BUREAU OF RECLAMATION

St. Mary Siphon Failure & Response

St. Mary Canal

Agenda

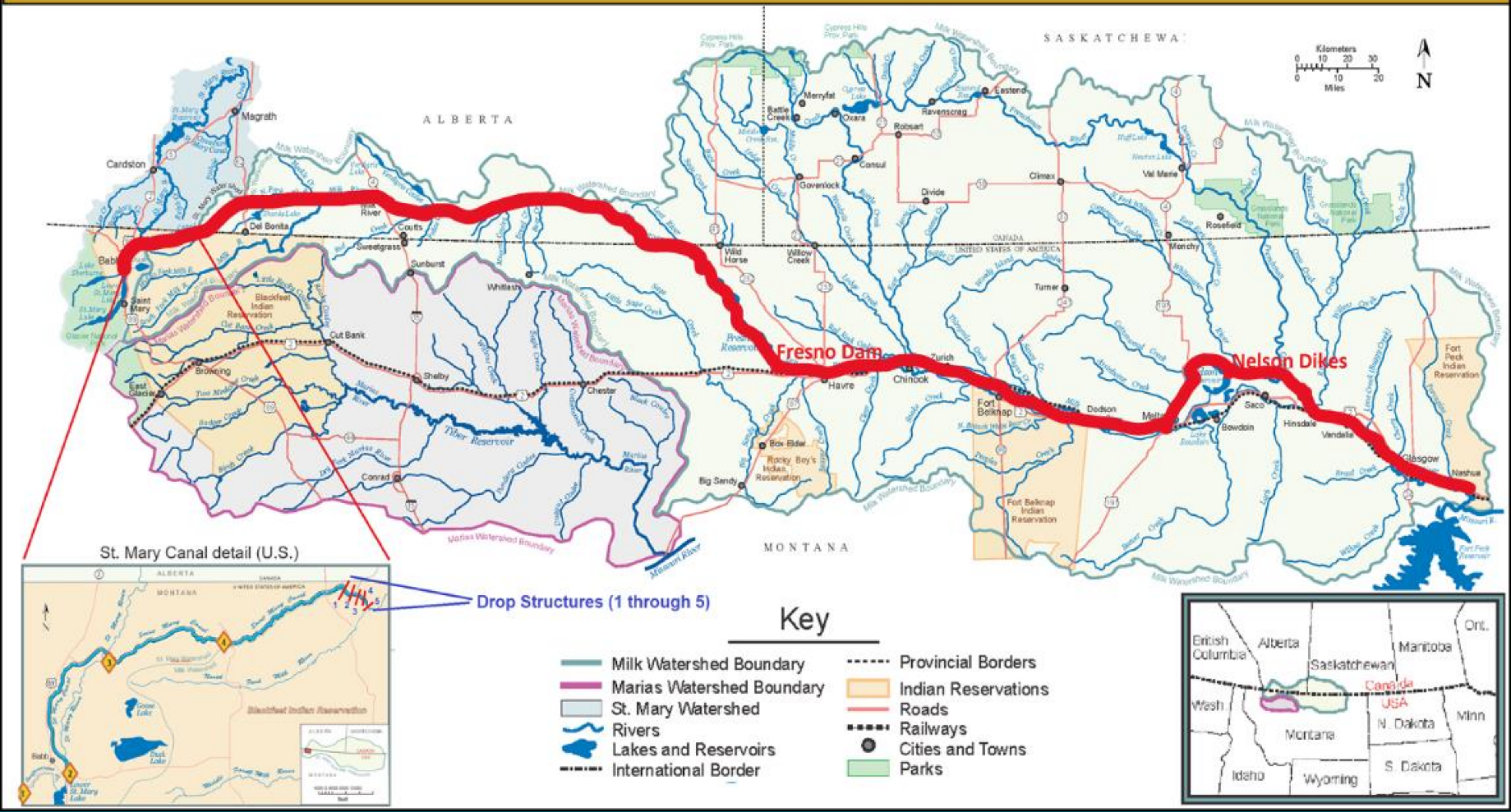
- Background
- Failure Overview
- Technical Team Assessment
- Water Supply Outlook
- Financing Options
- Next Steps Moving Forward
- Cooperating Agency Comment

