



MOUSE RIVER PLAN

TESTIMONY TO HOUSE APPROPRIATIONS
EDUCATION & ENVIRONMENT SECTION
RE: HOUSE BILL 1020
22 JANUARY 2025



23-25 Biennium Funding Summary

\$76.1 Million Total

The funding amount of \$76.1 million represented the first biennium with the same amount to complete the project (Legislative Intent, Section 14, SB 2020)

Uses:



- \$66.35 Million to the Souris River Joint Board for Construction and Engineering Throughout the Basin (Including Minot) and Acquisition Activities Outside Minot City Limits
- \$9.75 Million to the City of Minot for Acquisition Activities inside City Limits

Contracts between the State Water Commission and SRJB / City of Minot signed in May 2024

Original 23-25 Biennium Work Plan

Fairly significant shift in focus within the last 24-36 months based on delays associated with railroad negotiations and permitting.

Originally, Phase MI-4: Maple Diversion was programmed for the 23-25 biennium, but based on delays associated with the railroads, the SRJB repositioned to advance Phases MI-6 and MI-7 to completion.

			Total Estimated Cost to Complete	
2023-2025 WORK PLAN	PROPERTY ACQUISITIONS	Minot	\$ 13,000,000	
		Outside of Minot	\$ 1,800,000	
	CONSTRUCTION	Phase MI-6: Downtown Levee / Floodwall	\$ 59,000,000	
		Phase MI-7: Roosevelt Park Levee / Floodwall	\$ 41,000,000	
	Total			\$ 114,800,000
	State Funds			\$ 76,100,000
Federal Funds			\$ -	
Local Funds			\$ 38,700,000	

Significant progress has been made with the three railroad entities affected by the Mouse River Enhanced Flood Protection Project

Early design concepts (at right) included impractical railroad requirements:

- Significant reconstruction of BNSF Railway tracks
- Significant reconstruction of CPKC (formerly Canadian Pacific) Railway tracks
- Construction of a new bridge on the CPKC tracks to cross the diversion channel
- Reconstruction of the Amtrak passenger loading platform adjacent to BNSF Railway tracks



1 PLAN: GENERAL PLAN



Significant progress has been made with the three railroad entities affected by the Mouse River Enhanced Flood Protection Project

Latest design concepts only include:

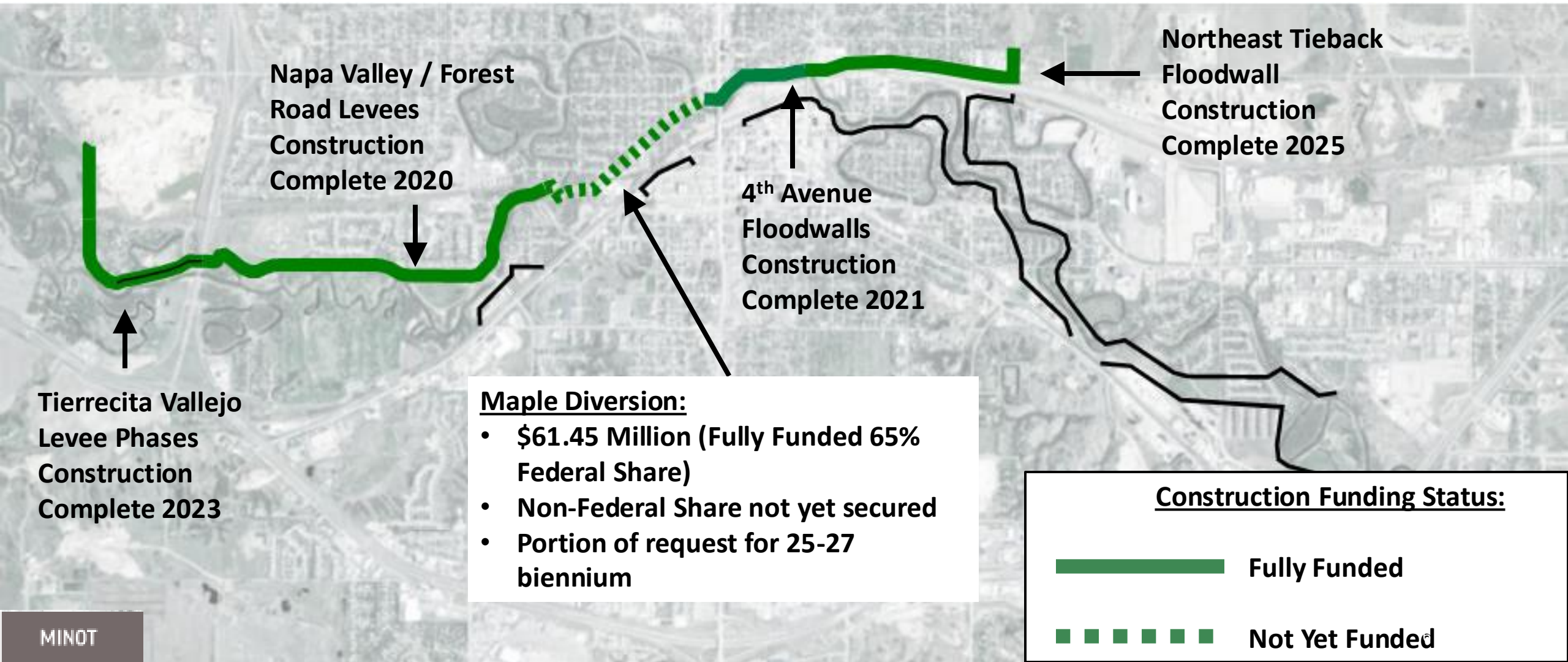
- Construction of a new bridge on the CPKC tracks to cross the diversion channel
- Reconstruction of the 6th Street railroad underpass bridge on the CPKC tracks
- Limited coordination with BNSF Railway
- Limited coordination with Amtrak

