

## **Needed Repairs Begin On Middle Republican NRD Flood Control Structure**

CURTIS, NE - Design flaws on two flood control structures owned by the Middle Republican Natural Resources District became apparent after heavy rains in 2007 and 2008. Both are scheduled for repairs as a result of structural flaws that occurred during their original construction. Structures 80 A (north of Maywood) is currently undergoing repairs while 32 A (Hitchcock and Hayes Co. line near Blackwood Creek) is scheduled to begin when 80A repairs are completed late this fall or early next year.

Small sink holes were observed in Structure 80A during the spring of 2007 and were determined by NRCS soil engineers to be the result of dispersive soils and differential settlement. These soils are fine grained particles that erode below the surface, causing holes and gullies.

Structure 32A near Blackwood Creek experienced a sudden breach during an isolated and severe rain event in August of 2008. The breach began as a crack that probably started as a result of the erosion of underlying dispersive soils. This structure will be rebuilt using stimulus funds.

The NRCS soil engineers inspected both structures and developed repair plans that include removing most of the existing fill, installing chimney filters and replacing the bulk of the earthen dam. Funding was requested from the USDA-NRCS and approved for the repair of 80A. Dirt work began in April of 2010.

The Middle Republican NRD 'owns' 34 flood control structures throughout the District as part of the federal Watershed Protection and Flood Prevention Act. The structures were built in the 50's and during the 70's through the early 90's. The two damaged structures were built in the 80s. The remaining 32 structures remain intact but the District is monitoring those structures as well even though they performed admirably during the 2007 and 2008 Spring rains.