

Fort Worth District Water Resources Branch

Corps Water Management System (CWMS) Implementation in USACE and the Trinity

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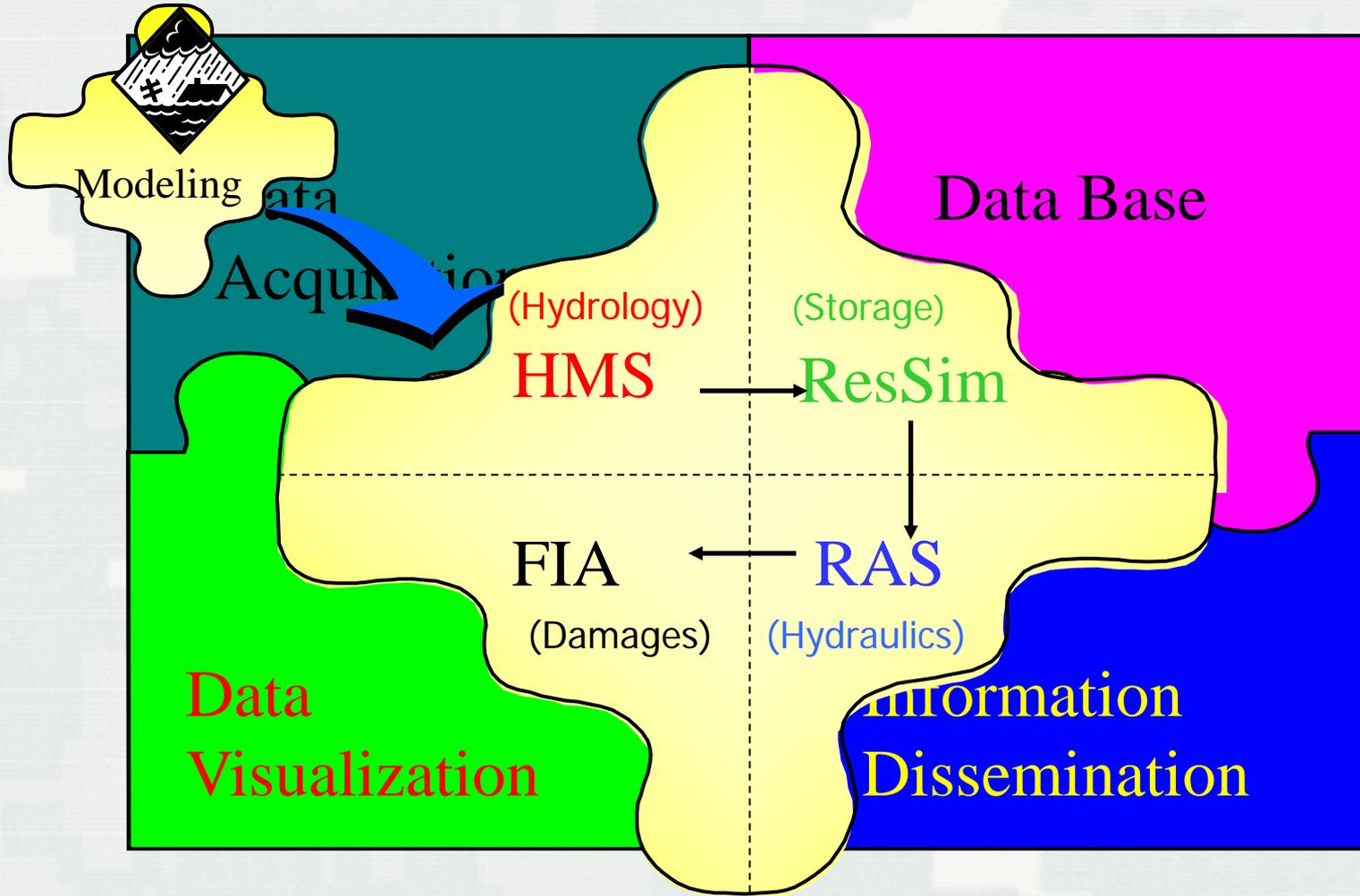
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What is CWMS?

