



MANDAN FLOOD PROTECTION PROJECT

*67th Legislative Assembly – Interim Session
Water Topics Overview Committee
June 23, 2022*

LOWER HEART RIVER WATER RESOURCE DISTRICT AND CITY OF MANDAN

MAYOR TIM HELBLING, CITY OF MANDAN

BILL ROBINSON, LOWER HEART WATER RESOURCE DISTRICT

JIM NEUBAUER, CITY OF MANDAN

MANDAN FLOOD PROTECTION PROJECT

- FEMA Driven Project
- Maintain Accredited Levee System
- Maintain Resilient Flood Protection
- Vital to Economic and Social Health of Mandan
 - 2,600 Residences and Businesses
 - Critical Infrastructure

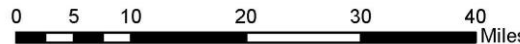
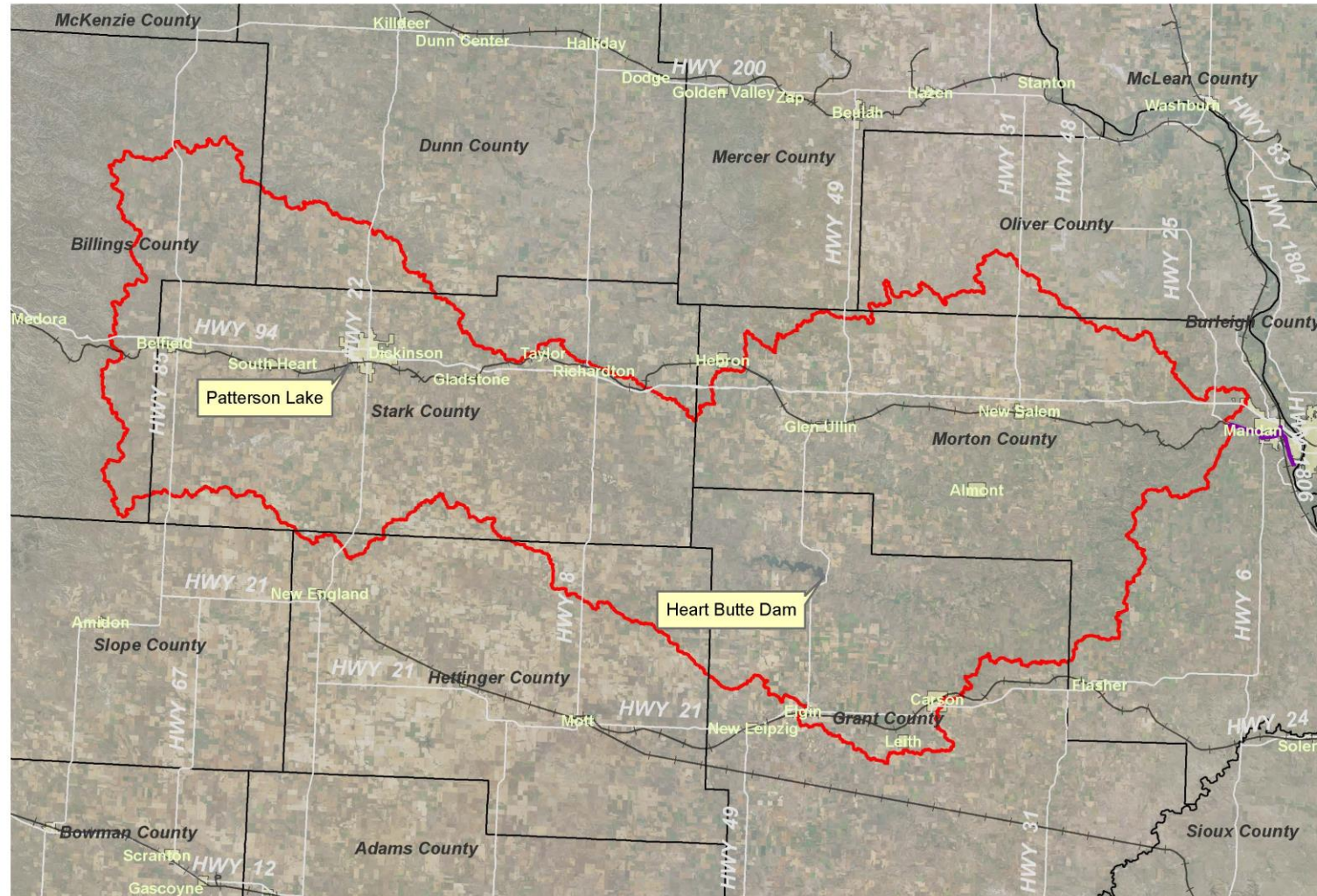


