

# Tree and Shrub Replacement Plan

Hawkeye Pipeline System  
Project

Williams and McKenzie  
Counties, North Dakota



Prepared for:  
Hess Corporation  
1501 McKinney Street  
Houston, TX 77010

Prepared by:  
Stantec Consulting Services Inc.  
3325 S. Timberline Rd., Suite 150  
Fort Collins, CO 80525

January 17, 2017

## TREE AND SHRUB REPLACEMENT PLAN

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Prepared by *Matthew Brekke* \_\_\_\_\_

**Matt Brekke, Senior Wildlife Biologist**

Reviewed by *E. Bergquist* \_\_\_\_\_

**Erin Bergquist, vegetation Ecologist**

Reviewed by *Charles T. Herrmann* \_\_\_\_\_

**Chuck Herrmann, Project Manager**

# TREE AND SHRUB REPLACEMENT PLAN

## Acronyms

Hess	Hess North Dakota Pipelines LLC
NGL	natural gas liquid
Project	Hawkeye Pipeline System Project
Project corridor	200-foot-wide survey corridor
PSC	Public Service Commission
ROW	right-of-way
SOP#14	USACE SOP#14
Stantec	Stantec Consulting Services Inc.
SWCA	SWCA Environmental Consultants
U.S.	United States
USACE	United States Army Corps of Engineers
USFS	United States Forest Service

TREE AND SHRUB REPLACEMENT PLAN

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# TREE AND SHRUB REPLACEMENT PLAN

## 1.0 Introduction

Hess North Dakota Pipelines LLC (Hess) has completed construction of an approximately 26-mile-long pipeline system connecting Bakken production fields south of Lake Sakakawea to existing processing facilities north of the lake. The Hawkeye Pipeline System Project (Project) will transport crude oil from the proposed Hawkeye Oil Facility near Keene, North Dakota, and natural gas and natural gas liquids (NGL) from the existing Hawkeye Compressor Station near Charlson, North Dakota, to the existing Ramberg Truck Facility (crude oil) and the existing Silurian Compressor Station (natural gas and NGL) near Tioga, North Dakota.

Per the North Dakota Public Service Commission (PSC) Tree and Shrub Mitigation Specifications requirements identified in the PSC's Findings of Facts, Conclusions of Law and Order for the Project (Case Nos. PU-15-31 and PU-15-32), trees and shrubs shall be inventoried for replacement, replaced at a 2:1 ratio, and monitored for 3 years to determine if a 75 percent survival rate has occurred. Hess will submit annual reports to the PSC following each year's monitoring efforts. Hess understands the PSC may order additional plantings if the survival rate after 3 years is less than 75 percent.

To inventory trees and shrubs for replacement, pre-construction tree and shrub surveys were conducted within the Project's 200-foot-wide survey corridor (Project corridor) by Stantec Consulting Services Inc. (Stantec) and SWCA Environmental Consultants (SWCA). SWCA conducted the pre-construction surveys of the 2012 Project route in October 2012 and in May and July 2013. Stantec conducted pre-construction surveys on Project route variations in October 2013 and July, August, and October 2014. The results of the pre-construction surveys were detailed in the Natural Resource Report (November 14, 2014, revised January 2015) (Stantec 2015), which is an appendix to Hess's Plan of Development (Hess 2015).

Post-construction tree and shrub surveys were conducted on United States (U.S.) Forest Service (USFS), State of North Dakota, and private land rights-of-way (ROWs) by Stantec on March 13 and 14, 2016. Those trees and shrubs not removed during Project construction were subtracted from the pre-construction totals to determine how many would need to be replaced post-construction.

Pre- and post-construction tree and shrub surveys on U.S. Army Corps of Engineers (USACE) lands were conducted by Stantec in December 2015 (Stantec 2016a) and March 2016 (Stantec 2016b), and were based on the requirements of USACE SOP#14 (SOP#14). The survey methods and mitigation requirements in SOP#14 are different than the PSC requirements; therefore, USACE tree and shrub surveys were conducted separately and the results were summarized in a report submitted to the USACE by Hess (**Appendix A**).

# TREE AND SHRUB REPLACEMENT PLAN

## 2.0 Post-construction Survey Results

A total of 54 areas containing trees and/or shrubs were identified within the Project corridor during the pre-construction surveys. Of these, 14 areas were either partially or completely cleared during construction activities, resulting in the loss of approximately 2 acres of woody vegetation containing 5,496 trees and shrubs (Table 2-1). The remaining 40 woody vegetation areas were either avoided through reroutes or by being bored under during construction.

**Table 2-1 Areas and Counts of Cleared Woody Vegetation Listed by Landowner Type**

Landowner	Acres Cleared	Shrub Square Footage Cleared	Tree and Shrub Removal Count
Private	0.20		100
State of North Dakota	0.27		17
USFS	1.40		5,379
<b>Subtotal For Replacement</b>	<b>1.87</b>		<b>5496</b>
USCAE <sup>1</sup>	.06	1440	30 (trees)
<b>Overall Total</b>	<b>1.93</b>	<b>1440</b>	<b>5,526</b>

<sup>1</sup> On USACE-managed lands pre- and post-construction tree and shrub surveys were based on the requirements of USCAE SOP#14, which is different than PSC requirements. Hess and USACE have agreed on terms for a one-time tree/shrub replacement fee in lieu of plant replacements for the cleared trees and shrubs (Appendix B).

Individual tree and shrub removal counts by species and individual landowner are presented in Appendix C. The table in Appendix C also highlights the proposed replacement totals based on PSC mitigation requirements.