Milk River Project - Background

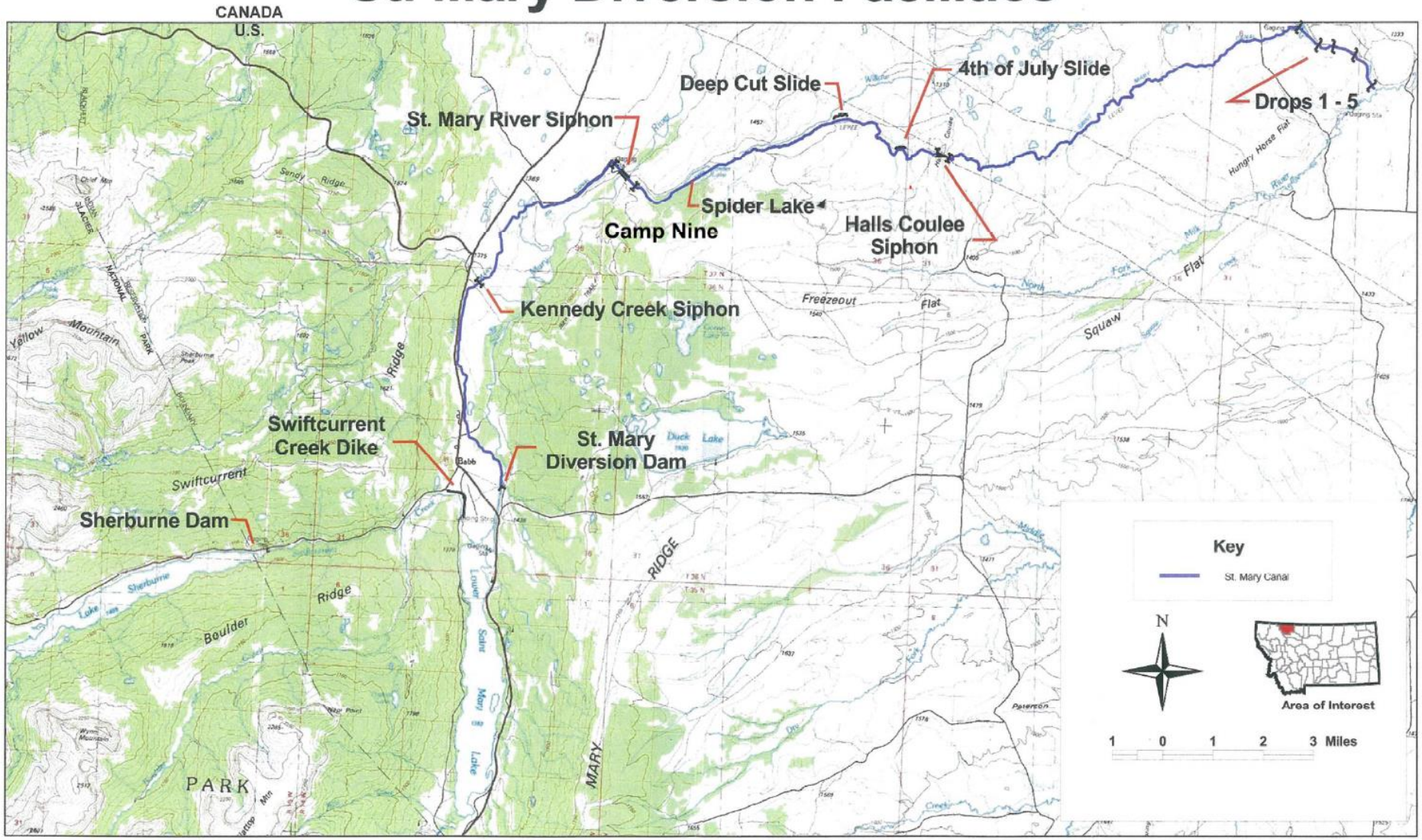
- Investigations begin in 1891 to supplement Milk River flow (dries up in summer)
- Project Authorized 1903
- Boundary Waters Treaty 1909
- Canal construction completed in 1915, modified in 1922
- Lake Sherburne Dam completed in 1921
- Fresno Dam completed in 1939

MISSOURI BASIN REGION

ST. MARY CANAL AND OVERALL MILK RIVER PROJECT



St. Mary Diversion Facilities



St. Mary Siphon Background

- North Siphon completed in 1915
- South Siphon completed in 1922
- Early 2000's efforts to replace (SMRWG, Northcentral Regional Feasibility Study, Corps Authorization, etc)
  - Identified as critical infrastructure needing replacement
- Funding allocations/Authorities limited replacement
- NRCS/FCA Watershed Plan
- 2022 Reclamation provided $1M from BIL to progress designs