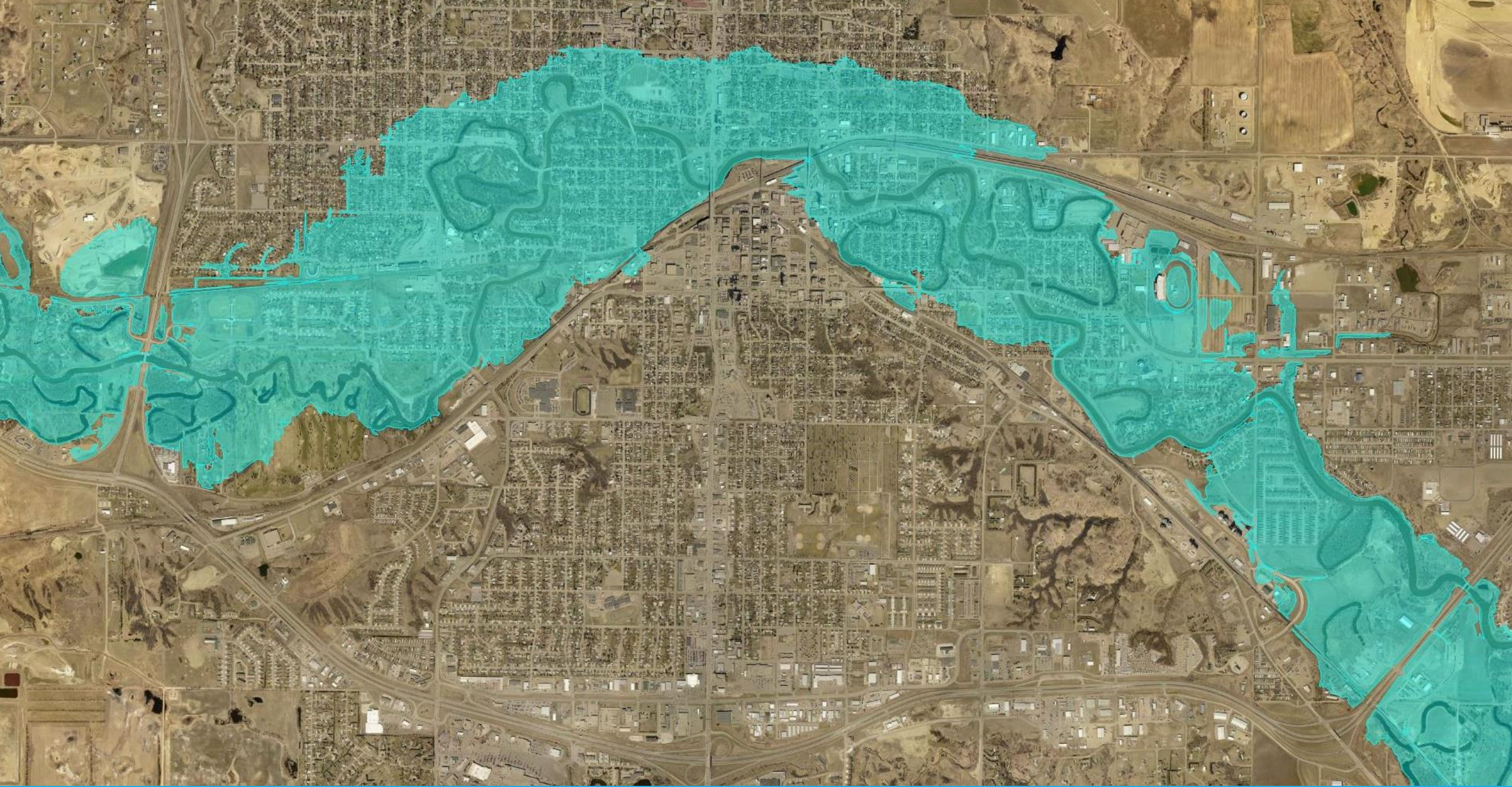


1 PLAN: GENERAL PLAN



Significant Progress Made Towards Minot Milestone 1



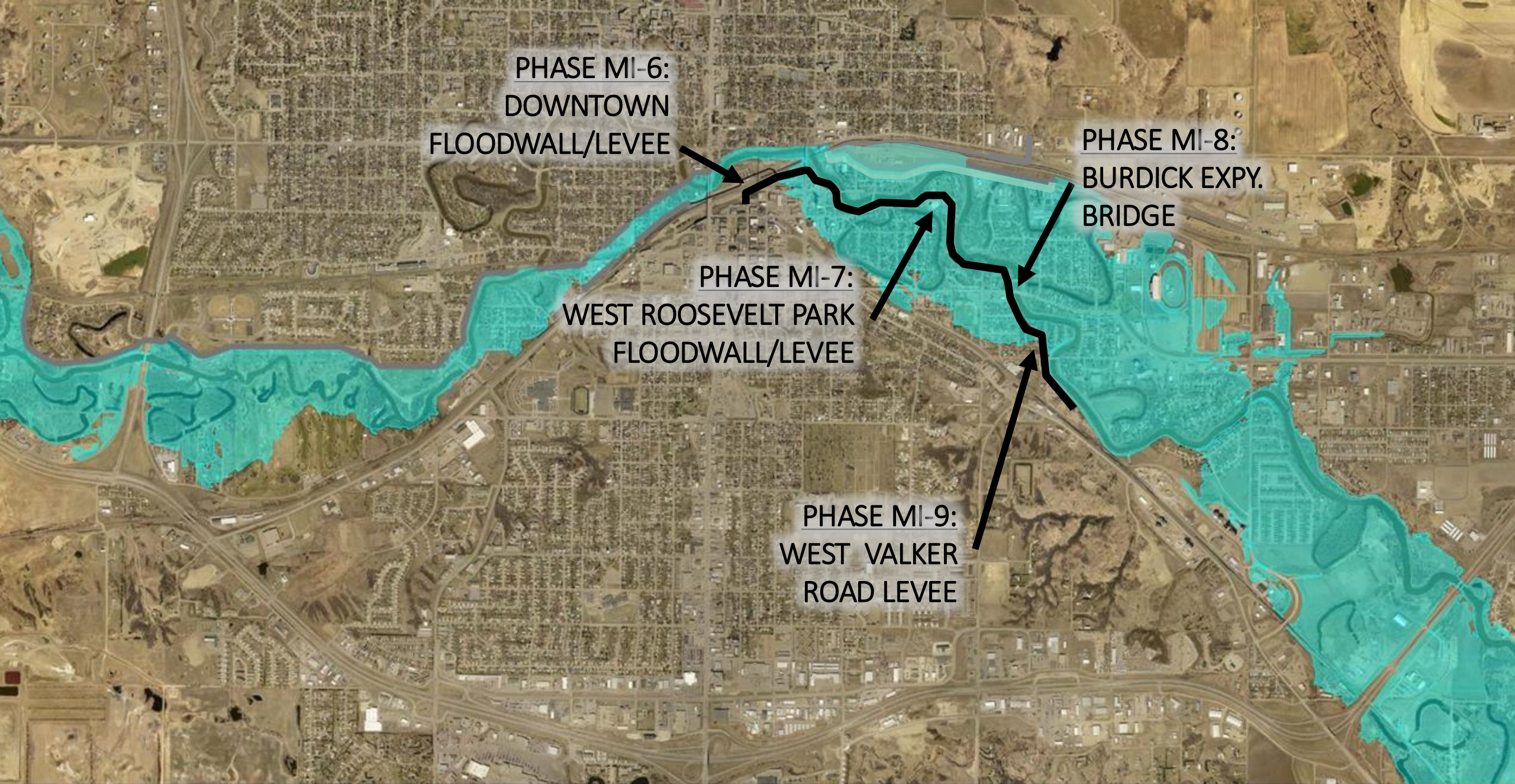


Future FEMA Regulatory Floodplain Prior to Milestone 1



**Removes Approximately
60% of Minot Valley
Residents from the FEMA
Regulatory Floodplain**

The Maple Diversion (Phase MI-4) is the USACE / federal component that will complete Milestone 1. Anticipated construction start in 2026 with completion in 2030

