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Flood 2009:
A Framework for
Recovery

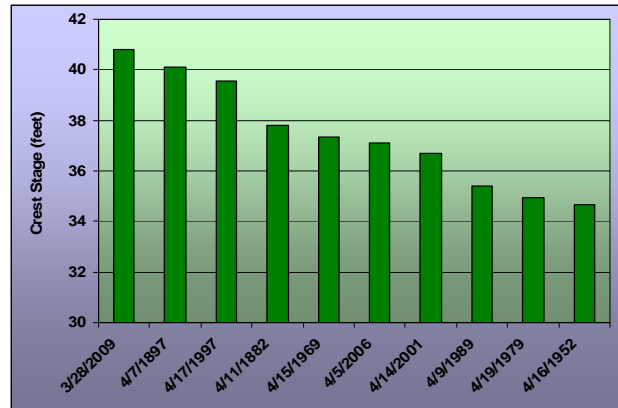


April 20, 2009



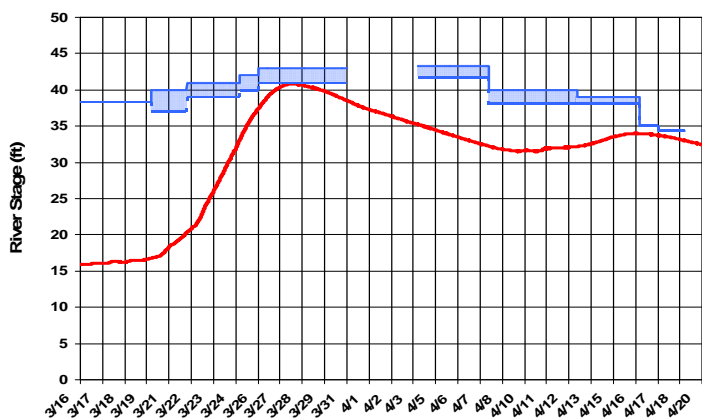
Overview

In the March of 2009, a record flood event occurred on the Red River of the North. The event was set apart from many previous spring flood events not only by the record river stage, but also by the rate of rise of flood waters, early crest date, and adverse weather conditions. The City of Moorhead worked cooperatively with Federal and State partners, investing millions of dollars in protection and countless hours of volunteer effort to successfully battle the flood event.



However, the conditions under which the flood was fought highlight the need for new approaches. Flood protection measures must become more agile (able to be implemented in a shorter time) and less dependent on outside resources (which take time to secure and mobilize)

As the City of Moorhead moves into a recovery mode, it is important to recognize that crisis breeds opportunity. To that end, a Framework for Recovery has been



developed to lead this effort. This Framework considers not only short-term recovery and damage restoration efforts, but incorporates a variety of flood-related activities currently underway in the metropolitan area. The Framework recognizes that short-, mid-, and long-term flood protection must be at the

forefront. These efforts will require close coordination with, and support from, the City's Federal, State, and local partners as well as the citizens of the City of Moorhead. The Framework for Recovery is highlighted in an overview and detailed with supporting explanation for each element.



Activity 1: Protective Measures

Brief Description: This activity involves the removal of all protective measures placed during the flood event.

Lead Department(s): Engineering, Operations, MPS

Activities:

- ❑ Remove temporary clay levees
- ❑ Remove temporary sandbag levees
- ❑ Remove temporary measures used to protect public utilities (sanitary sewer, storm sewer, power and water) including temporary levees, emergency pumps, sewer plugs, etc.
- ❑ Remove protective measures at 8th St & I-94

Special Considerations:

U.S. Army Corps of Engineers contractors will remove all temporary clay levees and temporary sandbag levees providing the primary line of protection (interpreted as those sandbag levees on riverfront property or providing direct protection from flood water with no intervening protection measures). Primary sandbag levees will be removed directly from private property if a right-of-entry form is signed by the property owner. U.S. Army Corps of Engineers contractors will backdrag ruts in yards, but will not seed or sod damaged areas. Secondary sandbag levees must be removed by property owners. U.S. Army Corps of Engineers contractors will collect these sandbags if placed on the street.

Schedule:

- ❑ Removal of temporary clay levees will begin later during the week of April 20, 2009.
- ❑ Removal of sandbag levees will follow the removal of temporary clay levees (schedule to be determined).
- ❑ City crews, with assistance from local contractors (as needed), will begin removing protective measures for utilities as they are no longer needed (based on river stage) beginning the week of April 20, 2009.
- ❑ Mn/DOT will remove protective measures installed at 8th St & I-94 during the week of April 20, 2009.

