

Lusaka West Water Supply project

Achieving water security in Lusaka West
through the power of partnerships

Lusaka is facing the challenge of water insecurity

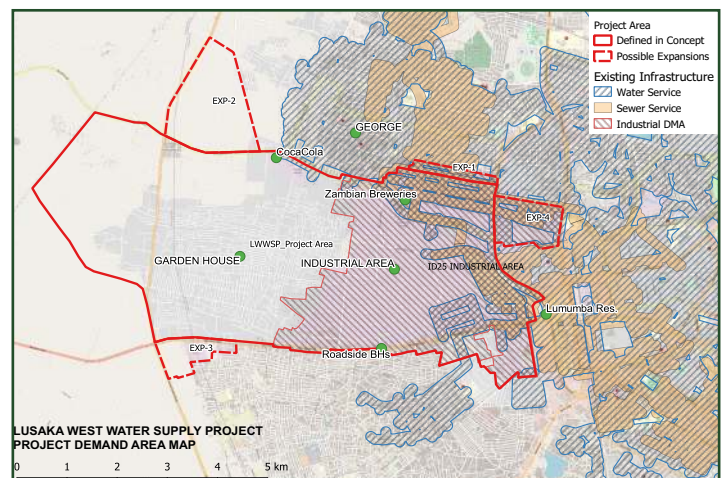
Lusaka's population of almost 2.8 million people is growing at approximately 5% per annum. This is increasing demand for goods, services and labour for the city's manufacturers. However, in Lusaka, like in many rapidly growing cities in Southern Africa, growth in population and manufacturing industries has not been matched by the development of water infrastructure. The expanding gap between demand for water and water supply is a challenge that the Lusaka Water Supply and Sanitation Company (LWSC) aims to address.

Urban economic growth and job creation rely on a safe, secure, and sustainable water supply. Threats to water security in Lusaka include population growth, land use changes, resource depletion, risk of flooding, and the contamination of groundwater from waste and pollutants. These threats are exacerbated by weak institutions, challenges with stakeholder coordination, and constraints in access to financing for infrastructure development. What's ultimately at stake is people's health and the viability of businesses in Lusaka. These challenges are often fall disproportionately on those members of the community that are the most vulnerable or marginalised.

Lusaka West Water Supply Project

Lusaka West is home to both industrial and residential consumers. It is an area that faces major challenges to water security, yet it has the potential to sustainably increase the amount of water taken from ground sources - a process called groundwater abstraction - to help meet current and future demand. Meeting the demand for water in Lusaka West requires a sound solution that meets the needs and rights of the community and commercial water users in a way that considers social and environmental factors and can attract financing.

LWSC aims to deliver safe water to communities and businesses in Lusaka West through an ambitious project to extract water from new boreholes. This initiative, called the Lusaka West Water Supply Project, is an example of successful collaboration among public sector actors, local businesses, civil society, and international development partners to co-develop a solution to the water security challenge in Lusaka West.



The Lusaka West Water Supply project idea grew from a 2016 study by Zambian Breweries, which raised concerns about the long-term sustainability of their operations given the water constraints in the area. It was clear that addressing a challenge of this size and complexity would require a collective effort. Zambian Breweries reached out to Lusaka Water Security Initiative (LuWSI), to develop the idea further (see Box 1). LuWSI played a role in bringing together the different stakeholders with an interest in ensuring a clean, reliable and sustainable water for Lusaka West. LuWSI continues to coordinate stakeholders involved the project.

Lusaka Water Security Initiative (LuWSI) is a multi-stakeholder collaboration system bringing together public sector, private sector, civil society, and international actors inspired by and working towards the vision of water security for the residents and businesses of Lusaka.

Find out more:

<https://www.luws.org/>

LWSC Engineer Kabisa Mwiyaluka, Water Security Project Coordinator, highlighted: “The project concept grew from the challenges that businesses in Lusaka West were facing in accessing water, and from the health challenges facing the communities living there. It offers an opportunity to improve water supply and to protect the areas surrounding the boreholes from contamination. Extracting groundwater is much more energy efficient than the alternative of pumping it from the Kafue River, meaning this is also a climate positive project.”

