

# CHEEO

Appraisal Note to the Central Sanctioning & Monitoring Committee, MoUD, For the  
consideration of projects under JNNURM.  
(Storm Water Drainage System)

1. Proposal : Trans-municipal drainage scheme for removal of drainage congestion within Khardah, Panihati, North Dum Dum, Dum Dum and South Dum Dum Municipal areas under KMDA.
1. Name of State / UT : West Bengal
1. Name of City : Kolkata
4. Objectives : To clear accumulated storm water from low-lying areas of five Municipalities located on the north-west of Kolkata city and prevent water logging of areas during rains by re-sectioning / lining of Khardah Khal, Udaipur Khal, Sonai Khal, Nadikul Khal, Sultanpur Khal, Birati LL2K Khal along with other allied works.
5. Whether CDC is prepared : Not furnished to CPHEEO
6. Background : During monsoon, major parts of the said municipal towns get inundated following one or two heavy showers. Factors that have contributed to such water logging are the inadequate capacity of lateral drains & outfall nikashi khals / nullahs, namely, Khardah Khal, Udaipur Khal, Sonai Khal, Nadikul Khal, Sultanpur Khal, Birati LL2K Khal, most of which have unlined sections with kaccha banks and are heavily silted.  
Therefore KMDA has identified five critical municipal towns located in north western fringes of Kolkata city i.e. Khardah, Panihati, North Dum Dum, Dum Dum and South Dum Dum and proposed the Trans-municipal Storm water drainage Scheme to ensure removal of drainage congestion. With the implementation of the scheme, low laying areas of these municipalities will be rid of the waterlogged situation.
7. Present Status : Basic amenities available in these areas are inadequate. Unplanned drainage network together with unlined and silted nikashi khals / nullah with inadequate carrying capacity of laterals giving rise to water logging problems in the project area even after one or two showers during monsoon.  
All the 6 drains/khals are kucha drains without lining and proper bed slope which also leads to the back flows in the project area. Most of the khals are heavily silted thus reducing the drain sections and unable to accommodate storm water.

8. Need of the Project : To improve drainage system in the water logged & low-lying areas by re-designing of existing drains as well as providing new drains, re-sectioning / lining of nikashi nullahs / khals Which flow through aforesaid municipalities and to prevent flooding /water logging of the project areas.
9. Population As per 2001 census : 9.58.352
10. Area to be covered : 75.07 Sq.km.
11. Project Components : 1. Construction / re-sectioning of lateral surface drains and underground storm water drains in some areas.  
2. Re-sectioning of Khardah Khal which is the Tran municipal drains.  
3. Re-sectioning and lining of Nadikul, Sonai, Udaypur, Sultanpur. Birati LL2K Khals/Drains.  
4. Construction of a pipe bridge over Udaypur Nullah/Drains.  
5. A pumping station at South Dum Dum Municipality near VIP Road.
12. Estimated Cost of the project submitted to JNNURM Directorate during June, 2006 : Rs. 3588.00 lakhs  
Estimated Cost of the project (cost of the revised proposal submitted as per the comments made by CPHEEO) : Rs. 4836.00 lakhs
13. Period of implementation (Schedule) : 48 months
14. Funding pattern : 35%:15%;50%  
GOI : Slate : ULB
15. Financial Phasing : 20%, 25%, 30%, 25% in respective years of execution.
16. Implementing Agency : Kolkata Metropolitan Development Authority (KMDA)
17. Annual O & M Expenditure (Rs. lakh) : Rs. 97.5 lakhs (for all the 5 ULBs)  
Existing : Rs. 5.50 Lakh  
Proposed (2008) : Factored annual O&M cost. [In proportion of capital expenditure]
18. Recovery of O&M cost : It is proposed to charge Rs. 120 per annum as drainage surcharge along with property tax to recover the O&M cost. The number of property tax assesses in the 5 ULBs is Rs.2.24 lacs yielding a drainage surcharge of Rs.268.80 lacs per annum (proposed).
19. Agency Responsible for O & M : Respective Municipalities
20. Estimated Cost for Consideration & approval : Rs. 4147.88 lakh

CPHEEO's Technical Comments:

1. The proposal is for providing Trans-municipal drainage for removal of water logging/drainage congestion within Khardah, Panihati, North Dum Dum, Dum Dum and South Dum Dum Municipal areas.
2. Rainfall data of Dum Dum Meteorological station for 25 years (1976-2001), processed and presented in DPR. Detailed rainfall data for the year 1978 has also been provided in DPR.

3. Design of Storm Water Drains has been done based on rainfall data and as per guidelines / norms laid down in the Manual on Sewerage and Sewage Treatment published In the Ministry and is in order.
4. The storm water drainage system has been designed for frequency of flooding of twice in a year with an inlet times 10 minutes.
5. Brick lined drains has been provided for carrying the surface drainage of all the five municipalities and design of section has been furnished.
6. NIM pipes of 900 mm for a stretch of 1500 m in Panihati Municipality and 1200 mm for a stretch of 1500 m & 1600 mm dia for a stretch of 1500 in South Dum Dum Municipality has been proposed.
7. Detailed cost estimates have been furnished for all the components of the project. The rates are based on the current SOR for PWD, Roads & Buildings, Govt. of West Bengal 2002. I&WD, Bengal, Govt. of West Bengal. Sewerage & Drainage, Water Supply & Electrical & Mechanical Works from KM DA current schedule of rates.
8. The cost of the proposal original was Rs.35.88 crore submitted during June 2006. The earlier cost was on ad-hoc basis as the proposed size of drain sections was on adhoc basis This has now been revised and detailed design calculation and detailed estimate has been prepared as per the comments of CPHEEO and the revised cost of the project now works out to Rs.4S.30 crore as submitted to the Ministry.
9. The DPR for "Trans-Municipal Drainage Scheme on Removal of Drainage Congestion within khardah, Panihati, North Dum Dum, Dum Dum and South Dum Dum Municipal Areas" is approved from technical angle at a cost of Rs. 41.48 crore for execution subject to the following conditions:-
  - a. 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 India Standards.
  - b. No. change in the scope of work shall be effected without prior approval of CPHEEO.
  - c. Catch pits should be located at strategic points along roads / streets, to prevent siltation of storm water drains.
  - d. No sewage should be allowed to How to these drains.