



**BASIN ELECTRIC  
POWER COOPERATIVE**

A Touchstone Energy® Cooperative 

# Antelope Valley Station Natural Gas Pipeline Project

Application to the North Dakota Public Service Commission for  
a Waiver of Procedures and Timelines, and Consolidated  
Certificate of Corridor Compatibility and Route Permit

Mercer County, North Dakota

PU-13-22

Prepared by Basin Electric Power Cooperative

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## INTRODUCTION

Basin Electric Power Cooperative (Basin Electric) is a regional wholesale electric and transmission cooperative owned and controlled by its member cooperatives. Basin Electric includes 136 rural electric systems operated by member cooperatives and is one of the largest electric generation and transmission cooperatives in the U.S. Basin Electric serves approximately 2.8 million customers in 540,000 square miles covering portions of nine states: Colorado, Iowa, Minnesota, Montana, Nebraska, New Mexico, North Dakota, South Dakota, and Wyoming.

Basin Electric is proposing to construct an approximately 3.5 mile long 10” diameter (steel) natural gas pipeline from Dakota Gasification Company to the Antelope Valley Station in central Mercer County, North Dakota (see Figures 1 and 2).

The purpose of the Antelope Valley Station Natural Gas Pipeline (Project or AVS-NGP) is to provide natural gas to Antelope Valley Station (AVS) in order to facilitate a particulate emission control project. The emission control project entails replacing the #2 fuel oil currently used as an ignition and preheating boiler start-up fuel with natural gas.

Basin Electric submits this Application for a Waiver of Procedures and Time Schedules and consolidated applications for a Corridor Certificate and Route Permit (collectively, Application). By this Application, Basin Electric requests that the PSC, pursuant to North Dakota Century Code (NDCC) Section 49-22-07.2, waive the following requirements:

That the PSC hold a single consolidated hearing on this waiver request for a Certificate of Corridor Compatibility and Route Permit, rather than separate hearings as may be required by NDCC Sections 49-22-08 & -08.1, 49-22-13, and North Dakota Administrative Code (NDAC) Section 69-06-01-02. Basin Electric also requests that the PSC shorten the three-month period specified in NDCC Section 49-22-08(5) and the six-month period specified in NDCC Section 49-22-08.1(5).

That the PSC waive the requirements of NDCC Section 49-22-08 and NDCC Section 49-22-08.1 insofar as these sections may require the separate filing of applications for a Corridor Certificate and a Route Permit, and insofar as they require the publication of notices of filing applications.

That the PSC waive the requirements from NDCC 69-06-04-02, which states that the width of the Corridor must be 10 percent of the length of the line, not less than 1 mile, and not more than 6 miles in width.

The PSC’s Application Guidelines for Waiver of Procedures and Time Schedules require a facility description, need for, cost of, and justification for the request for waiver, together with evidence that the project will produce minimal adverse effects. As demonstrated in the Application, Basin Electric’s Waiver Request and the issuance of a Corridor Certificate and Route Permit is justified, as the proposed facility is of such design, location, and purpose that it will produce minimal adverse effects. The full text of Basin Electric’s Waiver Application is submitted along with this document.

## **SECTION 1: DESCRIPTION**

### **1.1 Purpose and Need for Project**

The purpose of the Antelope Valley Station Natural Gas Pipeline (Project) is to provide natural gas to Antelope Valley Station (AVS) in order to facilitate a particulate emission control project. The emission control project entails replacing the #2 fuel oil currently used as an ignition and preheating boiler start-up fuel with natural gas.

During startup of coal-fired plants such as AVS, the baghouse (part of the air pollution control equipment) is normally bypassed until a critical temperature is reached and coal is used for combustion in the boiler. The ash resulting from burning the coal is used to protect the bags from the high soot content of fuel oil. Further, if the baghouse was engaged sooner than current, normal practice, there is the concern of unburned carbon from the fuel oil collecting in the baghouse and increasing the risk of fire.

The EGU MATS (Electric Generating Units Mercury and Air Toxics Standards) Rule, promulgated in February, 2012, defines startup as when steam is used to generate electricity. At that time, all pollution control technology except dry scrubbers and SCRs (but including baghouses) must be engaged. Continuing to bypass the baghouse could make it difficult (or impossible) to achieve compliance during startup, especially for particulate matter (PM) and sulfur dioxide (SO<sub>2</sub>). Given AVS's proximity to the DGC pipeline, natural gas is readily available and will be used as a clean start up fuel. This will allow for compliance with the EGU MATS Rule and the continued operation of AVS.

#### **1.1.1 Project Alternatives**

Basin Electric considered several alternatives to achieve compliance with the EGU-MATS rule such as:

- Using an alternative start-up fuel such as propane.
- Installing a baghouse addition for each unit with compartments specifically for low loads when burning fuel oil.
- Installing a separate baghouse that could serve either unit during low loads.
- Installing an electrostatic precipitator (ESP) that could serve either unit during low load
- Operational changes to start-up and shut-down procedures.

These project alternatives were removed from further consideration because of fuel storage issues, high cost, poor environmental performance, and/or poor energy efficiency.

## 1.2 Type

The AVS-NGP is a transmission pipeline designed to carry natural gas.

## 1.3 Approximate Length of Facility

The proposed AVS-NGP is approximately 3.5 miles in length.

## 1.4 Size and Design of Pipeline Facility

The AVS-NGP is a transmission pipeline. The steel pipeline will meet U.S. Department of Transportation (DOT) regulations, including the design, installation, pressure testing, operations and maintenance requirements as outlined in 49 CFR Part 192.

### 1.4.1 Pipe Size

The AVS-NGP will be constructed of steel pipe which shall, at a minimum, meet the following standards:

- 10.75-inch outside diameter;
- API 5L X52.

