

**BASIN ELECTRIC
POWER COOPERATIVE**

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June 4, 2012

RECEIVED

JUN 05 2012

PUBLIC SERVICE COMMISSION

Mr. Darrell Nitschke
Executive Secretary
North Dakota Public Service Commission
600 East Boulevard Avenue, Dept. 408
Bismarck, ND 58505

Re: Submission and request for approval of Tree/Shrub Replacement Plan for ND PSC Case No. PU-08-75 (Basin Electric Power Cooperative – PrairieWinds ND1).

Dear Mr. Nitschke:

Basin Electric Power Cooperative (Basin Electric) constructed the PrairieWinds ND1 wind energy facility (Project) in Ward County, North Dakota. Basin Electric contracted with Western EcoSystems Technologies (WEST) to inventory trees and shrubs that may be potentially cleared, grubbed, cut or otherwise removed so that mitigation could occur according to the Public Service Commission's Tree and Shrub Mitigation Specifications (Case No. PU-08-75). WEST, along with Basin Electric Right-of-Way personnel, conducted additional post-construction inspections to verify/validate the tree and shrub inventory.

Trees and Shrubs Removed

Approximately 989 trees and 345 shrubs were removed during construction of the Project. The attached WEST report provides details on species and locations of the trees and shrubs affected by construction. Twenty-three landowners were contacted by mail and given the choice of having the replacement trees or shrubs planted on their property or waiving the replanting in writing and allowing those replacement trees or shrubs to be planted in an alternate location. Five landowners indicated they wanted replacement trees and shrubs while ten landowners waived the replacements in writing. Three landowners declined the replacements by phone. The remaining landowners did not respond; accordingly, those trees and shrubs are assumed to be declined by the landowners.

Replacement Plan

Item number 11 of the Tree and Shrub Mitigation Specifications in Case No. PU-08-75 states that both trees and shrubs shall be replaced on a two for one basis; therefore, approximately 1978 trees and 690 shrubs (a total of 2668) are needed as replacements. In many cases, landowners requested tree and shrub species other than those removed.

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Request for approval of Tree-Shrub Replacement Plan

Basin Electric Power Cooperative
Kevin Solie

Mr. Darrell Nitschke

June 4, 2012

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The majority of the replacements will be planted by the Natural Resources Conservation Service (NRCS) on land owned by two individuals. The attached NRCS Tree and Shrub Planting Plan and Records indicate the legal description and species selected for these planting locations. For one landowner, the NRCS will plant a total of 960 trees and shrubs on parcels located in the NE ¼ Section 14, T 151 N, R 83 W and the SW¼ Section 10, T 151 N, R 83 W. For a second landowner, the NRCS will plant a total of 1345 trees and shrubs in the SE ¼ Section 14 T 152 N R 83 W. Basin Electric will work with the remaining three landowners to plant the following: 88 blue spruce in SE¼ Section 23, T 151 N R 83 W; 15 green ash in NW ¼ Section 9 T 151 N R 83; and, 12 blue spruce in Lot 2 of Block 1, Section 8, T 139 N R 82 W (residential area in Mandan).

With all proposed planting locations, a total of 2420 trees and shrubs are planned as replacements, which is approximately 90.7% of the total required. Basin Electric is working with the NRCS to fund a minimum of 248 additional plantings in areas impacted by the Souris River flood of 2012. Once the location(s) of the planting(s) and species are known, Basin Electric will submit the information to the PSC.

Tree and shrub planting will occur in 2012. Basin Electric contracted with the NRCS to supply and plant the trees and shrubs. The plantings will be inspected once a year for three years with reports due to the North Dakota Public Service Commission before October 1st of each year. Basin Electric requests the PSC consider and approve the Tree/Shrub Replacement Plan for Case No. PU-08-75. Please contact me at 701.557.5495 if you have any questions, comments or concerns regarding this submittal.

