

**Information Pertinent to State Review
of
BNSF's Sovereign Land Permit Application
No. S-2095**

Part II

Consideration Analysis

**Submitted to the Department of Water Resources
Public Meeting
January 20, 2023**



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Introduction

NDAC § 89-10-01-08 sets forth eleven considerations to apply when deciding what action to take on a permit application:

The state engineer may approve, modify, or deny any permit application. In deciding what action to take on a permit application, the state engineer must consider the potential effects of the proposed project on the following:

1. Riparian owner's rights;
2. Recreation;
3. Navigation;
4. Aesthetics;
5. Environment;
6. Erosion;
7. Maintenance of existing water flows;
8. Fish and wildlife;
9. Water quality;
10. Cultural and historical resources; and
11. Alternative uses.

These considerations will be discussed throughout these comments.

The incomplete technical work accepted by U.S. Coast Guard (Coast Guard) during their National Environmental Policy Act process puts the North Dakota Department of Water Resources (ND DWR) in a difficult situation. The *Draft Environmental Impact Statement BNSF Railway Bridge 196.6 Project Across the Missouri River, Morton and Burleigh Counties, North Dakota* (Draft EIS) was prepared by BNSF's contractor Jacobs Engineering Group for the Coast Guard navigation permit.

This Draft EIS and the subsequent *United States Coast Guard (Coast Guard) Final Environmental Impact Statement for BNSF Railway Bridge 196.6 Project Across the Missouri River, Mile Point 1315.0, Morton and Burleigh Counties, Between Bismarck and Mandan, North Dakota* (Final EIS) do not answer critical questions regarding the long-term results of the proposed additional, more closely-spaced bridge piers within the river channel would have on floodwater elevations, local scour, and patterns of deposition and scour within the overall reach, which would negatively impact erosion, fish and wildlife, water quality, navigation, and recreation.

It will therefore be contingent on ND DWR to complete a thorough review and to request adequate analyses through the Sovereign Lands Permit Process, rather than relying on the federal EIS results. FORB is submitting this technical information in addition to the oral presentations given at the January 20, 2023, public meeting to assist ND DWR in identifying critical issues in BNSF's Sovereign Land Permit application.

Background – History

In 1864 Congress chartered the Northern Pacific Railroad, signed into law by President Abraham Lincoln, granting 47 million acres of public land—the peoples’ land—to a private corporation to finance it. To put that in perspective, the railroad corporation was given 25,000 acres for every mile of track they laid.

Eugene Smalley’s introduction to his 1883 *History of the Northern Pacific Railroad*, provides a brief short history of what his 437-page book lays out in more detail:

When the project of a railroad across the American Continent was first broached, and for many years afterward, the northern route, by way of the valleys of the Missouri and Columbia rivers, was the only one thought of. This route was explored by Lewis and Clarke in the first decade of the [19th] century. It was known to be a route through valleys and over plains for nearly its entire distance; it crossed the Rocky Mountain barriers at low altitudes; it approached the Pacific by way of the greatest river of the western coast, at its farthest limit lay the most capacious and beautiful deep-water tidal estuary to be found on the continent. It avoided the deserts lying farther south, and was believed to traverse the only continuously habitable belt of country stretching from the Mississippi to the Pacific Coast. Long before the epoch of rail transportation this route had been explored for military and commercial purposes by the United States Government¹.

The timeline for construction and completion of the northern transcontinental railroad has been summarized as follows:

The first survey for a northern route to the Pacific was conducted by the War Department in 1853. The Northern Pacific Railroad Company was organized in 1864 with Josiah Perman as president. Construction began at Carlton, Minnesota, in February 1870, with an initial operation of 125 miles. That same year, construction began at Kalama, Washington Territory, near Portland, Oregon, and that line was extended to New Tacoma, Washington Territory, by 1873. The company was reorganized in the wake of financial troubles in 1875. The western and eastern lines joined at Gold Creek, Montana, in 1883. The real completion date was 1888 when the tunnel through Stampede Pass, Washington, was opened, replacing a switchback line over that pass. The company was reorganized for a second time in 1896 as the Northern Pacific Railway Company.²

The enterprise of building the Northern Pacific transcontinental railroad was headed by America’s foremost financier, Jay Cooke, who Lincoln had tapped to fund the Union effort in the Civil War. By 1873, the tracks reached a shabby settlement named Edwinton that sprang up at the place where the railroad would cross the Missouri. To attract European investment, Cooke renamed the place Bismarck after the German Chancellor.

¹ *History of the Northern Pacific Railroad (1883)*, Eugene Virgil Smalley, 1883, G.P. Putnam’s Sons, New York, page iii

² *Historical Note*, Northern Pacific Railway Co. 1870-1968 manuscripts, Maureen and Mike Mansfield Library, University of Montana, retrieved from <https://archiveswest.orbiscascade.org/ark:/80444/xv68060> (last visited January 17, 2023).

The scheme did not work. The railroad was hopelessly overextended, and by the fall of that year, Cooke's financial empire collapsed, triggering the Panic of 1873. The worst global economic depression in history started right here in Bismarck.

In 1876, the United States waged war against the Lakota and Cheyenne Tribes. The purpose was to seize tribal lands, in violation of the Fort Laramie Treaty, and transfer these to the railroad. It is no stretch to say that "Custer died for this bridge."

Eventually, construction of the line continued west. But the challenge of bridging the river remained, with its powerful ice jams and violent spring floods. It was met by an engineering genius, George Shattuck Morison, who used pneumatic caissons—giant wooden boxes—inside which laborers dug away the silt while stone masons set granite blocks above, sinking the piers into the shale bedrock 40 feet below the riverbed.

Bridge construction had just begun when a flamboyant tycoon, Henry Villard, acquired the Northern Pacific. The year the Historic Bridge was completed, a gang of political bosses, in league with the railroad, hijacked the Territorial Capital from Yankton and moved it to Bismarck. Opportunist and showman, Villard invited a who's who of American and European celebrities to cross the continent on his railroad. They would see the American West and celebrate driving the last spike at Gold Creek, Montana. In Bismarck, they would participate in a ceremony laying the cornerstone for a new territorial capitol.

