

# East Grand Forks, Minnesota



Flooding in East Grand Forks (Minnesota Department of Natural Resources, DNR Waters, 2001).

## Background

East Grand Forks (pop. 8,601) is a small city in Polk County, Minnesota, located along the Red River, about 80 miles north of Moorhead. The Red River Valley is flat and fertile. East Grand Forks and its larger counterpart across the Red River, Grand Forks, North Dakota, together form the Greater Grand Forks Metropolitan Statistical Area. The Red River divides East Grand Forks into two parts: the southern, residentially developed area known as “The Point,” and the northern residential area including the downtown (City of East Grand Forks, Grand Forks Herald).

**Figure 1: Location of East Grand Forks, Minnesota**



**Table 1: East Grand Forks Demographics**

|                         | <b>East Grand Forks</b> | <b>Minnesota</b> |
|-------------------------|-------------------------|------------------|
| Population (2010)       | 8,601                   | 5,303,925        |
| Median age              | 35                      | 37.4             |
| Housing units           | 3,626                   | 2,347,201        |
| Owner occupied (%)      | 62.8                    | 72.1             |
| Black (%)               | 1.3                     | 5.2              |
| White (%)               | 91.1                    | 85.3             |
| Hispanic or Latino (%)  | 6.5                     | 4.7              |
| High school degree (%)  | 90.9                    | 92.3             |
| Bachelor's degree (%)   | 21.9                    | 33.2             |
| Median household income | \$51,167                | \$60,828         |
| Poverty rate            | 10.6                    | 11.5             |

Source: US Census, 2010 and American Community Survey 2014

Table 1 compares demographic of East Grand Forks to the state. East Grand Forks is similar to state in terms of poverty rates and high school education. The city has a considerably lower population of Black residents (1.3% vs 5.2%), and a larger percentage of White residents (91.1% vs 85.3%). In addition, median household income is about \$9,000 lower in East Grand Forks, as well as the percentage of residents with bachelor's degrees (21.9% vs 33.2%).

### History of Flooding and Mitigation

Flooding is a common problem during the spring in many of the western U.S. river basins. Located on the Red River of the North and lying within its valley, East Grand Forks is no exception. Conditions that contribute to the region's flooding include soil moisture, snow cover, water equivalent, depth of frost, rate and timing of snow cover melt, spring precipitation, river ice conditions, and base hydrologic flows. The region is exceptionally flat and consequently prone to flooding. In 1997, according to FEMA's 1999 Red River of the North Potential Flood Update, a major flood reached 26 feet above its flood stage and inundated the city. The flooding was a result of a record eight blizzards dumping 100 inches of snow on the city over the winter, which residents battled in the form of water after the spring thaw. East Grand Forks saw the Red River rise until April 18, 1997, when a 54.4-foot crest defeated the dikes and overwhelmed the city. Residents of the city were forced to evacuate, and the flood wiped out 38 percent—\$56.6 million—of the value of the city's residential property. Nearly all homes in the city, 2274 out of 2301, experienced some degree of damage due to the flood. A conservative estimate of the flood's cost was \$400 million for a town whose total annual budget was just \$4 million. The Red River has also flooded in years following 1997, but proactive measures taken by the city and state—including dikes and levees--will mitigate future harm.

### The Buyout

The flood of record that occurred in the spring of 1997 led to a large-scale buyout of 507 properties between 1997 and 2000 (Table 2). Funding came from a variety of sources, including the Hazard Mitigation Grant Program (HMGP), Community Development Building Grant (CDBG), and Minnesota state funds. East Grand Forks received an expedited approval for funding to acquire 407 substantially damaged residences located in the 100-year floodplain. Rather than develop a set of criteria for individual properties to prioritize acquisitions, East Grand Forks targeted neighborhoods.

Over 90% of the population of East Grand Forks is white and the neighborhoods impacted were not low-income. Some of the neighborhoods were largely populated with older residents of modest means, but flood damages did not disproportionately affect disadvantaged communities. According to Brad Bails, East Grand Forks Assistant City Engineer, around 95% of homeowners opted to participate in the buyout. East Grand Forks used pre-disaster fair market value to determine the offer price. They also had a variety of forgivable loans and tax abatement programs to encourage people to buy a home or lot in the City of East Grand

Forks. There were a few holdouts, but levees were built around those properties. In some cases, those homes ended up on the river side of the levees.

Unfortunately, we were unable to obtain figures for the total cost of the buyout, or the current value of homes that remain in the flood hazard area. Lacking parcel data, we used aerial photographs to estimate the number of homes in the floodplain and identify buyout areas (Figures 2 and 3).