Sincerely,



Kevin L. Solie
Senior Water Quality/Waste Management Coordinator

/kz

ATTACHMENT

**Tree and Shrub Replacement Plan
Prairie Winds ND1
Ward County, North Dakota**

Prepared for:

Basin Electric Power Cooperative
1717 East Interstate Ave
Bismarck, North Dakota 58503

Prepared by:

Clayton Derby and Terri Thorn
Western EcoSystems Technology, Inc.
4007 State Street, Suite 109
Bismarck, North Dakota



May 18, 2011

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INTRODUCTION

Basin Electric Power Cooperative (Basin) has constructed the Prairie Winds ND1 (PWND1) wind energy facility in southern Ward County, North Dakota, north of the city of Max. Basin contracted with Western Ecosystems Technology, Inc. (WEST) to document the species, number, and location of impacted trees and shrubs and to develop a replacement plan of these trees and shrubs according to the North Dakota Public Service Commission's Tree and Shrub Mitigation Specifications (Appendix A).

STUDY AREA

The PWND1, which consists of 80 turbines, is located along US Highway 83, approximately 2 miles (mi: 3.2 kilometer [km]) north of Max or approximately 12 mi (19 km) south of Minot (Figure 1). It has a rolling to flat topography with elevations ranging from approximately 1,900 feet (ft; 579 meters [m]) to 2,300 ft (701 m) above mean sea level. Cropland, grassland (both native and planted), and wetlands dominate the study area. Lands in the study area are mostly privately owned except for one parcel of US Fish and Wildlife Service Waterfowl Production Area and two parcels of North Dakota State School Land.

