

## Decision Support System for Water Infrastructural Security (DSS-WISE)

DSS-WISE Lite is a web-based, automated two-dimensional dam-break flood modeling and mapping tool developed by the National Center for Computational Hydroscience and Engineering at the University of Mississippi and supported by FEMA. Registered users have free access through a secure web portal [DSSWISE™ Web](#).

In twelve intuitive steps, users can input and run dam and levee breach scenarios using a graphical user interface. The tool checks for real-time errors and delivers automated two-dimensional breach maps with a cell size from 20 to 200 feet. User data entry is minimal and does not require expertise in numerical modeling. The National Inventory of Dams and USGS DEM Raster datasets are used in the model, which can handle fast unsteady flows, wet and dry interfaces, and discontinuities.

The resultant geospatial data are compatible with GIS software and HAZUS-MH. The parallelized computational capabilities of DSS-WISE allow for quick real-time simulations that can provide crucial information during emergencies. DSS-WISE was used during the Oroville Dam spillway incident, Hurricanes Harvey and Maria in 2017, and Hurricane Florence in 2018.

DSS-WISE may also be utilized for hazard potential classification, ranking and prioritizing, and Emergency Action Planning. A post-processing module estimates the affected daytime and nighttime populations based on the breach flood extent and delivers loss of life analysis based on the new USBR methodology.

### DSS-WISE Components

A map viewer provides access to several analytical capabilities, including the following:

- A status and results page to list and manage the simulations, view and monitor simulation results, and download final result package;
- A web page for group managers to accept and reject membership, etc; and
- A web page with manuals, tutorials, webinars, frequently asked questions.

### DSS-WISE Lite-Rapid Dam Break Flood and Consequences Assessment Workshop

The OWRB Dam Safety program is pleased to host a two-day DSS-WISE Lite workshop April 14-15 with lectures and hands-on exercises instructed by the following dam safety professionals:

- Dr. Hui-Ming Shih, senior water resources engineer at CDM Smith's Denver office and the regional technical lead of FEMA's Compass PTS joint venture;
- Mr. Thomas Evans, engineering consultant with CDM Smith in Columbia, South Carolina; and
- Mr. Preston Wilson, training manager for FEMA's National Dam Safety Program.

Attendees are eligible for up to 12 Professional Development Hours. Breakfast, snacks, and beverages will be provided. Please note the class is limited to 50 participants who register by March 31, 2020. For more information, see the attached course details or visit

[www.owrb.ok.gov/damsafety](http://www.owrb.ok.gov/damsafety).

## Upcoming Events

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| Mar 3-4   | ASDSO Seminar: <a href="#">Geotechnical Dam Investigation and Analysis in the PNW</a> , Portland, OR                |
| Mar 10    | ASDSO Webinar: <a href="#">Putting Public Safety First – The Oroville Dam Spillway</a>                              |
| Mar 24-26 | ASDSO Seminar: <a href="#">Stability Analysis of Embankment Dams</a> , Phoenix, AZ                                  |
| Mar 26    | OWRB Seminar: <a href="#">Dam Safety, Floodplain and Well Drillers Workshop for Realtors</a> , Edmond, OK           |
| Apr 14    | ASDSO Webinar: <a href="#">Concrete Repair and Maintenance for Dams</a>   |
| Apr 14-15 | OWRB Seminar: <a href="#">DSS-WISE Lite-Rapid Dam Break Flood &amp; Consequences Assessment</a> , Oklahoma City, OK |

## DSS-WISE Lite – Rapid Dam Break Flood and Consequence Assessment

### April 14-15, 2020

**Francis Tuttle Technology Center – Reno Campus**  
**7301 W Reno Ave**  
**Oklahoma City, OK 73127**

#### Workshop Description:

Whether you are responsible for preparing dam breach mapping, preparing dam safety emergency action plans, want to identify critical infrastructure at risk prior to dam incidents, assess flood risk during incidents, or to prepare evacuation plans, the DSS-WISE Lite tool will give you a cost-effective means of improving public awareness and safety.

This workshop, offered by FEMA will teach dam safety professionals, dam safety regulators, community officials and emergency managers to understand how to rapidly identify the potential flood hazard areas downstream of dams, why it is important to evaluate the consequences of potential dam releases or failures, what steps can be taken before a dam failure incident to mitigate flood risk and manage the risk that remains.

#### Workshop Goals:

Upon completion of this course, participants will understand the use of FEMA’s DSS-WISE Lite toolset and its use in dam safety preparedness, mitigation, flood response, and post disaster planning to reduce flood losses and increase public safety. Specifically, participants will:

- Understand the concepts associated with dam risk and consequence assessment.
- Understand the application of DSS-WISE Lite to rapid assessment of dam safety.
- Understand the data preparation needed prior to using the toolset.
- Run a successful DSS-WISE Lite dam breach model and review model results.
- Introduce the concept of flood hazard classes and lethal flood zones for evacuation planning.
- Determine the population at risk downstream of dams.
- Applications of how rapid assessment is applied by local communities as part of their emergency management and dam safety program to reduce or manage flood risk.



#### Target Audience:

This workshop is intended for: State Dam Safety and Emergency Management Agency Staff, Community Officials, Emergency Managers, Dam Safety Professionals, FEMA HQ Staff, FEMA Insurance Actuaries and FEMA Contractors.

Attendees must have some basic computer skills and a laptop computer. No specialized software is required.

#### Cost:

- The workshop is \$60 for Non-Public/Private Sector consultants. Please note engineers from private firms that are working with local officials and inspecting or maintaining publicly owned dams still need to pay.
- The workshop is free of charge to dam owners and public officials.

#### Credit:

Oklahoma Water Resources Board awards 12 PDHs for the completion of this workshop.

#### Training Level:

Basic

#### Registration:

Please register for the workshop at: <https://www.eventbrite.com/e/dss-wise-lite-rapid-dam-break-flood-and-consequence-assessment-tickets-93112673513>. Registration deadline is March 31st, 2020.

