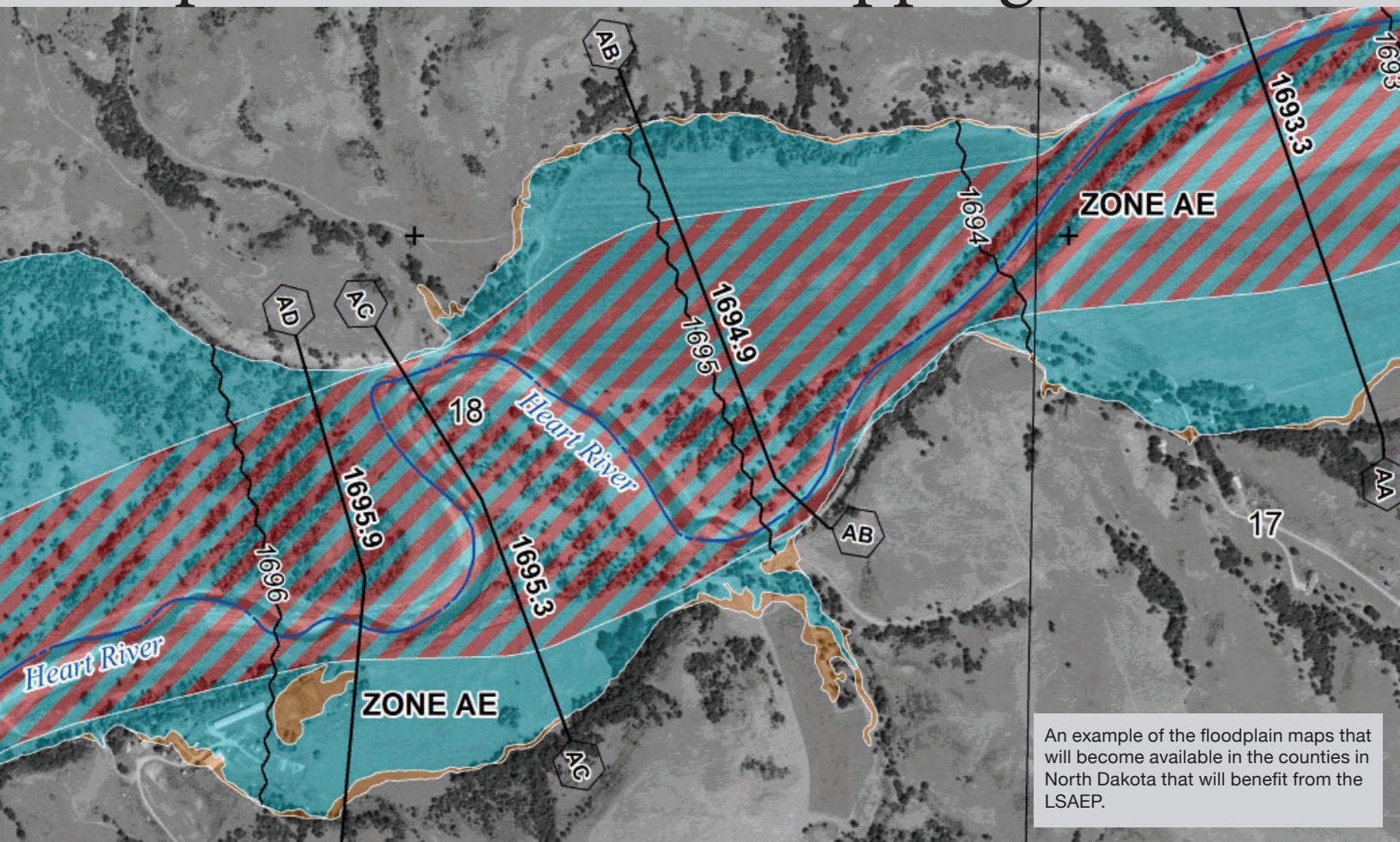




FROM THE NORTH DAKOTA STATE WATER COMMISSION

# Large Scale Automated Engineering To Improve State Flood Mapping Efforts

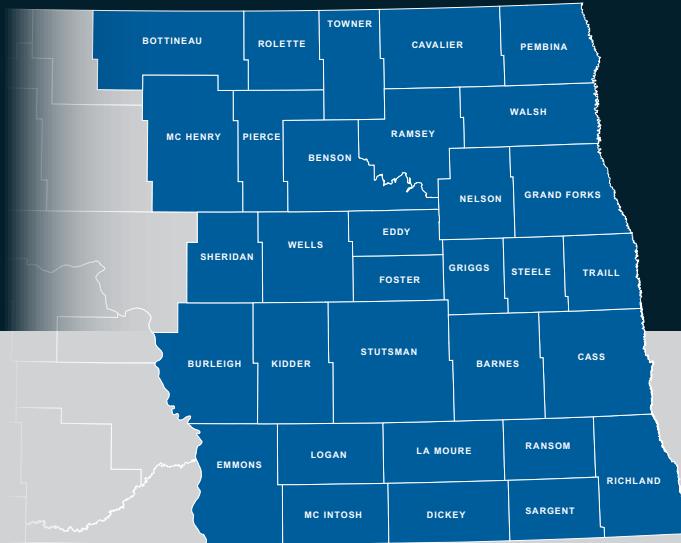


The Federal Emergency Management Agency (FEMA) has started on a Large Scale Automated Engineering Project (LSAEP) to assess county-wide floodplains in eastern North Dakota.