**Table 2: Homes Acquired in the Buyout**

|                                      |       |
|--------------------------------------|-------|
| Total homes in East Grand Forks      | 3,626 |
| Homes acquired in buyout             | 507   |
| Homes remaining in flood hazard area | N/A   |

N/A = data not available

Currently, the city has no plans for additional buyouts and all desired uses for the buyout areas were achieved. Bails said that, due to sandbagging, few of these homes acquired had flooded repetitively in the past. As a result, the city was able to sell a number of homes at auction. They were prohibited from being relocated to another location in the floodplain. Some of the homes were relocated to other parts of East Grand Forks and some were moved to nearby lakes to be used as vacation homes. Bails said they did not track where the residents moved after the buyouts, but the incentive programs were tied to locations behind the levees.

**Figure 2: East Grand Forks Floodplain, 1997**

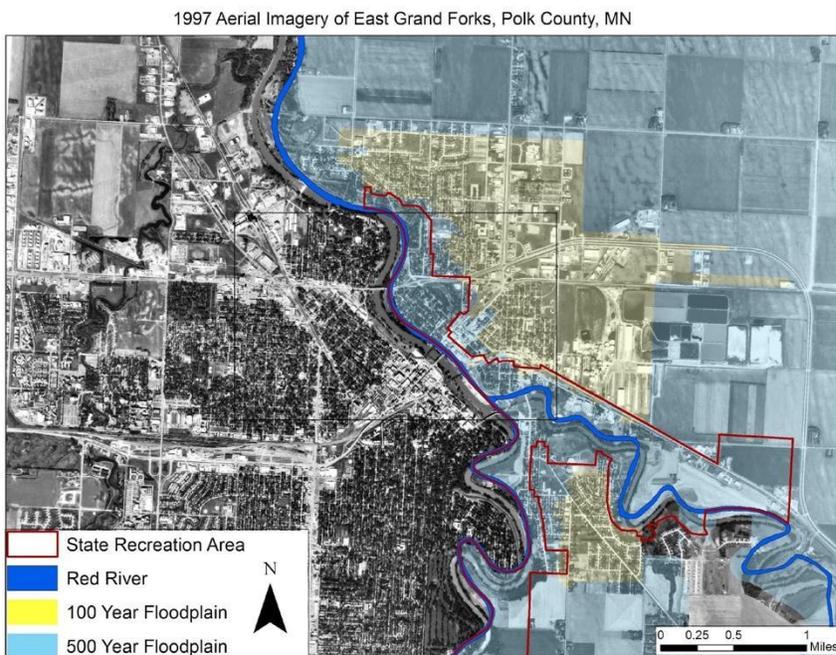
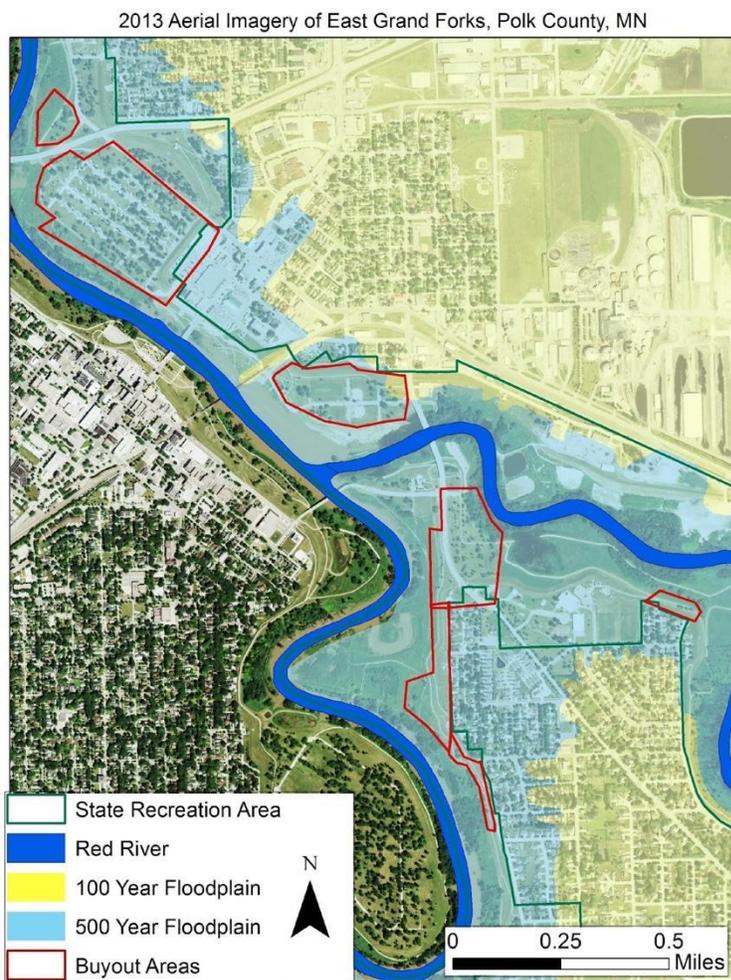


Figure 2 shows development in the floodplain as of 1997. The area outlined in red indicates the boundary of the current State Recreation Area.

