



AN ALLETE COMPANY

David R. Moeller
Senior Attorney
218-723-3963
dmoeller@allete.com

December 3, 2015

VIA EMAIL and U.S. MAIL

Mr. Darrell Nitschke
Executive Secretary
North Dakota Public Service Commission
State Capitol Building
600 E. Boulevard Ave., Dept. 408
Bismarck, ND 58505

RE: Minnesota Power's Application for a Corridor
Certificate and Route Permit for a DC Line
Reroute in Cass County, North Dakota
Case No. PU-14-121

Dear Mr. Nitschke:

Enclosed please find Minnesota Power's Tree and Shrub Mitigation Plan for the above-referenced Case.

If you have any questions, or need additional information, please contact me at the number listed above.

Yours truly,

A handwritten signature in black ink that reads "David R. Moeller".

David R. Moeller

DRM:sr
Enc.
cc: Jerry Lein

28 PU-14-121 Filed 12/03/2015 Pages: 8
Tree and shrub mitigation plan
Allete, Inc.
David Moeller

**Minnesota Power Tree and Shrub Replacement Plan for the
DC Line Reroute Project**

Case#: PU-14-121



Contents

Minnesota Power Tree and Shrub Mitigation Plan. Pages 2-3

Figure 1. Mitigation Site Location

Appendix A- Woodland Inventory Survey Results



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Introduction

In 2014 and 2015 Minnesota Power (an ALLETE company) constructed a 0.7 mile long reroute of its 250 kilovolt (kV) direct current high voltage transmission line (DC Line). During construction, some trees and shrubs were disturbed. In keeping with the North Dakota Public Service Commission’s (PSC) Certificate of Corridor Compatibility, Minnesota Power has developed this Tree and Shrub Mitigation Plan. This mitigation plan will facilitate the replacement of the trees and shrubs disturbed during construction and minimize any associated environmental impacts.

Number and Variety of Trees

Post construction vegetation surveys were performed to determine the number of stems disturbed, the species disturbed and their location. The post construction vegetation surveys were performed by KDK Consulting Inc. The following table (Table 1-1) shows the total number of trees and shrubs disturbed during construction of Minnesota Power’s DC Line reroute.

Table 1-1 Trees Disturbed During Construction

Trees/Tall		
Shrubs	-	-
Boxelder	Acer negundo	3
Siberian elm	Ulmus pumila	20
Total	-	23

Mitigation Plan

Following the requirements of the PSC Certificate of Corridor Compatibility for Minnesota Powers DC Line Reroute Project, Minnesota Power will mitigate trees and shrubs disturbed during construction. The disturbed trees and shrubs will be replaced at a minimum ratio of 2:1. However, the actual planting will be at a ratio closer 3:1 to account for mortality associated with any planting/re-vegetation effort.

All disturbed trees and shrubs will be replaced by the same or similar species in following with the PSC’s Tree and Shrub Mitigation Specifications.

Upon completion of mitigation activities, the planting site will then be monitored for three years to ensure that there has been a 75% survival rate based on a **2:1** planting regime. Survival surveys will occur in the fall of each year and will be used to determine if any additional mitigation activities will be required.



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Proposed Number, Variety, Type

Table 1-2 lists the number of stems disturbed during construction, the species disturbed and the minimum number of mitigation stems required. The percent survival will be determined assuming a 2:1 planting ratio.

In following with recommendations provided by local Soil Conservation Districts, range management professionals and local expertise, Minnesota Power has opted to replace the species that were disturbed by construction with species that are native, that do not have noxious qualities, are suitable for available soil types and are available for purchase with local NRCS offices in North Dakota. As a result of these parameters, the following adjustments to mitigation species have been made:

- Trees/Tall Shrubs
Siberian are non-native species and will not be used for mitigation. Instead, the species will be replaced with Green Ash which is native to North Dakota.

Table 1-2 Replacement stems by species for DC Line Reroute

Common Name	Scientific Name	Plants Removed	Minimum mitigation stems
Green ash	Fraxinus pennsylvanica	20	40
Boxelder	Acer negundo	3	6