DS of Trolley Bridge, Mar. 26, 2019 – NDSWC Drone Flight



HEART RIVER

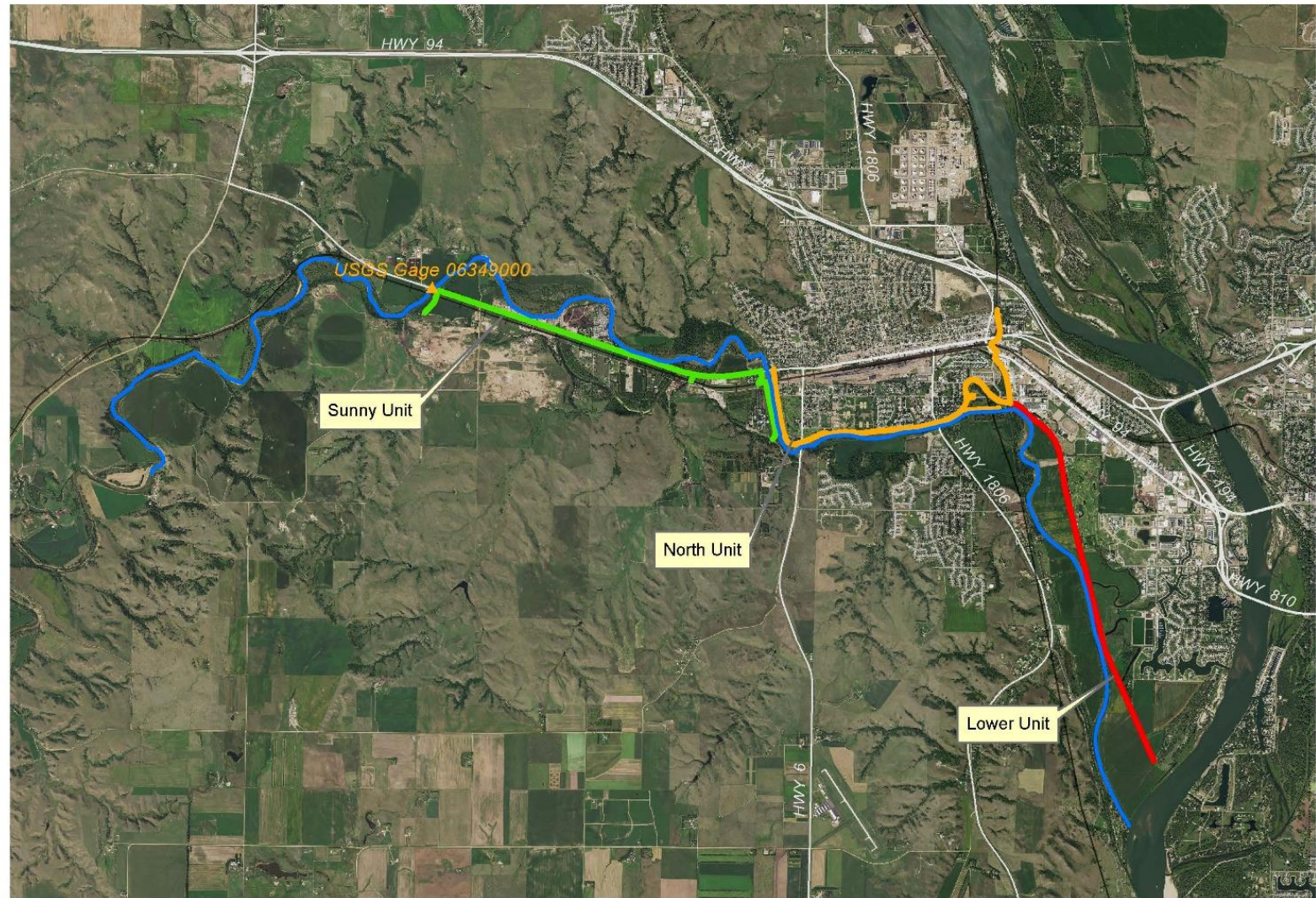
- Originates in Billings County
- 3,310 Square Miles at Mandan
- Two reservoirs on the mainstem:
 - Dickinson Dam (Patterson Lake) - 1950
 - Heart Butte Dam (Lake Tschida) – 1949
- Susceptible to ice jams in Mandan.



LOWER HEART RIVER WRD
HEART RIVER
DRAINAGE BASIN

LOWER HEART LEVEE SYSTEM BACKGROUND

- Installed by USACE,
Managed by Lower Heart
WRD
- North (Mandan) Unit
completed in 1949
- Lower and Sunny Units
completed in 1959
- Provided flood protection
during numerous flood
events: 1950, 1952, 1997,
2009, 2019, and many
more.



