U.S. Army Corps of Engineers' Corps Water Management System (CWMS) Overview

Chan Modini, Chief Water Management Systems Division, Hydrologic Engineering Center, U.S. Army Corps of Engineers, Davis, CA,
george.c.modini@usace.army.mil

Extended Abstract

The Corps Water Management System (CWMS) serves water managers at District and Division offices of the U.S. Army Corps of Engineers (USACE) by providing real-time data acquisition and hydrologic and hydraulic modeling capabilities. CWMS is a comprehensive data management system and modeling system for water management decision support. Figure 1 shows a picture of CWMS an Automated Information System (AIS).

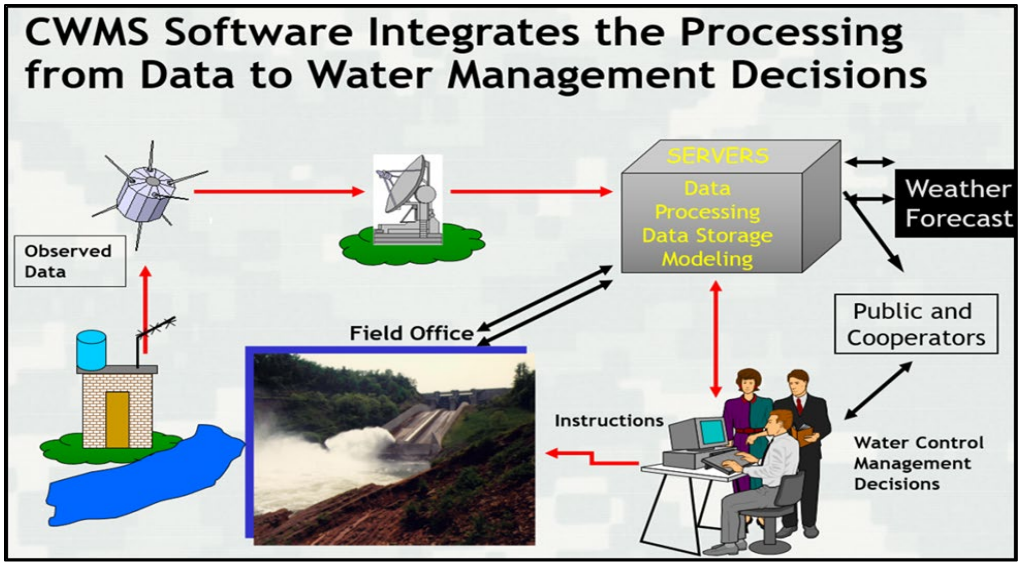

Figure 1. Picture of CWMS an Automated Information System

Through HEC-DSS (Data Storage System), CWMS facilitates the real-time use of observed and forecasted precipitation, observed flows and stages, and other meteorological and hydrologic data. CWMS also allows the integration of HEC-HMS (Hydrologic Modeling System) for forecasting flows throughout a watershed, HEC-ResSim (Reservoir Modeling System) for simulating reservoir operations and release decision, HEC-RAS (River Analysis System) for forecasting river stages and producing flood inundation maps, and HEC-FIA (Flood Impact Analysis) for estimating potential flood impacts on life safety, agriculture, and urban infrastructure. Figure 2 shows the picture of real-time fully integrated hydrologic models.