Siphon Inspection Photos

Siphon Issues

St. Mary Siphon Failure Timeline

- June 17
  - 8:45 am – North Siphon Failed
  - 9:15 am – Gates at Headworks Shut
  - 1:45 pm – South Siphon Failed
  - 4:30 pm – MTAO engineers arrive
- June 18-23
  - MTAO crews begin construction of new access road for Hook's Hideaway
  - Construct cofferdams in canal to stop flows
- June 25
  - Technical Team Assessment

St. Mary Siphon Failure – June 17

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St. Mary Siphon Team Site Visit – June 25

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Technical Team Assessment

- Team Focus: Understanding significant impacts to users; Assess temporary options for technically viable, timely and cost-effective implementation while a permanent repair is completed.
- Team arrived June 25th (Reclamation, Blackfeet Tribe, NRCS, NW Construction, BIA, and HDR)
- Minimum requirements for temporary options were:
  - 200 cubic feet per second (cfs) delivery minimum
  - Implemented and operable for 2025 season
  - Does not significantly impact or delay permanent replacement

Projected Impacts of Temporary Repair (200 cfs)

- Fresno inflows increase by 170 cfs (15% loss) by April 11
- Allows for full first irrigation through end of June with median natural runoff
  - Additional 20 days in June
  - Potential for a few full days of irrigation in July
  - Greater assurance in municipal supply

Technical Team Assessment

- Alternatives Considered:
  - Salvage pipe from the North Siphon and re-construct South Siphon
  - Purchase new steel pipe and re-construct South Siphon
  - Run small diameter HDPE through existing steel pipes (gravity or pump).
  - Pump directly from the St. Mary River (into existing pipes or directly to outlet).
- Due to the extent of damage to the pipe, pipe supports, and foundation, the team collectively determined pumping from St. Mary River was the most viable.

Pumping Options

Temporary Options Pros/Cons - Pumps

Pros	Cons
Irrigation in 2025	Costly installation/operation
River Stage for Canada	ESA (Consultation and Screening Requirements)*
Carryover Storage	Time, Resources, and Schedule
Positive environmental impact (Milk River)	Possible ROW acquisition
	Increased complexity
	Reliability Risk

Pumping Option Costs (pre-appraisal)

- **Installation of Pumps and Pipes**
  - $1,500,000 - $3,500,000 (depending on type and availability)

- **Operations and Maintenance**
  - Minimum $20,000/day - $3,060,000 for April 1 to September 1
  - Additional operation and maintenance personnel

Technical Recommendation

The Technical Team does not recommend a temporary repair be pursued and recommends prioritizing the permanent replacement.

Technical Team Assessment – Recommendations

Recommendation 1: **The Team recommends prioritizing immediate work at the failure location to ensure the site is safe for workers and visitors to the site.**

Recommendation 2: **The Team does not recommend a temporary repair be pursued and recommends prioritizing the permanent replacement.**

Recommendation 3: **The Team recommends the installation of two new 90-inch buried pipes for the permanent fix. The pipes are to be steel or HDPE as determined by the responsible engineer.**

Recommendation 4: **The Team recommends removing the existing siphons and placing the new siphons within the existing alignment.**

Recommendation 5: **The Team recommends the following tasks be completed this construction season in preparation of installing the pipes in 2025:**

- **Pipe procurement**
- **Remove existing pipe**
- **Geotechnical explorations**
- **Site excavation**
- **Establish river crossing**

Recommendation 6: **The Team recommends immediate river restoration.**

Operations Outlook 2024-2025

- 2024 Outlook
- 2025 Outlook

Milk River Water Supply: 2024

- 2024 Water Supply:
  - Irrigate until water in Fresno Reservoir reaches elevation 2560.
  - Negative inflows for the rest of July
    - Negative inflows happen when evaporation and seepage are greater than water inflow into Fresno
  - Ramping up releases to 900 cfs this week, 950 cfs next week
  - Construction target of 2555 feet on August 15
  - Releases 100 cfs until September 30 for municipal and Fort Belknap Indian Irrigation Project
  - September 30 carryover target of 17,000 AF for fall/winter municipal use, elevation 2550 feet
- RESULTS: Ramp down Fresno Releases starting on July 31, 2024 for the end of the irrigation season.

