

**COMBINED PROJECT INFORMATION DOCUMENTS / INTEGRATED  
SAFEGUARDS DATA SHEET (PID/ISDS)  
APPRAISAL STAGE**

**Report No.: PIDISDSA16610**

**Date Prepared/Updated:** 28-Jan-2016

**I. BASIC INFORMATION**

**A. Basic Project Data**

<b>Country:</b>	Liberia	<b>Project ID:</b>	P155947
		<b>Parent Project ID (if any):</b>	
<b>Project Name:</b>	Liberia Urban Water Supply Project (P155947)		
<b>Region:</b>	AFRICA		
<b>Estimated Appraisal Date:</b>	26-Feb-2016	<b>Estimated Board Date:</b>	24-Mar-2016
<b>Practice Area (Lead):</b>	Water	<b>Lending Instrument:</b>	Investment Project Financing
<b>Sector(s):</b>	Water supply (100%)		
<b>Theme(s):</b>	Other urban development (100%)		
<b>Borrower(s):</b>	Ministry of Finance and Development Planning		
<b>Implementing Agency:</b>	Liberia Water and Sewer Corporation		
<b>Financing (in USD Million)</b>			
	<b>Financing Source</b>	<b>Amount</b>	
	BORROWER/RECIPIENT	0.00	
	International Development Association (IDA)	10.00	
	Total Project Cost	10.00	
<b>Environmental Category:</b>	B - Partial Assessment		
<b>Appraisal Review Decision (from Decision Note):</b>	The review did authorize the team to appraise and negotiate		
<b>Other Decision:</b>			
<b>Is this a Repeater project?</b>	No		

**B. Introduction and Context**

## Country Context

1. In August 2013 Liberia celebrated a decade of peace. Since the end of the civil war, a lot has been achieved – two peaceful elections have been held, US\$4.6 billion of debt relief have been negotiated and GDP per capita doubled, although it remains low at approx. US\$300 (World Bank, 2015).
2. The continued vulnerability of Liberian institutions, infrastructure and society, however, was highlighted by the Ebola Virus Disease (EVD) outbreak of 2014-15. The disease infected over 10,000 Liberians and claimed 4,806 lives. The human impact was aggravated by economic repercussions. The World Bank termed the economic impact on Liberia “crippling” and estimated forgone national income at US\$240 million in 2015, over 10% of its GDP (World Bank, 2015).
3. A post-Ebola recovery strategy has been prepared by the Government of Liberia (GoL) to strengthen resilience and development outcomes. The World Bank has pledged US\$1.62 billion to the three countries most affected by EVD i.e. Liberia, Guinea and Sierra Leone. Investments in the water and sanitation sector are a critical part of this strategy, for as a recent report on Recovering from the Ebola Crisis highlighted, the “lack of access to safe water [and] proper hygiene contributed to the propagation of the virus” and was even a “critical factor” in schools (UN / World Bank / EU / AfDB, 2015).
4. Liberia’s urban population in 2008 (recent national census) comprised of 47% of the total population of 3.5 million with an annual urban population growth rate of 4.7%. Estimates now suggest that out of total population of approximately 4 million, more than half of the population (2.1 million) resides in urban areas. More than 40% of the Liberia’s urban population now lives in the Greater Monrovia area. Unplanned urbanization has resulted in the proliferation of slums, with an estimated 70% of Monrovia’s population currently living in slum conditions with lack of basic services. The fragility of Liberia’s cities was exposed by the Ebola outbreak that devastated urban population, especially the vulnerable populations in Monrovia’s slum communities

## Sectoral and institutional Context

5. After ten years of peace, access to clean water remains low at 56% in rural areas and 65% in cities, with only 8% of the urban population having access to piped water system in their premises.
6. Overall financing of the Liberian WASH sector has remained weak. Domestic budget allocations and donor funding to the sector – currently around US\$ 25 million a year – are low compared to needs estimated at US\$110m in 2014 (Government of Liberia, 2013). Only US \$2.5m, or 0.4% of the national budget, were allocated to the WASH sector in 2013-14. Donors have financed some key infrastructure improvements for the Liberia Water and Sewer Corporation (LWSC), the national water and sewer utility for urban centers with a population of above 5,000 inhabitants. In particular, AfDB is financing a rehabilitation of the White Plains water production plant to its pre-war capacity of 16mgd from the current 6mgd. These improvements have laid the basis for the proposed investment project to increase distribution capacity of and access to piped water system in the urban context (Government of Liberia, 2014).
7. The proposed focus on the urban water sector has a number of strategic advantages: it combines a concentration of need with already identified priority investments, and a reforming government counterpart with complementary projects that offer clear synergies.

8. Need is concentrated in the urban sector. Up to 75% of Liberians without adequate access to improved water are clustered within 10 miles of Monrovia or county capitals or 3 miles of a primary road (World Bank, 2011). Monrovia alone concentrates some 850,000 persons without access to piped water, and outside the capital most towns have no piped supply at all. Less than 15% of the population have access to piped water even in the capital Monrovia.

9. The majority of the urban population relies on “rural solutions”, that is, point sources such as wells, some of which may be “improved” in a technical sense, but are not providing safe water reliably. A 2011 World Bank water quality study in Monrovia found the majority of wells to be contaminated and unsafe to drink from (UHL & Associates, 2011). The Ebola Disease Outbreak (EVD) in 2014-2015 in Monrovia underlined that expanding safe piped water in urban areas is a critical priority to diseases prevention and control.

10. Liberia’s WASH Sector Investment Plan (SIP) has identified a rehabilitation of Monrovia’s distribution network as a top-priority (Government of Liberia, 2013, p. 17; p.23). Substantial operational planning has already occurred for the identified priority projects. In the case of Monrovia, a completed scoping study financed by the World Bank has developed the designs of the planned network extensions, and an ongoing study is identifying the detailed rehabilitation plan for the existing network. Thus, in urban water, clear priorities and advanced planning will facilitate a rapid implementation of the proposed project.