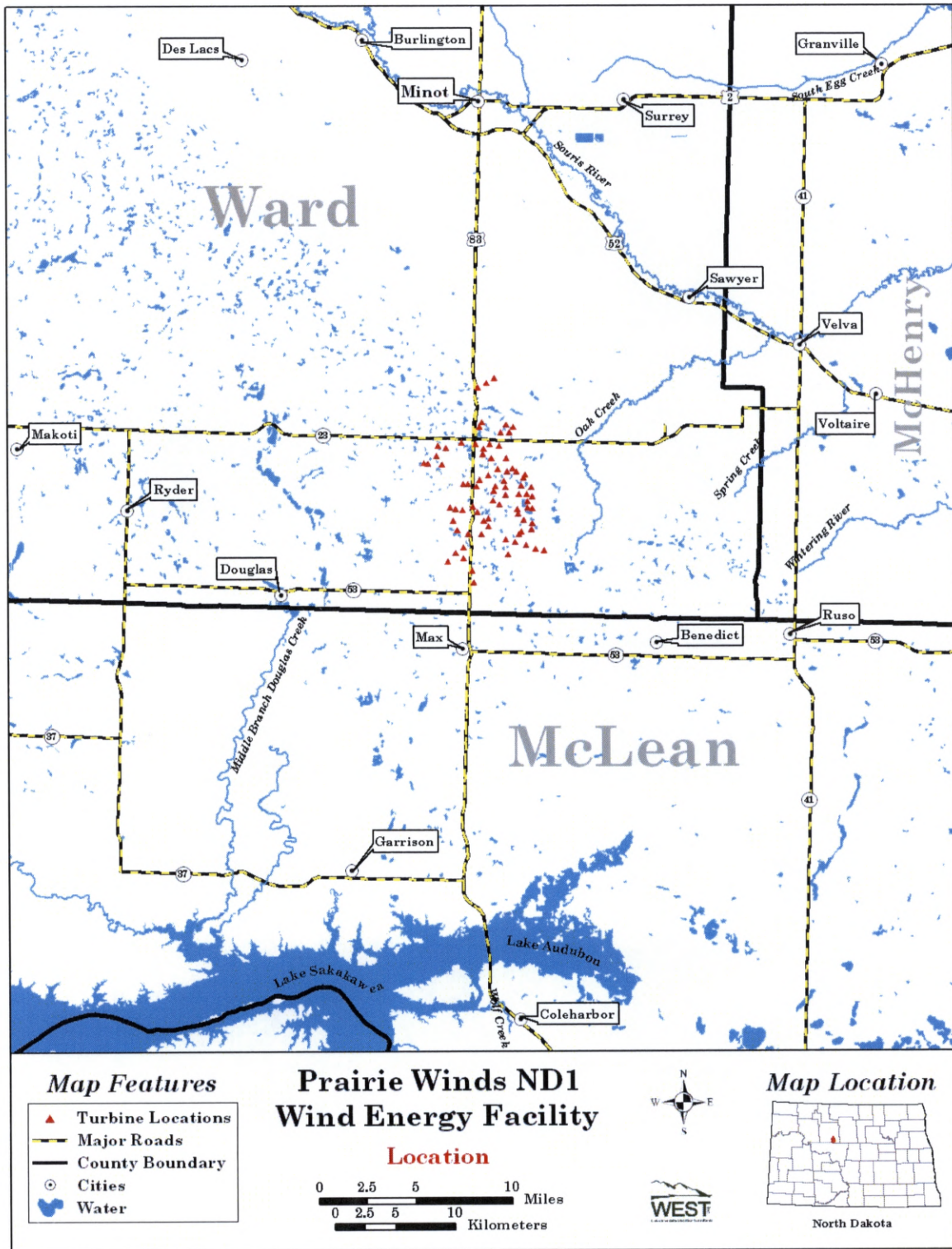


Figure 1. General project location of the Prairie Winds ND1 wind energy facility.

METHODS

Tree and Shrub Inventory

Trees and shrubs were inventoried by WEST botanists on foot or from a vehicle in August 2009 (proposed access roads, collector routes, and crane paths) and August 2010 (section line road right-of-way improvements). The area inventoried included 20 ft (6.1 m) along access roads and collector routes, 40 ft (12.2 m) along crane walk paths, 600 ft (182.9 m) around proposed turbine locations, and within the staked right-of-way along selected section line roads that were to be improved. Location of individual or clusters of trees/shrubs, species, number of individual plants and number of stems for shrubs, and height were recorded.

Impact to Trees and Shrubs

A visible inspection of the access roads, collector routes, crane paths, and section line road right-of-way improvements in September 2010 and a review of 2010 aerial imagery showed that the original surveyed areas (paths and widths) accurately estimated impacts to trees and shrubs at the PWND1. This assessment, along with the GPS location of inventoried trees and shrubs, were used in a GIS to determine location and number of impacted trees and shrubs.

RESULTS

Inventory

A total of 1,334 individual trees and shrubs were estimated within the inventoried areas. About 36% of all individual trees and shrubs were hawthorn and 13% were western snowberry/wolfberry (Table 1). For some species (e.g., snowberry and wolfberry) can grow in very dense clusters where one plant can have hundreds if not thousands of stems coming out of the ground. For these species, WEST noted both the number of plants by taking a GPS reading at the location as well as the number of stems at that point. This results in a very large number of stems but a much smaller number of individual plants for these species.

Table 1. Results of tree and shrub inventory by common name and number of stems and individual plants for the Prairie Winds ND1 wind energy facility.

Tree or Shrub Common Name	Number of Stems	Number of Individuals
Trees		
American Elm		30
Apple		2
Blue Spruce		24
Boxelder		71
Green Ash		63
Hawthorn		476
Hop-hornbeam		8
Locust (<i>Gleditsia sp.</i>)		37
Plains Cottonwood		3
Pine sp.		36
Quacking Aspen		44
Russian Olive		73

Siberian Elm		58
Willow sp.		64
Subtotal		989
Shrubs		
American Plum	29	3
Chokecherry	586	48
Downy Arrowwood	16	2
Honeysuckle		8
Siberian Peashrub	103	5
Silverberry	12,245	110
Silver Buffaloberry	16	2
Western Snowberry/Wolfberry	37,375	167
Subtotal	50,370	345
Total	50,370	1,334

Impact to Trees and Shrubs

Trees

Approximately 989 trees, representing 14 species were estimated to have been impacted during construction of the wind energy facility (Table 2). Nineteen different landowners were affected (Table 2, Figure 2)

Shrubs

Approximately 345 individual shrubs, representing eight species were estimated to have been impacted during construction of the wind energy facility (Table 2). Twenty three landowners were affected (Table 2, Figure 2).

Table 2. Landowner and estimated number of trees or shrubs removed by construction of the Prairie Winds ND1 wind energy facility.

Landowner		Estimated Number of Individuals Removed
Common Name	Scientific Name	
1.) Delzer, Loren & Tammy		44
American Plum	Prunus americana	1
Boxelder	Acer negundo	4
Chokechery	Prunus virginiana	6
Green Ash	Fraxinus pennsylvanica	1
Plains Cottonwood	Populus deltoides	1
Silverberry	Elaeagnus commutata	5
Western Snowberry/Wolfberry	Symphoricarpos occidentalis	4
Willow	Salix spp.	22
2.) Dunkel, Glen Jr. Jean		181
Blue Spruce	Picea pungens	4
Chokecherry	Prunus virginiana	3

Table 2. Landowner and estimated number of trees or shrubs removed by construction of the Prairie Winds ND1 wind energy facility.

