

January 24, 2024

VIA U.S. MAIL

Mr. Steve Kahl
Executive Secretary Director
North Dakota Public Service Commission
600 E. Boulevard, Dept. 408
Bismarck, ND 58505-0480

**RE: Case No. PU-22-391
SCS Carbon Transport LLC
Midwest Carbon Express Project
Response to Supplemental Filing 3.1.5**

Dear Mr. Kahl:

On October 17, 2023, the North Dakota Public Service Commission ("Commission") submitted certain supplemental filings ("Supplemental Filings") and data requests ("Data Requests") to SCS Carbon Transport LLC ("Summit") in the above-referenced case. *See* Docket No. 409. Summit timely filed its response to the Data Requests on October 31, 2023. *See* Docket No. 411. The Commission requested Summit to provide the Supplemental Filings "at such time that it believes it has sufficient data and supporting documentation to adequately address the requested filings." *See* Docket No. 409.

Summit believes it has sufficient data and supporting documentation in response to Supplemental Filing 3.1.5 which requests:

"[a] comprehensive analysis of a southern route around Bismarck. The analysis should compare relative adverse effects to the proposed route."

Accordingly, enclosed herewith, please find an original and seven (7) copies of the *Bismarck Route Analysis* in response to Supplemental Filing 3.1.5. The Bismarck Route Analysis was filed electronically by e-mailing the same to ndpsc@nd.gov.

Should you have any questions, please advise.

Sincerely,



LAWRENCE BENDER

LB/tjg
Enclosures

cc: SCS Carbon Transport LLC



Bismarck Route Analysis

Revision: 2

1/19/2024

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1. Introduction

In connection with the October 2022 Consolidated Application for a Certificate of Corridor Compatibility and Route Permit (the “Application”) and subsequent Petition for Reconsideration¹ submitted by SCS Carbon Transport LLC (“Summit”) in Case No. PU-22-391 before the North Dakota Public Service Commission (the “Commission”), Summit has prepared this analysis to address the Commission’s October 17, 2023, Request for Supplemental Filing and Data Request 3 that requested:

“A comprehensive analysis of a southern route around Bismarck. The analysis should compare relative adverse effects to the proposed route.”

This document provides Summit’s routing methodology and selection process and a detailed comparison of the siting attributes and associated risks considered in a comparison of the current proposed route² between mileposts 122.3 and 176.4 along the North Dakota mainline portion of the Project (the “Preferred Route”) and a route alternative for this portion of the route located south of Bismarck (the “Southern Alternative”).

2. Routing Methodology

Summit employed an industry-accepted iterative routing framework for the development of the proposed route for the Midwest Carbon Express pipeline system (“MCE Project” or the “Project”). A preliminary pipeline route was developed using PIVVOT, which is a Geographic Information System (“GIS”) based routing computer program, to interconnect the preferred terminus location (geologically suitable sequestration site in North Dakota), and CO₂ source locations (ethanol plants) in North Dakota, South Dakota, Minnesota, Nebraska, and Iowa.

PIVVOT utilized inputs that included aerial imagery and publicly-available and purchased datasets to produce a preliminary route that collocated with existing utilities, avoided sensitive areas, minimized crossings of large waterbodies, and minimized impact on environmental features while avoiding populated areas to the extent practical. Input examples included existing infrastructure (pipelines, railroads, and powerlines); environmentally sensitive areas (critical habitat, wetlands, national wildlife refuges, state parks, and eligible sites under the National Register of Historic Places); and land use features (airports, cemeteries, schools, mines, and economic development areas). Datasets were weighted based on the desire to collocate the pipeline with certain features (low risk) or avoid others (high risk). For example, the dataset of existing pipelines was considered low risk, so the program followed existing pipelines to the extent possible; whereas an example of a high-risk feature is national wildlife refuges which were excluded to avoid impacts to federal lands.

The preliminary route ultimately undergoes numerous adjustments or modifications to incorporate field collected and verified data. This data is generated from surveys (land, biological, and cultural), site evaluations, consultations with regulatory agencies,

¹ The Commission granted Summit’s Petition for Consideration on September 15, 2023.

² The current proposed route (i.e., the Preferred Route) is the current route that is being evaluated as part of the Reconsideration process and includes the Bismarck Reroute as shown in Summit’s October 31, 2023 (Docket No. 411) response to the October 17, 2023, Request for Supplemental Filing and Data Request 3.

discussions with landowners and other stakeholders, and ultimately culminates into the Preferred Route. The Preferred Route is subject to minor refinements until the point when all right-of-way is acquired, and all survey work is complete.

3. Background

Initially, Summit evaluated multiple route options across the Project footprint in North Dakota, including areas to the north and south of Bismarck, to ultimately develop the preliminary route. Regarding a potential route to the south of Bismarck, Summit reviewed an area that spanned from the University of Mary south to the Dakota Access Pipeline crossing of the Missouri River, referred to as the Southern Route Study Area (“SRSA”). Figure 1 shows the overall area that was considered as part of the SRSA.

Factors that contributed to the decision to route the Project to the north of Bismarck, in lieu of a route within the SRSA, include environmental and cultural constraints, constructability risks, maintenance and integrity risks, and Tribal impacts. Summit’s evaluation of a potential route south of Bismarck through the SRSA is discussed in Section 4. A detailed description of the Southern Alternative, as well as a comparison of siting factors considered in evaluating the Preferred Route and the Southern Alternative, is contained within Section 5.



Figure 1. Overview Map of the Southern Route Study Area (SRSA)

4. Analysis of the Southern Route Study Area (SRSA)

The following is a discussion of the factors that Summit evaluated to identify risks associated with routing the MCE Project within the SRSA for comparison to identified risks associated with the Preferred Route located to the north of Bismarck that is currently part of Summit's Application. Summit evaluated over 70 factors which can be generally

grouped into the following major categories: geohazard and constructability risk, environmental risk, potential impact to Tribal land; encroachment risk; and permitting risk.

