

BUFFALO-RED RIVER WATERSHED DISTRICT

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BUFFALO-RED RIVER WATERSHED DISTRICT CLAY COUNTY DITCH NO. 11 Minutes for Repair Hearing July 21, 2015

In accordance with Minnesota Statutes Annotated (M.S.A.) 103E.701, and other applicable statutes, the Board of Managers, Buffalo-Red River Watershed District (BRRWD), held a Repair Hearing for Clay County Ditch (C.D.) No. 11 on Tuesday, July 21, 2015, at 7:00 PM in the BRRWD office, 1303 4th AVE NE, Barnesville, MN. BRRWD Managers present were Peter V. Fjestad and Mark T. Anderson. Houston Engineering, Inc. (HEI) Staff present were Bruce E. Albright, BRRWD Administrator, and Erik S. Jones, District Engineer. Others attending included: John Ready, Kevin Olsgaard, Gary Andvik, Duane Walker, Teresa Walker, William Bye, John Bye, Michael Knorr, and Rick Brakke.

BRRWD Vice Chair Peter V. Fjestad called the hearing to order at 7:00 PM. He introduced the BRRWD Managers and Staff. He announced the hearing would be recorded to aid in the preparation of minutes.

BRRWD Administrator Bruce E. Albright stated there are a couple of repairs needed on Clay C.D. No. 11-North. All work on drainage systems is administered in accordance with Minnesota Drainage Law. The BRRWD is the ditch system authority. He went over the history of the ditch system. Clay C.D. No. 11 was initially built in approximately 1911. This system went through a redetermination of benefits in 2009. An improvement was completed with assistance from the Clay County Highway Department in 2009. The improvement started at Trunk Highway (T.H.) No. 75, and went west for approximately one mile, moving the County State Aid Highway (CSAH) No. 8 to the north and flattening the ditch slopes to address slumping issues. The project moved the ditch to the south and used the same outlet that is there now, which washed out this spring. The project also moved the road by Rustad west of T.H. No. 75, in an attempt to address the slumping issues. The BRRWD decided to hold tonight's hearing because of the costs associated with repairs needed at the present time. Over 100 notices were mailed to affected landowners on the system. If work gets done on the ditch, the costs get assessed back to the landowners according to the current benefiting area.

District Engineer Erik S. Jones stated there are three different repair sites that have been looked at over the last six months. The first site was by the river outlet through County Road (C.R.) No. 59. The second site was west of Duane Walker's driveway and involves a ditch slump. The third site is a 600-700' stretch where the ditch slope is giving way east of T.H. No. 75.

Jones explained the 1978 outlet project. The 2009-2010 improvement involved removing the first 60' of outlet pipe (84" dia. corrugated metal pipe (CMP)). It was replaced with a new headwall. The outlet structure was installed after the 1975 flood to address a serious erosion problem. In 2009, the invert of the pipe was dropped about 4'. Before this, there was almost no slope between T.H. No. 75 and the structure. Currently, the new pipe is fine, but the 280' of additional pipe downstream has rusted out. HEI looked at some options for repair. One option was slip lining the pipe, which proved

to be very expensive due to the size of the pipe. Replacing the pipe proved to be less expensive. Another option would be contouring everything and putting bigger structures through County Road (C.R.) No. 59. That also proved to be very expensive because there is 17' of fall over the 300' of area, so it would require a lot of grade control (rock, riprap, concrete blocks, etc.). We would have to replace the existing road structures with larger box culverts in order to keep the water from going over C.R. No. 59. The best option would be replacing the pipe. This would entail 280' of 84" dia. CMP with a price tag of \$130,000-150,000. The other options started at around \$250,000 or more.

Kevin Olsgaard asked if we were going to lower the pipe. He felt the ditch doesn't drain properly. Jones said they did not survey the pipe elevation. A survey would tell us if the pipe has moved. Duane Walker asked if there was a change in velocity of the water flowing through there from the 2009 project. Jones said the velocity of C.D. No. 11 North for this mile west of T.H. No. 75 was somewhat slow. Walker asked if it was true that the more velocity you have, the more erosion you have. Jones agreed. The road slope is very flat. Albright asked if we would use the existing headwall with this proposed repair. Jones said we would use the headwall, and the first 28' of pipe (installed in 2009) would also remain. William Bye mentioned that he sealed holes in the pipe just so they could drive over it. Jones added that in some areas, the pipe is corroded away. Bye said it has also buckled further downstream. Jones said when he walked the area, the pipe was partially filled up with material. Bye said that would slow down the flow. Jones said that we do have the ability to put pressure on the system. When there is a big flow, it would push that debris through the pipe. Bye asked if he could apply quikcrete or expander foam that he put in the holes when it washes out. Bye clarified that he repairs the holes in the first section of the culvert where they drive. Jones stated that he did not see the damage Bye was speaking of. He said that is a new section and there is no reason for there to be holes in it. Jones said HEI will look into that.