## TREE AND SHRUB REPLACEMENT PLAN

### 3.0 Replacement

Stantec has completed documentation identifying the number, locations, and type of trees and shrubs removed (**Table 2-1**). This document serves as the tree and shrub replacement plan required per the PSC Tree and Shrub Mitigation Specifications that details the proposed number, type, and location of plantings. This document will be filed with the PSC for approval.

Trees and shrubs will be replaced using the same or similar species on a 2:1 basis pursuant to the PSC Tree and Shrub Mitigation Specifications. Negotiations were conducted by Hess with the associated landowners or land administrators in the case of public lands where trees/shrubs were removed to determine appropriate nearby replacement locations (**Appendix D**). A few of the affected landowners/land administrators elected not to have the replacement trees/shrubs replaced on their property. The waivers from the landowners/land administrators who requested not to have replacement trees/shrubs replanted are included in **Appendix E**. Hess and the USACE have agreed on a one-time tree/shrub replacement fee (as defined in USACE SOP #14) for nineteen 2- to 4-inch trees, eleven 4- to 8-inch trees, and 1,440 square feet of shrubs removed on USACE-administered lands in lieu of the replacement of the trees and shrubs removed (**Appendix B**). In addition Hess and the USFS negotiated a partial replacement of the number of trees and shrubs removed from the USFS lands. The replacement will consist of 1200 green ash trees only and no shrubs. The documentation that supports the agreement with Hess and the USFS is also included in **Appendix E**. The required tree and shrub replacements that are not to be planted on Hess Hawkeye Pipeline affected properties from which they were removed will instead be planted on a separate property owned by Hess, adjacent to Hess's Tioga Rail Terminal (**Appendix D**). **Table 3-1** lists the species, the number of each species and the properties on which these will be planted. Trees will be replaced using 2-year-old saplings and shrubs will be replaced with stem cuttings. Based on the 2:1 mitigation ratio, planting of at least 10,992 trees and shrubs is required (**Table 3-1**).

**Table 3-1 Replacement Trees and Shrubs**

Landowner/Replacement Location	Tree/Shrub Type	Number
USFS	Green Ash	1,200
Dillard	Chokecherry	50
Halverson	Chokecherry	12
Moe (formerly Abel)	Chokecherry	68
	Silver Buffaloberry	56
Hess Tioga Rail Terminal	Green Ash	1,436
	Chokecherry	7036
	American Elm	400
	Silver Buffaloberry	160
	Juneberry <sup>1</sup>	160
	Nannyberry	200
	Downy Hawthorn <sup>2</sup>	8
	Common Juniper	22
	Skunkbrush Sumac	102
	Redosier Dogwood	80
	Rocky Mountain Juniper	2
<b>Total</b>		<b>10,992</b>

## TREE AND SHRUB REPLACEMENT PLAN

<sup>1</sup> Shrub also is known as Saskatoon serviceberry, as indicated in **Appendix B**.

<sup>2</sup> Downy hawthorn is the replacement shrub for fireberry hawthorn, as indicated in **Appendix B**.

### Planting Procedures to be Implemented in 2017

Tree and shrub replacement shall not be located within a 20- to 30-foot-wide path over the pipeline to facilitate visual inspections of the ROW in accordance with U.S. Department of Transportation safety regulations.

### Timeline for Plantings in 2017

Mechanical planting generally will be utilized where a large number of plantings are required and hand planting will be employed where there are fewer plantings. Plantings would occur once the materials/seedlings are available and based on the appropriate time of year for the materials to be planted (e.g., bare root versus potted). It is anticipated that replanting areas may require site preparation prior to the plantings; as such, some sites may not be suitable for planting until the ground has thawed.

At the conclusion of the Project, documentation identifying the actual number, type, location, and date of the replacement plantings shall be filed with the PSC.

### Replacement Monitoring

Hess will inspect tree and shrub replacements once a year for 3 years on the anniversary of the plantings, and complete a report documenting the status and condition of plantings on or shortly before October 1 of each year. This report will be submitted to the PSC. Survival success rates will be determined by monitoring replacement plantings and on a species-by-species basis. As many of the species to be used for the replacement plantings are colonizer species, individual plants propagating naturally will be included in the survival success rates determination. Hess understands the PSC may order additional plantings if survival rates are less than 75 percent after 3 years.



## TREE AND SHRUB REPLACEMENT PLAN

### 4.0 References

Hess Corporation (Hess). 2015. Hawkeye Pipeline System Project Plan of Development.

Stantec Consulting Services Inc. (Stantec). 2016a. Hawkeye Pipeline System Project – USACE Vegetation Mitigation Plan. January 27, 2016. 19 pp.

\_\_\_\_\_. 2016b. Hawkeye Pipeline System Project – USACE Property Post-Construction Assessment of Impacts to Woody Vegetation. April 15, 2016. 5 pp.

\_\_\_\_\_. 2015. Natural Resources Report, Hess Hawkeye Pipeline System Project (November 14, 2014, Revised January 2015). Prepared for Hess North Dakota Pipelines LLC. January 2015. 225 pp.

