



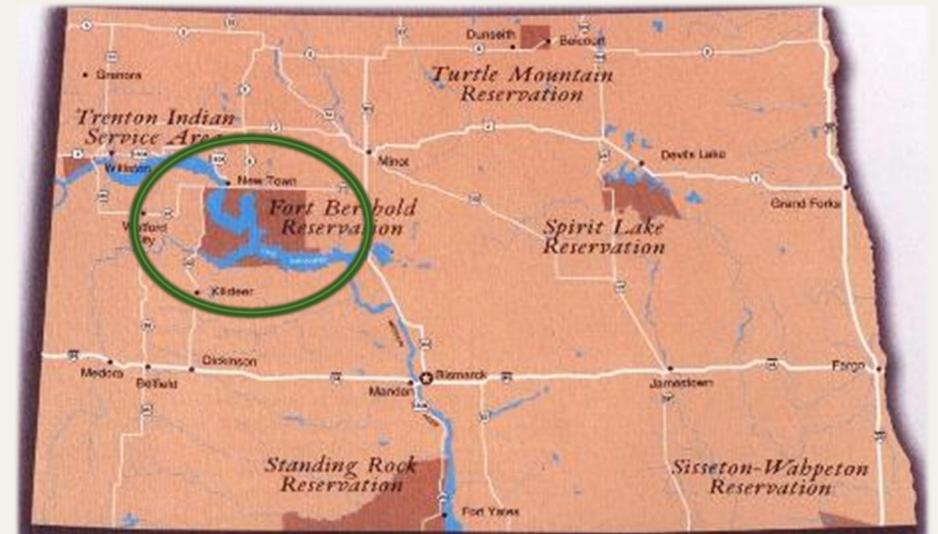
Wetlands & Cultural Connectivity:

Developing the Three Affiliated Tribes'
Wetland Program Plan
TAT Environmental

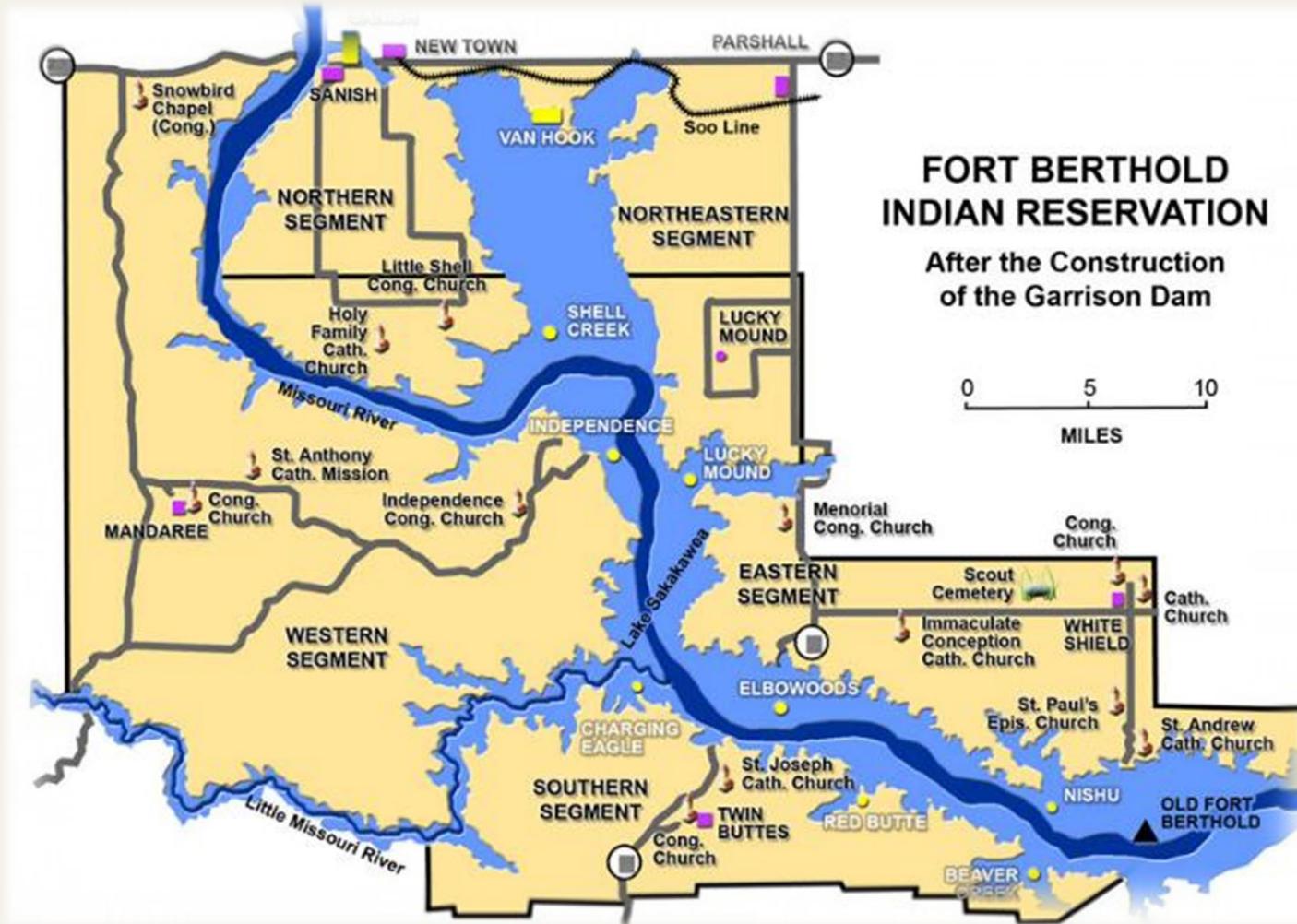


Fort Berthold Today

- Fort Berthold is home to the Mandan, Hidatsa & Arikara – we're also referred to as the Three Affiliated Tribes and MHA Nation
- The reservation is located in mid-west North Dakota occupying 988,000 acres
- Approximately 17,000 enrolled members
- The reservation is divided into 6 segments