The first week of September 1883 was one for the history books. On September 2, President Chester A. Arthur crossed the rail bridge on his return to the White House from a month-long adventure in Yellowstone Park. He would address the Villard Party at a gala in St. Paul. On September 4, Sitting Bull crossed the bridge from Mandan to Bismarck to play a part in the cornerstone ceremony. It was the first time the great Hunkpapa chief rode aboard a train. On September 5, Civil War hero and former President Ulysses S. Grant crossed the bridge with the Villard Party on their way to the last spike celebration. Grant was a featured speaker at the cornerstone ceremony in Bismarck. And on September 7, Theodore Roosevelt crossed the bridge on his first trip to the Badlands to hunt a buffalo before they were gone. It is ironic that 20 years later, the very railroad that carried him west to the "romance of his life" should be the subject of the case that sealed his reputation as the trust-buster president.

BNSF never seriously considered preserving the Historic Bridge. Instead, they treated it like one of a thousand rusty relics kept on their books as obsolete inventory. The Bismarck rail bridge is just as important in the American Story as the Brooklyn Bridge or the Golden Gate Bridge. No one would suggest these historic landmarks are "past their useful life."

Background - Riparian Owners

The Area around the Historic Bridge is surrounded by publicly owned trails and parks. The riparian owners in this case are, therefore, largely the people of Bismarck and Mandan, who use it for walking, biking, fishing, boating, swimming and other recreational activities. The following map from the Burleigh County Recorder's Office website shows a snippet of

Bismarck’s zoning map on the east side of the Missouri surrounding the Historic Bridge in Bismarck (Figure 1). This area along the Missouri River between Burnt Boat Drive on the north and Missouri Avenue on the south is the prime area to walk, bike, and otherwise have public recreational access to the Missouri River in Bismarck; it is used for those purposes more than any other place in Bismarck.

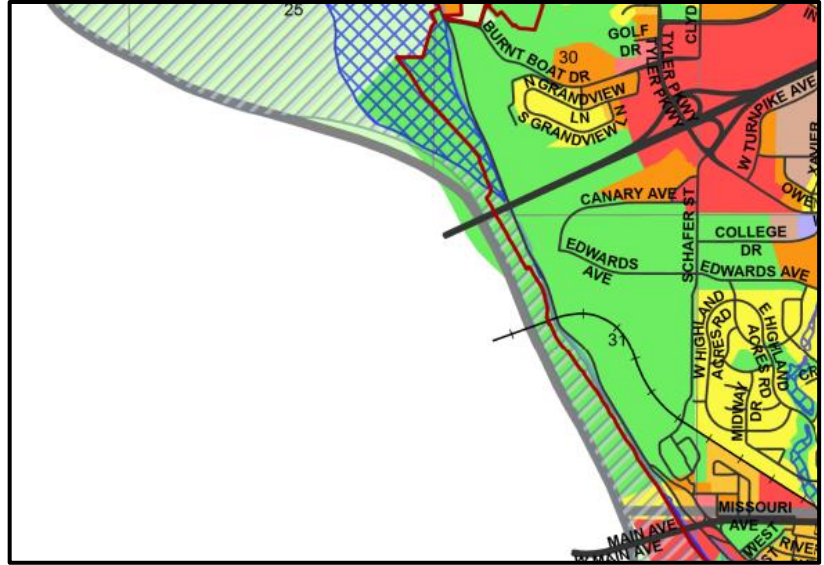


Figure 1: Map of Riparian Ownership in Vicinity of the Proposed Project Shown on the Burleigh County Recorder’s Office Zoning Map (https://www.burleighco.com/uploads/resources/696/zoning_map_42x65.pdf)

Figure 2 from the Morton County Recorder’s Office shows the Missouri River Natural Area and Trailhead. Green marks the boundaries of that recreation area.

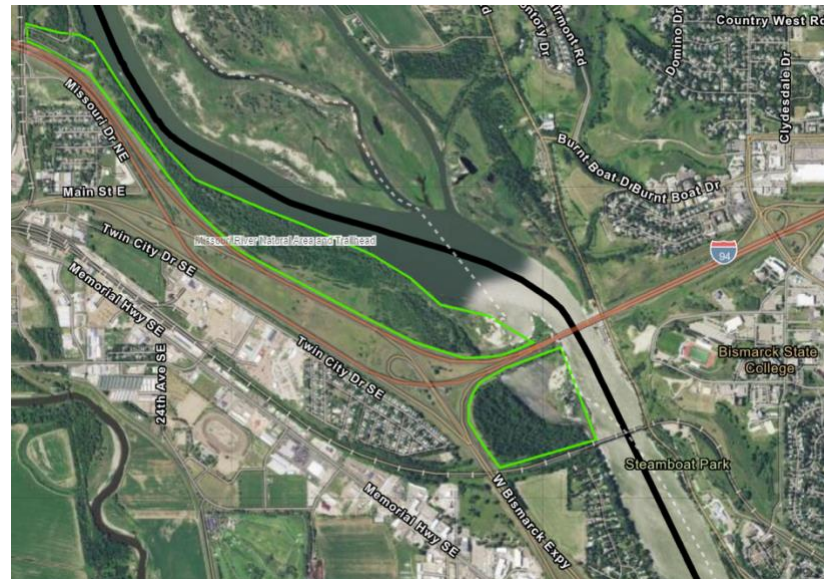


Figure 2: Missouri River Natural Area and Trailhead in Vicinity of the Proposed Project (<https://www.parkrec.nd.gov/missouri-river-state-natural-area>).

The North Dakota Parks and Recreation website describes the public recreation opportunities and wildlife in the Missouri River State Natural Area as follows:

Missouri River State Natural Area

Located on the east side of Mandan along the Missouri River this 157-acre preserve is a pristine floodplain woodlands. A deciduous forest consisting of cottonwood, green ash, the rare peachleaf willow and buck brush dominate the

area. The riparian woodland provides habitat to whitetail deer, fox, raccoon, squirrels, wild turkey, bald eagles, Canada geese, owls, woodpeckers, and a variety of songbirds.

