



Small Wisconsin Villages Leads the Nation: Rebuilds Above Floodwaters

Full Mitigation Best Practice Story

Crawford County, Wisconsin

Soldiers Grove, WI – Residents of the Village of Soldiers Grove in southwest Wisconsin defied the odds, gathered local resources, and pioneered un-chartered territory to create an innovative mitigation plan of their own. Instead of embracing a traditional dam and levee flood-proofing method to protect their community, they raised their town.



The village incorporated in 1888 as homes and businesses grew around a saw mill on the banks of the Kickapoo River amidst a backdrop of forests and farmlands. The river provided transportation and hydroelectric power in the valley, but cleared land added more water to a river that was filling with silt.

Beginning in 1907, repetitive flooding annoyed residents until 1935 when the first disastrous flood engulfed homes and businesses up and down the valley with sludge and mud. Congress directed the U.S. Army Corps of Engineers to study flood options.

Delayed by wars, the study wasn't completed until 1962 when the Corps recommended a dam be built 36 miles upstream in addition to the construction of a levee system around the village. Unfortunately, the proposition was met with problems. The fully federally funded dam was attacked by environmentalists, and its future was uncertain.

The \$3.5 million village levee system would require Soldiers Grove to pay \$220,000 toward construction and an estimated \$10,000 in annual maintenance. The village's property was valued at less than \$1 million with an annual tax levy of \$14,000. These numbers did not add up for the citizens.

For decades the village, with an estimated population of 600, had debated a better plan – instead of spending all the money on trying to control the river, they proposed spending less to move the flood-prone areas of the town. But this was met with more problems. No U.S. community had ever voluntarily moved, except for villages that would be flooded because of the construction of a dam. Without significant financial support from higher levels of government, the move could not be accomplished.

Exacerbating the problem was the relocation in the 1950s of U.S. Highway 61 from downtown to bypass the village. "From 1950 on Soldiers Grove suffered a progressive loss of business. It was getting to the point locals were saying – 'we're not going to be here much longer.' The vitality of the town was dying," said resident Thomas Hirsch, Relocation Coordinator for Soldiers Grove during the move.

"To many residents the [Corps'] proposal meant that a dying community prone to flooding would become a dying community protected from flooding if the new levee was built," Hirsch added.

The folks at the Village took a huge first step in 1977 and pooled their local and private resources together, and with \$90,000 in public financing purchased the relocation site. They acquired 100 acres of uphill land away from the Kickapoo River floodplain along the re-routed state highway and hoped for eventual funding to realize their goal – raise the town.

Torrential rains in July 1978 brought damages in excess of a half million dollars. It was declared a natural disaster as the Kickapoo River exceeded its flood stage by over six feet. The local debate was over, and the community began selling their idea to the state and federal government with a united front.

Armed with the research results of feasibility studies and outside consultation paid for with small state grants, local officials convinced state and federal officials that the move would be the best flood-proofing for the Village - to buyout floodplain properties, demolish the structures, clear the land, and rebuild the town uphill.

“The role of the state certainly factors heavily into the move,” explained Hirsch. “They gave us funding at a very critical time. The Department of Natural Resources (DNR) was the first to fund us with a second well and water supply grant to assure safe water at all times.”

A combination of state and local funds provided over a third of the estimated \$6 million total project. The Village applied for and successfully received grants for the remaining cost from federal agencies including HUD’s Community Development Block Grant (CDBG). CDBG funds may be used to assist communities recovering from a disaster, especially in low-income areas.

By 1983, the project was complete and relocated Soldiers Grove now sits uphill. Thirty-six businesses, three municipal facilities, and 22 homes were impacted by the relocation project. While some left the community and a few homeowners chose to remain and flood-proof, most chose to relocate.

At the time, with oil embargos and increased national concern for energy conservation, Village officials agreed to incorporate solar heating in all of the 20 or more buildings constructed. They pointed out that they did so ‘to reduce our dependence on foreign oil.’

The community agreed to utilize solar heating for at least half of its heating needs. Subsequently, Solar Village was established and has emerged as a model solar-city that attracts growing attention from communities and curiosity-seekers around the country.

Since the move, locals witnessed revitalization in their town as new businesses arrived and old ones expanded, people moved into the area, and officials continue to pursue community and industrial development in a financially sound community.

When the August 2007 flood of record devastated other communities along Kickapoo River, the Soldiers Grove levees were again topped. Only this time, instead of inundating downtown and homes, only the new riverside municipal park and campgrounds received slight damage. The Village of Soldiers Grove, the raised town, was dry.

“For communities to make something like this happen there has got to be local planners who won’t give up and will make things happen. This was a vision worth going after with daunting odds,” stated Larry Larson, Chief of Floodplain and Shoreline Management at the DNR for the State of Wisconsin, at the time of Soldiers Grove relocation. DNR has a 56-page book that details the many issues, tactics and solutions that made this move a reality.

Activity/Project Location

Geographical Area: **Single County in a State**

FEMA Region: **Region V**

State: **Wisconsin**

County: **Crawford County**

City/Community: **Soldiers Grove**

Key Activity/Project Information

Sector: **Public/Private Partnership**

Hazard Type: **Flooding**

Activity/Project Type: **Flood-proofing; Flood Control; Relocation**

Activity/Project Start Date: **08/1978**

Activity/Project End Date: **07/1983**

Funding Source: **Local Sources; State sources; Other Federal Agencies (OFA)**

Activity/Project Economic Analysis

Cost: **\$6,000,000.00 (Estimated)**

Activity/Project Disaster Information

Mitigation Resulted From Federal Disaster? **Yes**

Federal Disaster #: **559 , 07/07/1978**

Federal Disaster Year: **1978**

Value Tested By Disaster? **Yes**

Tested By Federal Disaster #: **1719 , 08/26/2007**

Repetitive Loss Property? **Yes**

Reference URLs

Reference URL 1: <http://www.soldiersgrove.com/>

Reference URL 2: <http://www.fema.gov/government/grant/hmgp/index.shtm>

Main Points

- Beginning in 1907, repetitive flooding annoyed residents until 1935 when the first disastrous flood engulfed homes and businesses up and down the valley with sludge and mud.
- Congress directed the U.S. Army Corps of Engineers to study flood options. Delayed by wars, the study wasn't completed until 1962 when the Corps recommended a dam be built 36 miles upstream in addition to a levee around the village.
- The \$3.5 million village levee system would require Soldiers Grove to pay \$220,000 toward construction and an estimated \$10,000 in annual maintenance. The village's property was valued at less than \$1 million with an annual tax levy of \$14,000.
- For decades the village, with an estimated population of 600, had debated a better plan – instead of spending all the money on trying to control the river, they proposed spending less to move the flood-prone areas of the town.
- The folks at the Village took a huge first step in 1977 and pooled their local and private resources together and with \$90,000 in public financing purchased the relocation site. They acquired 100 acres of uphill land away from the Kickapoo River floodplain along the re-routed state highway and hoped for eventual funding to realize their goal – raise the town.
- The project was completed in 1983 and flooding in August 2007 proved that raising the city was the best bet. Instead of inundating downtown and homes, the new riverside municipal park and campgrounds received slight damage. The Village of Soldiers Grove, the raised town, was dry.



Soldiers Grove 1978 Flood



Aerial view of Solar Village



Solar Village established in 1983



Tom Hirsch, relocation coordinator and Larry Larson chief at DNR during relocation of Soldiers Grove