



# FEMA

## Mitigated Roads Endure After Substantial Rainfall

**Holmes County, FL** – The red clay roads of Holmes County, quietly located between Pensacola and Tallahassee, pass by country homes and farmsteads and through woods and pastures. When Hurricane Earl dumped 20 inches of rain on the Panhandle in 1998, these roads were severely flooded and washed out. Through a State of Florida and Federal Emergency Management Agency (FEMA) initiative, the dirt roads were upgraded to withstand years of use and rainstorms.

After Earl's substantial rainfall, the dirt roads turned into mud, and were rendered impassable by cavernous ditches and flowing water. Holmes County residents became isolated. They were unable to get out of the area, and fire, medical, and police emergency service vehicles could not travel into the neighborhoods. Holmes County Commissioner Jim King surveyed the road conditions in the fall of 1998 after Earl's heavy rainfall. He found that close to 30 gravel roads had considerable washout problems. The majority were impassable at the time.

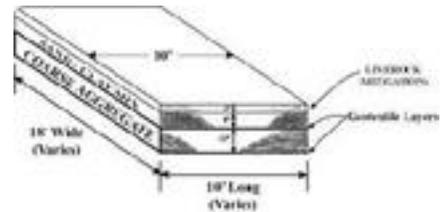
Because Holmes County was declared a federal disaster area, FEMA and the Florida Department of Community Affairs were able to provide funds through FEMA's Public Assistance program to repair and mitigate damaged roadways in the county.

To repair the roads in Holmes County, affected roadbeds were excavated into trenches measuring two feet deep by 18 feet wide by 10 feet long. A layer of geotextile fabric, or special screen mesh, was laid at the bottom of the trench. Then a coarse crushed stone aggregate base was laid over the fabric mesh. The aggregate, composed of two to four inches of crushed stone, allows water to pass through. Another layer of geotextile fabric was then laid on top of the coarse aggregate. An eight-inch thick sand and clay mixture topped the second layer of fabric as the finishing layer. In addition to the basic road repairs, a final mitigation measure was to stabilize the road surface to prevent erosion by placing a layer of lime-rock over the layer of sand and clay.

The mitigation measure was a success. The repaired roads were not affected by subsequent heavy rain incidents, including Hurricanes Ivan and Dennis. The project was funded under the Public Assistance program, and totaled \$91,252.00. Losses avoided from Ivan and Dennis are estimated at \$182,504.00.



Holmes County, Florida



### Quick Facts

Year:

**1998**

Sector:

**Public**

Cost:

**\$91,252.00 (Actual)**

Primary Activity/Project:

**Flood-proofing**

Primary Funding:

**Hazard Mitigation Grant Program (HMGP)**