Recreation

Popular for walkers, fisherman and mountain bikers there are almost 5 miles of single track trail. In the winter, although the trails are not groomed, it is also a great place to cross-country ski and snowshoe. Outdoor enthusiasts, bird watchers, and photographers come to enjoy the solitude, abundant wildlife and scenery.

Directions

From Mandan: Follow 1-94 E to Mandan Ave, Exit 153. Turn Right onto Mandan Ave, head south for .1 mile. Turn left onto Division St. NE, then immediately left onto River Dr NE. Take your first right into the entrance road, and follow it until you reach the parking lot.

From Bismarck: Follow 1-94 W to Mandan Ave, Exit 153. Turn left onto Mandan Ave, head south for .3 miles. Turn left onto Division St. NE, then immediately left onto River Dr NE. Take your first right into the entrance road and follow it until you reach the parking lot.

This natural area is managed by the North Dakota Parks and Recreation Department in cooperation with the ND Department of Transportation, Morton County Parks and the City of Mandan.

Figure 3, taken from the Morton County Recorder's website, shows the hiking and biking trails connected to the Missouri River State Natural Area on the Morton County side. There are more than 100 miles of biking and hiking trails owned by Morton County, Mandan, and the State of North Dakota, as shown on this map. The trail through the Missouri River State Natural Area is connected to and part of this extensive trail system.

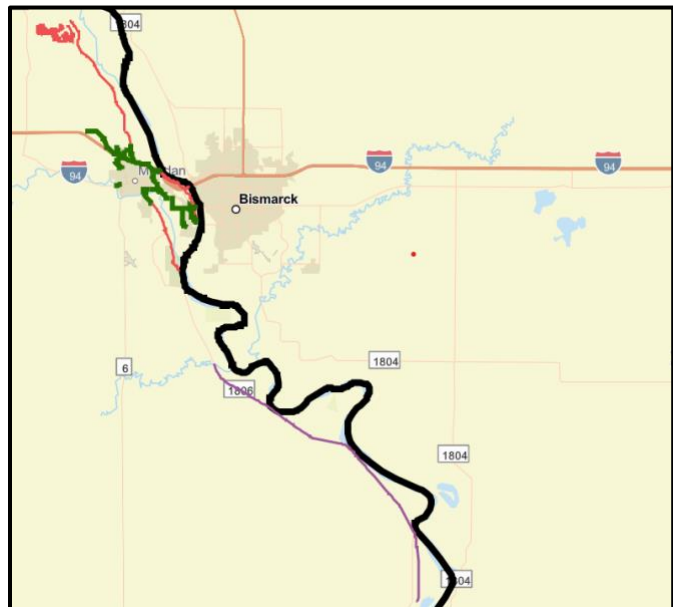


Figure 3: Hiking and Biking trails Connected to the Missouri River State Natural Area on the Morton County side

(<https://mortongisonline.maps.arcgis.com/apps/webappviewer/index.html?id=40f7a13b22224788a230825bfb12466>)

The Bismarck side has more than 50 miles of biking and hiking trails also, including mountain biking and hiking trail on the bluffs just north and east of the recreation trails along the Missouri River north of the Historic Bridge on the Burleigh County side. Preserving the Historic Bridge and repurposing it as the link between these two trail systems potentially will have immense benefits to the region's recreational, historic, tourist, parks, economic, and cultural resources for the next 100 years.

Analysis of the 11 Considerations under NDAC § 89-10-01-08

Consideration 1 – Effects to Riparian Owners

Bismarck West End Reservoirs - The City of Bismarck in comments on the Draft EIS expressed concern that encroachment of the hillside upslope of the project could affect the Bismarck West End Reservoirs. While the Final EIS said this “would require mitigation” in Table 1, page 12, but on page A-13 said, “The proposed action alternative would be constructed entirely within the existing BNSF right-of-way (ROW) and accordingly will not require acquisition of additional easements. Remediation of the existing slope instability between the BNSF track and the West End Reservoir is outside of the scope of this NEPA review.” [emphasis added] This is a groundwater issue, over which the State of North Dakota has jurisdiction and clearly an unmitigated adverse effect to a riparian owner, the City of Bismarck.

Increased Flood Elevations

Hydraulic modeling for the project was completed in 2017 for BNSF using a 1-D RAS model, as is standard practice, with results indicating that the proposed project (construction of new bridge piers and destruction of existing piers) would not cause a net rise in water surface elevations; however, review of the RAS model by Ackerman-Estvold in 2020³ indicated a number of technical concerns with the original modeling work (see Appendix C). The coefficients used in the modeling were not standard and altered the results to understate effects.

Based on Ackerman-Estvold (2020), corrected modeling indicates that BNSF's proposed preferred alternative in the Draft EIS (building a new rail bridge 20 feet upstream and demolishing the Historic Bridge) would cause a net rise of up to 0.013 ft impacting 500 upstream structures. FORB forwarded these concerns to Coast Guard for consideration under the Draft EIS; however, no technical response or corrected results were in the Final EIS. FORB has reached out to FEMA, to see if they were consulted on these modeling issues but has not received a response.

The Sovereign Lands application currently under review by DWR is for construction of the new bridge and retention of the Historic Bridge; that project would therefore generate an even higher net rise. A net rise in floodwater elevation, if allowed under the current application, would result in future construction of floodwalls along the river to protect homes and businesses and to avoid changes to flood insurance status.

³ Ackerman-Estvold, September 1, 2020, Memo to FORB. Task 1: Data Review and Alternatives Evaluation

Fortunately, mitigation of these adverse effects is possible, which would allow both the old and new bridges to co-exist without generating a net rise in floodwater elevations via culverts installed in the I-94 fill (see Appendix C - Ackerman Estvold 2020). For the current permit application, ND DWR would need to condition approval on these mitigation actions.

FORB supports that approach and given the economic, recreational, and cultural benefits the Historic Bridge provides believes the State of North Dakota should work cooperatively with BNSF on the required mitigation as well as to provide an easement to BNSF for the right-of-way on Sovereign Land in a revised permit.