HR



0 0.5 1 2 3 4 Miles

LOWER HEART RIVER WRD
LOWER HEART LEVEE SYSTEM

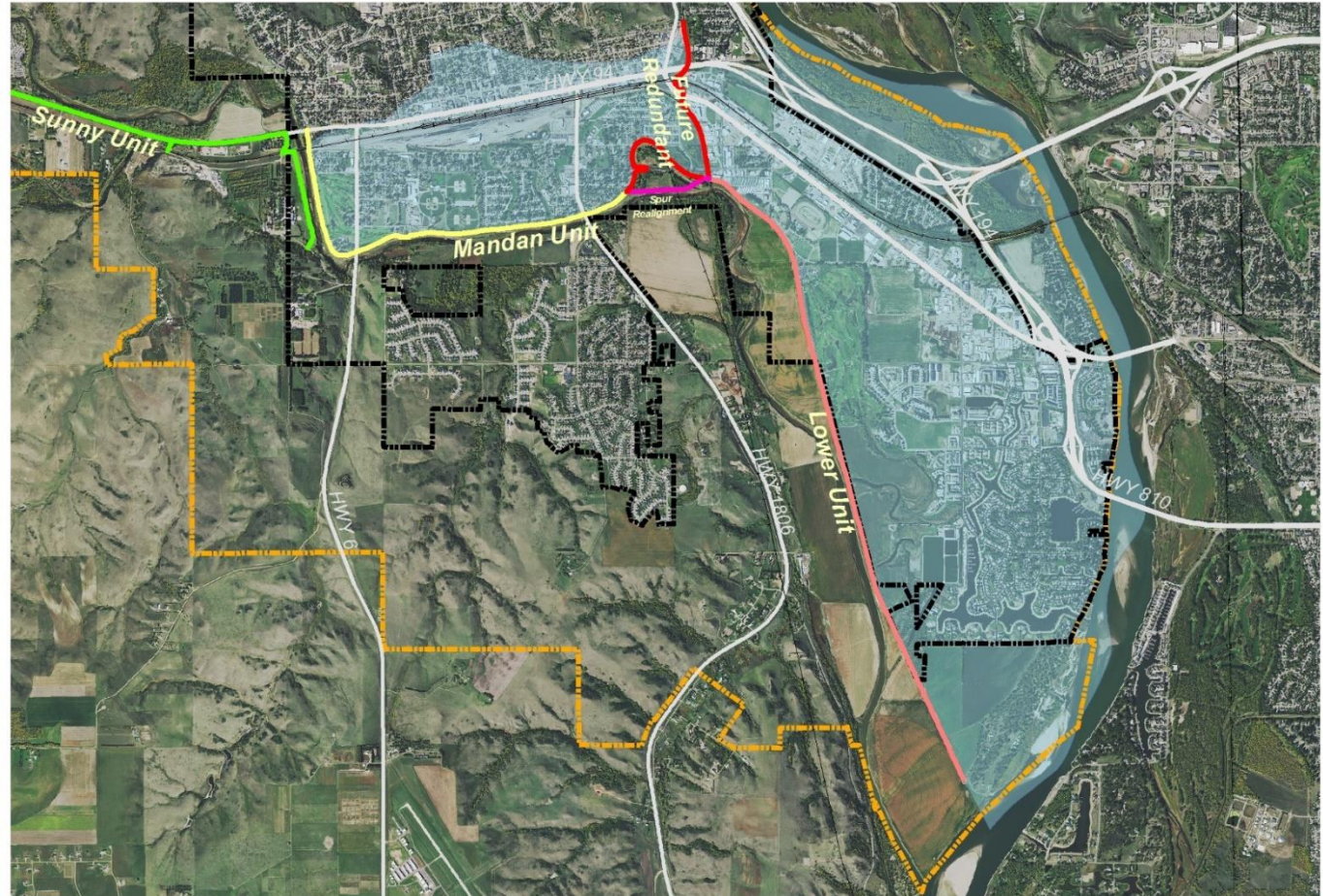
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Lower Heart
Water
Resource
District

LOWER HEART LEVEE RECERTIFICATION

- Undergoing a FEMA re-accreditation process.
- 2012 FEMA study suggested significant portions have freeboard deficiencies.
- Geotechnical and internal drainage deficiencies are also present.
- Flood insurance economic impact is estimated at **\$9.6M annually**.
- North (Mandan) and Lower Units Protect over 2,600 homes and businesses.



HDR  0 0.25 0.5 1 1.5 2 Miles
CITY OF MANDAN AND LOWER HEART RIVER WRD
LOWER HEART LEVEE SYSTEM
PROTECTED AREA

PATH: Z:\PROJECTS\16136\WATER\LOWER HEART WRD\TAS\ORDERS_FLOODSIDE SIGN\PROJECT\MANAGER\NT_COORDINATOR\WATER\TOPICS_2022\LOWER HEART\WATER\TOPICS_2022.MXD - USER: DREEP - DATE: 6/6/2022



**Lower Heart
Water
Resource
District**


MANDAN FLOOD RISK REDUCTION PROJECT

PHASE I SUMMARY:

- Hydrology CLOMR completed with FEMA concurrence in October, 2019.
- Geotechnical investigation and analyses completed in March, 2020 on Mandan and Lower Units with recommendations.
- Interior drainage analyses completed in March, 2020 on Mandan and Lower Units with recommendations.