Landowner Common Name	Scientific Name	Estimated Number of Individuals Removed
Fireberry Hawthorn	<i>Crataegus rotundifolia</i>	146
Russian Olive	<i>Elaeagnus angustifolia</i>	1
Siberian peashrub	<i>Caragana arborescens</i>	1
Silverberry	<i>Elaeagnus commutata</i>	12
Western Snowberry/Wolfberry	<i>Symphoricarpos occidentalis</i>	13
Willow	<i>Salix</i> spp.	1
3.) Faul, Kenneth Sr. & Vanda		1
Western Snowberry/Wolfberry	<i>Symphoricarpos occidentalis</i>	1
4.) Gasmann, Harold & Agnes		65
Chokecherry	<i>Prunus virginiana</i>	1
Downy Arrowwood	<i>Viburnum affine</i>	2
Fireberry Hawthorn	<i>Crataegus rotundifolia</i>	43
Pine	<i>Pinus</i> spp.	10
Silverberry	<i>Elaeagnus commutata</i>	3
Western Snowberry/Wolfberry	<i>Symphoricarpos occidentalis</i>	6
5.) Gasmann, Robert & Nancy		273
Chokecherry	<i>Prunus virginiana</i>	11
Fireberry Hawthorn	<i>Crataegus rotundifolia</i>	206
Willow	<i>Salix</i> spp.	3
Silverberry	<i>Elaeagnus commutata</i>	18
Western Snowberry/Wolfberry	<i>Symphoricarpos occidentalis</i>	35
6.) Hankel, Warren & Judy		1
Western Snowberry/Wolfberry	<i>Symphoricarpos occidentalis</i>	1
7.) Haugeberg, Arnold & Shirley		2
Silverberry	<i>Elaeagnus commutata</i>	1
Western Snowberry/Wolfberry	<i>Symphoricarpos occidentalis</i>	1
8.) Haugeberg, C.E.		60
American Elm	<i>Ulmus americana</i>	2
Boxelder	<i>Acer negundo</i>	10
Chokecherry	<i>Prunus virginiana</i>	4
Fireberry Hawthorn	<i>Crataegus rotundifolia</i>	33
Honeysuckle	<i>Lonicera tatarica</i>	1
Siberian peashrub	<i>Caragana arborescens</i>	1
Willow	<i>Salix</i> spp.	1
Western Snowberry/Wolfberry	<i>Symphoricarpos occidentalis</i>	8
9.) Herdt, Joyce		33
Chokecherry	<i>Prunus virginiana</i>	4
Fireberry Hawthorn	<i>Crataegus rotundifolia</i>	8

Table 2. Landowner and estimated number of trees or shrubs removed by construction of the Prairie Winds ND1 wind energy facility.

Landowner Common Name	Scientific Name	Estimated Number of Individuals Removed
Silverberry	<i>Elaeagnus commutata</i>	10
Western Snowberry/Wolfberry	<i>Symphoricarpos occidentalis</i>	11
10.) Lakaduk, Suzie		59
Boxelder	<i>Acer negundo</i>	1
Chokecherry	<i>Prunus virginiana</i>	2
Green Ash	<i>Fraxinus pennsylvanica</i>	51
Silverberry	<i>Elaeagnus commutata</i>	1
Willow	<i>Salix</i> spp.	4
11.) Lakoduk, Robert		164
American Elm	<i>Ulmus americana</i>	28
Blue Spruce	<i>Picea pungens</i>	4
Boxelder	<i>Acer negundo</i>	1
Pine	<i>Pinus</i> spp.	19
Russian Olive	<i>Elaeagnus angustifolia</i>	72
Siberian Elm	<i>Ulmus pumila</i>	27
Siberian Peashrub	<i>Caragana arborescens</i>	1
Silver Buffaloberry	<i>Shepherdia argentea</i>	1
Silverberry	<i>Elaeagnus commutata</i>	3
Western Snowberry/Wolfberry	<i>Symphoricarpos occidentalis</i>	2
Willow	<i>Salix</i> spp.	6
12.) Larson, Orlin & Ivadell		37
Silverberry	<i>Elaeagnus commutata</i>	15
Western Snowberry/Wolfberry	<i>Symphoricarpos occidentalis</i>	22
13.) Lennington, Barbara		36
American Plum	<i>Prunus americana</i>	2
Apple	<i>Caragana arborescens</i>	2
Boxelder	<i>Acer negundo</i>	6
Chokecherry	<i>Prunus virginiana</i>	2
Quaking Aspen	<i>Populus tremuloides</i>	2
Siberian Peashrub	<i>Caragana arborescens</i>	1
Silver Buffaloberry	<i>Shepherdia argentea</i>	1
Silverberry	<i>Elaeagnus commutata</i>	9
Western Snowberry/Wolfberry	<i>Symphoricarpos occidentalis</i>	7
Willow	<i>Salix</i> spp.	4
14.) Newman, Jay & Marcie		10
Blue Spruce	<i>Picea pungens</i>	1
Chokecherry	<i>Prunus virginiana</i>	3