### 1.4.2 Maximum Operating Pressure

The Project pipeline has been designed with the maximum allowable operating pressure:

- Maximum Allowable Operating Pressure (MAOP): 1440 pounds per square inch gauge (psig);

## 1.5 Aboveground Facilities

A pig launcher station incorporating pressure reduction capabilities would be installed near the interconnection site on the DGC 24 inch pipeline. A double block valve set up would be installed upstream of the pig launcher, with the actual valve body installed underground and the remaining components installed and accessible aboveground. In addition to these block valves, three isolation valves will be installed on the pig launcher assembly. A chain link fence and a building to house the control and isolation valves would also be installed by Basin Electric at the pig launcher site.

A pig receiver station would be constructed at the AVS plant site. The receiver site would incorporate pressure reduction capabilities as well as pressure regulation, filtration, and metering. A glycol receiver would be installed for glycol carryover from the process operation for normal natural gas production from DGC. A chain link fence and a building to house the control and metering valves would also be installed by Basin Electric at the pig receiver site.

### 1.5.1 Valve Specifications

Basin Electric will utilize valves which shall, at a minimum, meet the following standards:

- API Standard 6D;
- ANSI 600.

### 1.6 Corridor/Route Description and Land Requirements

The proposed Route is generally centered within the 100 foot wide Corridor. The Corridor is located in Sections 13, 14, 23, 24, 25 and 26 of T145N, R88W and Section 30 of T145N, R87W (see Figure 3). The proposed Corridor/Route will require a waiver from NDAC 69-06-04-02, which states that the width of the Corridor must be 10 percent of the length of the pipeline, not less than 1 mile, and not more than 6 miles in width. The smaller Corridor is proposed due to the short overall length of the project.

Several factors were taken into consideration to select the Corridor/Route. Section 2.0, Transmission Facility Corridor/Route Criteria, describes the selection criteria in further detail. The Corridor/Route was selected on the following basis:

- The Route is relatively direct minimizing costs of the transmission facility and minimizing potential impacts to landowners and the environment.
- The Route utilizes the properties owned and controlled by Basin Electric, its partners and subsidiaries.
- The potential for wetlands and other environmental impacts are minimized to the extent practicable.
- The Route will provide for potential future development of additional energy resources and not prohibit surrounding land utilization.

Construction of the proposed pipeline project would affect approximately 35 acres of land, including the pipeline construction ROW, additional temporary workspace (ATWS), staging areas, and aboveground facilities. Following construction, approximately 7.92 acres would revert to pre-construction conditions and uses. The remaining approximately 27.08 acres, including the permanent pipeline easement, permanent aboveground facility, and permanent access roads, would be retained for operation of the pipeline system.

Special construction methods would be implemented (e.g., the horizontal directional drill (HDD) method and bores) along the proposed pipeline route in the event of wetland, road and railroad crossings. A summarized list of land requirements is summarized in Table 1.

**Table 1 – Summary of Land Requirements<sup>1</sup>**

Facility	Land Affected During Construction (acres)	Land Affected During Operation (acres)
Pipeline Right-of-Way <sup>2</sup>	20.4	20.4
Additional Temporary Workspace Areas <sup>3</sup>	7.5	0.0
Block Valves and Pig Launcher	1.5	1.0
Pressure Regulating Station and Pig Receiver <sup>4</sup>	2.5	2.0
Staging Areas <sup>5</sup>	0.0	0.0
Temporary Access Roads <sup>6</sup>	0.0	0.0
Permanent Access Roads <sup>6</sup>	1.5	0.75
Project Total	30.9	24.15

1. The numbers in this table have been rounded for presentation purposes. As a result, the totals may not reflect the sum of the addends.
2. Based on a 75-foot-wide construction right-of-way and a 50-foot-wide permanent easement.
3. This includes additional area for pig launcher and receiver site construction and boring site area.
4. Pressure regulating and pig receiver site is located on the AVS plant site. Area usage included for reference.
5. Staging area for proposed pipeline and appurtenant facilities will be on the AVS plant site. No additional land area will be affected beyond the existing staging area utilized on the plant site.
6. Temporary access roads will not be required. Existing accesses will provide sufficient access to all areas of the propose pipeline route and facility locations.

## 1.7 Location

The total length of the proposed AVS-NGP is approximately 3.5 miles and is located entirely within Mercer County, North Dakota. Please refer to Figures 1 and 2 for location details.

## 1.8 Compliance with 10-Year Plan

The AVS-NGP is not currently included in Basin Electric's 10-year plan since the Project need is a result of the new EGU-MATS Rule, recently promulgated (February 2012) by the US Environmental Protection Agency. Please refer to Appendix E for a copy of Basin Electric's 10-year plan.

## 1.9 Project Schedule

It is anticipated that construction of the proposed pipeline project would commence in August 2013, with pre-mobilization of equipment and materials in June, subject to receipt of necessary permits and regulatory approvals. Construction of the pipeline would be completed by October 2013, and construction of aboveground facilities would be completed by November 2013. Basin Electric anticipates commissioning of the pipeline and associated facilities occurring in April 2014.

## 1.10 Easement Acquisition

Basin Electric will secure easements as required along the 3.5-mile long pipeline route. Parties involved include Basin Electric, DGC (a wholly-owned subsidiary of Basin Electric) and Coteau Properties. Basin

Electric has notified the parties of the proposed Project and anticipates easements/access will be granted without issue.

## SECTION 2: TRANSMISSION FACILITY CORRIDOR/ROUTE CRITERIA

The Project Corridor/Route selection included an inventory and suitability analysis of criteria listed in NDAC Section 69-06-08-02, including exclusion and avoidance area criteria; selection criteria that relate to minimizing potential land use and environmental impacts; policy criteria that relate to maximizing public benefits; and design and construction limitations. Basin Electric has also included economic considerations as part of the analysis.

None of the exclusion and avoidance criteria encompass greater than 50 percent of the Corridor/Route width. There are no exclusion areas within the Corridor/Route. The Corridor/Route is not expected to cause adverse effects to avoidance or selection criteria. The project will incorporate many of the benefits outlined in the policy criteria.

