

SOURIS RIVER BASIN FEASIBILITY STUDY



US Army Corps
of Engineers®
St. Paul District



Overview:

The Souris River Basin Feasibility Study is a cooperative effort between the Souris River Joint Water Resource Board (SRJB) and the U.S. Army Corps of Engineers, St. Paul District. Study efforts began in May 2016, and the study is scheduled to be completed by February 2019.

Study Purposes:

- Identify water resource problems in Souris River Basin
- Formulate possible solutions
- Evaluate benefits and impacts (economic and environmental)
- Determine whether federal investment is justified

Planning Objectives:

1. Reduce the risk to life, health, public safety and critical infrastructure due to flooding.
2. Reduce flood risk and flood damages to structures in the urban and rural areas due to peak flows.
3. Reduce the risk of property and agricultural damage due to peak flows.
4. Reduce the risk of property and agricultural damage due to extended duration of flows.
5. Improve the public's access to and use of outdoor recreational opportunities in conjunction with flood risk management and associated with improving ecosystem functions and habitat.
6. Increase community resilience and ability to fight and recover from flood events throughout the basin.

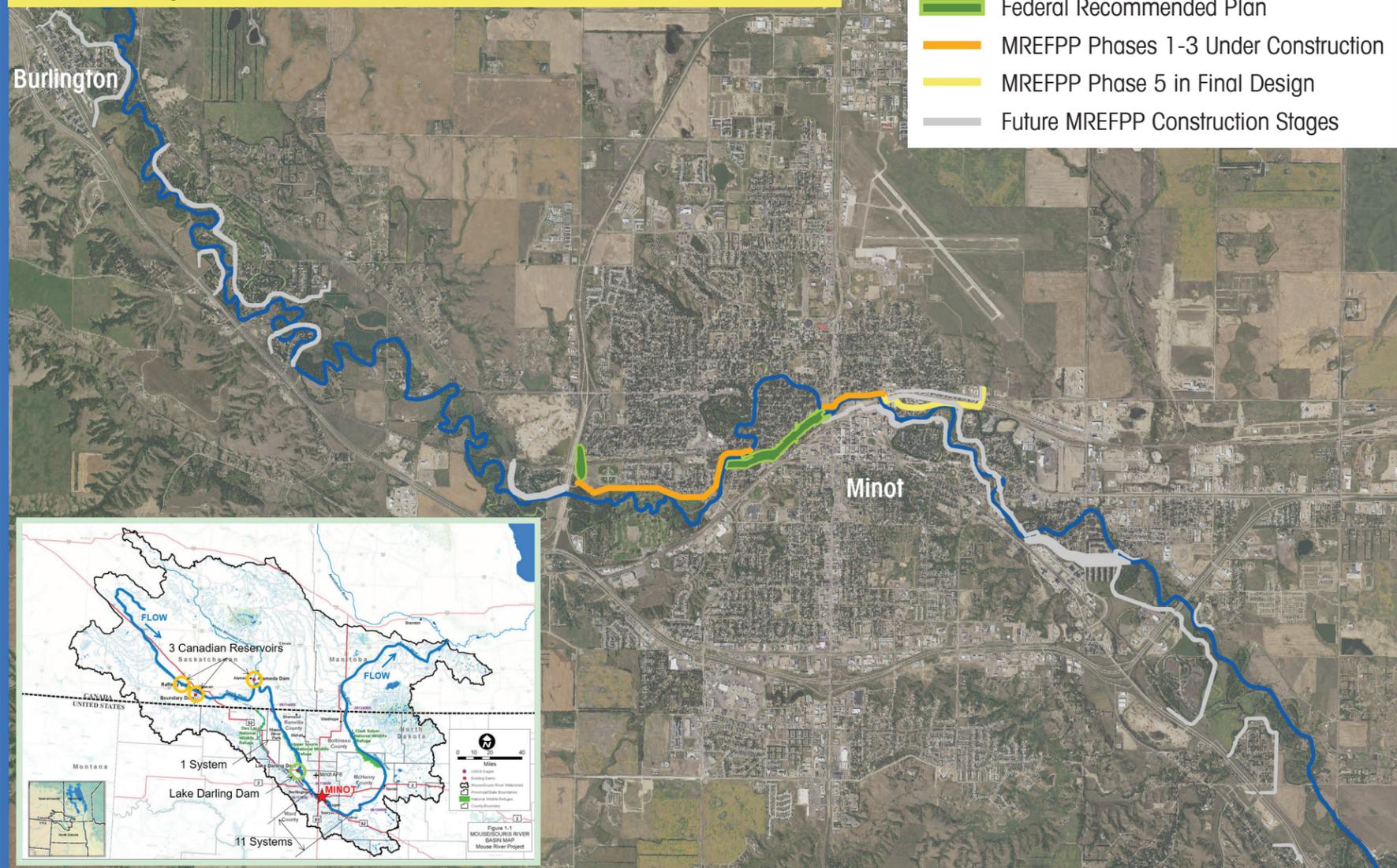
The Mouse River Enhanced Flood Protection Project