11. The urban water supply sector also benefits from clear, reformist government counterpart. The Liberia Water and Sewerage Corporation (LWSC) has gone through a long post-war crisis, but a new management team put in place after a World Bank financed audit in 2011-12 has made impressive improvements. LWSC has increased its revenues by 145% between FY11 and FY14, increased customers connected by 20%, and streamlined its staffing. The Ebola crisis in 2014-15 impacted revenues in fiscal year 2015, both because collection efforts were temporarily interrupted due to widespread panic and quarantines in Monrovia, and due to the closure of many businesses such as hotels at the height of the epidemic (thus reducing water use). However, due to a determined effort by LWSC which saw collection efficiency on issued bills rise from 69% to 89%, LWSC still managed to collect US\$ 4,085,420 in revenue in FY15 (compared to US\$ 4,709,932 in 2014, US\$1,760,611 in 2010 and approx. US\$500,000 in 2005).

12. The Water Global Practice has been an active part of LWSC’s ongoing reform process, funding a review of the billing system prior to its upgrade, guiding the enumeration of customers, helping to track illegal connections, and piloting an improvement to the customer contracting process. This has allowed the Global Practice to build a strong partnership and obtain detailed knowledge of LWSC’s strengths and weaknesses. In view of the latter, the proposed project will establish a Project Implementation Unit (PIU) within LWSC to ensure full compliance with World Bank policies.

13. In pursuit of institutional reform, the Government of Liberia is also entering into a Performance Contract Agreement with LWSC to provide water supply and sewerage services to the people of Liberia efficiently and economically in the urban areas with clear roles, responsibilities and targets. In addition, LWSC is undertaking to create independent local LWSC outstations subsidiaries for all secondary cities with piped water systems via Outstation Management Contract (OMC) that provides water services to the City based on performance

standards and targets. The signature of these agreements is expected before October 01, 2015. Furthermore, the Public Statutory Corporation under an Act – approved in 1973 and revised in 1976 that established LWSC is being revised to reflect these changes. The project will support analytical works which will make easy to monitor these contractual arrangements.

14. Investing in the urban water sector promises considerable synergies with ongoing and planned complementary projects. Since 2012, AfDB has funded the Urban Water Supply and Sanitation Project (UWSSP) which aims to restore White Plains production capacity to its full pre-war potential of 16 million gallons per day (MGD) from approx. 6 mgd at present. The proposed investments into the distribution network will reduce non-revenue water (presently above 50%) and extend the network, thus distributing new water production more productively. The investment would also facilitate a US\$3m project by the Global Partnership for Output Based Aid (GPOBA) to subsidize 8,500 pro-poor connections in the project area.

15. Although the need for investments in rural water and the sanitation sub-sectors is also great, the key contextual advantages of the proposed urban project (concentrated need, identified projects with advanced planning, a clear institutional partner and direct project synergies) are lacking. Moreover, the discrete nature of rural interventions (e.g. construction of individual waterpoints; CLTS in villages) gives the World Bank less of a comparative advantage relative to smaller non-state actors, which comfortably operate at this scale, but lack the resources to invest in urban zones.

## C. Proposed Development Objective(s)

### Development Objective(s)

The proposed project development objective (PDO) is to increase access to piped water supply services in the project area in Monrovia and improve the operational efficiency of the LWSC.

To achieve this objective, the project will include two components: (i) infrastructure improvements for Monrovia; (ii) Capacity Building for LWSC and development of improved Project Management and Monitoring & Evaluation systems.

### Key Results

Progress towards the PDO will be measured through the following indicators:

- a. Direct project beneficiaries (number)
  - i. of which female (%)
- b. Number of people in urban areas provided with access to Improved Water Sources under the project (number)
- c. Active connections per length of piping (kilometers)
- d. Metering Ratio - active metered accounts over unmetered accounts (%)
- e. Non-revenue water – ratio of volume of water billed to customers over volume of water produced (%).

The expected outcomes from the project are (a) at least 65,000 direct project beneficiaries (of which 44% female); (b) at least 48,000 people in urban areas of Monrovia provided with access to Improved Water Sources under the project;; (c) an increase of active connections per kilometer of piping from 28 to at least 43; (d) an improvement in the metering ratio from 49% at baseline to at

least 72%; (e) an improvement in non-revenue water from a baseline value of 75% in 2014 to at least 55% in 2021. As a precise, reliable baseline for non-revenue water is currently not available (production is not yet metered, only estimated), the baseline and expected outcome for non-revenue water may be adjusted at mid-term review.

## **D. Project Description**

16. The project will provide a credit of US\$10,000,000 in Investment Project Financing to achieve the development objectives. The credit is well aligned with Government and World Bank priorities, builds on years of technical assistance to the client, ideally complements an ongoing AfDB intervention to raise water production capacity.

### **PROJECT STRUCTURE**

17. Component 1 – Infrastructure Improvements: The project will invest approx. USD 8 million in infrastructure improvements, of which approx. USD 1.9 million in targeted repairs and rehabilitations of the existing distribution network under sub-component A, USD 6.1 million for the extension of the distribution network to new areas and customers under sub-component B. Estimated costs for components 1A and 1B include allowances for site mobilization, maintenance and contingencies.

18. Under sub-component 1A, the project will carry out critical rehabilitations and improvements in the existing network. This will include repairs along a critical section of the eastern transmission line to reduce water losses improve water flows to central Monrovia, as well as urgent rehabilitations along Somalia Drive and central Monrovia to restore water supply in the city center. Key transmission lines along Gardnerville road and Robertsville Highway will be rehabilitated to reduce bottlenecks and create back-up capacity in these areas. Furthermore, the installation of bulk meters across the network will allow LWSC to set up district metering areas to track and address non-revenue water (NRW) more effectively.