Engaging the community in Lusaka West

The Lusaka West Water Supply project has the potential to improve water supply for up to 300,000 residents. There is variation in the way that households presently access water. Some residents have household connections to water services from LWSC, others through private boreholes. Some residential areas do not presently have the infrastructure to deliver water supply services to houses, with residents accessing water from community kiosks. A sustainable solution to water security must consider the different needs of the community, particularly those of low-income households.

Community engagement is central to ensuring that water supply meets the needs of different community members. Such efforts are already being undertaken by Lusaka City Council, with support from LuWSI and the German Development Agency GIZ, as part of Zambia’s efforts to decentralise water and wastewater management. The Lusaka West Water Supply project will continue to engage with communities on water, sanitation and hygiene (WASH) practices that are important both to stop the spread of Covid-19 and of waterborne diseases like cholera.

Pioneering a sustainable water supply system

A sustainable water supply solution to addressing the challenges and needs in Lusaka West must identify borehole locations where there is a sustainable supply of groundwater. Two underground sources of water have been identified, following studies carried out by the German Geological Survey (BGR), that have potential for productive and sustainable boreholes. To ensure the sustainability of the water sources, an important priority of the Lusaka West Water Supply Project will be the protection of the area around the boreholes. This 'catchment area' will be protected from contamination risks associated with urban development, and potential soil contamination from fuel stations and pit latrines.

Putting the pieces together

In July 2020, CIGZambia and LWSC designed the scope of the engineering prefeasibility study and preparatory work (see Box 2). A Lusaka-based engineering team from GOPA Infra GmbH is implementing the study, which will present an evidence-based picture of the optimal social and environmental solution for Lusaka West, taking into account the perspectives of key institutional and community stakeholders. The study will be used to inform potential public and private investors about the project design requirements, costs and expected return on investment. The prefeasibility study team will work in collaboration with the USAID-funded WASH-FIN project, which is supporting LWSC in designing viable and sustainable financing solutions to enable the full engineering feasibility study and implementation of the project.

What is a prefeasibility study?

It is a study that involves assessing technical, social and economic factors to ensure that the project is viable and can deliver positive benefits. This includes:

- Understanding the current and future water needs of communities and businesses;
- Assessing the physical environment and proposing sustainable options for drilling boreholes, storing and transporting the water; and
- Considering potential impacts in the areas around the boreholes and at the source of the groundwater; and ensuring they are protected from future urban development or contamination.



PROJECT PHASES:

PHASE 1 Prefeasibility and Preparatory Study

(November 2020 to August 2021)

The Lusaka-based engineering consultancy GOPA Infra GmbH is carrying out a Prefeasibility and Preparatory Study to identify a project design that is sustainable, inclusive and can attract investment. During this time LWSC will work with potential investors to ensure that financing is available for eventual implementation.

PHASE 2 Full Engineering Feasibility Study

September 2021 - September 2022
(proposed)

A full engineering feasibility study will take place along with an Environmental and Social Impact Assessment, conducted in line with Zambia Environmental Management Agency requirements to maximise project benefits and mitigate risk.

PHASE 3 Project Implementation

2023 (pending funding)

LWSC will implement the LWWSP Project with a developer. This will be accompanied by work to protect water sources (wellfields) from contamination, to withdraw and treat groundwater in a sustainable way, and to support community water, sanitation and hygiene (WASH) best practices.

Water for the future

The prefeasibility studies will support the Lusaka West Water Supply project in attracting investments to ensure full implementation, and will result in new jobs, healthier communities and improved protection of water resources. Through effective collaboration across public and private sectors, the project can bring the best outcomes for Lusaka, as noted by Engineer Mwiyaluka:

“By bringing a new, safe and reliable water source into Lusaka West, this project will improve water security and climate resilience for the whole city. It is a very strategic project and essential to the long-term sustainability of health and prosperity in our city.”

About CIGZambia: Cities and Infrastructure for Growth Zambia is a flexible facility that provides high-quality technical assistance to government and the private sector to develop, finance and implement innovative urban infrastructure projects. CIGZambia assists its clients to build urban economic resilience and social inclusion into all projects that we support. CIGZambia is funded by the UK Foreign, Commonwealth and Development Office and is implemented by Cowater International.