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# INTEGRATED SAFEGUARDS DATA SHEET APPRAISAL STAGE

Report No.: ISDSA1180

Date ISDS Prepared/Updated: 06-Apr-2015

Date ISDS Approved/Disclosed: 08-Apr-2015

#### I. BASIC INFORMATION

### 1. Basic Project Data

Country:	Zamb	nia .	Project ID:	P14909	1	
Project Name:	Lusak	Lusaka Sanitation Project (P149091)				
Task Team		Michael John Webster				
Leader(s):						
Estimated	17-M	ar-2015	Estimated	22-May	-201	5
<b>Appraisal Date:</b>			<b>Board Date</b>	:		
Managing Unit:	GWA	DR	Lending Instrument		nent F	Project Financing
Sector(s):	Healt	h (10%), Sanitation (90%	)			
Theme(s):	wide	Urban services and housing for the poor (40%), Municipal finance (15%), Citywide Infrastructure and Service Delivery (15%), Polluti on management and environmental health (30%)				
		ed under OP 8.50 (En to Crises and Emerge	0	overy) or	OP	No
Financing (In U	SD M	illion)				
Total Project Cos	t:	78.90	Total Bank F	inancing:		65.00
Financing Gap:		0.00				
Financing Sou	rce					Amount
BORROWER/F	BORROWER/RECIPIENT 13.					13.90
International Development Association (IDA) 65				65.00		
Total	Total 78.9					
Environmental B - Partial Assessment						
Category:						
Is this a	No					
Repeater project?						

### 2. Project Development Objective(s)

The Project Development Objective it to increase access to sanitation services in selected areas of Lusaka and strengthen LWSC's capacity to manage sanitation services.

#### 3. Project Description

The project will have the following three components:

Component 1: Sewerage improvements (US\$ 38 million). The objective of this component is to upgrade and expand sewerage collection system in the Ngwerere and Manchinchi sewersheds located within the Lusaka Province and which connects to the Ngwerere sewage ponds before discharging into the tributaries of the Zambezi River. A sequenced (phased) approach will be used in implementing this component starting with upgrading and expanding selected sewage collection system as prioritized in the Lusaka Sanitation Master Plan. These prioritized investments, which will be implemented during the first year of the project implementation phase, were selected based on the following criteria: (i) number of people serviced by the project closing date (access to sanitation); (ii) environmental impact (mitigation of groundwater and surface water pollution); (iii) compliance with social safeguards (resettlement and land acquisition completed); and (iv) frequent flooding/lack of drainage in target areas (makes on-site sanitation solutions impossible).

#### Year 1 investments will include:

- CSE-23: Collection System Expansion Kafue Road, Manchinchi Sewershed. The 112 ha area is located in the south-west of Lusaka and extends from the roundabout at the southern end of Cairo Road to the junction of Kafue Road with Chifundo Road. It is a growing commercial area including a large shopping center in the north, having currently on-site sanitation systems. The geology of the area is unfavorable for on-site solutions with a shallow rock layer, a high groundwater table and the area is prone to flooding. The proposed sewer system will not only serve this industrial area but in future receive sewerage from the Kuomboka sewer service area (SCE-25), being another priority sub-project identified in the Master Plan. Additional individual water supply connections will be provided in parallel to sewerage (but not financed out of the project). The sub-project includes construction of 7.6 km of sewers of dia. 300 to 600 mm and provides 132 commercial enterprises access to sanitation. One collector on each side of the road is planned with the eastern one being able to take up the future flows from Kuomboka. Two pumping stations will be constructed with capacities of 11 l/s and 58 l/s lifting the sewage without the need of force mains. The collected wastewater will discharge into the existing Manchinchi main collector ending at the Manchinchi wastewater treatment plant. The collector (CSU-09) as well as the treatment plant will be upgraded under the EIB project.
- CSE-08: Collection System Expansion Emmasdale and Chaisa, Ngwerere Sewershed. Part of Emmasdale is already sewered and the project will connect the remaining area of 156 ha. The residential and commercial facilities existing in the area are currently served by pit latrines and septic tanks. The area is moderately flood prone and population density is medium. The number of people in the service area is about 12,900 plus 23 commercial connections, and it is assumed, within the life of the project, that half of these households will connect to the sewer. This assumption is based on estimates by LWSC which is based on the enquiries for connections that have been made by residents. The sub-project includes construction of 15.1 km of gravity sewers of dia. 200 to 400, as well as a pumping station for 8 l/s and 10 m plus a 350 m long force main of dia. 200 mm. The collected sewage will be discharged into the Ngwerere West Interceptor which will be upgraded under this project (CSU-05) which is followed by the Ngwerere Downstream collector to be upgraded under CSU-07 which ends at the Ngwerere Sewage Ponds.
- CSU-05: Upgrade of Ngwerere West Interceptor, Ngwerere Sewershed. This existing interceptor starts 700 m west of the Great North Road and runs east till it discharges into the

