

# *Calming the Storm... Prevention Measures Pay Big Dividends*

Growing up on a farm in rural North Dakota, Terry Styf learned a lot about keeping water out of where it doesn't belong. Like out of grain bins. And machine sheds. And houses.

It's a lesson that has paid him big dividends over the years. But none more so than in June 2000 when about 7 inches of rain bombarded his West Fargo neighborhood in little more than six hours.

The storm filled the streets—and many basements—with water. In front of Styf's house, water 3 feet deep covered the street. In fact, the water came as close as his front sidewalk.

But Styf's house was relatively unscathed thanks to a number of disaster-resistance measures he had put in place throughout the year before the storm.

"I saw people carrying flood-damaged things out of their houses just a few blocks from here," says Styf, 35. "We didn't have that problem. I didn't have to call FEMA and have an inspector come over to my house to look at damage."



*Terry Styf installed pavers with a slight angle to drain water away from his house.*

## **Risk of Flooding**

Styf, a West Fargo police officer, says he knew the flood threat heavy rains posed in his neighborhood, an area lacking the elevation needed to help water quickly run off. He had lived next door to his current house for seven years. So when he bought his multi-level residence in June 1999, he immediately began using the same techniques that had successfully protected his personal property and kept water out of his previous house.

First, he added shelving in his basement to elevate all of his storage. Now, extra shoes, Christmas decorations, toys and off-season items sit 12 to 18 inches off the floor. Styf and his wife Tara chose to forego permanent wall-to-wall carpeting and instead use a carpet remnant that can be rolled up and pushed to one side as a precaution during heavy storms. He also added another floor drain plug and replaced an old sump pump.

Then Styf turned his attention to the exterior of the house. He added plastic window-well covers to keep water from getting inside through the windows. He added extensions to the downspouts so that water wouldn't run down the foundation walls. And he extended the sump pump discharge hose another 10 feet to the street and then buried it. Moving the hose below ground enabled him to angle it downward, improving the gravity drainage away from the house, and reducing the chances that the hose would accidentally be disconnected, pouring water down the foundation.

Styf did extensive landscaping as well. Soil around the house had settled about a foot over the years, leaving the foundation exposed. So he hauled in 16 cubic yards of dirt, built the soil around the foundation back up a foot and then sloped it away from the house. A top layer of mulch helps hold the soil in place.

About 100 square paver blocks were put in around the house and slightly tilted so that water moving across the yard first hits the pavers and then runs down toward the street. A curved and sloped concrete extension was added to the side of the driveway to carry water away from the garage and to prevent the yard from eroding.

### Spending a Little Saves a Lot

Lastly, Styf added what appears to be just an attractive sitting area with a bench atop a mound of soil and mulch and bordered by two wooden privacy fence panels. In reality though, the fence panels and the mound help guide rainwater overflowing from the roof during heavy storms away from the house and into nearby flowerbeds.

So far, Styf says he's invested about \$4,000 in cash and a lot of labor for all the work done to the house. He has been able to cut costs by borrowing equipment and by bargain shopping for materials such as the paver blocks, which he found for 50 cents each at a garage sale. The money he's spent, Styf says, has saved thousands in damage many times over.

"The mitigation has been worth it," Styf said. "We've gotten four- to five-inch rains and flooding hasn't been an issue. But what I've learned is that flooding is an ongoing risk. You always have to be willing to look at things and continually upgrade."



*An attractive sitting area catches roof runoff and channels it away from the house.*



*Styf secures hoses into a basement drain.*



*More pavers outside Styf's garage also help direct water away from the structure and foundation.*

Styf now is making even more changes to correct three small problems that occurred during the June storm. Water was able to seep into the house from one of the window wells because the metal well wasn't sealed around the outside. Now, he'll waterproof the exterior of all the wells.

There was slight seepage underneath one of the shelving units in a corner of the basement through a crack that wasn't sealed. Now, Styf has sealed the crack with a vinyl cement patch and checked the rest of the basement to ensure there were no more possible entry points.

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A small amount of sewage backed up into the basement through one of the floor drains because Styf forgot to put the temporary plug in place. Now, he'll install a permanent plug in the drain similar to the other plug already in place so the drain is protected full time. As an added precaution, he'll put a second sump pump with a battery backup power source in another corner of the basement.

All in all, Styf says, the work he's done has protected the investment of his house and freed him from worrying about future storms.

"When the storms of 1993, 1997 and 2000 hit, I was working, helping other people," Styf said. "I couldn't come home. Now, I can just tell my wife to roll the carpet up and push it to one side. I'm not concerned now every time rain comes through."