies to be used by the local governments to guide growth in their jurisdictions and perform development control functions.
  - *Interventions*: Develop implementation plans proposing interventions to improve and maintain infrastructure within each municipality with financial implications and resource mobilization plans.
  - *Regional Context Analysis*: Analysis of urban-rural linkages and investment opportunities with surrounding jurisdictions and possible impacts on the Planning Area.
  - *Environment Protection and Resilient Development*: Assessment, update or development of short-term, medium-term and long-term resilient strategies.
  - *Renewal and Redevelopment Proposals*: Development of proposals for improving the liveability of informal settlements, focusing on slum upgrading.
- Scenarios: Develop short to long term scenarios illustrating possible outcomes of the target areas with no intervention, some intervention and full (as recommended in the plan) intervention.
  - *Short-, Medium- and Long-term Scenarios*: illustrating the impacts of various levels of infrastructure planning and investment.
  - *Climate-related Hazard/Risk Scenarios*: highlighting the potential effects of climate change with and without interventions recommended in the plan.
  - *Land-use Scenarios*: illustrating the long-term outcomes if land-uses are predetermined.

- viii. Implementation and Financing Plans: Planning proposals categorized into short-, medium- and long-term projects. Financing proposals to include costing, resource mobilization, etc. shall be prepared under the implementation section.
- ix. Institutional Strengthening Strategy
- *Institutional Framework for Infrastructure Investment*: Analysing legal and policy frameworks, institutional structure and technical capacity of Municipalities to monitor and report on the status of infrastructure. Determining the existing role of each level of government in Infrastructure Investment and making recommendations to improve the management of infrastructure.
  - *Statutory Framework*: Defining the necessary statutory framework to ensure adoption and implementation of the Spatial Plans.
  - *Management Information System (MIS)*: The consultant shall evolve a regular MIS for reviewing and monitoring the implementation of the municipal structure plans.
  - *Spatial Planning Guidelines and Institutional Framework*: Preparation of a step-by-step guide to assist government planning bodies with future planning activities including Planning Department staffing recommendations and required equipment and supplies. Taking into consideration the lack of planning and urban management professionals in the country.
  - *Planning Framework for Infrastructure*: Reviewing existing infrastructure development plans in terms of adopting principles of integrated planning.
- x. Monitoring and Evaluation (M&E) Framework: Development of M&E framework(s) to ensure effective monitoring and evaluation of implementation plans.
- xi. Spatial plans shall be guided by the legal framework as well as the following key principles:
- *Consultative/ participatory process*: mandatory local government, LURP Task Force composed of technicians from various government stakeholders, Liberia Geographical Society, University of Liberia and public participation to promote ownership of plans as the basis for shared responsibility for implementation.
  - *An integrated approach*: require thinking and acting holistically across conventional sectoral boundaries.
  - *Functional, socio-economic, cultural, and ethnic interaction*: provide for economic development and employment and facilitate institutional cooperation and community participation.
  - *A balance between natural and physical environments, viable economic systems and greater integration, equity and responsibility*.
  - *Promote gender mainstreaming*: incorporate the needs and aspirations of the different gender categories.
  - *Sustainability, Scalability and Replicability*: The Spatial Plans should be designed to accommodate future urban growth and address emerging urban issues. The potential barriers to plan implementation on a larger scale should be identified and analyzed.

- xii. Throughout this phase, the Consultant shall conduct ongoing skill building according to Training and Technical Assistance Plan produced during Phase II, and summarize activities, engagement, and outcomes in quarterly progress reports.

#### **Phase VI: Plan Implementation Support and Skill Building [12 months]**

- i. Continued implementation of Training and Technical Assistance Plan produced during Phase III, with an emphasis on skill building for urban plan implementation and enforcement, including operationalization of Urban Planning Tool.
- ii. Continued delivery of Public Awareness Campaign as described in Deliverable G.
- iii. Training and Technical Assistance and Public Awareness Campaign activities and outcomes during Phase V shall be summarized in quarterly progress reports which will be a communication tool that is associated with incremental payments [collectively, Deliverable O].

#### **Phase VII: Program Evaluation and Closure [1 month]**

Through fieldwork, stakeholder interviews, focus groups, and a final reflection workshop produce an Evaluation Report [Deliverable P] that summarizes the activities of the program but emphasizes the successes, challenges, and outcomes of the program and that provides recommendations on the way forward for further strengthening urban planning practice in Liberia.

## 4. Organization of the Assignment

### **4.1 Management and coordination of this assignment**

The process of conducting this assignment shall be managed by the LURP Project Management Unit (PMU) in the Ministry of Public Works (MPW), in coordination with the Ministry of Internal Affairs (MIA), the respective local governments and other relevant government ministries and departments. This is to ensure effective integration and policy coherence of the planning process and allow local governments to actively participate in the development of the plans, understand the process of developing the plans and maintain a deep appreciation of the task ahead of implementing the plans. A multi-stakeholder task force is established to help as the interface between stakeholders and the team preparing the plans composed of various government stakeholders. The task force will also help in organizing sector-specific consultations, training and validation meetings/workshops. The task force is composed of participating cities, government ministries and the Liberia Land Authority.

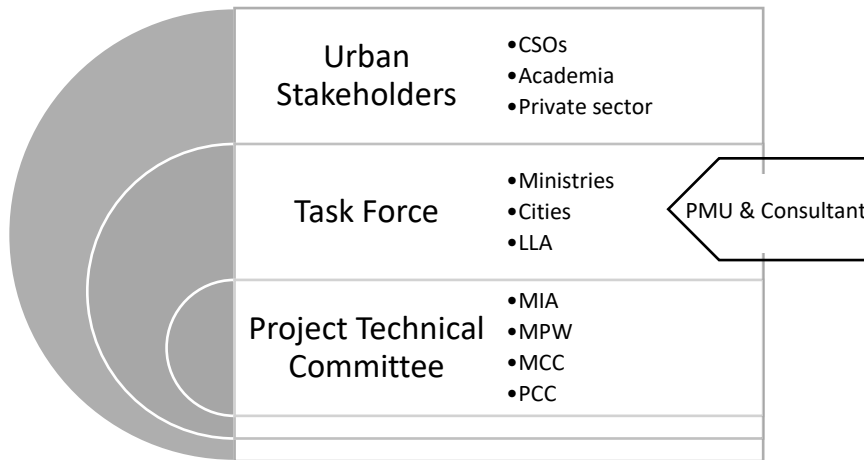


Fig. 1: Assignment Organization

**4.2 Responsibility of the MPW/PMU:** The MPW, through the PMU shall be responsible to:

1. ensure government and community participation throughout the process at the central and local level;
2. provide baseline assessments of capacity and development controls of selected municipalities, if available;
3. provide community profile data for informal and at-risk communities in each Planning Area, if available;
4. provide assessment report of the Mesurado Wetlands, if available;
5. provide any GoL plans, policies, laws, etc upon request of the consultant.
6. provide the following reference materials upon signing the contract:
  - a. **The Liberian Constitution (1986)**
  - b. **Zoning Act for the City of Monrovia (1979)**
  - c. **Liberia Land Authority (2016) Law**
  - d. **Local Government Law of 2018**
  - e. **Land Rights Act (2018)**
  - f. **Environmental Protection Law (2003)**
  - g. **Ministry of Internal Affairs (MIA) Law (1979)**
  - h. **Ministry of Public Works (MPW) Law (1979, amended in 2008)**
  - i. **Monrovia City Corporation (MCC) Law**
  - j. **Paynesville City Corporation (PCC) Law**
  - k. **Masterplan Study on Urban Renewal and Restoration for Monrovia (JICA, 2009)**
  - l. **Greater Monrovia Development Strategy (Cities Alliance, 2020)**
  - m. **Know Your City Slum Profile Reports (Cities Alliance, 2018)**
  - n. **Liberia National Urban Policy (UN-Habitat, 2022)**
  - o. **Accelerated Community Development Program (UNDP, 2021)**
  - p. **Cheesemanburg Landfill & Urban Sanitation (CLUS) Project Reports**
  - q. **National Transportation Strategy (MPW)**
  - r. **National School Infrastructure Strategy (MoE, 2021)**
  - s. **Gbarnga Land Inventory Report and Data (UN-Habitat/Liberia Geographic Society)**
  - t. **Buchanan Land Inventory Data (UN-Habitat/Liberia Geographic Society)**