4.1. Geohazard and Constructability Risk

Lateral migration and scour are both potential geohazard risks considered in the evaluation of crossing the Missouri River in the SRSA and in the corridor of the Preferred Route. The severity of risk is dependent upon the exact location of the crossing and the presence of avoidance areas (cultural, environmental, etc.). Avoidance areas are prevalent along both banks of the Missouri River which severely limit the potential crossing locations (both north and south of Bismarck). In general, the meander line and floodplain area along the Missouri River south of Bismarck is significantly larger (up to 4.28 miles wide³) when compared to the Preferred Route crossing location which traverses approximately 1.29 miles of floodplain. The larger floodplain area in the SRSA introduces greater short-term risk during construction as well as greater long-term risk associated with potential effects from river migration and scour. Summit's review of recent aerial imagery found evidence of recent flood events within the SRSA (Figure 2) that were not present in the area where the Preferred Route would cross north of Bismarck. Flooding presents a risk during construction and reclamation and also affects the location and potential access to pipeline isolation valves on either side of the Missouri River.

The west side approach to the Missouri River in the SRSA has a more abrupt topography change descending down into the floodplain and has a higher density of unstable slope and landslide areas as identified by aerial imagery and validated by the North Dakota Mineral Resources 24K Landslide maps.⁴ The topography on either side of the river crossing in the area of the Preferred Route is more subtle, and the landslide risk is significantly lower. Risks during pipeline construction and operation in the area of the Preferred Route are manageable and do not require site-specific engineering solutions.

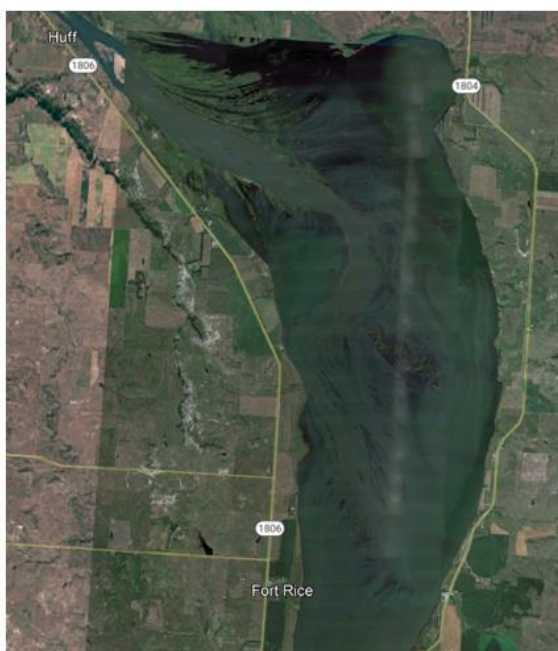
Finally, a pipeline route in the SRSA requires crossing the Little Heart River on the west side of the Missouri River which introduces additional environmental impact risks as well as integrity risks from scour and lateral migration. The Preferred Route avoids crossing the Little Heart River.

³ North Dakota Risk Assessment MapService (NDRAM). <https://ndram.dwr.nd.gov>.

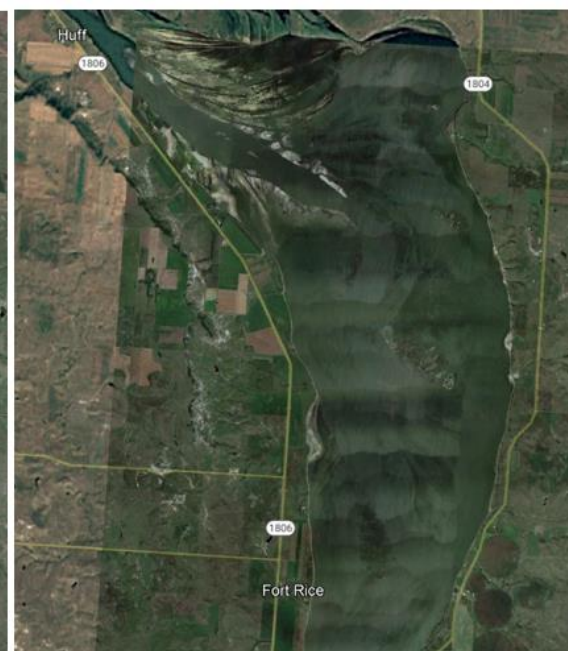
⁴ North Dakota Geological Survey. <https://www.dmr.nd.gov/ndgs/landslides/>.



Google Earth Imagery from 2023 (non-flooded conditions)



Google Earth Imagery from 2021 (flooded conditions)



Google Earth Imagery from 2011 (flooded conditions)

Figure 2: Google Earth Imagery of non-flooded versus flooded conditions

4.2. Environmental Risk

The SRSA has numerous sensitive and historic lands that run the length of the Missouri River from the University of Mary south to the Dakota Access Pipeline crossing. These lands include federal lands (Figure 3), recreation management lands, conservation areas, wildlife management areas, Fort Abraham Lincoln State Park, North Dakota Veterans Cemetery, Huff Indian Village, and Fort Rice. The Preferred Route to the north of Bismarck traverses mostly agricultural lands and significantly reduces the impact to sensitive areas (Reference Table 1).

Table 1: Sensitive Areas Crossing Table: Comparison of Preferred Route versus Southern Route Study Area

	Preferred Route	Southern Route Study Area
Recreation Management Area, Lake Oahe	Not Impacted	Will be Impacted
Lake Oahe - USACE Reservoirs	Not Impacted	Will be Impacted
Oahe Wildlife Management Area (Mandates for Protection)	Not Impacted	Likely Impacted
University of Mary	Not Impacted	Potentially Impacted
Oahe Recreation Area – West of University of Mary	Not Impacted	Potentially Impacted

4.3. Tribal Risk

Relocating the pipeline crossing within the SRSA would raise major concerns for area Tribes and their supporters, both regionally and nationally. This was reinforced by Mr. Tyrel Iron Eyes, a Tribal Archeologist for the Standing Rock Sioux Tribe Tribal Historic Preservation Office who testified at the June 2, 2023, hearing in Bismarck. The crux of this concern is the Dakota Access Pipeline, whose final route⁵ was apparently shifted from north to south of Bismarck in response to non-Tribal related objections. This route change was reportedly viewed by the affected Tribes as disrespectful of their continuing interests in their former treaty lands.