Finance:

- ❑ U.S. Army Corps of Engineers work will be paid with 75% Federal funding and 25% State funding (no City cost).



Activity 1: Protective Measures

- Removal of protection measures for utilities will be accomplished with City resources and contractor assistance as needed. The City will seek reimbursement for any contractor costs under the FEMA Public Assistance Program.
- Mn/DOT will seek reimbursement under the FEMA Public Assistance Program either independently or through the City.

Public Information: Press releases and the City's website will be used to provide time-sensitive information to the affected public.



Activity 2A: Damage Assessment & Restoration – Public Infrastructure

Brief Description: This activity includes damage assessments and projects to restore/repair all public infrastructure.

Lead Department(s): Engineering, Operations, MPS

Activities:

- ❑ Assess damage to streets & boulevards
- ❑ Assess damage to utilities (sanitary sewer, storm sewer, power & water)
- ❑ Assess damage to public facilities including, but not limited to, the Heritage Hjemkomst Interpretive Center (HHIC), Trollwood Performing Arts Center, Public Housing Authority, and various parks
- ❑ Prepare plans (as needed), secure financing (Federal, State & local cost-share), bid projects (as needed), and conduct restoration

Special Considerations:

As noted below, the cost-share for much of this work has yet to be determined. Damage assessments and the scope of restoration projects will significantly impact the schedule.

Schedule:

- ❑ Street & boulevard damages will be assessed after the removal of temporary clay and sandbag levees (to include any continued damage resulting from the removal activities).
- ❑ Utility damage assessment will take place simultaneously with the removal of protective measures.
- ❑ Damage to public facilities will be assessed as flood waters recede and access becomes available.
- ❑ The schedule for restoration projects will be dependent on completion of assessments, the scope of damages, and funding sources/requirements.

Finance:

- ❑ Very preliminary estimates indicate a potential for \$20M in damage to public infrastructure.
- ❑ The Federal Highway Administration, through Mn/DOT, provides a cost-share program for the restoration of Municipal State Aid (i.e. federal-aid eligible) streets/boulevards. The details of the cost-share are yet to be determined.



Activity 2A: Damage Assessment & Restoration – Public Infrastructure

- The cost-share for restoration of local streets/boulevards, utilities, and public facilities will be secured through the FEMA Public Assistance program. Federal, State, and local cost-sharing under the program has yet to be determined.

Public Information: Press releases and the City's website will be used to provide time-sensitive information to the affected public.



Activity 2B: Damage Assessment & Restoration – Private Property

Brief Description: This activity includes damage assessments for private property and the issuance of building code and, as applicable, floodplain development permits for the restoration/repair of private property.

Lead Department(s): Community Services, Engineering

Activities:

- ❑ Conduct inspections to assess all reported private property damage
- ❑ Issue building codes permits for repairs to all non-floodplain properties
- ❑ Conduct substantial damage determinations for all non-conforming floodplain properties
 - Issue building codes and floodplain development permits for properties that are not substantially damaged
 - Issue building codes and floodplain development permits for substantially damaged property that can be brought into compliance with City Code floodplain requirements (i.e. elevated)

Special Considerations:

National Flood Insurance Program (NFIP) and State regulations/rules, as incorporated into City Code, have very specific requirements for the repair of properties in the floodplain. If a property is substantially damaged (the cost to repair to the pre-flood condition exceeds 50% of the pre-flood market value of the structure), a floodplain development permit cannot be issued unless the property is brought into compliance with floodplain development requirements (i.e. elevated). A tool provided by FEMA will be used to estimate the cost to repair. In cases where the estimated cost to repair is near 50%, quotes from a reputable building contractor will be accepted to make the final determination. The City's assessed value will be used as the pre-flood market value of the structure. In cases where property owners have flood insurance, the Increased Cost of Compliance provisions of the NFIP program will provide up to \$30,000 to bring the property into compliance with City Code requirements. Some substantially damaged properties may not have flood insurance or may not be physically able to comply with Code requirements. Buyouts may be an option for these properties.

Schedule:

- ❑ Initial inspections are underway
- ❑ Issuance of permits will take place as applications for repairs are made



Activity 2B: Damage Assessment & Restoration – Private Property

Finance: City resources will be used for all inspection and permitting activities. Staff workload and associated costs have not been determined.

Public Information: City staff will work directly with affected property owners to assess damage, issue permits, and evaluate alternatives applicable to property-specific circumstances. Press releases and the City's website will be used to provide to the affected public.