Consideration 2 – Recreation

The maps and current recreational and trail use of the riparian zones surrounding the Historic Bridge on both sides of the river are summarized above. The Draft EIS (page 133) briefly discusses impacts to public recreation trails on either side of the river, "[t]he earthwork required to align the track with the new bridge would result in permanent changes to the trails throughout the Project area." The Final EIS (page 20) says, "[p]ost-construction Riverfront Trail will be restored to a condition that is "equal or better" to preconstruction," but there is no commitment to restore the publicly owned walking trail on the west side of the river. David Mayer, Operations Director of Bismarck Parks and Recreation District, specifically requested to participate in design discussions in order to provide, "input on impacts to the East bank trail system" in his comments on the Draft EIS; however, Mr. Mayer did not receive a response in the Final EIS committing to Bismarck's inclusion in the planning process. Restoration was left in the hands of the construction contractor, without input from the riparian landowner.

The Final EIS (page A-17) says, "[r]ecreational use of the Missouri River would be restricted during in-water construction; however, closure of the Missouri River waterway is not anticipated." Despite disclosure of this general impact to navigation and river recreation without any specifics, no mitigation measures or environmental commitments are included in the Final EIS.

BNSF should quantify the number of recreational users of each of these areas annually to estimate the impact of 3.5 years of construction on river and trail recreation in Bismarck-Mandan. How many boats launch from Keelboat Park daily? Will this ramp be closed during construction?

What will be the economic impact to the Lewis & Clark Riverboat run by the Fort Abraham Lincoln Foundation? There are over 125,000 visitors annually to Fort Abraham Lincoln State Park alone, according to North Dakota Parks and Recreation. Will River Road be closed at any time? What impact will road closures have on local businesses, Papa's Pumpkin Patch the Lewis & Clark Riverboat, and Huckleberry House restaurant? Will construction be during winter months or during the summer? FORB recommends an economic analysis of these impacts and development of mitigation measures as part of the permitting process.

Considerations 3, 6, and 7 - Navigation, Erosion and Maintenance of Existing Water Flows

Bridge piers generate local scour in their immediate vicinity but also influence the larger patterns of scour and deposition in a reach, particularly in sand bed rivers like the Missouri.⁴ As flow separation occurs around each individual pier, the resulting wake vortices entrain sediment further downstream, often causing linear depositional features downstream offset to either side of the pier. The I-94 Grant Marsh Bridge in Bismarck is a good example of how pier placement modifies sediment transport. Given the incoming meander bend alignment, significant scour along the left bank of the river above and adjacent to Keelboat Park would be expected from BNSF's proposed project.

The bathymetric survey by USGS during the 2011 flood shown in Figure 4, indicates how the left pier effectively shifts the scour zone away from the bank and towards the center of the river, creating depositional zones to either side (Densmore et al. 2013)⁵. Note that local scour around the piers themselves is not present in this case, because the piers are armored with riprap.

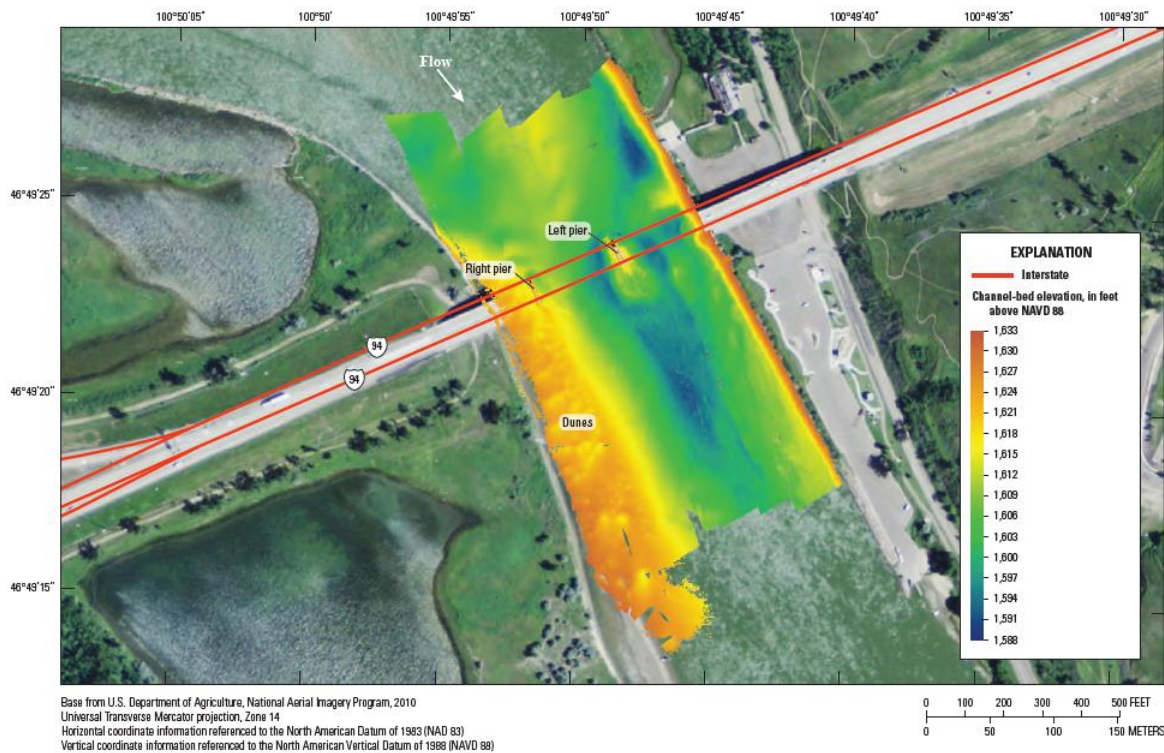


Figure 15. Channel-bed elevations from the Missouri River hydrographic survey at Grant Marsh Bridge, Bismarck, North Dakota, June 6, 2011.