Damming the Missouri River nearly six decades ago to fill the Lake Oahe reservoir, which now serves as the eastern boundary of the Tribes' reservations, flooded more than 200,000 acres of Tribal lands. These were the most economically prosperous areas, as well as the center of the community and traditional life for most of the Tribes' citizens. The inundated area of their reservations had been reserved as Indian Country in 1851 by the original Treaty of Fort Laramie. Congress reneged on the Treaty by enacting the Pick-Sloan Flood

⁵ USACE is still in the process of evaluating the Dakota Access Pipeline Lake Oahe Crossing location with the issuance of the September 2023 *Dakota Access Pipeline Lake Oahe Crossing Project Draft Environmental Impact Statement* (online at [Dakota Access Pipeline Lake Oahe crossing project draft environmental impact statement - Project Management Reports - USACE Digital Library \(oelc.org\)](https://www.usace.army.mil/Portals/0/documents/16647/16647main/Dakota+Access+Pipeline+Lake+Oahe+crossing+project+draft+environmental+impact+statement+-+Project+Management+Reports+-+USACE+Digital+Library+oelc.org)).

Control Act in 1944 and imposing the Missouri Basin Program on the Tribes.⁶ When the U.S. Army Corps of Engineers (“USACE”) initiated eminent domain proceedings in 1958 to take Standing Rock Sioux Tribal lands for the Lake Oahe site, the Tribe convinced a judge to block the USACE’s condemnation, only to have Congress pass legislation overturning the court’s decision.⁷ Today, Lake Oahe is the fourth-largest reservoir in the country by volume. It destroyed communities, farms, and wooded bottomlands for which the Tribes have been seeking compensation from Congress ever since without much success.

From the perspective of Tribal members, the Dakota Access Pipeline was not just a pipeline: it was a reminder of what Native people lost when Congress dammed the Missouri River – of broken promises from the federal government to which other tribes could easily relate. The Chairman of the Standing Rock Sioux Tribe, Dave Archambault II, drew this historical connection:

When the Army Corps of Engineers dammed the Missouri River in 1958, it took our riverfront forests, fruit orchards and most fertile farmland to create Lake Oahe. Now the Corps is taking our clean water and sacred places by approving this river crossing. Whether it’s gold from the Black Hills or hydropower from the Missouri or oil pipelines that threaten our ancestral inheritance, the tribes have always paid the price for America’s prosperity.⁸

Routing the pipeline to the south of Bismarck closer to Tribal interests and Tribal lands would likely cause significant controversy.

4.4. Encroachment Risk

The Southern Alternative is located within 500 feet of 26 residences/places of business, while the Preferred Route is located within 500 feet of 3 residences/places of business. The three encroachments along the Preferred Route are located within Burleigh County, and Summit has obtained a waiver for each of the three locations. Residences and places of business are defined as Avoidance Areas by the Commission’s routing criteria (N.D. Admin. Code Chapter 69-06-08-02). To comply, Summit would be required to secure all 26 waivers for the Southern Alternative or reroute the pipeline which may introduce other risks of encroachment.

The Southern Alternative crosses approximately 0.7 miles of the Bismarck extraterritorial area (“ETA”), also known as the Bismarck Future Development Area (Figure 5), whereas the Preferred Route does not cross the Bismarck ETA and is located approximately three miles outside of the boundary at the closest point. Routing the pipeline outside of the Bismarck ETA in the SRSA is unfavorable as it crosses directly through federally owned lands such as the Apple Creek Bottoms Wildlife Management Area (“WMA”), which directly abuts the ETA to the south.

⁶ Flood Control Act of 1944, ch. 665, 5 Stat. 887.

⁷ *United States v. 2,005 Acres of Land*, 160 F. Supp. 193, 202 (D.S.D. 1958), *vacated as moot sub nom. United States v. Sioux Indians of Standing Rock Reservation*, 259 F.2d 271 (8th Cir. 1958); see Act of Sept. 2, 1958, Pub. L. No. 85-915, 72 Stat. 1762.

⁸ David Archambault II, “Taking a Stand at Standing Rock,” *The New York Times* (Aug. 24, 2016).

4.5. Permitting Risk

If the pipeline was routed across Lake Oahe, the following approvals would be required: (1) a Section 408 permit from the USACE under the Rivers and Harbors Act, 33 U.S.C. § 408 (2012); and (2) an easement across USACE-administered lands along Lake Oahe pursuant to the Mineral Leasing Act, 30 U.S.C. § 185 (2012).

Based on the lessons learned from the Dakota Access Pipeline, Summit anticipates receipt of this easement to be improbable. Despite Energy Transfer Partners' (owner of the Dakota Access Pipeline) repeated victories in federal court, the Tribes quickly gained traction in the political arena. On September 9, 2016, Judge Boasberg issued an order denying the Standing Rock Tribe's motion for a preliminary injunction to stop the Dakota Access Pipeline construction until the USACE engaged in additional consultation with the Tribe under the National Historic Preservation Act. Later the same day, the USACE, along with the U.S. Departments of Justice and the Interior, issued a joint statement temporarily halting the project on federal land bordering and under Lake Oahe and requesting "that the pipeline company voluntarily pause all construction activity within 20 miles east or west of Lake Oahe."⁹

President Obama soon announced that he had asked the USACE to consider rerouting the Dakota Access Pipeline. "We are monitoring this closely," President Obama said. "I think as a general rule, my view is that there is a way for us to accommodate sacred lands of Native Americans. I think that right now the Army Corps is examining whether there are ways to reroute this pipeline."¹⁰ On November 14, 2016, the USACE issued a statement saying it had not yet determined whether to grant an easement on the USACE-administered lands at Lake Oahe "at the proposed location" and invited the Standing Rock Sioux Tribe to engage in additional consultation.¹¹ Three weeks later, the USACE rejected the easement.