Activity 3A: Mitigation – Private Property

Brief Description: This activity will consist of investigating alternatives for substantially damaged private property, securing funding, and implementing mitigation.

Lead Department(s): Engineering, Community Services

Activities:

- ❑ Issue building codes and floodplain development permits for substantially damaged property that can be brought into compliance with City Code floodplain development requirements (i.e. elevated).
- ❑ Secure funding for the buyout of substantially damaged properties in the floodplain that cannot be brought into compliance with floodplain development requirements.
- ❑ Secure funding for the buyout of repetitive loss properties that are not substantially damaged, but flood frequently.
- ❑ Secure funding for voluntary private riverfront property buyouts (not substantially damaged) that may be needed for a future flood protection projects.
- ❑ Secure funding for other damaged private property as Federal and State programs allow.
- ❑ Investigate funding sources and program requirements for private property protection through private levees/floodwalls or other non-structural measures

Special Considerations:

Private property buyouts may be accomplished with FEMA Hazard Mitigation Grant Program (HMGP) funds and/or State bond funds. However, the FEMA HMGP requirements place very specific open space deed restrictions on buyouts and may not be appropriate for properties that may be needed for long-term flood protection improvements. State bond funds typically require a 50% local match. Relocation benefits are not available for voluntary property acquisitions. Tenants are eligible for relocation benefits.

Schedule:

- ❑ Issuance of permits will take place as application for repairs are made
- ❑ A list of property owners seeking voluntary buyouts is being compiled
- ❑ Initial discussions regarding funding have been initiated with appropriate state agencies



Activity 3A: Mitigation – Private Property

Finance:

- ❑ Property owners with floodplain insurance may be able to utilize the Increase Cost of Compliance provisions of the NFIP to bring properties into conformance with floodplain management requirements.
- ❑ Property acquisition utilizing FEMA HMGP funds can typically be accomplished with little or no local cost share. FEMA benefits/insurance settlements are deducted from the proceeds of the acquisition if not reinvested in the property.
- ❑ State bond funds typically require a 50% local cost share.
- ❑ The specific details of Federal and State programs, as they relate to this event, have not been determined.
- ❑ Potential funding sources for levees, floodwalls, or other non-structural improvements on private property have not been identified.

Public Information: City staff will work directly with affected property owners to assess damage, issue permits, and evaluate alternatives applicable to property-specific circumstances. Press releases and the City's website will be used to provide to the affected public.



Activity 3B: Mitigation – Public Infrastructure

Brief Description: This activity includes identifying, securing funding, and constructing public infrastructure mitigation projects including improvements to storm sewers and flood control lift stations, sanitary sewers and lift stations, and permanent levees on public property.

Lead Department(s): Engineering

Activities:

- ❑ Identify improvements to increase the level of flood protection for public infrastructure. The most feasible protection goal appears to be 41-42 feet.
- ❑ Identify funding sources.
- ❑ Prepare plans for improvement projects.
- ❑ Perform programmatic functions (public input, public notice, permitting, bidding, etc) required by funding programs/sources.
- ❑ Construct improvement projects

Special Considerations:

Public infrastructure improvements will not eliminate flooding that occurs as the result of water flowing over private property. Projects that are ultimately constructed will depend on eligibility and availability of funding sources. FEMA funds typically require that the project meet a benefit-cost test based on damage. With limited damage to public utilities, these funding sources may be difficult to secure.

Schedule:

- ❑ Conceptual improvement projects have been identified.
- ❑ Discussions with appropriate Federal, State & local partners have been initiated (additional discussions to follow).
- ❑ Pending identification of funding sources, proceed with projects.

Finance:

- ❑ Initial estimates for conceptual improvement projects total \$20M.
- ❑ Funding sources include FEMA's Public Assistance Program, FEMA's Hazard Mitigation Grant Program (HMGP) administered through the State Department of Homeland Security, State bond funds administered by the Minnesota DNR, local funds via special assessment, and other sources yet to be determined.



Activity 3B: Mitigation - Public Infrastructure

Public Information: Depending on programmatic requirements associated with specific funding sources, appropriate public input and notice will be provided. Press releases and the City's website will be used to provide time-sensitive information to the affected public.



Activity 4: Future Flood Protection

Brief Description: This activity includes continued participation in on-going U.S. Army Corps of Engineers feasibility studies for comprehensive long-term flood risk reduction, continued advisory roles for the Oakport Flood Protection Project and Fargo Southside Flood Control Project, revisions to the City's Flood Preparation Manual and GIS tools, and potential interim studies of flood protection in priority areas within the City.