### 2.1 Exclusion Areas

Per NDAC Section 69-06-08-02, the following geographical areas (Table 2 Exclusion Areas) shall not encompass more than fifty percent of the Corridor width unless there is no reasonable alternative. NDAC Section 69-06-08-02-1 states that exclusion areas shall be excluded in the consideration of a route for a transmission facility. A buffer zone of a reasonable width to protect the integrity of the area shall be included. Natural screening may be considered in determine the width of the buffer zone.

**Table 2 – Exclusion Areas**

Exclusion Area	Present within Corridor or Route?	Potential Impacts
a. Designated or registered national: parks; memorial parks; historic sites and landmarks; natural landmarks; monuments; wilderness areas.	Not present within Corridor or Route.	No impacts are anticipated and no buffer is proposed.
b. Designated or registered state: parks; historic sites; monuments; historical markers; archaeological sites; and nature preserves.	Not present within Corridor or Route.	No impacts are anticipated and no buffer is proposed.
c. County parks and recreational areas; municipal parks; and parks owned or administered by other governmental subdivisions.	Not present within Corridor or Route.	No impacts are anticipated and no buffer is proposed.
d. Areas critical to the life stages of threatened or endangered animal or plant species	Not present within Corridor or Route.	No impacts are anticipated and no buffer is proposed.
e. Areas where animal or plant species that are unique or rare to this state would be irreversibly damaged	Not present within Corridor or Route.	No impacts are anticipated and no buffer is proposed.

## 2.2 Avoidance Areas

Per NDAC Section 69-06-08-02-2, the following geographical areas (Table 3 Avoidance Areas) shall not be considered in the routing of a transmission facility unless the applicant shows that under the circumstances there is no reasonable alternative. In determining whether an avoidance area should be designated for a facility, the PSC may consider, among other things, proposed management of adverse impacts; orderly siting of facilities; system reliability and integrity; efficient use of resources; and alternative routes. Economic considerations alone shall not justify approval of these areas. A buffer zone of a reasonable width to protect the integrity of the area shall be included unless a distance is specified in the criteria. Natural screening may be considered in determining the width of the buffer zone.

**Table 3 – Avoidance Areas**

Avoidance Area	Present within Corridor or Route?	Potential Impacts
a. Designated or registered national; historic districts; wildlife areas; wild, scenic, or recreational rivers; wildlife refuges; and grasslands.	Not present	No impacts are anticipated and no buffer is proposed.
b. Designated or registered state: wild, scenic, or recreational rivers; game refuges; game management areas; management areas; forests; forest management lands; and grasslands.	Not present	No impacts are anticipated and no buffer is proposed.
c. Historical resources which are not designated as exclusion or avoidance areas	Recorded site 32ME767 is located in and adjacent to the corridor/route.	32ME767 is a farmstead site, including a foundation, machinery and dump. No avoidance was recommended by MAC and ND SHPO concurred with MAC's <i>No Historic Properties Affected</i> Determination.
d. Area which are geologically unstable	Not present.	No impacts are anticipated and no buffer is proposed.
e. Within five hundred feet [152.4 meters] of a residence, school, or place of business. This criterion shall not apply to a water pipeline facility.	AVS and DGS plant sites are within 500 feet of the route and corridor.	No impacts are anticipated to these industrial facilities and no buffer is proposed.
f. Reservoirs and municipal water supplies.	Not present	No impacts are anticipated and no buffer is proposed.
g. Water sources for organized rural water districts.	Not Present	No impacts are anticipated and no buffer is proposed.
h. Irrigated land. This criterion shall not apply to an underground transmission facility.	Not present	No impacts are anticipated and no buffer is proposed.
i. Areas of recreational significance which are not designated as exclusion areas	Not present	No impacts are anticipated and no buffer is proposed.

## 2.3 Selection Criteria

Per NDAC Section 69-06-08-02-3, a corridor or route shall be designated (Table 4 Selection Criteria) only when it is demonstrated to the PSC by the applicant that any significant adverse effects resulting from the location, construction and maintenance of the facility, as they relate to the following, will be at an acceptable minimum or that those effects will be managed and maintained at an acceptable minimum.

**Table 4 – Selection Criteria**

Selection Criteria	Potential Adverse Effects
1) Agricultural production.	None. Land within the corridor is not used for cultivated crops.
2) Family farms and ranches.	No family farms will be displaced due to construction in the corridor/route.
3) Land which the owner demonstrates has soil, topography, drainage, and an available water supply that cause the land to be economically suitable for irrigation.	No irrigated land occurs within or adjacent to the corridor/route.
4) Surface drainage patterns and ground water flow patterns.	No impacts to surface drainage patterns or groundwater flow patterns are anticipated.
1) Noise-sensitive land uses.	The pipeline is to be located in a heavily developed, industrial location. No noise-sensitive land uses are present.
2) The visual effect on the adjacent area.	The pipeline will be buried adjacent to developed, industrial land uses. Visual impacts will be minimal.
3) Extractive and storage resources.	No impacts are anticipated to extractive and storage resources
4) Wetlands, woodlands, and wooded areas.	No adverse impacts are anticipated to wetlands or woodlands within the corridor/route.
5) Radio and television reception, and other communication or electronic control facilities.	No impacts to radio and television reception, and other communication or electronic control facilities are expected.
6) Human health and safety.	No impacts to human health and safety are anticipated. The pipeline would be maintained and operated in accordance with all applicable safety rules and laws.
7) Animal health and safety.	No impacts to livestock are anticipated. Impacts to wildlife populations are expected to be minimal. Ground dwelling species may be injured or displaced during construction.
8) Plant life.	Land is generally seeded to non-native road ROW. Areas of temporary construction impacts will be restored using appropriate seed mixes.

## 2.4 Policy Criteria

Per NDAC Section 69-06-08-02-4, the PSC may give preference to an applicant that will maximize benefits that result from the adoption of the following policies and practices, and in a proper case may require the adoption of such policies and practices (Table 5 Policy Criteria). The PSC may also give preference to an applicant that will maximize interstate benefits.