As 2016 drew to a close, national politics were changing. Just four days after taking office, President Donald Trump issued a memorandum declaring the Dakota Access Pipeline to be in the national interest and directing federal agencies to review and approve it "in an expedited manner, to the extent permitted by law and as warranted."¹² The USACE formally notified Congress and Judge Boasberg on February 7, 2017, of its intention to grant the easement at Lake Oahe. The Dakota Access Pipeline was finally completed and entered service in June of that year.

Notwithstanding President Trump's decision to expedite the Dakota Access Pipeline, the pipeline continued to generate federal court litigation years after it went into service. The District Court found that the USACE violated the National Environmental Policy Act (NEPA) in its issuance of an easement to the Dakota Access Pipeline across Lake Oahe.

⁹ 5 Press Release, Office of Pub. Affairs, Dep't of Justice, Joint Statement from the Dep't of Justice, the Dep't of the Army and the Dep't of the Interior Regarding Standing Rock Sioux Tribe v. U.S. Army Corps of Eng'rs (Sept. 9, 2016).

¹⁰ Quoted in Christine Hauser, "Obama Says Alternative Routes Are Being Reviewed for Dakota Pipeline," N.Y. Times (Nov. 2, 2016).

¹¹ Press Release, U.S. Army Corps of Eng'rs, Statement Regarding the Dakota Access Pipeline (Nov. 14, 2016).

¹² Memorandum of January 24, 2017, 82 Fed. Reg. 11,129 (Feb. 17, 2017).

In 2020, the District Court ordered the USACE to prepare an Environmental Impact Statement (“EIS”) and vacated the easement. In September 2023, the USACE issued the Dakota Access Pipeline Lake Oahe Crossing Project Draft Environmental Impact Statement (“DEIS”) and is currently seeking public comments on the DEIS.

In the DEIS, the USACE included four potential outcomes with one of the four involving a new crossing for the South-Central North Dakota portion of the Dakota Access Pipeline. The alternative route would be north of the City of Bismarck (Figure 3). Generally, the proposed Alternative 5 Route (red line) for the Dakota Access Pipeline is closer to eastern and northern boundaries of Bismarck compared to the location of Summit’s Preferred Route.

To this day, the NEPA review process is still ongoing without any defined schedule or known outcome to whether an easement will ever be granted. Beyond litigation risk, reopening the Tribes’ concerns about their former treaty lands, including those inundated by Lake Oahe, raises significant political dangers given the solicitude with which Summit has always shown Native American nations since the Project’s inception.

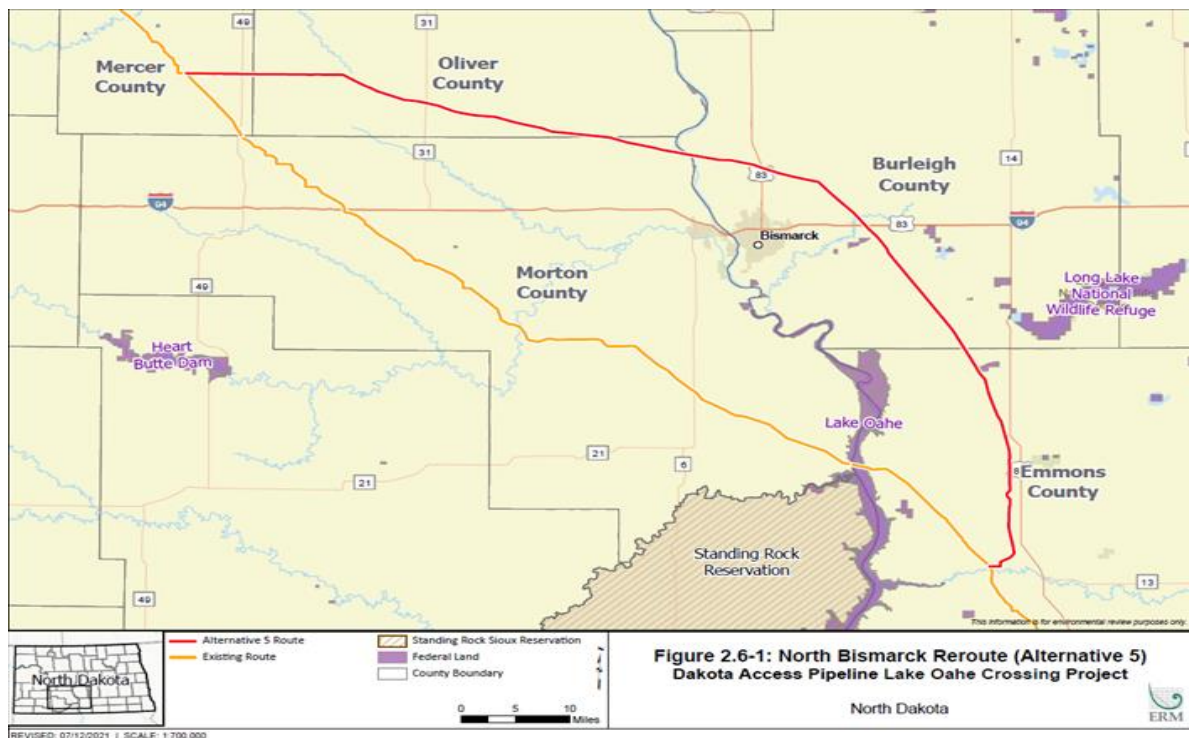


Figure 3. Screenshot of Figure 2.6-1 (page 2-24) from the September 2023 Dakota Access Pipeline Lake Oahe Crossing Project Draft Environmental Impact Statement

5. Route Comparison

In consideration of the routing factors discussed in Section 4, primarily the permitting risk associated with crossing Lake Oahe federal fee-owned lands, Summit developed a proposed southern route alternative (the Southern Alternative) to be compared to the Preferred Route in response to the Commission's October 17, 2023, Request for Supplemental Filing and Data Request 3. The Southern Alternative and the Preferred Route are shown in Figure 4. The Preferred Route for this analysis is the portion of the currently proposed route between mileposts 122.3 and 176.4 along the North Dakota mainline portion of the Project.

