

or currently underway. However, two situations in particular remain extraordinarily risk-laden: Fargo-Moorhead and the Devils Lake region.

### **Fargo-Moorhead**

Fargo-Moorhead is an area of high risk based on potential damages and resulting costs to government if the area is inadequately protected for a future major flood, its condition at this time. The recent USACE Feasibility Report to determine flood protection alternatives for the Fargo-Moorhead area points out that although Fargo and Moorhead have managed successful flood fights in the past using temporary emergency measures, such successes may contribute to an unwarranted sense of security, one that does not reflect the true flood risk in the area. The USACE concludes that the probabilities for such emergency flood fights to continue to be successful for Fargo-Moorhead are “very low.” A senior planner with USACE’s St. Paul District reported to the team of experts called together to determine the more accurate hydrology for Fargo-Moorhead that “both the 1997 and 2009 flood events came close to overwhelming the [two cities’] emergency levee systems.” With current levels of protection, the planner explained, a 500-year flood event would inundate the city of Fargo and a large portion of Moorhead (see Appendix B, Exhibit B-11, p. 27). **Estimates for damages to the cities from a lost flood fight at this urban center range from \$2.5 billion for a 100-year event** to nearly \$9 billion for a 500-year event (see Chapter 4 for more details). The gravity of the situation for Fargo-Moorhead is underscored in USACE’s inclusion of estimated relocation costs for the cities in its Feasibility Report.<sup>17</sup>

### **Devils Lake**

A second instance of immediate risk, and of potential risk to a large section of the basin, is the rise of waters in the Devils Lake subbasin. The Devils Lake subbasin is considered a closed subbasin, a condition that is true until its water levels reach an elevation of 1458 feet, at which point, as illustrated by the following figure, it would reach its current natural overflow level. Devils Lake has risen an extraordinary 32 feet since 1993. The rise has flooded about 150,000 acres of land, most privately owned. These flooded areas have remained flooded—the land first flooded in 1993 remains flooded today and will remain under water for years, if not decades, in the future (see Appendix B, Exhibit B-1 for a PowerPoint overview of the Devils Lake subbasin).

The inundation by Devils Lake also threatens the subbasin’s cities and rural residents. The threat of flooding resulted in a Federal Emergency Management Agency (FEMA) buyout of the town of Churchs Ferry, and the town of Minnewaukan is currently at a significant risk that could result in buyout or relocation. The city of Devils Lake is protected by a long dam/levee at a cost of over \$100 million. That levee/embankment has gone through a series of raises and extensions in response to forecasted water levels and risk assessments. Due to the magnitude and duration of water against what started as a levee, enhancements to the earth embankment have been designed as a dam meeting dam safety criteria.

An alternative to increasing the size of the large levee is to pump water out of the much-enlarged lake. Although this solution can reduce the risk of a catastrophic breakout of Devils Lake waters into the Sheyenne River, it poses several other effects: 1) additional flows in the

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<sup>17</sup> See *Supplemental Draft Feasibility Report and Environmental Impact Statement*, April 2011 (Appendix C, Exhibit C-4). In the report, the estimated cost of \$4.7 billion for a “nonstructural” plan for Fargo-Moorhead cannot be read as comparable to a full relocation cost. The plan does not include costs for lost or new infrastructure or for regional or local damages not covered in National Economic Development (NED) damage numbers. To put the estimate in perspective, the estimated NED flood damages to the Fargo-Moorhead area from a 500-year event are in excess of \$7.5 billion.