Decision Support Tool for Real-time Operation of USACE Dams



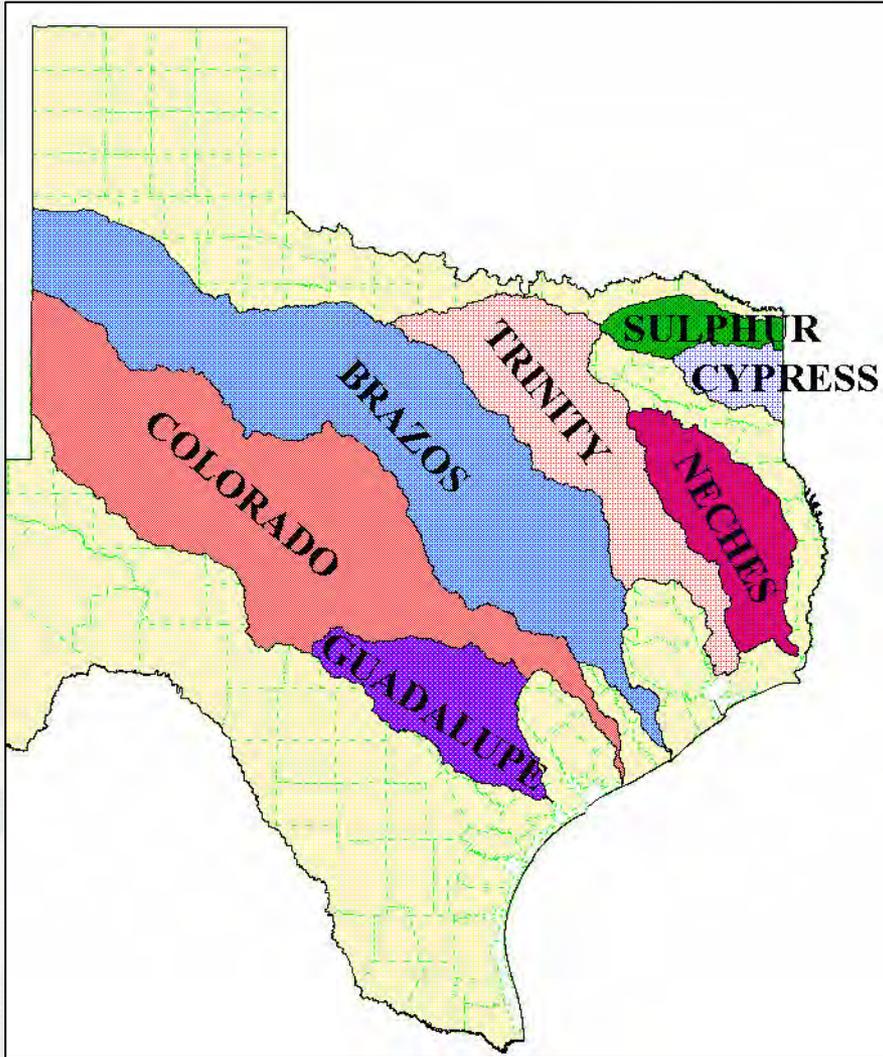
CWMS National Implementation Plan

Benefits

- Provide the resources necessary to accomplish this modeling effort from national funding sources
- Create Upward Reporting and Public Reporting Capabilities within USACE
- Build a National Model Library
- Models can be leveraged by USACE and its partners for other type of studies, depending on the level of detail required
- Potential Savings of Time & Money



Texas CWMS Implementation



4 Texas River Basins are being modeled in FY14:

- Colorado River Basin
- Guadalupe River Basin
- Neches River Basin
- **Trinity River Basin**

