

No.Q-12045/28/10 / NURM/2006-CPHEEO
Government of India
Ministry of Urban Development
(CPHEEO)

Appraisal Note for Consideration of Projects under JNNURM by Central

Sanctioning & Monitoring Committee of M/o UD

(Storm Water Drainage)

1. Proposal : Improvement of drainage in Howrah city and its vicinity
2. Name of State / UT : West Bengal
3. Name of City : Howrah under Kolkata UA
4. Objectives : To minimize flooding in the project area during monsoon / rains; to curtail losses to public & private property, productivity and to minimize disruption of civic life.
5. Whether CDP is prepared : Yes
6. Background : The project area consisting of Howrah city and its vicinity including south Howrah, south west Howrah, central Howrah, bally (West) area and Howrah Drainage channel (HDC) area is marked by the lower levels as compared to the level of River Hooghly. Storm drainage of the area is difficult to achieve due to this topography which is compounded by the physical barriers such as the extensive railway lines, GT Road and Benares Road etc. The erstwhile Calcutta Metropolitan Planning Organization (CMPO) had prepared a Master Plan for Drainage of the area under WHO auspices with renowned consultants, M/s. Metcalf & Eddy. All the recommendations of CMPO Drainage Master Plan could not be implemented due to resource crunch faced by the ULBs. Hence the drainage system remains inadequate.
Present Status Under the CMPOs drainage master plan, various components of the drainage system such as drainage channels, ducts & conduits, drainage pumping stations with force mains and local surface drains had to be implemented. However, the plan could not be implemented in its totality. The existing drainage system coverage is follows:
Primary drains - 75%
Secondary Drains - 90%
Major drains - 70%
Canals - 80%
Pumping Stations - 20 %
Further, the HDC (Howrah drainage-Channel system) has become silted and narrowed due to dumping of debris & solid waste etc and lack of proper maintenance.

8. Need of the Project : Due to the shortage of resources, only a part of the drainage master plan could be implemented due to which the storm drainage system is not fulfilling its objective. Therefore, it is now proposed to execute the remaining components of drainage master plan and also to refurbish existing channel / canal system to wider, & deeper sections so that the water logging in the area is minimized.

9. Population (in Lakh) :	Howrah MC	Bally Municipality	Total
2001 Census	10.09	2.82	12.91
2025 projected	15.08	5.30	20.38

10. Area to be covered (Sq.Km)	Howrah MC	Bally Municipality	Total
Total	51.74	11.81	63.55
Already covered	31.04	6.50	37.54
Covered in this project	20.70	5.31	26.01
Balance to be covered	0.00	0.00	0.00

(100 % covered)

11, Project Components :

1. Drainage System including pipes, covered channels & ducts.
2. Drainage pumping stations including force mains,
3. Canal / Channel improvement works.
4. Out fall Structures & operating platforms including connecting foot bridges,

Refurbishment of existing drainage system including by-pass arrangements & connecting to drainage pumping stations.

12 Estimated cost (Proposed) (Rs.lakh) : Rs. 9860.03 Lakh

Estimated cost (Approved) (Rs.lakh) : Rs. 9338.19 Lakh

13 Period of Implementation : 36 months

14. Funding Pattern :	Gol	GoWB	ULBs	Total
	35%	15%	50%	100%
Proposed (Rs. Lakh)	3451	1479	4930	9860.00
Approved (Rs. Lakh)	3268.36	1400.73	4669.10	9338.19

15. Financial Phasing	06-07	07-08	08-09	09-10	Total
Percent	5%	30%	45%	20%	100%
Rs. Lakh	466.91	2801.46	4202.18	1867.64	9338.19

16. Implementing Agency	:	Kolkata Metropolitan Development Authority (Nodal Agency) with KMW. & SA, Irrigation & Water Ways Directorate, Howrah Improvement Trust
17. Annual O&M Expenditure	:	
- Existing	:	Rs.75.00 lakh approx. per annum
- Proposed (year 2010 onwards)	:	Rs. 229.67 Lakh per annum which will be totally met by the ULBs. from their yearly budget.
18 Agency Responsible for O&M	:	Urban Local Bodies of Howrah Municipal Corporation & Bally Municipality
19 Estimated cost for consideration & approval	:	Rs.9338.19Lakh

The following officials of KMWSA, Govt. of west Bengal have attended this office during 27-30 December 2006 for interaction with the officials of CPHEEO and clarified on the technical shortcomings / issues of detailing etc involved in the project formulation:

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| 1. Shri Anik Roychowdhary | Suptg .Engineer, KMWSA |
| 2. Shri Ranajit Kr. Sutradhar | Exe .Engineer, KMWSA |
| 3. Shri Debabrata Mondal | Exe .Engineer, KMDA |

CPHEEO's Technical Comments:

1. The proposal is for implementing all the components of Calcutta Metropolitan Planning Organisation (CMPO)s Drainage Master plan for the project area and minimize water logging in the area to the designed minimum.
2. The proposal consists of the following components:
 - a. Drainage System including pipes, covered channels & ducts.
 - b. Drainage pumping stations including force mains.
 - c. Canal / Channel improvement works.
 - d. Out fall Structures & operating platforms including connecting foot bridges.
 - e. Refurbishment of existing drainage system including by-pass arrangements & connecting to drainage pumping stations.
3. The drainage master plan of CMPO already accepted & implemented in part in the project area, has been based on the design consideration, of flood frequency of once in two months (6 times in a year), The officials of KMWSA & KMDA have stated that this design consideration is accepted by the ULBs situated in the project area / covered under the drainage master plan. The Rainfall intensity-frequency-Duration curve drawn for the stated frequency has been adopted by KMDA / ULBs.
4. The coefficient of imperviousness has been considered as 70% as per the CMPO drainage master plan.
5. All the components of the project such as drainage network, drainage pumping stations with pumping equipment and mains, canal / channel improvement woks, outfall structures, operating platforms & connecting foot bridges and Refurbishment of existing drainage system including by-pass arrangements & connecting to drainage pumping stations, have been designed as per the norms laid down in the Manual on Sewerage & Sewage Treatment published by the Ministry.

6. Detailed cost estimates based on the current SoR of KMDA, I&WD & PWD of govt. of West Bengal have been furnished along with indicative drawings.
7. Annual maintenance cost estimates for the proposed works have been furnished in the DPR. The ULBs have agreed to bear the annual O&M costs of the project as no user charges can be imposed as storm drainage is a non-point source.
8. As the DPR is prepared on the basis of CMPOs' drainage master plan and as per the Manual, the same may be approved from technical angle at a cost of Rs. 9330.19 Lakh as per Annexure, subject to the following conditions:

ABSTRACT OF APPROVED COST (Rs. Lakhs)

Sl. No	COMPONENT	As per KMDA	As Per CPHEEO	Remarks
	Canal / channel improvement works	2916.96	2887.79	Incl.3% contingencies
	Drainage network	3807.79	3769.71	-Do-
	Drainage pumping stations	1928.46	1909.18	-Do-
	Outfall structures, operating platforms & connecting foot bridges	220.01	217.81	-Do-'
	Refurbishment of existing drainage system including by-pass arrangements & connecting to drainage pumping stations	97.44	553.70	-Do-Pumping Stns at Kona & Icchapore included. Hence
	Sewage Treatment Plant	889.37	0.00	
	TOTAL Rs. Lakh	9860.03	9338.19	

Improvement of drainage in Howrah city and its vicinity Technical Remarks

- ⇒ No expenditure shall be incurred without the Administrative approval of the State Government and necessary budget provision for the project cost from their own resources shall be ensured by KMDA towards the counter part State / ULB share.
- ⇒ A suitable mechanism may be developed by the KMDA with adequate expertise and institutional capacity to implement the said scheme as per the specifications.
- ⇒ The State Govt. / KMDA may ensure that there is no encroachment on the alignment of the drain, so as to facilitate smooth execution of the project and to avoid time over run and cost over run of the scheme,
- ⇒ KMDA shall ensure the R & R programme for the project affected persons shall be implemented simultaneously so as to avoid time over run resulting in cost over run (since JNNURM guidelines doesn't provide funds for R & R.)
- ⇒ The invert levels at each cross section of the drain at various locations shall be checked at the field by KMDA during implementation by detailed survey to ensure smooth flow of storm water in the channels.

- ⇒ KMDA shall ensure that no solid waste is dumped in the storm water drains,
- ⇒ The KMDA shall ensure that the designed section shall carry all the silt without depositing in the drainage channel for which, adequate self cleaning velocity shall be facilitated in the section.
- ⇒ KMDA shall check the structural design of the section for over turning and earth pressure before implementation
- ⇒ The State Govt, / KMDA must take prior permission of State Environment & Forests Deptt. / Transport Deptt. etc, if necessary before execution of the works.
- ⇒ No central grant shall be utilized for the purchase of land, vehicle, tools and plants etc. since they are not allowed under JNNURM.
- ⇒ KMDA shall ensure un-interrupted power supply by creating dedicated power supply for pumping equipment
- ⇒ KMDA shall prepare a PERT Chart for all the drainage works and get it approved by the competent authority and KMDA shall monitor implementation regularly so as to avoid time over run and resulting cost over run.
- ⇒ A suitable mechanism may be developed by KMDA to have a routine maintenance of the system for which an action plan may be chalked out
- ⇒ KMDA shall ensure the O& M cost on completion of the project from its own resources.
- ⇒ The estimate has been prepared on Current Schedule of rates applicable for 2006 and no escalation cost has been Included during implementation, which shall be borne by State Government / ULB.
- ⇒ If there is any change in the scope of work, revised approval has to be obtained from CPHEEO.