Figure 4: Illustration of Missouri River Channel-Bed Elevations (taken from Densmore et al. 2013: Figure 15).

⁴ Federal Highway Administration, 2012. Hydraulic Engineering Circular No. 18: Evaluating Scour at Bridges, Fifth Edition.

⁵ Densmore, Strauch, Dietsch 2013. Hydrographic Surveys of the Missouri and Yellowstone Rivers at Selected Bridges and through Bismarck, North Dakota, during the 2011 flood: U.S. Geological Survey Scientific Investigations Report 2013-5087.

Bathymetric survey results for the reach, including the Historic Bridge and proposed location of the new rail bridge, are shown in Figure 33 of that same report (see Figure 5). The Historic Bridge east main channel pier appears to have generated the expected scour/deposition pattern downstream, but the west pier did not. That may be due to impacts on currents from flows exiting the low-lying wetlands upstream, or some other factor, but regardless it is evident that with the existing piers in place, the west bank of the river was protected from significant scour. Based on the amount of riprap in place along that west bank, it appears that it experiences erosive conditions currently, even in the absence of scour.

If additional piers in new locations increase scour along the west bank, then it would be likely that the existing riprap protection would be undermined. Private landowners would be forced to invest in new riverbank protection projects, generating short-term effects of increased turbidity, disturbance to fish and wildlife, and risk of contaminant transfer from heavy equipment and materials.

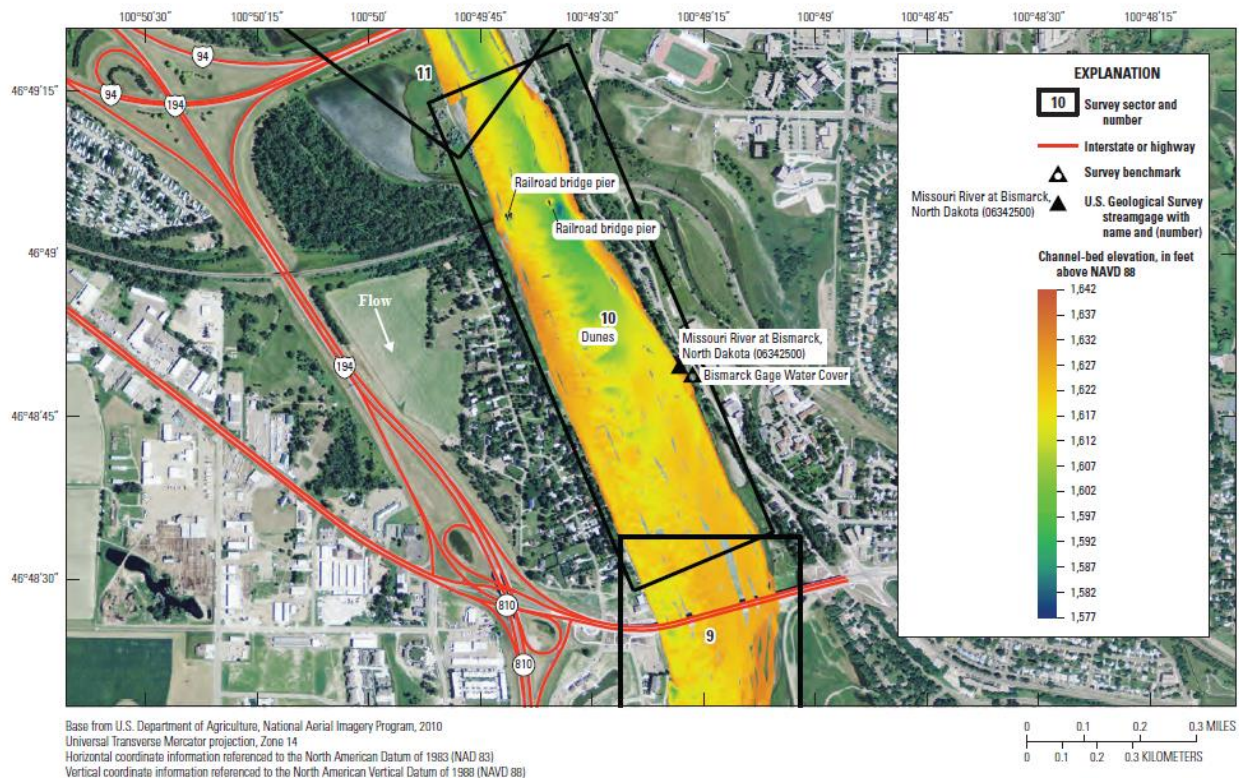


Figure 33. Channel-bed elevations from the Missouri River hydrographic survey of sector 10 located at Bismarck, North Dakota, July 2, 2011.

Figure 5: Channel-bed Elevations at Proposed Project Location (Taken from Densmore et al 2013: Figure 33).

Appendix I of the Draft EIS was intended to document navigational impacts of the proposal to place 5 piers within the navigable channel. The engineer who wrote the report clearly noted that the river bottom is in a constant state of flux, with scour and deposition changes taking place regularly and that the navigation report was written based on channel geometries at the time of the report. No sediment transport modeling to evaluate predicted trends in scour and deposition

patterns at a reach scale, due to the proposed piers, was conducted. The engineer who wrote the report is specifically not taking professional liability for potential to increase bank erosion due to the project.

Sediment transport modeling in this reach is complex due to the extensive numbers of bridge piers from all 3 bridges, bank protection, and training structures as well as the backwater impacts from Oahe at higher flows. That said, USGS (Schenk et al. 2014) developed a calibrated, multidimensional, numeric sediment transport model (FaSTMECH) based on bathymetric survey and LiDAR data collected during the 2011 flood in the Bismarck-Mandan reach.⁶ The technically defensible approach to analyzing the long-term impacts of the proposed bridge piers would be to utilize that sediment transport model and related data with computational fluid dynamic software such as FLOW-3D to model existing versus proposed conditions at various flows.