## 5. Firm Consultant's and Key Experts' Required Qualifications and Experience

### 5.1 Qualifications and Competence of the Consultant

For this Assignment, the LURP is explicitly looking to hire a Firm or a consortium of Firms with demonstrated experience in:

- (1) urban planning exercises with strong interaction with local stakeholders,**
- (2) defining strategic aspirations aligned with existing national plans;**
- (3) surveys of urban areas, mapping and analysis of geospatial data, and modeling with particular emphasis on flood and erosion hazard and risk assessments;**
- (4) identification of investment needs in urban infrastructure including roads, wastewater treatment, drinking water, drainage, electricity. The selected firm or consortium will work closely with local stakeholders and the Government of Liberia.**

In addition to the above, the Client envisages the engagement of a Firm or Consortium with:

- a. At least 10 years of experience in: land use/urban planning, urban transport, housing and real estate, urban economic analysis, municipal infrastructure, GIS mapping, flood hazards and risk modelling/mapping, geospatial management, and urban environmental management.
- b. demonstrated relevant experience on at least two assignments for a city of at least 1 million people in sub-Saharan Africa in the last 7 years
- c. Experience in public awareness raising, knowledge transfer and institutional strengthening expertise demonstrated in results. The firm/consortium must also have experience in city/town planning and urban design in African cities. The applicant must have demonstrated experience with community engagement and bottom-up community planning.

The Consultancy assignment is expected to harness local expertise and experience with regards to data management and geoinformatics systems, integrated urban flood management and planning, disaster risk reduction and climate change adaptation practices.

### 5.2 Required Key Experts' Qualifications and Experience

The Consultant is responsible for proposing staff who are technically competent and sufficient in number to undertake the assignment. Experience on similar assignments and in similar cities is expected. The indicative composition of the team is listed below. The Consultant may however propose additional resources and a different resource mix with its rationale; for example, the positions may be filled by separate resources or be combined and performed by a smaller number of resources. The Consultant is also encouraged to partner with a local firm or other entity to assist with logistics and facilitate engagement at the district or sub-district level. However, the consultants should make their own estimates of staffing resources and level of effort required to complete the assignment satisfactorily within the specified timeframe. At a minimum, the Consultant's Key Staff shall include.

**Table 1: Team composition.**

No	Key Expert	Required Minimum Qualifications and Experience	No. of Persons as part of the team	Total Inputs (in person-months)*
1	Urban Planning Specialist - Team Leader	M.Sc. in Urban Planning or Urban Management, 15 years post-qualification relevant experience	1	24
2	Knowledge and Skill Building Coordinator	M. Sc in Public Administration, Urban Planning, Education, or related field with at least 10 years of relevant training post-qualification relevant experience	1	24
3	Urban Economy, Trade or Industrial Development Specialist	M.Sc. in Urban Economy or Industrial & Trade Development or related fields 10 years post-qualification relevant experience	1	4
4	Institutional Development and Governance specialist	M.Sc. in Public Sector Administration, Governance, Institutional development or related field 10 years post-qualification relevant experience	1	2
5	Transportation and Infrastructure Planning Expert	M.Sc. in Transportation Planning or civil engineer, or related field 10 years post-qualification relevant experience	2	4
6	Social Services Infrastructure Planning Expert	M.Sc. in Transportation Planning, Utilities Planning or related Social Sciences 7 years post-qualification relevant experience	2	4
7	Water and Drainage Infrastructure Specialist	M.Sc. in Water Engineering/ Hydrology or related field 10 years' experience	1	2
8	Solid waste management Expert	M.Sc. in Solid Waste Management/Environmental Engineering or related field 10 years post-qualification relevant experience	1	2
9	Housing Development, Land and Real estate.	M.Sc. in Housing or Estate development/or related field 7 years post-qualification relevant experience	1	4
10	Environment Management Specialists	M.Sc. in Environment studies 7 years post-qualification relevant experience	2	4
11	Geographic Information Systems Mapping	BSc. in GIS or related field 5 years post-qualification relevant experience	2	4
12	Programmer	5 years post-qualification relevant experience in customization of open source tools	1	3
13	Flood and erosion risk management expert	M.Sc. in Disaster Risk Management or hydrology or geology related field 7 years post-qualification relevant experience	2	4
14	Gender/Community mobilization specialist	B.Sc. in Gender Studies/Social Work/Sociology or related field 5 years post-qualification relevant experience	1	4

The consulting team members must demonstrate strong skills in the design of surveys, gathering data, doing quantitative and qualitative analysis and preparing reports and spatial plans. Excellent communication and organizational skills are a must.

The proposed experts shall have the necessary professional qualifications and experience required to successfully deal with the issues and to cover all the activities indicated in this ToR. Moreover, the experts shall have excellent writing and editing skills.

Experts must demonstrate relevant experience on at least two assignments for a similar city setting in sub-Saharan Africa in the last 7 years

## 6. Project Duration, Deliverables, and Payment Schedule:

It is expected that the duration of the contract will be thirty-six months from signing of contract. The main deliverables under this assignment will be the following:

**Table 2: Summary of Activities, Reporting Timelines and Payments**

Reports / expected outputs		Expected period for submission from contract signing	Payment schedule
<b>Phase I Mobilization, data collection, review, and inception report</b>			
A.	Inception Report	2 Months	10%
B.	Urban Planning Tool Prototype	2 Months	
<b>Phase II Existing Situation Analysis and Strategy Development</b>			
C.	State of Urban Planning and Way Forward Report	5 Months	15%
D.	Urban Planning Handbook	5 Months	
E.	Urban Planning Tool (final)	5 Months	
F.	Training and Technical Assistance Plan	5 Months	
G.	Public Awareness Plan and Package	5 Months	
	Q. 1 Report	3 Months	
<b>Phase III Plan Initiation, Data Assembly and Skill Building</b>			
H.	Geodatabases for each of the urban areas targeted for spatial plans	11 Months	15%
	Q. 2 Report	6 Months	
	Q. 3 Report	9 Months	
<b>Phase IV (parallel to Phase III) Flood and Erosion hazard/risk Assessments</b>			
I	Flood and erosion hazard and risk report	8 months	10%
J	Database with flood and erosion hazard/risk models and maps	10 months	
<b>Phase V Planning and Skill Building</b>			
K.	Spatial and Infrastructure Investment Plan for Greater Monrovia	23 Months	35%
L.	Spatial and Infrastructure Investment Plan for <i>Gbarnga City</i>	23 Months	
M.	Spatial and Infrastructure Investment Plan for <i>Buchanan City</i>	23 Months	
N.	Spatial and Infrastructure Investment Plan for <i>Ganta City</i>	23 Months	

	Q. 4 Report	12 Months	
	Q. 5 Report	15 Months	
	Q. 6 Report	18 Months	
	Q. 7 Report	21 Months	
<b>Phase VI Plan Implementation Support and Skill Building</b>			
O.	Quarterly Summaries of Training, Technical Assistance, and Public Awareness Activities and Outcomes	35 Months	10%
	Q. 8 Report	24 Months	
	Q. 9 Report	27 Months	
	Q. 10 Report	30 Months	
	Q. 11 Report	33 Months	
<b>Phase VII Program evaluation and Closure</b>			
P.	Evaluation Report	36 Months	5%
	Q. 12 Report	36 Months	

**7.0 Proposal requirements:** Technical proposals should clearly and concisely outline the proposed methodology and expected outputs. The DTM technical specifications and procurement for the three cities (Ganta, Gbarnga, Buchanan) will form part of the technical proposal. Costings for these items must be clearly presented as part of the cost proposal. Proposals should also be clear on the expected risks in successful project execution and any mitigation measures that will be taken to address these risks. Recognizing the varying approaches that could be taken to achieve the assignment outcomes, and in particular, the potential complexity of the approach, it is expected that the consultants will present and communicate their proposal simply and concisely with no residual ambiguity. In considering this, the consultant should bear in mind that the reviewing panel will not necessarily all be experts in this field. Failure to explain their method in a way that is easily understood will be judged as indicative of the firm’s inability to deliver the clarity and simplicity of data and information required within the proposed deliverables.

