



COMPLETION REPORT

GLEN-VIEW CHOLERA INTERVENTION

Name of Project	Glen View Sanitation Project Report
Sector	Water and Sanitation
Allocated Funds	US\$146 ,443.99
Sponsor	Infrastructure Development Bank of Zimbabwe
Implementing Partners	Harare City Council (HCC)
Type of project	Rehabilitation and expansion of the town's existing water treatment and distribution infrastructure.
Objectives	Upgrading of Sewerage infrastructure to Glen View township, Harare.
Project Description and Components	<ul style="list-style-type: none"> Upgrading of burst out old water reticulation network replacement and rerouting of approximately 1200 metres by 250mm diameter non-functional sewer reticulation lines in Glenview
Location	Glen View, Harare

Background

As part of the IDBZ's mandate and mid-term strategy (2016-2020) focus on development of infrastructure in various sectors of the economy which includes housing, energy, transport, water & sanitation and ICT sectors, the Bank, in direct response to the Cholera outbreak, partnered the City of Harare in providing necessary emergency interventions on the core infrastructure in the most vulnerable areas and nodes.

To kick-start these measures, the Bank, in partnership with the City of Harare; commenced its first localised intervention in the Glenview Suburb which was the epicentre of a recent cholera outbreak. The on-going intervention includes;

- Replacement of the sewer system by laying new sewer lines running parallel to the over-loaded pipes on the main trunk-lines servicing Glenview;
- Rehabilitating the affected sections of the local infrastructure through placement of a larger diameter pipes;
- Complete replacement of dysfunctional manholes and other attendant connections.

This intervention was made possible through a direct contribution of US\$146,443.99 for the availing of earthmoving equipment & materials by the Bank. In the arrangement, the City of Harare was to provide some of the materials and labour requirement. The implementation and supervision of the work was to be the sole responsibility of the City of Harare who have the requisite specifications for the Civil works and laying pattern for the pipes.

The Bank proceeded to hire an Excavator that was initially expected to complete the works in a period of three (3) weeks through a fixed-sum contract and based on indicative trenching depths advised by City of Harare. Other ancillary items e.g. provision of safety signage, clearance of services and pipelaying were to be done by the COH.

The project structure thus limited the overall control of the Bank in so far as the effective co-ordination of the project was concerned thereby resulting in unsatisfactory progress being achieved on site and the project had to surpass the original implementation time estimated at project commencement.

Impacts/Benefits of the Project

- Reduced incidences of Cholera outbreaks and other water-borne diseases
- Minimisation of pollution to waterways and underground reservoirs
- Environmental improvement due to proper and recommended disposal of wastewater.
- Value appreciation of private owned property in the area.

Benefits to the IDBZ

- Alignment with mandate on the intervention
- Corporate social responsibility and brand visibility
- Building collaborative relations with host local authority i.e. City of Harare.

Completed Works

Excavation – 1200m

Pipelaying – 1200m

Backfilling – 1200m

Challenges faced

Below the report flags major issues that cumulatively compounded to slow project progress that was witnessed.

- The trenches were very deep on some segments of the selected route meaning progress of the project was slower than anticipated. The depth was between 4.5m to 5m and the tendered depth were 2m to 3.3m. The volume of the excavated material doubled.
- The project team was working close to private property, so it was difficult for the excavators to manoeuvre freely which also slowed down progress.
- Presence of undocumented ZESA underground cables also presented a safety challenge to the team.
- Working through low overhead ZESA power lines had also slowed down progress because the project team was forced to work 5 hours a day instead of the expected 8 hours to allow for the approved and scheduled power cuts from ZESA.
- The soil was unstable, and the groundwater table was high which made the working conditions unsafe and difficult in the deep trenches. The trenches were more often collapsing due to the bad soil mechanics of the area. Safety precautions had to be undertaken.
- The new pipe was being laid parallel to an existing sealed road and it was difficult to excavate without damaging the existing infrastructure.
- Fuel shortages experienced were constantly delaying progress and significant working days lost as a result of this.
- The annual shut down in December to January also affected progress and when work was supposed to resume, strikes kicked in and it was mostly concentrated in the high-density areas. The project therefore suffered many problems and interruptions.
- Rains also delayed progress as trenches were sometimes affected by the running water or collapsing and therefore requiring re-excavations.

Interventions

- Bank engineers and HCC engineers quickly redesigned a new line with a sufficient load carrying capacity parallel to the existing road.
- The Bank mobilised plant to carry-out the works and provided all the material requested to ensure the project was a success. HCC in turn supplied the labour requirements and assisted in the project management. Despite the challenges faced in execution, the quality of the work done shows exemplary workman-ship guaranteeing durability.
- To mitigate against the unexpected occurrence of abnormal excavation depths encountered, DK Construction was requested to provide heavier machinery and the Contractor complied despite the equipment shortages prevailing. Additional plant was mobilised per request to deal with excess ground water that was slowing down progress.

Project Cost and Expenditure

<u>Project Budget</u>	
Approved	\$146,298.59
<u>Payments</u>	
Equipment Hire – (DK)*	\$62,619.80
Pipes -	\$16,052.39
Cement, Sand and quarry -	\$4,094.00
Safety Net -	\$366.00
Sub-Total	\$60,063.19
Total	<u>\$83,132.19</u>
Budget Balance Outstanding	\$63,166.40

Lessons Learnt

- Emergency works by their nature give little time for proper feasibility and relies more on the desktop feasibility and sometimes resources must be deployed first and accounted for when the problem has been solved. Procurement processes should therefore align to the requirement of such emergencies in terms of procedures, documentation requirements and turn-around times.
- Delays caused by limited work-time because of ZESA and related counter-party requirements should be fully assessed prior to commencing works of a similar nature in the future. In this case, an average daily down-time of four (4) hours was as a result of compliance with strict ZESA requirements in terms of activation of their supply lines.
- The Bank should in future get the lead project management role on similar interventions. The Municipality at often-times seemed overwhelmed when managing the day to day activities. Their real capacity to deal with counter-party obligations assigned to them should be evaluated upfront and accurately factored in.



DRAIN FILLED WITH RAW



RAW SEWER FLOWING



WOMAN FETCHING
WATER FROM A WELL
CLOSE TO RAW SEWER



Dry Collapsible Material



Manhole being set



Removing collapsed material



Ground water filled the trenches



Ground water filled the trenches



Connection Point



Road needs rehabilitation



Road needs clearing and rehabilitation