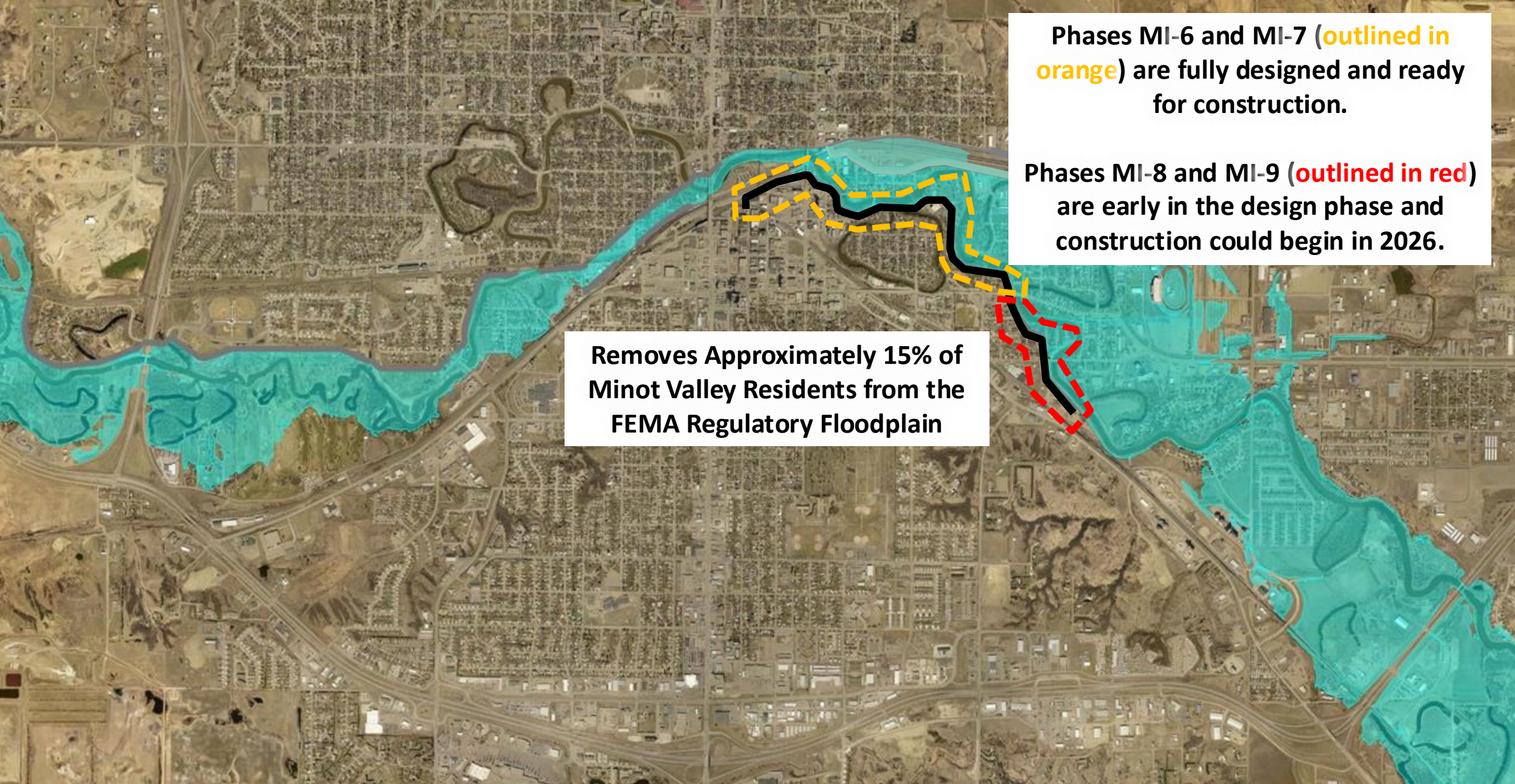


**PHASE MI-6:
DOWNTOWN
FLOODWALL/LEVEE**

**PHASE MI-8:
BURDICK EXPY.
BRIDGE**

**PHASE MI-7:
WEST ROOSEVELT PARK
FLOODWALL/LEVEE**

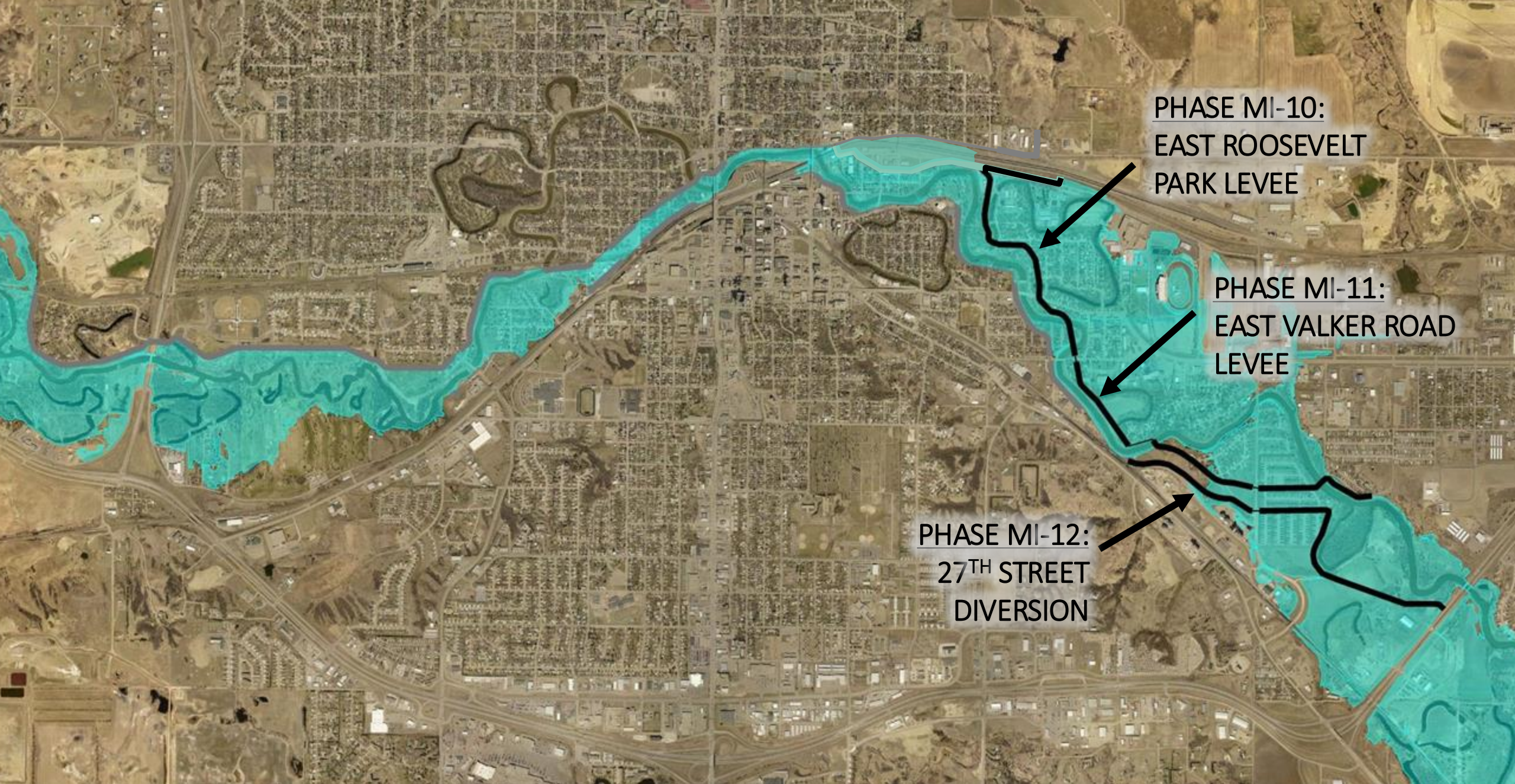
**PHASE MI-9:
WEST WALKER
ROAD LEVEE**



Phases MI-6 and MI-7 (outlined in orange) are fully designed and ready for construction.

Phases MI-8 and MI-9 (outlined in red) are early in the design phase and construction could begin in 2026.

Removes Approximately 15% of Minot Valley Residents from the FEMA Regulatory Floodplain