The LSAEP will provide 32 eastern North Dakota counties with high quality flood risk assessments of all streams and tributaries. The initial flood risk assessment

will be created by utilizing elevation data derived from Light Detection and Ranging (LiDAR) information, in combination with powerful geographic analysis software and hydrology modeling techniques.

The results of the flood risk assessment will model high-risk flood zones, complete with water surface elevations for various flood events.



## WHY NORTH DAKOTA FOR THIS PROJECT?

Since the early 2000s, the State Water Commission has been partnering with other local and federal entities in an effort to fund LiDAR collects for the entire State of North Dakota. To date, this effort has yielded complete LiDAR coverage - statewide. Because of the breadth of LiDAR coverage, FEMA was able to leverage the state's data for the purpose of this 32 county project. One advantage to using a large-scale dataset for hydrologic analysis is that water knows no political boundaries. Watersheds often cover areas of multiple cities, townships, and/or counties. Therefore, a basin-wide project will reduce errors from the city to city approach, and also pay dividends in cost savings for smaller communities throughout the state.

Because the LiDAR datasets created through the LSAEP will still be huge files, State Water Commission IT professionals are currently working on the best methodology to make sure that the communities that need the LSAEP data will be able to access them as easily as possible through the agency website.

## PROJECT BENEFITS

There are a number of communities within the LSAEP footprint that are regulating their floodplains from dated Flood Insurance Rate Map (FIRM) products, or are in areas that are currently unmapped with no areas of risk identified. In addition, these maps often do not provide the engineering model that supports the delineated floodplain. But with the LSAEP, updated floodplains will be generated to reflect current flood risks for a given area, as well as provide the supporting technical engineering information that support the floodplain delineation.

The data generated from this project can be used to help guide communities with their planning/zoning decisions for future development. It will allow a community to

understand its risk and have digital data to help with public outreach and education. It will also enable a community to more readily respond to potential flooding risks by having more information to plan evacuation routes and sandbagging efforts.

Laura Horner, who is the North Dakota Risk MAP (Mapping, Assessment, and Planning) Coordinator at the State Water Commission, will be dovetailing this effort with an education and outreach campaign aimed at keeping communities informed and engaged. "FEMA's mission is to identify and mitigate flood risks," said Horner. "At the completion of this project, communities will be able to recognize their true risk to flooding. They will be able to use this information to communicate risk, implement higher standards, and apply for mitigation grants. These efforts will allow the community to create a more flood resilient township, city, or county."

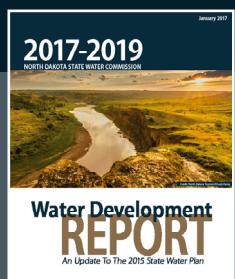
## FUTURE OUTREACH

FEMA is slated to complete its data processing late summer of 2017. Starting this spring, representatives from FEMA and the State of North Dakota will begin the process of community outreach by conducting both Kick-off and Discovery meetings throughout the 32 county project area. Dates and locations have not been decided yet, but look for announcements through mailings, articles, and social media such as the State Water Commission's Facebook page ([www.facebook.com/NDStateWater/](http://www.facebook.com/NDStateWater/)) in the coming months.

## 2017-2019 Water Development Report Completed

The State Water Commission has completed the 2017-2019 North Dakota Water Development Report, which serves as an update to the 2015 State Water Plan.

The report is available for download via the Water Commission's website at [www.swc.nd.gov](http://www.swc.nd.gov), or paper copies can be requested by calling (701) 328-4989 or emailing [ndswmp@nd.gov](mailto:ndswmp@nd.gov).



# UPPER SHEYENNE

## Board Presents Oarsman Award

At the State Water Convention awards banquet last December, the Upper Sheyenne River Joint Water Resource Board (Board) presented Steve Krentz, of the United States Fish and Wildlife Service (USFWS) with the Oarsman Award.

The State Water Commission has a long history of working with various cost-share partners to complete the restoration of dams. Every one of these efforts takes not only financial resources, but also time and commitment from individuals, agencies, and technical experts to ensure the success of each project. An example of a particular individual's commitment and effort that helped to advance projects was that of Steve Krentz.

Through his efforts with the Board, Krentz was able to assist with securing funding from the USFWS, and numerous other entities, for multiple low head dam restorations on the Sheyenne River. These projects involved the installation of fish passages that serve the dual purpose of reinforcing the aging dams, while allowing fish to travel over what would normally be an impassable barrier. The dam restorations on the Sheyenne River are a good example of how bringing together as many as eight different cost-share partners, can allow even small counties to afford the projects that they need.

The Upper Sheyenne Joint Board, which represents the counties in the watershed above Lake Ashtabula, created the Oarsman Award in order to recognize individuals whose efforts support the Board's mission of managing the waters of the basin for the benefit of its citizens.

"The Upper Sheyenne River Joint Water Resource Board has been able to move several projects forward through partnerships involving multiple partners," said Ben Varnson, Manager of the Upper Sheyenne Board. "Steve



Steve Krentz (right) being presented the Oarsman Award by Ben Varnson in December.

has assisted the Joint Board with his recommendations and guidance to secure cost-share for project goals, including rehabilitation for dams in our member counties. Steve is always willing to help where needed and always has a positive attitude."

Steven and his wife Sharon live north of Bismarck on a small place where they raise their equine dependents, and continue to be active in the Bismarck Horse Club.

The State Water Commission would like to congratulate Steve, the Upper Sheyenne River Joint Board, and all of the other partners who helped to make several dam rehabilitations successful in the Sheyenne River watershed.



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