Milk River Water Supply: 2025

- 2025 Water Supply Assumptions:
  - Irrigate until water in Fresno Reservoir is at 15,000 acre-feet
  - Median inflows: Results in minimal to negative inflows after July 1
    - Negative inflows happen when evaporation and seepage are greater than water inflow into Fresno
    - Precipitation can improve outlook
    - Hot, dry, and windy can decrease outlook
  - Irrigation demand starts mid-May and peaks at 800 cfs
  - September 30 target of 17,000 AF for fall/winter municipal use
  - Release storage and natural flow for Fort Belknap Indian Irrigation Project
  - Storage for Fort Belknap Indian Irrigation Project may be limited
- RESULTS: Ramp down Fresno Releases starting on June 7, 2025 for irrigation.
- Other Water Mangement Options: lower release from Fresno, other storage in the basin, tributary water right calls

St. Mary Siphon Replacement

- Repair date analyzed: August 31, 2025
- Fresno inflows increase to 500 cfs 10 days following completion of the repair
- Allows for greater drawdown of Fresno in June before shutdown because inflows can replenish storage if repair date can be guaranteed
- RESULTS
  - Additional 10,000 acre-feet
  - Additional week of irrigation

Replacement Plan/Financing Options

- Reclamation and MRJBOC Partnership
- Public Law 111-11
- Reclamation Funding
- State of Montana Financing

Reclamation/MRJBOC Project Roles

- **Partnership**
  - Temporarily transfer OM&R of siphons to MRJBOC
- **MRJBOC Role - Lead**
  - Manage contract for design and construction management
  - Contract for pipe fabrication/delivery
  - Contract to construct bridge, inlet, outlet and install pipe
  - Remove and recycle existing pipe
- **Reclamation Role - Support**
  - Retain ownership - Technical and construction support throughout
  - Permitting and cultural (remediation and construction)
  - Contract for River restoration, excavation and removal of existing pipe and pipe supports

Project Financing

- Public Law 111-11 (2009 Omnibus Bill)
  - Allows for Extended Repayment of Extraordinary Maintenance (XM)
  - Provides for Emergency Extraordinary Maintenance (EXM)
    - Advancement of funds contingent upon written assurance to enter into repayment contracts
    - If qualified as EXM 35% of total cost becomes non-reimbursable
- MRJBOC Request for Qualified EXM received June 18th
- Qualified EXM designation requires Commissioner approval
  - Commissioner approved designation on July 3rd for both St. Mary and Halls Coulee Siphons

Project Cost Allocations – Qualified EXM

St. Mary and Halls Coulee Funding Options				
Assumed Total Cost:		$70,000,000		
	Reclamation Allocation	Beneficiaries Allocation	Reclamation Cost Share	Beneficiaries Cost Share
Traditional Operations and Maintenance	26.04%	73.96%	$18,228,000	$51,772,000
Qualified Emergency XM	35% Non-Reimbursable		$24,500,000	
Qualified Emergency XM Cost Split	51.9%	48.1%	$36,330,000	$33,670,000

Federal Funding

- Short Term
  - $10,000,000 made available on July 3rd for site remediation work
- Long Term
  - Option 1: Surplus funds within Reclamation
  - Option 2: Federal appropriations process
    - Disaster Supplemental Request
    - Energy and Water Development Sub-Committee Appropriations

State of Montana Funding Support

- House Bill 6 (68th Legislature 2023)
  - $26,000,000 in loan funding
  - Loan repayment may be interest only (rate TBD)
  - Interest repaid placed in a revenue account for long-term O&M
- House Bill 540 (59th Legislature 2005)
  - ~$6,000,000 Bonding Authority Remaining
  - No repayment required
  - Requires a Federal Cost Share

Immediate Efforts

- Tribal Coordination
  - Cultural Monitoring
  - Borrow Areas and Material Sources
  - Tribal Employment Rights Office (TERO) Coordination
- Permitting
  - Will require two sets of permits (immediate response and construction)
  - 404 Permit (Nationwide Permit 3)
  - Ordinance 117 and 401 permits (Blackfeet Environmental)
  - General Construction Permit/SWPPP
- Construction Contracting
  - Hiring a Site Remediation Contractor (BOR)
  - Final Design and Placing order for pipe (MRJBOC)

Summary

- Temporary Fix Not Recommended
  - Increased costs/site conflicts/viability
- Replacement Tentative Estimate/Schedule
  - $70,000,000 for St. Mary and Halls Coulee Siphons
  - Targeting Fall of 2025 for an operational St. Mary Canal
- Water Projections
  - WY2024: End of Irrigation in late July
  - WY2025: Supply based on Natural Flow/Late season transfer

Comments from Cooperating Agency Partners

Public Comment – Question & Answer Session

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