**Selection criteria:** Technical criteria for selection, and associated weights, are indicated in the below table:

**Table 3: Selection criteria for this assignment**

<b>Criterion</b>	<b>Weight (%)</b>
Plan and approach, including proposed methods, hazard and risk assessment approach, planning approach, and communication and stakeholder engagement in all components of the study. This includes defining capacity building activities and quality control and assurance procedures, etc.	40%
Evidence of the companies experience in similar projects in developing countries over the last 5 years.	20%
Project Manager’s qualifications and experience in urban planning assessments, with a focus on experience in urban planning in developing countries.	15%
Proposed team – qualifications and relevant experience of the core team.	25%

**8.1 Consultations:** While the assignment will include desk research, the practical nature of the assignment will require substantial engagement with the local city clients and stakeholders to understand the flood risk, the issues, and potential mitigation options. Consultation will also involve:

- Close liaison with the LURP Project Management Unit.
- Coordination and organization of meetings and workshops with key stakeholders (government, private sector, civil society, academia, development partners). The LURP PMU will assist as needed with introductions.

**8.2 Value-added:** Where possible, the assignment should consider how to include co-benefits for livelihoods, communities, and capacity building. For example:

- Opportunities for local contracting for any additional data collection, preparation and verification.
- Consider hiring a local firm as part of the overall consortium to assist with consultation and general logistics of data collection and verification.
- Consider training and legacy systems with long term sustainability incorporated into the chosen technology

## Annex 1: Detailed context information urban planning in Liberia

**Environment.** Severe rainfall events occur during the rainy season resulting in localized floods across the country with particular impacts in urban areas. Climate change is projected to increase temperature and impact water availability across Liberia, as well as change the amount and distribution of precipitation with significant inter-annual variability. Climate variability and change are expected to manifest in increased extreme weather events such as heavy rainfall, and increased runoff, and elevated sea levels in the next 30 years and beyond.

**Planning.** Municipal ordinances are outdated and generic focusing on sanitation, beautification and maintaining public order. Ordinances are often not enforceable as local government authorities do not have the human nor the financial capacity to do so. The City of Monrovia has an Infrastructure Master Plan (JICA, 2009) and a Zoning Law (GoL, 1979), both under the authority of the national Ministry of Public Works. There is also a National Transportation Plan illustrating the need to connect primary roads for regional connectivity. There are no plans for the purpose of development control, resulting in unplanned, haphazard development and the proliferation of slum settlements on unoccupied land in urban areas.

**Pro-Poor Agenda for Prosperity and Development.** Liberia's Pro-Poor Agenda for Prosperity and Development 2018 to 2023 (PAPD), the second in the series of 5-year National Development Plans (NDP) anticipated under the Liberia Vision 2030 framework. The PAPD is actually a policy document with a section highlighting the impending risks of the rapid pace of unplanned urbanization in Liberian cities. The PAPD also notes the significant health risk and potential threat to peace and stability posed by increasing informal settlements. Informal settlements face challenges with little or no security of title to the land they occupy, severe income insecurity, and access to basic services such as electricity, water, and sanitation. The PAPD intends to shift the paradigm from sectoral-based national development planning to spatial integrated multi-sectoral planning--with a major focus on addressing disparities and inequality between demographic groups and regions of Liberia<sup>4</sup>.

**Sustainable Cities Initiatives.** Liberia's PAPD 2018-2023 proposes a Sustainable Cities Initiative, piloting the concept of sustainable cities in the following five cities: Monrovia, Paynesville, Gbarnga, Buchanan, and Ganta, to promote a holistic approach to planning for the growth of cities to achieve a balance between the social and economic needs of the community, sanitation, and environmental conservation and development through some form of administrative autonomy. The PAPD recognizes the urgent need for urban plans for these five as well as the other rapidly growing, but still manageable, urban centers such as Kakata, Pleebo and Greenville.

**National Urban Plan (NUP).** The GoL has committed to developing its first National Urban Plan (NUP), a policy document to serve as a foundation and guide for planning the future development in Liberian cities. The NUP is expected to be completed in August 2022 and is committed to spatial planning as a key element of urban development.

**Legal Framework.** The preparation of Urban Spatial Plans must build on previous and existing planning documents and anchor on legislation guiding the conduct of town planning and the management and development of land. The process of undertaking this assignment should be guided by the following documents:

- a. The 1972 Zoning Law for the City of Monrovia, the only zoning law in Liberia, is applicable only in Monrovia City and was originally accompanied by a zoning map, which was lost during the civil crisis.

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<sup>4</sup> PAPD

- b. The Liberian Constitution (1986) replaced the initial 1847 Constitution for the purposes of establishing a framework of government to promote unity, liberty, peace, stability, equality, justice and human rights under the rule of law, with opportunities for political, social, moral, spiritual and cultural advancement of society. The citizen's right to own property is a fundamental right in the Constitution.
- c. Liberia Code of Laws Revised, Volume VI, Part I, Zoning Act for the City of Monrovia (1979), an update of previous legislation (1958), is meant to guide the growth of Monrovia and was to be applied to new cities as they were established. Unfortunately, the corresponding zoning map for Monrovia was misplaced during the war and the act was never applied to newly established cities. This is the only zoning law in Liberia and legally it applies only to Monrovia. Currently, the Zoning Law is loosely applied using institutional knowledge of area zones (residential, commercial, etc.). The Zoning Act establishes the position of National Zoning Officer within the Ministry of Public Works (MPW) to regulate land use in the city of Monrovia, however, it requires updating as there are new contradicting legislations and urban conditions. There also must be zoning regulations to be enforced in other cities.
- d. Liberia Land Authority (2016) act created the Liberian Land Authority (LLA) with the primary mandate to "develop policies on a continuous basis, undertake actions and implement programs in support of land governance, including land administration and management". Included in the functions of the LLA, the LLA is to "promote, support, and ensure the development of land use plans and zoning schemes and their implementation through municipalities, towns, and other local government structures".
- e. The Local Government Law of 2018 is the legal framework governing all sub-national government bodies in Liberia. Section 2.1 mandates local governments to be the responsible agencies for the overall management and development of respective jurisdictions. Local governments are authorized to exercise administrative, fiscal and political authority and to direct and supervise fiscal, political and development activities. Specific elements of this law relevant for this assignment are:
  - Local Government Law of 2018. Title 20. Republic of Liberia (2018) is to repeal the previous Local Government Law Title 20, sections of which, requiring local government elections, were ruled to be unconstitutional by the supreme court in January 2008. Section 2.16h of the authorizes local governments (cities, townships, and boroughs) to "supervise the preparation and implementation of the development plans".
  - The Local Government Law of 2018 (Section 2.17), Demarcation and Harmonization of Boundaries and Local Government Subdivisions requires MIA and LLA, with the consultation of other stakeholders, to ensure the harmonization and demarcation of the boundaries of counties, administrative districts, chiefdoms, clans and towns as well as cities, townships and boroughs.
  - The Local Government Law of 2018 (Section 4.3) lists own-source revenue as a fiscal resource for counties, cities, townships and boroughs to include location-based sources such as real property tax, business licenses and permits and fees and charges for public services.
- f. Land Rights Act (2018), in furtherance of the Land Rights Policy (2013), is intended to:
  - Define and delineate different categories of land ownerships and rights;
  - Prescribe the means by which each category may be acquired, used, transferred and otherwise managed;
  - Ensure all communities, families, individuals and legal entities enjoy secure land rights free of fear that their land will be taken without due process of law; and
  - Confirm, declare and ensure equal access and equal protection with respect to land ownership, use and management, including ensuring that Customary Land and Private Land are given

equal legal protection and that land ownership is provided for all Liberians, regardless of identity, custom, ethnicity, tribe, language, gender or otherwise.

- g. Environmental Protection Law (2003), creates the Environmental Protection Agency (EPA) and provides the legal mandates and authority to manage coordinate, monitor and supervise in consultation with relevant line Ministries, Agencies and organizations, and other relevant stakeholders for the protection of the environment and sustainable use of natural resources. The act details the functions of the EPA from the Policy Council to environmental inspectors. The Act also clearly explain the entire environmental impact assessment (EIA) process in its totality.

**Institutional Framework.** There is no legal framework clearly identifying the government agency responsible for developing development control or spatial plans. The Ministry of Internal Affairs has a department for City and Town Planning, the Liberia Land Authority has a department for Land-use and Management, the Ministry of Public Works has an office for Zoning, and each city government has an office for City Planning. Individual institutional activities are not clearly defined. Going forward the Government of Liberia, through the Liberia Land Authority, intends to place development controls with municipal governments. The following institutions play various roles in development controls, planning, mapping, data collection and capacity building.

