

## Mitigating a Neighborhood Flooding Risk: Federal And State Grants Help Fund City Mitigation Project That Takes Over 100 Homes Out Of Harm's Way

**GRAND RAPIDS, MI.** – Over \$1 million of combined federal and state grants helped fund mitigation measures that protect a city neighborhood and significantly reduced their exposure to flood damage. Flood insurance for more than 100 homeowners can now be purchased at greatly reduced premiums.

According to Rick DeVries, Grand Rapids' assistant city engineer, homes along Plaster Creek in south Grand Rapids were subject to repeated flooding. "It seemed like every few years the area would flood," he said in August 2013.

Named for a deposit of gypsum found at its mouth, Plaster Creek is a 25.9-mile long, mostly urban, tributary of the Grand River in Kent County in western Michigan. Salmon spawn in the stream each fall.

A federal environmental review in 2006 estimated flood damage to homes and contents in the four city block area was as much as \$300,000 each year. More than 100 homes south of Plaster Creek were within the 100-year-floodplain, triggering the flood insurance requirement of most lending institutions.

Grand Rapids city officials looked at several options over the years to mitigate flooding south of Plaster Creek, according to DeVries. Opportunity presented itself in September 2000 when federal Major Disaster Declaration DR-1346-MI was granted by President Clinton as a result of severe storms and flooding in southeastern Lower Michigan. The declaration made Hazard Mitigation Grant Program (HMGP) funds available statewide. City officials promptly took advantage of the funding opportunity and submitted an application for the Plaster Creek flood mitigation project.

The HMGP provides grants to states and local governments to implement long-term hazard mitigation measures after a major disaster declaration. The purpose of the HMGP is to reduce the loss of life and property due to natural disasters and to enable mitigation measures to be implemented during the immediate recovery from a disaster. Funding, based on a percentage of a disaster's recovery costs, is awarded to the state, which prioritizes the project requests.

The grant award for the Plaster Creek mitigation project was announced in June of 2006. Working with the city's engineers, FEMA approved the mitigation project's design in November of 2006, and work began the next construction season.

The mitigation project consisted of five components:

- Improvements to an existing earthen embankment so that every section of its 1,500-foot length was elevated one foot above the base flood elevation. In many areas, this required adding another one to three feet in height to the existing embankment.
- Installation of a gravity-fed pump station with three pumps capable of handling 4,000 gallons per minute.



- Construction of a 700-foot steel floodwall that ranges in height from five to seven feet and provides a barrier of one foot above the base flood elevation.
- Construction of a series of low earthen levees and modular block floodwalls that protect individual properties along Union Avenue north of 28<sup>th</sup> Street.
- Clearing a stream diversion channel to serve as a partial floodwater relief.

Work on the project was completed in early July 2009. As a corollary benefit, city officials announced that as a result of the reduced flood vulnerability of homes in the project area, revisions were made to the area Flood Insurance Rate Maps, changing the flood zone designation from A to X. This change allows affected homeowners to purchase flood insurance at a lower cost than was previously available.

The map revisions affected properties south of Plaster Creek on Ken-O-Shay Drive between Division Avenue and Madison Avenue, and the properties south of Plaster Creek between Madison Avenue and Godwin Avenue.

The HMGP award was for \$571,658. This mitigation funding complemented another project funded by a \$555,923 grant from the Michigan Department of Transportation (MDOT), which went toward extending a paved pathway along the south bank of Plaster Creek.

The MDOT “Enhancement Grant” project added a second mile to the existing path, which now includes a 62-foot bridge over Plaster Creek and a 235-foot long boardwalk.

The City of Grand Rapids provided \$911,088 in match from its Capital Improvement Fund, bringing the total project cost to \$2,038,670.

Although Plaster Creek continues to rise and fall with the elements, residents of the area are no longer displaced by high water or suffer severe damage due to flooding. Based on the estimates made in 2006 and adjusted for an average inflation rate for the four years between project completion in July 2009 and August 2013, the expected savings in avoided damage costs was approximately \$1.28 million. In addition, the National Flood Insurance Program is at lower risk for payouts to cover flood claims in the former flood-prone area south of Plaster Creek.