MREFPP: A regional plan developed by the SRJB with assistance from other local and state agencies

- Basin-wide, with an estimated cost of \$1 Billion, to be built over the next 25 years
- Phases 1, 2, & 3 currently under construction in Minot (included in the FWOP)
- The Corps Recommended Plan would tie into phases 1 & 3 of this larger plan to form a complete system
- Together, the regional & federal project would remove 60% of Minot residents from the regulatory floodplain

The proposed Recommended Plan is a critical feature of this larger project.

Map of Local Plan vs Federal Recommended Plan



- Federal Recommended Plan
- MREFPP Phases 1-3 Under Construction
- MREFPP Phase 5 in Final Design
- Future MREFPP Construction Stages



Minot flood June 28, 2011.



Emergency flood fighting efforts, 2011.

In 2011, the Souris River in the cities of Burlington, Minot, Logan, and Sawyer had a flood of record with flows of 27,400 cubic feet per second (cfs). These flows devastated the communities and caused evacuations of more than 11,000 residents and approximately a billion dollars in damage to private and public property. The annual flooding in the basin, combined with the record flood event in 2011, continues to stress the area. Many repairs have been made to the Federal levee system since the 2011 event. Levee safety and confidence in the existing Federal project during a flood event has been significantly reduced.



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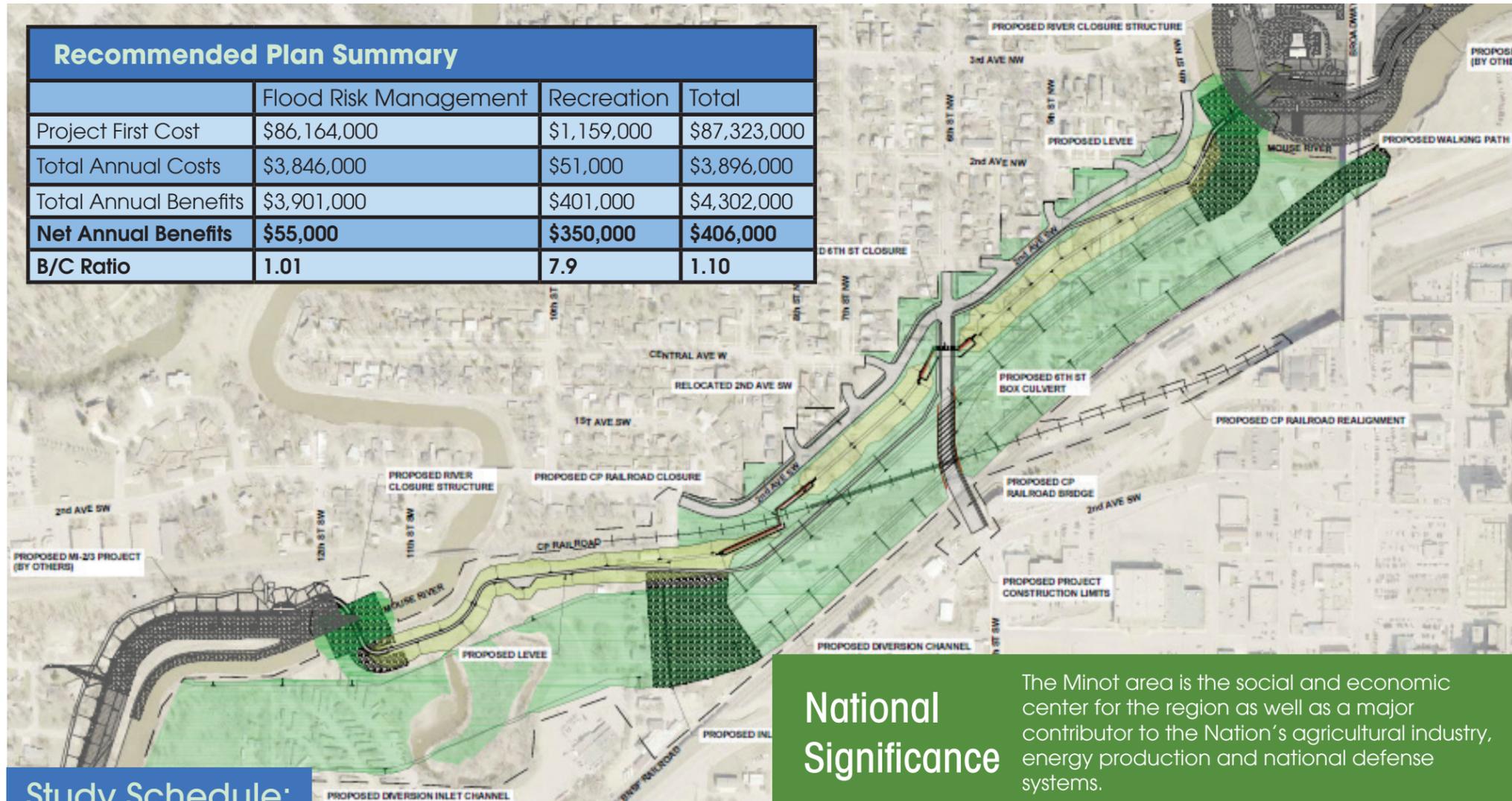
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Description of the Recommended Plan