2019 ICE FLOW AT TROLLEY BRIDGE

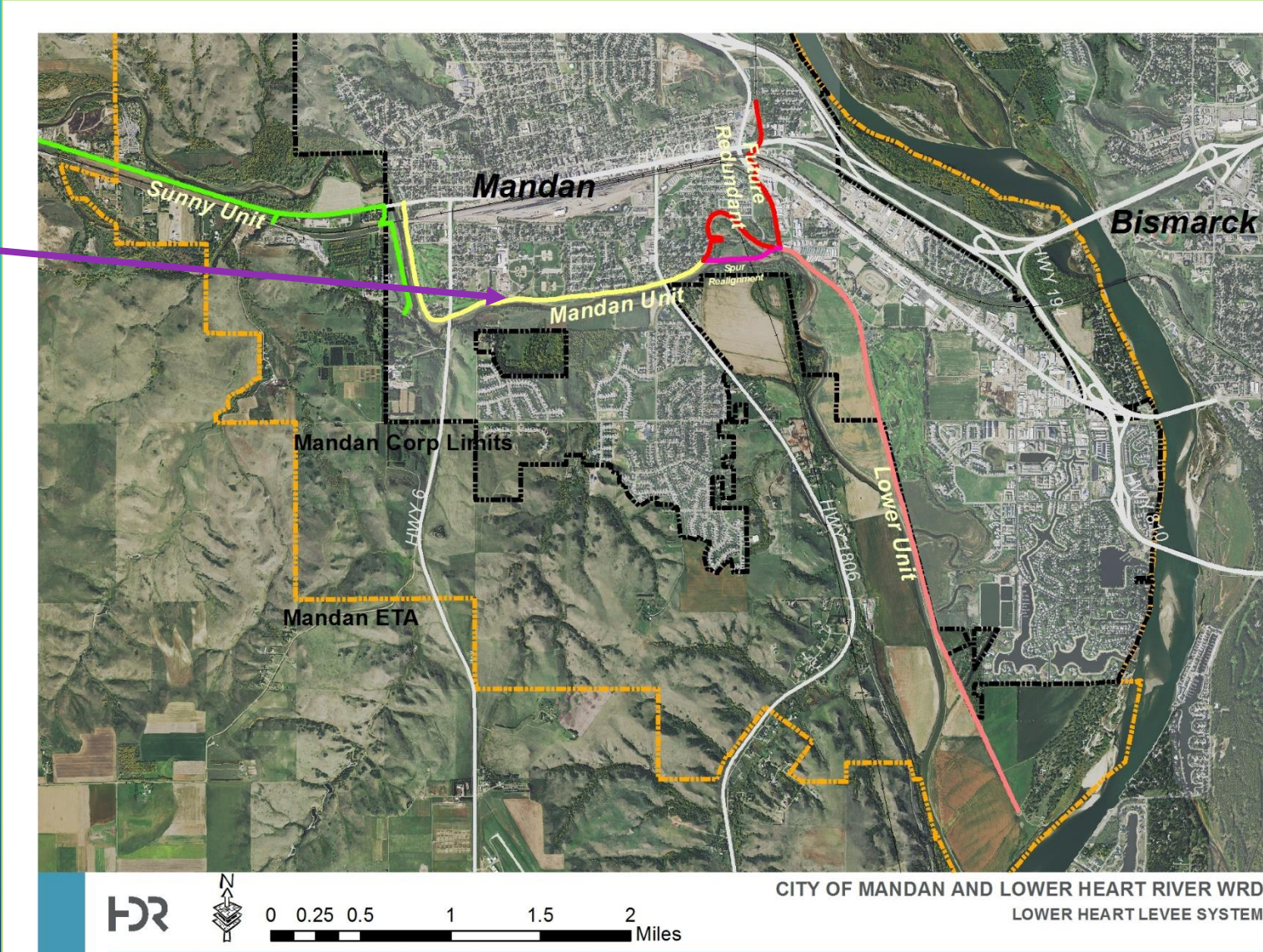


MANDAN FLOOD RISK REDUCTION PROJECT



RECERTIFICATION FEATURES

- **Floodwall replacement.**
- Levee raise and stability berm.
- Realignment & Seepage remediation.
- Localized levee raises.
- Interior drainage improvements.
- New Lift Station



