

INDRI WATER SERVICES DIVISION KARNAL
Estimate for Remodeling of Augmentation Canal from Km 0 to 75.250
i.e. up to merging point with WJC Main Branch.
Report

This estimate amounting to **Rs3235844015** /- only has been framed to cover the probable cost of above cited work.

For optimum use of available Yamuna water, a proposal has been made for enhancing capacity of carrier system in a manner that all the off-taking canal system from Khubru, Munak and Indri will be able to run simultaneously as per demand. This will help not only in meeting with the drinking and irrigation needs of water starved area of south Haryana but also help in equitable distribution of surface water to some extent. In this proposal, **the capacity of Augmentation Canal is proposed to be increased from 4500 Cs. to 6050 cs** at head. Although present designed capacity of the canal is 4500 Cs. but at present the canal is not capable for carrying more than 3200 Cs discharge safely. Accordingly the revised capacity of **Augmentation Canal** has been approved by the **Chief Engineer, YWS (North) Panchkula & the Revised L-Section has been approved by the Chief Engineer, YWS (North)** issued vide Superintending Engineer/CDO letter No. 1699-1701/CDO-IV/2019/351 dated 08.08.2019.

For carrying the proposed approved discharge i.e. **6050 Cs.** through the **Augmentation Canal** safely, it become essential to remodel the Canal as per design data approved in the Revised L-Section alongwith the reconstruction of old outlived, deteriorated & damaged structures which has become unsafe & unserviceable or creating bottleneck in free flow. Accordingly a **Project Estimate of increasing capacity of Augmentation Canal from 4500Cs. to 6000Cs by providing lining & remodeling of structures falling in Reach KM 0-75.250** amounting to **Rs. 489.00 Crores** was framed & submitted for consideration to Standing Technical Committee (STC), Irrigation & W.R. Department Panchkula for approval. This **Project Estimate** was discussed in the **STC meeting held on dated 23.08.2017** under the Chairmanship of Worthy Engineer-In-Chief, Irrigation & W.R. Deptt. Haryana, Panchkula and the project estimate was approved in principal vide Minutes of Meeting issued vide EIC/I&WRD/PKL letter No. 4453-73/132-W/STC dated 07.09.2017. The

Approval for enhancing the capacity of the canal from 4500 cs. to 6000 cs. has been accorded vide Govt. Memo No. 2/26/2016/1 IW dated 05.02.2016. Accordingly the Govt. has accorded the **Administrative Approval amounting to Rs. 489.0 Crores vide PS to Govt. Haryana, Irrigation & W.R Department letter No. 2/184/2017-1 IW dated 17.10.2017** chargeable under Head NABARD (RIDF- XXV) (Copy attached)

Since with the changed designed parameter of the Canal all the structure such as Bridges, Cross Drainage works, super passages etc. were required to be remodelled. The work of providing consultancy, drawing & design for remodelling of all the structures has been assigned to M/S WAPCOS as per A/A accorded by the Govt. & Estimate Sanctioned vide CE/YWS(N) letter No. 1086/NABARD/2019 dated 21.08.2019. The preliminary drawings of most of the structures have been supplied by the WAPCOS. The provision of Remodeling/Reconstruction of these structures exist in the Project Estimate. The provision of Reconstruction/Remodeling of all the structures along with lining has been made in the Estimate. Hence necessity of the Estimate is arise.

The main components of this estimate are as under:-

1. **EARTH WORK**

As the enhanced capacity is accommodated by increasing bed width and FSD, the section will be remodeled as per approved L-section and hence the earth work is mandatory. The X-sections has been observed at an interval of 100 meter instead of 60 meter by WAPCOS during closure of Augmentation canal. The necessary approval for framing the estimate on the basis of already observed these X-sections and an interval of 100 meter instead of 60 meter has been accorded vide Engineer-In-Chief, Irrigation & W.R. Deptt. Haryana, Panchkula letter No 1107/NABARD/2018 dated 02.09.2019 and thus estimate framed accordingly as it is not possible to observe the fresh X-sections during running of canal. However the initial X-sections at an interval of 30 meter will be observed before execution of work and the same will be got checked from the vigilance unit. The quantities of E/Work has been calculated accordingly on the basis of X-Section observed at 100 meter interval by WAPCOS at site & attached. The average lead of earthwork has been calculated which comes out to be 30 m and the same has

been provided in the estimate. The provision for replacement of existing kankar earth with good earth of both banks from RD 64.000 KM to RD 75.250 KM has been made in the estimate with an average lead of 5.0 Km.

It has been observed that there is silt deposition in the bed of the canal from reach RD 0.00 Km to RD 58.665 Km and necessary credit for the same has been incorporated in the estimate.