Ngwerere Downstream collector. It follows a stream which is part of the Bombay Drainage system and runs within the stream in Chaisa and Mutambe (Marapodi) locations. The collector is asbestos cement which is 40 years old and has inadequate capacity. A significant amount of the wastewater collected gets lost, polluting the stream which is a raw water supply source for Chongwe Town. Its intake faces serious problems of algae and aquatic weeds. The project includes a railway crossing and proposes partly realigning and upgrading of 2.8 km of the collector of dia. 600 and 700 mm due to informal settlements.

Year 2 to 5 investments will be network expansion in Chawama, Kuomboka and Garden, upgrade of Ngwerere Downstream Collector and upgrade and extension of Ngwerere Sewage Ponds, to be confirmed during implementation.

Component 2: On-site sanitation (US\$ 13 million). The objective of this component is to develop a comprehensive response to the on-site sanitation challenge facing Lusaka and support on-site sanitation services and systems in priority areas. This component will focus on priority peri-urban areas that will not be sewered in the medium- to long-term due to technical and financial considerations. Investments will include a support fund for on-site sanitation facilities, support to the development of FSM infrastructure and service providers, construction of a number of DEWATS systems and sanitation and hygiene promotion. The areas to be covered under this component will be selected after the completion of the feasibility study.

Component 3: Institutional strengthening (US\$ 9 million). This component will provide technical assistance (TA) to enhance LWSC's capacity to implement the project, operate and maintain the facilities going forward, and to support the reforms needed to deliver sanitation services effectively and efficiently and to respond better to customer demand. This will include: (i) project management support to LWSC to implement the project, (ii) TA to strengthen the capacity of LWSC to provide sanitation services and preparation funds for future investments and equipment for sewer maintenance and labs, and (iii) building capacity for monitoring program implementation and impacts in LWSC, LCC, MCDMCH and MoH.

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

The project's area of influence covers the Manchinchi and Ngwerere sewersheds which are located in the western part of Lusaka city within the Lusaka Province and within the Chongwe River watershed. The Chongwe River is a tributary of the Zambezi River, which has been categorized as an international waterway for purposes of the policy. The Chongwe River is a source of water supply to a small portion of the Zambian population, and one that is at risk of increased pollution from various forms of pollution including fecal discharge, and marks the western boundary of the Lower Zambia National Park before it discharges into the Zambezi. The Chunga River drains into the Kafue River while the Ngwerere River drains into the Chongwe River, both of which eventually drain into the Zambezi River. The surface water quality within the Ngwerere and Chunga River is negatively impacted by the effluent discharges from households. Monitoring by the Zambia Water Resource's Authority indicates that the ground water quality has been negatively affected by fecal waste from on-site sanitation (especially from high density areas as evidenced by fecal coliforms and high nitrates associated with pit latrines within the project area). The project area is low lying and has poor drainage, making some areas, like Kanyama, prone to flooding and therefore not appropriate for on-site generic sanitation interventions

Year 1 investments will include sewer network expansion in Emmasdale and Chaisa neighborhoods

and Kafue Road Interceptor and sewer network upgrade of Ngwerere Western Interceptor. Year 2 to 5 investments will involve expansion of the sewer network in Chawama-Kuomboko and Garden, upgrade of Ngwerere Downstream Collector and upgrade and extension of Ngwerere Sewage Ponds.