PHASE MI-10:
EAST ROOSEVELT
PARK LEVEL

PHASE MI-11:
EAST WALKER ROAD
LEVEL

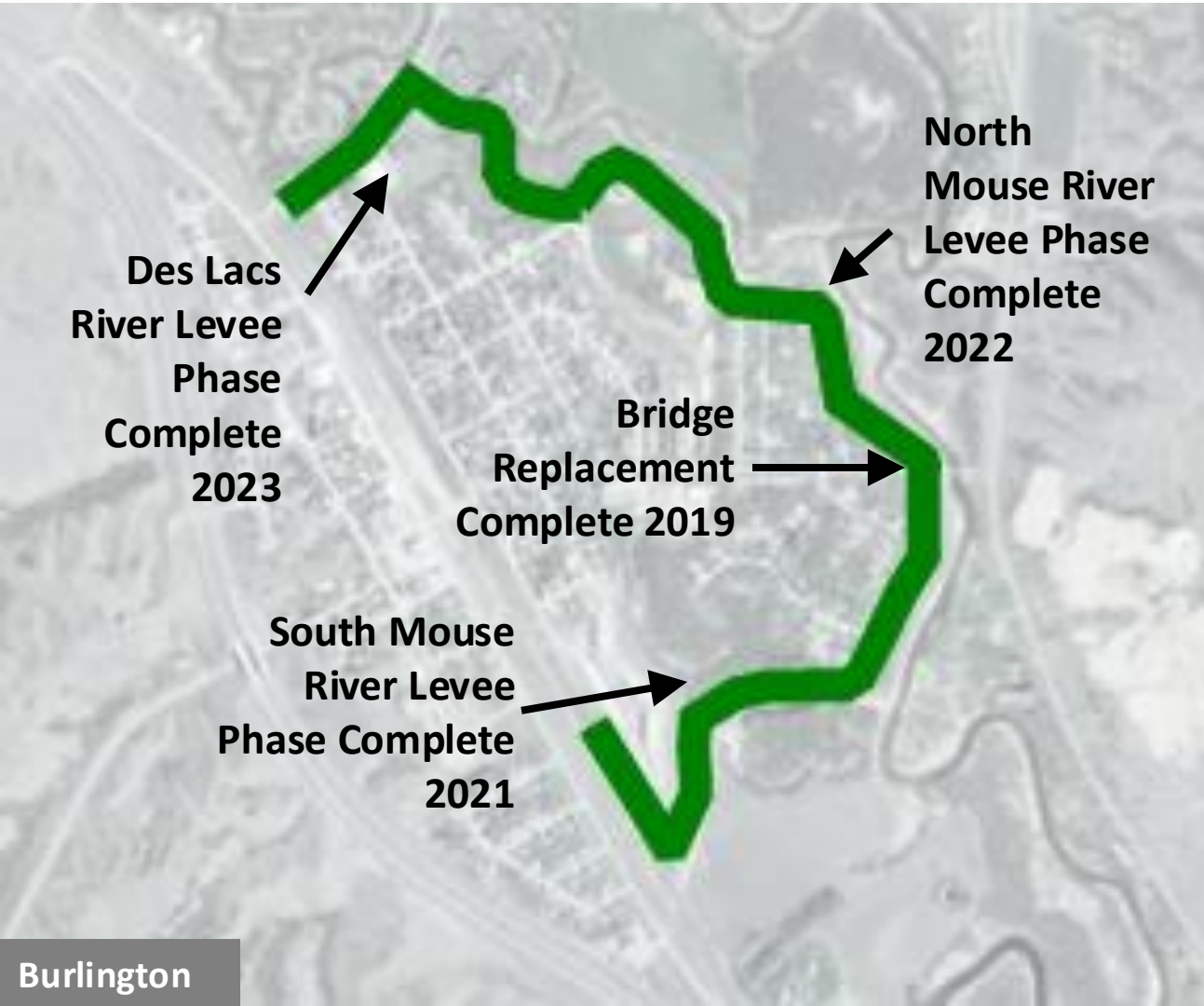
PHASE MI-12:
27TH STREET
DIVERSION




**Removes Approximately
25% of Minot Valley
Residents from the FEMA
Regulatory Floodplain**

**Detailed design has not
yet begun**

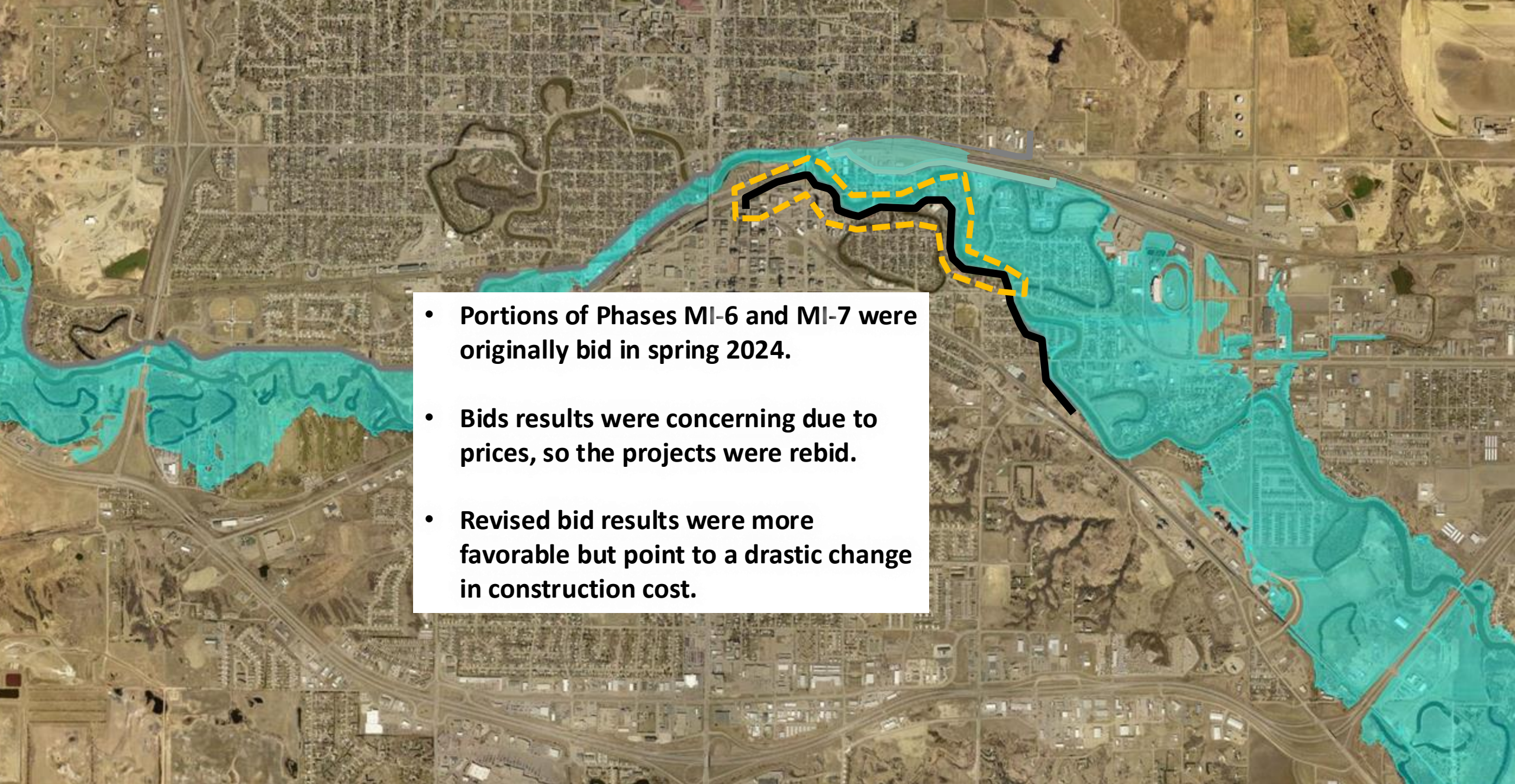
Progress in Rural Portions of the Mouse River Valley



Construction Funding Status:

 Fully Funded

Construction of all Burlington phases of the project are substantially complete.

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- An aerial photograph of a river valley. A large section of the river and its immediate banks is highlighted in cyan. A dashed yellow line follows the course of the river through the center of this cyan area. A solid black line follows the river's path on the right side of the cyan area. The surrounding landscape is a mix of urban development, roads, and open fields.
- Portions of Phases MI-6 and MI-7 were originally bid in spring 2024.
 - Bids results were concerning due to prices, so the projects were rebid.
 - Revised bid results were more favorable but point to a drastic change in construction cost.