The Southern Alternative was sited in a location that avoided crossing federal lands, maximized the distance from the Dakota Access Pipeline crossing, and maximized the distance from the City of Bismarck. Unavoidably, any route within the SRSA will impact Tribal interests associated with Lake Oahe.

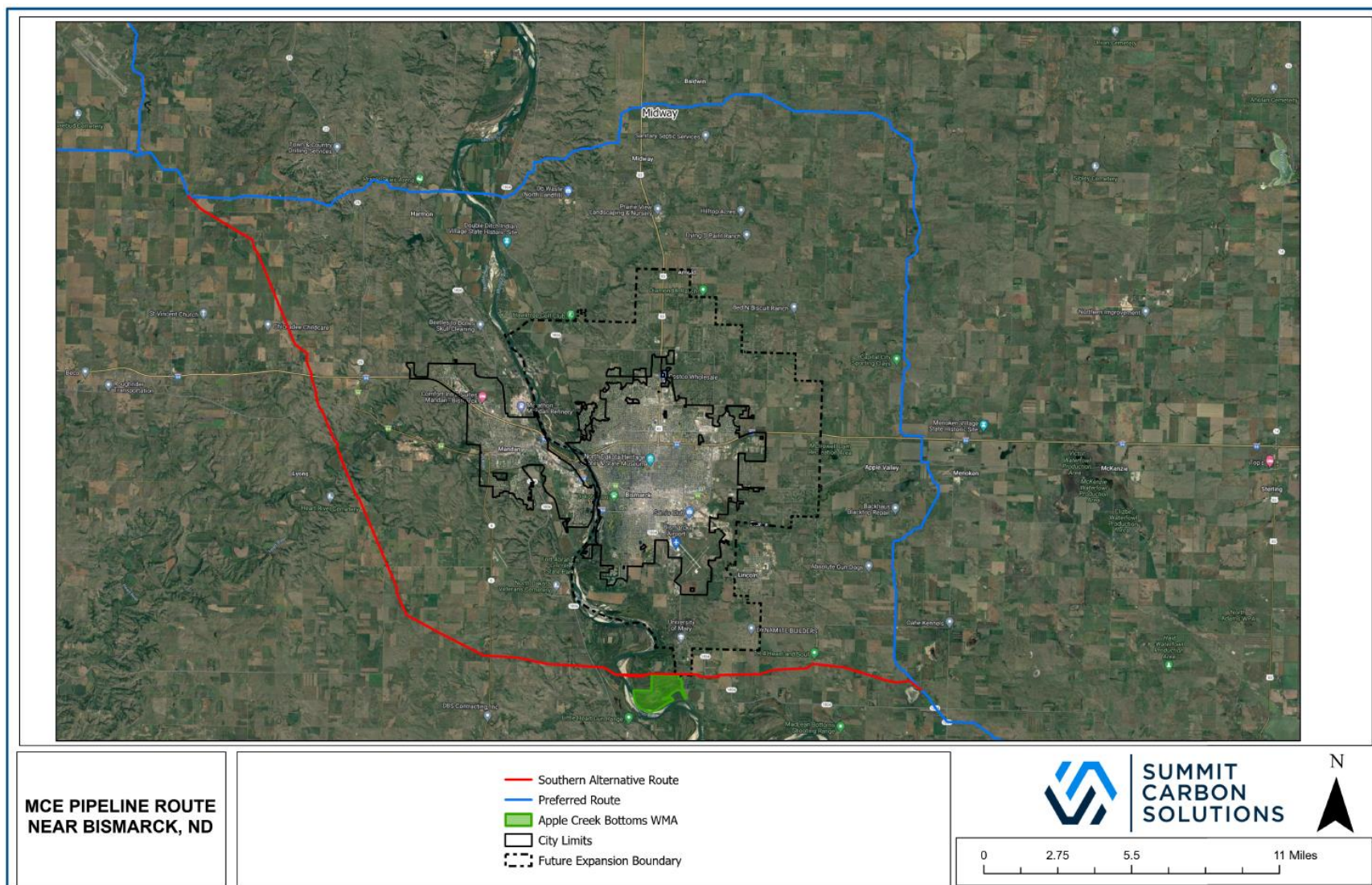


Figure 4: Overview Map of Preferred Route and Southern Alternative Route

Table 2 is a summary of the environmental, siting, and land use factors used to compare the potential impact of the Southern Alternative versus the Preferred Route. The data included in Table 2 is derived from desktop datasets, as no field-collected data was utilized.

The Southern Alternative is 38.2 miles in length and would deviate from the Preferred Route at milepost 122.3 at the location of proposed pump station MPS-09. From MPS-09, the route travels north for 0.5 miles then to the west for approximately 11.2 miles where it crosses the Missouri River and the Little Heart River, approximately 2.3 miles to the southwest of the University of Mary. After crossing the Missouri River and Little Heart River, the route continues approximately 4.3 miles to the west where it crosses State Highway 6, then travels in a northwesterly direction for approximately 21 miles where it terminates into the Preferred Route at milepost 176.4. The Preferred Route, and associated mileposts, is Summit's proposed route that is the basis of the Petition for Reconsideration.