Scheduled Completion:
December 2014

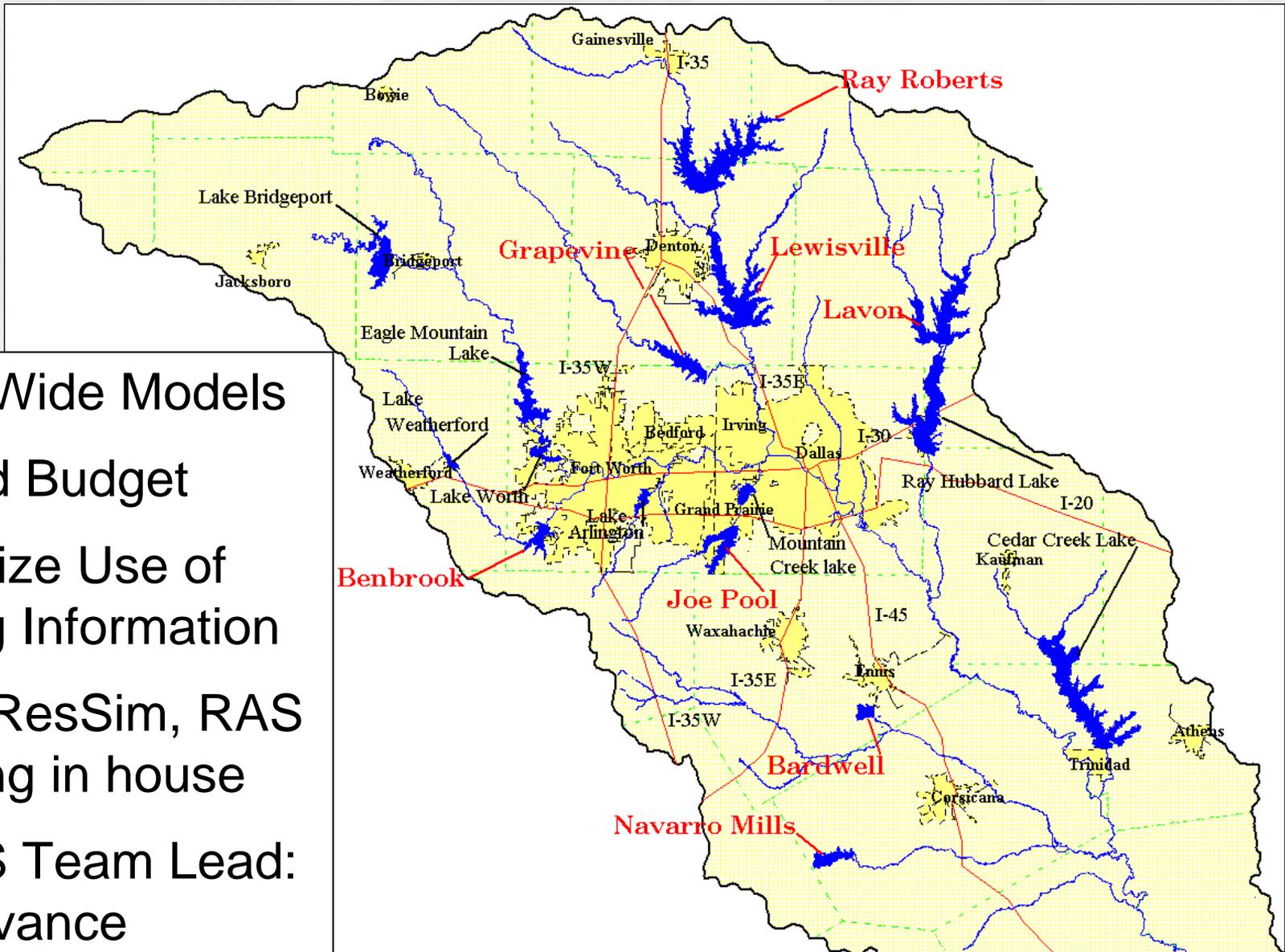
Cyprus & Sulpher: FY15

Brazos: No Schedule Yet

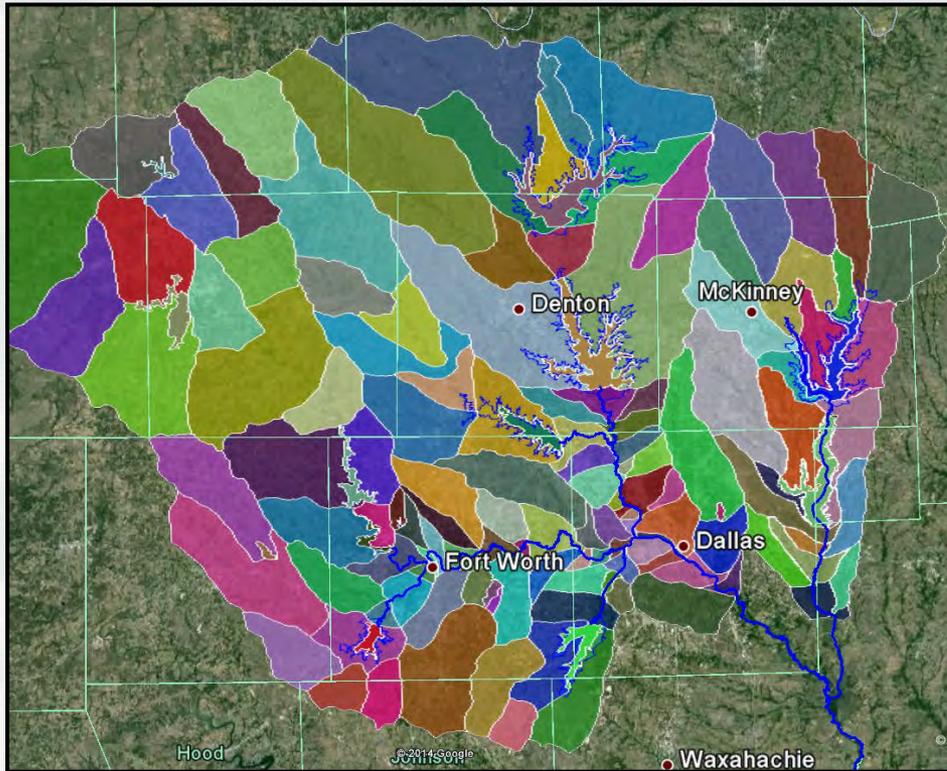


Trinity - CMWS Implementation

- Basin Wide Models
- Limited Budget
- Maximize Use of Existing Information
- HMS, ResSim, RAS modeling in house
- CWMS Team Lead: Allen Avance