Historical Concrete Bid Costs – Price per Cubic Yard (CY)

Pump Station Concrete

- Phase MI-1 (Bid December 2017): \$921 / CY *
- Phase MI-5 (Bid February 2022): \$1,100 / CY
- Phase MI-6 (Bid September 2024): \$3,400 / CY *

+209% in 31 months

Floodwall Concrete

- Phase MI-1 (Bid December 2017): \$752 / CY *
- Phase MI-5 (Bid February 2022): \$1,213 / CY
- Phase MI-7 (Bid July 2024): \$1,710 / CY *

+41% in 29 months

* Project was re-bid due to high pricing or irregularities




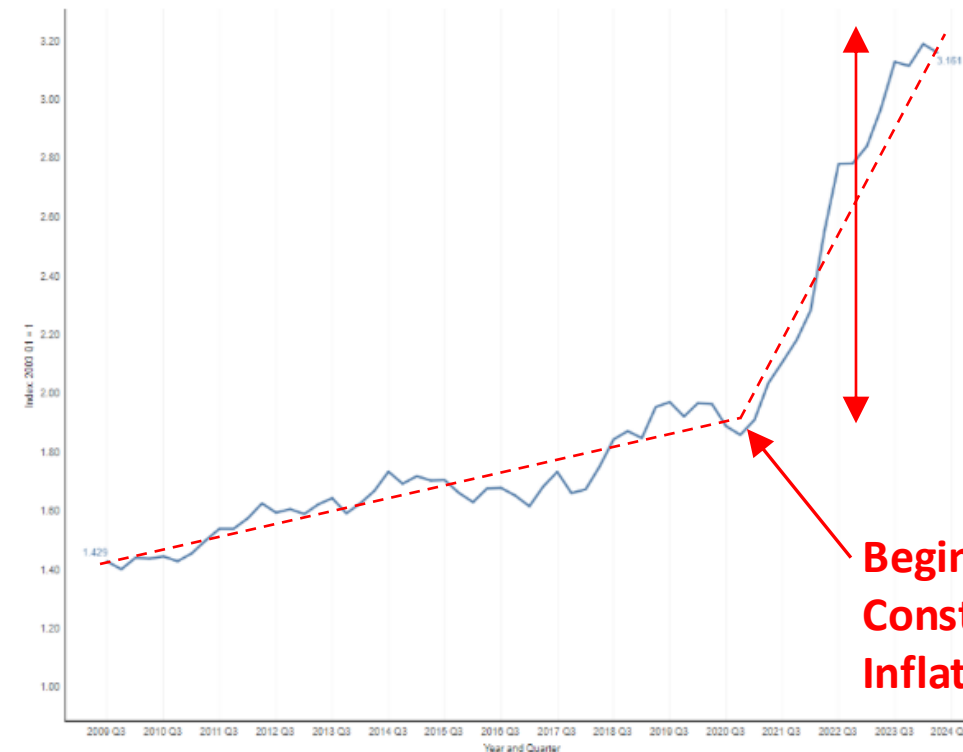
Photo: Roadway closure installed near the Minot water treatment plant

Nationwide Construction Cost Indices Show Similar Trends, Though Not as Excessive

U.S. Department of Transportation
Federal Highway Administration
Select Year and Quarter:
2009 Q3 2024 Q3

National Highway Construction Cost Index

Select Series:
 NHCCI
 Seasonally Adjusted NHCCI



National Average Increased Approx. 71% Between Q1 2021 and Present Day

Beginning of Major Construction Cost Inflation Q1 2021

Photo: Installation of steel sheet pile to combat seepage beneath levee west of Minot.

2024 Q3 index is preliminary.
2023 Q4 and 2024 Q1 indexes are revised.

Photo: Levee embankment being constructed at Tierrecita Vallejo subdivision, west of Minot

Our actions thus far include:

Rejecting and rebidding phases of the project.

- Rebidding of Phases MI-6 and MI-7 resulted in the costs being reduced by approximately \$12 million. These projects were subsequently awarded.

Repackaging the project to solicit the interest of smaller contractors

- Phases MI-6 and MI-7 were split into smaller scopes of work (approximately \$20M each) in an attempt to entice other bidders. This encouraged some additional competition, which lowered pricing of the larger contractors.

Photo: Levee embankment being constructed at Tierrecita Vallejo subdivision, west of Minot

Our actions thus far include:

Evaluating why there has been a considerable change in the degree of competition and the bid amounts for these projects. Contractor feedback indicates:

- Relocation of crews and labor to the Minot region is not ideal due to increased workload across the state and region (state-funded projects, federally funded projects, etc.)
- Cost of labor
- Cost of materials
- Too much carryover work from last year to meet schedule demands of the flood control work

Photo: Levee embankment being constructed at Tierrecita Vallejo subdivision, west of Minot

Our actions thus far include:

Performing a re-evaluation of the entire program to identify

- Projected budgetary impacts of inflation (i.e. construction costs)
- Projected effects of revised alignments due to railroad feedback
- Opportunities for capital cost savings
- Alternate Delivery Methods
 - Bridge replacement at Mouse River Park bid 4 times with no bidders
 - Bridge replacement at Velva bid 1 time with no bidders

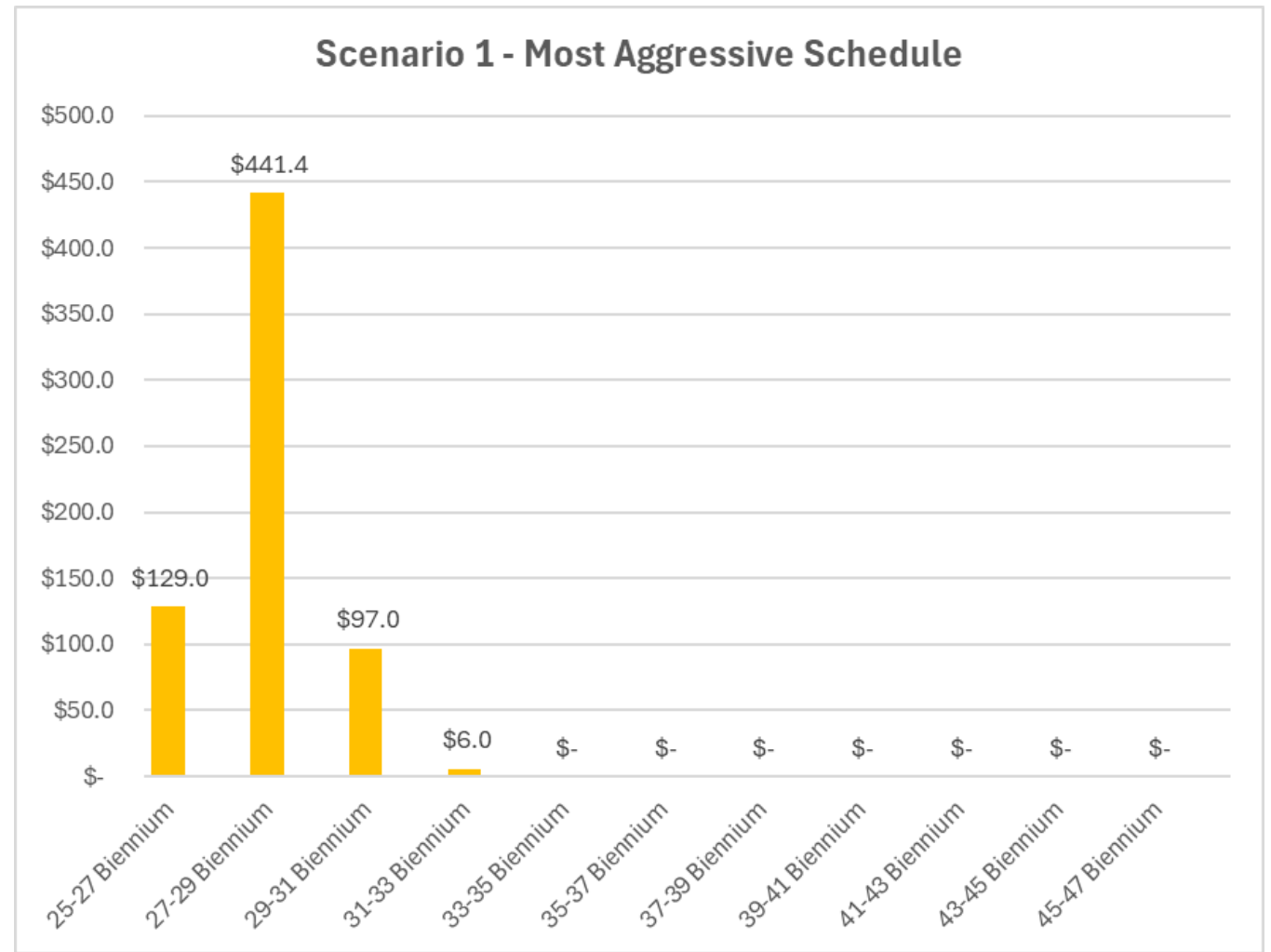
We Wish to Secure a Commitment to Finish this Project

Alternate funding scenarios have been developed to illustrate the effects of inflation on the total investment and schedule for completing the project.