TREE AND SHRUB REPLACEMENT PLAN

Appendix A USACE Property Post-construction Assessment of  
Woody Vegetation Letter



Stantec Consulting Services Inc.  
2950 E. Harmony Road, Suite 290  
Fort Collins, Colorado 80528  
Tel: 970-482-5922  
Fax: 970-482-6368

April 15, 2016

Mr. Brian Epperson  
Hawkeye Pipeline System Project, North Dakota  
Hess Corporation  
1501 McKinney Street  
Houston, TX 77010

**Reference: Hawkeye Pipeline System Project – USACE Property Post-construction Assessment of Impacts to Woody Vegetation**

Dear Mr. Epperson:

This letter report is a summary of the impacts to tree and shrubs on the United States (U.S.) Army Corps of Engineers (USACE) property from construction activities related to the Hawkeye Pipeline System Project and is a follow-up to the Stantec-prepared USACE Vegetation Mitigation Plan dated January 27, 2016.

Two woodland/shrubland areas (SWV-4 and SWV-5) were observed during pre-construction field surveys conducted on USACE land. A field survey was conducted on March 1, 2016 by Stantec staff to document construction impacts to woody vegetation. Survey results have been included in this letter report.

**Results**

The trees and shrubs associated with the woodland/shrubland area (SWV-5) were not disturbed or removed since the Horizontal Directional Drill (HDD) construction method was used at this crossing. The second woodland/shrubland area (SWV-4) was crossed using the open-cut trenching construction method. In addition, timber matting was utilized at this crossing to enable construction equipment access within the construction right-of-way (ROW) and to minimize vegetation impacts and soil compaction. The width of surface disturbance associated with the open-cut trenching construction method was approximately 18 feet. Timber matting was placed along the eastern side of the construction ROW over the top of the shrubs. The width of the timber matting was approximately 13 feet.

With the use of timber matting over a portion of the shrubland area and since construction was completed during the winter, the shrubs in this area have a high likelihood of recovery following mat removal. The mats were still in place at the time of the field survey. The mats will remain in place to facilitate access for reclamation equipment and will be removed following completion of reclamation activities.



Reference: **Hawkeye Pipeline System Project – USACE Property Post-construction Assessment of Impacts to Woody Vegetation**

The area with construction impacts to woody vegetation within SWV-4 is shown in **Figure 1** (attached). The woody vegetation impacts are tallied by species, size, and stem count or clump count area in **Table 1**.

**Table 1 Woody Vegetation Impacted within SWV-4**

Tree/Shrub Species	Diameter Breast Height	Stem Count or (Clump Count Area)
Green ash trees (removed)	2-4"	16
Green ash trees (removed)	4-8"	11
Chokecherry trees (removed)	2-4"	3
Chokecherry/snowberry shrubs (removed)	<2"	(864 ft <sup>2</sup> )
Chokecherry/snowberry shrubs (matted)	<2"	(576 ft <sup>2</sup> )

A representative photo of the site is provided below.



**Photo 1: SWV-4, view south**



March 21, 2016  
Page 3 of 4

**Reference: Hawkeye Pipeline System Project – USACE Property Post-construction Assessment of Impacts to Woody Vegetation**

Replacement of herbaceous vegetation disturbed during construction will occur via seeding activities to be completed between May 1 and June 15, 2016. Seeding activities will be completed in accordance with the planting specifications and one of the specified seed mixes provided in the U.S. Army Corps of Engineers (USACE) SOP#14 - Garrison Project Tree/Vegetation Mitigations (SOP #14). In addition, erosion control, soil reclamation, and vegetation monitoring requirements will be implemented in accordance with SOP#14.

A suitable planting location for tree/shrub replacement will be determined in consultation with the USACE for incorporation into a detailed planting plan or monetary compensation (based on the table provided in SOP#14) will be remitted at the discretion of the USACE.

Please do not hesitate to contact us with any questions.

Regards,

**Stantec Consulting Services Inc.**

A handwritten signature in blue ink that reads "Erin Bergquist".

Erin Bergquist  
Senior Scientist  
Phone: 970-449-8642  
Erin.Bergquist@Stantec.com

A handwritten signature in blue ink that reads "Charles T. Herrmann".

Chuck Herrmann  
Senior Scientist  
Phone: 920-428-1373  
Chuck.Herrmann@Stantec.com

