



2010 Dams Sector Exercise Series - Green River Valley (DSES-10)

Green River Valley public and private stakeholders in the State of Washington are collaborating with multiple critical infrastructure partners to establish a cooperative effort addressing regional disaster resilience issues. The primary goal of this collaborative project is to achieve a greater understanding of the potential impacts associated with significant flooding events along the Green River Valley and to identify those critical infrastructure interdependencies that influence local and regional disruptions. This project will assist public and private stakeholders in jointly identifying, assessing, and improving recovery strategies and business continuity plans, thus enhancing regional resilience and promoting robust partnerships at the local and regional levels.

Scope

The 2010 Dams Sector Exercise Series – Green River Valley (DSES-10) project will focus on the analysis of short- and long-term regional impacts resulting from a flooding scenario affecting a large portion of the Green River Valley, and leading to severe consequences and significant disruptions in the King County communities of Auburn, Kent, Renton, and Tukwila in the State of Washington. This flooding scenario will serve as the triggering event to analyze impacts and interdependencies.

The DSES-10 effort will assist in the development of risk mitigation strategies to enhance disaster resilience by: 1) improving the current understanding of the potential impacts associated with significant flooding events, including direct and indirect economic consequences, environmental impacts, and disruptions to local government capabilities and services; 2) identifying and assessing cascading effects associated with critical infrastructure dependencies and interdependencies; 3) delineating public-private sector stakeholder roles and responsibilities in local and regional disaster mitigation, response and recovery; and 4) recommending short- and long-term risk mitigation measures, programs, and strategies that could be implemented individually or collectively by local and regional stakeholders.

Background

The overall purpose of DSES efforts is to identify, analyze, assess, and enhance regional preparedness and disaster resilience, using multi-jurisdictional discussion-based activities involving a wide array of public and private stakeholders. For a given region, this collaborative process is based on a particular scenario that serves as the triggering event to analyze impacts, disruptions, critical interdependencies, and stakeholder roles and responsibilities. The discussion-based process is executed under the framework provided by the Homeland Security Exercise and Evaluation Program (HSEEP), maintained by the Federal Emergency Management Agency

(FEMA). This framework provides a standardized methodology and terminology for activity design, development, conduct, evaluation, and improvement planning, and can be adapted to a variety of scenarios and events (from natural disasters to terrorist incidents). To date, two major regional efforts involving multiple dams and levee systems, cascading impacts, and critical infrastructure interdependencies have been conducted as part of the DSES initiative.

The first effort, DSES-08, was conducted in 2008 by the U.S. Army Corps of Engineers (USACE), U.S. Department of Homeland Security (DHS), and Ameren UE, in collaboration with public and private partners across the Dams Sector. DSES-08 involved two dams along the Osage River Basin in Missouri, and consisted of a series of exercises focused on enhancing protection efforts against deliberate attacks and improving preparedness, response, and rapid recovery in the event of an attack or natural disaster. The triggering event for DSES-08 was a simultaneous terrorist attack on both dams. More than 300 attendees representing over 60 organizations participated in DSES-08 events.

The second effort, DSES-09, was conducted in 2009 by USACE, DHS, and the Pacific Northwest Economic Region, in collaboration with multiple public and private partners across the sector. DSES-09 involved multiple dams and levees along the Columbia River Basin, and consisted of a series of discussion-based activities aimed at assessing and improving regional preparedness and disaster resilience for the cities of Kennewick, Pasco, and Richland in the State of Washington. The triggering event for DSES-09 was severe rain-on-snow conditions leading to significant flooding in the region. More than 460 attendees representing over 90 organizations participated in DSES-09 events.

The proposed DSES-10 effort will take advantage of the multiple activities, capabilities, and proactive engagement demonstrated by Green River Valley stakeholders as a result of the operational conditions at Howard Hanson Dam. This dam, owned and operated by USACE, provides flood risk reduction and water storage on the Green River. Following a record high level of water behind the dam in January 2009, USACE became concerned after the discovery of two depressions on the right abutment, increased water levels in groundwater monitoring wells, and the appearance of sediment-laden water entering the abutment drainage tunnel. As a result, USACE imposed restrictions on the pool level for flood storage, thus increasing the risk of flooding to downstream communities. Preparations for the 2009-2010 flood season also included constructing an interim seepage barrier wall and improving the drainage of the right abutment to direct seepage into the drainage tunnel. This work concluded in early November 2009, effectively reducing the threat of flooding. However, while the dam itself presents no immediate danger of catastrophic failure, there is increased risk of flooding to downstream communities until the seepage issues are fully addressed.

The Green River Valley region has a strong culture of disaster preparedness, as evidenced by stakeholder participation at a regional critical infrastructure interdependencies workshop organized by the King County Office of Emergency Management on November 12, 2009. More than 140 business and community representatives participated at this workshop that highlighted the need for additional collaborative efforts addressing regional disaster resilience issues. Local and regional stakeholders have expressed desire to utilize DSES-10 as an effective mechanism with which to ensure collaboration among public and private stakeholders in the development of risk mitigation strategies for improving current understanding of potential impacts associated with significant flooding events, identify and assess cascading effects associated with critical infrastructure interdependencies, and recommend short- and long-term strategies that could be implemented by regional stakeholders.

Approach

The DSES-10 effort will be implemented through a series of discussion-based activities (meetings, seminars, workshops, etc.), complemented by a number of data gathering, information assessment, and analysis efforts. Activities will follow the HSEEP framework to facilitate a systematic mechanism to consolidate all findings resulting from this effort, providing a recognized process to inform future resource support and investment justifications aligned with Federal grant program requirements.

