

**28TH DECEMBER 1996**

**FOUNDATION STONE LAYING  
BY  
HONB'LE MINISTER  
SRI BUDDHADEB BHATTACHARYYA**

**60 MGD TREATMENT PLANT  
GARDEN REACH PHASE-II**



**ANOTHER MILESTONE TOWARDS PROVIDING SAFE WATER TO MILLIONS BY THE YEAR 2000**

## INTRODUCTION

The project has been prepared for augmenting the existing 60 MGD Plant at Garden Reach, Commissioned in 1982, by **another 60 MGD Plant** for meeting the potable water demand for a population of 30.43 lakhs (year 2015) for the area extending from Baghajatin area of CMC in the East to Pujali in the West; Garden Reach unit of CMC in the North to Maheshtala Municipality and South suburban unit of CMC in the South. The existing plant supplies water to a population of 12.71 lakhs (1991 census) spread over South Calcutta, South Suburban and Garden Reach units of CMC together with Budge Budge municipal area at 140 litre (30 gal.) per capita per day. The same rate shall be maintained in 2015 with the exception that Calcutta city shall receive at per capita supply rate of 180 lpcd.

## THE PROJECT

The project has been included in the Megacity Programme on 02.12.95 where the amount cleared was Rs. 59.07 crore including loan repayment interest component. It has been entrusted to *Calcutta Metropolitan Water and Sanitation Authority* for implementation.

*The project comprises of :*

- ▶ Construction of a 12000 cu. meter per hour capacity water Treatment Plant at Garden Reach,
- ▶ Construction of an RCC Intake Jetty on the River Hooghly at Surinam Ghat,
- ▶ Construction of a Raw Water Pump House near the Intake Jetty,
- ▶ Laying of about 4 KM. Rising main,
- ▶ Construction of a Clear Water Pumping Station within the Treatment Plant Complex,
- ▶ Construction of Administrative Building and Staff Quarters.

## Treatment Plant

Construction of the Treatment Plant is the largest component which includes **Flash mixers, Chemical house, 4 Clarifiers with mechanical flocculators, Filter house** for 16 filter beds including recirculation & back washing arrangements and **Chlorination plant** for pre & post chlorination. The work has already been allotted on turnkey basis at a cost of Rs. 18.06 crore with working time of 30 months.



## Intake Jetty on Hooghly River

In the project report there was a proposal to utilise the existing Mild Steel Intake Jetty for the Suction Mains of GRWW phase-II. But hydraulically the existing jetty has been found inadequate. To avoid spiraling maintenance cost of the M.S. Jetty, it has been decided to construct an **R.C.C. Intake Jetty**. The proposed Intake Jetty will be supported on RCC bored piles. The size of the jetty will be about 25 meter wide and 50 meter long with capacity to hold 5 suction mains (three for the proposed plant and two for the existing plant).

## Raw Water Pumping Station

Raw Water Pumping Station for the proposed Treatment Plant will be taken up after the level of suction main is finalised in the Intake Jetty. Soil testing has been completed. The proposed RWPS will be constructed adjacent to the existing one. The proposed station shall have 5 pumps, three running and two acting as stand by, in keeping with the latest CPHEEO recommendations. Each pump would have a pumping capacity of **6000 cu. meter per hour**. The excess water pumped will be delivered to the existing Treatment Plant to supplement its capacity.

## Rising Main

In the project report there was a proposal to lay 1600 mm dia M.S. rising main. It has been considered necessary to supplement the inflow to the existing treatment plant and an additional 20 mgd water will have to be brought to the plant through the new rising main from the proposed RWPS. If M.S. pipes are chosen, the diameter will be about 2000 mm. Moreover M.S. pipes are much more susceptible to corrosion in the cinder filled land which form the bulk of the alignment. To overcome this problem, it has been decided to utilise **Fibre Glass Reinforced plastic pipes** of 1600 mm dia. The lesser dia pipe will suffice in view of its lower co-efficient of friction than M.S., C.I or P.S.C.



## Clear Water Pumping Station

Construction of Clear Water Pumping station will be taken up by inviting turnkey tenders. Soil investigation work have already been completed.

## BENEFITS

With the completion of the Project, apart from serving a larger area, 183 sq. km against 98 sq. km at present, safe surface water shall be ensured, bringing down dependance on unprotected sources, and the incidence of water-brone diseases, thereby increasing economic productivity. Bulk industrial demand shall be met. Adequate water supply for fire fighting purposes shall also be assured. Urbanisation stalled for want of sufficient potable water should no longer pose an impediment within the command area leading to planned growth and healthy spread of population density. The concerned local bodies shall also benefit financially as providing sufficient quantity of safe drinking water would entitle them to levy higher taxes. Among the indirect benefits, with clear surface water being available, ground water sources, presently being exploited beyond their yield capacity would be relieved substantially, offering them an opportunity to recharge themselves. Full benefits of the project will be achieved when transmission lines, under ground reservoirs and booster stations become functional.

**The Project is likely to be completed by 2000 AD.**

## Major surface water treatment plants within Calcutta Metropolitan Area

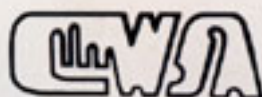
More than 10 million people within the Calcutta Metropolitan area are already served with potable water with treated surface water as its source. The major treatment plants are listed below :

Bank	Location : of the plant	Rated capacity (MLD)	Areas Served	Commissioned on :
East	Palta (3)	727*	Calcutta Municipal Corpn. with the exclusion of South Suburban & Garden Reach units of CMC. (Through Tallah, Subodh Mullick Square & Auckland Square Pumping Stations).	1869 (27 MLD) 1911 (209 MLD) Capacity increased thereafter in stages.
East	Baranagar Kamarhati (2)	136	Baranagar, Kamarhati, North Dum Dum, Panihati, Khardaha, Titagarh.	March, 1993
East	Garden Reach (1)	272 †	Calcutta South, South Suburban & Garden Reach Units of CMC and Budge Budge Municipal area.	December, 1982
West	Howrah (4)	182	Howrah Municipal Corporation area.	April, 1984
West	Serampore (1)	91	Bhadreswar, Champdani, Baidyabati, Serampore, Rishra, Konnagar, Uttarpara-Kotrung.	December, 1994

Operation and maintenance by : (1) CMWSA, (2) CMDA, (3) CMC, (4) HMC

\* Capacity being augmented

† More millions are on the way of being served through the plant at Garden Reach (Phase II), foundation stone for which is being laid today the 28th. December, 1996.



Calcutta Metropolitan  
Water & Sanitation Authority