Consideration 4 - Aesthetics

The North Dakota Sovereign Lands Management Plan published by the Office of the State Engineer in 2007 states that “The Public Trust Doctrine, as interpreted by the North Dakota Supreme Court, imposes on the state the duty to manage sovereign land to foster not only the “public’s right of navigation” but...further requires the protection and preservation of other interests including “natural, scenic, historic, and aesthetic values.” (North Dakota Sovereign Lands Management Plan, 2007, p.3)

The great American author John Steinbeck once wrote, “Someone must have told me about the Missouri River at Bismarck, North Dakota, or I must have read about it. In either case, I hadn’t paid attention. I came on it in amazement. Here is where the map should fold. Here is the boundary between east and west.”

For the last 140 years, George Morison’s rail bridge across the Missouri has spanned our picturesque landscape, the gateway to the American west. The current bridge was built with funds paid by the settlers of these lands, by sale of plats granted to the railroad by the federal government to create the Northern Transcontinental railroad.

North Dakotans love our rail bridge; its graceful steel arches contrasting sharply but elegantly with the mighty Missouri are seen printed in grand scale on the walls of restaurants and shopping malls, in dozens if not hundreds of local advertisements, and in senior pictures, family portraits, and wedding poses by the thousands. But it means more to us than just a pretty bridge. It is a symbol of our home. This architectural marvel is our marker of place, our Eiffel Tower. Our Brooklyn Bridge. We may not have populations in the millions, but our connection to our local story and its place in the greater history of our nation is just as important.

This railway remains a vital artery of commerce, and we hope that it continues to thrive, as we believe that is what is best for our state and for our country. But the interest of this national

⁶ Schenk, Skalek, Benthem, Dietsch, Woodward, Wiche, Galloway, Justad, Hupp, 2014. Geomorphic change on the Missouri River during the flood of 2011: U.S. Geological Survey Professional Paper 1798-I.

railroad should not be allowed to overshadow the interests of the people who live and work here; those of us who cherish this place and want to preserve it and shape it for future generations to enjoy. We will never understand why Burlington Northern Santa Fe has painted this project as a choice between the past and the future, that we must tear down the old to make way for the new. That simply is not true.

This Sovereign Lands permit application is for the construction of a new bridge. If the State of North Dakota approves the preferred design of the railroad, the destruction of the current one will be the only safe option remaining. North Dakotans will lose the potential future connection of trails, of creating an exciting hub of recreation, community, and cultural heritage. Please consider carefully and approve a new bridge that will allow a win-win solution, one with where the railroads needs are met, and we can safely retain the bridge to our past and the potential for our future.

Consideration 5 - Environment

The ND Department of Water Resource's best available information regarding the potential environmental effects of Sovereign Land Application S-2095 would presumably be Draft EIS prepared by BNSF's contractor Jacobs Engineering Group for the Coast Guard navigation permit. This Draft EIS and the subsequent Final EIS purport to evaluate the environmental effects of four action alternatives for a replacement rail bridge across the Missouri River:

- Proposed Action Alternative: 20-foot Offset, 200-foot Spans, Remove the Existing Structure
- Offset Alternative 1: 92.5-foot Offset, 200-foot Spans, Retain Existing Structure
- Offset Alternative 1: 92.5-foot Offset, 400-foot Spans, Retain Existing Structure
- Offset Alternative 1: 42.5-foot Offset, 200-foot Spans, Retain Existing Structure

Unfortunately, there is a complete disconnect between BNSF's Sovereign Land Permit Application S-2095 and the environmental documents BNSF's contractor prepared for the Coast Guard. These EISs did not evaluate the potential environmental effects, both positive and negative, of an alternative retaining the historic rail bridge in place for an undisclosed period of time and constructing a new rail bridge 20 feet upstream. Instead, they evaluated building a new rail bridge 20 feet upstream and demolishing the Historic Bridge.

Leaving two bridges standing side-by-side in the Missouri River with unmatched pier spacing requires additional analysis and mitigation of effects not evaluated in the Draft and Final EISs.

However, the land-based environmental effects of construction of a new rail bridge 20 feet upstream of the existing bridge are partially disclosed in the Draft EIS but shockingly no mitigation measures are included in the environmental commitments in the Final EIS. The excuse given is, "[i]mpact mitigation is not part of the selected alternative because avoidance and minimization best management practices (BMPs) are part of the selected alternative" (Final EIS, page 17).

These are some of the unmitigated land-based environmental effects extracted from the Draft and Final EISs.

Riparian Owner - Bismarck West End Reservoirs – (see previous section).

Trees - Numerous commentors on the Draft EIS expressed concern about 19 acres of mature trees to be removed by the project and requested tree replacement. The response in the Final EIS was “[t]rees removed outside of BNSF ROW will be replaced” meaning the acres of trees removed within the right-of-way (ROW), even if on state or other publicly owned land, will not be replaced. BNSF has said they intend to build within their ROW, which means the loss of trees will not be mitigated at all. In addition, 29.1 acres of permanent loss of herbaceous land cover will be lost, as well as 1.1 acres of shoreline habitat without mitigation.

Recreation – (see previous section).

Riparian Owner’s Rights and Aesthetics - In addition, the EISs do not disclose or evaluate the impact of the new bridge navigation lights to nearby riparian owners. How bright will these lights be? How far will the visual impact extend? Will these lights be disruptive to recreation and an adverse visual impact to nearby residences? How will these visual impacts be mitigated?

Given that the purpose and need for this project proposes to increase the volume, speed, and double the number of tracks and/or stack trains, there would be long-term noise and vibration impacts if this permit is issued. The adverse effects would extend far beyond the bridge crossing and into the cities of Bismarck and Mandan.

Given that the potential environmental effects of BNSF’s construction of a new rail bridge on state land are unknown, these must be evaluated, and mitigation measures developed before the State of North Dakota issues a permit. FORB recommends BNSF’s Sovereign Land Permit be denied due to lack of consideration and disclosure of the potential environmental effects of their proposed action on lands under the jurisdiction of the State of North Dakota

Consideration 8 - Fish and Wildlife

A net rise in floodwater elevation, if allowed under the current application, would result in future construction of floodwalls along the river to protect homes and businesses (and to avoid changes to flood insurance status). Installation of concrete or sheet pile floodwalls would generate short-term effects of increased turbidity, disturbance to fish and wildlife, and risk of contaminant transfer from heavy equipment and materials. More importantly, the long-term impact of floodwalls would be permanent loss of natural vegetation in the riparian area, increased water temperature, loss of habitat complexity, insect population reductions, and overall negative impacts to fish and wildlife. Another long-term impact is additional transport of contaminants (lawn fertilizers, pesticides, petroleum products) due to increased flooding extents.