MANDAN FLOOD RISK REDUCTION PROJECT

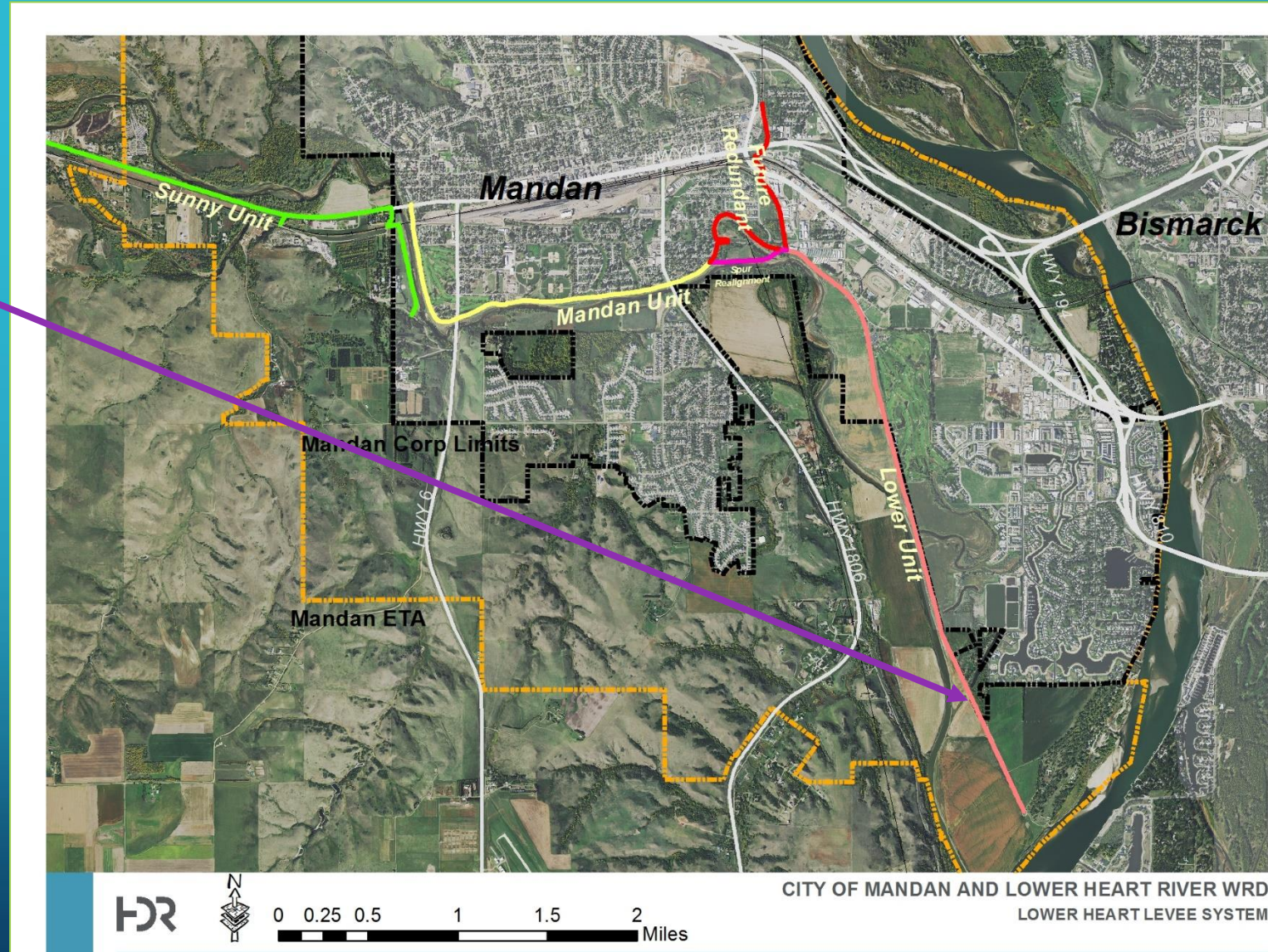


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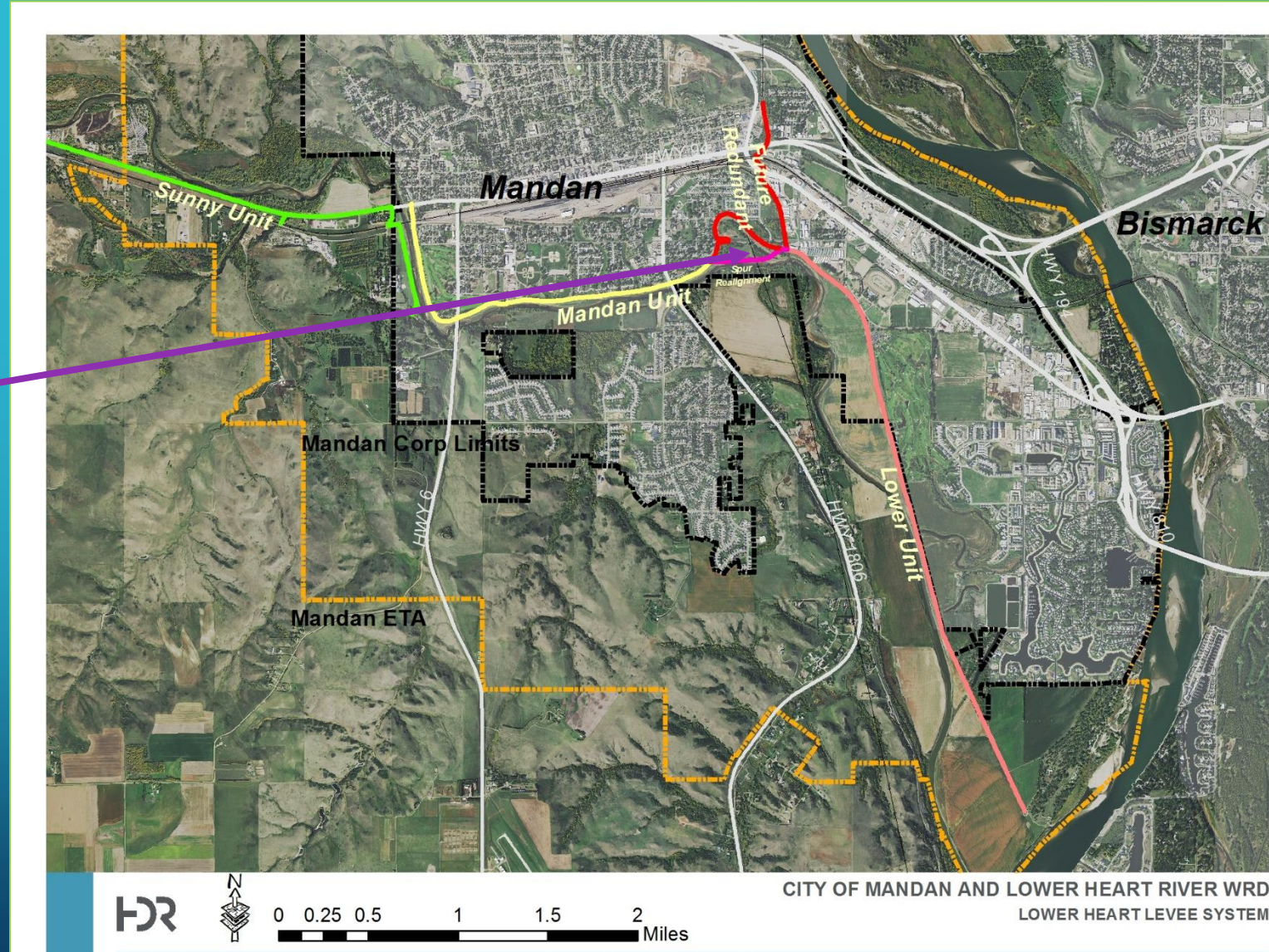