Table 2. Comparison Table for Preferred Route versus the Southern Alternative Route

Environmental Features	Unit	Preferred Route	Southern Alternative
Overall Length	miles	54.04	38.16
Counties	list	Burleigh, Morton	Burleigh, Morton
South Central Regional Water District Crossing	miles	43.21	11.36
Bismarck ETA Jurisdiction Crossing (Bismarck Future Development Area)	miles	0.00	0.71
Avoidance Areas as Defined by ND PSC Routing Criteria (North Dakota Administrative Code Chapter 69-06-08)			
Residence, school, or place of business within 500 feet	count	3 ^a	26
Designated or registered national: historic districts; wildlife areas; wild, scenic, or recreational rivers; wildlife refuges; and grasslands crossed by the route	count	2 ^b	0
Siting Considerations			
Structures within 500 feet (houses, businesses, animal feeding operations, garages, barns, sheds)	count	5	63
Structures within 1000 feet (houses, businesses, animal feeding operations, garages, barns, sheds)	count	100	190
Airports within 25 miles	count	15	13
Communication Towers within 500 feet	count	4	3
Water Wells within 1 mile	count	6	3
Collocation			
Existing Right-of-Ways (pipelines, roads, transmission lines, other linear features)	miles	3.83	15.97
Census Data			
Civil Townships Crossed	count	13	9
Civil Townships within 2 miles	count	17	11
Legislative Districts Crossed	count	3	4
Management Areas			
U.S. Fish and Wildlife Service Critical Habitat	miles	0.51 (Piping Plover)	0.37 (Piping Plover)

Table 2. Comparison Table for Preferred Route versus the Southern Alternative Route

Environmental Features	Unit	Preferred Route	Southern Alternative
Agricultural Easement within 1000 feet	count	2	0
Conservation Easement within 1000 feet	count	7	0
National Public Lands within 1000 feet	count	1	0
Recreation Management Area within 1000 feet	count	1	2
State Resource Management Area within 1000 feet	count	2	1
U.S. Army Corps of Engineers Reservoirs within 1000 feet	count	1	1
State Conservation Area within 1000 feet	count	0	1
Wildlife Management Area within 1000 feet	count	0	1
Scenic Byway within 1000 feet	count	0	1
Agricultural Easement Crossed	miles	0.10	0.0
Conservation Easement Crossed	miles	1.50	0.0
Scenic Byway Crossed	feet	0.0	2.06
Land Use/ Land Cover			
Barren Land	miles	0.0	0.04
Cultivated Crops	miles	15.83	13.55
Deciduous Forest	miles	0.33	0.38
Developed, Open Space	miles	1.21	0.75
Developed, Low Intensity	miles	0.13	0.09
Developed, Medium Intensity	miles	0.02	0.04
Evergreen Forest	miles	0.0	0.02
Hay/Pasture	miles	1.90	1.84
Herbaceous	miles	33.28	18.53
Emergent Herbaceous Wetlands	miles	0.76	1.32
Open Water	miles	0.34	0.28
Shrub/Scrub	miles	0.02	0.0
Woody Wetlands	miles	0.23	1.30
National Wetland Inventory Wetlands	miles	1.50	0.61
Wetland and Waterbody Crossings			
Total Waterbody	crossings	59	31
Total Wetland	crossings	84	43
Perennial Waterbody	crossings	3	0
Intermittent Waterbody	crossings	52	28

Table 2. Comparison Table for Preferred Route versus the Southern Alternative Route

Environmental Features	Unit	Preferred Route	Southern Alternative
Other Waterbody (artificial path)	crossings	4	3
Forested and Scrub/Shrub Wetlands	crossings	0	1
Freshwater Emergent Wetlands	crossings	28	11
Pond/Lakes	crossings	2	3
Other Freshwater Wetlands	crossings	3	0
Riverine	crossings	51	28
Geology and Water Resources			
Floodplain A	miles	0.0	0.55
Floodplain AE	miles	0.82	1.96
Floodplain AE; Floodway	miles	0.53	0.63
Aquifers	List	Glencoe Channel, Burnt Creek, Wagonsport, Square Butte Creek, Missouri River, Apple Creek	Glencoe Channel, Heart River, Soo Channel, Little Heart, Missouri River, Bismarck
Aquifers Total Crossing Length	miles	6.99	5.49
Landslide Hazards	Yes/No	No	No
Soil Analysis			
Depth to Bedrock less than 6 feet	miles	15.72	11.91
All areas are prime farmland	miles	4.67	2.71
Farmland of statewide importance	miles	24.29	16.00
Not prime farmland	miles	25.08	19.45
Hydric Soils	miles	1.39	0.81
Cultural Resources			
North Dakota Cultural Resource Survey (NDCRS) Sites	crossings	7	4
NDCRS Sites within 100 feet	count	8	6
NDCRS Sites within 300 feet	count	15	10
NDCRS Sites within 1 mile	count	80	70
NDCRS Isolates within 100 feet	count	2	2
NDCRS Isolates within 300 feet	count	5	5
NDCRS Isolates within 1 mile	count	26	43
NDCRS Listed Sites within 1 mile	count	0	1
Cultural Heritage Forms within 300 feet	count	1	0
Cultural Heritage Forms within 1 mile	count	6	0
NDCRS Architecture within 1 mile ^b	count	2	0

Table 2. Comparison Table for Preferred Route versus the Southern Alternative Route

Environmental Features	Unit	Preferred Route	Southern Alternative
Notes ^a Summit has secured waivers for all 3 of the residences/place of business along the Preferred Route ^b This represents the crossing of 2 Waterfowl Production Areas (WPA); both WPAs crossed by HDD resulting in no surface disturbance to the WPA. Sources ND GIS Hub; 2021 National Landcover Database; NRCS SSURGO; ND SHPO; Pivvot			

The Preferred Route is 15.9 miles longer than the Southern Alternative. Location of the Preferred Route has been matured through data collected during field survey as well as stakeholder input, which has resulted in a high number of route modifications from the route that was originally proposed in the October 2022 Application. Additionally, relocating the Preferred Route farther north of Bismarck in response to concerns raised by the Commission, Intervenors, and the public during the public hearings added approximately 9.5 miles to the length of the route when compared to the October 2022 filed route.

Although the Southern Alternative is shorter, based on the experience of the routing process of the Preferred Route, there is a high likelihood the Southern Alternative would lengthen to accommodate modifications driven by unforeseen factors related to sensitive resources along the route and stakeholder input. For example, it is anticipated that the west side of the Missouri River would be rich in cultural sites requiring a large number of reroutes, which would reduce the linear nature of the route. Exhibit B outlines some of the challenges that were experienced with the current Missouri River crossing and would likely be duplicated at the crossing location along the Southern Alternative.