The project is also likely to result in minimal involuntary resettlement and disruption of sources of livelihood. Some vendors on road reserve may be forced to relocate to new area, but within the same vicinity. A total of 1 vendor market center with an average of 120 people may be encountered by sewer pipeline per subproject, though the relocation will be temporary. Experiences from other projects in related areas are that there will be pit latrines and wells which may complicate excavation for sewers. Pit latrine contents tend to affect the area around the toilet making excavations around a health risk as often in such areas hand excavation becomes the most appropriate approach due to limited space. Occupational safety and health of the employees working on the sewer system and the community are also important aspects. Negative environment and social impacts may include: (i) water pollution (contamination of both ground and surface waters); (ii) issues relating to informal settlements; (iii) temporary disruption of livelihood activities; (iv) occupational safety and health; and (v) public safety and health.

#### 5. Environmental and Social Safeguards Specialists

Paula F. Lytle (GSURR)

6. Safeguard Policies	Triggered?	Explanation (Optional)
Environmental Assessment OP/BP 4.01	Yes	The project will largely generate positive impacts contributing to better public health through increased access to sanitation facilities, reduced incidences of water borne diseases and awareness on good hygiene practices.  The Project is classified as environment Category B, requiring a partial environmental assessment. The potential negative impacts associated with the project activities will occur during the construction and operational phases of the project. During the construction phase, the likely temporary impacts will largely be associated with civil works emanating from digging of trenches to install the sewer pipes. The anticipated negative impacts will be localized, site-specific and small-scale. These may include erosion and sediment control, generation of construction related solid waste (spoil), dust and noise, limited and reversible vegetation clearing due to trenching and oil spillage from construction equipment and machinery.  During the operational phase, the principal environmental risks are largely related to environmental and human health effects from effluent discharges. Preliminary assessment of the likely impacts of the effluent to the water quality of the Zambezi River indicates long term improvement in the water quality of the effluent discharged into the Zambezi River. Incremental

		wastewater to be collected will be treated in the newly rehabilitated wastewater treatment plants to comply with the national BOD5 standard of 50mg/L before discharging into the Ngwerere River which discharges into the Chongwe River and finally into the Zambezi River.  Given that the nature, scope and location of activities related to on-site sanitation will be determined during implementation of the project, as well as the exact paths for laying the sewer pipes, an Environmental and Social Management Framework (ESMF) was prepared, consulted upon and has been disclosed in-country and at the InfoShop before appraisal. In addition, Environmental and Social Management Plan (ESMP) with appropriate mitigation measures has been prepared for all year 1 investments. Other future sub-projects will be screened, assessed and site-specific environmental assessment carried out during the implementation stage of the project according to the procedures described in the ESMF.
Natural Habitats OP/BP 4.04	No	A review of the critical natural habitat within the Lusaka Province, indicates that all listed significant natural habitats are not located within the footprint (area of influence) of the project, and that the project activities will not result in any significant conversion or degradation of critical natural habitats including wetlands. The project design includes infrastructure design measures to ensure that impacts to these areas are minimized.
Forests OP/BP 4.36	No	The project areas do not include any forested areas.
Pest Management OP 4.09	No	The scope of the project will not involve the use of pesticides.
Physical Cultural Resources OP/BP 4.11	No	The project activities will have no impacts on Physical Cultural Resources. The project areas show that they are already impacted with the construction of existing sewers, road network and residential areas such that the chances of coming across physical cultural resources are remote. However, the project ESMF has incorporated chance find procedures for construction contracts.
Indigenous Peoples OP/ BP 4.10	No	There are no Indigenous Peoples in the project area.
Involuntary Resettlement OP/BP 4.12	Yes	The project areas are densely populated, possibly including informal settlements, existing infrastructure like tarred roads, vendor markets, electricity and communication network. The project is expected to disturb settlements, requiring temporary or permanent

