



April 2021

KWIA & WASPA Project Concept Note

Enhanced Water Supplies in High Density, Low Income Areas Drill and Equip Boreholes with Solar Power and Pre-Paid Sales Kiosks in Low-Income Urban Areas

These are extraordinary times; to date in Kenya officially there have been 2,622 deaths from Covid 19, and thus far some 157,000 cases have been identified. The pandemic status is embedded, and the country is enduring a “third wave”, with possible associated economic/social crises yet to come. With this critical national situation in mind, this initiative is to improve access to water in urban poor areas and should be fast-tracked. This PCN is presented for funding.

One of the key preventative measures to stop the virus, is to wash hands, both thoroughly and frequently. Usually, this is readily achieved, but not so in high-density, low-income settlements within urban areas. Here water has high value and may be purchased for as much as 20/- per 20litres, equivalent to 1,000/- per cum, whereas typically the economic cost of water is 100/- per cum, ie 2/- per 20litres. Often within a few hundred meters from these water scarce areas, there can be households connected to mains water, paying 200/- per month for water supplied. Historically in poor urban areas, it has been challenging for Water Service Providers (WSP) to establish robust water distribution and people there are thus further exposed and more vulnerable to the risks of the Corona Virus.

Under this project, water access will be improved by the drilling of boreholes, suitably equipped to supply water via prepaid meters so that there is cost recovery. The Water Service Providers Association (WASPA) represent the interests of all Water Service Providers; the Kenya Water Industry Association (KWIA) embodies private sector industries of the water sector, including hydrogeologists, drillers, pump/pipe manufacturers, suppliers, and contractors. KWIA and WASPA are agreed in principle to collaborate in a partnership to undertake physical interventions to significantly increase supply and to lower the costs of water in slum areas. It is proposed that a project management cell (PMC) is established for actual implementation, overseen by a KWIA/WASPA Board. The PMC will plan, prepare and oversee the activities of KWIA members to undertake these emergency works. The project will be carried out by KWIA members without competitive bidding, to economic set rates developed and established by the PMC and agreed by the Board, such that implementation is done wholly to best practice. KWIA has the capacity within its membership to undertake such a programme of works. It is anticipated that that manufacturers and suppliers, who are KWIA members, will offer their products to the project at



discounted rates, as Corporate Social Responsibility (CSR). The initial target is for some 50 boreholes/installations.

It is envisaged that with, advice/input from government and water sector participants, WASPA will assist to select say 5-10 municipalities with needy low income populations. Consultations will then be made individually with the respective WSP to establish populations and identify suitable locations for hydrogeological and social survey for drilling new sources. The respective WSP will manage pumping operations including the prepaid meters; the WSP will be eventual owners of the as-built assets and will benefit from the income. There is also provision to inspect, refurbish, test pump and equip unused BHs. WASPA with respective WSP, will develop and disseminate information on Hygiene, Health and Water Use with specific reference to Covid-19.

Following survey and receipt of WRA groundwater authorization, the borehole will be drilled to say 200m on average; each installation will comply with standardized design. A production pump of say 5.5kW is anticipated and budgeted for, along with option for solar power if there is adequate space for the solar stand/array. The water will be delivered to two elevated 13,000litre tanks if the pump is solarized, or a single 13,000litre tank if the pump is connected to mains power alone. The technology of pre-paid water metering is now robust and such a delivery system will be installed as a sales point for 20litre and bulk sales can also be established. The groundwater may not be potable quality. If/as necessary a simple gravity fluoride filter can be installed; if other chemical parameters are beyond potable limits, then users are clearly informed.

It is planned to work in say 10 municipalities and undertake an average of five projects per centre and thus say 50 installations will be newly established. The following Project Budget is estimated:

For One Installation:

Part 0	Hydrogeological Survey and Preliminaries	\$2,500
Part 1	Borehole Drilling and Construction to 200m	\$22,000
Part 2	Production Pump say 5.5kW installation with solar power	\$22,000
Part 3	Water Infrastructure: tank-stand, storage, pre-paid kiosk	\$20,000
	Add 5% Contingency	\$3,500
	Installation Total	\$70,000

Total for 50 BH Installations: \$3,500,000

Part 1A	Allow old BH inspection, cleaning, test pump, refurb: say 10BHs	\$200,000
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For Overheads (20%):

Add 10% Project Management Cell	\$370,000
Add 5% WASPA/WSP Software & Costs	\$185,000
Add 5% for KWIA/WASPA oversight	\$185,000

Overhead Total **\$740,000**

GRAND TOTAL: \$4,440,000