Neither the Preferred Route nor the Southern Alternative cross any Exclusion Areas as defined by the Commission’s routing criteria (N.D. Admin. Code Chapter 69-06-08-02).

The Southern Alternative does not cross any designated or registered national historic districts; wildlife areas; wild, scenic, or recreational rivers; wildlife refuges; or grasslands. The Preferred Route crosses two Burleigh County Waterfowl Production Areas (“WPAs”), though both easements will be crossed via horizontal directional drilling (HDD) and therefore surface disturbance will be avoided. The crossing method of these WPAs is consistent with commitments made in the Petition for Reconsideration.

The Southern Alternative is collocated for approximately 42% of its route, while the Preferred Route is collocated for approximately 7% of its route. The higher percentage of the collocation for the Southern Alternative is primarily due to the parallel of a high-voltage transmission line for approximately 12.7 miles, or approximately 80% of the collocation total. Although Summit would attempt to collocate with existing rights-of-way along the Southern Alternative, should Summit encounter a landowner who would not want to sign a voluntary easement or avoidance areas identified by field survey, Summit would have to deviate from the existing rights-of-way, losing the benefit of collocation.

The Southern Alternative crosses approximately 0.7 miles of the Bismarck ETA, as shown in Figure 5, whereas the Preferred Route does not cross the Bismarck ETA and is located between approximately 3 to 6 miles outside of the boundary. The placement of the route away from the Bismarck ETA is a primary factor in the additional length between the two

options. For the Southern Alternative, Summit is unable to avoid crossing directly through the Bismarck ETA as it abuts the Apple Creek Bottoms WMA. The Apple Creek Bottoms WMA is USACE-owned land that is leased to and managed by the North Dakota Game and Fish Department.

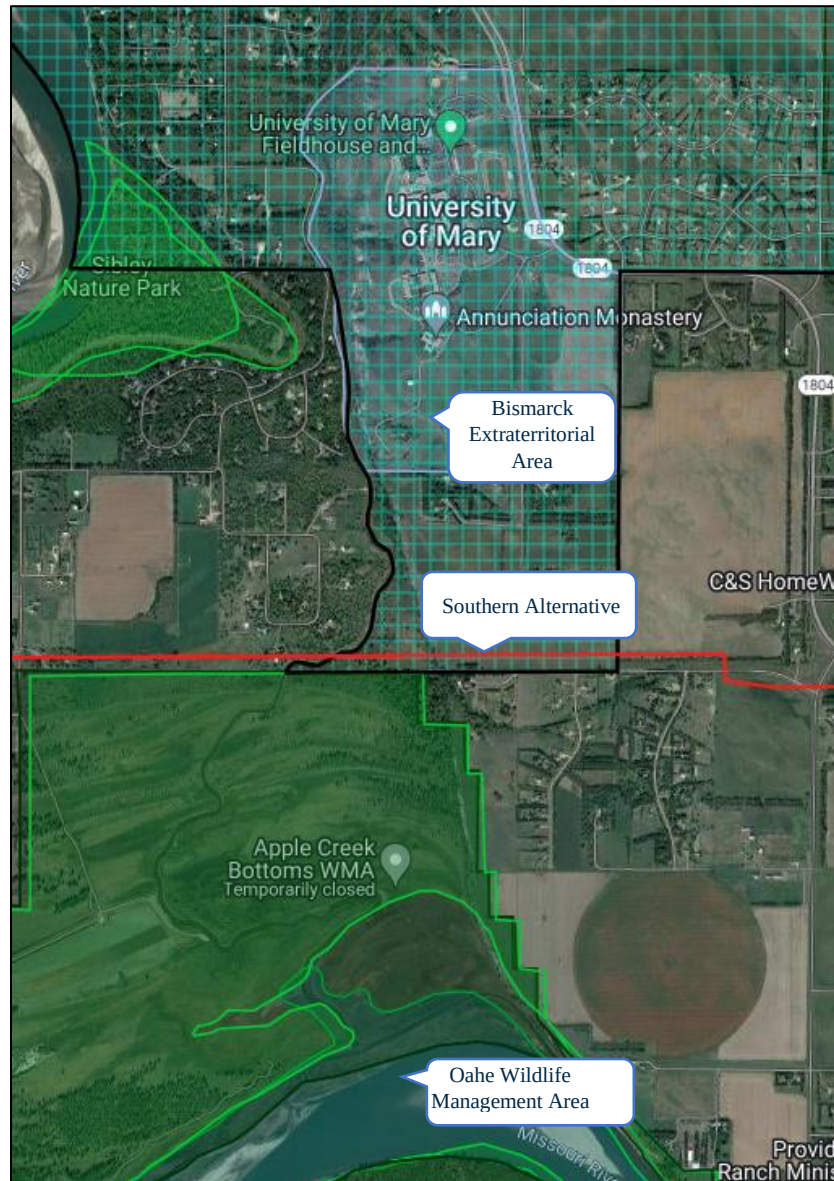


Figure 5 Bismarck ETA Boundary

Both the Southern Alternative and the Preferred Route cross similar numbers of wetlands (using the USFWS National Wetland Inventory) and waterbodies (using the USGS National Hydrography Dataset) when accounting for the difference between the length of the two routes (i.e., comparing wetland and waterbody crossings per mile).

For the remaining factors evaluated in Table 2, there is similar magnitude of environmental and cultural resources crossed by or in proximity to the two routes when normalized for the difference in route length.

6. Conclusion

In summary, the results of Summit's analysis of siting a pipeline through the Southern Route Study Area includes significant risks which, in total, would be more impactful than Summit's preferred route on the north side of the City of Bismarck. These risks include potential impacts to resources that cannot be mitigated, including the impact to Tribal lands in the area south of Bismarck.