State Funding Scenarios

Scenario 1

(Most Aggressive Schedule)



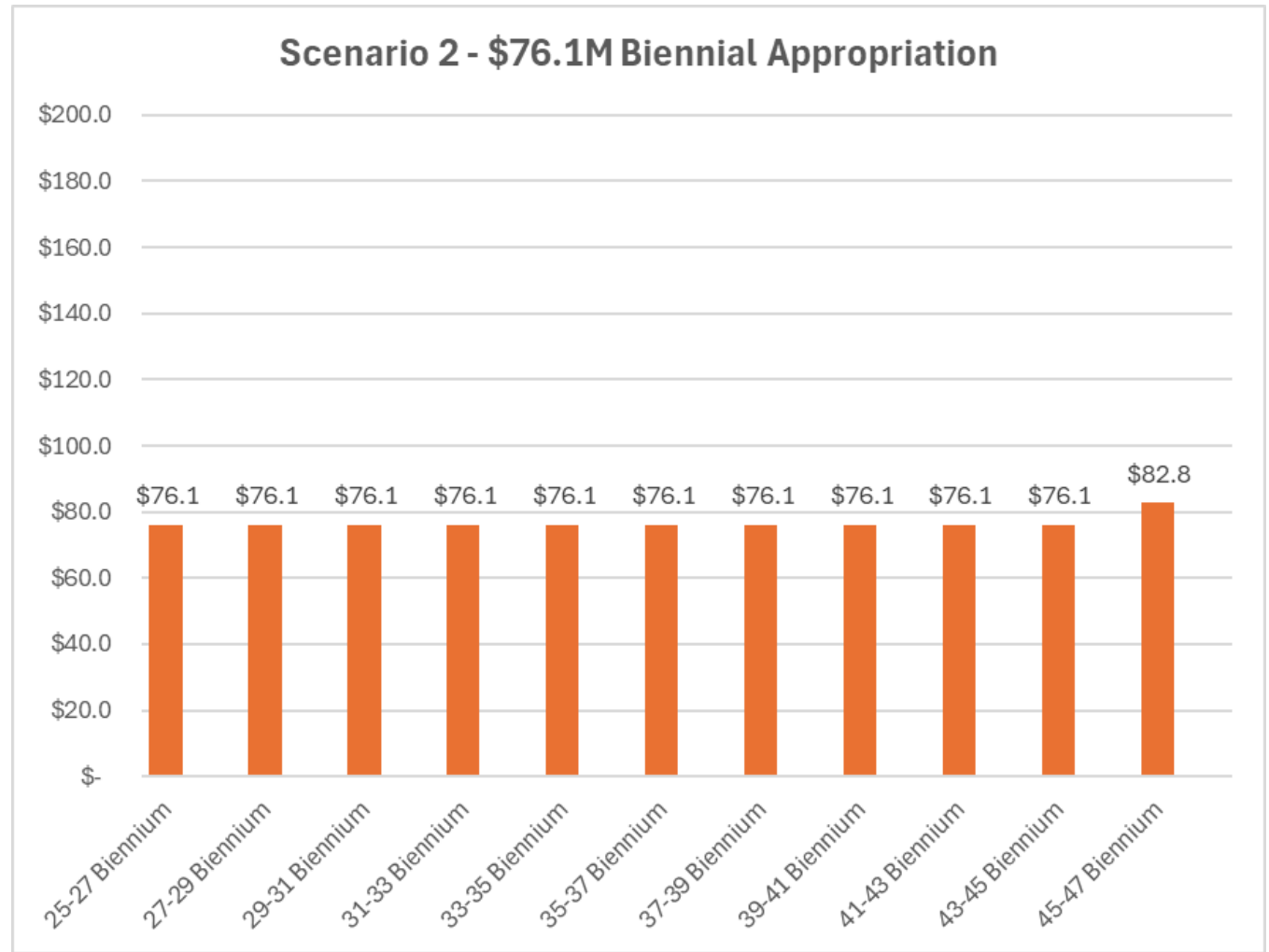
**\$1,092 M
TOTAL**

\$673 M STATE | \$70 M FEDERAL | \$349 M LOCAL

State Funding Scenarios

Scenario 2

(\$76.1M /
Biennium to
Completion)



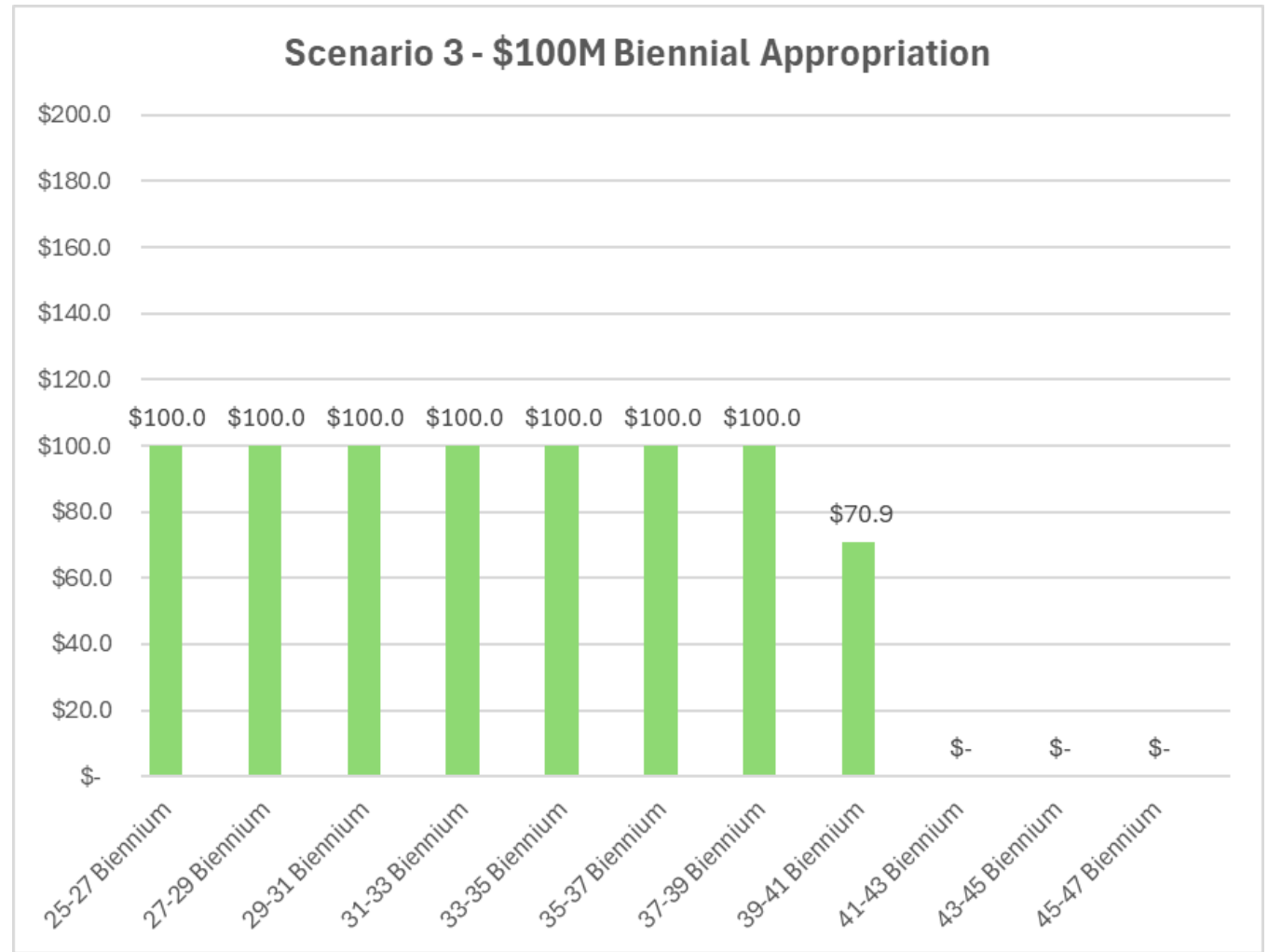
**\$1,351 M
TOTAL**

\$844 M STATE | \$70 M FEDERAL | \$437 M LOCAL

State Funding Scenarios

Scenario 3

(\$100M / Biennium to Completion)