		resettlement, requiring land acquisition, and is likely to disrupt livelihood activities and needs to coexist with existing infrastructure. A Resettlement Policy Framework has been prepared, consulted upon and will be publicly disclosed in Zambia and in the Bank InfoShop. A Resettlement Action Plan was prepared for two sections of the year 1 investments and has been disclosed in Zambia and the Bank's Infoshop. One of the year 1 investments has not yet been finalized in terms of design details; when finalized, an abbreviated RAP will be prepared for that section. Preliminary possible impacts have been identified. Future subprojects including year 2-5 investments will be screened, assessed, consulted upon and disclosed before beginning civil works in the project.
Safety of Dams OP/BP 4.37	No	The project will not support the construction of new dams or entail rehabilitation of existing dams.
Projects on International Waterways OP/BP 7.50	Yes	OP 7.50 is triggered because the project areas lie within the Chongwe River Watershed. The Chongwe River is a tributary of the Zambezi River, which has been categorized as an international waterway for purposes of the policy. The Chongwe River is a source of water supply to a small portion of the Zambian population, and one that is at risk of increased pollution from various forms of pollution including fecal discharge. The Chongwe River marks the western boundary of the Lower Zambia National Park before it discharges into the Zambezi.
		The proposed project will finance: (i) additional 82km of sewer lines and collectors to the existing sewage collection system; (ii) construction of three pumping stations with capacities of 11 l/s, 58l/s, and 8l/s respectively; and (iii) upgrading and expansion of the Ngwerere sewage ponds from a current capacity of 8.3 ML to 16.6 ML. This scenario is considered minor since it does not exceed the design capacity of the upgraded wastewater treatment plant in terms of the volume of the hydraulic load.
		Preliminary assessment of the likely impacts of the effluent to the water quality of the Zambezi River indicates improvement in the water quality of the effluent discharged into the Zambezi River. Incremental wastewater to be collected will be treated in the newly rehabilitated wastewater treatment plants to comply with the national BOD5 standard of 50mg/L before discharging

		into the Ngwerere River which discharges into the Chongwe River and finally into the Zambezi River. Therefore, the exception to the riparian notification applies as the upgraded wastewater treatment plant, receiving less than the design capacity will meet the national BOD5 standard of 50mg/L indicating that the water quality in the Zambezi River will not be adversely affected.  LWSC has sought exemption for the requirement for notification of riparian states prior to appraisal and this
		has been communicated to the RVP for approval.
Projects in Disputed Areas OP/BP 7.60	No	The project location is not within a disputed area.

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

#### A. Summary of Key Safeguard Issues

## 1. Describe any safeguard issues and impacts associated with the proposed project. Identify and describe any potential large scale, significant and/or irreversible impacts:

The project is classified as Category B, and triggers Environmental Assessment (OP 4.01). The construction of (i) additional 82km of sewer lines and collectors to the existing sewage collection system; (ii) construction of three pumping stations with capacities of 11 l/s, 58l/s, and 8l/s respectively; and (iii) upgrading and expansion of the Ngwerere sewage ponds from a current capacity of 8.3 ML to 16.6 ML will not generate any potential large scale, significant and/or irreversible impacts.

The potential negative impacts associated with the project activities will occur during the construction and operational phases of the project. During the construction phase, the likely temporary impacts will largely be associated with civil works emanating from digging of trenches to install the sewer pipes. The anticipated negative impacts will be localized, site-specific and small-scale. These may include erosion and sediment control, generation of construction related solid waste (spoil), dust and noise, limited and reversible vegetation clearing due to trenching and oil spillage from construction equipment and machinery.

During the operational phase, the principal environmental risks are largely related to environmental and human health effects from effluent discharges. Preliminary assessment of the likely impacts of the effluent to the water quality of the Zambezi River indicates long term improvement in the water quality of the effluent discharged into the Zambezi River. Incremental wastewater to be collected will be treated in the newly rehabilitated wastewater treatment plants to comply with the national BOD5 standard of 50mg/L before discharging into the Ngwerere River which discharges into the Chongwe River and finally into the Zambezi River.

