

Web Based Flood Maps for Emergency Managers



August 27-30, 2019
San Antonio, Texas

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WEST Consultants, Inc.

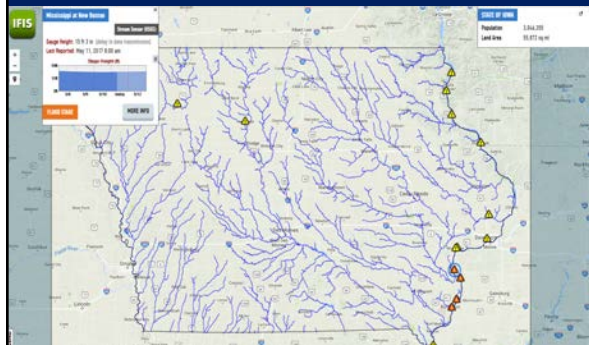


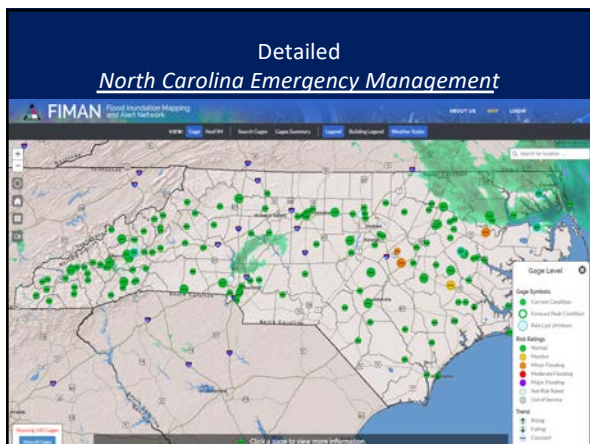
Flood Warning Systems

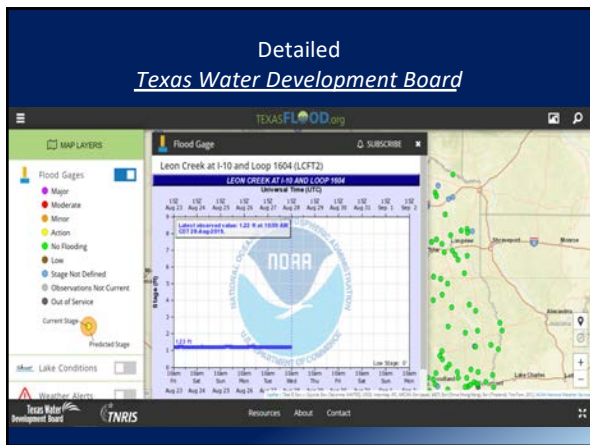
- Range from Simplified to Detailed
- Incorporate existing and forecasted rainfall
- Compute flows and elevations based on forecasted rain
- Visualize flooding
- Compute possible (and reduced) damages