**Table 5 – Policy Criteria**

Policy Criteria	Suitable Policy or Practice of Applicant
a. Location and design.	Basin Electric’s policy is to locate and design projects to minimize environmental impacts.
b. Training and utilization of available labor in this state for the general and specialized skills required.	Basin Electric would use local labor to the extent practicable.
c. Economies of construction and operation.	This project creates economies of operation by connecting AVS to the DGC gas supply.
d. Use of citizen coordinating committees.	The use of citizen coordinating committees is not expected for this project.
e. A commitment of a portion of the transmitted product for use in this state.	Basin Electric will use the natural gas solely at its AVS plant.
f. Labor relations.	No labor relations will be negatively affected by the project.
g. The coordination of facilities.	Basin Electric coordinated with DGC regarding pipeline route and above ground facilities.
h. Monitoring of impacts.	Basin Electric and its construction contractor will employ Best Management Practices (BMPs) during construction to monitor ground disturbing activities. Surface water impacts will be monitored according to the SWPPP.
i. Utilization of existing and proposed rights of way and corridors.	Basin Electric route/corridor parallels existing County Road 26 ROW.
j. Other existing or proposed transmission facilities.	Not applicable to this Project.

## **SECTION 3: CONSTRUCTION, OPERATION AND MAINTENANCE**

The proposed AVS natural gas pipeline would be designed, constructed, operated, and maintained in accordance with applicable requirements defined by U.S. Department of Transportation (USDOT) regulations in Title 49 CFR Part 192, Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards; by 18 CFR 380.15, Siting and Maintenance Requirements; and by other applicable federal and state safety regulations. Additionally, Basin Electric would construct, operate, and maintain the proposed pipeline and other facilities in accordance with the requirements of permits issued to the Project.

### **3.1 General Pipeline Construction Procedures**

Construction of the proposed pipeline would follow industry-standard practices and procedures, which involve a series of discrete activities conducted in a linear sequence. Prior to construction, a surveyor crew would stake the pipeline centerline and the limits of the construction right-of-way and ATWS areas. Wetland boundaries and other environmentally sensitive areas also would be marked at this time. Basin Electric's construction contractor may need to cut and brace fences along the right-of-way if necessary for pre-construction survey.

Prior to ground-disturbing activities, Basin Electric's construction contractor would coordinate with the North Dakota One-Call system to have existing underground utilities identified and flagged. A clearing crew then would clear the work area of vegetation and other obstacles, including trees (as necessary), stumps, logs, brush, and rocks. To the extent feasible, Basin Electric would minimize tree removal during construction. Cleared vegetation and stumps would be transported offsite to a permitted disposal facility.

Following clearing, the construction ROW and ATWS areas would be graded where necessary to provide a level work surface. Topsoil would be segregated for use in reclamation as appropriate. If the ground is relatively flat and does not require grading, rootstock may be left in the ground to facilitate revegetation of the ROW. In areas disturbed by grading, temporary erosion and sediment controls would be installed within the ROW to minimize erosion. These erosion and sediment controls would be inspected and maintained throughout the construction and restoration phases of the Project.

Individual sections of pipe would be trucked to the construction ROW and strung along the trenchline in a single, continuous line. The pipe would be bent, where necessary, to allow for a uniform fit with the contours at the bottom of the trench. Typically, a track-mounted, hydraulic pipe-bending machine would tailor the shape of the pipe to conform to the contours of the terrain. After the pipe sections are bent, they would be welded together into long sections and placed on temporary supports. Welding would be conducted in compliance with Title 49 CFR Part 192 and American Petroleum Institute Standard 1104 Welding of Pipelines and Related Facilities. Completed welds would be visually and non-destructively inspected, and all pipe welds would be coated in accordance with required specifications. The coating would be inspected for defects, and repaired, if necessary, prior to lowering the pipe into the trench.

Trenching would be conducted with rotary trenching machines, track-mounted backhoes, or other similar equipment as illustrated in the 10" Natural Gas Pipeline Construction Right of Way drawings as depicted in Appendix A. Crossings of any roads, railroads, wetlands or waterbodies would be accomplished using the Horizontal Directional Drilling (HDD) method, which allows for trenchless construction across an otherwise sensitive area. The HDD method is described in greater detail in Section 5, Mitigation Measures.

Trench spoil would be deposited adjacent to the trench within the construction ROW, and adjacent to the topsoil pile. In areas where the trenchline only topsoil segregation method is proposed, Basin Electric's contractor would stockpile excavated topsoil and subsoil in separate piles directly on a sod mat to prevent stockpiled subsoil from mixing with underlying topsoil. In open lands, the sod mat would provide an adequate buffer between the stockpiled spoil and underlying topsoil.

The trench would be excavated to a depth that provides sufficient cover over the pipeline after backfilling and would also meet the requirements of the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration as specified at 49 CFR 192.327 of 49 CFR Part 192. Typically, the trench would be excavated to a depth of about 5 feet to allow for a minimum of 4 feet of cover over the pipeline, or any associated appurtenances, after construction. Additional cover would be provided at road crossings, railroad crossings, and waterbody crossings.

Prior to lowering-in, the trench would be inspected to ensure it is free of rocks and other debris that could damage the pipe or its protective coating. The pipe would then be lifted from the temporary supports and lowered into the trench using side-boom tractors. After lowering-in, the trench would be backfilled with previously excavated materials using bladed equipment or backhoes. If the excavated material is rocky, the pipeline would be protected with a rock shield or covered with more suitable fill. Clean fill would be obtained by removing rock from the excavated spoil. Topsoil would not be used to pad the pipe. Previously graded areas would be returned to original contours as near as practicable, with the exception of areas requiring access for remaining construction activities (e.g., for restoration in the spring or summer of 2014).