Table 2. Landowner and estimated number of trees or shrubs removed by construction of the Prairie Winds ND1 wind energy facility.

Landowner Common Name	Scientific Name	Estimated Number of Individuals Removed
Silverberry	<i>Elaeagnus commutata</i>	2
Western Snowberry/Wolfberry	<i>Symphoricarpos occidentalis</i>	4
15.) Osadchy, Donald & Julie		18
Boxelder	<i>Acer negundo</i>	1
Chokecherry	<i>Prunus virginiana</i>	1
Plains Cottonwood	<i>Populus deltoides</i>	2
Silverberry	<i>Elaeagnus commutata</i>	6
Western Snowberry/Wolfberry	<i>Symphoricarpos occidentalis</i>	8
16.) Osadchy, Paul		9
Chokecherry	<i>Prunus virginiana</i>	1
Pine	<i>Pinus spp.</i>	7
Western Snowberry/Wolfberry	<i>Symphoricarpos occidentalis</i>	1
17.) Osadchy, Ricky		6
Chokecherry	<i>Prunus virginiana</i>	1
Silverberry	<i>Elaeagnus commutata</i>	2
Western Snowberry/Wolfberry	<i>Symphoricarpos occidentalis</i>	3
18.) Poleschook, Nick		4
Chokecherry	<i>Prunus virginiana</i>	1
Western Snowberry/Wolfberry	<i>Symphoricarpos occidentalis</i>	3
19.) Samson, Jeffrey		9
Blue Spruce	<i>Pinus pungens</i>	9
20.) Samson, Sam Jr. "Gene"		62
Boxelder	<i>Acer negundo</i>	34
Siberian Peashrub	<i>Caragana arborescens</i>	1
Silverberry	<i>Elaeagnus commutata</i>	11
Western Snowberry/Wolfberry	<i>Symphoricarpos occidentalis</i>	16
21.) Samulenok, Sharon		132
Chokecherry	<i>Prunus virginiana</i>	5
Fireberry Hawthorn	<i>Crataegus rotundifolia</i>	40
Honeysuckle	<i>Acer negundo</i>	7
Quaking Aspen	<i>Populus tremuloides</i>	42
Silverberry	<i>Elaeagnus commutata</i>	11
Western Snowberry/Wolfberry	<i>Symphoricarpos occidentalis</i>	19
Willow	<i>Salix spp.</i>	8
22.) Strilcov, Sharon, et al		6
Blue Spruce	<i>Picea pungens</i>	6
23.) Zahursky, Archie & Mavis		14

Table 2. Landowner and estimated number of trees or shrubs removed by construction of the Prairie Winds ND1 wind energy facility.

Landowner Common Name	Scientific Name	Estimated Number of Individuals Removed
Boxelder	<i>Acer negundo</i>	10
Chokecherry	<i>Prunus virginiana</i>	1
Silverberry	<i>Elaeagnus commutata</i>	1
Western Snowberry/Wolfberry	<i>Symphoricarpos occidentalis</i>	2
24.) Unknown, T. 151 N, R. 83 W, NW1/4, NW1/4, Section 21 (section line road ROW)		75
Boxelder	<i>Acer negundo</i>	3
Chokecherry	<i>Prunus virginiana</i>	1
Green Ash	<i>Fraxinus pennsylvanica</i>	11
Hop-hornbeam	<i>Ostrya virginiana</i>	8
Locust	<i>Gleditsia</i> spp.	37
Willow	<i>Salix</i> spp.	15
25.) Unknown, T. 151 N, R. 83 W, NE1/4, NE1/4, Section 20 (section line road ROW)		33
Boxelder	<i>Acer negundo</i>	1
Chokecherry	<i>Prunus virginiana</i>	1
Siberian Elm	<i>Ulmus pumila</i>	31
Tree Total		989
Shrub Total		345