Location and Date of Replacements

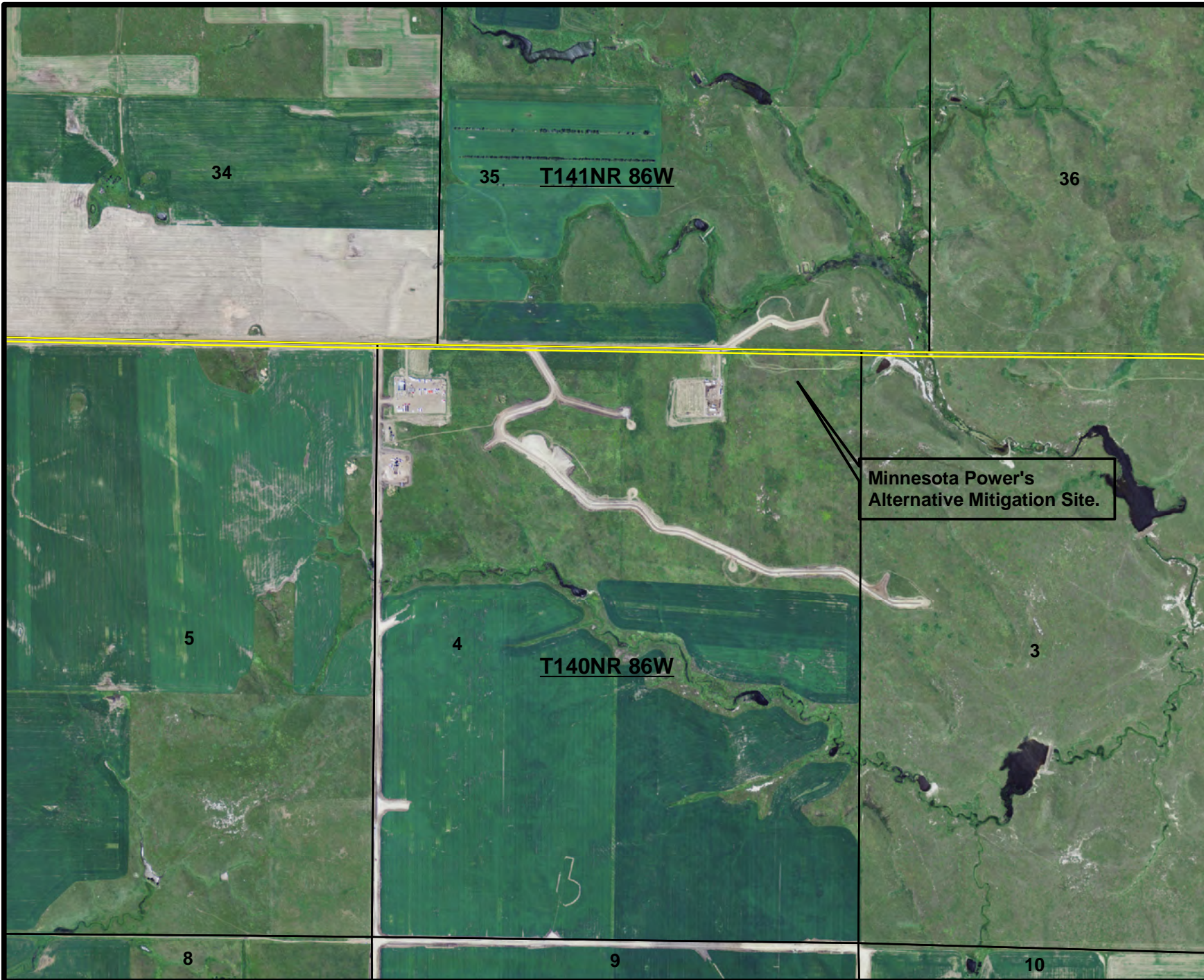
One landowner had trees or shrubs affected by the project. In an effort to maintain customer satisfaction, project acceptance and a high standard of public relations, Minnesota Power has developed an alternative site for the mitigation plantings to occur, if requested by land owners. Land owners have their choice to have mitigation activities occur either on their ownership or on Minnesota Power’s alternative site.

The landowner did not respond after two phone call attempts and two mailing attempts. As a result, the mitigation plantings will occur on Minnesota Power’s Alternative Site.

The Minnesota Power alternate site is located in Morton County in Section 4-Township 140N-Range 86W. See Attached Figure #1 for mitigation site location information.

Figure 1

Minnesota Power Alternative Mitigation Site.



- Legend**
- Bison Area Roads
 - ▭ PLSS_townships
 - ▭ PLSS_sections



0.25 Miles



Appendix A-

- Woodland Inventory Survey Results

**SHELTERBELT DISTURBANCE- DC LINE REROUTE (PU-14-121)
FOR MINNESOTA POWER- A DIVISION OF ALLETE, INC.
WITHIN T137N-R54W- SECTION 11**

Conducted by KDK Consulting October 22, 2015

An estimated count of trees removed within a 120 foot right-of-way through a shelterbelt for a DC Line reroute was conducted by KDK Consulting on October 22, 2015. Each row had an original tree spacing of 6', thusly a potential of 20 trees present for each row within the sampled 120' right-of-way provided by Mr. Dan McCourtney of Minnesota Power. The shelterbelt is in declining health due to age and/or disease. Most surviving trees were mature with large canopies allowing the shelterbelt to still function as a windbreak for the adjacent cropland, thus reducing wind erosion.

Six rows were present within the shelterbelt with a row spacing of 10' between rows. The easternmost row had faded from existence well north of the right-of-way, with no evidence of any trees disturbed. The remaining five rows had variable survival within the right-of-way. From east to west, the rows had an estimated survival of 60%, 30%, 20%, 40%, and 40%, respectively. The latter 3 rows appear to have had no survival in the south 3/4 of the 120' right-of-way based on review of aerial photography and ground reconnaissance indicators. All trees in the shelterbelt were Siberian Elm, with the exception of the first row from the east that was disturbed. Boxelder trees were embedded within the row (approximately 1/4 of the trees were Boxelder within the immediate vicinity of the right-of-way. A higher percentage of Boxelder trees were surviving in the row the further north one moved away from the right-of-way and were a majority of the surviving trees in the north half of the shelterbelt).

Based on that information, and if the survival patterns within each row followed what was observed to the north of the right-of-way, the following estimates for trees removed would be as follows:

From east to west:

Row 1: 20 trees possible * 60% = 12 trees (9 Siberian Elm, 3 Boxelder)

Row 2: 20 trees possible * 30% = 6 trees (All Siberian Elm)

Row 3: 5 trees possible * 20% = 1 tree (Siberian Elm)

Row 4: 5 trees possible * 40% = 2 trees (Both Siberian Elm)

Row 5: 5 trees possible * 40% = 2 trees (Both Siberian Elm)

An estimated total of 23 trees were present prior to disturbance within the 120' right-of-way with 20 of these trees being Siberian Elm and 3 Boxelder. This number of trees present prior to disturbance may be slighter lower as the survival percentages appears to drop off in the sampled right-of-way based on a recent aerial photo and the current ground reconnaissance. Based on available evidence, it appears that the 23 trees would likely be a worst case scenario for the amount disturbed during the reroute.