Recommended Plan Summary

	Flood Risk Management	Recreation	Total
Project First Cost	\$86,164,000	\$1,159,000	\$87,323,000
Total Annual Costs	\$3,846,000	\$51,000	\$3,896,000
Total Annual Benefits	\$3,901,000	\$401,000	\$4,302,000
Net Annual Benefits	\$55,000	\$350,000	\$406,000
B/C Ratio	1.01	7.9	1.10



Study Schedule:

Milestone	Date
Feasibility Cost Sharing Agreement Signed	06 May 2016
Workshop, St. Paul MN	21 - 23 September 2016
NEPA Scoping & Agency Meetings	25 - 27 October 2016
Planning Charrette, Minot ND	15 - 16 November 2016
Alternatives Milestone	27 January 2017
Tentatively Selected Plan Milestone	5 September 2017
Agency Decision Milestone	16 February 2018
Chiefs Report	April 2019

National Significance

The Minot area is the social and economic center for the region as well as a major contributor to the Nation's agricultural industry, energy production and national defense systems.



The Minot Air Force base is of particular importance to national security and military readiness; it is the only installation in the Department of Defense that houses two components of the nuclear triad: Intercontinental Ballistic Missiles and Strategic Bombers (B-52 aircraft).

The Recommended Plan Features:

The NED plan optimized to a levee height compatible with the Mouse River Plan.

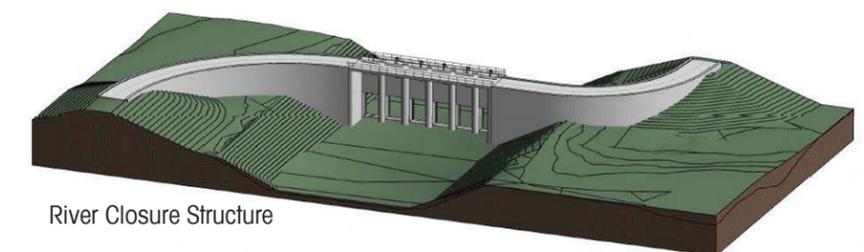
The Plan includes 3 main features:

1. Maple Diversion Channel
2. North Diversion Levee with a recreation trail connecting to an existing trail system
3. West Tieback Levee (not shown)

The Maple Diversion would consist of a high flow bypass channel that is approximately 140 ft in width and 5,000 ft in length. The top of levee height is approximately 15 ft (compatible with the Mouse River Plan).

The associated structures of the Maple Diversion include:

- 2 River Closure Structures
- 1 Diversion Inlet Weir
- Sixth Street NW Road Closure and Diversion Crossing
- Second Avenue NW Relocation
- 2 Railroad Closure Structures
- 1 Railroad Bridge



River Closure Structure

Operation of the Diversion Channel:

The diversion would be activated when flows on the Souris River exceed 3,000 cfs, approximately a 1 in 10 year event. When a flood event occurs the structures would be closed and all river flows would be diverted into the high-flow bypass channel. During flows below 3,000 cfs, the closure structures would be open, allowing water to continue through the existing river channel.