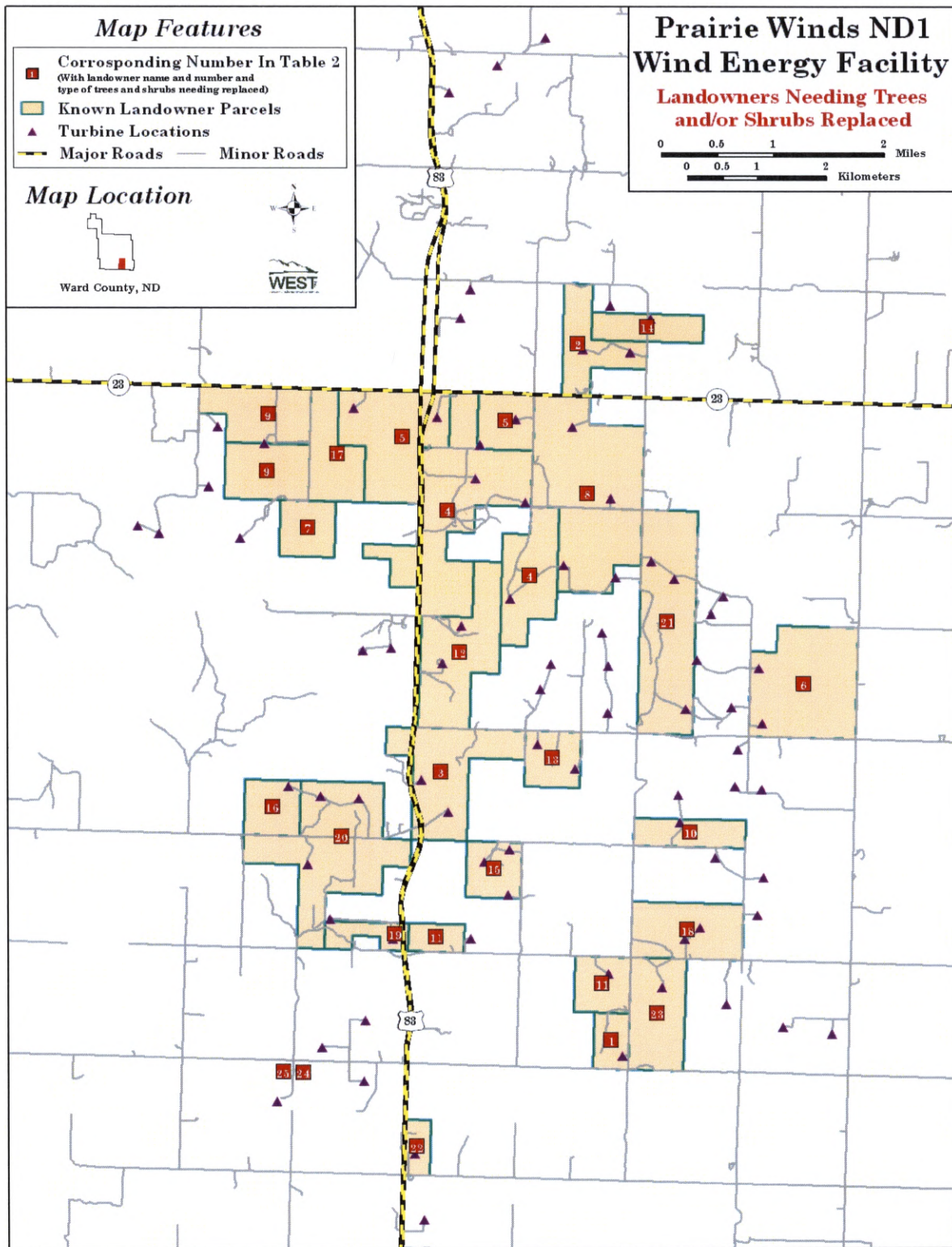


Figure 1. Landowners at the Prairie Winds ND1 wind energy facility for tree and/or shrub replacement.