Historical & Cultural Context



Bakken Oil Boom

- Oil boom began in late 2000's with advent of hydraulic fracturing and horizontal drilling
- Large influx of people, resources & money to Reservation
 - Improved/expanded infrastructure
 - Improved tribal government & public facilities, schools
- At peak of boom (2012), approx. 400 wells within Reservation boundaries
 - Millions of barrels/month
 - Unprecedented construction activities
 - Increased traffic → more accidents
 - Pipelines → leaks
- Spills/leaks of produced water, oil
 - Thousands – millions of barrels of produced water, oil released to environment in some incidents
 - Fines imposed & remediation enforced by EPA, TAT Environmental



Wetland Program Plan

- Three Affiliated Tribes Environmental Division established during Bakken boom
 - Water Quality department originally focused on ambient water quality monitoring of surface waters across Reservation (CWA 106)
- Water Quality expanded to include a Wetland Program Plan (WPP)
 - Work began in FY2019 in collaboration with EPA & GeoSpatial Services (GSS) of St. Mary's University of Minnesota
 - Established goals:
 - Create wetland **monitoring & assessment** program in coordination with CWA 106 program
 - Obtain 401 certification for **regulatory activities**
 - **Restore & protect** designated wetland activities



Wetland Program Plan

- How did we start?
 - EPA contacts encouraged proposal for Wetland Program Development Grant
 - Worked with GSS to develop a proposal for FY2018 funding
 - After falling just short w/ first proposal, received good feedback
- GSS tailored proposal to TAT's specific goals and needs
 - Short-term: Facilitate monitoring & assessment program
 - Compile wetlands database → Collect data on-site → Use data to assess health & performance of wetlands → Eventually identify wetlands to be restored/protected
 - Medium-term: Develop foundation for regulation
 - Enforcement when wetlands are altered/impacted by oil production, infrastructure development, community expansion, etc.
 - Long-term: Protect/restore wetlands and provide educational opportunities
 - Implement a wetlands protection and restoration plan
 - Educate & reconnect community members with scientific and cultural value of wetlands
- Proposal approved for FY2019 funding (and second WPDG proposal funded FY2021)!



Wetland Program Plan

Finished work:

- GSS → Comprehensive inventory of surface waters on Fort Berthold Reservation (SWI)
 - Identify wetland extent
 - Community
 - Type
 - Water regime
 - Vegetation
 - Water quality
 - Function
- Story map
 - Scientific, Geographic + Historic, Cultural
- Level-2 Rapid Assessment Method (RAM)



Wetland Program Plan

Rapid Assessment Method (RAM):

- Conduct literature review
 - Identify wetland functions
 - Determine which attributes:
 1. Perform the function
 2. Indicate that the function is being performed
 - or 3. Cause a change in the function's performance when impacted
- Select Attributes:
 - Develop questions to answer on-site
 - Easily-identifiable & measurable
 - Answers in form of Y/N, T/F, Presence/Absence, range of values, etc.
 - Attribute scores will reflect performance relative to the function
- Utilize Surface Water Inventory to identify & select wetlands for assessment:
 - 80th- & 90th-percentile wetlands identified in Level-1 Assessment (SWI)
 - Site prioritization decision support matrix [?]
- Collect data:
 - Conduct Rapid Assessment on-site
 - Incorporate data into Monitoring & Assessment program, AWQMS?

Report building condition	Minor / None	Moderate	Severe
Collapse	●	●	●
Building leaning	●	●	●
Structural damage	●	●	●
Falling hazards	●	●	●
Ground slope movement	●	●	●



Wetland Program Plan

Ongoing work:

- Adapt/adjust RAM through field visits and data analysis
- Prioritize wetlands for inclusion in monitoring & assessment program
- GSS completing Hydromodification of digital elevation model
 - Can be utilized as tool for managing stormwater and for hazardous spill response
 - Can be utilized by many departments @ TAT, not just Environmental Division

Upcoming work:

- Host Story Map @ MHA Interpretive Center
- Once monitoring & assessment program is established & Rapid Assessment data accumulated, TAT will begin moving toward establishing regulatory protocol
- Identify wetlands for restoration/protection; incorporate into monitoring & assessment
 - Eventually create educational opportunities re: both the scientific and cultural importance of wetlands



Conclusion

- Despite losing wetlands to development (whether good or bad) we are working toward protecting remaining wetlands
- The TAT wetland program can benefit the entire community through collaboration with other departments & through community engagement
- We didn't get funding first time – Don't give up!
 - We received some valuable feedback after our first application, and it made our next proposal stronger
 - Our second wetland proposal was approved, and we will likely be submitting a third during the next funding cycle
- Development of WPP provides opportunities:
 - Preservation of wetland habitats & important ecological functions
 - Retention of cultural knowledge & practices
 - Creation of useful data that have broad application

Acknowledgements

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 - 1974 - 2020