- a. The Ministry of Internal Affairs (MIA) is the national government agency responsible for all sub-national governments, except for the Monrovia City Corporation (MCC) which answers directly to the President.
- b. The Liberia Land Authority (LLA) is the national government agency responsible for all land administration activities, including land-use planning, and for the implementation of the Land Rights Act.
- c. The Ministry of Public Works (MPW) is the national government agency with oversight of the development and maintenance of public and private infrastructure.
- d. Monrovia City Corporation (MCC) is the corporation responsible for governing the City of Monrovia.
- e. Paynesville City Corporation (PCC) is the corporation responsible for governing the City of Paynesville (although an incorporated city, the Local Government Act of 2018 does not recognize its independence from MIA as it does for the MCC).
- f. The Environmental Protection Agency (EPA) is the national government agency with oversight of all environmental issues, including the protection of environmentally important areas that require protection and strict no-build enforcement regulations.
- g. Liberia Institute of Statistics and Geographic Information Service (LISGIS) is the national institute responsible for collecting and sharing national statistics, however, data on the municipal level is limited.
- h. The Geographical Society of Liberia is composed of GIS professionals, regional planners and urban planners and has participated in various mapping projects throughout Liberia. They are a source of some baseline data as well as professional input.
- i. The University of Liberia offers degrees in Regional Planning and in Geography and is in the process of establishing a professional certificate program in Urban Affairs.

**Human Resources.** The number available of urban professionals (planners, GIS experts, administrators) within local government is few. Municipalities do not have the human resources to lead the planning process.

## Appendix 2: Maps and Urban areas

### Location of Study Areas



Map of Liberia with locations of four areas of interest for this study (Monrovia/Paynesville, Buchanan, Gbarnga, Ganta).

**Greater Monrovia District** is a recognized political district in Montserrado County. Although not legislated, it is the most populated district composed of the capital city of Monrovia, the city of Paynesville, nine townships and one borough (listed below). With a combined population exceeding 1.3 million people, representing nearly 29 percent of the national population, the Greater Monrovia District is the hub of the administrative, economic and transport activities in the country. Census data is accumulated on the level of District and Clan, not municipality, mainly for the purpose of demarcating new electoral districts. Independent municipal data is often difficult to disaggregate from the Greater Monrovia District data. Monrovia and Paynesville are incorporated cities each with a mayor and a seven (7) member city council, all appointed by the President. As the capital city, Monrovia City Corporation is answerable directly to the President, while all others answer directly to the Ministry of Internal Affairs. Townships are municipalities with fewer criteria than cities governed by Commissioners and Boroughs are governed by Governors also appointed by the President.

The Mesurado Wetlands are located in Monrovia and the site is particularly important for the protection of mangrove species and several species of birds and crocodiles. The wetlands are designated as a Ramsar site.<sup>5</sup> Monrovia is one of the wettest capitals of the world with a yearly average rainfall of more than five meters.<sup>6</sup> This assignment is therefore expected to steer city growth away from protected wetlands and other flood-prone zones and mitigate the effects of climate change through better planning and zoning (e.g. introduction of no-build zone concept). It is acknowledged that the lack of urban planning exacerbates the risks of climate change in the Greater Monrovia District.

Due to the combinations of local governments that make up the Greater Monrovia District and the lack of an administrative structure for the district, when developing outputs, the consultant must take into consideration individual and independent local government status of the following 12 local governments that compose Greater Monrovia District. Outputs and should ensure that administrative boundaries for these areas are clearly shown on maps.

- i. Monrovia City
- ii. Paynesville City
- iii. New Kru Town Borough
- iv. Barnesville Township
- v. Caldwell Township
- vi. Congo Town Township
- vii. Dixville Township
- viii. Garnersville Township
- ix. Garwolohn Town Township
- x. Johnsonville Township
- xi. New Georgia Township
- xii. West Point Township

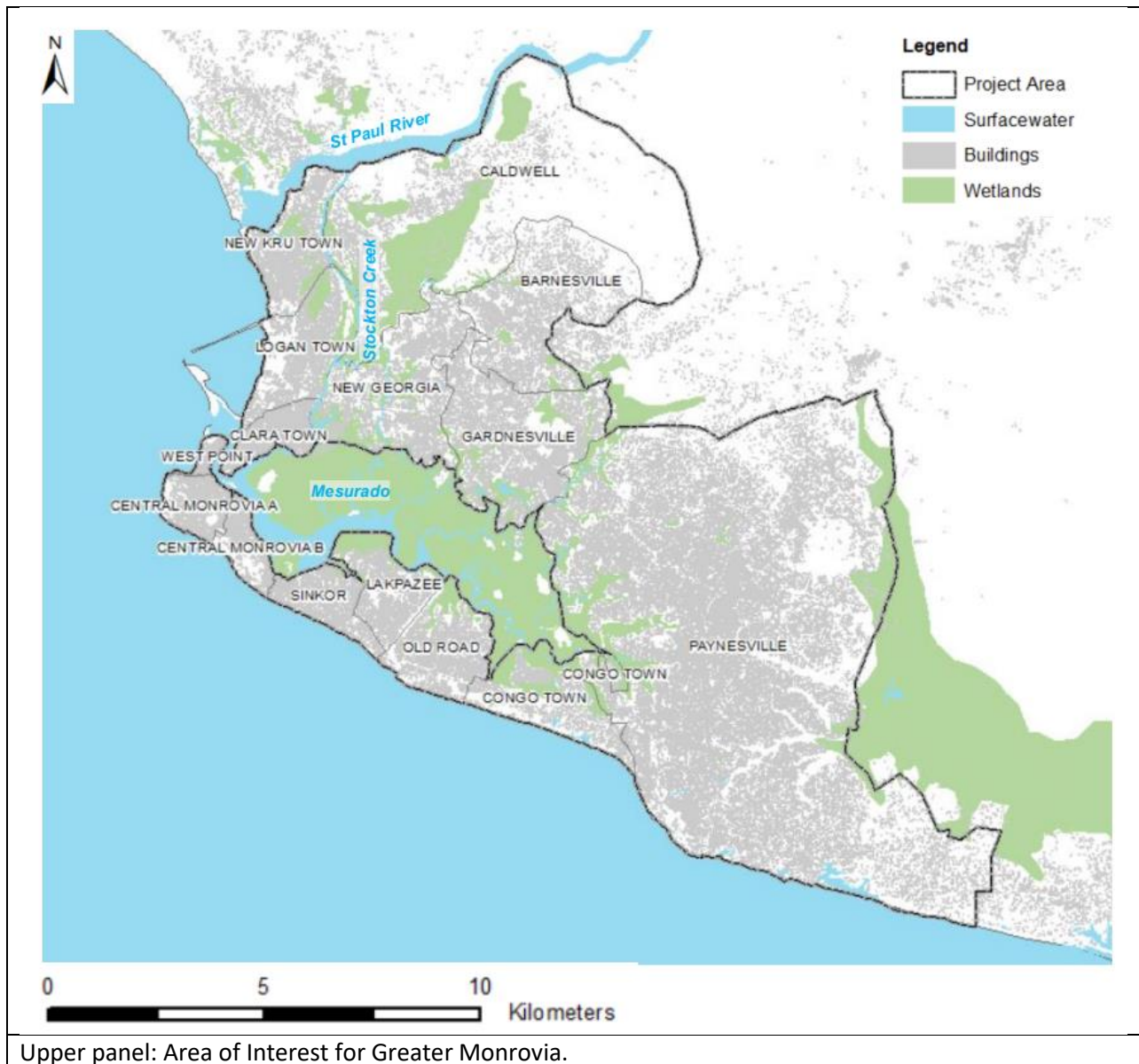
The land cover of greater Monrovia has almost doubled since 1975. Informal settlements accommodate two-thirds of Greater Monrovia's population and an estimated 70 percent of the built-up area in Greater Monrovia

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<sup>5</sup> <https://rsis Ramsar.org/ris/1631>

