

An Ounce of Prevention...



Building Disaster-Resistant Communities in North Dakota

It goes without saying that North Dakota has seen its share of disasters in the past decade.

But instead of being repeatedly victimized by Mother Nature's fury, communities large and small are fighting back. They are looking at ways to better withstand the effects of natural disasters so that future floods, blizzards and severe storms won't be as devastating. They are, in fact, working to protect the very lifeblood of their towns—those who live, work and play there.

In four North Dakota communities, those disaster-resistance efforts are becoming a community-wide endeavor through a program known as *Project Impact: Building Disaster Resistant Communities*.

Project Impact, first launched in 1997 by the Federal Emergency Management Agency (FEMA), is a nationwide initiative to change the way America deals with disasters. Its premise is that individuals, businesses and communities can take steps to reduce or prevent damages *before* disaster strikes, thereby reducing the human suffering and financial costs of those life-altering events.

Since then, the momentum to embrace disaster resistance has continued to grow—in large part because of reported successes in *Project Impact* communities and because more and more local leaders are recognizing the importance of disaster resistance to their own community's long-term survivability.

As of December 2000, nearly 250 communities and more than 2,500 businesses in all 50 states, Puerto Rico, Guam and the U.S. Virgin Islands had joined *Project Impact*.

The *Project Impact* initiative has four major components: 1) identifying a community's risks and vulnerabilities to disaster; 2) building public-private partnerships to further the community's disaster-resistance goals; 3) taking actions that will reduce or prevent damages; 4) communicating the success of those efforts with the community at large.

Specialists from FEMA and state emergency management agencies provide technical expertise and support, as needed, to *Project Impact* communities throughout the four-stage process.

Already, in just three years, countless stories of damage prevention have been reported throughout the country. In North Dakota, many disaster-resistance efforts already are underway in hopes of reversing the trend of escalating disaster damage from recent years.

Here is a look at the four North Dakota *Project Impact* communities, their disaster risks and what they are doing to build safer communities:

City of Fargo

North Dakota's largest community, population 77,000, Fargo is on the eastern side of the state in the Red River Valley, considered one of the most fertile farming regions in the world. The valley also is home to the Red River of the North, which begins in the southeastern corner of the state and flows north to Canada.

The Red River is a flood source for the eastern part of the state, including Fargo, when spring

snowmelt and excessive precipitation swell the river beyond its banks and into neighboring communities.

Since 1969, Fargo has experienced six major spring flood events from the Red River. During the winter of 1996–97, the city was pummeled with a record eight blizzards, five winter storms and 117 inches of snow. In July 1999, straight-line winds damaged residences, businesses and some public facilities during a pop-up storm. And in the summer of 2000, parts of the city were swamped when 7 inches of rain fell hard and fast in about seven hours.

In addition to riverine flooding, Fargo’s disaster risks include flash flooding, blizzards, and severe storms, including tornadoes and damaging straight-line winds.

In Fargo, these trees and shrubs, also known as a living snow fence, have reduced blowing and drifting snow by about 70 percent since they were planted in 1986. FEMA photo by Andrea Booher.



Fargo has long worked to reduce the effects of disasters in the community and, as such, was chosen by the state in 1998 to be North Dakota’s first *Project Impact* community. In 1999, the city received a national award from FEMA for having actively applied land use planning to new growth and better landscape management since becoming a *Project Impact* community.

“In Fargo, the idea of *Project Impact* is to encourage sustainable community hazard mitigation [disaster resistance] in whatever way we can,” said Jessica Thomasson, the city’s *Project Impact* coordinator. “We have explored new mitigation options. We have stronger and more integrated partnerships with people in the community and the public continues to see the value of supporting mitigation policies.”

The city has participated in the National Flood Insurance Program since 1971 and, after the 1997 floods, adopted stronger local building codes for new construction in and near floodplain areas.

Since joining *Project Impact*, the city’s disaster-resistance actions have included:

- ◆ Developing and instituting educational campaigns for all ages on disaster risks and prevention measures. A special program called “Fargo Ready Kids” was developed for third-graders throughout the city to get children involved in family disaster planning.
- ◆ Conducting a citywide risk assessment and hazard analysis.

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- ◆ Continuing a variety of mitigation efforts such as property acquisition and drainage improvements to minimize overland flooding throughout the city.
 - ◆ Installing storm warning sirens.
 - ◆ Building stormwater retention basins.
 - ◆ Adding a stormwater lift station.
 - ◆ Planting living snow fences or shelter belts to reduce the amount of blowing and drifting snow on key roadways.
 - ◆ Incorporating *Project Impact* and disaster-resistance principles in the city's growth and land use plans.
 - ◆ Helping to plan tornado storm shelters in mobile home parks to provide protection for park residents in the event of a severe storm.
 - ◆ Upgrading the city's Emergency Operations Plan.

City of Valley City

Valley City, population 7,100, is located in the scenic Sheyenne River Valley in the plains of south-central North Dakota. It is a community with a long history of flooding and with a great deal at stake when the river rises—all of its public buildings, all of its downtown businesses (about 75) and about 360 of its homes are either in the floodplain or the floodway.

In 1999, Valley City became the state's second *Project Impact* community. Having had four floods in the last 10 years alone, it is a community that is determined to change the course of its disaster history. After a devastating flood in 1993, Valley City sponsored a voluntary buyout of 47 homes in the floodplain. Today, the area is open space.



Valley City Mayor Riley Rogers is helping to build a disaster-resistant community.

The city is at risk for other disasters as well, including blizzards and winter storms, hazardous materials accidents (an interstate and a major railway border two sides of the city), dam failure, tornadoes and other severe storms.