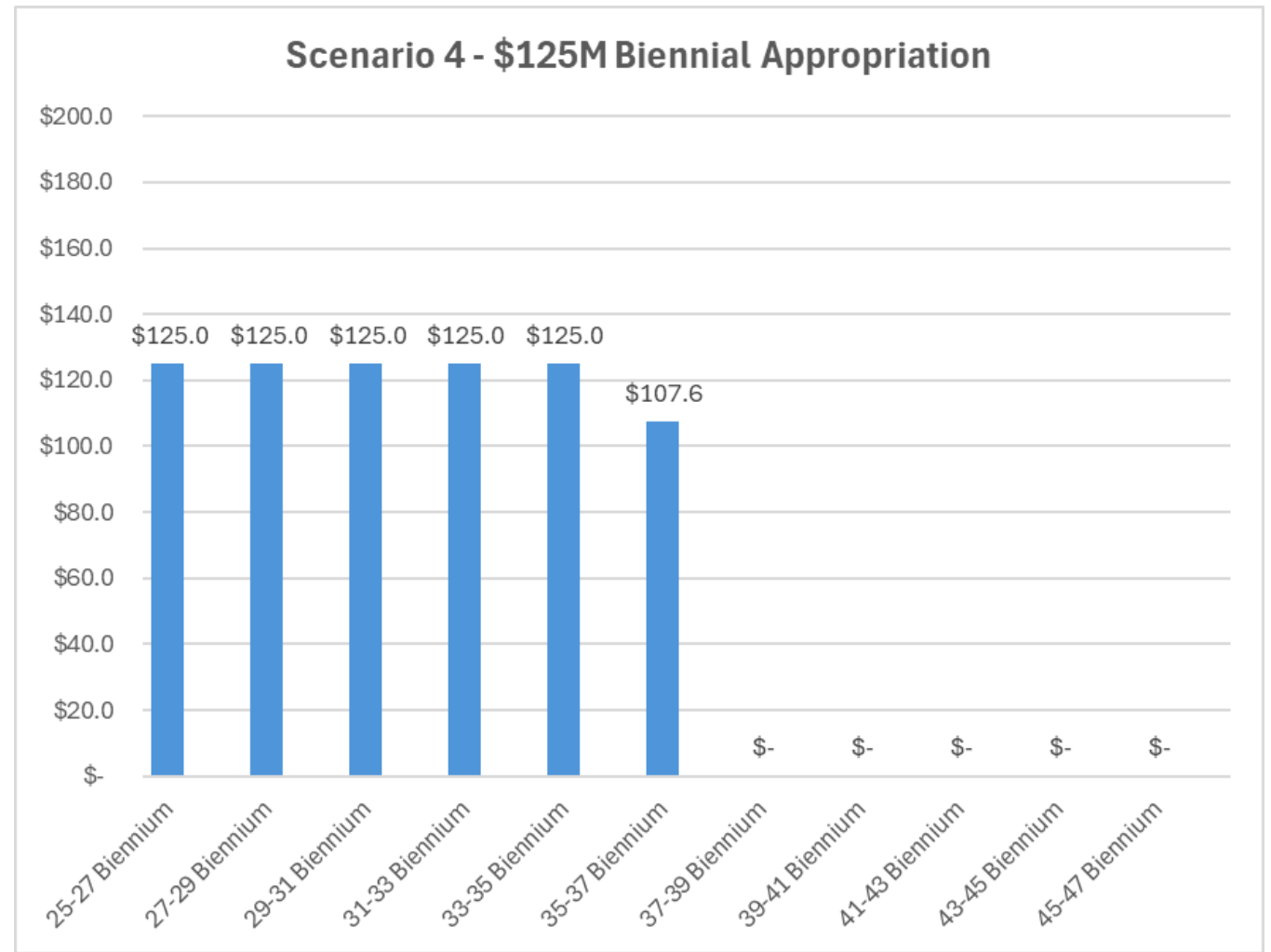
**\$1,240 M
TOTAL**

\$771 M STATE | \$70 M FEDERAL | \$399 M LOCAL

State Funding Scenarios

Scenario 4

(\$125M / Biennium to Completion)



**\$1,182 M
TOTAL**

\$733 M STATE | \$70 M FEDERAL | \$380 M LOCAL

Mouse River Design Level – 27,400 cfs

The Mouse River Enhanced Flood Protection Project is being designed to convey the flow rates experienced in 2011, or 27,400 cubic feet per second at Minot.

Why?

It is the optimal investment. The US Army Corps of Engineers performed an independent evaluation of the economics associated with the design level for the Maple Diversion. The maximum benefit-cost ratio is achieved at a design flow rate of 27,400 cfs.



US Army Corps
of Engineers®
St. Paul District

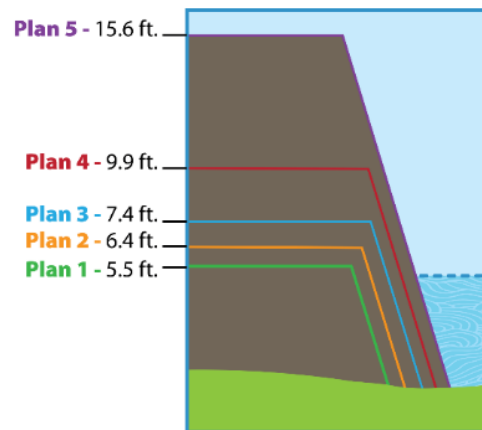


Figure 10: Levee Height Differences Across Different Plans Evaluated During Optimization

Table 9: Optimization results across Plan 1 – Plan 5

Results Top of Levee	Plan 1 14,000 cfs	Plan 2 17,000 cfs	Plan 3 20,400 cfs	Plan 4 27,400 cfs	Plan 5 36,000 cfs
Total Investment Cost ¹	66,900,000	67,800,000	69,500,000	72,000,000	78,600,000
Total Annual Costs ²	2,700,000	2,800,000	2,900,000	3,000,000	3,200,000
Total Annual Benefits ³	2,400,000	2,800,000	3,100,000	3,600,000	3,800,000
Net Annual Benefits	-400,000	-30,000	300,000	600,000	600,000
BCR	0.89	0.99	1.09	1.20	1.18

Mouse River Design Level – 27,400 cfs

The Mouse River Enhanced Flood Protection Project is being designed to convey the flow rates experienced in 2011, or 27,400 cubic feet per second at Minot.

Why?

The cost savings don't justify the reduction in project value.

The ND State Water Commission studied the costs associated with building to various lower levels. A 64% reduction in project capacity (i.e. 10,000 cfs in lieu of 27,400 cfs) would produce savings of approximately 6%.