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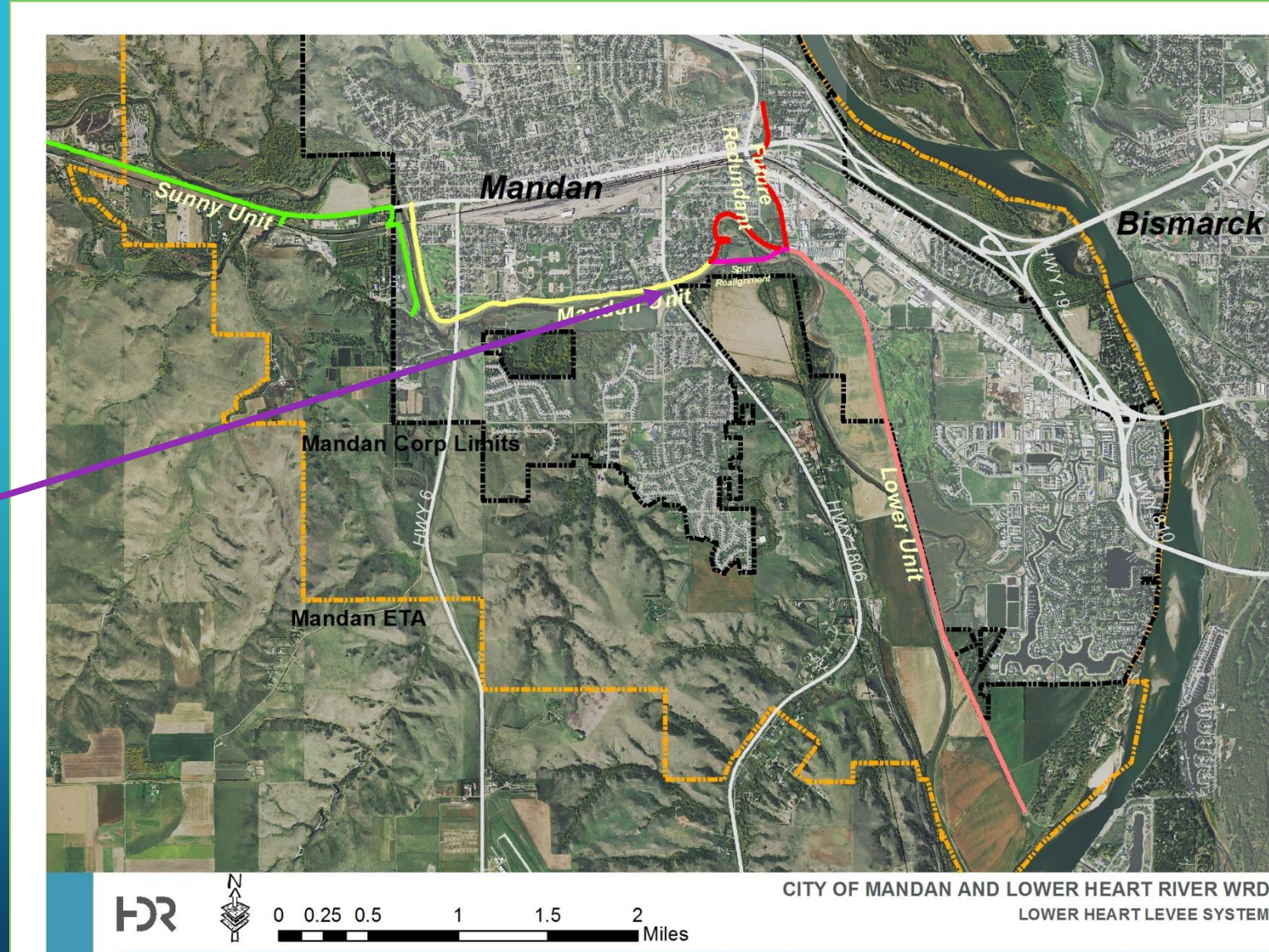
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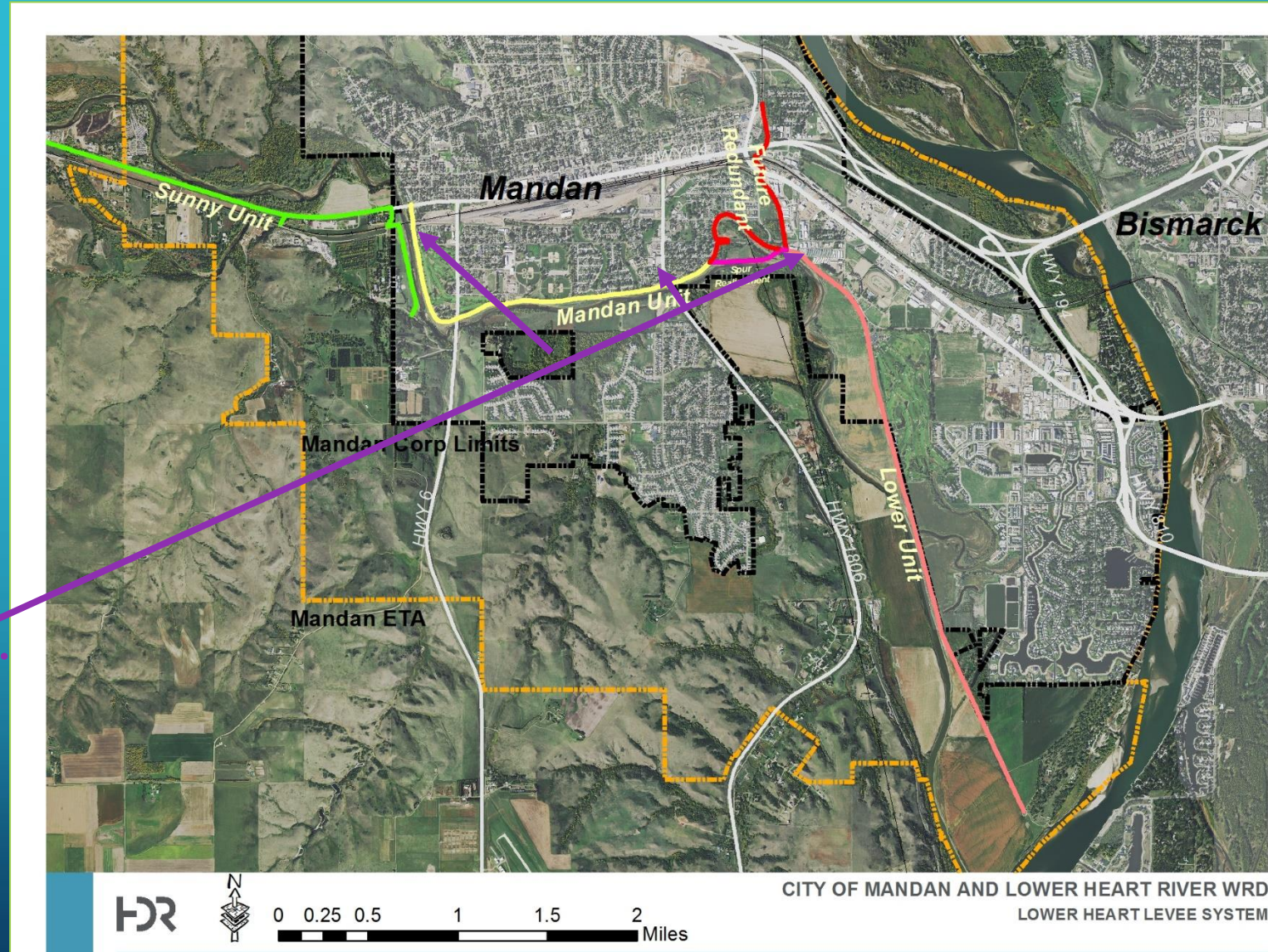
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MANDAN FLOOD RISK REDUCTION PROJECT