TREE AND SHRUB REPLACEMENT PLAN

Basin has contacted the US Forest Service on other tree and shrub replacement efforts to determine a list of tree and shrub species suitable for planting in North Dakota; species from this list will be planted if existing species are not replanted. Landowners will be contacted and given the choice of having the replacement trees or shrubs planted off the right-of-way on their property or waiving this choice in writing and allowing those replacement trees or shrubs to be planted in an alternate location. Tree and shrub planting will occur in spring 2012 and plantings will be inspected once a year for three years with reports due to the North Dakota Public Service Commission before October 1st of each year.

Item number 11 of the Tree and Shrub Mitigation Specifications attached to the Order in Case No. PU-08-75 (Appendix A) states that both trees and shrubs shall be replaced on a two for one basis. Therefore, approximately 1978 trees and 690 shrubs should be planted.

Appendix A: North Dakota Public Service Commission's Tree and Shrub Mitigation Specifications.

Tree and Shrub Mitigation Specifications

Inventory

1. Trees and shrubs anticipated to be cleared, including those that are considered invasive species or noxious weeds (e.g., *Caragana arborescens*, *Elaeagnus angustifolia*, *Rhamnus cathartica*, *Tamarix chinensis*, *T. parviflora*, *T. ramosissima*, *Ulmus pumila*), shall be inventoried before cutting. The inventory shall record the location, number, and species of trees and shrubs.
2. In windbreaks, shelterbelts and other planted areas, trees or shrubs anticipated to be cleared, regardless of size, shall be inventoried for replacement.
3. In native growth areas, trees anticipated to be cleared that are 1 inch diameter at breast height ("dbh") or greater shall be inventoried for replacement.
4. In native growth areas, shrubs anticipated to be cleared in the permanent right-of-way shall be inventoried for replacement.
5. In native growth areas outside the permanent right-of-way, shrubs shall be cut flush with the surface of the ground, taking care to leave the naturally occurring seed bank and root stock intact. If soil disturbance is necessary, the native topsoil shall be preserved and replaced after construction. Shrubs shall be allowed to regenerate naturally where native topsoil is preserved and replaced. Where native topsoil is not preserved and replaced, shrubs anticipated to be cleared shall be inventoried for replacement.
6. In native growth areas, trees and shrubs may be inventoried by actual count or by sampling method that will properly represent the woody vegetation population. A sampling plan developed by the company, filed with the North Dakota Public Service Commission (NDPSC) and approved prior to the start of construction shall define the sampling method to be used for trees, for tall shrubs and for low shrubs. The data from the sample plots shall be extrapolated to the total acreage of the wooded area to be cleared to determine the species and quantity of trees and shrubs to be replaced.

Clearing for Construction

7. Trees and shrubs shall be selectively cleared, leaving mature trees and shrubs intact where practical.
8. The width of clear cuts through windbreaks, shelterbelts and all other wooded areas shall be limited to 50 feet or less unless otherwise approved by the NDPSC.

9. If the area of trees or shrubs actually cleared differs from the area inventoried, the difference in number of trees and shrubs to be replaced shall be noted on the inventory.

Replacement

10. Prior to tree/shrub replacement, documentation identifying the number and variety of trees removed as well as the mitigation plan for the proposed number, variety, type, location and date of replacement plantings shall be filed with the NSPSC for approval.
11. Tree replacement shall be on a 2 to 1 basis with 2-year-old saplings. Shrub replacement shall be on a 2 to 1 basis with stem cuttings.
12. Trees and shrubs shall be replaced by the same species or similar species suitable for North Dakota growing conditions as recommended by the North Dakota Forest Service.
13. Tree and shrub replacement shall not be conducted within a 20 to 30 foot wide path over the pipeline to facilitate visual inspections of the right-of-way in accordance with U.S. Department of Transportation safety regulations.
14. Landowners shall be given the option of having replacement trees/shrubs planted off the right-of-way on the landowner's property or waiving that requirement in writing and allowing those replacement trees/shrubs to be planted at alternative locations.
15. At the conclusion of the project, documentation identifying the actual number, variety, type, location and date of the replacement plantings shall be filed with the NDPSC.
16. Tree/shrub replacements shall be inspected once a year for three years, on about the anniversary of the plantings, and, on or shortly before October 1 of each year, a report shall be submitted to the NDPSC documenting the condition of replacement planting and any woodlands work completed. If after three years from the anniversary of the plantings the survival rate is less than 75%, the NDPSC may order additional planting(s).