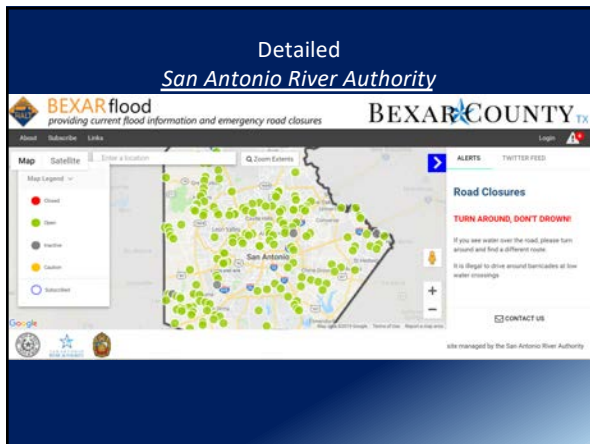


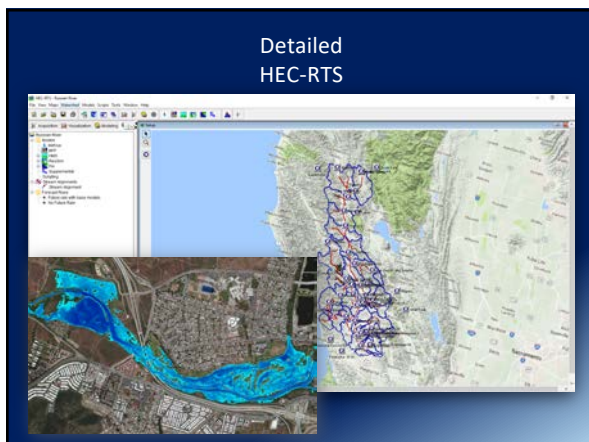
Detailed *Iowa Flood Center*





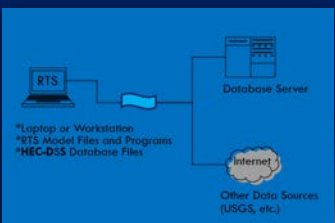




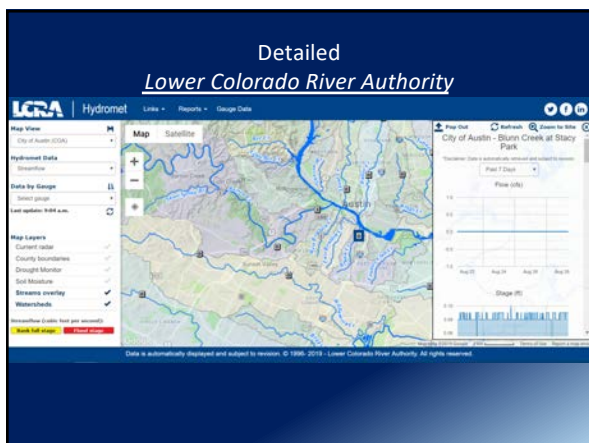


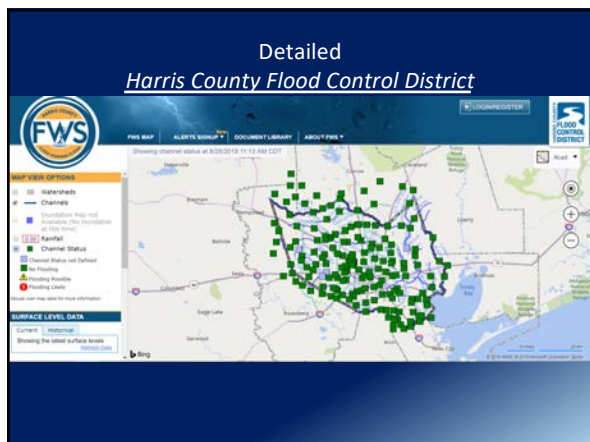
Detailed Forecasting with HEC-RTS

- HEC-RTS is the Hydrologic Engineering Center's Real-Time Simulation program
- HEC-RTS is a publically available version of the Corps Water Management System (CWMS) that runs on a single computer without using an Oracle database or a UNIX Server



The diagram illustrates the system architecture for HEC-RTS. It shows a laptop labeled 'RTS' connected to a 'Database Server'. The 'Database Server' is also connected to the 'Internet'. Below the 'Internet' cloud, there is a box labeled 'Other Data Sources (USGS, etc.)'. Text below the diagram specifies: '*Laptop or Workstation', '*RTS Model Files and Programs', and '*HEC-DSS Database Files'.

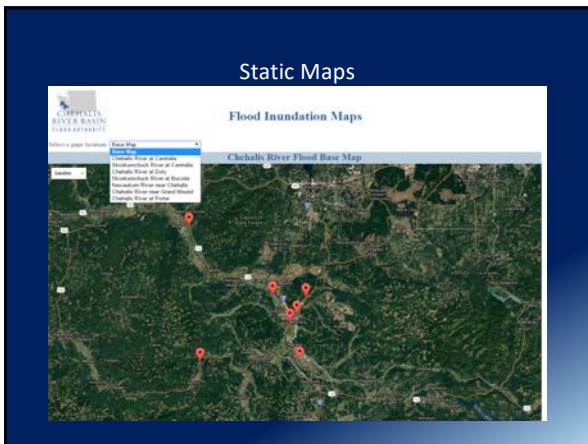


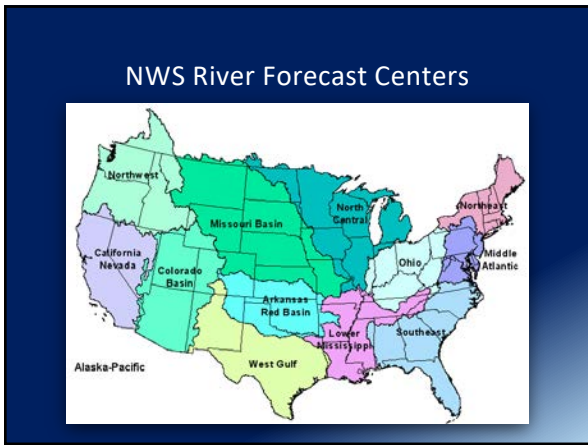


Static Mapping

- ▶ Initiated in Chehalis River Basin, WA
- ▶ Large Flood events 2007, 2009
- ▶ Desired Improved Awareness
 - Cost Effective
 - Leverage Existing Resources
 - Immediate Benefits