To combat the impact of these types of disasters, Valley City's *Project Impact* efforts include:

- ◆ Installing a permanent backup generator at the city's water treatment plant to provide uninterrupted power—and therefore continuous water service—even during a disaster. The water treatment plant had failed during past disasters.
- ◆ Working with the city's school system to add disaster-resistance education to its regular curriculum.
- ◆ Developing a community education program that provides citizens with how-to information on protecting their homes and businesses from disasters.
- ◆ Installing sluice gates.
- ◆ Working with a local seniors organization to help develop a neighborhood watch that would assist older residents during a disaster.
- ◆ Relocating police and fire radio systems to a higher floor to make them less susceptible to flooding.
- ◆ Partnering with the county emergency management office on a local Emergency Plan and Resource List.

According to Valley City Mayor Riley Rogers and *Project Impact* Coordinator Mary Lee Nielsen, the initiative has created a synergy within the city.

"*Project Impact* has given collaboration and networking new meaning to the citizens of Valley City," said Nielsen. "It's like the floodgates have been opened. This kind of energy flow cannot be extinguished and is easily passed to others."

Added Rogers, "*Project Impact* is going to eliminate a lot of problems we've had in the past. We are going to move buildings out of the floodway. We are not going to allow structures to be put in the floodway. We are going to be a city that will be as disaster resistant as we can be and *Project Impact* will be a part of Valley City's existence from now on."

City of Jamestown

Jamestown, population 15,500, also is located in south central North Dakota along Interstate 94. There, the Pipestem and James rivers meet—providing a number of recreational opportunities for south central North Dakota.

Since 1993, Jamestown has been part of eight presidential disaster declarations for flooding and one for a severe winter storm.

The city faces two major disaster threats—flooding and hazardous materials accidents. For more than six years, the city's water tables have remained high, causing ground saturation and overland flooding. As a result, damages have occurred to homes, the city's infrastructure and roads.

Jamestown elementary students learned about disasters the fun way... by coloring pictures of floods, tornadoes and other types of disasters. Here, one student receives a certificate of appreciation for her work from FEMA Regional Director Rick Weiland. FEMA photo by Brian Hvinden.



Because of its proximity to the interstate, a major U.S. highway (also the city's main street) and a key railway system, Jamestown faces a high risk of a hazardous materials accident. Moderate disaster risks include severe storms, high winds, rural fires, drought and dam failures.

Although Jamestown just joined *Project Impact* in 2000, the community already has begun working to improve its disaster resistance. The city's efforts so far have included:

- ◆ Providing disaster-resistance information to visitors at the Stutsman County Fair.
- ◆ Installing a backup generator at the city's Civic Center to provide emergency power so that the center can be used as a shelter during disaster events. The generator and its installation was provided by Jamestown Hospital, a local *Project Impact* partner.

Other planned projects include:

- ◆ Conducting a citywide study to determine appropriate stormwater projects.
- ◆ Developing a 24-hour Skywarn system for emergency communications.
- ◆ Preparing a multi-hazard school safety plan that outlines procedural steps for emergencies.
- ◆ Improving the community warning system.
- ◆ Enhancing the community's public awareness program for emergency preparedness of all hazards.

“*Project Impact* has changed our approach to dealing with vulnerable conditions in our community,” said Project Impact co-coordinator Joe Kroeber. “It has changed our thoughts to looking more ahead to see what steps we can take now.”

Pembina County

Designated as the state’s 2001 *Project Impact* community, Pembina County is home to the oldest settlement in North Dakota and the upper Midwest. The county, population 8,741, is located in the state’s northeastern corner along the borders of Canada and Minnesota. The international border at Pembina is the main access for the Interstate 29 International Trade Corridor.

Pembina County and many of its smaller communities are located along the banks of the Red River of the North. The City of Pembina, northernmost in the county, sits near the confluence of both the Red and the Pembina rivers.



New mobile home park in Pembina offers residents a safe alternative to living along the river. Through a voluntary buyout, the city purchased 27 properties along the river to move the residents from harm’s way and to prevent future flood damages.

The county is particularly vulnerable to flooding because of the Red River’s unusual characteristic of flowing north. In the spring, the river normally thaws first in the southern part of the state, causing excess water to flow northward where thaws have not yet occurred. When the water hits frozen areas, the river overflows its banks and causes widespread flooding.

The county has had eight presidential disaster declarations for flooding and one for blizzards since 1993. Along with flooding, winter storms and severe summer storms, including tornadoes, pose the greatest disaster threat.

Despite the repeated disasters in recent years, the county and many of its communities have made great strides in disaster resistance. In the past decade, nearly \$10 million in federal, state and local funds have been spent on disaster repairs and on reducing or preventing future damages.

Those disaster-resistant efforts throughout the county have included:

- ◆ Voluntary buyout of 27 flood-prone properties in one community and the subsequent development of a mobile home park outside the 100-year floodplain.

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- ◆ Relocating a city maintenance facility outside the 100-year floodplain.
 - ◆ Moving a primary sewer lift station and a medical clinic off an unstable riverbank.
 - ◆ Voluntary buyout of several residential and commercial properties off an unstable riverbank and subsequently out of the floodplain.
 - ◆ Relocating a city sludge pond out of the floodplain.
 - ◆ Re-channeling a portion of the Red River that runs through one of the communities.
 - ◆ Using special measures, including elevation and flow-through doors, to protect a general aviation airport.

Planning and identification of new efforts as part of *Project Impact* will begin in 2001.

“Through the *Project Impact* initiative, we hope to work to develop a more integrated approach to disaster resistance,” said Sandra Simonson, the county’s *Project Impact* coordinator. “By working together to reduce damages and costs associated with natural disasters, we hope to not only protect the individual towns but also our county as a whole.”

For more information on Project Impact and disaster prevention, call FEMA at 1-800-646-4600 or visit the FEMA website at www.fema.gov/impact.