19. Under sub-component 1B, the project will invest in the extension of the transmission and distribution network in order to reach additional customers and improve LWSC's revenue and profits. In the capital's areas of SKD Boulevard, Paynesville, Gardnersville, Barnersville, Johnsonville, Robertsville Highway, Kakata Highway, Junction Road, Kessely Boulevard, Nizohn and Chicken Factory Community as well as Nicklay Town, the project will fund 70 kilometers of new distribution lines as well as up to 60 new kiosks and standpipes.

20. Component 2 – Capacity Building: The project will invest approx. USD 2 million into initiatives to strengthen LWSC's capacity to sustain and expand services. Activities under this component will directly contribute to meeting targets under the key results indicators. The key activities will include:

(a) Cost-Recovery: LWSC is currently incurring NRW in excess of 50% of production. Reducing these losses is a key target of the capacity building efforts and will include the setting-up of District Metered Areas (DMAs), staff training in NRW monitoring and leak detection, the introduction of device assisted meter reading and associated staff training to replace the error prone manual process. These activities will directly contribute to meeting the key results indicator on NRW and the metering ratio.

(b) Improve Customer Service: LWSC currently struggles to react swiftly to customer complaints and request. This has direct implications for the proposed project, for instance, at present LWSC manages to respond to barely half of the connection requests required to meet project targets for new accounts. The project will thus review, retrain and re-equip LWSC connection teams in line with an earlier pilot which managed to double the connection rate. LWSC will also develop a rate-payment scheme to allow poorer households to finance connection fees over a longer period to increase demand. Moreover, the project will open at least two additional customer service centers to provide the bulk of the new customers with a service point closer to their homes. Furthermore, the project will invest in a best-practice grievance redress system to track complaints and their resolution. These activities (esp. work on higher connection rates) will contribute to meeting targeted results for the PDO indicators on direct project beneficiaries, number of people in urban areas provided with access to improved water and active connections per length of piping.

(c) Public consultations: The project will provide funding for public consultations (events and media placements) with two particular objectives. Firstly, to continuously inform citizens in intervention areas and provide them with an avenue to raise concerns with management and political stakeholders about the project specifically and LWSC in general. Secondly, to carry out consultations with women groups in project areas, in particular with respect to kiosk/standpipe design and placement.

(d) Key Operational Equipment: The project will procure key operational equipment currently lacking and required for a smooth project implementation, including but not limited to vehicles, small excavators, leak detection equipment and spare meters. The equipment will be critical for expanding metering and reducing physical non-revenue water through leak detection and repairs, and thus contribute directly to meeting targets of the key results indicators.

(e) Project implementation Unit (PIU): In order to mitigate institutional capacity risks, the project will support salaries and office equipment for a strong, carefully recruited project implementation unit with five key staff – a PIU Director, a project finance management specialist, a safeguards specialist, procurement specialist and monitoring & evaluation specialist (water and sanitation engineer)

## LESSONS LEARNT AND REFLECTED IN THE PROJECT DESIGN

21. The project stands in a long tradition of World Bank investments in water supply in Africa, starting with a loan to Belgian Congo in 1951 (P003006). Specific lessons have been drawn from recent investments in urban water supply services in the region, including in Ghana (P119063, P056256) and Nigeria (P123513,P115658,P071075), as well as a 2006 Liberia Emergency Infrastructure Project (P100160) that included approx. US\$ 5m in financing to the urban water sector. The proposed project is also informed by five years of World Bank technical support to the Liberian water sector since 2010. The following key lessons have been reflected in the project design:

22. Capacity building requires significant long-term commitments. The Implementation Completion and Results Report (ICR) of the Liberia Emergency Infrastructure Project prominently highlighted the lesson that “capacity building after a prolonged and severe crisis”

must “transcend the span of one project”, a point reiterated in the ICR of the Nigerian National Urban Water Sector Reform Project 1 which stated that “reform is a long-term process”. This lesson has been taken into account by closely coordinating the project with the complementary technical assistance provided by the Water and Sanitation program over the past years, thus linking the capacity building component of this project to an existing longer-term program. To compensate short- and medium-term capacity constraints, moreover, the project will support a strong, carefully recruited Project Implementation Unit (PIU).

23. Coordination with other donors and stakeholders is critical. This lesson has been particularly clear from the recent Ghana Second Urban Environmental Sanitation Project (P082373) during which planning conflicts with city authorities led to at least one investment site being abandoned. This project’s focus on the distribution network in Monrovia was purposefully designed to complement the activities of other major donors, in particular the AfDB funded expansion of water production capacity in the capital, and USAID’s investments in water supply production and distribution in secondary towns. The World Bank’s funding of the annual Joint Sector Reviews since 2013 has further helped to ensure that this and other investments are well aligned. The project has also engaged Monrovia’s Municipal Authority and Ministry of Public Works to brief these key actors on the proposed intervention sites and rule out any conflicts.

24. Flexibility in Procurements. The ICR of the Liberia Emergency Infrastructure Project further noted that “works contracts in post-conflict environments present a special challenge” and that in addition to regular World Bank bidding procedures, the “Limited International Bidding” approach may be necessary to provide the correct incentives to international contracts/suppliers. While the political and economic situation has steadied since then, the recent Ebola Virus Disease (EVD) outbreak has had a destabilizing effect on the market, which is only slowly recovering. The project team and PIU procurement specialist will closely study the design of successful recent tenders in Liberia to ensure the use of appropriate procurement methods.

25. Importance of avoiding delays related to the Resettlement Framework: Past projects (e. g. P056256) have incurred delays related to resettlements and associated compensation payments. While no resettlements and compensation payments are expected in this project, agreements to rebuild, after pipe laying, those structures that encroach on the right of way have to be made with occupants of affected buildings, and such work must be reflected in work orders with contractors to avoid unnecessary delays and disagreements.