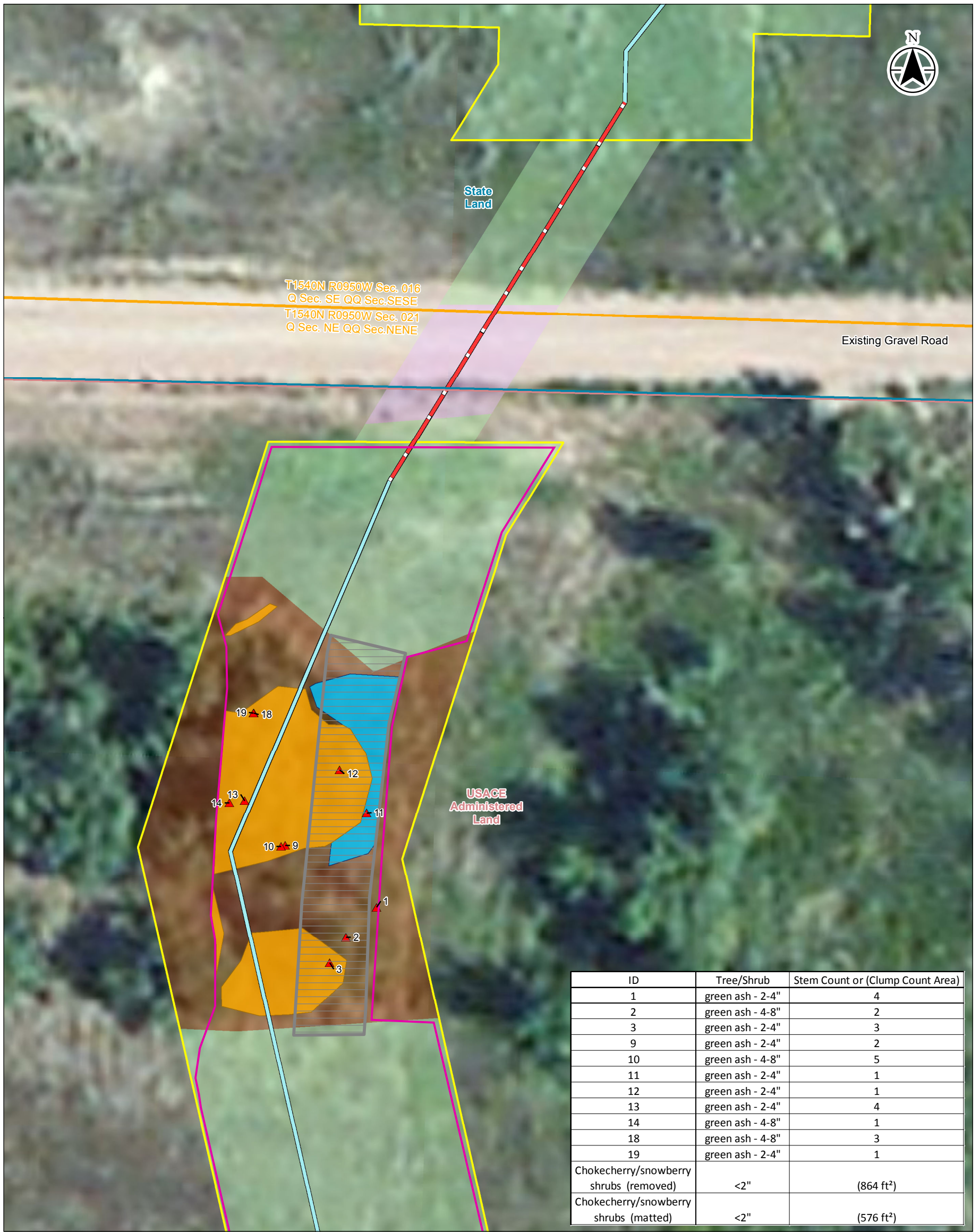


March 21, 2016  
Page 4 of 4

Reference: Hawkeye Pipeline System Project – USACE Vegetation Mitigation Plan

## Appendix A

### Figure 1 – USACE-managed Lands, Field Survey Results



ID	Tree/Shrub	Stem Count or (Clump Count Area)
1	green ash - 2-4"	4
2	green ash - 4-8"	2
3	green ash - 2-4"	3
9	green ash - 2-4"	2
10	green ash - 4-8"	5
11	green ash - 2-4"	1
12	green ash - 2-4"	1
13	green ash - 2-4"	4
14	green ash - 4-8"	1
18	green ash - 4-8"	3
19	green ash - 2-4"	1
Chokecherry/snowberry shrubs (removed)		<2" (864 ft <sup>2</sup> )
Chokecherry/snowberry shrubs (matted)		<2" (576 ft <sup>2</sup> )



- Legend**
- Timber Mat
  - Limit of Vegetation Disturbance
  - Temporary Easement
  - State Land
  - USACE Administered Land
  - PLSS
- Woody Species Impacts**
- Trees/Shrubs DBH 2-8" Removed
  - Snowberry/Chokecherry Removed
  - Chokecherry Removed
  - Snowberry/Chokecherry Matted
  - Chokecherry Matted
- Cover Type**
- Developed
  - Grassland
  - Woodland and Shrubland
- Installation Method**
- HDD
  - Trench

0 10 20 Feet  
 1:240 (At Original document size of 11x17)



Project Location: Williams County, ND. 212205020  
 Prepared by BST on 2016-04-15  
 Technical Review by EB on 2016-04-15  
 Independent Review by CH on 2016-04-15

Client/Project:  
 Hess  
 Hawkeye

Figure No.  
**1**

**USACE - Managed Lands  
 North of Lake Sakakawea  
 Vegetation Mitigation Plan**

- Notes**
- Coordinate System: NAD 1983 StatePlane North Dakota North FIPS 3301 Feet
  - Data Sources Include: Hess 2015, Stantec 2016.
  - Survey Data 3/2/2016

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TREE AND SHRUB REPLACEMENT PLAN

Appendix B Hess/USACE Tree and Shrub Mitigation Agreement



## Coughlin, Dawn

---

**From:** on behalf of Spooner, Wade D NWO <Wade.D.Spooner@usace.army.mil>  
**Sent:** Thursday, October 27, 2016 4:19 PM  
**To:** Epperson, Brian; Coughlin, Dawn  
**Cc:** Thury, Jeremy J NWO; Kolke, Timothy D NWO  
**Subject:** FW: Hess Hawkeye Tree & Shrub Total Cost (UNCLASSIFIED)  
**Attachments:** Hawkeye\_USACE\_treect\_postct\_ltr\_041516\_final.pdf;  
ltr\_Hawkeye\_USACE\_shrubregrowth\_postct\_071216 (2).pdf;  
Hawkeye\_USACE\_vegmitplan\_ltr\_012716\_final.pdf

Hi Brian and Dawn,

We have reviewed the attached documents and concur with the identified impacts. Based on Garrison Projects vegetation mitigation policy, we have calculated the total impact to be \$220,900.