The safeguards issues relate to major road cuttings, temporary vendor markets disruptions, coexisting or restoration of infrastructure, temporary disruptions of gate entrances and trenching on road reserve greens. Household trees, gardens and some boundary fences may be affected, especially those that are in encroached areas. In the unforeseen event, there may be some house demolitions in unplanned areas. Road cuttings will have an effect of traffic congestions during traffic diversions. General indications are that there will not be interference with electricity and communication network though about billboards will need temporary relocation and reinstatement afterwards. The negative impacts from this project are temporary, site specific and reversible.

## 2. Describe any potential indirect and/or long term impacts due to anticipated future activities in the project area:

The potential negative long-term impact from sewer network expansion is the increase effluent generation by about 7 mega liters, which will in turn increase surface water pollution load from the sewage treatment systems. This is expected to be counter balanced by the expected positive long-term impact of such sewer network on groundwater quality and public health considering that all waste associated with such discharge was being directed to the groundwater resources through soak away and pit latrines. Considering that it is more difficult to rectify ground water contamination as compared to surface water, the net impact from the sewer network expansion is expected to be positive.

### 3. Describe any project alternatives (if relevant) considered to help avoid or minimize adverse impacts.

For major road cuttings, the alternative is to use underground tunnel across the major roads as compared to road cuttings. Consultation between LWSC and RDA will arrive at the final most sustainable option. Consultation between LWSC, RDA, ZAMTEL and ZESCO will avoid relocation of communication and electricity infrastructure by efficiently using the available road reserve. This will leave LWSC to deal with billboards, which are expected to be a better relocation option. In residential and restricted areas, manual trenching will be employed as compared to mechanical trenching, thereby reducing the impact zone.

## 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.

The project will be implemented by the Lusaka Water and Sanitation Corporation (LWSC). An Environmental and Social Management Framework (ESMF) and an Environmental and Social Management Plan (ESMP) have been prepared, consulted upon and publicly disclosed according to the Zambia EIA regulations and the World Bank's Safeguard policies. The instruments spell out the institutional roles and responsibilities for implementing the mitigation measures described in the ESMP. With regard to resettlement, the project areas are densely populated, possibly including informal settlements, existing infrastructure like tarred roads, vendor markets, electricity and communication network. The project is expected to disturb settlements, requiring temporary or permanent resettlement, requiring land acquisition, and is likely to disrupt livelihood activities and needs to coexist with existing infrastructure. A Resettlement Policy Framework has been prepared, consulted upon and publicly disclosed in Zambia and in the Bank InfoShop. A Resettlement Action Plan was prepared for two sections of the year 1 investments and has been disclosed in Zambia and the Bank's Infoshop. One of the year 1 investments has not yet been finalized in terms of design details; when finalized, an abbreviated RAP will be prepared for that section. Future subprojects including year 2-5 investments will be screened, assessed, consulted upon and disclosed before beginning civil works in the project.LWSC will have the overall responsibility to implement, monitor and report on the provisions contained in the safeguards instruments. The country's legal and institutional framework for environmental and social management is relatively good. The Government has committed itself to support environmental management in the country and has instituted a structure for this purpose. The Zambia Environment Management Agency (ZEMA) is responsible for supervising, managing and monitoring environmental issues in the country. LWSC undertook the preparation of safeguards instruments itself, demonstrating commitment and ownership of the necessary measures for

mitigation. However, LWSC's capacity to handle safeguard issues is generally weak, although commitment to implementing safeguard provisions is notable. The project will seek to address this constrain by making provision in the project to strengthen the safeguard capacity through the recruitment of safeguard specialist. All contractors will be required to follow site-specific management plans agreed and incorporated into all construction contracts. Mitigation for construction works will be guided by method statements for general environmental issues such as sediment and erosion control, noise and duct control, as well as safety and health of workers. During preparation, LWSC was directly responsible for preparation of the abbreviated RAP and the hands-on process has been an initial step in capacity building.