Trinity CMWS Hydrology with HEC-HMS



- New GeoHMS project of headwaters to Trinity Bay
- Match existing model subbasin delineations
- Subbasin parameters from USACE Upper Trinity, East Fork and Lower Trinity Forecast Models, plus TRWD West Fork Model
- Storage Routings from RAS
- Calibrate Combined Model



Trinity Reservoir Operations with ResSim



- New HEC-ResSim Model
- From headwater USACE and TRWD Lakes downstream to Lake Livingston
- Reservoir Operations from Existing Models
- Storage Routings from RAS
- Reservoir Inflows from HMS, Downstream Local Flows from HMS or RFC



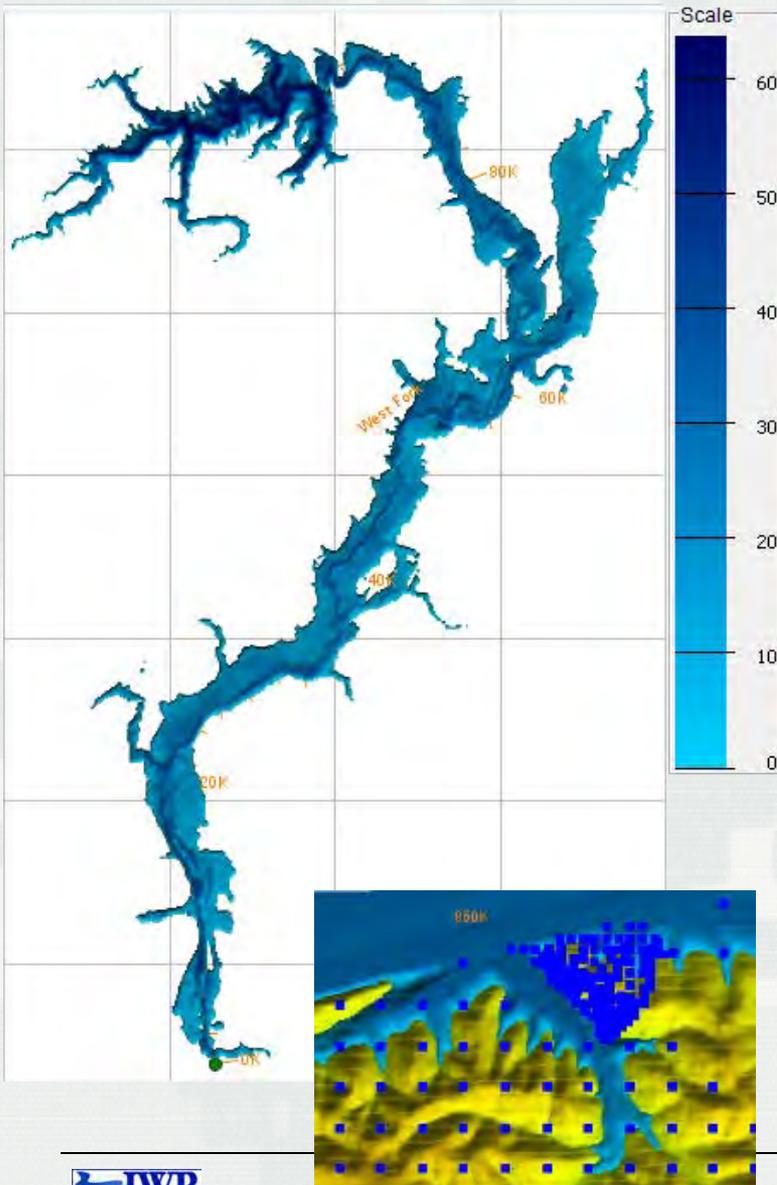
Trinity Hydraulic Modeling with HEC-RAS



- Start with Existing USACE Dam Break Models
- Add New Reaches for Clear, West & East Forks, Chambers and Richland Creeks
- Downstream to Trinity Bay
- Add LiDAR, Structure Data and Bathymetry where available.
- Calibrate to Rating Curves, HWMs and Unsteady Hydrographs



Trinity Consequence Modeling in HEC-FIA



- Compute economic flood damages by “impact area”
- From USACE Dams to Gulf
- Spatially referenced structures
- National Structure Inventories, City/County Parcel Data, Dallas Floodway Structure Inventory
- Water Surface Elevation data from HEC-RAS
- Compare difference in damages for different scenarios



QUESTIONS?



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