



Officials Meet on DL Flooding Prognosis

By Patrick Fridgen

In early February, about 40 federal, state, and local officials met in Bismarck for a Devils Lake flood strategy session. The underlying purpose of the meeting was to respond to a recently released forecast from the National Weather Service that provided a grim outlook on how much Devils Lake might grow this coming spring and summer. And with a high probability of at least a three-foot, record-setting jump in Devils Lake water levels expected, officials wanted to get an early start on identifying impacts, and responses.

The meeting began with a presentation by Brian Connelly, a senior hydrologic forecaster from the National Weather Service's North Central River Forecast Center in Chanhassen, Minn. Connelly reported that an extremely wet fall, that left upper soil layers completely saturated, followed by above normal snowfall in November and December, laid the foundation for a runoff year that has a 50-50 chance of exceeding the 1997 record runoff year by about 100,000 acre-feet.

From there, the big question on everyone's mind was how high might the lake get above its February elevation of 1,447 feet above mean sea level (msl)? According to probabilities reported by Connelly, that were based on Devils Lake basin conditions as of late January, there is a 90 percent chance that Devils Lake will reach 1,450.4 feet msl, and a 50 percent chance of 1,451.2

feet msl, by sometime this spring or summer. The previous record elevation was set in May 2006 at 1,449.2 feet msl. Should the lake get as high as 1,451.2 feet msl, more than 34,400 additional acres of land will be flooded.

Following the National Weather Service presentation, Skip Vecchia, of the United States Geological Survey (USGS), provided a longer-term perspective on potential flood elevations for Devils Lake out to 2018. The USGS model for 2009 estimates slightly lower water levels than what was reported by the National Weather Service, but they were still relatively close. What was most eye-opening during Vecchia's presentation was when he reported that previous model-predicted lake elevations haven't changed much in recent years, but this year, Vecchia said, "things have changed a lot."

There are a number of ramifications to Devils Lake reaching certain higher elevations – some of which may very possibly happen this spring

and summer. One big issue relates to the city of Devils Lake levee system, which the U.S. Army Corps will now more appropriately refer to as the Devils Lake dam. For several months, the U.S. Army Corps has been working with state and Devils Lake area local officials on a \$5 million feasibility study to determine the next best course of action for the Devils Lake dam.

The current embankment configuration is approximately eight miles long, and with a top elevation of 1,460 feet msl, it is only designed to protect the city to an elevation of 1,454 feet msl, with six feet of freeboard. With a 2 percent chance that the lake could exceed 1,454 feet msl sometime this summer, Bonnie Greenleaf of the U.S. Army Corps reported that they are fast-tracking the feasibility study, and could begin construction on existing sections of the alignment later this summer – while they work out details on new alignment segments. Greenleaf also reported that they estimate the embankment extension and raise will cost between \$70 million and \$100 million, depending upon which alignment is ultimately chosen.

At the time this article was written, two of the three alternative embankment alignments had become quite contentious, because several homes, along with various National Guard training facilities at Camp Grafton, would potentially be on the wet side of the dam. Also at

Chances Devils Lake Will Rise to Various Levels Spring/Summer 2009

	90%	50%	20%	10%	5%	2%
Lake Level (feet msl)	1,450.4	1,451.2	1,452.2	1,453.0	1,453.5	1,454.1
New Acres Flooded*	26,797	34,429	44,664	53,436	59,191	66,383
Volume Increase (AF)**	503,237	639,435	818,607	969,574	1,067,566	1,189,033

*Based on area above February 2009 elevation of 1,447.1 feet msl.

**Numbers are in acre-feet (AF). Previous record inflow was 538,402 AF, set in 1997.

the time this article was written, the city of Devils Lake had agreed to be the local sponsor for the project. However, because of the extent of the new alignment, which may go well beyond the extra territorial boundary of the city, an arrangement with additional local partners was being sought.

Another looming problem discussed at the meeting was the issue of roads acting as dams. This poses a serious problem because the roads in

the area acting as dams were not designed or built to serve that purpose. As Devils Lake began its rapid rise more than a decade ago, roads were quickly raised to maintain transportation corridors throughout the area. As a result, many are now holding-back water and acting as dams. This has left government officials with two options; breach the roads, or upgrade them to actually serve as dams.

In addition to several other flood-related problems that are expected to impact many rural areas throughout the Devils Lake basin, another potentially dire situation exists for the city of Minnewaukan. Located along the west shore of the swelling lake, Minnewaukan is also on the front line, so to speak, of the Devils Lake flood fight. Like the roads acting as dams situation, Minnewaukan is left with only two options should the lake continue to rise: stay and fight the encroaching lake with a dam alignment that would protect the city; or proceed with a buyout of the entire community. Since many of the roads surrounding and entering the city would be below the required dam elevation, and because of the overall cost of such a project, a buyout currently looks like the more viable option. What complicates that decision is the Benson County courthouse is

located in Minnewaukan – the county seat. And even more importantly, no one wants to see another one of North Dakotas small towns simply disappear from the map.

