

## **SECTION 2.0 DESIGN GOALS**

Design goals and functional requirements describing the intended performance of the flood mitigation project were initially developed by HEI and confirmed by the Browns Valley Flood Mitigation Task Force (BVFMTF) during their September 13, 2007. Project design goals and the functional requirements for the Browns Valley Flood Mitigation Project (BVFMP) are described within this section.

Design goals are essentially “criteria” established to evaluate the effectiveness of the various flood mitigation concept alternatives in achieving the desired outcomes. Design goals were also used to evaluate the performance and rank the desirability of the flood mitigation concept alternatives and to select the “preferred” concept alternative.

The following design goals were established for review and consideration by the Task Force:

- Provide flood protection for the 1% chance (100-year) or a less frequent flood (providing the additional protection is at nominal additional cost) within the Corporate Limits for the City of Browns Valley;
- Provide flood protection for the 1% chance (100-year) or a less frequent flood (providing the additional protection is at nominal additional cost) for a buffer area extending some distance beyond the Corporate Limits for the City of Browns Valley;
- Provide for a distribution of flows between Lake Traverse and the Little Minnesota River based upon an understanding of the historic distribution;
- Incorporate a safety factor into the design of the flood mitigation solution reflecting the unpredictable nature of the flood mechanism within Browns Valley (e.g., summer floods versus spring floods caused by ice);
- Avoid moving the flood problem downstream, based upon criteria for the increase in elevation within Big Stone Lake and historic flows to Lake Traverse;

- Use the least amount of land possible for construction of the project features for the selected alternative;
- Maintain minimum flows less than the 5-year recurrence interval within the Little Minnesota River through Browns Valley to provide for ecological integrity within the river through town; and
- Technical feasibility.

The design goals were accepted by the BVFMTF subsequent to their September 13, 2007 meeting. The design goals along with technical feasibility were used to evaluate an initial set of concept alternatives believed capable of mitigating flooding within Browns Valley. These alternatives were screened by the BVFMTF during their September 13, 2007 meeting (see Section 4.0, Range of Flood Mitigation Alternatives Considered).