After backfilling, the entire pipeline would be hydrostatically tested in sections to ensure that the system is free from leaks and would provide the required margin of safety at operating pressures. The testing medium, which would be a filtered water supply and would be obtained from local suppliers and trucked to the ROW in accordance with state regulations and any required transportation permits. Internal test pressures and durations would be in accordance with Title 49 CFR Part 192 and applicable permit conditions. If leaks are found the pipe will be repaired and the section of pipe will be retested until all required specifications are met. After testing, the hydrostatic test water would be discharged into a storage pond at AVS.

After hydrostatic testing, the pipeline would be filled with low pressure nitrogen to protect it from corrosion until commissioning, which is scheduled to occur in spring 2014. Commissioning would involve activities to verify that equipment is properly installed and working, controls and communications systems are functional, and the pipeline is ready for service. The pipeline would be cleaned, dried, and inspected to detect anomalies in the pipe that may have been introduced during construction, and prepared for service by purging the line of air and loading the line with natural gas.

Final cleanup would begin after backfilling and as weather and site conditions permit. During clean-up, construction debris would be collected and taken to a permitted disposal facility. Pre-construction contours along the ROW would be restored to pre-existing condition as closely as possible. Segregated topsoil would be returned to the stripped areas, and as necessary, permanent erosion controls would be installed. Seeding would be seasonally timed to ensure adequate growth.

Markers showing the location of the pipeline would be installed at fence and road crossings to identify Basin Electric as the owner of the pipeline and convey emergency information in accordance with applicable government regulations, including USDOT safety requirements.

### **3.1.1 Aboveground Facility Construction Procedures**

Construction of the proposed pig launcher and receiver, and pressure regulating and metering stations would include a standard sequence of events. Construction would begin with clearing and grading of the sites to establish suitable grades for the facilities. Subsequent activities would include preparing foundations, installing underground piping, erecting and installing buildings, installing aboveground piping and equipment, testing the piping, testing the control equipment, cleaning up the work area, and graveling access roads and parking areas. Each station site would be fenced for security. Safety and control devices would be installed and tested prior to operation.

Construction of block valves would include grading, installing the underground assembly, testing the control equipment, cleaning up the work area, and graveling the site area. Block valve construction would be concurrent with the construction of the pipeline. At each site, the disturbed area would be stabilized with gravel within a fenced enclosure and by seeding with appropriate species outside the fence.

## **3.2 Operations and Maintenance**

Basin Electric would operate and maintain the new pipeline and aboveground facilities in accordance with all applicable federal and state requirements, including the minimum federal safety standards identified in Transportation of Natural and Other Gas by Pipeline, Title 49 CFR Part 192.

Basin Electric periodically would inspect the pipeline on foot as required by applicable regulatory requirements to identify potential concerns that may affect the safety and operation of the pipeline. Pipeline markers and signs would be inspected and maintained or replaced, as necessary, to ensure that pipeline locations are clearly identified. Field personnel would advise the appropriate operations personnel of new construction along or near the pipeline system. Line patrol of highway and railroad crossings would be completed as required by the USDOT. Block valves also would be inspected on an annual basis. If pipeline patrols or vegetation maintenance identify areas on the ROW where erosion is occurring, Basin Electric would repair existing erosion control devices or install additional devices as necessary to stabilize the area and prevent future erosion, throughout the life of the Project.

To maintain accessibility to the ROW and accommodate pipeline integrity surveys, vegetation along the pipeline right-of-way would be periodically maintained, using mechanical mowing or cutting where necessary. Vegetation maintenance could not be conducted more frequently than every three years; with the exception of a 10-foot-wide corridor centered on the pipeline that may be maintained annually. In no case would routine vegetation maintenance clearing occur between April 15 and August 1 of any year. This restriction is designed to minimize potential impacts on migratory birds during operation of the pipeline.

In non-cultivated uplands, the entire 50-foot-wide permanent easement would be maintained in an herbaceous state. In wetlands, a 10-foot-wide corridor centered over the pipeline would be maintained in an herbaceous state, and trees greater than 15 feet in height within 15 feet of the pipeline may be selectively cut and removed from the ROW. Because the majority of the route has low growing vegetation, Basin Electric

expects that the need for routine vegetation maintenance would be infrequent and limited to specific locations such as areas around pipeline markers and road crossings.

Basin Electric personnel also would perform regular operation and maintenance activities on equipment at the proposed meter and pressure regulating station. These activities would include calibration, inspection, and scheduled routine maintenance. Operational testing would be performed on safety equipment to ensure proper functioning, and problems would be corrected. Operation and maintenance of block valves would be performed in accordance with information provided by the valve manufacturers.

### **3.3 Electrical Facilities**

Electric power to Basin Electric's proposed pig launcher station would be provided by Roughrider Electric via an existing distribution line on the south side of County Road 26 (68th Street NW) in Mercer County. Roughrider Electric would construct and operate approximately 0.5 mile (2,640 feet) of electric distribution line between the existing distribution line to a transformer to be built within the permanent footprint of the pig launcher site.

### **3.4 Expansion or Abandonment**

Basin Electric has no plans for future expansion or abandonment of the pipeline or aboveground facilities. Should the facility need to be decommissioned at a future date, Basin Electric would comply with the decommissioning and reclamation rules in effect at that time.

## **SECTION 4: ENVIRONMENTAL ANALYSIS**

### **4.1 General**

Land use throughout the Corridor and along the route was historically agricultural, consisting of both cropland and rangeland. Since the construction of AVS and DGC, along with the associated open pit lignite mining, the corridor/route and immediate vicinity are dominated by intensely developed, heavy industrial uses.

Basin Electric contacted various federal, state and county agencies in Project-specific consultations to identify potential issues and concerns as well as to determine occurrences of sensitive species or their critical habitat(s). Please see Appendix C for complete record of agency consultations.

The consultations were augmented with a comprehensive desktop analysis of the Corridor/Route as well as a Class III Cultural Resource Inventory. Since the surrounding areas are previously disturbed, there are no environmentally sensitive areas present except for the potential of seasonal wetlands along and within the corridor. The inventory of Exclusion and Avoidance Areas, presented in Section 2, indicate that there are few constraints in the Project Area.