# 5. Identify the key stakeholders and describe the mechanisms for consultation and disclosure on safeguard policies, with an emphasis on potentially affected people.

As part of the project preparation process as well as during the preparation of the ESMF and RPF, stakeholder consultations were carried out using formal and informal channels. The local leadership and community were consulted through meetings at the Donchi Kubeba market and vending areas along the Kafue Road. Community meetings were also held in the Ngwerere area. The Government departments, business representatives, community leaders and NGOs were consulted through a stakeholder meeting at Mulungushi Conference Centre. A targeted Kafue Road business cluster meeting was conducted at the LWSC offices. Newspapers were used to provide information on the project and its components. Focus groups were held with project beneficiaries.

The documents were disclosed in Lusaka in the Times of Zambia on March 26, 2015, and in the Bank's InfoShop on March 27, 2015.

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

Environmental Assessment/Audit/Management Plan	n/Other			
Date of receipt by the Bank	27-Feb-2015			
Date of submission to InfoShop	26-Mar-2015			
For category A projects, date of distributing the Exec Summary of the EA to the Executive Directors	utive 00000000			
"In country" Disclosure				
Zambia	26-Mar-2015			
Comments: Disclosed to public press, published in	Times of Zambia on March 26.			
Resettlement Action Plan/Framework/Policy Process				
Date of receipt by the Bank 27-Feb-2015				
Date of submission to InfoShop 26-Mar-2015				
"In country" Disclosure	,			
Zambia	26-Mar-2015			
Comments: Disclosed to public press, published in Times of Zambia on March 26.				
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.				
If in-country disclosure of any of the above documents is not expected, please explain why:				
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### C. Compliance Monitoring Indicators at the Corporate Level

OP/BP/GP 4.01 - Environment Assessment					
Does the project require a stand-alone EA (including EMP) report?	Yes [×]	No [	]	NA [	]
If yes, then did the Regional Environment Unit or Practice Manager (PM) review and approve the EA report?	Yes [×]	No [		NA [	]
Are the cost and the accountabilities for the EMP incorporated in the credit/loan?	Yes [×]	No [	]	NA [	]
OP/BP 4.12 - Involuntary Resettlement					
Has a resettlement plan/abbreviated plan/policy framework/ process framework (as appropriate) been prepared?	Yes [×]	No [	]	NA [	]
If yes, then did the Regional unit responsible for safeguards or Practice Manager review the plan?	Yes [×]	No [	]	NA [	]
OP 7.50 - Projects on International Waterways					
Have the other riparians been notified of the project?	Yes [ ]	No [	]	NA[	× ]
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 [×]	No [	]	NA [	]
Has the RVP approved such an exception?	Yes [×]	No [	]	NA [	]
The World Bank Policy on Disclosure of Information					
Have relevant safeguard policies documents been sent to the World Bank's Infoshop?	Yes [×]	No [	]	NA [	]
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 [×]	No [	]	NA [	]
All Safeguard Policies					
Have satisfactory calendar, budget and clear institutional responsibilities been prepared for the implementation of measures related to safeguard policies?	Yes [×]	No [	]	NA [	]
Have costs related to safeguard policy measures been included in the project cost?	Yes [×]	No [	]	NA [	]
Does the Monitoring and Evaluation system of the project include the monitoring of safeguard impacts and measures related to safeguard policies?	Yes [×]	No [	]	NA [	]
Have satisfactory implementation arrangements been agreed with the borrower and the same been adequately reflected in the project legal documents?	Yes [×]	No [	]	NA [	]

### III. APPROVALS

Task Team Leader(s):	Name: Michael John Webster	
Approved By		
Safeguards Advisor:	Name: Alexandra C. Bezeredi (SA)	Date: 06-Apr-2015

Practice Manager/	Name: Jonathan S. Kamkwalala (PMGR)	Date: 08-Apr-2015
Manager:		