AGENCY COORDINATION

- ***NDDOT – Mandan – Lower Heart***

- **MOU – Combined Lift Station**

- Design, Permitting, and Installation
- Operation and Maintenance

- ***Bureau of Reclamation***

- **Heart Butte Dam Remediation**

- Reservoir Drawdown
- Risk Assessment of Heart River Flooding during construction



MANDAN FLOOD RISK REDUCTION PROJECT

FUNDING RECEIVED FROM STATE:

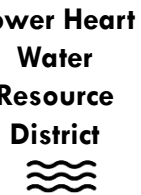
- **2019-2021 Biennium:**
 - **\$1.2 Million**
 - Lower and Mandan Unit Remediation
 - Includes Design Services

Local Funding:

- **2019-2021 Biennium:**
 - **\$1.0 Million (Lower Heart WRD Operating Funds)**
 - Lower and Mandan Unit Remediation
 - Includes Design Services and Assessment District Establishment



MANDAN FLOOD RISK REDUCTION PROJECT - FUNDING



	With Federal Funding *	Without Federal Funding
NDSWC Feasibility & Design Grants (2018-20)	\$1.4M	\$1.4M
Local Share (Feasibility and Design)	\$1.4M	\$1.4M
NDSWC Construction Grant (2023)	\$3.9M	\$11.5M
Local Construction Share (Special Assessment)	\$3.9M	\$7.8M
BRIC Grant (2022)	\$11.5M	\$0.0M
Total Project Cost	\$22.1M	\$22.1M

* Assumes Current NDSWC Policy of 50% of Non-Federal Funds

Special Assessment (Approved by Mandan in January, 2022) **	With Federal Funding	Without Federal Funding
Inundated - Commercial	\$1,108	\$2,215
Inundated - Residential	\$886	\$1,772
Non-Inundated - Commercial	\$264	\$529
Non-Inundated - Residential	\$211	\$423

** Total Assessed Amounts

PROJECT TIMELINE

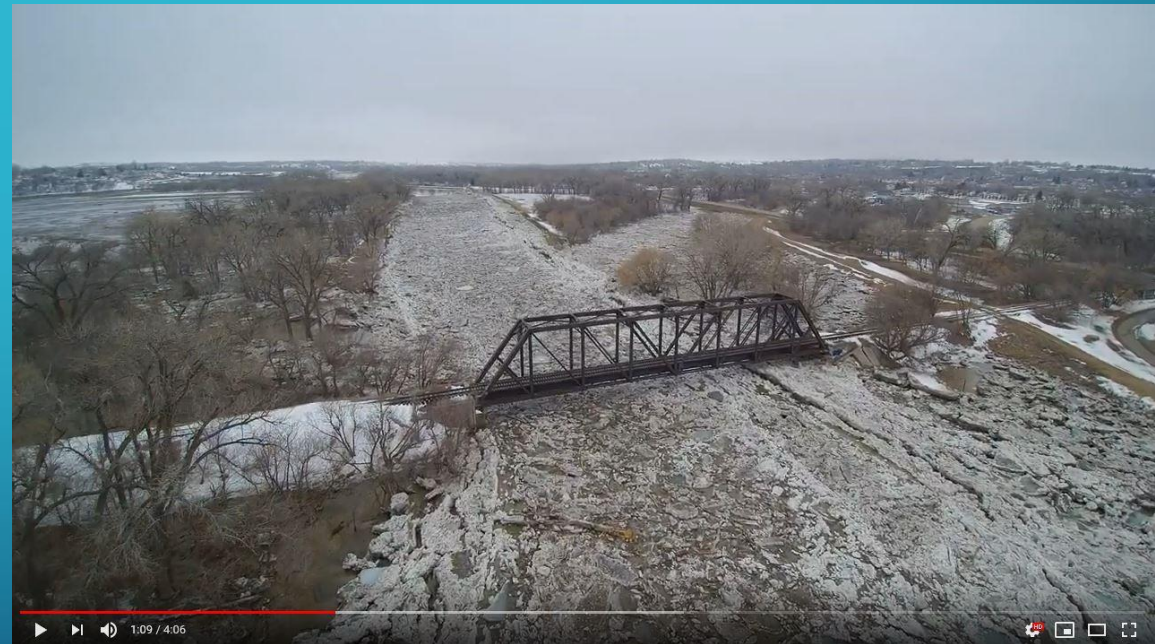
- 2012 – 14: FEMA Hydrology Study Requiring Significant Levee Raises
- 2018 – 19: Phase I Study Results in Revised Hydrology and Reduces Levee Raises
- 2021 – Preliminary Design Initiated
- August, 2022 – Conditional Letter of Map Revision (CLOMR) Submittal
- August, 2022 – Section 408 and 404 Permit Submittals
- Spring/Summer, 2023 – Construction Bidding
- Fall, 2023 – Construction Commencement
- Fall, 2025 – Construction Complete



