

City of Fort Ransom Flood Control

BACKGROUND

The City of Fort Ransom (City) is a small city with a population of 77 located along the Sheyenne River between the cities of Valley City and Lisbon. We are part of the Sheyenne River National Scenic Byway and we have the T. J. Walker Historic District which is on the National Register of Historic Places. We are next to the Fort Ransom State Park, the Fort Ransom State Historic Military Site, and have one of two winter downhill ski resorts in North Dakota.

Like the cities of Lisbon and Valley City, we experienced unprecedented flooding during the spring of 2009, 2010, and 2011. Even with the protection of emergency clay levees constructed by the U.S. Army Corps of Engineers (USACE) around the downtown area in 2009 and 2011, we sustained heavy damage to our infrastructure costing hundreds of thousands of dollars and many homes and farmsteads in and outside the city limits were damaged by the flooding. The Federal Emergency Management Agency (FEMA) and the State of North Dakota Department of Emergency Services (NDDDES) paid a portion of the costs for emergency work and facility repairs through disaster recovery grant funding. However, many costs were deemed not eligible by FEMA and the NDDDES and the City was left to pay those costs as well as the cost share associated with the disaster recovery grant funding.

Going through three disasters in three years has taken its toll on the community and has exhausted the City's finances. In 2009, the USACE constructed and removed temporary emergency levees around the City as a result of a FEMA mission assignment requested by the NDDDES. There was a cost share that the City was responsible to pay associated with the clay levee removal. This year the NDDDES notified the City that it would not be requesting FEMA to issue a mission assignment and that the City would be responsible for the removal of the emergency clay levees and associated costs and that the City could apply for FEMA reimbursement once the work was completed. The estimated cost of removing the levees is \$175,000, and again there will be a cost share that the City must pay.

Not having the funds in the City's coffer to pay for the levee removal or cost share, we have been forced to raise our sales tax by one percent (1%) and do a general revenue bond to pay for the required engineering plans and specifications, legal fees, and the costs of a contractor to remove the levee. With the City's tax base being so small, the 1% increase only amounts to approximately \$10,000 per year, which will be earmarked for paying the bond. And, FEMA will not be contributing any disaster assistance funding towards any legal fees associated with the levee removal and will only pay a portion of the engineering fees. Further, the removal of the levees will cause our roads to again be so damaged from the heavy truck traffic that they will need to be replaced as they had to be after the 2009 flood levee removal. Because we are a small City with limited resources and having had our finances exhausted by all the costs from the flooding disasters, we cannot financially take on and pay for another flooding event.

PROBLEM

With the National Weather Service predicting that North Dakota could be in a wet cycle for possibly decades, and with the additional threat of 600 to 3,000 cubic feet per second (cfs) of additional water coming down the Sheyenne River from the Devils Lake pumps and gravity fed outlets, we are being put into an uneasy situation. The peak flow during the 2009 flood was approximately 9,000 cfs and almost toppled over the USACE constructed levee. We can't even imagine what the outcome would be with a possible release rate of 10,000 to 14,000 cfs, which has been reported could possibly occur from a catastrophic Devils Lake overflow through the Tolna Coulee.

With a 4,500 cfs release from Baldhill Dam the Sheyenne River in Fort Ransom is at major flood stage with a portion of the City being inundated. We are fearful that during non-flooding times when we have no temporary levees in place, we could receive 4,000 cfs from Baldhill Dam during a summer thunderstorm, as we did this past August, and with the additional water coming from Devils Lake, the City would be severely flooded or possibly destroyed and without State or FEMA disaster recovery assistance. Given all the flooding that has occurred over the past three years and is anticipated to continue, along with the additional water we will be receiving from Devils Lake, we find ourselves in desperate need of permanent flood control mitigation measures.

In addition, with all the flooding that has occurred, we have experienced major riverbank erosion. On the west side of our downtown area, some of the homes have lost approximately thirty-five feet of rear yard because of the extensive riverbank erosion. With the collapse of the river embankments, there now is danger that some residential septic tanks, and eventually the homes themselves and the street they front on, will eventually collapse into the river.

To remedy this situation, the City requested and was approved funding from the Natural Resource Conservation Service (NRCS), the ND State Water Commission, and the Lake Agassiz Regional Council, for a riverbank restoration and stabilization project. The project consists of rip rapping the river's east bank and moving the river's alignment approximately 45 feet to the west into a City Park area on the west bank. The project is out to bid and we are hopeful that the bids are within the design engineer's estimate. If they are not, the project may not be constructed and the funding will be lost. There is this possibility because many contractors are in the Minot and Bismarck area working on flood projects. We only had four contractors interested and they all were from out of state.