2. CONCRETE LINING

The provision of 125 mm thick concrete lining with M-15 design mix in bed and side slope of the Canal over 10 mm thick cement plaster in cement mortar 1:5 on the prepared sub grade has been made in the estimate. The type design of concrete lining has been approved in the meeting of STA Committee, Irrigation & W.R. Deptt. Haryana, Panchkula

3. STRUCTURES

i) **Bridges:-** The provision for reconstruction of 46 Nos. VR/DR Bridges has been made in the estimate.

There is a proposal of up gradation of Karnal-Kunjpora MDR to SH so the bridge at RD 50.081 Km of Augmentation canal will be constructed by PWD (B&R) at their own cost. There is also a proposal of up gradation of Karnal -Meerut SH to NH. So the bridge at RD 58.665 Km of Augmentation canal will be constructed by Haryana PWD (B&R) at their own cost.

There exists one no. AR bridge on NH-44 (GT Road) at RD 64.330 Km of Augmentation canal and the same will be constructed by NHAI as deposit work. There exists one No. MDR Bridge on Karnal-Munak MDR at RD 72.310Km of Augmentation Canal and the same will be constructed by PWD(B&R) as deposit work.

There exists Double Railway line Bridge on Ambala-Delhi Railway line at RD 66.761 Km of Augmentation canal. Any Remodeling/ upgradation/ reconstruction, if required due to revision of parameters of Augmentation Canal, will be taken up by Railway Authority as deposit work.

ii) **Drainage Crossings:-** The provision for reconstruction of existing 16 Nos. Drainage Crossings has been made in the estimate.

- iii) **Disty/Minor Crossings:-** The provision for construction of 2 Nos. new Syphon for Disty & Minor Crossing for Bazida Ditsy. at RD 65.845 Km & Munak Minor at RD 70.545 km of Augmentation Canal has been made in the estimate instead of existing submerged aquaduct combined with bridge. Seprate provision for 2 No. bridges have been made in the estimate.
- iv) **Escape Regulators:-** The provision for construction of 2 Nos. New Escape Regulators at RD 21.200 KM and 55.950 KM for releasing water in Dhanaura Escape & Indri Escape in case of any emergency has been made in the estimate.
- v) **Head Regulator:-** The provision for reconstruction of Head Regulator at RD 68036/L of MLL Canal has been made in the estimate.
- vi) **Tail Regulator:-** The provision for reconstruction of Tail Regulator at RD 75.150 of Augmentation Canal has been made in the estimate.
- vii) **Transition Structure:-** The provision for construction of 4 No. new Transition Structure at RD 9.016 KM, 48.187 KM, 70.545 KM & RD 74.500 KM has been made in the estimate.
- viii) **Fall-cum-X-regulator combined with Bridge:-** There exist two No. Fall-cum-X-regulator combined with Bridge at RD 19.916 KM and RD 30.102 KM on which two No. MHP have been installed for generating Hydro Power. The remodeling/ reconstruction of these structures will be taken up in due course of time after consultation of MOU signed between Govt. of Haryana and Proprietor of MHP and other technical/legal viability and thus the provision of remodeling/ reconstruction of these structures has not been made in this estimate.

The item wise quantum of work required to be executed has been calculated on the basis of preliminary drawings supplied the WAPCOS & as per Note recorded in these drawings in respect of wing walls & approach slab etc. the design adopted for approach slab is in accordance with the guide line of MOST.

Since all the old structures will have to be dismantled, therefore a committee of two SDO's will be constituted by the U/S for assessment, estimation, costing of old structure. The quantities of dismantling has been calculated either on the basis of last approved drawings available in the record or as per actual measurement visible at site. However the actual measurements of hidden work will be done by the committee of Two SDO's during actual dismantling at site. Necessary credit for the material to be recovered from the dismantling has been given to the estimate as per latest guide line issued in the Minutes of Meeting of Board of Chief Engineers

The rates has been provided in the estimate on the basis of HSR +Sanctioned Zonal Premium applicable now & rate of non scheduled items have been provided on the basis of rates approved by the EIC/CE/YWS earlier for similar nature of items. The provision of contingency @ 0.20% of Total cost instead of 0.25% of Total cost has been made as per clause No. 10.1.13 b of PWD code. The expenditure will be charged under Head NABARD-(RIDF-XXV).

An early sanction of the estimate is requested please.

-Sd -
Sub Divisional Officer,
Indri W/S Sub Divn.
Karnal

Executive Engineer,
Indri W/S Division,
I&WR Deptt. Karnal

Recommended PI.

Superintending Engineer,
YWS Circle Karnal