The DSES-10 effort will consist of the following three main areas:

a) Regional Baseline Assessment: Efforts in this area will focus on identification, collection, and assessment of relevant information necessary to characterize the baseline condition of the Green River Valley region. This area will analyze potential regional disruption scenarios and will identify critical information sharing and collaboration capabilities of local and regional public and private stakeholders spanning the entire disaster lifecycle. Efforts will also focus on the analysis of plans and community best practices, addressing both public and private sector priorities. This area will identify relevant pre- and post-event decision-making processes and collaboration mechanisms, and will include a preliminary identification of infrastructure interdependencies that may be relevant to regional disruption scenarios. Activity implementation will entail conducting interviews and surveys to elicit information from representative samples of public and private sector stakeholders.

This area will address the following objectives:

- Identify and consolidate regional baseline information, describing economic structure, industrial development, economic and social landscape, and potential disruption scenarios.
- Identify current public and private capabilities related to preparedness, mitigation, and response and recovery.
- Identify current information sharing and collaboration mechanisms supporting public-private interactions during the disaster lifecycle.
- Conduct baseline identification of cross-sector infrastructure interdependencies.
- Conduct preliminary identification of public and private capabilities, characteristics, and requirements that may serve as effective drivers to enhance regional resilience.

A Regional Baseline Assessment report will be developed in collaboration with participating public and private stakeholders to summarize the corresponding findings, conclusions, and recommendations.

b) Regional Consequence Assessment: Efforts in this area will focus on assessment and evaluation of the potential consequences associated with selected regional disruption scenarios; refinement of existing models to evaluate flood damages, including estimation of human health and safety impacts, and estimation of direct and indirect economic impacts; identification of potential environmental impacts; identification of potential behavioral changes and impacts on public confidence; and assessment of critical infrastructure dependencies and interdependencies associated with regional disruption scenarios.

This area will address the following objectives:

- Estimate extent of regional direct and indirect consequences associated with significant flood events.
- Refine existing models and procedures to assess regional short- and long-term, direct and indirect impacts associated with significant disruption scenarios.

- Conduct scenario-specific identification of critical infrastructure dependencies and interdependencies.

A Regional Consequence Assessment report will be developed in collaboration with participating public and private stakeholders to summarize the corresponding findings, conclusions, and recommendations.

c) Regional Resilience Strategy. Efforts in this area will focus on assessment and evaluation of the effectiveness of continuity of operations and business plans in addressing direct impacts and regional disruptions caused by significant flood events; identification of short- and long-term impacts to local government capabilities and services; analysis of private sector recovery planning priorities; identification of additional preparedness, mitigation, and preventive actions that would minimize disruptions and accelerate recovery and restoration of critical infrastructure and essential services; and identification of actions, programs, and strategies that could assist public and private stakeholders in enhancing regional resilience.

This area will address the following objectives:

- Develop an integrated regional strategy to assist public and private stakeholders in jointly enhancing regional resilience.
- Support identification of integrated post-disaster recovery solutions and prioritize recommended short- and long-term actions that could improve regional disaster resilience.
- Identify regional strategy implementation mechanisms and support strategic flood risk reduction efforts and other interagency initiatives.

A Regional Resilience Strategy will be developed in collaboration with public and private stakeholders as the overall outcome of the DSES-10 project.

Benefits

The DSES-10 effort will provide significant value to regional stakeholders. This project will:

- Improve stakeholder understanding of preparedness and resilience challenges, enhance planning capabilities, and foster development of additional capabilities by providing a foundation and path forward to mitigate shortfalls.
- Further develop the DSES approach as a model to assist the Nation in improving the preparedness and resilience of at-risk communities and regions to mitigate consequences, and promote expeditious response and recovery from all-hazards events and disasters.
- Foster closer cooperation and collaboration on regional resilience issues among government agencies at the local, state, and federal levels.
- Integrate private sector and other non-government organizations into regional disaster planning and management efforts and demonstrate how they can work with public sector partners to develop a regional integrated risk strategy to meet business continuity challenges.

Sponsoring Organizations

Federal sponsors for this effort include USACE, FEMA, and DHS. Local and regional coordination of DSES-10 activities will be conducted by the Washington State Homeland Security Region 6 (King County) Critical Infrastructure Protection Working Group, in collaboration with the Green River Emergency Management Planning Group and other Green River Valley stakeholders.

Timeline

Date	Event	Milestone	Area		
			a) Regional Baseline Assessment	b) Regional Consequence Assessment	c) Regional Resilience Strategy
04/28/2010	DSES-10 Initial Planning Workshop				
05/03/2010 - 05/14/2010		Stakeholder Interviews			
06/30/2010	DSES-10 Regional Baseline Assessment Workshop	Regional Baseline Assessment Report (Draft)			
07/21/2010		Regional Baseline Assessment Report (Final)			
08/11/2010	DSES-10 Regional Consequence Assessment Workshop	Regional Consequence Assessment Report (Draft)			
09/08/2010		Regional Consequence Assessment Report (Final)			
10/21/2010	DSES-10 Regional Resilience Table-Top Exercise				
11/18/2010		Regional Resilience Strategy (Draft)			
12/9/2010	DSES-10 Regional Resilience Conference	Regional Resilience Strategy (Final)			

For Additional Information

For additional information, please email DSES10@dhs.gov.