#### ALTERNATIVES CONSIDERED AND REASONS FOR REJECTION

26. Investments outside of Monrovia: Pre-feasibility studies for investments in the secondary cities of Gbarnga, Harper and Greenville, which are not targeted by USAID or AfDB, have also been prepared and would allow for a natural second phase of the project. However, it was decided to focus the initial investments on Monrovia for a number of reasons: Firstly, the concentration of need in Monrovia with up to 1 million persons without access to piped water. Secondly, the synergies with the AfDB financed water production capacity improvement in Monrovia, which will be completed in 2016-17. Thirdly, the fact that most of the existing network and customers of LWSC are in Monrovia and improvements in the capital will thus allow a consolidation of the utility’s core business prior to new expansions to secondary towns.

27. Conditionality on Performance Improvements and Reforms: Direct conditionality of the

proposed investments on prior performance improvements as well as institutional reforms was considered. However, in line with advice from the Country Management Unit, a decision was made to work within the existing, reforming institutional structures to improve services for Monrovia's population without further delay. This is because key performance improvements such as a reduction of non-revenue water require the proposed investments, and should thus not be a condition for them. Moreover, in light of a likely change of government in 2017, remaining institutional reforms such as the creation of a sector regulator need political engagement best pursued through the World Bank's more flexible technical assistance program in Liberia (P155696).

28. Investments in Piped Sewerage System: Access to improved sanitation is very low in Liberia and a rehabilitation of LWSC's depilated piped sewerage network was considered. However, at this time it was rejected in favor of an investment in water supply for three reasons: Firstly, due to the reduced state of the piped sewerage system, a sewerage investment would require considerably greater resources than those proposed under this project and thus carry excessive risks given the present capacity constraints at LWSC. Secondly, a sewerage investment would lack the synergies currently possible in the water sector due to the AfDB investment in Monrovia's water production capacity. Thirdly, unlike in the water sector, detailed feasibility studies are not available for piped sanitation, and a rapid progression to project implementation as desired in the aftermath of Ebola thus less probable. Preparing such a pre-feasibility study would be a productive next step as part of the World Bank's technical assistance program to assess intervention options and required funding.

29. Private sector participation: A direct role of the private sector was considered as an alternative to the proposed LWSC-centric implementation. However, at the present time the immediate participation of the private sector in the management of water appears unrealistic due to the enduring country risk, the lack of an adequate regulatory framework, the dilapidated state of the utility's infrastructure and the lack of local firms experienced with large-scale water supply. Once LWSC's finances and infrastructure are considerably improved, a solid regulatory framework is established, and a coherent and financially sustainable subsidy strategy is firmly in place to allow the poor to be served, Private Sector Participation could be considered in the medium- to long-term.

#### RATIONAL FOR PUBLIC SECTOR FINANCING

30. LWSC is a public corporation which at present cannot finance major infrastructure investments, such as the one proposed in this appraisal document, through commercial lenders. LWSC has not financed infrastructure through private lenders in the recent past, and consultations during a project scoping study showed that given LWSC's still precarious financial situation, the corporation would struggle to raise sufficient funds commercially at acceptable interest rates. By contrast, public financing has significantly better terms and is thus more suitable to make critical investments that will help LWSC improve its performance and revenues. This may then allow LWSC to access private lending on affordable terms in the future.

31. The proposed project is also of high public interest, as it forms a critical element of the Ebola Economic Strategic Recovery Plan and an important contribution to building resilience to shocks in the urban context. The investment will also address priorities outlined in the national Sector Investment Plan (SIP 2012-2017) and is aligned with the Government's Agenda for

Transformation (AfT) target for safe water supply improvements.

32. As outlined above, private sector participation was considered as an alternative to the proposed LWSC-centric project, but rejected due to the current risk profile, lack of appropriate regulatory framework, low capacity and network quality of LWSC and the limited presence of capable firms. The case for private sector participation may be strengthened in the future, should these risks and capacity gaps reduce.

#### VALUE ADDED BY WORLD BANK SUPPORT

33. The value added by the World Bank goes beyond its ability to offer at-scale financing for this project at conditions superior to commercial lenders. The Water Global Practice (WGP) has the unique advantage of building this operation on detailed knowledge of the utility and strong relationships stemming from years of technical assistance to LWSC, which will be continued by a complementary program (P155696) led by the World Bank's Water and Sanitation Program.

34. The Water Global Practice has been an active part of LWSC's ongoing reform process, funding a review of the billing system prior to its upgrade, guiding the enumeration of customers, helping to track illegal connections, and piloting an improvement to the customer contracting process. This has allowed the Global Practice to build a strong partnership and obtain detailed knowledge of LWSC's strengths and weaknesses that put it into a unique position to add value to the infrastructure project.

35. Major donor partners engaged in the water sector are currently prioritizing other aspects. USAID is investing in water supply in secondary cities, and AfDB is focusing on the rehabilitation of water production capacity, which the proposed investment in LWSC's ability to distribute water would ideally complement. Other stakeholders in the sector, such as local and international NGOs, lack the required financial scale for significant investments in urban areas. The distribution bottleneck is thus unlikely to be addressed in a timely manner without the World Bank's intervention.

#### PARTNERSHIP WITH AFDB

36. The project has been prepared in coordination with the African Development Bank, which is implementing the restoration of the White Plane production facility to raise treated water supply in Monrovia from around 5 mgd to 16 mgd and rehabilitate the pumping mains up to Red Light Area in Paynesville. The IDA project intends to efficiently distribute this added capacity to Monrovia's population through rehabilitation of a critical section of the main transmission line from Red light to Central Monrovia, by restoring supply the main elevated concrete tanks in the city, by balancing and regulating the flows in the system and reducing water losses. Further, the project will invest in about 70 km to extend the distribution network in order to reach additional customers within Monrovia and thus also improve LWSC's revenue.

