

Remaining Elements of Moorhead's 2009 Flood Plan (\$16M)

7 Flood Control Lift Station Improvements for High-Risk Service Areas



BEFORE
 Requires manual operation using tractors and on-site monitoring



AFTER
 Permanent power source meets **FEMA** and **USACE** risk and reliability standards

- High Risk Lift Station
- Accredited Levee
- Non-Accredited Levee
- Environmental Justice Tract
- High Risk Service Area
- Acquired Properties

Minnesota State Bonding Request

CITY OF MOORHEAD & CLAY COUNTY

Flood Mitigation

\$60.4M REQUEST

HF 2224

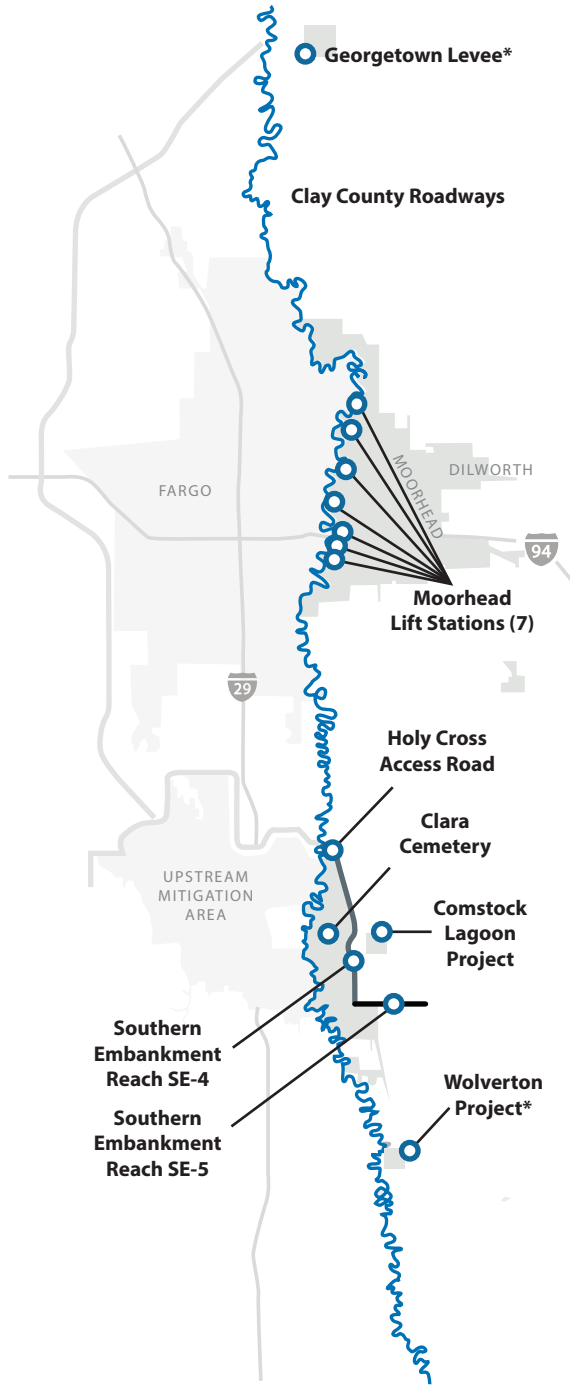
SF 2015

To construct the remaining in-town and FM diversion flood mitigation infrastructure in Minnesota, the City of Moorhead and Clay County request funding from the Minnesota Department of Natural Resources (MN DNR) Flood Damage Reduction Program in the amount of \$60.4 million. The funding would first be used to complete the remaining components within the City of Moorhead.

Projects

	7 Flood Control Lift Station Improvements	\$16M
	Upstream Mitigation Area Property and Relocations <ul style="list-style-type: none"> • CR 2 Reconstruction (includes drainage improvements) • Comstock Lagoon Project • Clay County 37-foot road raise 	\$16M
	Holy Cross Access Road	\$1.1M
	Southern Embankment Reach SE-4 Property Acquisition	\$2M
	Southern Embankment Reach SE-5 Property Acquisition	\$200K
	Clara Cemetery Mitigation	\$2M
	Georgetown Levee*	\$6.5M
	Wolverton Project*	\$16.6M

*Financial request led by Clay County





Flood Risk in the Red River Valley

The Red River is unique due to its low gradient and northward flow. These features also lead to a high flooding risk. Ice melt comes earlier in the southern regions, causing ice jams and other conditions that result in flooding nearly every year. This makes the Red River Valley one of the most flood-prone areas in the U.S.



FM Diversion Project Overview



Water flows downstream (north), passing through the natural riverbed, which is bordered by in-town levees and floodwalls. If the flood level will exceed 37 feet, the MFDA will prepare to operate the FM Area Diversion.



Radial-arm flood gates on the Red River Structure and Wild Rice River Structure are lowered to limit the amount of floodwater that enters the metro area.



A portion of the floodwater moves into the upstream mitigation area, where it is temporarily stored within the southern embankment.



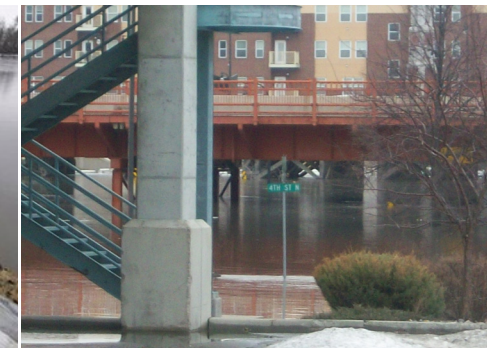
Gates open on the Diversion Inlet Structure, allowing floodwaters to enter the stormwater diversion channel and safely pass around the metro area.



Once the project operations end, the MFDA will remove flood-related debris from the upstream mitigation area.

City of Moorhead & Buffalo-Red River Watershed District Improvements Progress

	Completed	In-Progress
Property Acquisitions	337	
Private Property Easements	99	
Levees & Floodwalls (miles)	18.8	0.8
Removable Floodwall Closures	5	
Stormwater Pump Stations	24	1
Stormwater Gates	83	
Sanitary Sewer Pump Station Improvements	6	1



Contacts



Jenny Mongeau
District 3 Commissioner
701.238.2987
jenny.mongeau@claycountymn.gov



Stephen Larson
County Administrator
218.299.5002
steve.larson@claycountymn.gov



Andy Pomroy
Senior Government Relations Specialist
612.492.7644
apomroy@fredgov.com



Shelly Carlson
Mayor
218.299.5307
shelly.carlson@moorheadmn.gov



Bob Zimmerman
Engineering Director
218.299.5390
bob.zimmerman@moorheadmn.gov



Lisa Bode
Governmental Affairs Director
218.299.5434
lisa.bode@moorheadmn.gov

LARGEST RED RIVER HISTORICAL CRESTS

7 of the top 10 flood events occurred within the last 30 years.

★ March 28, 2009	40.84 ft.
★ April 18, 1997	39.72 ft.
April 7, 1897	39.10 ft.
★ April 9, 2011	38.81 ft.
April 15, 1969	37.34 ft.
★ April 5, 2006	37.13 ft.
★ March 21, 2010	36.99 ft.
★ April 14, 2001	36.69 ft.
April 9, 1989	35.39 ft.
★ April 8, 2019	35.03 ft.