### **4.2 Agency Consultations**

On December 13, 2012, Basin Electric sent letters requesting review and comment on the Project to the designated state agencies and officers listed in NDAC 69-06-01-05, as well as to various federal and county agencies and officials. Records of consultations with the agencies listed below are provided in Appendix C. The following agencies responded to Basin Electric's request for comments:

- U.S. Fish and Wildlife Service (USFWS)
- North Dakota Game and Fish Department (NDGFD)
- North Dakota Parks and Recreation-Natural Heritage Program (NDPRD)
- North Dakota State Water Commission (NDSWC)
- North Dakota State Historical Preservation Office (SHPO)
- North Dakota Department of Health (NDDoH)
- U.S. Army Corps of Engineers (COE)
- Federal Aviation Administration (FAA)
- Natural Resources Conservation Service (NRCS)
- Mercer County

#### **4.2.1 U.S. Fish and Wildlife Service**

The USFWS administers several programs designed to identify and protect special status plant and animal species and critical habitats. USFWS responded on December 28, 2012 indicating the Project will have no significant impact on fish and wildlife resources. The USFWS further indicated that no endangered or

threatened species are known to occupy the project area. See Appendix C for a copy of the correspondence.

#### **4.2.2 North Dakota Game and Fish Department**

The NDGFD exercises oversight and management of the state's game species and certain state-managed lands (e.g., PLOTS Program). NDGFD responded on January 17, 2013 indicating they have reviewed the Project, and foresee no identifiable conflict with wildlife or wildlife habitat. See Appendix C for a copy of the correspondence.

#### **4.2.3 North Dakota Parks and Recreation Department**

The NDPRD Natural Resource Division's scope of authority and expertise covers recreation and biological resources (in particular rare species and ecological communities). The NDPRD also maintains a database comprised of the location and recorded occurrences of plant and animal species of special concern. The NDPRD authority includes management of state park lands and Land and Water Conservation Funded recreation projects.

On January 8, 2013 the NDPRD confirmed the absence of managed lands, ecological resources, rare species and their critical habitats. NDPRD also recommended that any areas impacted by construction be revegetated with species native to the project area. See Appendix C for a copy of the correspondence.

#### **4.2.4 North Dakota State Water Commission**

The NDSWC is in charge of managing surface and groundwater resources with North Dakota. NDSWC responded on January 14, 2013 indicating they had reviewed the proposed project, and provided comments that there were no floodplains identified and/or mapped where the proposed project is to take place, that the project sponsor is responsible to obtain any local, state, federal approvals, permits, or easements, and that there are no other concerns that affect State Water Commission of State Engineer regulatory responsibilities. See Appendix C for a copy of the correspondence.

#### **4.2.5 North Dakota State Historic Preservation Office**

The SHPO is responsible for managing the historic and archaeological resources of the state; as such, the SHPO maintains records of all previously recorded cultural resources within the state. SHPO responded on December 14, 2102 recommending a Class III cultural resource survey of the Corridor be conducted. See Appendix C for a copy of the correspondence.

Basin Electric commissioned Metcalf Archaeological Consultants, Inc. (MAC) to conduct a Class III Cultural Resource Inventory of the Corridor. Please refer to Appendix D for the complete MAC report. The research and fieldwork conducted by MAC identified no new cultural resources, however one (1) previously recorded cultural resource site (32ME767) is located within the Project area. No avoidance of the site and no further work were deemed necessary; MAC recommended a determination of *No Historic Properties Affected* for the undertaking as inventoried, mapped, and documented.

SHPO responded on December 21, 2102 finding the MAC report acceptable and concurring with the *No Historic Properties Affected* determination recommended by MAC. Please refer to Appendix C for a copy of the correspondence.

#### **4.2.6 North Dakota Department of Health**

The NDDoH, Environmental Health Section, administers air quality, water quality and waste management regulatory programs in the State of North Dakota. NDDoH responded on December 18, 2012 indicating the proposed construction was minor and environmental impacts could be controlled by using proper construction methods. The NDDoH offered specific comments relating to minimizing fugitive dust, protecting waters of the state, requirements for stormwater permits and noise abatement. Additional permits or authorizations that may be required for the project are discussed below.

##### **4.2.6.1 NDDOH Pollution Discharge Elimination System**

The NDDoH administers the North Dakota Pollution Discharge Elimination System (NDPDES), a program that regulates and issues permits for water discharges, including construction stormwater, site dewatering and hydrostatic test water. Basin Electric or its contractor will obtain the following NDPDES permits from the NDDoH:

Construction Stormwater: Basin Electric or its contractor will seek coverage under the North Dakota Pollutant Discharge Elimination System general permit for construction sites as required when disturbing an area greater than one (1) acre. A project-specific erosion control plan referred to as Storm Water Pollution Prevention Plan (SWPPP) will be prepared and maintained on-site for the duration of the Project.

Hydrostatic test water discharges: Basin Electric or its contractor will seek coverage under the North Dakota Pollutant Discharge Elimination System general permit for various temporary discharges, including both construction site dewatering and hydrostatic test water discharges. This permit may not be necessary if onsite ponds at AVS are used to manage this water.

#### **4.2.7 U.S. Army Corps of Engineers**

The COE administers regulatory programs governing certain activities involving Waters of the United States. The COE has been delegated authority under the Clean Water Act by the U.S. Environmental Protection Agency to regulate activities that may result in discharges to these waters. The COE has developed the Nationwide Permit (NWP) program which it uses to regulate various activities including utility line activities.

COE responded on December 20, 2012 indicating a Department of the Army permit may be required for all or part of the Project and advised Basin Electric to complete and submit a Department of the Army Permit Application so the COE could fully evaluate the Project. Basin Electric will comply with the COE's request and will seek coverage under a Nationwide Permit as necessary.