Station	10/16/2019	10/15/2019	10/14/2019	10/13/2019	10/12/2019	10/11/2019	10/10/2019	10/09/2019	10/08/2019	10/07/2019	10/06/2019	10/05/2019	10/04/2019	10/03/2019	10/02/2019	10/01/2019	09/30/2019	09/29/2019	09/28/2019	09/27/2019	09/26/2019	09/25/2019	09/24/2019	09/23/2019	09/22/2019	09/21/2019	09/20/2019	09/19/2019	09/18/2019	09/17/2019	09/16/2019	09/15/2019	09/14/2019	09/13/2019	09/12/2019	09/11/2019	09/10/2019	09/09/2019	09/08/2019	09/07/2019	09/06/2019	09/05/2019	09/04/2019	09/03/2019	09/02/2019	09/01/2019	08/31/2019	08/30/2019	08/29/2019	08/28/2019	08/27/2019	08/26/2019	08/25/2019	08/24/2019	08/23/2019	08/22/2019	08/21/2019	08/20/2019	08/19/2019	08/18/2019	08/17/2019	08/16/2019	08/15/2019	08/14/2019	08/13/2019	08/12/2019	08/11/2019	08/10/2019	08/09/2019	08/08/2019	08/07/2019	08/06/2019	08/05/2019	08/04/2019	08/03/2019	08/02/2019	08/01/2019	07/31/2019	07/30/2019	07/29/2019	07/28/2019	07/27/2019	07/26/2019	07/25/2019	07/24/2019	07/23/2019	07/22/2019	07/21/2019	07/20/2019	07/19/2019	07/18/2019	07/17/2019	07/16/2019	07/15/2019	07/14/2019	07/13/2019	07/12/2019	07/11/2019	07/10/2019	07/09/2019	07/08/2019	07/07/2019	07/06/2019	07/05/2019	07/04/2019	07/03/2019	07/02/2019	07/01/2019	06/30/2019	06/29/2019	06/28/2019	06/27/2019	06/26/2019	06/25/2019	06/24/2019	06/23/2019	06/22/2019	06/21/2019	06/20/2019	06/19/2019	06/18/2019	06/17/2019	06/16/2019	06/15/2019	06/14/2019	06/13/2019	06/12/2019	06/11/2019	06/10/2019	06/09/2019	06/08/2019	06/07/2019	06/06/2019	06/05/2019	06/04/2019	06/03/2019	06/02/2019	06/01/2019	05/31/2019	05/30/2019	05/29/2019	05/28/2019	05/27/2019	05/26/2019	05/25/2019	05/24/2019	05/23/2019	05/22/2019	05/21/2019	05/20/2019	05/19/2019	05/18/2019	05/17/2019	05/16/2019	05/15/2019	05/14/2019	05/13/2019	05/12/2019	05/11/2019	05/10/2019	05/09/2019	05/08/2019	05/07/2019	05/06/2019	05/05/2019	05/04/2019	05/03/2019	05/02/2019	05/01/2019	04/30/2019	04/29/2019	04/28/2019	04/27/2019	04/26/2019	04/25/2019	04/24/2019	04/23/2019	04/22/2019	04/21/2019	04/20/2019	04/19/2019	04/18/2019	04/17/2019	04/16/2019	04/15/2019	04/14/2019	04/13/2019	04/12/2019	04/11/2019	04/10/2019	04/09/2019	04/08/2019	04/07/2019	04/06/2019	04/05/2019	04/04/2019	04/03/2019	04/02/2019	04/01/2019	03/31/2019	03/30/2019	03/29/2019	03/28/2019	03/27/2019	03/26/2019	03/25/2019	03/24/2019	03/23/2019	03/22/2019	03/21/2019	03/20/2019	03/19/2019	03/18/2019	03/17/2019	03/16/2019	03/15/2019	03/14/2019	03/13/2019	03/12/2019	03/11/2019	03/10/2019	03/09/2019	03/08/2019	03/07/2019	03/06/2019	03/05/2019	03/04/2019	03/03/2019	03/02/2019	03/01/2019	02/29/2019	