#### RISK RATING AND SAFEGUARD ISSUES

37. The overall risk rating is Substantial, primarily due to the limited institutional capacity of LWSC, which will play a key role in implementing, coordinating, and overseeing project activities. The institutional risk will be mitigated through capacity-building activities and the

recruitment of competent PIU staff dedicated to the project. Confining fiduciary responsibility to the PIU will help reduce fiduciary risks.

38. Political and Macroeconomic risks are other drivers of the overall substantial risk rating, as the next Liberian Presidential and General Election, which will be strongly contested due to the retirement of the current two-term President, falls into the project period. Moreover, Liberia's economy remains vulnerable to internal and external shocks as the recent decline in global commodity prices and the Ebola epidemic have shown.

39. Any PAP related risks will be limited due to the lack of any economic or physical displacements and land acquisitions – the project will involve only minor, temporary disturbances during pipe laying in the rights of way. The project was screened for impacts of climate change and geophysical hazards and the result is an overall low risk driven by extreme precipitation and flooding. All project partners have been fully involved in the project's preparation to ensure the successful start-up of activities. Additional risk and safeguard related issues, including the climate change screening, are captured in the PAD.

40. The operation has been screened for short and long-term climate change and disaster risks. While Liberia in general faces significant exposure to climate change related hazards, this exposure does not translate into substantial risks of actual negative climate change impacts for this specific infrastructure project. Thus the project is rated "low risk" for climate change related outcome/service delivery impacts in both the historical/current and future time-frame.

41. In line with Operational Policy 4.01, this project has been classified in Environmental Category "B". The World Bank requires an environmental assessment (EA) of projects proposed for Bank financing to help ensure that they are environmentally sound and sustainable. An Environmental and Social Impact Assessment (ESIA) and associated Economic and Social Management Plan (ESMP) have been developed to assess the exact impacts and outline mitigation measures. The integrated ESIA and ESMP have not found any major negative environmental impact as all impacts are limited, temporary and site-specific. The integrated document was consulted upon in-country and disclosed in Liberia and in the World Bank's InfoShop on January 29th, 2016.

42. A Resettlement Policy Framework (RPF) has also been prepared, consulted upon in-country, and published in Liberia and in the World Bank's InfoShop on January 29th, 2016. No physical displacement of Project Affected People (PAPs) has been identified, nor will land acquisitions be required. There will only be minor economic disturbances, mostly related to temporary disruption during pipe laying of entrance ramps, terraces, fences and stairs which are encroaching on the rights of way. The total number of affected structures is below 70, and these are listed in detail in the RPF document. Affected structures will be reconstructed by the project in equal or better quality. Given that no physical or economic displacement will be required, the preparation of a Resettlement Action Plan (RAP) is not necessary at this stage, but will be guided by this RPF if required due to future, unexpected displacement related challenges.

43. The project also triggers OP/BP 4.11 - Physical Cultural Resources. The works will take place in inhabited areas and will involve excavations and demolitions. There is a possibility of chance finds of physical cultural resources. To mitigate potential adverse impacts, the ESMF, the

Environmental and Social Impact Assessments (ESIAs) include guidance and procedures for physical cultural resources management. No separate safeguards instrument is needed.

44. OP 7.50 is applicable to the proposed project since the water supply system to be supported by the project sources water from the St. Paul River shared between the Republic of Liberia and the Republic of Guinea and is therefore an “international waterway” for purposes of the policy. However the project has obtained exception to notification requirements of riparians from the Regional Vice President (AFRVP) because it meets the exemption criteria defined in paragraph 7 (a) of OP 7.50, that is, alterations to the ongoing scheme are minor and will not adversely change the quality or quantity of water available to the other riparian of the St. Paul River, nor be adversely affected by the other riparian’s possible water use.

## ECONOMIC AND FINANCIAL ANALYSIS

45. The proposed project will assist the LWSC to improve the piped distribution network, as well as to strengthen its institutional ability to sustain and expand service delivery. As a result the project is expected to improve the customer and revenue base of LWSC through its interventions to reduce NRW, improve collection efficiency and reduce operational expenses. Reducing the physical loss will enable LWSC to make more water available to its existing customers and increase access to previously unreached areas. The project builds on and complements the expected increase in water production from 6 to 16 million gallon per day from the ongoing, AfDB funded restoration of the White Plains treatment plant and transmission mains.

46. Cost-benefit analysis is used to assess financial and economic viability of the project and its sensitivity to key variables. With and without project scenarios are defined in order to identify the incremental costs and benefits of the project. Benefits and costs are projected over a period of 25 years (2017-2041) starting from the first year of the project in 2017 and including three years construction period. Based on the Technical Note on Discounting Costs and Benefits in Economic Analysis of World Bank Projects issued by GGSVP cash flows are discounted at 6%.

47. In the base case scenario of the economic and financial model, a financial net-present value of just above USD 9 million was calculated for the project, representing a financial internal rate of return of over 15%. The economic model that takes into account a wider stream of benefits (e.g. time saved from fetching water; increased income due to lower work absenteeism due to disease; reduced health expenses), the net present value reaches close to USD15 million, and the economic internal rate of return is estimated at approx. 21%.

48. Sensitivity Analysis: A range of scenarios have been developed to test the sensitivity of NPV and IRR to major elements of the cash flow (cost and revenue). A 10% decrease in either cost or revenue relative to the base-case scenario would still maintain a positive economic and financial net present value, while internal rates of return (both economic and financial) would be approximately halved. A 15% decrease in revenue or cost would lead to a negative financial net present value, though economic net present value would remain positive in a range of USD 1.7 to 2.9 million dollars.

49. Further details to the economic and financial model are given in the Project Appraisal Document (Annex 6).

## WORLD BANK GRIEVANCE REDRESS MECHANISM

50. Communities and individuals who believe that they are adversely affected by a World Bank (WB) supported project may submit complaints to existing project-level grievance redress mechanisms or the WB's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service (GRS), please visit <http://www.worldbank.org/GRS>. For information on how to submit complaints to the World Bank Inspection Panel, please visit [www.inspectionpanel.org](http://www.inspectionpanel.org).

