

**Table 2.4-1.  
Policy Criteria**

Policy Criteria	Suitable Policy or Practice of Applicant	Section Addressed
a. Location and design.	Basin Electric's policy is to locate and design to minimize environmental impacts and utilize existing corridors.	1.1.1 & 4.18
b. Training and utilization of available labor in this state for the general and specialized skills required.	Basin Electric and MWEC will use local labor to the extent practicable.	4.2.2
c. Economies of construction and operation.	This project creates economies of construction and operation by double-circuiting a MWEC 115 kV transmission line.	
d. Use of citizen coordinating committees.	The use of citizen coordinating committees is not expected for this project.	N/A
e. A commitment of a portion of the transmitted product for use in this state.	Basin Electric has identified the need for additional electric transmission capacity in northwestern North Dakota as a result of increased demand and to meet reliability and system stability requirements for the region.	1.1.1
f. Labor relations.	No labor relations will be negatively affected by the project.	4.2.2
g. The coordination of facilities.	Basin Electric has coordinated with MWEC to double-circuit the transmission line with a 115-kV transmission line	1.0
h. Monitoring of impacts.	Basin Electric, MWEC and the construction contractor will employ Best Management Practices (BMPs) during construction to monitor ground disturbance impacts. Surface water impacts will be monitored according to the SWPPP.	4.4.3 & 4.12.2
i. Utilization of existing and proposed rights of way and corridors.	Basin Electric has coordinated with MWEC to double-circuit the transmission line with a 115-kV transmission line. The project follows half- and quarter-section lines to the extent practicable.	4.3.2
j. Other existing or proposed transmission facilities.	Basin Electric has coordinated with MWEC to double-circuit the transmission line with a 115-kV transmission line	1.1.1

## 2.5 Design and Construction Limitations

The proposed Corridor/Route is the most direct route while minimizing impacts to the criteria identified in NDAC Section 69-06-08-02. Basin Electric intends to span all wetlands and intends to mitigate unavoidable impacts as required by the USACE and NDDH.

The configuration of the existing substation equipment and high voltage overhead transmission lines restrict where the new transmission line may enter the Western's Williston substation. Between the Williston Substation and proposed Basin Electric Judson 345-kV Substation (Section 19, T154N, R101W and Sections 23 and 24, Township 154N, Range 102 W) and north of the Basin Electric 345-kV Judson Substation through Section 15, Township 154N, Range 102W, Basin Electric is proposing to use single-pole steel structures that would accommodate a double circuit transmission line build out. Following geotechnical exploration it may become necessary to utilize special structures or materials to avoid sensitive environmental features or to accommodate poor soil conditions or other design limitations.

The structure types that would be necessary to address the various voltages, terrain and connector scenarios included as part of this project are shown in Exhibit 2.5-1 through Exhibit 2.5-3. A summary of structure characteristics is provided in Table 2.5-1.

Project construction and design would meet the requirements of the National Electrical Safety Code (NESC) for the Heavy Loading District, Basin Electric and USDA-RUS design criteria, and other applicable local or national building codes. The Heavy Loading District refers to those areas (including North Dakota) that are subject to severe ice and wind loading. Minimum conductor clearance is measured at the point where conductor sag is closest proximity to the ground. The proposed transmission line would be constructed with clearances that exceed standards set by NESC. Minimum conductor height would be 30 feet over agricultural land, rural roads, and paved highways for the 345/115-kV segment and 26 feet for the 230-kV and 230/115-kV segments. Clearance will be based on a conductor temperature of 100 degrees Celsius.

**Table 2.5-1.  
Transmission Line Design Components**

Description of Design Component	Segment A 345/115-kV (Exhibit 2.5-2)	Segment B 230/115-kV (Exhibit 2.5-1)	Segment C 230-kV (Exhibit 2.5-3)
Conductor Size (inches)	1.8/1.108	1.345/1.108	1.345
Right-of-way Width (feet)	150	100	80
Typical minimum and maximum Span Distance between Structures (feet) *	650/850	700/1,020	650/950
Average Span (feet)	800	800	800
Minimum and Maximum Structure Height (feet)	115/145	97/127	70/110
Average Height of Structures (feet)	130	112	95
Transmission Line Length(miles)	1.62	1.9	.20
Average Number of Structures per Mile	6.5	6.5	6.5
Number of structures	17	13	2
Permanent disturbance per Structure (acre) **	0.0009	0.0006	0.0005
Temporary disturbance per Structure (acre) **	.29	.29	.23
Minimum Conductor-to-Ground Clearance to agricultural lands, rural roads and paved highways @100 deg C (feet)	30	26	26
Minimum Conductor-to-Ground Clearance to Railroads @100 deg C (feet)	As required by specific railroad		
Circuit Configuration	Exhibit 2.5-2	Exhibit 2.5-1	Exhibit 2.5-3

\* Actual span distance will vary depending on topography.

\*\* Single pole, angle and dead-end structures (for longitudinal stability) would be constructed with concrete foundations