Lead Department(s): Engineering

Activities:

- ❑ Continue local sponsorship of, and participation in, the U.S. Army Corps of Engineers Fargo-Moorhead and Upstream Feasibility Study and Fargo-Moorhead Metropolitan Feasibility Study.
- ❑ Continue to serve in an advisory capacity for the Oakport Flood Protection Project and conduct appropriate project permitting and plan review.
- ❑ Continue to serve in an advisory capacity for the Fargo Southside Flood Control Project
- ❑ Conduct an independent review of the Fargo Southside Flood Control Project, as deemed appropriate.
- ❑ Update the City's Flood Preparation Manual and GIS flood tools based on measures taken during the 2009 flood event.
- ❑ Initiate interim studies of flood risk and flood protection in priority areas within the City.

Special Considerations:

The efforts included in this activity include short-, mid- and long-term flood risk management and will evolve over time. Merging these efforts into a comprehensive flood risk management project would be particularly advantageous.

Schedule:

- ❑ The U.S. Army Corps of Engineers Fargo-Moorhead and Upstream Feasibility Study is an on-going effort.
- ❑ The Fargo-Moorhead Metropolitan Feasibility Study is scheduled begin Phase 2 in May and be complete at the end of 2010.
- ❑ Permitting and construction of initial phases of the Oakport Flood Control Project are anticipated to begin in 2009.
- ❑ Activities associated with the Fargo Southside Flood Control Project are on-going.
- ❑ Updates to the City's Flood Preparation Manual and GIS tools are scheduled to be completed in 2009.



Activity 4: Future Flood Protection

- Interim studies could be initiated at the Council's discretion.

Finance:

- No additional City cost is anticipated for the U.S. Army Corps of Engineers Fargo-Moorhead and Upstream Feasibility Study.
- The local cost share to the City to initiate Phase 2 of the U.S. Army Corps of Engineers Fargo-Moorhead Metropolitan Feasibility Study is \$140,000. Staff will request Buffalo-Red River Watershed District cost participation in the amount of 50% of the City's cost share (same as Phase 1). State participation may also be requested.
- Staff resources will be utilized for advisory functions associated with the Oakport Flood Protection Project and Fargo Southside Flood Control Project. The cost of these resources has not been determined. Should the Council direct an independent review of all, or portions of, the Fargo Southside Flood Control Project, resources would need to be identified commensurate with the scope of the review.
- The City's Flood Preparation Manual and GIS flood tools will be updated with City resources with the possible exception of some outside consultant work for the GIS flood tools. Costs for this work have not been determined.
- The cost to initiate interim studies of flood risk and flood protection in priority areas has not been determined. With Council direction, staff would solicit proposals for consultant assistance. State participation may be requested.

Public Relations: Press releases, public meetings, and the City's website will be used to provide information to the affected public.



Activity 5A: Floodplain Management - Preliminary Floodplain Maps

Brief Description: This activity includes all City functions associated with adoption of the preliminary, revised FEMA Flood Insurance Study (FIS) and Flood Insurance Rate Map (FIRM).

Lead Department(s): Engineering

Activities:

- ❑ Participate in FEMA's Preliminary Results Meeting and Public Open House
- ❑ Draft floodplain ordinance revisions adopting the new FIS, FIRM and other regulatory provisions in State statute and DNR model ordinance
- ❑ City Council approval of ordinance revisions
- ❑ Develop policy revisions and a coordinated program/policy (with funding) for more detailed ground surveys, the preparation of Elevation Certificates (ECs), and Letters of Map Amendment (LOMAs) as applicable and as requested by property owners

Special Considerations:

The revised FIS and FIRM are based on the best elevation data available (1999, 2002 and 2006 LiDAR data). This data has an accuracy of approximately ± 0.5 feet which may be significant when considering the floodplain relative to a specific property. The purchase of flood insurance is mandatory as a condition of a Federally-backed mortgage. In determining the need for flood insurance, mortgage companies generally err on the conservative side and assume that properties near the floodplain are in the floodplain. A detailed ground survey, EC and LOMA provide a more formal and accurate process to determine if a property/structure is in the floodplain or out of the floodplain. Historically, City staff has completed this work at no cost to property owners. However, with adoption of the revised FIS/FIRM, an additional 500-700 properties may be affected. City resources are inadequate to complete this work at no cost. A coordinated effort will minimize the cost to property owners for this service.