51. The World Bank Grievance Redress mechanism is part of a wider citizen engagement and feedback process aimed to ensure that any complaints about the project or LWSC's performance can be effectively addressed. This wider process includes not only dedicated public consultation events, but the operational grievance redress tool to be set-up under the capacity building program, the benchmarking that is a critical aspect under the Performance Contract LWSC has agreed upon with the Government of the Republic of Liberia, as well as the annual Joint Sector Reviews (JSR) during which civil society organizations are able to participate.

### **Component Name**

Component 1 – Infrastructure Improvements

### **Comments (optional)**

The focus of this component is to rehabilitate and expand the piped water distribution network of LWSC in Monrovia. Priority undertakings include the repair and reconditioning of parts of the main eastern transmission line, the installation of bulk meters, support to expand distribution and branchlines in selected areas of Monrovia and construction of water kiosks.

### **Component Name**

Component 2 – Capacity Building

### **Comments (optional)**

The objective of the second component is to strengthen LWSC's capacity to sustain and expand services. The proposed sub-activities include: (a) improving cost recovery and reducing non-revenue water; (b) improving customer services, in particular the rate of newconnections and response to grievances; (c) assisting the PIU and other key staff with training and critical operational equipment.

## **E. Project location and salient physical characteristics relevant to the safeguard analysis (if known)**

The project location is Monrovia, the capital city of the Republic of Liberia (coordinates: 6°18'48"N 10°48'5"W). The project area has a large lagoon from southern to central area. Surrounding this Mesurado lagoon, flat land is spread and distributed over the west side and northwest side, and low hills with gentle undulation are distributed on Monrovia's southern side along the coast of a narrow peninsula and watershed boundaries among the Mesurado river basin, the Warner

creek basin and Du river basin. The St Paul river, which originates in the Republic of Guinea, empties into the Atlantic ocean in Monrovia and is the source of the water for White Plains treatment plant that supplies the city's piped network.

At least a quarter of Liberia's population lives in the Greater Monrovia area. Unplanned urbanization has resulted in the proliferation of informal settlements, with an estimated 70% of Monrovia's population currently living in slum conditions with lack of basic services. Such settlements and Industrial Areas have expanded into inland swampy areas, and the generally dense and informal settlements in Monrovia mean that road reserves are often not respected.

The geology of the project area mainly consists of Precambrian Melanocratic gneiss, Devonian Paynesville sandstone, Jurassic Diabase dike, Tertiary Edna sandstone and Quaternary Beach and Fluvial deposits. The Precambrian Melanocratic gneiss is widely distributed as a base rock in northern part of the study area such as New Kru Town, North part of Logan town, Caldwell, Barnesville, North part of New Georgia, North part of Gardnersville and Johnsonville. The Devonian Paynesville sandstone is distributed at central area of New Georgia and at every part of Paynesville. The formation is intruded by Jurassic Diabase at every area and covered by Tertiary and Quaternary deposit at low flat area. The Jurassic Diabase is distributed as a dike or intrusive rock with rather large rock body in Central Monrovia A and B, Congo Town and Paynesville. The rock bodies often form low-height hill. The Tertiary Edina sandstone is distributed at the front of Paynesville sandstone in central and southern east area of New Georgia, and in central and partly southern area of Paynesville. The Quaternary deposit is distributed at low flat land of all the study area and covers underlying other formations.

## **F. Environmental and Social Safeguards Specialists**

Demba Balde (GSU01)

Sekou Abou Kamara (GEN01)

## **II. Implementation**

### **Institutional and Implementation Arrangements**

LWSC will be responsible for the implementation of the IDA project. In order to reinforce the existing capacity gaps, a project implementation unit (PIU) will be established within LWSC for the daily management of the project.

The PIU will conduct the daily tasks of project implementation and periodic assessments of its progress. The unit will report to LWSC management. The PIU staff are expected to consist of a PIU director, a finance management specialist, a social and environmental specialist, procurement specialist and monitoring & evaluation specialist. The PIU will be constituted prior to project effectiveness.

The responsibilities have been defined in close cooperation with LWSC to avoid overlaps or frictions with existing departments of the utility. The PIU will work closely with all of the relevant departments within LWSC to ensure the execution of both investment and TA activities. It will have the ability to contract consultants but will rely primarily on in-house staff in order to build and maintain capacity and institutional memory. It will use consultants only when necessary to accomplish certain specific tasks such as technical execution studies, preparation of bidding documents, the receipt of goods and equipment's, and the supervision / control and receipt of works.

The PIU will oversee the execution of the project components and corresponding contracts for works and services. It will prepare draft quarterly progress reports for IDA and the Steering Committee, including detailed comments on the execution of the project. But the final progress reports will be sent to IDA by LWSC Management. These will highlight project achievements but also provide detailed description of any difficulties encountered and how these are being addressed. The PIU will facilitate the coordination between the contractors, consultants and any public entity or service related to the project.

The PIU will also be responsible for the project financial management and for the preparation of project financial reports. It will ensure that all project activities are performed, and quarterly progress reports and annual financial audits submitted, in a timely manner. The PIU will maintain a separate accounting of assets generated by the project, which will only be merged with LWSC's assets at the end of the project. A midterm review (MTR) will be conducted and an impact assessment with a beneficiary satisfaction survey will be carried out at project closing.

The PIU will receive financial support through the project, thus ensuring that it has the technical and management resources necessary to oversee the technical studies as well as the technical and financial aspects of implementation.