02/28/2019	02/27/2019	02/26/2019	02/25/2019	02/24/2019	02/23/2019	02/22/2019	02/21/2019	02/20/2019	02/19/2019	02/18/2019	02/17/2019	02/16/2019	02/15/2019	02/14/2019	02/13/2019	02/12/2019	02/11/2019	02/10/2019	02/09/2019	02/08/2019	02/07/2019	02/06/2019	02/05/2019	02/04/2019	02/03/2019	02/02/2019	02/01/2019	01/31/2019	01/30/2019	01/29/2019	01/28/2019	01/27/2019	01/26/2019	01/25/2019	01/24/2019	01/23/2019	01/22/2019	01/21/2019	01/20/2019	01/19/2019	01/18/2019	01/17/2019	01/16/2019	01/15/2019	01/14/2019	01/13/2019	01/12/2019	01/11/2019	01/10/2019	01/09/2019	01/08/2019	01/07/2019	01/06/2019	01/05/2019	01/04/2019	01/03/2019	01/02/2019	01/01/2019	12/31/2018	12/30/2018	12/29/2018	12/28/2018	12/27/2018	12/26/2018	12/25/2018	12/24/2018	12/23/2018	12/22/2018	12/21/2018	12/20/2018	12/19/2018	12/18/2018	12/17/2018	12/16/2018	12/15/2018	12/14/2018	12/13/2018	12/12/2018	12/11/2018	12/10/2018	12/09/2018	12/08/2018	12/07/2018	12/06/2018	12/05/2018	12/04/2018	12/03/2018	12/02/2018	12/01/2018	11/30/2018	11/29/2018	11/28/2018	11/27/2018	11/26/2018	11/25/2018	11/24/2018	11/23/2018	11/22/2018	11/21/2018	11/20/2018	11/19/2018	11/18/2018	11/17/2018	11/16/2018	11/15/2018	11/14/2018	11/13/2018	11/12/2018	11/11/2018	11/10/2018	11/09/2018	11/08/2018	11/07/2018	11/06/2018	11/05/2018	11/04/2018	11/03/2018	11/02/2018	11/01/2018	10/31/2018	10/30/2018	10/29/2018	10/28/2018	10/27/2018	10/26/2018	10/25/2018	10/24/2018	10/23/2018	10/22/2018	10/21/2018	10/20/2018	10/19/2018	10/18/2018	10/17/2018	10/16/2018	10/15/2018	10/14/2018	10/13/2018	10/12/2018	10/11/2018	10/10/2018	10/09/2018	10/08/2018	10/07/2018	10/06/2018	10/05/2018	10/04/2018	10/03/2018	10/02/2018	10/01/2018	09/30/2018	09/29/2018	09/28/2018	09/27/2018	09/26/2018	09/25/2018	09/24/2018	09/23/2018	09/22/2018	09/21/2018	09/20/2018	09/19/2018	09/18/2018	09/17/2018	09/16/2018	09/15/2018	09/14/2018	09/13/2018	09/12/2018	09/11/2018	09/10/2018	09/09/2018	09/08/2018	09/07/2018	09/06/2018	09/05/2018	09/04/2018	09/03/2018	09/02/2018	09/01/2018	08/31/2018	08/30/2018	08/29/2018	08/28/2018	08/27/2018	08/26/2018	08/25/2018	08/24/2018	08/23/2018	08/22/2018	08/21/2018	08/20/2018	08/19/2018	08/18/2018	08/17/2018	08/16/2018	08/15/2018	08/14/2018	08/13/2018	08/12/2018	08/11/2018	08/10/2018	08/09/2018	08/08/2018	08/07/2018	08/06/2018	08/05/2018	08/04/2018	08/03/2018	08/02/2018	08/01/2018	07/31/2018	07/30/2018	07/29/2018	07/28/2018	07/27/2018	07/26/2018	07/25/2018	07/24/2018	07/23/2018	07/22/2018	07/21/201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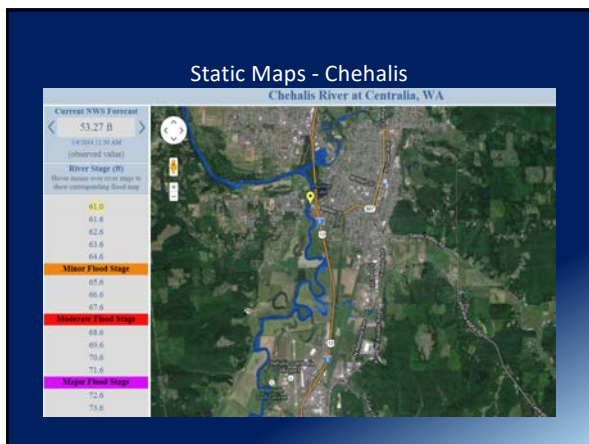