East Grand Forks also got directly involved with housing development in an attempt to ensure a supply of affordable housing for residents displaced by the

buyouts. The city bought several tracts of land and attempted to develop subdivisions on them. One of the tracts of land was the former site of a FEMA temporary housing trailer park. At the time the FEMA trailer park was developed, the city negotiated with FEMA for permanent utility lines for water, sewer and electricity rather than temporary lines that would be removed with the trailers. This site is now being developed as a subdivision.

**Figure 3: East Grand Forks Floodplain, 2013**



When asked how much development has occurred in the floodplain since the buyout occurred, Bails commented that between the levees and a lack of developable land in the floodplain, there has been practically none. One of the more interesting aspects of flood damage prevention in East Grand Forks is the removable flood wall that runs for over 800 feet in front of the business district (Figure 4). This removable wall sits in contrast to the permanent flood walls across the river in Grand Forks. A permanent low wall provides some protection and allows for river views, and vertical support columns can be inserted into the low wall and horizontal panels can be placed in the support columns to increase the height of flood protection. A number of roads also feature

removable flood walls that can be erected to seal off neighborhoods otherwise protected by dikes and levees.

The city has also created stormwater detention ponds in several locations. The ponds were created from areas where clay was dug out for use in building new levees.

## Current Status

Buyout areas are being managed and used for public amenities, including disc golf, soft ball fields, a football field, basketball and tennis courts, boat ramps, fishing, habitat, linear parks, and The Greenway, an extensive greenway network.

Sherlock Park, a neighborhood adjacent to the downtown commercial district, was devastated in the 1997 flood, but a new dike left the neighborhood unprotected. As a result, the entire neighborhood of over 200 homes was acquired and the area was converted to a large campground within the newly created Red River State Recreation Area. Bails stated that the campground is one of two in the state that generate revenue and is a critical component of tourism and economic activity for East Grand Forks.

### Figure 4: Removable Flood Wall

Source: *Flood Control America*



Open space planning has also occurred in conjunction with Grand Forks, ND. In 1998 the North Carolina-based firm, Greenways Inc., was hired to develop a comprehensive greenway plan for both of the neighboring communities. A series of public meetings helped garner input. A range of groups participated, including wildlife professionals, wetlands managers, and recreation planners. This plan was finalized in 2001 and updated in 2011. It

covers over 2,200 acres of open space in East Grand Forks and Grand Forks.

Four agencies are involved in the management of the greenway, including the City of East Grand Forks and the Minnesota Department of Natural Resources, along with the City of Grand Forks and the Grand Forks Park District. In addition, there is a Greenway and Trail Users Advisory Group. In East Grand Forks, maintenance and management of the greenway system is funded through an annual utility fee.

## Integration with Hazard Mitigation Plan

The Minnesota State Hazard Mitigation Plan (adopted in 2014) includes the following goals: to provide funding for mitigation planning, to encourage communities to update and implement local hazard mitigation plans, and to improve compliance with state floodplain regulations and encourage participation in the National Flood Insurance Program. There is a section of Mitigation Actions that includes Property Protection: the "acquisition, repair, or retrofitting of property...to prevent or reduce risks to property from flooding" (p. 222).

## Integration with Land Use Plan

East Grand Forks' current land use plan is guided by the 2040 Land Use Plan Update, which includes a section on Flood Protection. According to the plan, East Grand Forks, with the Army Corp of Engineers, completed the city's flood protection system in 2007. The system includes two ring dikes and a diversion of the Hartsville Creek to accommodate water level rises during flooding season. The land use plan does not include more specific data about the use of buyout areas or acquisition of future homes.

However, 2040 Land Use Plan Update does note that 34% of the land in East Grand Forks is dedicated recreational/open space, which "can be explained by the large areas of the city that are located adjacent to the river in the floodway; these regions have been turned over to lower intensity land uses for reasons of safety and their aesthetic beauty." Moreover, the Red River State Recreation Area, maintained by the Minnesota Department of Natural Resources, "is designed as a model for sustainable floodplain management" (33). The floodplain buyout project is explicitly referenced as a success for East Grand Forks' long-term land use objectives.

## Conclusion

The impact of the buyout in East Grand Forks was largely positive, with approximately 95% of eligible homeowners participating. The location of the new levee had something to do with this, as homeowners along the river didn't want to find themselves on the wrong side of the levee. In addition, the state's financial assistance, in the form of forgivable loans and tax abatement programs, enabled homeowners to relocate without undue financial stress.

Consequently, acquired land in the floodplain became available for use by the public, and there has been little development since. Instead, the greenway and public parks in the Red River State Recreation Area today showcase the natural beauty of the riverside while reducing the community's vulnerability to future floods. As a result, more than one third of the total land in East Grand Forks is dedicated to recreation and open space, making the floodplain buyout program a hazard mitigation success.

## References Cited

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