To put the urgency of Minnewaukan's situation into perspective, Steve Huffman, a Minnewaukan city commission member, reported that a number of man-holes in town might have to be ring-diked this spring because they are at an elevation of 1,450.4 feet msl. And the community's school, which is currently at or above capacity, is at an elevation of 1,458 feet msl, but the gym is only at 1,454 feet msl. Furthermore, there have been previous estimates that the city's sewer system might become overwhelmed with groundwater inflow once the lake reaches 1,450 feet msl.

Shandi Teltschik, from the Federal Emergency Management Agency (FEMA) in Denver, Colo., gave an overview of existing flood insurance options. Teltschik also said that FEMA was working to get as many Devils Lake basin residents as possible signed up for flood insurance, and she strongly encouraged local officials to help FEMA get the word out before it was too late.

Jeff Klein, the Floodplain Management Program manager at the State Water Commission provided flood insurance statistics for the Devils Lake area. On a positive note, Klein pointed out that areas currently in the greatest amount of danger, including the city of Devils Lake, Minnewaukan, and Creel Township, (which includes the Lakewood addition), have the highest concentrations of flood insurance policies in Ramsey, Benson, Nelson, and Towner counties.

Following the meeting of federal, state, and local officials, another meeting was held to update several state legislators about the Devils Lake flooding situation.

LANDOWNERS: TAKE NOTICE

If you are a Devils Lake Basin landowner, or if you are affected by closed basin flooding elsewhere in North Dakota, you may be eligible to enroll flooded land in a new conservation easement program under the 2008 Farm Bill. Important points to note are that the easements are for 30 years, and flooded areas cannot be under more than 6.5 feet of water to be eligible.

For more information, please contact your local Natural Resources Conservation Service office.

Devils Lake encroaching on the city of Minnewaukan.



PHOTO COURTESY OF LAURA EVERY

Record of Decision Signed for NAWS Water Treatment

By Patrick Fridgen

Jan. 15 was an exciting day for North Dakota, and especially those living in the northwest portion of the state. On that day, Michael Ryan, the Great Plains Regional Director of the U.S Bureau of Reclamation, signed a Record of Decision (ROD) for the Northwest Area Water Supply (NAWS) project.

The signing of the ROD officially marks the Bureau of Reclamation's selection of a preferred alternative for water treatment for the NAWS project. In addition, it brings the Environmental Impact Statement (EIS) process to an end, and fulfills the Bureau's obligations under the Nation Environmental Policy Act.

"We were really happy to get word that the Record of Decision had been signed by Mr. Ryan. This is a big step for NAWS, and we're excited to move the project forward," said Michelle Klose, NAWS project manager at the State Water Commission.

The signing of the ROD is a big deal because the main sticking point that has held up NAWS in the past has been the issue of water treatment. The Province of Manitoba filed a lawsuit challenging the original Finding of No Significant Impact (FONSI) back in 2002 that ultimately resulted in the development of the current EIS. Manitoba's primary objection was that NAWS could increase the risk of transferring non-native biota between the

Missouri River and Hudson Bay drainage basins.

Now that the ROD is signed, the next step is to go back to federal District Court and ask the judge to lift the injunction that has barred the state from developing treatment facilities. If that happens, NAWS project managers will proceed with efforts to move water from Lake Sakakawea to northwest North Dakota – across the Missouri River-Hudson Bay divide.

Despite the project's legal challenges, the federal court allowed construction to continue on non-treatment related project components. As a result, the 47-mile main NAWS transmission line between Minot and Lake Sakakawea has been completed. And in August, construction was also completed on 24 miles of pipeline, four pump stations, and two storage reservoirs that provide water service to Berthold, Minot's South Hill region, and North Prairie Rural Water District, with an interim supply from Minot's water treatment plant.

With the 47 miles of pipeline already in the ground between Lake Sakakawea and Minot, court removal of the injunction would prompt the state to immediately begin design on an intake, and the recommended treatment facility, to be located at Max.

In the ROD, the Bureau of Reclamation stated that all of the alternatives considered in the Final

EIS were considered environmentally preferable because each of them exhibits a low to very low risk of biological invasions between the two drainage basins. The Bureau further went on to say that though the levels of risk differ between the various alternatives; there are still much higher risks associated with non-project-related pathways.

The alternative that the Bureau chose will cost an estimated \$17.5 million to construct. Construction costs associated with the treatment facility at Max are the federal government's responsibility because of obligations under the Boundary Waters Treaty Act between the United States and Canada.

The preferred alternative involves a combination of treatment processes from the Draft EIS, including the chemical disinfection process that was looked at as part of the no action alternative. In addition, the UV [ultraviolet] disinfection process, evaluated as part of the action alternatives, will also be implemented. The upgraded Minot water treatment plant will then filter the water as required by the federal Safe Drinking Water Act.

"It certainly has been a challenging process for everyone involved in the NAWS project to get to where we are today. And, there's still a lot of work to be done, but a signed Record of Decision was definitely a great way to start the year," said North Dakota State Engineer, Dale Frink.



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