

Office of County Engineer
ALEXANDER COUNTY

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April 11, 2016

I am Jeff Denny, the county engineer for Alexander County, Illinois. The New Years Flood resulted in the over-topping and beaching of a levee in the Len Small Levee District in Alexander County. The consequent flooding damaged homes, destroyed millions of dollars of public infrastructure, scoured farmland and covered some with sand up to six feet deep. The lack of flood protection leaves thousands of acres of productive farmland as marginal farmland until future flood events destroy it as well.

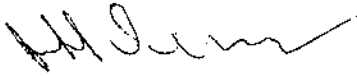
The Len Small Drainage District is in the Public Law 84-99 Program. We have been working with the St. Louis District to find a solution to repair this levee system, but the benefit/cost ratio's have not been favorable for reconstruction.

The potential for a channel cut-off at this location is extremely high. The St. Louis District has proposed additional bank stabilization measures, but because this does not fit the Corps definition of an emergency, no additional work can be started until at least October. They have also proposed additional measures to prevent a channel cut-off should the levee not be reconstructed. Although millions of dollars of additional work will have to be completed to try to prevent a channel cut-off none of these costs are factored into our Benefit/Cost Analysis.

I believe the Corps of Engineers greatly underestimates the potential for this cut-off to occur. The New Years Flood levee failure occurred at the crest, so flow was only present during the falling leg of the flood. The flood event was of relatively short duration. A number of road embankments were in place to help baffle the flow and the Ohio River at Cairo was at the sixth highest level ever which reduces the gradient of the flow across Dogtooth Bend. The potential exists for much more devastating results.

The St. Louis District has told us they had a similar situation with a cut-off at Thompson Bend and have proposed similar measures, but the situation is completely different. From the Corps Flow Frequency Study, on a 1% annual flood event, the fall across Thompson Bend is 1.6 feet, across Dogtooth Bend it is 8 feet. On a 20% annual flood event the fall across Thompson Bend is 3.3 feet, across Dogtooth Bend it is 9.6 feet. This is not a situation that can easily be controlled and navigation on the Upper Mississippi is greatly at risk.

Not rebuilding the levee will also be an environmental disaster. Horseshoe Lake is a 2400 acre cypress/tupelo ringed ox-bow lake located a little over a mile from the breach. If the Mississippi River is allowed to continually directly flow into Horseshoe Lake, this environmentally significant shallow water lake will soon be destroyed. The only solution to stop this economic disaster and to protect both navigation and the environment is by reconstructing the Len Small Levee.

A handwritten signature in black ink, appearing to read "Jeff Denny". The signature is fluid and cursive, with a long horizontal stroke at the end.

Jeff Denny, P.E.
Alexander County Engineer