As we have discussed, Hess can, In lieu of making a direct payment to the Corps of Engineers, provide in-kind services. We currently use this program to assist in accomplishing smaller projects at our facilities. Comfort station upgrades, Tree plantings, wildlife habitat improvements, camp ground pad and loop paving, new courtesy loading and unloading boat docks and playground equipment are a couple of examples of things that can be provided as in-kind services, under this program. If Hess would like to participate, my staff will develop, negotiate and manage the project or projects. If Hess concurs to the terms and conditions, of the In-kind, Hess will be instructed to make a check or checks made payable directly to the contractor or supplier performing the work. That check would be sent to us here at the Garrison Project and then held until the work has been completed.

Wade

-----Original Message-----

**From:** Thury, Jeremy J NWO  
**Sent:** Thursday, October 27, 2016 1:56 PM  
**To:** Spooner, Wade D NWO <Wade.D.Spooner@usace.army.mil>  
**Cc:** Stonesifer, Alfred C NWO <Alfred.C.Stonesifer@usace.army.mil>; Nelson, Jason H NWO <Jason.H.Nelson@usace.army.mil>; Morris, Michael P NWO <Michael.P.Morris@usace.army.mil>; Lillejord, Andrew J NWO <Andrew.J.Lillejord@usace.army.mil>  
**Subject:** FW: Hess Hawkeye Tree & Shrub Total Cost (UNCLASSIFIED)

CLASSIFICATION: UNCLASSIFIED

Wade,

This has been reviewed again and the mitigation necessary for the reported post construction woody vegetation impacts for the Hess approach work that was done. Jason and I visited the grassland vegetation and for the first year of growth it looked good.

With all of the most current information:

Compensation for the reported impacts of the trees on the Hess site are as follows:

19 - 2-4" trees = \$1900

11- 4-8" trees = \$2200

1084 sqft of shrubs - \$216,800

TREE AND SHRUB REPLACEMENT PLAN

Appendix C Post-Construction Tree and Shrub Survey Results Table

**Table C-1 Trees and Shrubs Removed During Construction of the Hawkeye Pipeline System Project**

Feature ID	Species Name	Owner	Notes	Acres Cleared During Construction Activities	Number of Individuals (Stem Counts)		Required Mitigation (2:1 Ratio)
					Pre-Construction Counts <sup>1</sup>	Number Removed	
SWV-3	Fireberry hawthorn ( <i>Crataegus chrysocarpa</i> )	Stockman, Richard	Native woodland. Post-construction ROW follows different configuration than pre-construction ROW.	0.04	48	4	8
	Silver buffaloberry ( <i>Shepherdia argentea</i> )				27	2	4
	Common juniper ( <i>Juniperus communis</i> )				16	1	2
SWV-4	American elm ( <i>Ulmus americana</i> )	USACE	Native woodland. Located on USACE-administered lands.	0.06	101	30 trees and 1,084 square feet of shrubs were cleared. For mitigation, Hess and USACE have agreed in terms on a one-time tree/shrub replacement fee.	
	Green Ash ( <i>Fraxinus pennsylvanica</i> )				44		
SWV-6	Silver buffaloberry ( <i>Shepherdia argentea</i> )	USFS	Native shrubland. Completely Removed.	0.12	22	22	44
	Skunkbush sumac ( <i>Rhus trilobata</i> )				25	25	50
	Chokecherry ( <i>Prunus virginiana</i> )				12	12	24
	Common juniper ( <i>Juniperus communis</i> )				5	5	10
SWV-8	Chokecherry ( <i>Prunus virginiana</i> )	USFS	Native woodland. Partially removed.	0.01	30	3	6
	Green Ash ( <i>Fraxinus pennsylvanica</i> )				6	0	0
	Silver buffaloberry ( <i>Shepherdia argentea</i> )				70	6	12

Table C-1 Trees and Shrubs Removed During Construction of the Hawkeye Pipeline System Project

Feature ID	Species Name	Owner	Notes	Acres Cleared During Construction Activities	Number of Individuals (Stem Counts)		Required Mitigation (2:1 Ratio)
					Pre-Construction Counts <sup>1</sup>	Number Removed	
SWV-15	Chokecherry ( <i>Prunus virginiana</i> )	USFS	Native woodland. Partially removed.	1.02	3000	2000	4000
	American elm ( <i>Ulmus americana</i> )				400	200	400
	Green Ash ( <i>Fraxinus pennsylvanica</i> )				500	300	600
	Common juniper ( <i>Juniperus communis</i> )				5	5	10
	Skunkbush sumac ( <i>Rhus trilobata</i> )				36	26	52
	Red osier dogwood ( <i>Cornus stolonifera</i> )				50	40	80
	Saskatoon serviceberry ( <i>Amelanchier alnifolia</i> )				100	80	160
	Nannyberry ( <i>Viburnum lentago</i> )				100	100	200
	Silver buffaloberry ( <i>Shepherdia argentea</i> )				40	15	30
SWV-17	Boxelder ( <i>Acer Negundo</i> )	USFS	Native woodland. Partially removed.	0.24	10	0	0
	Chokecherry ( <i>Prunus virginiana</i> )				3000	1500	3000
	American elm ( <i>Ulmus americana</i> )				300	0	0
	Green Ash ( <i>Fraxinus pennsylvanica</i> )				3000	1000	2000
	Silver buffaloberry ( <i>Shepherdia argentea</i> )				47	22	44