In addition, aggradation more uniformly spread across the river channel upstream of the proposed bridge, with multiple small channels rather than the larger main channel that currently exists between piers #7 and #8, would generate the need for regular dredging in the future to maintain navigation. Impacts on fish and wildlife, as well as water quality, would be much more

substantial than the temporary impacts during bridge construction. Obviously, the potential to increase erosion along the west bank of the river downstream of the rail bridge is of concern as well; given that homeowners in that area could be forced to construct/reconstruct bank protection projects to the detriment of habitat and water quality.

Consideration 9 - Water quality

Water quality concerns have been included in above sections on erosion, navigation, and fish and wildlife. In addition, FORB submitted comments to the North Dakota Department of Water Quality regarding BNSF's application to build a new rail bridge (see Appendix D). FORB also requested that the State of North Dakota set "[s]ite-specific standards," meaning water quality criteria developed to reflect local environmental conditions to protect the uses of a specific water body and "best management practices" (ND ADC § 33.1-16-02.-04(2) & (10). FORB reiterates that request to protect the recreational and other uses of the Missouri River at the Historic Bridge crossing that have been in place for decades.

Consideration 10 - Cultural and Historical Resources

The North Dakota Sovereign Land Management Plan imposes on the state the duty to manage sovereign land to foster not only the "public's right of navigation" but also "other important aspects of the state's public trust interest, such as bathing, swimming, recreation and fishing, as well as irrigation, industrial and other water supplies." The Doctrine further requires the protection and preservation of other interests including "natural, scenic, historic, and aesthetic values."

Sovereign Land Management Plan Recommendation 3 states that the Office of the State Engineer should consider the impacts of actions on sovereign land to cultural and historic resources before granting or modifying permits. Though the State Historical Society of North Dakota is included in the list of agencies consulted for a sovereign land permit application, language was also added to this document, reinforcing the importance of cultural and historic resources.

The segmenting of BNSF's Sovereign Lands Permit from the entirety of the existing bridge and new bridge proposal is an attempt at circumventing the cultural and historic importance and responsibilities associated with this project.

There is not a more significant cultural and historic place in North Dakota or the Northern Great Plains than the 60 miles between the Oahe and Garrison dams, in fact, Congress designated it a National Heritage Area in 2009. Civilizations that are centuries old inhabited this land; it is the homeland of the Nuweta, the Mandan people. The only remaining villages of the Mandan, Hidatsa and Arikara nations exist in this corridor. As western expansion reached these homelands monumental events would change the Northern Great Plains forever. The arrival of the railroad, connecting eastern interests with western opportunities was a pivotal event in the history of the US. Contemporary developments continue to contribute to the history of this place. This historic bridge stands as a tribute to time and technology and is a rock-solid monument to this state,

region and nation's history. It should be acknowledged as worthy of and a priority for preservation before a Sovereign Lands Permit is requested for a new bridge.

The existing rail bridge was designated to have historic significance in a 2017 letter from the State Historical Society of North Dakota in response to the original BNSF Sovereign Land Permit application. The historical finding invoked NDCC 55-02-07 (see Appendix E). Under state law, “[a]ny historical or archaeological artifact or site that is found or located upon any land owned by the state or its political subdivisions or otherwise comes into its custody or possession and which is, in the opinion of the director of the state historical society, significant in understanding and interpreting the history and prehistory of the state, may not be destroyed, defaced, altered, removed, or otherwise disposed of in any manner without the approval of the state historical board.”

BNSF should be proud of and supportive towards saving this landmark in railroad history. As part of North Dakota's sovereign land, we should all work together protecting the integrity of these resources for generations to come.

Consideration 11 - Alternative Uses

FORB is not opposed to BNSF building a new rail bridge. Our objection is the unnecessary destruction of the existing bridge. BNSF can construct a new bridge and allow our community to preserve the Historic Bridge. Had BNSF simply worked with our community to this end, construction of the new bridge would be well on its way. BNSF is solely responsible for the delay in building a new bridge because of their unreasonable position that the Historic Bridge must be destroyed. The easiest fix for this is for Katie Farmer, the CEO of BNSF, and the newly proclaimed "Railroader of the Year" by Railway Age Magazine to decree that BNSF will build a new bridge and allow the old bridge to remain, and it will be so.

Preserving and repurposing the Historic Bridge is an opportunity to utilize and elevate an existing asset to benefit our community. It is a natural tourist attraction already in existence. Preserving the Historic Bridge will produce numerous benefits beyond recreation and tourism, including fostering civic pride, increasing historical awareness, and stimulating economic development along the river.

Like the North Dakota Department of Commerce and its Tourism division, we should embrace tourism marketing and couple it with workforce development, to retain and attract people who want to live in a vibrant community; a community that cares about its iconic past and provides the outdoor recreation that a rail-to-trail conversion would create. Travel and tourism benefit every county in North Dakota, creating jobs, generating sales across dozens of sectors and improving our quality of life.

The North Dakota Tourism website (<https://findthegoodlife.com/cities/bismarck/>) encourages people to move to Bismarck-Mandan with these words: “*Straddling the beautiful Missouri River, Bismarck – Mandan combines two unique cities into one extraordinary community. The metro*

area is home to the North Dakota State Capitol, public and private post-secondary education, two distinct downtowns, and miles upon miles of parks and recreation trails.”

The repurposed bridge can be the connector between these trails and cities. Let us not disappoint the community and visitors or forego an economic opportunity by allowing this bridge to be demolished, simply replaced with a mitigation plaque, historic documentation or grant program.