QUESTIONS



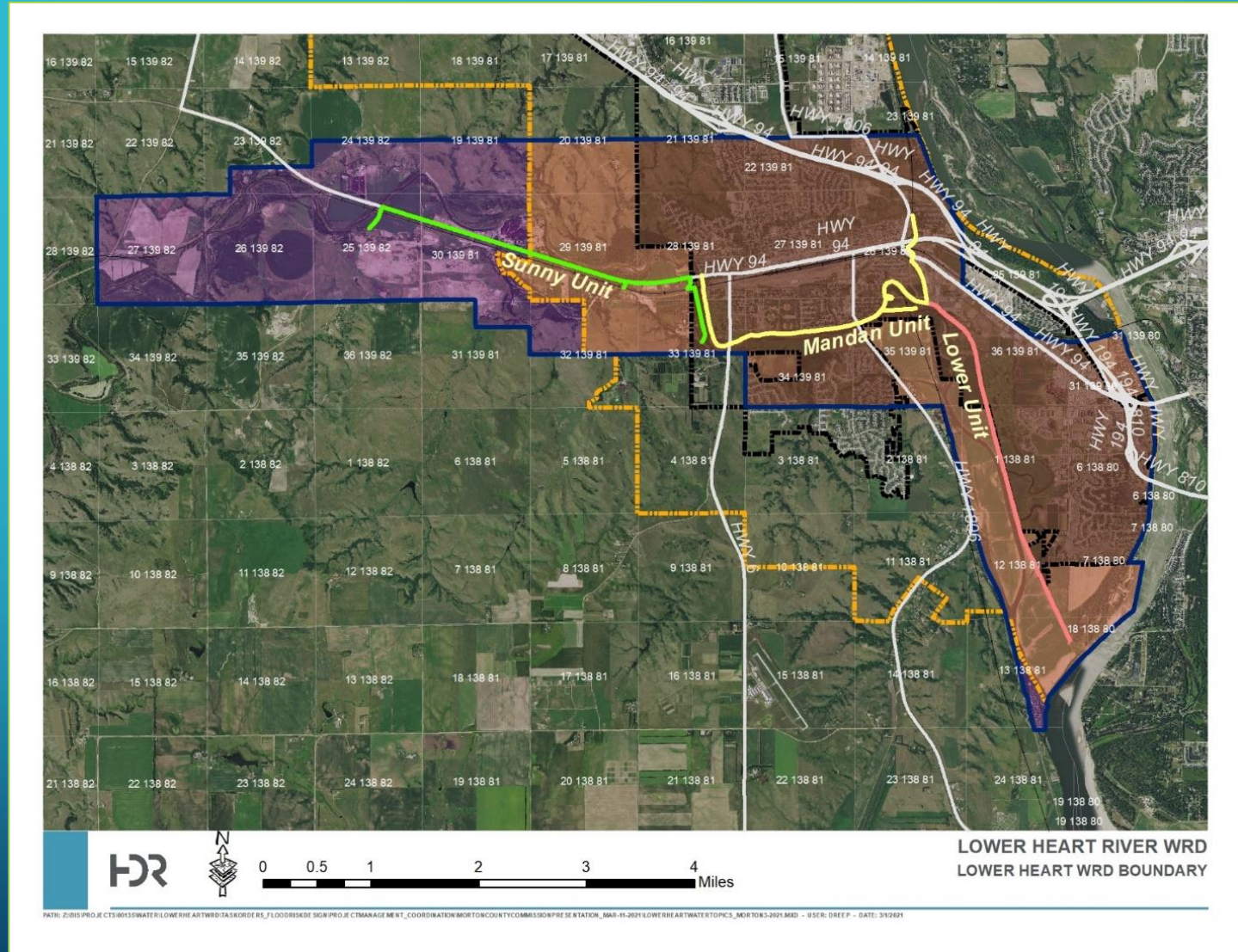
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Trolley Bridge, Mar. 26, 2019 – NDSWC Drone Flight

LOWER HEART WRD

- 12,200 Total Acres
- 5,540 Acres in Mandan (45%)
- 3,070 Acres in ETA (25%)
- 3,590 Acres in Morton County (30%)
- Operates under NDCC 61-16.1
- 4-mil maximum



2019 PHOTOS



DS of 1806 Bridge, Mar. 24, 2019



Trolley Bridge, Mar. 24, 2019



Lower Heart
Water
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2019 PHOTOS



DS of HWY 10 Bridge at USGS Gage, Mar. 23, 2019



RR Bridge DS of Highway 10 , Mar. 23, 2019

2019 PHOTOS



DS of Trolley Bridge, Mar. 28, 2019



Overflow area between HWY 6 and 1806 , Mar. 28, 2019