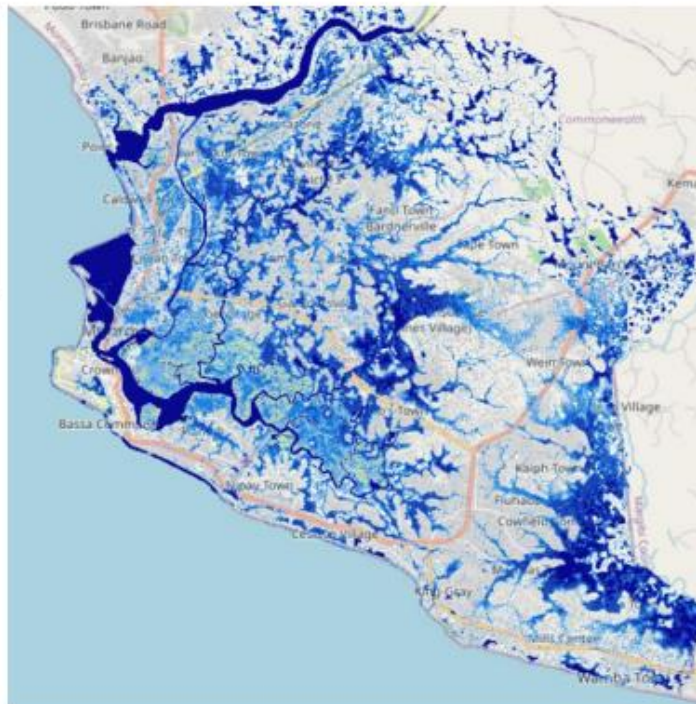
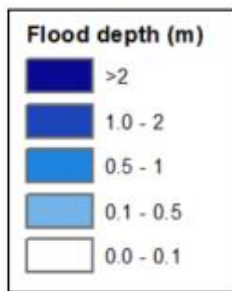
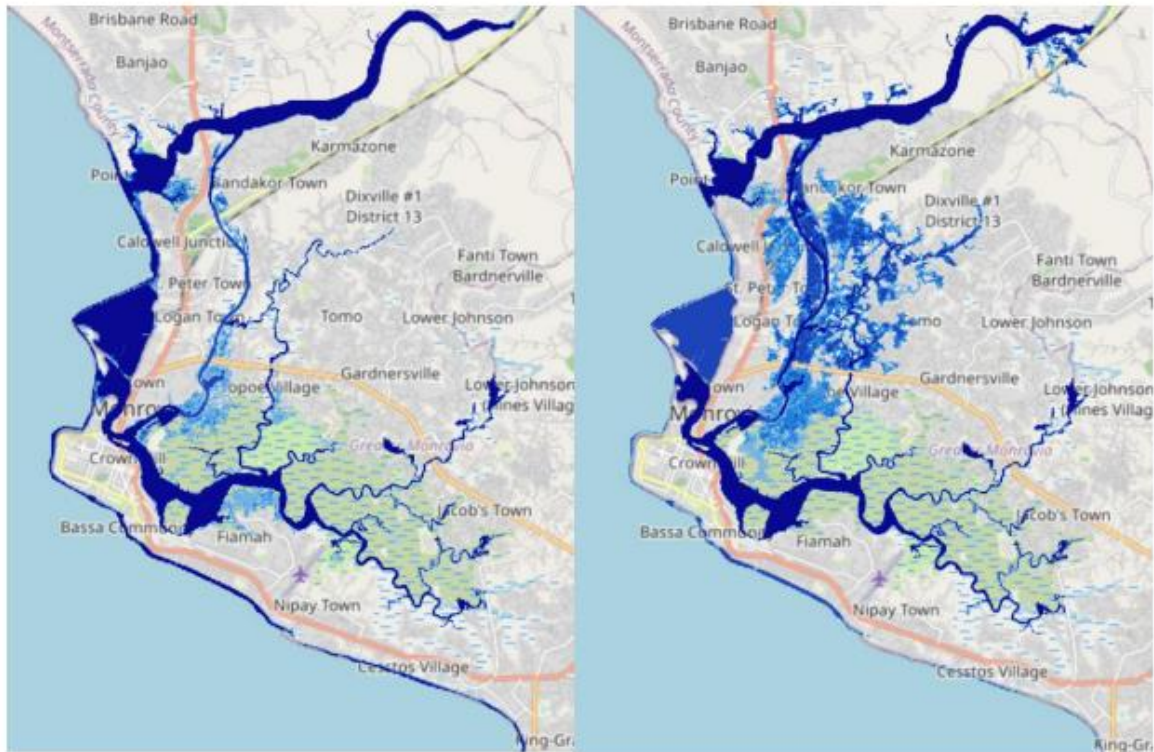
<sup>6</sup> World Bank, Deltares (2021): Flood risk profile for Greater Monrovia

is informally developed.<sup>7</sup> Within these, there are about 113 demarcated slum communities dispersed across the city.<sup>8</sup> Population density in these informal settlements is among the highest.



<sup>7</sup> World Bank (2020): Greater Monrovia Urban Review.

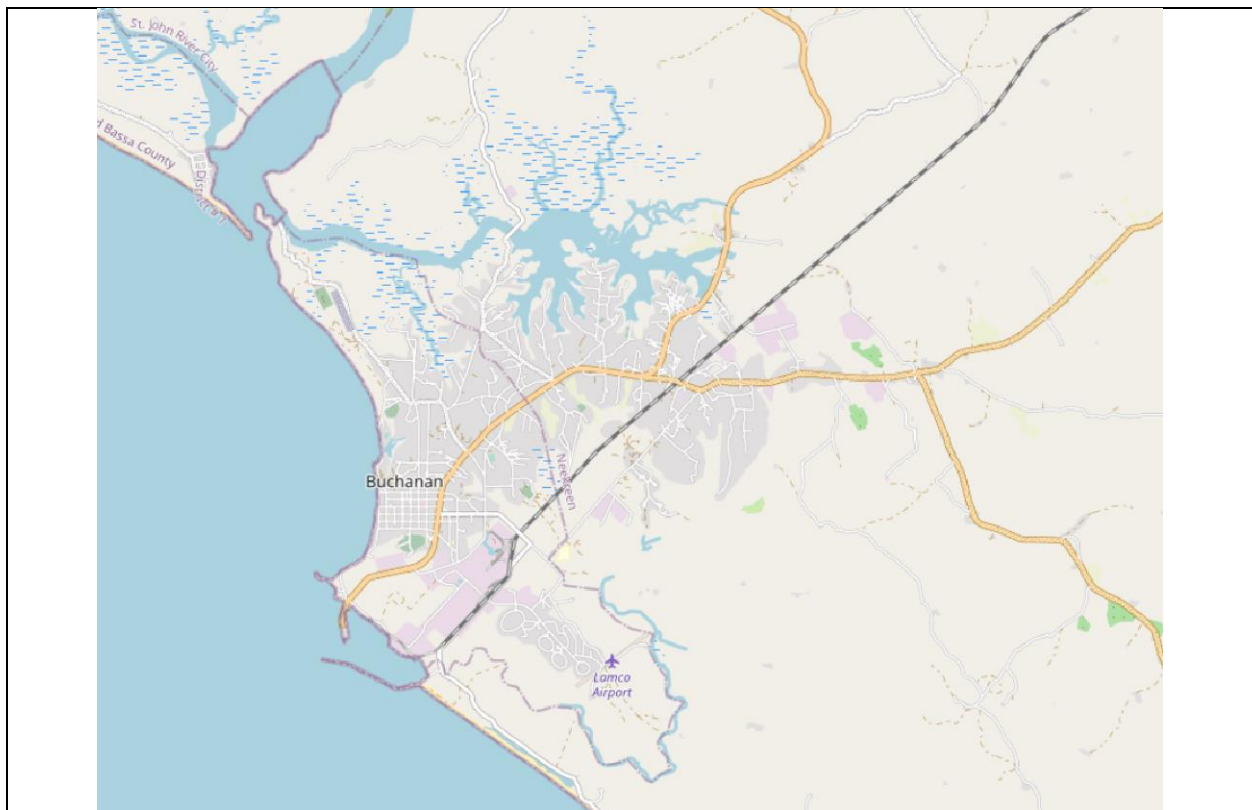
<sup>8</sup> Cities Alliance, SDI, (2016) Know your city Initiative slum profile



