

Software Development on IWM

(PIP, Akarni , CTF, Circular, Head Regulator, CR etc Window base Excel)

Executive Summary

Preliminary Irrigation Program (PIP) for Water Allocation:(MS-Excel)

In case of storage fed irrigation schemes, it is necessary to strike the balance between supply and demand. Therefore, careful planning of water allocation to different crops and other uses before the start of irrigation season is essential. This program uses simulation approach to estimate the area under different crops, which can be irrigated with the available water in the reservoir. The losses in the reservoir and canal system are taken into account. Different crop mixes and varying crop water requirements can be considered for decision-making.

Design & Evaluation of Standing Wave Flume: (MS-Excel)

This program designs and produces discharge of standing wave flume as per IS code 6063 - 1971 for the given data of cross-sectional details of channel, Manning N, discharge range and normal depth of flow for the maximum discharge taking into account the given loss of head based. The respective levels of hump, and toe are calculated based on the upstream canal bed level. This software also includes measures to improve existing SWF, if not functioning properly Similarly discharge table of SWF canal to be prepared if not available

Selection, Design and Discharge Tables for Cut Throat Flume: (MS-Excel)

This program displays a table of various sizes of cutthroat flumes which could be suitable for the given design discharge, full supply depth, bed width of channel and allowable afflux. One can select any one of the flumes from the table or may give some other flume size to suit a particular requirement. Once a flume satisfying the constraints of head and afflux is selected discharge equations for free and submerged flow conditions along with setting required for free flow condition are displayed. The setting can be changed based on practical requirements. The discharge tables are printed for free flow, submerged flow or both as per the user's choice from the menu. The plan and sectional elevation showing various dimensions also appears on the screen at the end.

Preparation of Water Charges Statement

(Akarni Takta or Assessment Statement) : (MS-Excel-Marathi)

This software is developed to prepare irrigation water charges statement called Akarni Takta or Assessment Statement in form 12 prescribed by Government of Maharashtra Given farmers details and crops irrigated by each farmer in the command area, the software gives irrigation water charges statement village wise. Water bill of each farmer can also be printed.

Information System of Government Circulars on Irrigation Water Management (Windows)

Government Circulars, orders etc. pertaining to I.W.M. have been compiled to form a database. The circulars are divided in 15 subject areas and 99 keywords have been selected for effecting easy retrieval of the desired circular/order. Retrieval is possible by choosing through subject area, keyword and date of circular. Also a combined search is possible by giving multiple choices of these three parameters.

Rotational Water Supply Schedules Below an Irrigation the outlet (RWS Schedules): (MS-Excel)

This program prepares RWS schedules for all the farmers in the outlet command area (Chak) for rotations in a season. The crop water requirement, losses in the field channel are taken into account while calculating the irrigation time of individual farmer. This program is available for three different water distribution methods.

- i) RWS based on AI/DC (RWS1)
- ii) RWS based on weighted depth of irrigation (RWS2)
- iii) RWS based on crop wise Net Irrigation Requirement, NIR (RWS3)

Discharge Table for Head Regulator of Main Canal:(MS-Excel)

This program generates discharge table for Head Regulator of Main Canal based on the procedure laid down in P.W.D. handbook No. 23 (Outlets) given FRL, MDDL, Sill level of H.R., Gate size, Gate opening Interval, Reservoir depletion. The program will be useful to prepare discharge table for existing H.R. on Main Canal or to check existing discharge table.

Selection & Hydraulic Design of Weir Type Level Regulator:(MS-Excel)

The combination of Self Regulated Outlet & weir type level regulator in a canal in distribution network gives a practically simple and low cost solution for water control in the irrigation system. This program has been developed for selection & hydraulic design of weir type level regulator with the consideration of allowable fluctuations in the water level for self regulated outlets, afflux created due to the construction of weir type level regulator (Cross Weir, Daigonal Weir, Duckbill Weir) and the allowable submergence for the free flow functioning of weir and the geometrical limitations of the struture as available in present literature.