#### **4.2.8 Federal Aviation Administration**

The FAA's area of responsibility regards whether or not the Project would have effects on aviation and the national airspace system. The FAA responded on January 25, 2013 encouraging Basin Electric to

coordinate with the FAA's Obstruction Evaluation/Airport Airspace Analysis (OE/AAA) office. FAA further indicated it is the applicant's responsibility to determine if formal notice to the FAA is required. The requirements for the notice are found in Title 14 of the Code of Federal Regulations, Part 77, Objects Affecting Navigable Airspace.

Since the project is not located adjacent to any airport and no structures will exceed 199 feet in height, Basin Electric has determined that no formal notice is required.

#### **4.2.9 Natural Resources Conservation Service**

The NRCS responded on December 18, 2012 indicating they had reviewed the proposed project, and since the Project did not appear to involve the conversion of agricultural land to non-agricultural land or the conversion of wetlands, the NRCS had no particular comment regarding the Project.

#### **4.2.10 Mercer County**

Mercer County responded on December 17, 2012 indicating they had no concerns regarding the proposed Project but advised Basin Electric that Mercer County Zoning Laws would need to be followed.

### **4.3 Wetland and Waterbodies Analysis**

Desktop analysis of aerial photography and National Wetland Inventory (NWI) maps was used to evaluate the location and extent of mapped wetlands and waterbody features within the Corridor (see Figure 3). No NWI wetlands were identified along the proposed Route centerline or within the Corridor. However, the United States Geological Survey (USGS) Gap Analysis Program (GAP) data indicates three areas of depressional wetlands within or partially inside the Corridor (see Figure 4). Prior to construction, Basin Electric will identify wetland and waterbody boundaries along the proposed Corridor to ensure avoidance of these features.

### **4.4 Tree/Sapling/Shrub Analysis**

Desktop analysis of aerial photography was used to evaluate the location and extent of woody vegetation within the Corridor; woody cover appears to be extremely sparse to non-existent. Prior to construction, Basin Electric will conduct field surveys of the Corridor and Route to inventory woody vegetation in order to comply with the Commission's tree and shrub mitigation policy.

### **4.5 Other Permits and Approvals**

Basin Electric has committed to obtaining applicable permits and regulatory approvals relating to construction and operation of the proposed facilities. The following permits are required or may be required for the Project:

- Mercer County Zoning
- NDPDES General Permit for Construction Stormwater Discharge
- NDPDES General Permit for Temporary (hydrostatic test water) Discharge

- COE Department of the Army Permit (if there are planned impacts to wetlands)
- Mercer County Road Crossing Permits

## **SECTION 5: MITIGATIVE MEASURES**

### **5.1 Special Pipeline Construction Procedures**

Basin Electric would use special construction techniques when constructing across water bodies, wetlands, roads and railroads.

### **5.2 Horizontal Directional Drill (HDD) Method**

Crossings of any wetlands or waterbodies would be accomplished using the HDD method, which allows for trenchless construction across an area by drilling a hole below the depth of a conventional lay, and then pulling a prefabricated section of pipe through the hole. The method is sometimes used to avoid direct impacts on sensitive environmental features or areas that otherwise present difficulties for standard construction methods.

To begin each crossing, a drill rig would be placed on the entry side of the HDD and a small pilot hole would be drilled along a predetermined path beneath the waterbody or roadway. The pilot hole would be progressively enlarged through a process called reaming. A reaming tool would be installed at the end of the drill string on the exit side of the pilot hole, and then drawn back to the drill rig to enlarge the hole. Several passes with progressively larger reaming tools could be needed to enlarge the hole to a sufficient diameter to accommodate the pipeline. During this process, drilling fluid, or mud, consisting of in-situ material and water would be circulated through the hole to remove drill cuttings and maintain the integrity of the hole. Once the reaming process is complete, a prefabricated segment of pipe would be attached to the drill string on the exit side of the crossing, and pulled back through the hole toward the drill rig.

### **5.3 Wetlands**

Wetland crossings using the open trench construction method would be prohibited for this project. In the event of an unanticipated, future discovery of a wetland, wetland boundaries would be delineated and marked in the field prior to construction activities. As mentioned previously, wetlands would be crossed using the HDD method. Woody vegetation within the construction ROW would be cut off at ground level and removed from the wetlands, leaving the root systems intact. The pulling of tree stumps and grading activities would be limited to the area directly over the trench line unless it is determined that safety-related construction constraints require grading or the removal of stumps from the working side of the ROW. Temporary erosion control devices would be installed as necessary after initial disturbance of wetlands or adjacent upland areas to prevent sediment flow into wetlands.

### **5.4 Road and Railroad Crossings**

Construction across paved roads, highways, and railroads would be conducted in accordance with the requirements identified in road and railroad crossing permits or approvals. Most paved roads, highways, and railroads would be crossed by conventional subsurface boring beneath the roadbed or railroad. Boring would consist of excavating a pit on each side of the road or railroad; placing boring equipment within the pits; boring a hole under the roadbed or railroad; and pulling a section of pipe through the hole. For long crossings, sections would be welded into a pipe string before being pulled through the borehole. Typically,

there would be little or no disruption to traffic at road, highway, or railroad crossings during boring operations.

Unpaved roads, two-tracks, trails, and driveways, as well as roads in areas with a high water table, would be crossed using the conventional method and then restored to preconstruction condition. Most road crossings would be completed and the road restored in a few days.

## **5.5 Environmental Compliance Inspection and Monitoring**

Basin Electric would minimize environmental impacts by complying with applicable permits and approvals and adhering to construction, restoration, or mitigation measures described in this Application. Basin Electric would familiarize its contractors with the applicable environmental requirements, and would monitor compliance during construction.

Basin Electric would conduct post-construction monitoring to document restoration and revegetation of the right-of-way and other disturbed areas. Basin Electric would monitor disturbed areas for a period of three years or until vegetation is reestablished in accordance with the SWPPP.

## **5.6 Unanticipated Discovery Plan**

Basin Electric would develop an Unanticipated Discovery Plan before construction begins. The plan would detail steps to take if previously unknown archaeological or paleontological resources or human remains are encountered during construction. Appropriate authorities would be notified in accordance with local and state rules, laws and guidelines in the event that human remains are discovered.