Albright asked Jones the longevity of the new CMP. Jones has discussed this with TrueNorth Steel, which is the company that makes the culverts locally, and we could switch to a heavier gauge (ex. 10 gauge) or we could look at an epoxy-type coating to give the pipe more life. In either case, those options would give the pipe approximately a 50-year life span. Manager Anderson clarified that the cost for the heavier gauge or coating is already built into the estimate. An audience member questioned if precast concrete was too expensive. Jones replied yes, he did not price it out, but it would be very expensive. Bye questioned whether CMP is strong enough to run big equipment over. Jones answered that once the new pipe is installed with at least 3' of cover over the top, it should be fine. Albright asked Jones if he thought the ditch will perform properly given the size of the pipe and the elevation of the headwall. He pointed out that now would be the time to address these issues if we think those things should be changed. Manager Anderson stated that we are implementing the project repair per drainage law, which requires you to put it back to the plan on record. If we elevate things from a repair to an improvement, that would change the whole process.

Jones added that when these pipes corrode, you usually see damage at the flow line first. By that time, the damage is usually on the rest of the pipe, it is just not visible. Bye added the seams are separated, and that is why he has been filling it. Albright said Bye's repairs may have bought us some time. Bye admitted that the way he went about trying to fix the problems was probably the wrong way, and that it should have been packed underneath for additional support. Jones added that once water starts migrating along the underside of the pipe then it starts undermining the support.

Jones continued with his presentation upstream of T.H. No. 75. The next area looked at was along CSAH No. 8 (the Rustad Road). Specifically, the first 700' along the south side of the ditch. HEI has

been working with Terracon, a geotechnical engineering firm. The Watershed hired them to do the analysis on how to properly slope this area. Initial thoughts were to copy what was done on the west side of the road where we flattened the slope out to an 8:1 or 10:1 slope. That will not be a possibility at this location. We are trying to reestablish the original 6' bottom of the ditch. We won't be doing anything with the north slope. The finished slope would end up being 5:1. We would have a buffer strip and spoil bank just south of the ditch. There would be 1' of sand that would be brought in to replace the heavier removed material. It starts out under the footprint of the ditch bottom and then tapers up following the 5:1 slope. Over the top would be lean clay from the site and some top soil over that. The project would start by T.H. No. 75 and over the course of 25-50', we would transition into this new cross section. We would transition into the existing ditch at 700' east of the highway. Right now, the ditch has a 'v' at the bottom. In general, it is holding back about 3' of water because of the ditch bottom is getting pushed up by the slumping.

An audience member asked if Jones has ever done this sort of repair before. Jones stated that he has not, but Terracon affirms they have done it several times. Manager Fjestad asked if there was a guarantee that went along with this. Jones stated that the geotechnical engineers think it will work and they have a safety factor of 1.3-1.5 on this project. Jones said that they did look at going as flat as an 8:1 on the south slope, but the factor of safety was not even 1, so they didn't think it would hold up over time. If this was a new ditch and you excavated it, the undisturbed soil does have the ability to stand up to steeper slopes, but as soon as you have a failure, you are left with the residual strength of the soil. You can never stack it back up (the soil/slope) to what it was.

Albright brought up repair work done along the convent road, west of T.H. No. 75, on C.D. No. 9. On that project, we dug out the failing material and built the slope back by using Styrofoam blocks that are larger than square hay bales. They have used those in the Fargo-Moorhead area. It takes the weight off. We stack them, put black dirt over the top, and get grass growing on the top. Jones talked to Terracon about that being an option here and they thought that would be more expensive than what they are proposing for this site.

Albright said a third option would be to dig the failing material out, put sand in there, put clay (from the site) over the top, and slightly flatten the site. Albright noted that the slump is obviously affecting upstream drainage. Fjestad mentioned that the folks that are in this room are the ones that are going to pay for the repairs. Albright mentioned that we just have a rough estimate on the total cost right now.

Olsgaard commented that he didn't understand why the landowners have to pay for everything when he felt that the engineer had screwed up. He stated that this is the third time trying to fix this area. Jones pointed out that the area we are proposing repairs on was not part of the 2009 improvement. That work was all west of T.H. No. 75. We thought we would be able to get more life out of the outlet structure that was left in there, but that was not the case. Otherwise, we would have had to replace that back in 2009. Albright added that it was the Soil Conservation Service that put that pipe in back in 1978 and that organization no longer exists. Jones clarified that it was the headwall that was built in 1978 and the original pipe was put in a year earlier. Albright noted that it was all done after the 1975 flood. Olsgaard stated that totals three mistakes and asked how many mistakes the landowners will have to pay for. Another audience member noted that the answer was apparently all of them. Albright noted that the Watershed District was not associated with any of that work. We were obviously involved from T.H. No. 75 west, back in 2009-2010, when we worked with the Clay County Highway Department.

