

## 3 MG Underground Reservoir-cum-Boosting Station at Metiabruz, area with Kolkata Municipal Area.

### **Executive Summary**

Southern Fringe of Kolkata, recently been added as area under Kolkata Municipal Corporation (KMC), is facing serious problem of Water Supply. The population of the region was 1,85,755 as per 2001 Census and expected to increase to 2,71,772 by 2003.

The water provided to the project influence area (consisting of ward no. 137 to 141 of Borough XV to KMC) is neither sufficient quantity nor attain adequate pressure as the supply station, Garden Reach Water Works (GRWW) is at a distance from the area.

To combat such situation, the project envisages installing a 3 .Million Gallon Capacity Under Ground Reservoir (UGR) with a Booster Pump House wherein suitable horizontal dry pit pumps along with Motors will be installed.

After completion of the project, the residents of ward no. 137 to 141 of KMC will receive treated surface water @135 litre/person/day at a requisite pressure, and thereby the dependency on hand tube wells will be eliminated and thereby the depletion of ground water table can be arrested.

The cost of the project is estimated to be Rs. 1141 lakhs -.with implementation period of 18 months.

After completion, the project will be handed over to Kolkata Municipal Corporation for its Operation and Maintenance.

**CPHEEO**  
**appraisal Note for Consideration of Projects under JNNURM by Central Sanctioning &**  
**Monitoring Committee of M/o UD**  
**(Water Supply)**

Proposal	: For 3.0 MG under ground water reservoir-cum-booster pumping station at Gandhi Maidan, Akra under Kolkata Metropolitan Development Authority (KMDA), Kolkata.
Name of State / UT	: West Bengal
Name of City	: Kolkata
Actives	: To provide, adequate and quality water supply to the population in the project area and to reduce dependency on ground water.
Whether CDP is prepared background	: Not furnished to CPHEEO : The Borough No. 15 of Kolkata Municipal Corporation does not have adequate and safe water supply. The area is facing water supply problem due to their high dependence on groundwater sources. With depletion of ground water, it has become a scarce commodity for quality of life of residents.
Present Status	: Water supply in Borough No. XV, the added area of Kolkata Municipal Corporation, at present is not adequate as it is drawn from deep tube wells, which are depleting at a fast rate. The quality of water supply is also not satisfactory. Thus, there is need to develop water supply based on surface water.
Water availability	:
• Availability of source	: Treated surface water from Garden Reach Water Treatment Plant, Kolkata
• Total (MLD)	: 27 MLD allocated
• Per capita (Ipcd)	: 135 plus 15% losses
• UFW	: 37%
Need of the Project	: The project area was originally under Garden Reach
Population	:
As per 2001 Census	: 185755
Base year (2009)	: 210304
Design year 2023	: 271772
Base year	: 18.17
Design year 2023	: 23.5
Proposed Source	:
Surface	: Treated surface water from Garden Reach Water
Fund	: Nil

Project Components	:	<ul style="list-style-type: none"> <li>• 3.0 MG capacity UGR with Booster pump house</li> <li>• Pumping Machinery</li> <li>• Related civil, electrical works</li> <li>• Supply &amp; installation of Electro-Chlorination System</li> </ul>
Estimated cost Proposed	:	Rs.11.65 crore
Period of Implementation	:	18 months
Funding Pattern	:	Gol 35% (JNNURM scheme) GoWB 65% (Budgetary support) ULB - Nil
Financial Pattern (lakhs)	:	FY 06-07 - 350.89 FY 07-08 - 790.40
Implementing Agency	:	Kolkata Metropolitan Water & Sanitation Authority.
Annual O&M Expenditure Rs. lakh)	:	
Existing	:	5.20
Proposed (year 2008)	:	60.25
Agency Responsible for O & M	:	Kolkata Municipal Corporation
Tariff (Rs./kl)	:	
Existing	:	3.00
Proposed (year 2009)	:	3.50
Revenue generation Rs. lakh)	:	
Existing	:	2.25
Proposed (year 2009)	:	87.00
Estimated cost for consideration & approval	:	Rs. 11.41 crores

### CEO's Technical Comments:

The proposal is for providing treated water supply based on surface water source, to the population in the Borough No. XV, added area of Kolkata Municipal Corporation. This area presently has ground water based water supply, which is meagre and plagued with quality problems related to Iron & Arsenic.

Population projections of the project areas have been furnished and found to order. Similarly, water demand projections have been made in the revised

"PR.

...& raw water source is River Hooghly (a branch of River Ganga), which is a perennial source.

...vv water quality analysis reports have been furnished with the revised DPR.

...draulic design of the under ground reservoir and drawings of the proposal ...vo been furnished, which are in order.

...rk;n of pumping machinery has been done as per the guidelines laid down in ... - ;■■ manual on Water Supply & Treatment and is in order.

HU31 O&M estimate of the proposed scheme has been framed and appended /o; the revised DPR.

x DPR also furnishes the proposal for water tariff.

estimates of all the components of the project, based on current schedule of rates (SOR) applicable in the state have been furnished with DPR. Items not covered under SOR have been estimated at market rates.

The revised DPR for 3.0 MGD under ground water reservoir-cum-booster pumping station at Gandhi Maidan, Akra under Kolkata Metropolitan Development Authority (KMDA), and allied works has been examined and financially approved at a cost of Rs.11.41 crore (against the proposed cost of 11.65 crore) for execution, subject to the condition that: -

All works proposed in the DPR shall be carried out as per the detailed standard specifications and the relevant code of practice published by the Bureau of Indian Standards.

The pumping machinery and electrical equipment shall conform to the relevant Indian Standards published by the Bureau of Indian Standards.

The execution and O&M of the project shall be carried out as per the comments appended.

No change in the scope of work shall be effected without prior approval of CPHEEO.

Appendix  
Akra

### **Technical comments for execution and O&M of water supply projects:**

Metering of all the service connections should be done to ensure the recovery of user charges.

Leak detection & control measures should be taken up in the projects area to reduce leakage, which has been estimated as 37% as per World Bank study, to enable the replacement of worn out pipes, if any, and reduce water & energy losses.

Bulk meters should be installed in all the transmission mains to monitor the quantity of water produced & introduced into the distribution system.

Water samples should be picked up after each unit operation at WTP to ensure water of desired quality.

The execution of water treatment plants should be done on turn key basis and agency should be asked to operate & maintain the plant for a minimum period of at least one year from the date of commissioning and train the staff of local body who are likely to operate & maintain the plant later.

Water quality surveillance mechanism should be put in place by the local body and regular water samples should be procured from consumer end and strategic locations to ensure quality of water being supplied to consumer.

Pumping equipment & machinery should be procured directly from the manufacturers to ensure quality of product and manufacturer may be asked to install the pumps.

For the water treatment plants, care should be taken at every unit operation in order to produce treated water of desired quality and also to reduce the O&M cost.