Here are some facts you cannot ignore when determining the future of the repurposed rail bridge. [North Dakota Travel and Tourism](#) generated \$2.61 billion in direct visitor spending and \$237 million in visitor-paid taxes to the state’s economy in 2021. Tourism is a significant revenue source for hotels, lodges, restaurants, museums, art galleries, parks, fishing and hunting outfitters, casinos, sporting events, retail outlets, coffee shops, festivals, craft shops, golf courses, and many other businesses. In 2021, there were more than 21.7 million visitors to and through North Dakota.

There are more than 2,900 businesses and organizations offering countless attractions, events, and tourism-related activities in the state. The Missouri River waterfront in Bismarck-Mandan is already an attraction, and our use of the historic repurposed bridge will only increase with the new Heritage Landing and Gateway to Science attractions overlooking the river.

Research on the 2021 paid advertising campaign showed that 1.4 million trips were motivated due to advertising. Visitors reported spending \$241.9 million in incremental spending. Every dollar invested in the 2021 ND advertising campaign generated \$34 in direct visitor spending and \$3 in tax contributions.

As the State and private donors are investing in the Theodore Roosevelt Library in Medora, it is interesting to note in September 1883, Theodore Roosevelt crossed this very bridge on his way to the Badlands. The thought of tearing down the historic bridge seems ironic and counterproductive to tourism and a state-funded project.

A repurposed Bridge is economically, culturally and environmentally feasible according to the [2019 Bismarck Missouri River Historic Bridge Repurposing Feasibility Study](#) conducted by North Dakota State University Department of Landscape Architecture (Appendix F). The two bridges can co-exist together. In fact, BNSF provided three preservation alternatives in the permitting process. Other communities have successfully preserved bridges as recreational assets, event venues, and tourist attractions. Included in the study are governance and jurisdiction considerations, security and maintenance issues, and a discussion and opinion of probable costs to complete and maintain the project. Beyond the Historic Bridge structure, the study considers connections to established and heavily used trails and road connections and considerations for expanded and future trail connections.

The Rails-to-Trails Conservancy and the Historic Bridge Foundation have non-exhaustive lists of successful historic bridge preservation, restoration, and repurposing projects. Two case studies that inform this feasibility study include the Fairview Lift Bridge near Cartwright, North Dakota and the Stone Arch Bridge in Minneapolis, Minnesota. The Fairview Lift Bridge across the Yellowstone River on ND’s western boundary, was converted to a walking/biking bridge in 2001, currently owned and maintained by the Friends of the Fairview Bridge.

The Minneapolis Stone Arch Bridge is a shining example of the cultural impact a converted railroad bridge can have on a community. Built in 1883, this former railroad bridge crosses the Mississippi River at St. Anthony Falls. The Stone Arch bridge was purchased by the Minnesota Department of Transportation in the 1990s and is currently maintained by the Minneapolis Park District. Throughout the year, the bridge is a hub of community activity including the Stone Arch Bridge Festival of the Arts. The repurposing of this bridge has had economic impacts in excess of \$1 billion and includes the creation of thousands of jobs.

Considering that the demolition cost of the historic rail bridge is comparable to that of accessibility and initial upgrade costs, repurposing the Historic Bridge for bicycle and pedestrian use is feasible from a cost and feasibility perspective. Despite BNSF's claim that the Historic Bridge cannot stand much longer, BNSF currently runs incredibly heavy trains across the Historic Bridge daily, with some approaching 20,000 tons. To put that into perspective a fully loaded semi-tractor trailer is limited to 80,000 pounds on federal highways, or about 40 tons, meaning one train is equivalent to 500 fully loaded tractor trailers. This Historic Bridge is incredibly strong. Trains have crossed it for 143 years and is certainly capable of handling foot traffic for another 100 years.

Summary and Recommendation

Incomplete technical work accepted by Coast Guard during their EIS process puts ND DWR in a difficult situation. The Final and Draft EISs did not answer critical questions regarding the long-term results of the proposed additional, more closely spaced, piers within the river channel would be on floodwater elevations, local scour, and patterns of deposition and scour within the overall reach which would negatively impact erosion, fish and wildlife, water quality, navigation, and recreation. It will therefore be contingent on North Dakota ND DWR to complete a thorough review and request adequate analysis work through the Sovereign Lands Permit Process rather than relying on the federal EIS results.

The location of the 5 main channel piers as proposed in the application under review by ND DWR has them offset, perpendicular to flow, between the 3 existing historic bridge piers. While it is entirely possible to mitigate net rise concerns of constructing new bridge piers with the historic piers, as outlined in the Sept 1, 2020, Ackerman-Estvold Memorandum (Appendix C), ice jam and sediment transport impacts of this configuration could likely not be mitigated. Therefore, if ND DWR were to approve this permit it would also be necessarily approving destruction of the historic bridge, which it cannot do without approval of the State Historical Board under NDCC 55-02-07.

ND DWR should require that BNSF provide a report stamped by a North Dakota Professional Engineer stating that construction of the proposed project in this application will not generate an increase in the frequency and progression of riverbank erosion downstream of the bridge nor will it impact patterns and depth of riverbed aggradation upstream of the bridge. Lacking that submittal and supporting modeling, the one alternative that could be permitted, without the need for further modeling, would be EIS Offset Alternative 2: 92.5-foot Offset, 400-foot Spans which places new in line with the current piers. This alternative could be reasonably expected to not

change scour and deposition patterns from the existing condition, thereby not endangering private property, water quality, and fish and wildlife habitat.

If BNSF wants to secure a permit for the new bridge as a stand-alone project, without removal of the Historic Bridge, ND DWR can only approve it under conditions requiring both flood mitigation (drainage structures through the west floodplain in the I-94 fill) and piers set parallel to the flow with the existing piers. EIS Offset Alternative 2: 92.5-foot Offset, 400-foot Spans, Retain Existing Structure would provide this pier configuration.

We urge ND DWR deny the current BNSF permit and encourage them to submit a revised application that preserves the Historic Bridge for future generations connecting recreational trails across the mighty Missouri River.