Figure 5: Levee geometry A

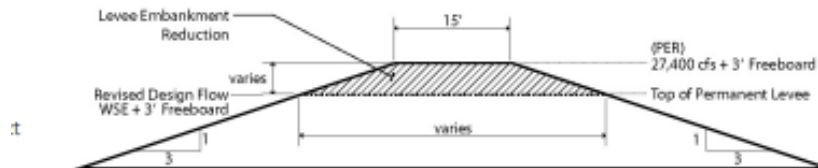


Figure 6: Levee geometry B

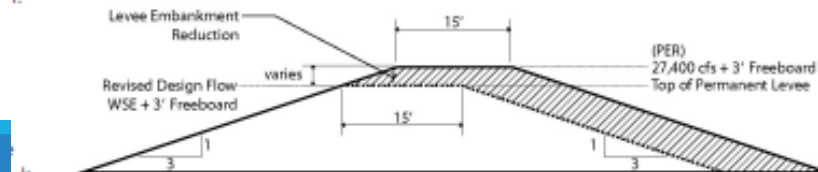
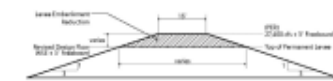


Figure 7: Levee geometry A costs



Levee scaling only		
Design Flow (CFS)	Cost (\$) Millions	Reduction from PER
10,000	534.6	-1.6%
15,000	538.7	-0.8%
20,000	541.0	-0.4%

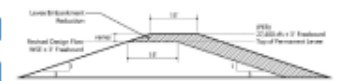


Floodwall scaling only		
Design Flow (CFS)	Cost (\$) Millions	Reduction from PER
10,000	528.3	-2.7%
15,000	535.8	-1.3%
20,000	538.8	-0.8%

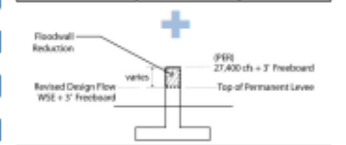
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Levee and floodwall scaling		
Design Flow (CFS)	Cost (\$) Millions	Reduction from PER
10,000	519.8	-4.3%
15,000	531.4	-2.1%
20,000	536.9	-1.1%

Figure 8: Levee geometry B costs



Levee scaling only		
Design Flow (CFS)	Cost (\$) Millions	Reduction from PER
10,000	527.1	-2.9%
15,000	531.5	-2.1%
20,000	535.9	-1.3%



Floodwall scaling only		
Design Flow (CFS)	Cost (\$) Millions	Reduction from PER
10,000	528.3	-2.7%
15,000	535.8	-1.3%
20,000	538.8	-0.8%

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Levee and floodwall scaling		
Design Flow (CFS)	Cost (\$) Millions	Reduction from PER
10,000	512.3	-5.6%
15,000	524.3	-2.4%
20,000	531.7	-2.1%

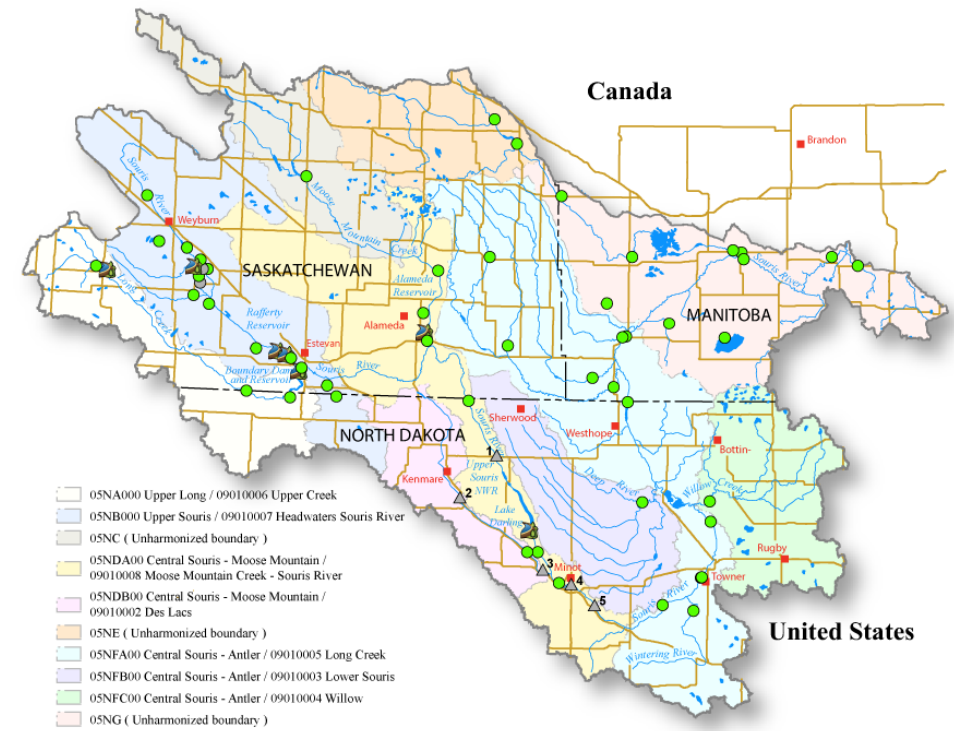
As shown in Figure 7 and 8 above, the reduction in costs for levee and floodwall scaling are estimated to be less than 6 percent of the project cost for PER Minot reach: (OPC of \$543 million).

Mouse River Design Level – 27,400 cfs

The Mouse River Enhanced Flood Protection Project is being designed to convey the flow rates experienced in 2011, or 27,400 cubic feet per second at Minot.

Why?

Allows for adaptive reservoir management that can be used to benefit both urban and rural portions of the basin. When flow rates are well below the capacity of the urban levee systems, the reservoirs could be operated for the benefit of rural stakeholders. This is the essence of a basin-wide solution.

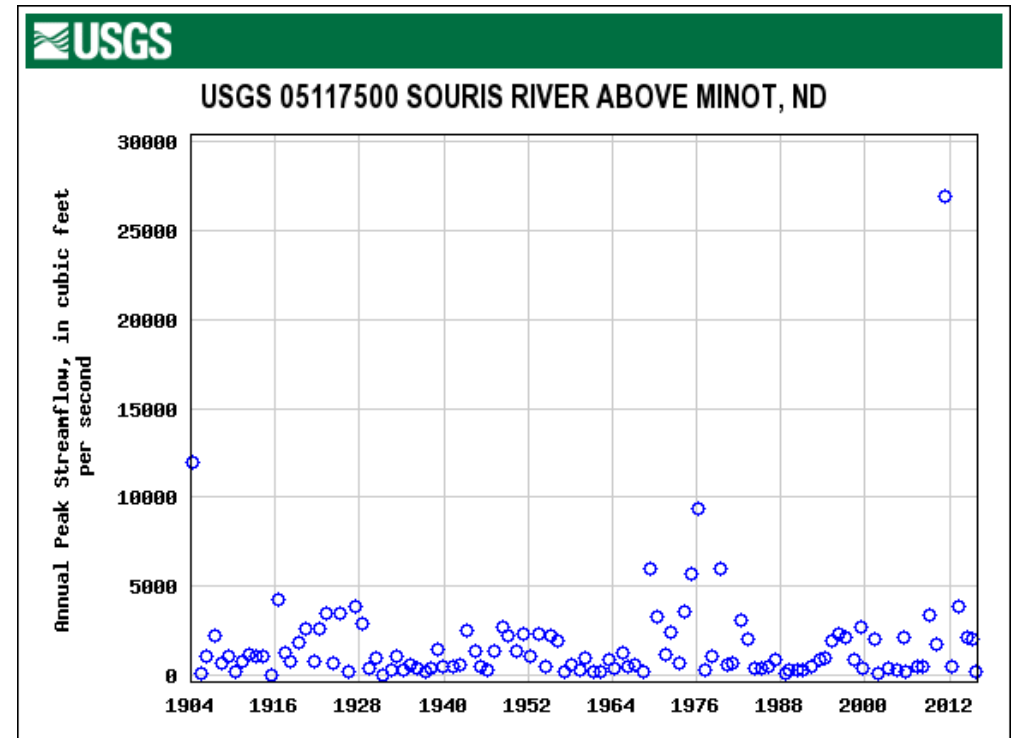


Mouse River Design Level – 27,400 cfs

The Mouse River Enhanced Flood Protection Project is being designed to convey the flow rates experienced in 2011, or 27,400 cubic feet per second at Minot.

Why?

Our historical record is ‘only’ a century long, and multiple researchers and agencies have classified the 20th Century (1900s) as a relative drought. What will the next century bring?



Mouse River Design Level – 27,400 cfs

The Mouse River Enhanced Flood Protection Project is being designed to convey the flow rates experienced in 2011, or 27,400 cubic feet per second at Minot.

Why?

It actually happened.





MOUSE RIVER PLAN

On behalf of the residents of the Mouse River Basin...

Thank You!

Project information may be viewed or downloaded at:

<http://www.mouseriverplan.com>

Construction progress videos may be viewed at:

<https://www.youtube.com/channel/UCJEMcuR74qzNPZ83qzQhCTg>