An audience member inquired as to when the ditch was last cleaned. He thought that we cleaned the bottom not that long ago. It slumped right away because it didn't drain properly.

Albright noted that slumping issues get complex when looking at it from a geotechnical perspective: sometimes it slumps when it's wet; sometimes it slumps when it's dry. It depends on the nature of the underlying soils in the area. We paid a geotechnical firm (Terracon) to survey the area and come up with their best recommendations. Manager Fjestad noted that none of this comes with a guarantee.

Albright said that the ditch system currently has a -\$50,000 balance. Then, you add in an estimated \$250,000 from these projects. The benefits on this project total \$738,313. The \$100/acre benefit rate would pay \$33/acre, the \$75/acre rate would pay \$25, the \$30/acre rate would pay \$10/acre, \$25/acre rated would pay \$8.46/acre, the \$20/acre rate would pay \$6.77, and the \$10/acre rate would pay \$3.39. Minnesota Drainage Law states that those payments would be spread out over a period of time (approximately 3 years).

William Bye questioned what will happen if the diversion project goes through. He asked if it would cut everything off from C.D. No. 11 south, and divert that water into the Red River.

Jones and Duane Walker looked at a third site 0.5 miles west of T.H. No. 75 on the west side of Walker's driveway. We also looked at re-sloping the ditch in this area. The consensus was to monitor the area to see if it slumps any further. It appears to have stabilized and doesn't appear to be affecting flow in the channel. William Bye added that in some places where slumping occurs, they put animals out there and it seems to help by packing the soil. Jones agreed, and stated that it is usually good vegetation that helps hold everything in place.

William Bye asked if there was an option to pay off the repair work all at once. Albright said that was an option in 2009 because we sold bonds. That will not be an option because we won't have a bond sale this time. Olsgaard added that before the 1975 summer flood, the ditch drained properly. The ditch hasn't worked ever since the outlet culvert was installed.

Albright noted that replacement of the culvert was the least expensive of the four different options that were looked at. The first 28' was replaced in 2009-2010, so we will just hook up to that. We will be replacing the culvert with better material than what was available in 1977-1978.

William Bye suggested putting multiple, smaller culverts deeper down in the ditch. Jones added that it would take a lot of them to make this work. Jones said he would take a look at the possibility of multiple culverts, but he is not sure if that is even an option for a pipe this big. The material costs for the pipe we are currently looking at is \$155/foot, which will equal \$35,000-\$45,000 of the total project costs.

Manager Anderson said that he feels this needs to be fixed because it sounds like the road could collapse if we get another heavy rain. Olsgaard added that if it collapses, then we will have no drainage.

Mike Knorr questioned if the cost is per acre or per the value of a house. Albright said it is per acre. Knorr said that he is wondering what he will pay by Rustad, since all of their water goes north. He questioned if his area was charged the current rate for protection benefits only. Albright noted that this is why we hold hearings before the determinations are set. This is the time for any discrepancies to be

brought before the Viewers. Once the benefits are adopted, it is much harder to make changes. He acknowledged Knorr's comments and said that he can look into this issue after the hearing.

William Bye asked if it was alright for him to mow the area. Albright answered yes.

Albright concluded that the Board will meet Monday, July 27, 2015. Prior to that meeting, an order will be prepared regarding the repair. The Board will look at spreading the cost out over a minimum of three years. We will fix the interest rate in that order. The Board will adopt the order at their meeting. By law, anyone on the ditch system will have 30-days to appeal that decision if they disagree with the order. After that 30-day period, a contractor can be hired and work can begin. Hopefully, work can begin around Labor Day.

Manager Anderson questioned how long the road would be closed. Jones estimated 2-3 days.

Duane Walker had a question for Jones regarding bids. He has heard of projects in Fargo where they rejected all of the bids and re-bid a project the following year. He was wondering if there was a chance of that happening with this project. Jones answered that we would not be able to award the bid if all bids were 30% over the estimate. This project is large enough that we will solicit bids to the newspapers and internet. Walker also noted that he has heard of projects that do not get any bids. Jones stated that this project is pretty straight forward. He may consider including the installation of the pipe this year, but the slope work east of T.H. No. 75 could be done in 2016. An audience member stated that he does not agree and that he hopes the work is done sooner than that. Albright felt this project was small enough for a local contractor to handle.

There being no further testimony from the audience, Vice Chair Fjestad adjourned the hearing at 8:15 PM.

Respectfully submitted,

Bruce E. Albright, Office Administrator