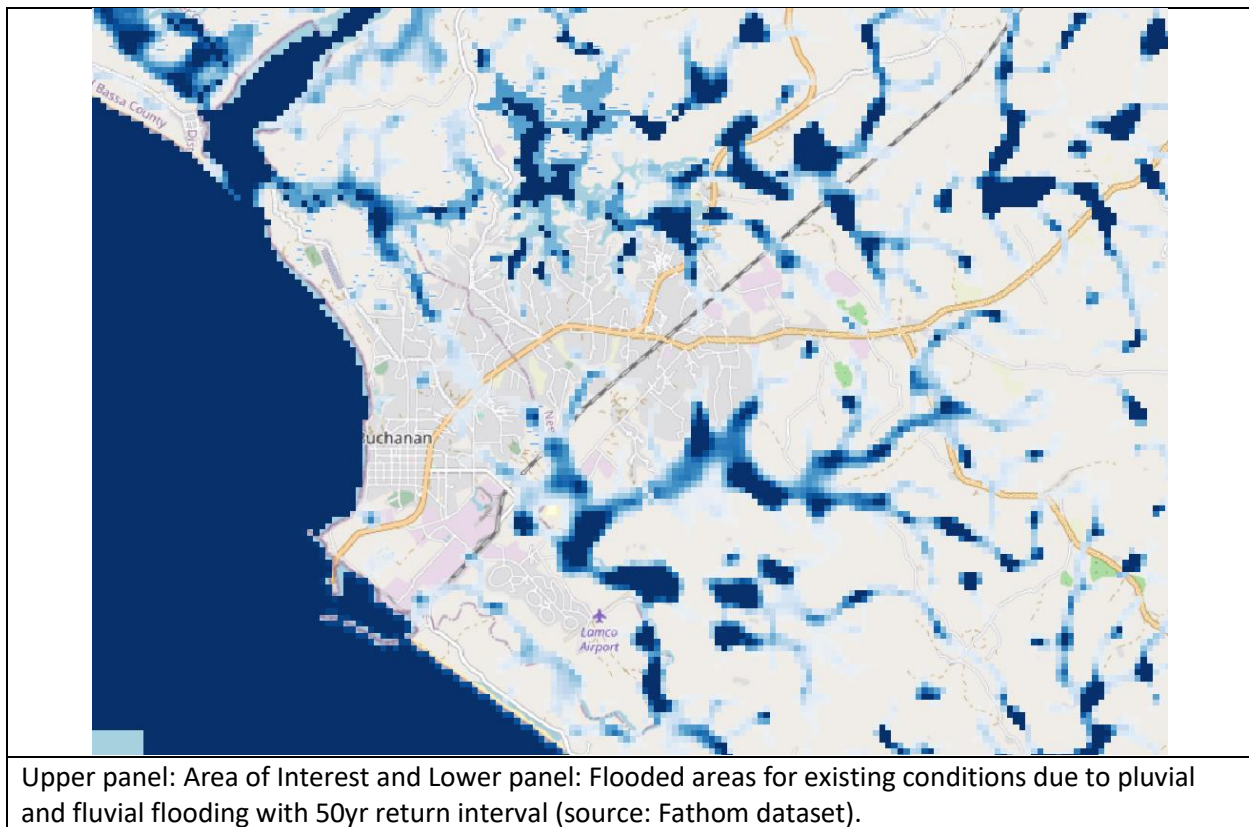
Modelled flooded areas for coastal (top left), fluvial (top right) and pluvial (bottom) flooding with 50yr return interval (source: Deltares/iLabs study).

**Buchanan City**, the capital city of Grand Bassa County, is the next largest city in Liberia after Gbarnga with a population of more than 34 thousand people, and about 150 kilometers southeast of Monrovia. Buchanan is a coastal city near the mouth of the St John River with a partially functional sea port in need of repair. Buchanan’s port is currently in use by ArcelorMittal Liberia, a subsidiary of an international iron ore mining company. It is the end point of the firm’s inland iron ore mining and processing in Nimba County. Ore is the 1<sup>st</sup> export product of Liberia with total value of US\$ 322 million which is 1/3 of the total export of Liberia (2020). Other economic activities include agriculture, fishing, and trade. Buchanan is a rural city, with minimal urban infrastructure and services. Buchanan is currently battling severe coastal erosion which continues to wash away miles of the city’s coastline.

Buchanan has a tropical monsoon climate with a wet season from May till October and an average annual rainfall of 2000 millimeters. The center of Buchanan and also the main transport corridor leading towards the city (“Fruit Freeway”) are located at relatively high ground (10 m+Mean Sea Level (MSL)). The city is located in the catchment of the St John River which is one of the six large rivers in Liberia running to the southwest from the Guinea Highlands towards the ocean. Buchanan’s urbanized areas on the northern side close to the St John River and to a lesser extent south towards the airport do have a lower elevation (approx. 3 – 5m+MSL). Especially the northern side of the city is therefore vulnerable to fluvial flooding and/or rising sea levels. Also, heavy rainfall often leads to localized flooding in the low-lying parts of Buchanan due to lack of sufficient drainage. These downpours are sometimes also accompanied by strong winds leading to additional damage<sup>9</sup>. Coastal erosion is also a well-known issue in Buchanan, particularly north of the port area. In recent years, various initiatives have been taken to tackle this erosion problem.



<sup>9</sup> See e.g. [https://www.mia.gov.lr/2press.php?news\\_id=37&related=7&pg=sp](https://www.mia.gov.lr/2press.php?news_id=37&related=7&pg=sp)

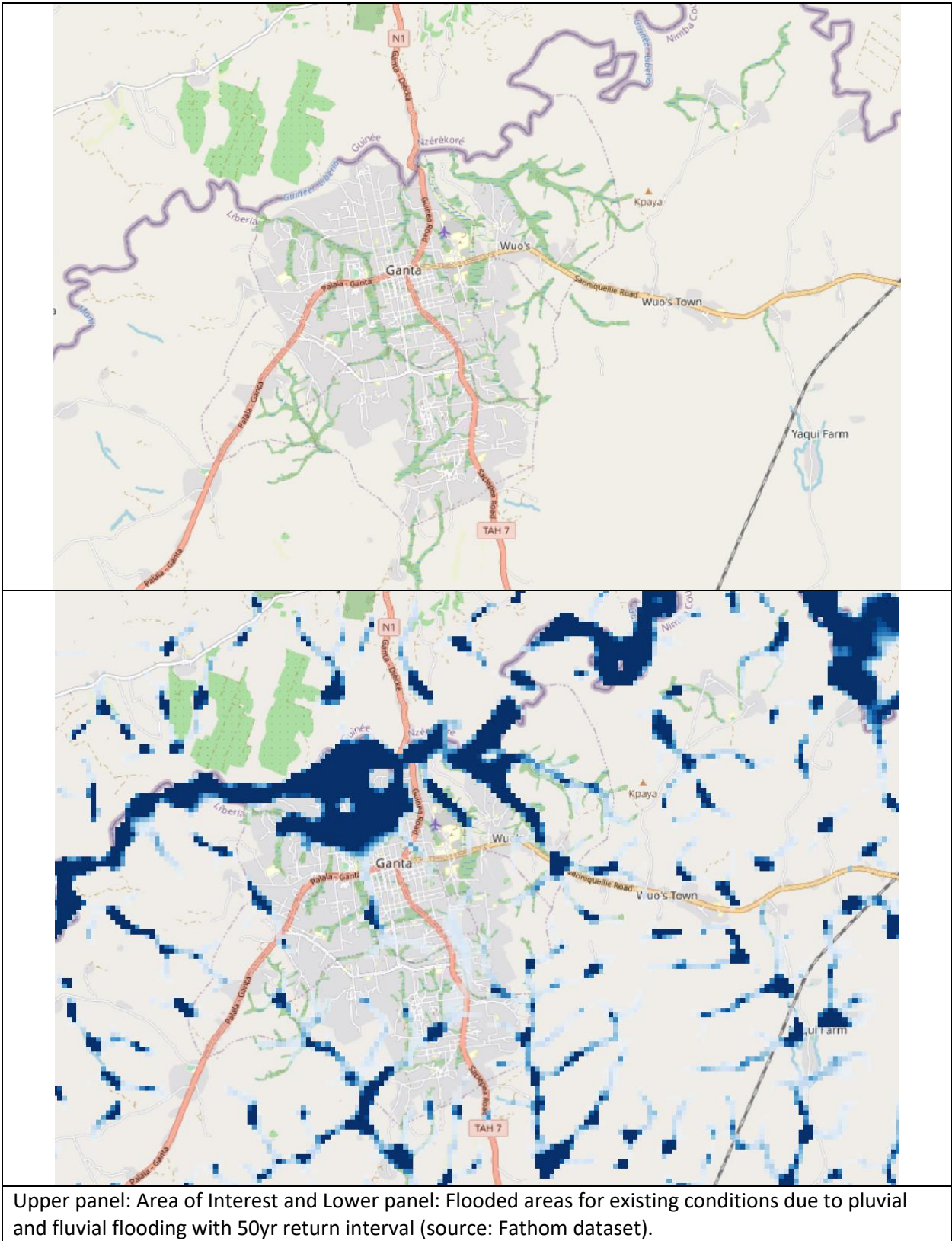


## Ganta

**Ganta City** is a secondary city with a population of more than 42 thousand people (est. 2008). It is located in Nimba County along Liberia's border with Guinea and is located approximately 250 kilometers northeast of Monrovia. Ganta's economy is driven by cross-border trade with Guinea. The economy of the city is further fueled by activities in agriculture and hospitality. This city has been noted for its bustling and growing economy which is supported by the city's connection to the West African Power Pool electricity supply. It is also home to a key wholesale market for the palm oil trade in West Africa, along with Diaobé in Senegal and Guéckédou in Guinea. Ganta is reported of handling 80 to 100 tonnes of palm oil per week with more than half exported to Guinea<sup>10</sup>. Ganta is a rural city, with minimal urban infrastructure and services.

