

Tree & Shrub Survival Report

Ashtabula I Wind Energy Center

Annual Report 4 of 5

Prepared for:

NEXTERA ENERGY RESOURCES ASHTABULA WIND, LLC

ND PSC Case Number: PU-08-32 (Wind Farm)
ND PSC Case Number: PU-08-73 (Transmission Line)



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1.0 Introduction & Background

The Ashtabula Wind Energy Center (Project) was completed in 2008 in Barnes County, North Dakota, within portions of Township 143N, Range 57W, Township 142N, Range 58W, Township 142N, Range 57W, and Township 141N, Range 57W. The Project is operated by Ashtabula Wind, LLC (Ashtabula Wind), a subsidiary of NextEra Energy Resources, LLC, and comprises a 148.5-megawatt (MW) wind generation plant and 230 kV transmission line approximately 9.5 miles long. The Project is under the jurisdiction of the North Dakota Public Service Commission (PSC). Its construction required the removal of trees and shrubs within Project rights-of-way.

A Tree and Shrub Replacement Plan for this Project was submitted in 2011 which discussed the approach that Ashtabula Wind would follow and the PSC approved the plan April 2011. The plan was implemented in May and June 2011. Survival monitoring was required for three years and was completed in 2014 with a survival rate of 87%.

In October 2015, the PSC requested that NextEra conduct survival monitoring in 2015 and 2016 since a portion of the trees had been replanted in 2013. This survival report documents the number of trees and shrubs surviving in the fall of 2015.

Ashtabula Wind retained Wenck Associates, Inc. (Wenck) to assist in field checks and documentation of tree and shrub survival.

2.0 Survival Report

2.1 SURVIVAL REQUIREMENTS

The total number of trees and shrubs removed for the Project in 2008 was 292; the total number to be replaced was 584 based on the 2:1 replacement requirement. From 2010 to 2014, Ashtabula Wind was responsible for tracking the survival of only 566 trees/shrubs due to landowner preferences (refer to Section 2.2 for further explanation). In 2015, upon one landowner's preference to remove numerous trees/shrubs of his allotted portion, Ashtabula Wind is currently responsible for monitoring a total of 308 trees/shrubs under the Ashtabula I project (see Section 2.2). At the end of the PSC's requested three-year monitoring of the replantings that occurred in 2012, 75% of these planted trees, or 231, will be required to have survived to meet the obligations of the PSC. An additional six trees will be required to have survived between this Project per the Ashtabula II Project, for a total of 237, since the landowners for the Ashtabula II Project did not want all of their allotted tree replacements (see Ashtabula II Mitigation Plan, Planting Report, and Survival Reports, filed under PSC Case Numbers PU-08-34 and PU-09-221).

2.2 PLANTING REVIEW

Five landowners within the Project area requested replacement on their property. One planting (Mark Askerooth allotment) was installed in May 2010 but had high tree/shrub mortality. Replacements for the Askerooth planting and the remaining landowner's plantings were installed in late May and early June 2011 in Sections 8, 9, 10, and 27, Township 142N, Range 57W and Section 14, Township 143N, Range 57W by the Barnes County SCD. A total of 944 trees were planted, which exceeds the required 2:1 ratio.

Ashtabula Wind can no longer be responsible for the allotment of trees for John Molstad. There was lack of cooperation from the landowner regarding planting of the trees in a timely manner; therefore his 18 allotted trees will not count towards the number required for the project (for further details, refer to Tree and Shrub Planting Report, November 2011).

The original planting for Maynard Flatt was located to the north of his farmyard and to the south of a wind turbine access road, extending to the west along the north edge of several existing tree rows. Planting plans for the original planting in 2011 were for 358 trees; Mr. Flatt's original allotment was 364 (refer to 2011 Ashtabula I Tree and Shrub Replacement Plan and 2011 Ashtabula I Planting Report). In 2013, the landowner stated that the SCD replanted 100 trees to replace high mortality after a washout from a rainstorm in the spring of 2012. The 2013 replacement planting was planted in a block to the south of the original planting between that planting and farmyard buildings. During the 2014 field visit, it was noted that within the original planting area, one row of trees had been mowed and part of several rows had been cleared to create a field approach. During the 2015 field visit, the entire original planting had been tilled and was now part of the adjacent crop field. In a phone conversation with Mr. Flatt, he stated he had changed his mind and didn't want the trees anymore. For this reason, Ashtabula Wind can no longer be responsible for the original planting of trees, but will continue to track the 2013 planting of 100 trees and will consider 100 as Mr. Flatt's allotted amount.

2.3 2015 SURVIVAL

The plantings of each of the landowners were visited in November 2015. Trees or shrubs which had any portion of living plant material were considered alive. Wenck consulted Joel Nichols, Community Forestry Specialist at the North Dakota Forest Service (November 10, 2015) for indicators of living material for deciduous plants that have lost their leaves. Nichols suggested using any of the following three indicators: 1) pliable, non-brittle smaller branches and twigs, 2) presence of new buds, and 3) green color underneath the bark. Of the 944 trees originally planted for this Project and including the replacement planting and tree removal done by Mr. Flatt, 435 were alive in the fall of 2015 (Table 2-1). Since the number of trees planted for the mitigation exceeded the planting requirement, the current survival rate is above the required 75% at 139%.

Table 2-1: Survival Counts

Landowner	Number of Trees/ Shrubs Planted	2012 Count	2013 Count	2014 Count	2015 Count	Comments
Mark Askerooth	449	190 deciduous 230 coniferous	407	286 (105 deciduous, 181 coniferous)	298 (68 deciduous, 230 coniferous)	Weeds were well controlled and trees looked good in 2013. On the 2014 visit, several rows of trees were covered in weeds.
Casey Burchill	64	64	64	64	64	A large farmyard planting was installed (~1000 trees), but Ashtabula Wind was only responsible for the cost and survival of 64 trees.
Joel Owen	48	42	37	33	22	During 2012 field visit, it appeared only 44 trees were planted.*
Jon Owen	25	15	14	14	9	During 2012 field visit, it appeared only 15 trees were planted.*
Maynard Flatt	358 (now tilled per landowner preference)	155	222 (including new planting of 100 trees)	97	42	During 2012 field visit, it appeared only 259 trees were planted.* Landowner stated SCD replanted 100 new trees in 2013. During the 2015 visit, the entire original planting had been tilled and converted to cropland. Ashtabula will now only be responsible for the 2013 planting of 100 trees.
TOTAL	944	696	744	494	435	This count exceeds the required 237.

*The reason for the inconsistency with number of trees planted could include: a miscount of planted trees; SCD may not have planted as many as reported; Wenck staff may not have been able to locate the entire planting which is often split up into different parts of the farmyard; and/or some of the planted trees/shrubs may have disintegrated after dying. Currently, Ashtabula Wind will assume the number of trees reportedly planted in 2011 is the correct number and will use this number when calculating survival rate.



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