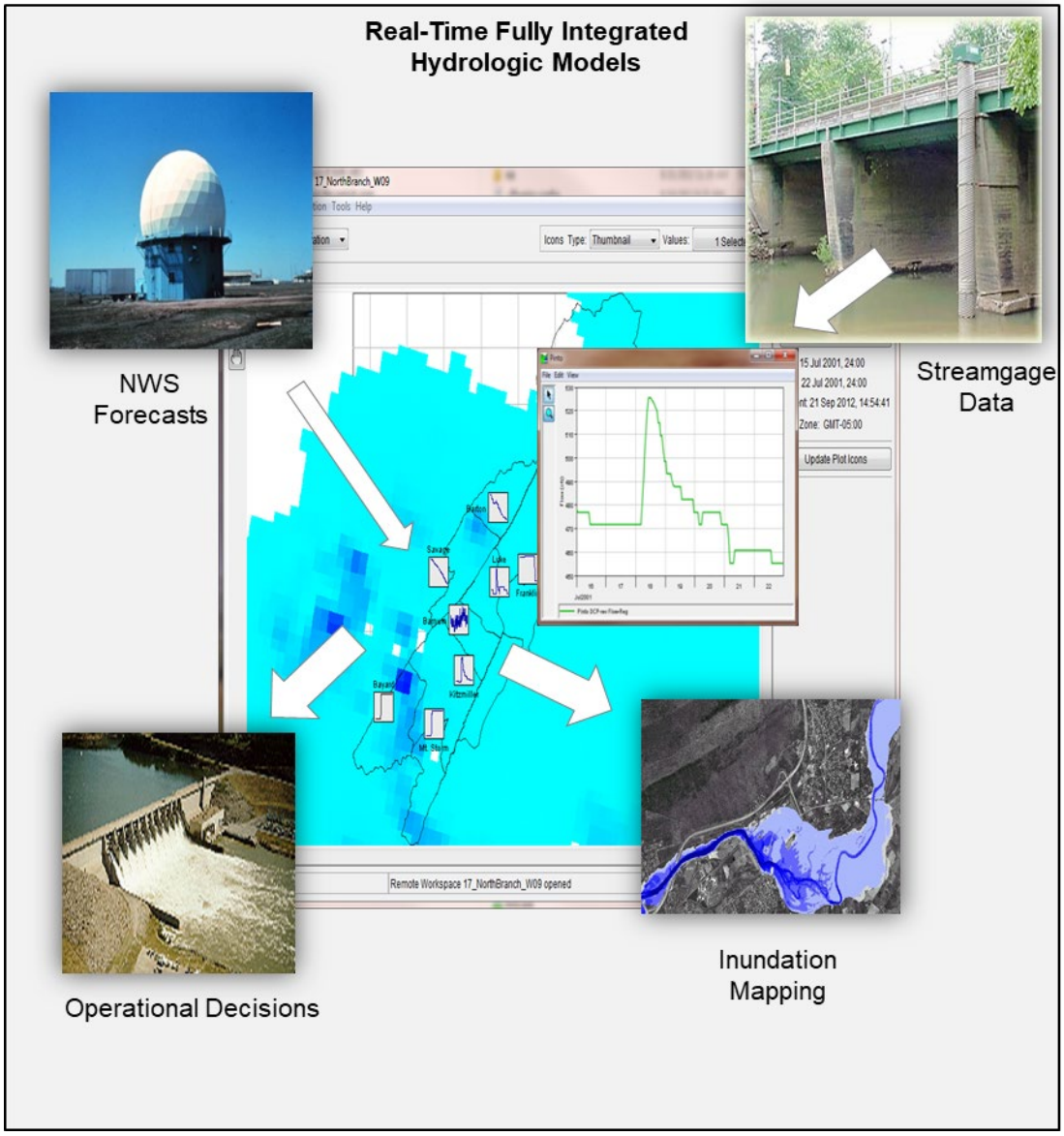

Figure 2. Picture of Real-time Fully Integrated Hydrologic Models

This presentation will provide an overview of the CWMS database component and related utilities and provide an update on the latest enhancements to the CWMS modeling suite and the Control and Visualization Interface (CAVI) including HEC-MetVue. HEC-Metvue is a new tool that will provide the capability to display, verify, manipulate and edit spatial data by interactive visual means. HEC-MetVue will also be part of the modeling suite and can be used in place of the MFP (Meteorolgic Forecast Processor) in the modeling sequence for forecasting purposes. Figure 3 provides a picture of how Storm Editing and Storm Design can be accomplished with HEC-MetVue in order to create a gridded data set for use in modeling studies or forecast simulations.

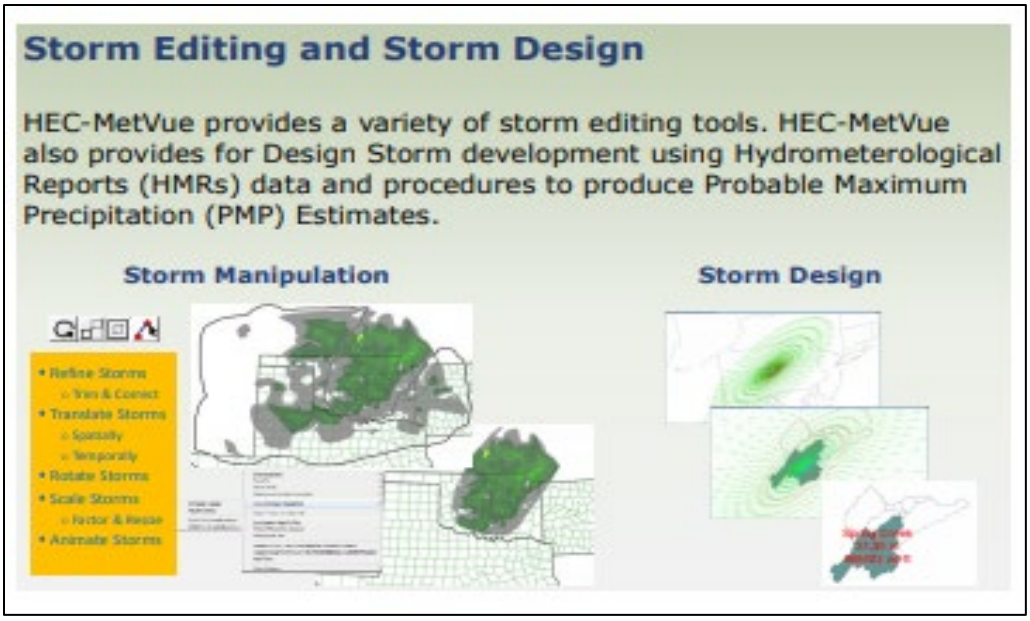

Figure 3. Storm Editing and Storm Design in HEC-MetVue

This presentation will also characterize HEC-RTS, which is the public version of CWMS and how non-USACE entities can implement real-time decision support applications using HEC-RTS. HEC-RTS is PC based and does not include the database component (ORACLE) of CWMS. Time-series data are provided via HEC-DSS (Data Storage System). Enhancements are also planned for development of an API (Application Programming Interface) that will allow linking to MS-Access and other commercial databases.