#### Project Steering Committee

A steering committee will be established for providing overall guidance to the project and ascertaining the project results, to ensure the coordination of the project with the country's overall water service improvement programs, and to ensure that the main beneficiaries' expectations are met. It will include representatives of the following institutions and entities: Ministry of Finance and Development Planning, the Ministry of Public works, the Environmental Protection Agency, Ministry of Lands, Mines and Energy, Ministry of Health and the Monrovia City Corporation, LWSC MD and LWSC Board of Directors Chair.

#### Implementation Arrangements

To facilitate the carrying out of the Project, the Government of Liberia will make the IDA Financing available to LWSC under a subsidiary agreement.

### III. Safeguard Policies that might apply

Safeguard Policies	Triggered?	Explanation (Optional)
Environmental Assessment OP/BP 4.01	Yes	The proposed intervention will rehabilitate and extend parts of the piped water supply network in Monrovia with a significant net positive social and environmental benefit through enhanced access to safe water and with few if any irreversible negative impacts. However, during construction some site-specific negative impacts may occur temporarily e.g. noise, dust, displacement of households or businesses or minor construction related accidents. The project is thus rated as category B.

Natural Habitats OP/BP 4.04	No	The project is located in urban Monrovia, where the ecosystems' bio-logical communities are not formed largely by native plant and animal species, and human activity has already essentially modified the area's primary ecological functions. Hence, the project area does not affect natural habitats as per the definition thereof in Annex A of OP/BP 4.04 and the policy is not triggered.
Forests OP/BP 4.36	No	The project is located in urban Monrovia and thus does not entail forest management and is not expected to impact on forests.
Pest Management OP 4.09	No	This policy is not triggered as the project will not be involved in helping the borrower manage pests that affect public health
Physical Cultural Resources OP/BP 4.11	Yes	The project will finance the construction and rehabilitation of pipelines in dense urban areas which may affect physical cultural resources adversely, though this unlikely. To mitigate potential adverse impacts, the integrated ESIA and ESMP include guidance and procedures for physical cultural resources management. No separate safeguards instrument is needed.
Indigenous Peoples OP/BP 4.10	No	This urban project is located in Monrovia, the capital city of Liberia, there are no indigenous peoples expected to be present in the project area.
Involuntary Resettlement OP/BP 4.12	Yes	While no physical or economic displacements are expected, the construction and rehabilitation of pipelines in urban areas may cause temporary disturbances of communal structures or ancillary structures of private properties and income generating opportunities built onto road reserves.
Safety of Dams OP/BP 4.37	No	The project does not entail construction of dams, nor does it rely on dam structures.
Projects on International Waterways OP/BP 7.50	Yes	OP 7.50 is applicable to the proposed project since the water supply system to be supported by the project sources water from the St. Paul River shared between the Republic of Liberia and the Republic of Guinea and is therefore an "international waterway" for purposes of the policy. An Exception to Notification Requirements under OP7.50 has been granted by World Bank management.
Projects in Disputed Areas OP/BP 7.60	No	The project is not located in a disputed area.

#### IV. Key Safeguard Policy Issues and Their Management

##### A. Summary of Key Safeguard Issues

<p><b>1. Describe any safeguard issues and impacts associated with the proposed project. Identify and describe any potential large scale, significant and/or irreversible impacts:</b></p>
<p>The project component designed to finance the rehabilitation and expansion of the distribution network within Monrovia within the existing rights of way of Monrovia roads and highways. As such, pipe laying including ancillary structures has no foreseen major negative environmental impact, as confirmed by the Economic and Social Impact Assessment (ESIA). The adverse environmental impacts are thus expected to be moderate, of limited significance and magnitude, and restricted to the construction phase. No economic or physical displacement of Project Affected People (PAPs) has been identified, nor will land acquisitions be required. There will only be minor economic disturbances, mostly related to temporary disruption of structures such as terraces, fences, entrance ramps and stairs during pipe laying due to encroachments on the rights of way. These will be reconstructed by the project in equal or better quality. No cash compensations are expected. While OP 7.50 (Projects on International Waterways) is applicable to the proposed project since the water supply system to be supported by the project sources water from the St. Paul River shared between the Republic of Liberia and the Republic of Guinea, an Exception to Notification Requirements under OP7.50 has been granted by World Bank management.</p>
<p><b>2. Describe any potential indirect and/or long term impacts due to anticipated future activities in the project area:</b></p>
<p>As Monrovia is growing rapidly with an evolving infrastructure, it is possible that future building activities in the project area may damage or block access to pipes financed by this project. LWSC will work with the Ministry of Public Works to minimize encroachment and coordinate on future building projects such as roads.</p>
<p><b>3. Describe any project alternatives (if relevant) considered to help avoid or minimize adverse impacts.</b></p>
<p>As adverse environmental impacts are expected to be moderate, of limited significance and magnitude, and restricted to the construction phase, because no physical or economic displacement of project affected people is expected, and because the nature of the project (investing in the piped water network) makes the key causes of the temporary effects (i.e. digging and laying of pipes) inevitable, no project alternatives were judged to be relevant or necessary to further minimize impacts. Alternatives such as bottled water, tanker deliveries or point sources are either not safe or not affordable in the dense, urban environment of Monrovia.</p>
<p><b>4. Describe measures taken by the borrower to address safeguard policy issues. Provide an assessment of borrower capacity to plan and implement the measures described.</b></p>
<p>A detailed Environmental and Social Impact Assessment (with integrated Economic and Social Management Plan) and Resettlement Policy Framework have been developed, cleared and disclosed on January 29th, 2016. Overall implementation and monitoring of the environmental and social management plan is the responsibility of LWSC. The Project Implementation Unit (PIU) will conduct the daily task of project implementation and periodic assessment of its progress, incl. safeguard issues. While LWSC suffers from known technical and human capacity constraints, the recruitment of the PIU (incl. a dedicated safeguards specialist) is expected meet the required standards to allow LWSC to address safeguard policy issues in a satisfactory manner. Moreover, an Environmental Compliance Monitoring Unit (ECMU) at LWSC has been set up in LWSC for the ongoing AfDB project. This ECMU, is composed of an inter-departmental team, responsible for monitoring environmental compliance, act as internal environmental auditors for the Corporation and liaise with the EPA and other relevant agencies on environmental issues. The ECMU also interacts with the public on social concerns.</p>
<p><b>5. Identify the key stakeholders and describe the mechanisms for consultation and disclosure</b></p>