The detailed comparison of the Preferred Route and the Southern Alternative shows that the Southern Alternative will directly cross the Bismarck ETA boundary which is in direct conflict with the concerns expressed by the Commission, Intervenors, and landowners during the public hearings for the Project. The Southern Alternative is in close proximity to a higher number of Commission-defined Avoidance Areas, such as residences, places of business, and schools, when compared to the Preferred Route. As referenced previously, Summit would be required to secure approximately 26 waivers for the Southern Alternative. The siting of the route within 500 feet of these Avoidance Areas would affect new landowners whose impact would be directly attributable to a mandated change in location of the pipeline.

Additional information concerning safety can be found in Exhibit A attached hereto; however, as detailed above, a southern route presents additional and unnecessary integrity and safety risks that do not exist in the Preferred Route north of Bismarck. Requiring Summit to relocate the proposed pipeline south of Bismarck at this stage of project development would add unnecessary cost and delay associated with identifying risks via field survey, field reconnaissance, etc., and developing plans to either eliminate or mitigate identified risks. This work has largely been completed along the Preferred Route, and identified risks and mitigation plans either have been vetted (e.g., geohazards) or are in an ongoing vetting process (e.g., State Historical Society of North Dakota). These efforts are nearly complete, and many impact mitigation measures have been implemented, as shown in Exhibit B. Summit strongly believes this analysis of a multitude of factors supports the position that Summit has chosen the safest, most prudent route for the Project.

EXHIBIT A

Safety

As discussed at length during the public hearings for the Project, transportation of a commodity like carbon dioxide (CO₂) via pipeline is the safest mode of transportation when compared to truck and rail¹³. The safety record of pipelines in the United States, as well as North Dakota, is exceptional, and existing pipelines transporting CO₂ are statistically the safest. There are two CO₂ pipelines in operation in North Dakota and to date there have been no recordable injuries or significant releases. As a matter of perspective, there have been four fatalities in the home building industry in the Bismarck area in the last five years compared to zero injuries and zero fatalities associated with pipeline operations.

Summit has provided the Commission with a dispersion and risk analysis which indicates that in the unlikely event of a guillotine rupture, the city of Bismarck would not be a “could affect” area.¹⁴ In other words, a worst-case release scenario associated with the pipeline along the Preferred Route presents minimal risk to the city of Bismarck and its residents. Conversely, the proximity of the Southern Alternative to the University of Mary and Bismarck would likely increase risk associated with a pipeline release. As stated previously, the area along the Southern Alternative is more densely populated with approximately nine times (9X) more encroachments. Generally, Summit has expended considerable time and effort to perform numerous iterations of dispersant analysis to identify risk and incorporate mitigating actions into pipeline design, as well as construction and operating plans. Summit has also reviewed the dispersant results with Emergency Management and First Responder personnel in Burleigh and Emmons Counties. A pivot to the Southern Alternative at this late stage of development would delay the project and potentially introduce risks not present along the Preferred Route.

Regarding the adequacy of Pipeline and Hazardous Materials Safety Administration (PHMSA) regulations, Summit strongly believes the requirements set forth in Title 49 of the Code of Federal Regulations, Part 195 (49 CFR 195) regarding design, construction, and operation of a CO₂ pipeline in dense phase service, are more than adequate. In addition, Summit has provided testimony to the Commission regarding the numerous PHMSA requirements that will be exceeded with respect to the Project as part of Summit’s ongoing efforts to further mitigate the risk associated with an already safe mode of transportation.

The presence of pipelines and the risk of operation have not deterred development, especially on the north side of Bismarck, where homes have been constructed in close proximity (many within 500 feet) to existing PHMSA-regulated transmission pipelines that have been in operation for decades.

¹³ <https://www.bts.gov/sites/bts.dot.gov/files/2021-12/NTS-50th-complete-11-30-2021.pdf>;
<https://www7.phmsa.dot.gov/sites/phmsa.dot.gov/files/docs/news/70826/report-congress-shipping-crude-oil-truck-rail-and-pipeline-32019.pdf>

¹⁴ Summit has submitted the dispersion modeling and risk analysis to the Commission which is protected information pursuant to the Commission’s August 4, 2023 order (Docket No. 364).

EXHIBIT B

Current Project Status

Prior to easement acquisition, Summit completes exhaustive field investigations and surveys to confirm a route and/or provide information to adjust a route. These surveys include biological, threatened and endangered species, cultural, and civil. Summit has committed to mitigating any impacts to culturally sensitive areas, in which the Missouri River is rich in cultural sites. Summit has completed Class III cultural surveys for 100% of tracts within 5 miles of the currently proposed Missouri River crossing and has made micro-adjustments to the route to avoid impacts to culturally sensitive areas. Figure 1 illustrates the extent of cultural surveys completed on the west side of the Missouri River. Over the span of multiple months, 2,031 acres were surveyed to identify an acceptable route. The level of effort required to avoid impacts to culturally sensitive areas can be reflected by the magnitude of surveys required which can be measured by the cost for the completion of the surveys. The survey effort on the west side of the Missouri River cost five times more than the project average, equating to a survey cost of \$50,600 per mile on the west side of the Missouri River versus \$9,000 per mile for the remainder of the Project.



Figure 1: Cultural Survey Boundary

A proposed reroute around the south side of Bismarck within the Southern Route Study Area would be sited on new tracts in Burleigh County, Morton County, and also potentially Emmons County. None of the potentially impacted landowners south of Bismarck have been approached or contacted to determine whether they would be amenable to having a pipeline cross their property.

Summit's currently proposed route through these 3 counties and around the north side of Bismarck crosses 293 tracts accounting for approximately 113 miles of right-of-way. Of these, 208 tracts, or 71%, have executed easements¹⁵. These acquired easements encompass approximately 84 miles of right-of-way, or 74% of the current proposed route in Burleigh, Emmons, and Morton Counties.

¹⁵ Acquisition statistics as of January 22, 2024.

In addition to progress on the overall route, Summit has acquired easements for 77% of tracts within 3 miles of the existing Missouri River crossing as well as the federally mandated mainline valve sites on both sides of the Missouri River.