## **SECTION 6: FACTORS CONSIDERED**

NDCC 49-22-09 of the North Dakota Energy Conversion and Transmission Facility Siting Act lists 11 factors to guide the PSC in the evaluation of Sites, Corridors, and Routes. The following sections address these factors where applicable to the Corridor and Route.

### **6.1 Public Health and Welfare, Natural Resources, and the Environment**

Section 2 discusses the effects of the proposed facility on public health and welfare, natural resources, and the environment. Section 5 sets forth proposed mitigation methods to be used for construction in sensitive areas. Chapter 3 discusses construction, operation, and maintenance techniques relating to pipeline safety. The project would provide environmental benefits by supplying a clean fuel source for AVS boiler start-up, which would in turn lower air emissions. All impacts evaluated in the Corridor/Route are expected to be minor.

### **6.2 Technologies to Minimize Adverse Environmental Effects**

Basin Electric would utilize recent pipeline construction technologies, such as HDD, in order to minimize impacts to the environment. Sections 1 and 3 discuss the engineering and operational design of the Project, including proposed pipeline construction techniques.

### **6.3 Potential for Beneficial Uses of Waste Energy**

This factor is not applicable to this project.

### **6.4 Unavoidable Adverse Environmental Effects of the Corridor/Route**

Sections 2, 4 and 5 detail the expected environmental impacts and mitigation in relation to the proposed Corridor/Route. The environmental effects of the Project are minor, given the short length of the pipeline and the heavily developed, industrial setting in the vicinity of Project.

Unavoidable adverse environmental effects include minor visual and physical impacts to the land associated with construction. Basin Electric would implement the mitigation discussed in this Application and as identified by regulatory agencies in order to minimize these unavoidable adverse environmental effects.

### **6.5 Alternatives to the Proposed Corridor/Route Identified During the Hearing Process**

Alternatives may be identified at the hearing; however, Basin Electric believes its analysis of alternatives was rigorous and appropriate for the Project.

### **6.6 Irreversible and Irretrievable Commitment of Natural Resources for the Corridor/Route**

There are few commitments of resources associated with this project that are irreversible and irretrievable, but include those resources related to construction, such as steel, concrete, aggregate and hydrocarbon fuel. None of these resources, however, are in short supply, and their use for the Project would not have an adverse effect on the availability of these resources.

### **6.7 Direct and Indirect Economic Impacts of the Proposed Facility**

Direct and indirect economic impacts are primarily positive. To the extent that local contractors are used for portions of the construction, total wages and salaries paid to contractors and workers would contribute to the total personal income of the region. Expenditures made for equipment, energy, fuel, operating supplies, and other products and services also benefit businesses in the county and the state. Most importantly, the Project is necessary to facilitate compliance with the EGU-MATS Rule, thereby allowing the continued operation of AVS.

### **6.8 Existing Development Plans of the State, Local Government and Private Entities at or in the Vicinity of the Corridor and Route**

There are no known development plans that conflict with the Project. Basin Electric would comply with applicable county zoning ordinances; as such, no conflicts are anticipated.

### **6.9 Effect of Route on Cultural and Paleontological Resources**

Basin Electric commissioned Metcalf Archaeological Consultants, Inc. (MAC) to conduct a Class III Cultural Resource Inventory of the Corridor. The research and fieldwork conducted by MAC identified no new cultural resources; however, one (1) previously recorded cultural resource site (32ME767) is located within the Project area. No avoidance of the site and no further work were recommended; MAC made a recommendation to the SHPO for a No Historic Properties Affected determination for the undertaking as inventoried, mapped, and documented. SHPO responded on December 21, 2012 finding the MAC report acceptable and concurring with the No Historic Properties Affected determination.

The Project Corridor is located in an area affected by Pleistocene glaciation; as such, paleontological resources would be extremely rare since the bedrock is covered by glacial sediments.

Basin Electric would develop an Unanticipated Discovery Plan before construction in the project area begins. The plan would detail steps to take if previously unknown archaeological resources or human remains are encountered during construction. Appropriate authorities would be notified in accordance with local and state rules, laws and guidelines in the event that human remains are discovered.

### **6.10 Effect of Route on Sensitive Species and Habitats**

Sections 2 and 4 discuss potential impacts to biological resources such as wetlands, vegetation, wildlife, and rare and unique species. Based on consultations with various state and federal agencies, the short length of the pipeline and Basin Electric's commitment to utilize HDD techniques to cross sensitive areas (wetlands), impacts of the Project on biological resources are expected to be minimal.

Federally-listed species such as the whooping crane and piping plover may occur within Mercer County. Given the heavily developed, industrial landscape in the vicinity of the Project, it is more likely these species would utilize suitable habitat elsewhere. No critical or sensitive habitat was identified in the vicinity of the Project. No effects on rare or sensitive species and habitats are expected.

### **6.11 Concerns Raised by Agencies**

Basin Electric sought review and comment on the Project from state and federal agencies as part of the scoping process used in the preparation of this Application. Agency comments varied according to agency function and jurisdiction, but agency comments generally emphasized a desire to minimize impacts to environmental resources such as wetlands, wildlife, and cultural resources. Agency comment letters regarding the Project are included in Appendix C.

## SECTION 7: LIST OF PREPARERS

**Table 6 – List of Preparers**

Name Project Role	Education And Professional Experience
<b>Kevin Solie</b> Senior Environmental Coordinator	M.S. Geology B.S. Geology B.S. Geological Engineering, EIT 22 Years Experience
<b>Erin Fox Dukart</b> Environmental Analyst	B.S. Biology 4 Years Experience
<b>Gary Hager</b> Project Engineer	A.S. Science B.S. Mechanical Engineering EIT Certificate 6 Years Experience
<b>Shauna Laber</b> Right-of-Way	B.S. Economics B.S. Political Science 13 Years Experience
<b>Jason Brekke</b> GIS Analyst	B.S. Geography 8 Years Experience