<b>on safeguard policies, with an emphasis on potentially affected people.</b>
The key stakeholders include (a) the Liberia Water & Sewer Corporation (LWSC) which is the implementing agency; (b) the Ministry of Finance & Development Planning; (c) the Ministry of Public works; (d) Ministry of Health; (e) the Monrovia City Corporation, which is the local government agency responsible for the project area; (f) the affected communities and relevant community groups; (g) development partners active in the water sector (esp. AfDB, USAID and UNICEF). A first consultation to discuss the draft Environmental and Social Impact Assessment was held on December 8, 2015 at Paynesville City Hall under the leadership of Mr. N. Hun-Bu Tulay, Managing Director of LWSC. The interactive meeting included key government agencies (incl. MCC, Ministry of Health and Ministry of Public Works), development partners (incl. UNICEF), local and international NGOs, community Leaders and individual citizens. Minutes have been recorded in the Annex of the ESIA document. Additional public consultations will be funded by the project in the future with two particular objectives. Firstly, to continuously inform citizens in intervention areas and provide them with an avenue to raise concerns with management and political stakeholders about the project specifically and LWSC in general. Secondly, to carry out consultations with women groups in project areas to ensure the gender sensitivity of the project in general and safeguard related issues in particular. The cleared safeguard documents (ESIA and RPF) have been disclosed locally and in Infoshop in line with World Bank requirements.

### ***B. Disclosure Requirements***

<b>Environmental Assessment/Audit/Management Plan/Other</b>	
Date of receipt by the Bank	18-Jan-2016
Date of submission to InfoShop	29-Jan-2016
For category A projects, date of distributing the Executive Summary of the EA to the Executive Directors	00000000
"In country" Disclosure	
Liberia	29-Jan-2016
<i>Comments:</i> Disclosure in newspapers and through posters in public places at project sites.	
<b>Resettlement Action Plan/Framework/Policy Process</b>	
Date of receipt by the Bank	18-Jan-2016
Date of submission to InfoShop	29-Jan-2016
"In country" Disclosure	
Liberia	29-Jan-2016
<i>Comments:</i> Disclosure in newspapers and through posters in public places at project sites.	
<b>If the project triggers the Pest Management and/or Physical Cultural Resources policies, the respective issues are to be addressed and disclosed as part of the Environmental Assessment/Audit/or EMP.</b>	
<b>If in-country disclosure of any of the above documents is not expected, please explain why:</b>	

### ***C. Compliance Monitoring Indicators at the Corporate Level***

<b>OP/BP/GP 4.01 - Environment Assessment</b>
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Does the project require a stand-alone EA (including EMP) report?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
If yes, then did the Regional Environment Unit or Practice Manager (PM) review and approve the EA report?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
Are the cost and the accountabilities for the EMP incorporated in the credit/loan?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
<b>OP/BP 4.11 - Physical Cultural Resources</b>	
Does the EA include adequate measures related to cultural property?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
Does the credit/loan incorporate mechanisms to mitigate the potential adverse impacts on cultural property?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
<b>OP/BP 4.12 - Involuntary Resettlement</b>	
Has a resettlement plan/abbreviated plan/policy framework/process framework (as appropriate) been prepared?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
If yes, then did the Regional unit responsible for safeguards or Practice Manager review the plan?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
Is physical displacement/relocation expected?  Provided estimated number of people to be affected	Yes [ <input type="checkbox"/> ] No [ <input checked="" type="checkbox"/> ] TBD [ <input type="checkbox"/> ]
Is economic displacement expected? (loss of assets or access to assets that leads to loss of income sources or other means of livelihoods)  Provided estimated number of people to be affected	Yes [ <input type="checkbox"/> ] No [ <input checked="" type="checkbox"/> ] TBD [ <input type="checkbox"/> ]
<b>OP 7.50 - Projects on International Waterways</b>	
Have the other riparians been notified of the project?	Yes [ <input type="checkbox"/> ] No [ <input checked="" type="checkbox"/> ] NA [ <input type="checkbox"/> ]
If the project falls under one of the exceptions to the notification requirement, has this been cleared with the Legal Department, and the memo to the RVP prepared and sent?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
Has the RVP approved such an exception?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
<b>The World Bank Policy on Disclosure of Information</b>	
Have relevant safeguard policies documents been sent to the World Bank's Infoshop?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
Have relevant documents been disclosed in-country in a public place in a form and language that are understandable and accessible to project-affected groups and local NGOs?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
<b>All Safeguard Policies</b>	
Have satisfactory calendar, budget and clear institutional responsibilities been prepared for the implementation of measures related to safeguard policies?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
Have costs related to safeguard policy measures been included in the project cost?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
Does the Monitoring and Evaluation system of the project	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]

include the monitoring of safeguard impacts and measures related to safeguard policies?	
Have satisfactory implementation arrangements been agreed with the borrower and the same been adequately reflected in the project legal documents?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]

## V. Contact point

### World Bank

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### Borrower/Client/Recipient

Name: Ministry of Finance and Development Planning  
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### Implementing Agencies

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## VI. For more information contact:

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## VII. Approval

Task Team Leader(s):	Name: Deo-Marcel Niyungeko	
<b>Approved By</b>		
Safeguards Advisor:	Name: Johanna van Tilburg (SA)	Date: 28-Jan-2016
Practice Manager/ Manager:	Name: Alexander E. Bakalian (PMGR)	Date: 28-Jan-2016
Country Director:	Name: Henry G. R. Kerali (CD)	Date: 02-Feb-2016