**Table C-1 Trees and Shrubs Removed During Construction of the Hawkeye Pipeline System Project**

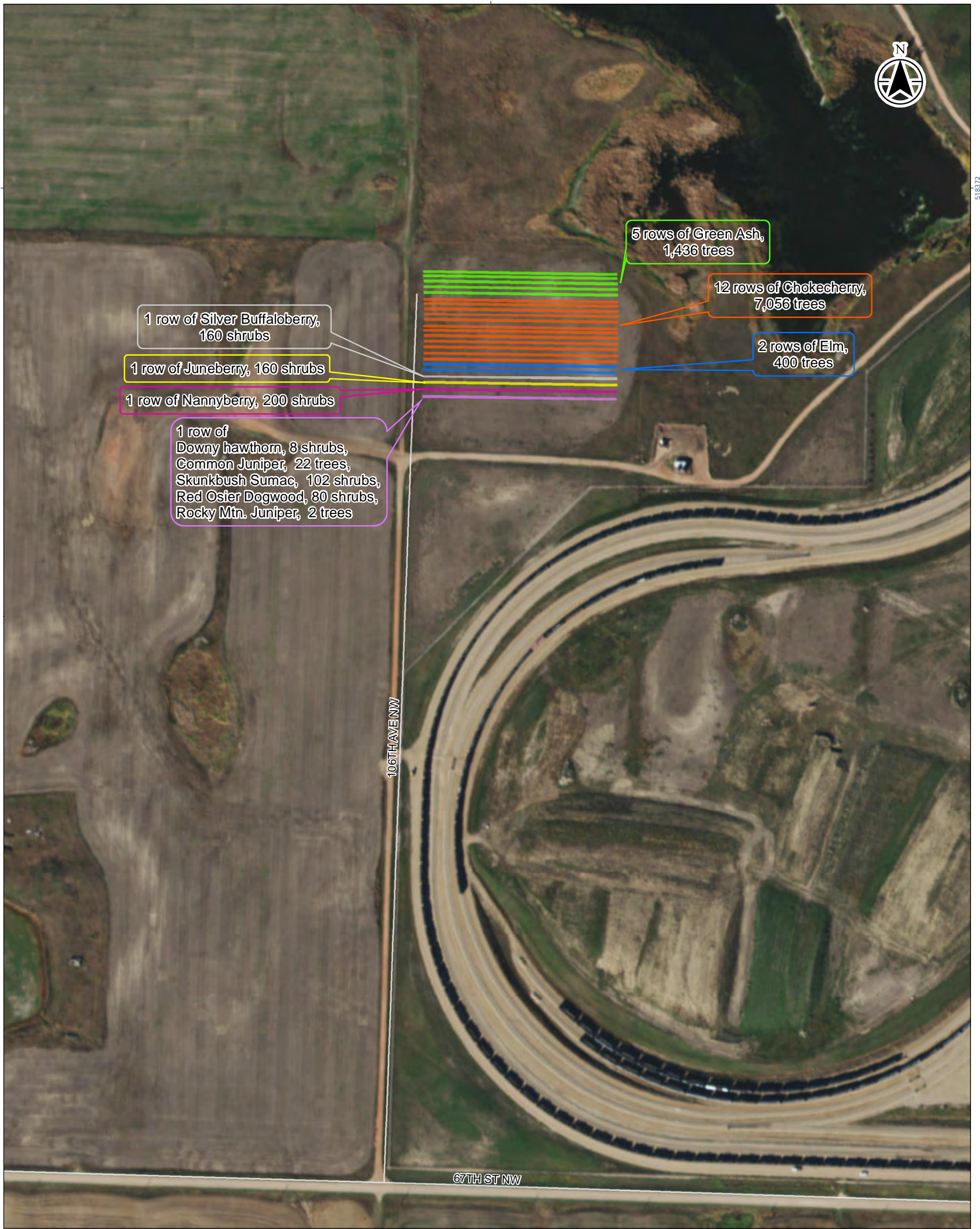
Feature ID	Species Name	Owner	Notes	Acres Cleared During Construction Activities	Number of Individuals (Stem Counts)		Required Mitigation (2:1 Ratio)
					Pre-Construction Counts <sup>1</sup>	Number Removed	
SWV-33	American elm ( <i>Ulmus americana</i> )	USFS	Native woodland. Partially removed.	0.01	2	0	0
	Green Ash ( <i>Fraxinus pennsylvanica</i> )				15	15	30
	Rocky Mountain juniper ( <i>Juniperus scopulorum</i> )				1	0	0
	Chokecherry ( <i>Prunus virginiana</i> )				20	3	6
SWV-37	Green Ash ( <i>Fraxinus pennsylvanica</i> )	State of ND	Native woodland. Completely removed.	0.24	3	3	6
	Silver buffaloberry ( <i>Shepherdia argentea</i> )				11	11	22
	Rocky Mountain juniper ( <i>Juniperus scopulorum</i> )				8	1	2
SWV-39	Silver buffaloberry ( <i>Shepherdia argentea</i> )	State of ND	Native woodland. Completely removed.	0.02	2	2	4
SWV-47	Chokecherry ( <i>Prunus virginiana</i> )	Diland, Raymond	Native shrubland. Completely removed.	0.04	25	25	50
SWV-48	Chokecherry ( <i>Prunus virginiana</i> )	Abel, Nancy	Native shrubland. Partially removed.	0.01	48	24	48
SWV-51	Silver buffaloberry ( <i>Shepherdia argentea</i> )	Abel, Nancy	Native shrubland. Partially removed.	0.02	60	10	20
	Chokecherry ( <i>Prunus virginiana</i> )				20	5	10
SWV-55	Chokecherry ( <i>Prunus virginiana</i> )	Halverson, Roger and Linda	Native shrubland. Completely removed.	0.06	6	6	12

