Wild Fire Home Sprinklers

Full Mitigation Best Practice Story

Cook County, Minnesota

Cook County, MN - The Sierakowskis had a dream: to live along the Gunflint Trail in Grand Marais, Minnesota. They honeymooned at Gunflint Lodge, and after a lifetime of work in the St. Paul area, they were able to retire and build their dream log home along the quiet shores of Gull Lake. The house was designed by Corrine Sierakowski and built seventeen years ago with local Norway pine logs.

On July 4, 1999, the surrounding area was hit with 70-100 mph winds that toppled 40 million trees. Although they had little damage around their home from the blow-down, they knew that for the next decade, the Gunflint Trail Corridor was at risk for increased wild fire activity.

George Carlson, the Gunflint Trail Volunteer Fire Department Assistant Chief, also realized the implications of the Gunflint Trail Corridor's remote location coupled with the incredible fuel loads and knew some mitigation had to be done to prevent total devastation from the potential wild fire activity. He began researching the use of permanent sprinkler systems on structures and presented his findings to the community.

The Cook County Board of Commissioners applied to the State of Minnesota and Hazard Mitigation Grant Program (HMGP) funding for the sprinkler project. Soon the Sierakowskis received a letter from the County stating that HMGP funds would pay 75 percent of the cost of installation but the homeowner was responsible for the remaining 25 percent. Corrine said it was a "no-brainer." She knew they had to protect their dream house and their property.

As part of the approval process for installation, they submitted a plan for the sprinkler system, including the pump location, sprinkler head locations, distance to the house, other building locations, and a diagram of the property. The Sierakowskis paid about $1,500 for their 25 percent share. It only took a couple of days to install the system, which they ran afterward to assure proper installation, and it worked great.

During the 2005 Alpine Lake Fire, they saw first hand the importance of maintenance. "People have to look at them and make sure it works," said Joe Sierakowski. They ran their system purely as a precautionary measure during that fire, but realized one corner of the house was not getting soaked from the sprinklers.

As a result, they added one more sprinkler head to cover that section of the house. It made them realize how observant homeowners have to be in order to see if their system is set up properly to cover the entire property. It's critical to do a good quality check on the whole system.

On Saturday, May 5, 2007, the fire started about ten miles away in mid-morning. Once they heard, Joe started running the sprinklers on gas as a precautionary measure. Running on gas, the system will run about 80 minutes and provide a half inch of water; however, the system is set up for dual fuel of gas or propane, which allows it to be self sufficient after evacuating.

Sunday afternoon they were notified there would be an evacuation order in effect soon and to begin to get ready to leave. The Sierakowskis were told they would be evacuating later in the afternoon by boat to the Canadian side of their lake, but a shift in the fire path quickly changed that. They only had time to grab their immediate medications and underwear while the Fire Department fire fighters switched their pump to propane.

They left their house in a four vehicle caravan down the Gunflint Trail. Joe describes the drive by saying "I don't have to wonder what Hell is like; I've been through it."

As they were driving in the caravan along the Gunflint Trail, there was fire on both sides of the road, with flames cascading over the road and trees flaring up into black toothpicks. Sparks and embers were landing everywhere, and suddenly the interior of the car became so hot they couldn't even touch the doors. They felt as if there was no oxygen to breathe; it was stifling. As they were driving, it felt like the tires were sticking to the hot, fiery road. "It was quite an experience!" recalls Corrine.

After waiting anxiously, property owners were finally allowed to visit their home for 20 minutes on Tuesday. Corrine said the trip home “was really scary because stumps were burning and trees were burning, and even though the fire had gone through the area, there were big blazes behind us and small fires around the areas.”

When they arrived the sprinklers were still going, although two heads had stopped working. They cleaned out the sprinkler heads, and chuckled to see one head plugged with a minnow. The screen on the intake hose from the lake had been damaged and the low lake levels made it possible for minnows, mud, and other debris to enter the hose and come out the sprinkler heads.

In the end, the sprinkler system provided the protection needed to save their dream home. The Sierakowskis said “This fire is a good testimony that these systems really work!”

Four houses burned right next to theirs, yet their house remains intact. They credit the sprinklers for saving their home and recommend that if “anyone has the opportunity to do this, they should do it.” Joe said “This FEMA grant is they only thing we ever applied for and got. We are so thankful to FEMA because the system saved us!”

When asked about what advice they would share with other home threatened by fire, they offer three suggestions:

1) “Install the sprinkler system; don’t live on the Gunflint Trail without it!”

2) “Maintain the system; no matter what system you have, you have to maintain it.”

3) “Use the system; don’t wait for the fire. Keep your property moist to eliminate drought conditions on your property before an event occurs.”

Following the success of their sprinkler system during the Ham Lake Fire, they feel even more assured because they see right where the fire was stopped. Even their 500-pound propane tank was safe because the sprinklers protected it and prevented it from exploding during the fire. Joe summarized their feelings by saying “We feel very secure and confident with our sprinkler system.”

Activity/Project Location

Geographical Area:	**Single County (County-wide)**
FEMA Region:	**Region V**
State:	**Minnesota**
County:	**Cook County**

Key Activity/Project Information

Sector:	**Public/Private Partnership**
Hazard Type:	**Fire**
Activity/Project Type:	**Retrofitting, Non-structural**
Structure Type:	**Wood Frame**
Activity/Project Start Date:	**06/2000**
Activity/Project End Date:	**09/2000**
Funding Source:	**Hazard Mitigation Grant Program (HMGP)**
Funding Recipient:	**Local Government**
Funding Recipient Name:	**Cook County Board of Commissioners**
Application/Project Number:	**1283**

Activity/Project Economic Analysis

Cost:	**Amount Not Available**

Activity/Project Disaster Information

Mitigation Resulted From Federal Disaster?	**Yes**
Federal Disaster #:	**1283 , 07/28/1999**
Federal Disaster Year:	**1999**
Value Tested By Disaster?	**No**
Repetitive Loss Property?	**Unknown**

Reference URLs

Reference URL 1:	**http://www.gunflint911.org**
Reference URL 2:	**http://www.fema.gov/hazard/wildfire/index.shtm**

Main Points

- The Sierakowskis built their home along the Gunflint Trail.
- Winds toppled 40 million trees in 1999 putting the area at risk for wildfires in the coming years.
- The State of Minnesota and Hazard Mitigation Grant Program (HMGP) provided funding for a sprinkler project.
- As part of the approval process for installation, they submitted a plan for the sprinkler system, including the pump location, sprinkler head locations, distance to the house, other building locations, and a diagram of the property.
- Tested the system once to work out the 'kinks' - ended up adding another sprinkler to one corner of the house that was not protected.
- On May 5th, 2007, the system was put to the test when a wild fire tore through the Gunflint Trail.
- The Sierakowskis were evacuted, and when they returned, they found their house in prefect condition - they could even see where the fire had stopped surrounding their home.