Schedule:

- ❑ The City has received the preliminary FIS and FIRM.
- ❑ FEMA is in the process of scheduling the Preliminary Results Meeting and Public Open House (anticipated in May or June)
- ❑ Approximately five to six months after the Public Open House, FEMA will issue a Letter of Final Determination. The revised FIS/FIRM will become effective six months after issuance of the Letter of Final Determination.



Activity 5A: Floodplain Management - Preliminary Floodplain Maps

- ❑ Approximately four-five months after issuance of the Letter of Final Determination, FEMA will issue the final FIS/FIRM
- ❑ Ordinance revisions must be adopted by the City Council and approved by the DNR prior to the revised FIS/FIRM becoming effective (approximately one year after the Public Open House).
- ❑ Policy revisions and a coordinated program/policy for ground surveys, ECs and LOMAs should be drafted prior to the Public Open House facilitating distribution of this information at the Public Open House

Finance:

- ❑ All activities associated with adoption of the revised FIS/FIRM will be completed with City resources. A cost for these activities has not been determined.
- ❑ The cost for a single property survey, EC and LOMA (if applicable) is estimated to be \$900-\$1,000 if completed by a consultant. A coordinated effort to systematically perform these activities would reduce this direct cost to property owners.

Public Information: The date and time of the Public Open House will be advertised. The Public Open House would provide an opportunity to distribute and solicit interest in more detailed ground surveys. Press releases and the City's website will also be used to provide information to the affected public.



Activity 5B: Floodplain Management - Community Rating System

Brief Description: This activity includes making application to, and on-going participation in, FEMA's Community Rating System (CRS).

Lead Department(s): Engineering

Activities:

- ❑ Appoint a CRS coordinator.
- ❑ Submit an application and supporting documentation to FEMA.
- ❑ Participate in a field verification of the City's floodplain management activities qualifying for credit under the CRS program.
- ❑ Continue current floodplain management activities and conduct additional floodplain management activities to achieve higher CRS classification.

Special Considerations:

The NFIP CRS is a voluntary incentive program designed to recognize and encourage community floodplain management activities that exceed minimum NFIP requirements. The goal of the CRS program is to reduce flood losses, facilitate accurate insurance ratings, and promote awareness of flood insurance. Communities participating in the CRS program are classified using a system that assigns points for various floodplain management activities. Classes range from 10 (lowest) to 1 (highest). Property owners within a CRS community that are required to, or elect to, purchase flood insurance receive a discount on flood insurance premiums based on the community's class rating. Discounts range from 0% (Class 10) to 45% (Class 1). Communities typically enter the system at a lower classification and move up by conducting additional floodplain management activities.

Because floodplain cities in Minnesota must comply with State requirements that exceed the minimum NFIP requirements, all are eligible to participate in the CRS program as a Class 9 community (5% premium discount). Currently, the City of Fargo is a Class 7 CRS community which results in a 15% discount in flood insurance premiums.

Schedule:

- ❑ In response to a previous inquiry, the City has been accepted to make application for participation in the CRS program. A CRS field representative will meet with staff in May to assist in completing the application for submission in June. This visit will include field verification of the City's current floodplain management activities.
- ❑ Additional floodplain management activities will be identified and implemented as resources allow.



Activity 5B: Floodplain Management - Community Rating System

Finance:

- All activities will be completed using City resources. A cost for these activities has not been determined.

Public Information: The CRS program includes numerous public information activities that may involve press releases, special mailings, and posting information on the City's website.



Activity 6: Legislative Relations

Brief Description: This activity includes legislative efforts to secure Federal and State funding assistance and authorization for various program initiatives essential to ensure long-term community competitiveness.

Lead Department(s): Community Services

Activities:

- ❑ Promote Federal and State legislation to secure funding assistance through direct appropriations or State bonding funds for costs incurred to protect the community, restore/repair damage to public and private property, mitigate future damages to public and private property, and develop long-term flood protection.
- ❑ Seek legislative authority for various program initiatives to ensure community competitiveness and long-term recovery.

Special Considerations:

A variety of program initiatives are anticipated and necessary to address long-term flood impacts to public institutions, businesses, and private property owners.

Schedule:

- ❑ Discussions with Federal and State delegations have been initiated.
- ❑ State legislation providing for flood recovery is anticipated during the current session.
- ❑ Longer-term funding initiatives associated with mid- to long-term mitigation and flood risk management will continue well into the future.

Finance:

- ❑ Legislative initiatives will be completed with City resources. The cost for these activities has not been determined.

Public Information: Press releases and the City's website will be used to provide time-sensitive information to the affected public.