Ganta's environmental conditions are governed by a tropical monsoon climate with a wet season from May till October and an average annual rainfall of 2000 millimeters. It is located around 300 meters above Mean Sea Level in the upstream part of the St John River catchment. The city has a natural low-lying network draining rainwater to this river but these have been encroached by human activities. One of the upstream river branches of this river flows along the city at the northern side and also marks the border with Guinea at this stretch. There have been several reports in the recent past that the St John River causes flooding in the city resulting in havoc and homeless people and interrupting (cross-border) urban activities due to the flooding of Ganta's port of entry.

<sup>10</sup> See e.g. <https://www.howwemadeitinafrica.com/city-on-the-move-ganta-liberia/101172/>



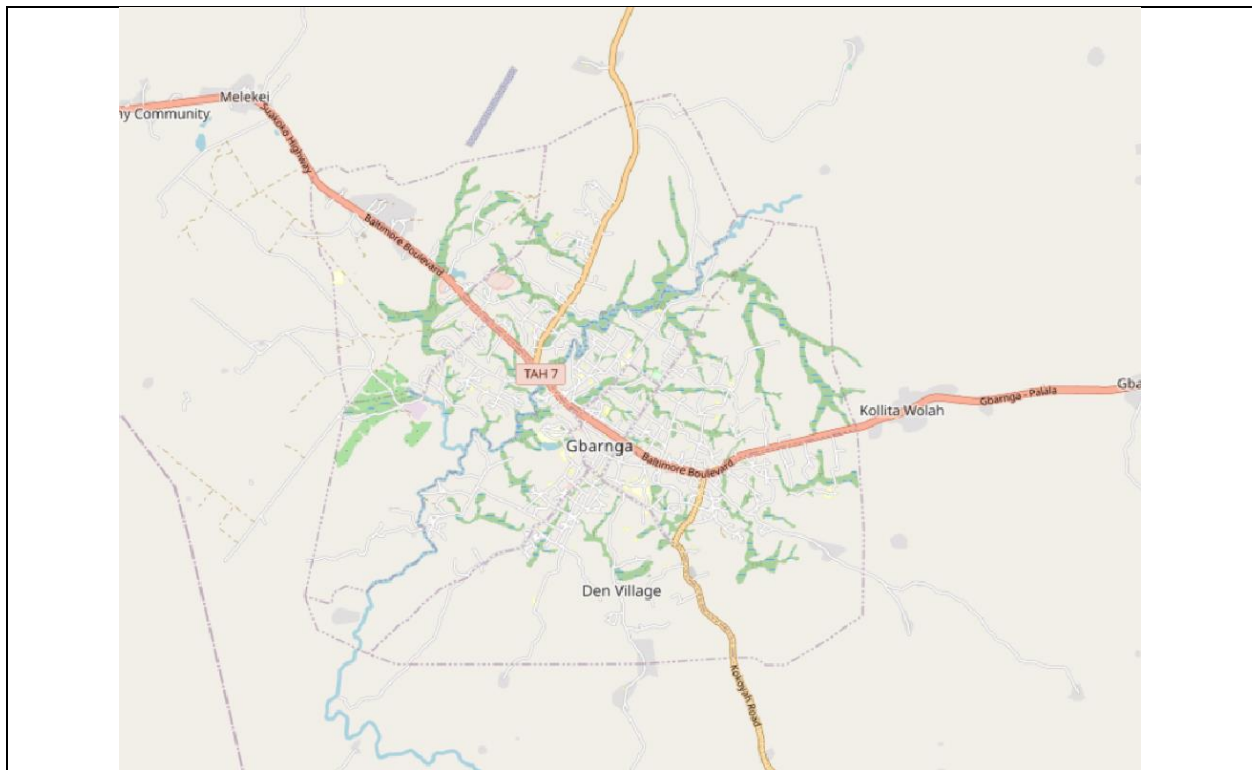
Upper panel: Area of Interest and Lower panel: Flooded areas for existing conditions due to pluvial and fluvial flooding with 50yr return interval (source: Fathom dataset).

## Gbarnga

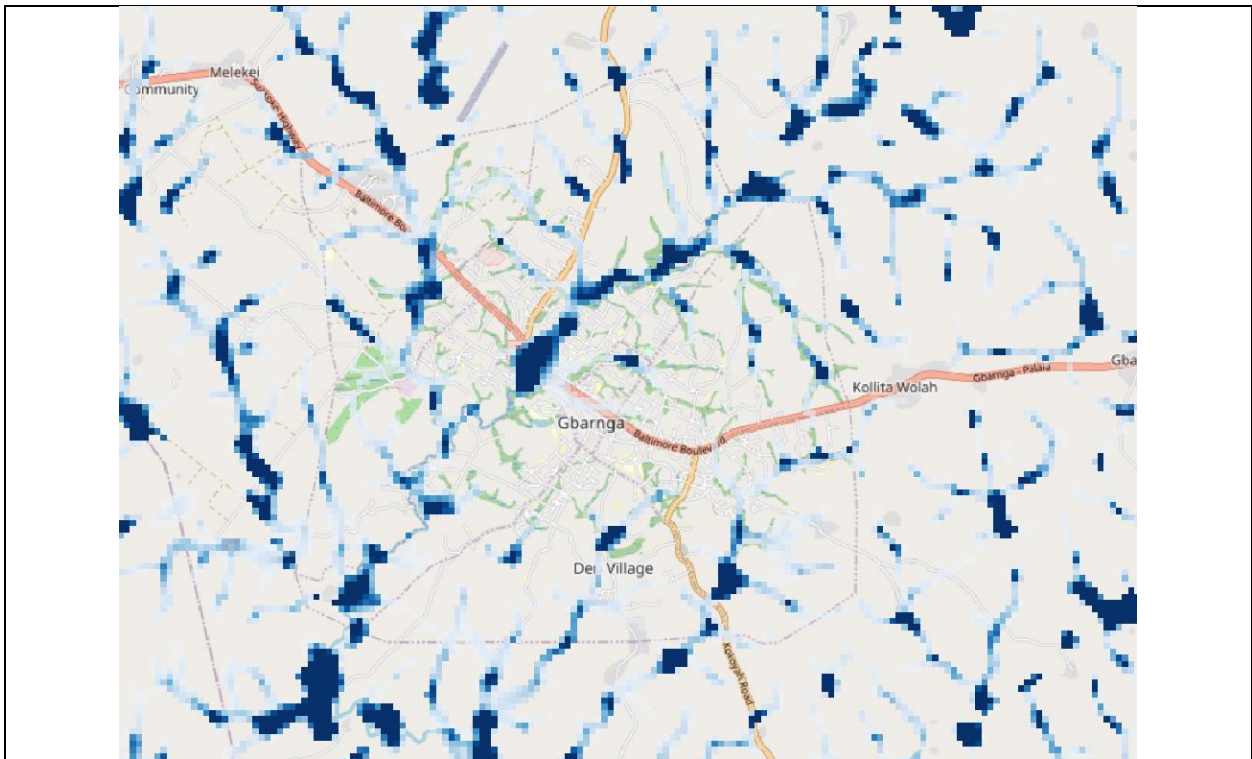
**Gbarnga City**, described as the heartland of Liberia due to its central location, is the next largest city in Liberia after Monrovia and Paynesville. Gbarnga is the capital city of Bong County with a population of more than 62 thousand people and is positioned on the corridor from Monrovia on the Atlantic coast to the international borders with Guinea, Sierra Leone and Ivory Coast making it a strategic hub for commerce. It is a rural administrative and local trade centre, and it hosts a rubber factory.