Table C-1 Trees and Shrubs Removed During Construction of the Hawkeye Pipeline System Project

Feature ID	Species Name	Owner	Notes	Acres Cleared During Construction Activities	Number of Individuals (Stem Counts)		Required Mitigation (2:1 Ratio)
					Pre-Construction Counts <sup>1</sup>	Number Removed	
SWV-77	Silver buffaloberry ( <i>Shepherdia argentea</i> )	Abel, Nancy	Native shrubland. Partially removed.	0.04	20	18	36
	Chokecherry ( <i>Prunus virginiana</i> )				20	5	10
	<b>TOTAL</b>				<b>11,255</b>	<b>5,496</b>	<b>10,992</b>

# TREE AND SHRUB REPLACEMENT PLAN

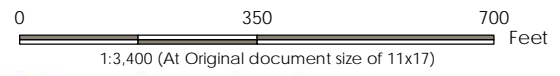
## Appendix D Proposed Tree and Shrub Replacement Location Maps



- Proposed Tree/Shrub Replanting Locations**
- Chokecherry
  - Downy hawthorn, Common Juniper, Skunkbush Sumac, Red Osier Dogwood, Rocky Mtn. Juniper
  - Elm
  - Green Ash
  - Juneberry
  - Nannyberry
  - Silver Buffaloerry

**Notes**  
 1. Coordinate System: NAD 1983 StatePlane North Dakota North FIPS 3301 Feet

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.



Project Location: Williams County and Mountrail County, ND  
 212205020-200.340 REV8  
 Prepared by BST on 2016-11-09  
 Technical Review by EB on 2016-11-18  
 Independent Review by CH on 2016-11-18

Client/Project: Hess Hawkeye Pipeline System Project

Figure No.: C-1

Title: Proposed Tree/Shrub Replanting Locations - Hess Tioga Rail Terminal Location

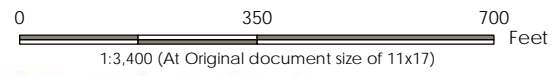




- Proposed Tree/Shrub Replanting Locations
- Chokecherry
- Project Components
- Stationing
  - Bore
  - Trench Installation
  - Additional TWS
  - Permanent Easement
  - Temporary Easement

Notes  
 1. Coordinate System: NAD 1983 StatePlane North Dakota North FIPS 3301 Feet

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Project Location: Williams County and Mountrail County, ND  
 212205020-200.340 REV8  
 Prepared by BST on 2016-11-09  
 Technical Review by EB on 2016-11-18  
 Independent Review by CH on 2016-11-18

Client/Project  
 Hess Hawkeye  
 Pipeline System Project

Figure No.  
 C-2

Title  
 Proposed Tree/Shrub  
 Replanting Locations -  
 Dillard Property Location

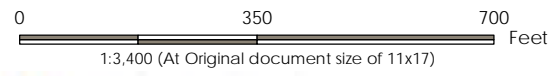
V:\2122\active\212205020\GIS\mxd\field\Survey\2016\Fig\_ReplantingLocations\_11x17\_Aerial2.mxd Revised: 2016-11-18 By: bristaylor



- Proposed Tree/Shrub Replanting Locations**
- Chokecherry
  - Buffaloberry, Chokecherry
- Project Components**
- Stationing
  - Trench Installation
  - Additional TWS
  - Permanent Easement
  - Temporary Easement

**Notes**  
 1. Coordinate System: NAD 1983 StatePlane North Dakota North FIPS 3301 Feet

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Project Location: Williams County and Mountrail County, ND  
 212205020-200.340 REV8  
 Prepared by BST on 2016-11-09  
 Technical Review by EB on 2016-11-18  
 Independent Review by CH on 2016-11-18

Client/Project:  
 Hess Hawkeye  
 Pipeline System Project

Figure No.  
 C-3

Title  
 Proposed Tree/Shrub  
 Replanting Locations -  
 Moe Property Location

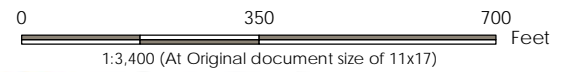


Proposed Tree/Shrub Replanting Locations

- Chokecherry
- Project Components**
- Stationing
- HDD
- Trench Installation
- Additional TWS
- Permanent Easement
- Temporary Easement

Notes  
 1. Coordinate System: NAD 1983 StatePlane North Dakota North FIPS 3301 Feet

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Project Location  
 Williams County and Mountrail County, ND  
 212205020-200.340 REV8  
 Prepared by BST on 2016-11-09  
 Technical Review by EB on 2016-11-18  
 Independent Review by CH on 2016-11-18

Client/Project  
 Hess Hawkeye Pipeline System Project

Figure No.  
 C-4

Title  
 Proposed Tree/Shrub Replanting Locations - Halverson Property Location

V:\2122\active\212205020\GIS\mxd\field\Survey\2016\Fig\_ReplantingLocations\_11x17\_Aerial2.mxd  
 Revised: 2016-11-18 By: brian.taylor  
 406823

1384512



406823

1384512

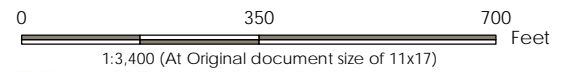


Proposed Tree/Shrub Replanting Locations

- Green Ash
- Project Components**
- Stationing
- HDD
- Bore
- Trench Installation
- Additional TWS
- Permanent Easement
- Temporary Easement

Notes  
 1. Coordinate System: NAD 1983 StatePlane North Dakota North FIPS 3301 Feet

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.