As you can see, we are being pro-active in recognizing and finding funding for measures that mitigate the effects of flooding from the Sheyenne River and protect our city. However, more mitigation measures are needed to protect the City from the ravages of floods.

FLOOD CONTROL MITIGATION MEASURES

We in Fort Ransom believe that permanent flood control mitigation and riverbank stabilization measures cannot be solved in a one-step process, but rather in a three-step process.

The first step is to find ways of funding projects that will provide immediate flood control mitigation measures to keep the City from losing any homes or public facilities that are under an immediate threat of being destroyed even with the installation of emergency levees.

As mentioned above, we have already completed the first step. We have found funding for engineering and construction of mitigation measures to restore and stabilize the riverbanks that pose an immediate threat during both low flow and high flow flooding conditions.

The second step is to find ways of funding engineering and feasibility studies for permanent flood control mitigation measures that will protect the City from flooding in future flooding events.

With respect to this second step, we have been working with NRCS on the construction of a river bypass/diversion project immediately north of the downtown area. The bypass/diversion would involve intercepting high flood waters on the river before they proceed through the city's downtown area and divert them into a channel which connects to the river again on the other side of the city. This bypass/diversion would result in eliminating the need to have very high levees around the downtown area during major flood conditions. Smaller levees could be used and hopefully eliminate home buyouts. A bypass/diversion would also assist in protecting the river embankments discussed above. The City was informed that NRCS funding had been approved to perform an engineering survey and feasibility study of the project. However, we have been waiting for NRCS's engineer to perform the survey and study for over a year. It seems we are being put on the back burner for other flood control projects. We have already discussed the acquisition of easements for the bypass/diversion with the surrounding affected landowners and have their full cooperation.

However, in addition to the bypass/diversion study, we also need funding for soils borings and testing and an engineering feasibility study that will address permanent flood protection utilizing levee systems in conjunction with the diversion channel. Our City Engineer has estimated the costs for the soils borings and testing and the preliminary engineering to be \$30,000 and \$50,000 respectively (see attached Moore Engineering letter).

Therefore, the City of Fort Ransom respectfully requests financial assistance with the costs of soils borings and testing and a preliminary engineering feasibility study for the construction of permanent levee flood control.

The third step is to find ways of funding the final engineering and construction of the permanent flood control and mitigation projects.

The construction of emergency temporary levees year after year has done a lot of damage to our City streets, to private property, and has been very expensive to the Federal, State, and local governments. Once the engineering feasibility studies above are completed, the third step will be to perform the final engineering and construction of the permanent flood control projects. The current Sheyenne River flooding dilemma compounded with the addition of water from the Devils Lake outlets could ultimately lead to the demise of Fort Ransom, Valley City, Lisbon, as well as all the other downstream communities. Action in the form of engineering studies and planning needs to be taken as soon as possible before it's too late, and we are again reacting with temporary measures that have a short life span and are extremely costly.

Thank you in advance for your consideration to provide the City of Fort Ransom with financial assistance on this vital and important issue.

James Thernes
Mayor



October 6, 2011

Consulting Engineering
Land Surveying

James Thernes, Mayor
City of Fort Ransom
PO Box 17
Fort Ransom, ND 58033

RE: Request for flood control cost opinions

Moore Engineering, Inc. is pleased to submit for your review cost opinions for future flood control projects within the City of Fort Ransom. Please note that these opinions are very preliminary and will require future engineering study in order to define the required work associated with each project. At this time, we feel there are two options for flood control for the city. One option would be a levee system to control the Sheyenne River. The second option would be a diversion channel for the Sheyenne River.

The first step would be to evaluate the soils conditions along the Sheyenne River banks and possible diversion channel routes. It is our opinion that a soils investigation and report with soils borings would cost approximately \$30,000. The next step would be to prepare preliminary engineers report for conceptual levee and diversion channel alignments with a recommendation on the preferred option. It is our opinion that this preliminary engineers report would cost approximately \$50,000.

Although more detail information will be obtained with the work listed above, it is our opinion that a levee system may require home buyouts at a cost of approximately \$1,600,000 and levee engineering and construction of approximately \$3,800,000 for a total of cost opinion of \$5,400,000. The preliminary cost for the diversion channel requires only land purchases of approximately \$200,000 and the diversion channel engineering and construction of approximately \$2,600,000 for a total of cost opinion of \$2,800,000.

Please note that these costs again are very preliminary and require more detail engineering study. If you have any questions or need future assistance, I would be happy to discuss them with you.

Respectfully,
MOORE ENGINEERING, INC.

A handwritten signature in blue ink, appearing to read 'Tracy D. Eslinger'.

Tracy D. Eslinger, PE
Project Manager

925 10th Avenue East
West Fargo, ND 58078

T: 701.282.4692
F: 701.282.4530

www.mooreengineeringinc.com