Gbarnga is a rural city, with minimal urban infrastructure and services. Economic activities are mostly in agriculture and local trade. The city benefits greatly from its proximity to Cuttington University College and Phebe Hospital near Suakoko District 10 miles (16 km) west. Gbarnga city has 19 administrative communities headed by community chairpersons (also known as zonal heads) who report directly to the city mayor<sup>11</sup>. Gbarnga has an estimated growth rate of 1.6 percent and 2.3 percent of the land area built-up in 2013.

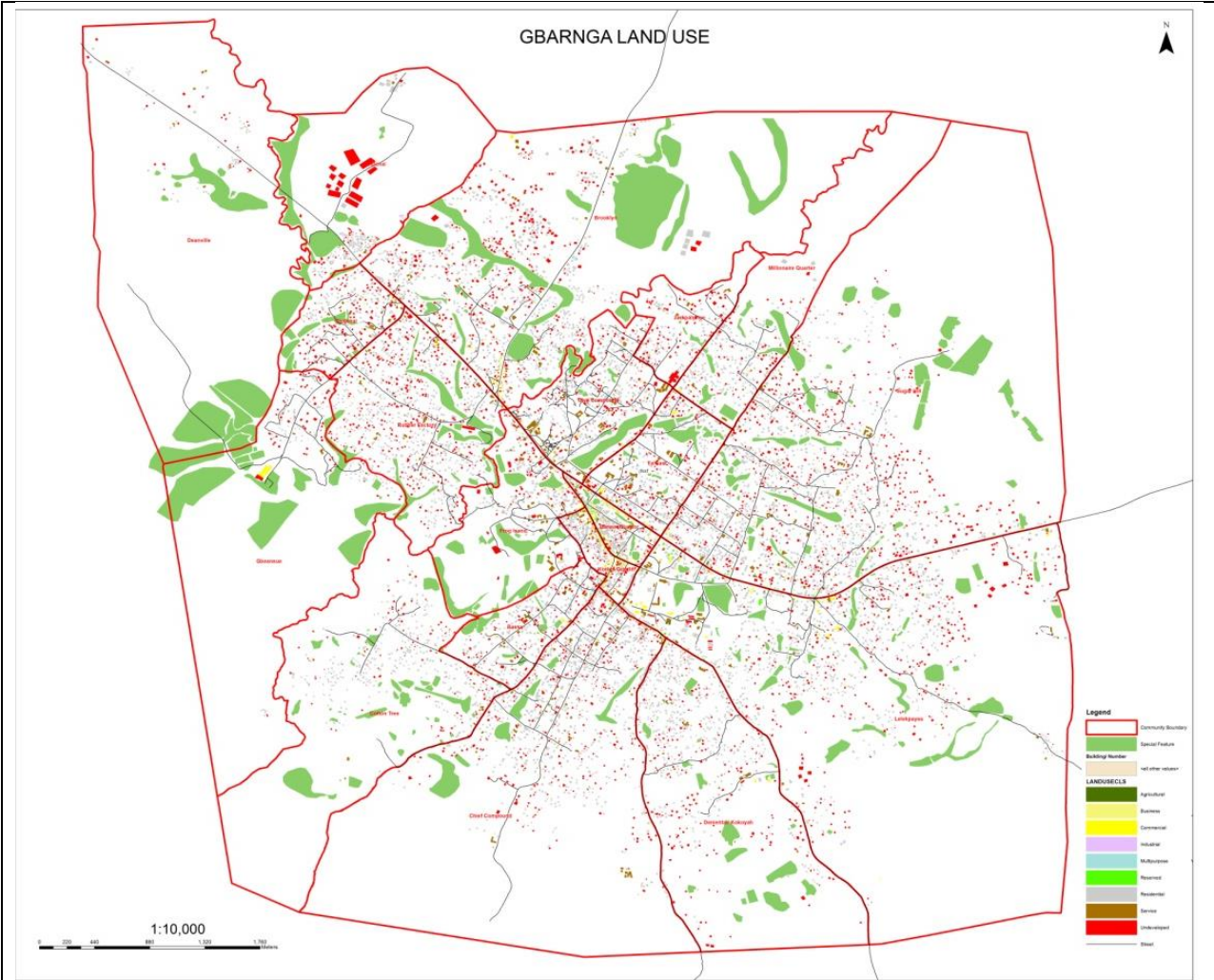
The climate in Gbarnga is very similar to Ganta with a tropical monsoon climate an average rainfall of around 2 meters per year. The city lies about 250 meters above mean sea level at the very upstream end of the St John River catchment close to the watershed with the neighboring St Paul River. Flooding is most likely dominated in this area mainly by local pluvial events due to absence of large rivers.



<sup>11</sup> Gbarnga Land Inventory



Upper panel: Area of Interest and Lower panel: Flooded areas for existing conditions due to pluvial and fluvial flooding with 50yr return interval (source: Fathom dataset).



Land use Gbarnga (source : UN Habitat & LISGIS, 2014)

### Annex 3 : Data collection

The Consultant is expected to collect and review available information, reports and data identifying gaps or data deficiencies, and development of a data management plan, outlining any further data capture necessary, defining coping strategies for missing or inadequate data, and clearly identifying any limitations, constraints, or uncertainties associated with data for this assignment. Key data sets are likely to include the following:

- Geographical and political boundaries, including the overall study boundary, city boundaries, districts, other traditional authority boundaries, drainage basin and sub-catchment boundary etc.
- Geophysical data sets, such as soils, geology, land cover etc
- Hydrological data – e.g. rainfall, river level or flow, and erosion, tide data where relevant.
- Urban settlement patterns and growth scenarios
- Physical infrastructure: roads, bridges, culverts, electricity networks, rail crossings, etc
- Planned infrastructure investments under a range of projects, initiatives and plans.
- Social infrastructure (e.g. schools, hospitals, religious institutions etc)
- Buildings and land use (OSM or remote sensed imagery)
- Areas of environmental degradation hotspots: extraction of soil/sand/gravel, deforestation, solid waste dumping, improper sewage/wastewater disposal.
- An inventory of historical flooding events and areas of impact in history (depending on available data)
- Preparation of a land use mapping for the study should build on existing OSM data, freely available satellite or remote sensed imagery or data, and may include the use of drone data captured by the firm as part of the assignment.
- A suitable high resolution digital terrain model (DTM) will be purchased by the consultant for the three cities outside Greater Monrovia and surrounding drainage areas for flood hazard modelling purposes. For the urbanized city areas, this should be at minimum a DTM with 2 meter horizontal resolution or higher with sufficient ground truthing (at least 1 GCP per km<sup>2</sup>) to calibrate the DTM and get sufficient vertical accuracy of the DTM. The catchment areas can have a lower resolution since the DTM is mainly used for defining the runoff to the urbanized areas (10 meter horizontal resolution at minimum, no calibration with GCPs necessary).

For Greater Monrovia, various data sets have been collected as part of earlier assignments and are readily available for the Consultants. These data will be handed over to the Consultant at the start of the assignment.

It is noted that relevant local data for urban planning and in digitized form is limited for the areas outside Greater Monrovia. A relevant data set for this study is the data gathered on urban land use for the Ganta, Gbarnga and Buchanan<sup>12</sup>. UN-Habitat supported the former Land Commission in 2014 to conduct urban land inventories in the three cities under consideration in this assignment: Gbarnga, Ganta and Buchanan. The digitized data is available from the Liberia Institute for Statistical and Geographical Information (LISGIS). The approach used consultative and participatory methods as well as modern technology, using Geographic Information System (GIS) technology and field enumeration techniques to capture, verify, record and analyze urban land use data and also information about the urban building stock. An example of the land use map available for Gbarnga is included in Annex 1. LISGIS also holds other data sets (e.g. road infrastructure, Census

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<sup>12</sup> UN Habitat, 2014. Gbarnga, Urban Land Inventory.

data, building footprint and type) which are very likely valuable for this assignment. Despite these data, it is expected that the Consultant shall rely on additional surveys to cross-check and fill data gaps with existing open data sets. The Consultant shall already present an initial survey plan in the proposal which can be further finetuned in the inception stage.