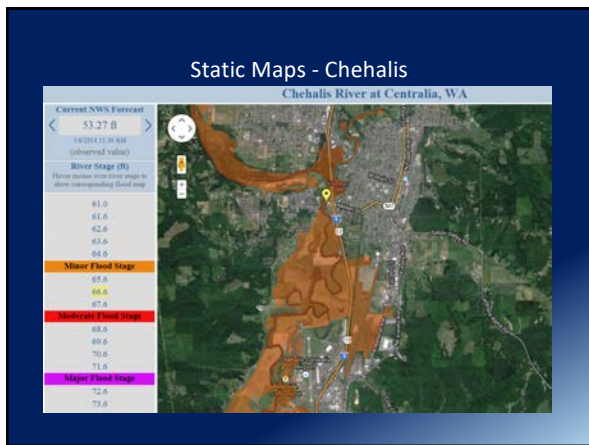


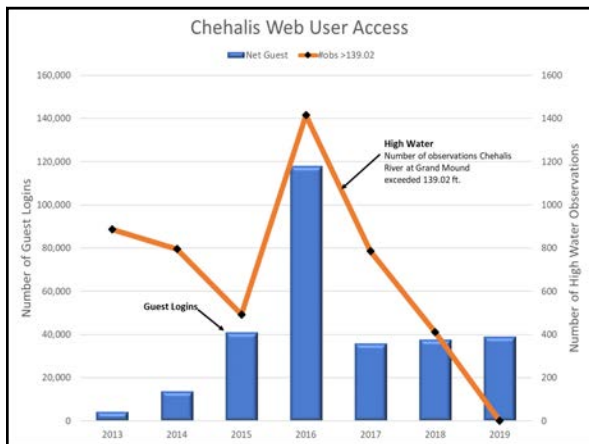
Static Mapping Methodology

- Calibrated HEC-RAS model
- HEC-RAS Steady Flow Series
- HEC-RAS results on same datum as gage network
- Determine area of influence for each gage
- Trim shapefiles to represent area of influence
- Display current information
 - Existing stage
 - Forecasted Stage
- Allow user to select elevation

Static Mapping Methodology







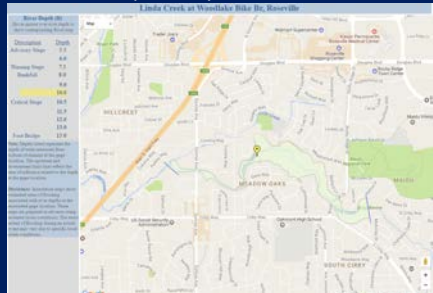
Static Mapping

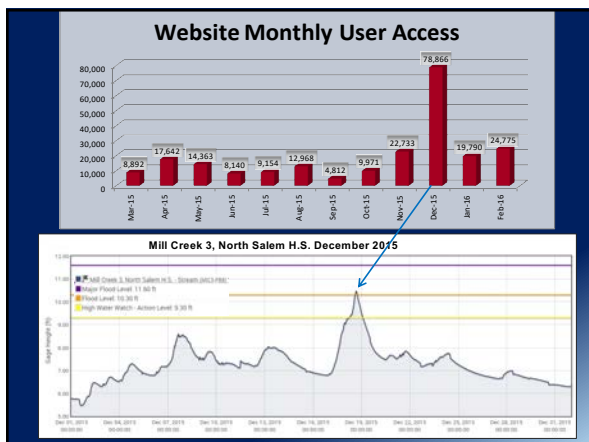
- ▶ Additional Locations
 - San Diego River, CA
 - City of Roseville, CA (Two versions)
 - San Joaquin County, CA
 - Mill Creek, OR

Static Maps – City of Roseville EOC



Static Maps – City of Roseville Public





Questions

Brisbane, Australia

Houston, TX

Salina, CO

Roseville, CA