Project Location: Williams County and Mountrail County, ND  
 212205020-200.340 REV8  
 Prepared by BST on 2016-11-09  
 Technical Review by EB on 2016-11-18  
 Independent Review by CH on 2016-11-18

Client/Project  
 Hess Hawkeye  
 Pipeline System Project

Figure No.  
 C-5

Title  
 Proposed Tree/Shrub  
 Replanting Locations -  
 USFS Property Location

TREE AND SHRUB REPLACEMENT PLAN

Appendix E Landowner Tree and Shrub Replacement Waivers

## Coughlin, Dawn

---

**From:** Haupt, Michael L. <mhaupt@nd.gov>  
**Sent:** Tuesday, June 14, 2016 10:12 AM  
**To:** Coughlin, Dawn  
**Cc:** Barth, Cory J.; Humann, Michael T.  
**Subject:** ROW#6272 amend ROW#7647 - Hess Hawkeye Pipeline Tree and Shrub Restoration

Dawn,

Good morning! The Department of Trust Lands respectfully declines the request to plant replacement trees and shrubs on the area of native prairie disturbed by the recent Hess pipeline construction under ROW#6272 amend ROW#7647. If possible, Trust Lands requests that the trees/shrubs be offered to the ND Game and Fish, Parks and Recreation or State Forestry Department for use on their projects. Let me know if you have questions. Thanks.

### *Michael L. Haupt*

Land Management Professional, CPRM  
North Dakota Department of Trust lands  
1707 Nth 9th Street  
Bismarck ND 58506-5523  
701-328-1916  
[mhaupt@nd.gov](mailto:mhaupt@nd.gov)

Note: You can track the real time status of your right-of-way application 24/7 at <http://www.land.nd.gov/surface/right-of-way.aspx> using either the ROW number or by entering at least the first three letters of the company name. By checking this site you can find the name, telephone number and email address of the person working on the application as well as its current status in real time.

**From:** Coughlin, Dawn [<mailto:DCoughlin@hess.com>]  
**Sent:** Thursday, June 09, 2016 9:47 AM  
**To:** Haupt, Michael L. <mhaupt@nd.gov>  
**Subject:** Hess Hawkeye Pipeline Tree and Shrub Restoration

Hello Michael,

Thank you for taking the time to discuss the tree and shrub restoration relating to the Hess Hawkeye Pipeline project. As part of our project permit, the North Dakota Public Service Commission (PSC) requires that Hess replace any tree and shrubs removed during the project on a 2:1 ratio. Stantec, our consultant has performed pre and post construction evaluations and determined that the following trees and shrubs were removed:

13 Silver Buffaloberry  
3 Green Ash  
1 Rocky Mountain Juniper

Based on our conversation, the State Trust Lands do not wish to replace the trees and shrubs. Your preference is to allow these areas to return to grassland, which is in line with your needs for livestock grazing. If you would please confirm that this is correct by responding to this email, I will pass on this information to the PSC. If PSC has any additional requirements, I will reach out to you.

Regards,  
Dawn

**Dawn M. Coughlin**  
**Sr. Advisor, Environmental Affairs**



HESS CORPORATION  
1501 McKinney Street  
Houston, TX 77010

August 18, 2016

Richard L. Stockman  
P.O. Box 786  
Sedalia, CO 80135

Re: Tree and Shrub Mitigation

Dear Richard:

Hess North Dakota Pipelines, LLC ("Hess") is required to comply with the State of North Dakota Public Service Commission's Tree and Shrub Mitigation Specifications ("Mitigation") pursuant to the Certificate of Corridor Compatibility Numbers 168 and 169 and Route Permit Numbers 180 and 181 (Case No. PU-15-32) related to Hess' Hawkeye Pipeline Project for the Natural Gas Liquids and Crude Oil Pipelines constructed on your property. The Mitigation requires, among other things, that Hess plant on your property two 2-year-old saplings for every one tree removed and two shrub stem cuttings for every one shrub removed from your property.

Pursuant to the Mitigation, you, as landowner, have the option of having these replacement trees and shrubs planted on your property, either on or off the right-of-way. Alternatively, you have the option to waive, in writing, these options. Please execute this letter below indicating your preference for the planting of the replacement trees and shrubs and return such executed letter to the undersigned at your earliest convenience. Should you have further questions, please contact the undersigned.

Regards,

I Richard Stockman would like to waive my option to have the replacement trees and shrubs planted on my property.

Please Print Name: Richard Stockman

Date: 08/29/2016

OR

I \_\_\_\_\_ would like the replacement trees and shrubs planted on my property.

Please Print Name: \_\_\_\_\_

Date: \_\_\_\_\_

**From:** [Grotte, Kim -FS](#)  
**To:** [Ewing, David](#)  
**Subject:** RE: Hawkeye Pipeline. A follow up to today's phone conversation concerning tree planting on USFS lands.  
**Date:** Tuesday, March 21, 2017 3:52:49 PM  
**Attachments:** [image001.png](#)

---

David,

Yes, plant the design that Dawn worked out with PSC and pipeline operators with the referenced areas of the existing pipeline right-of-ways being excluded from tree planting.



**Kim Grotte**  
**Cost Reimbursement Pipeline Specialist**  
**Forest Service**  
**Dakota Prairie Grassland, McKenzie Ranger District**

p: 701-842-8509  
f: 701-842-8544  
[kgrotte@fs.fed.us](mailto:kgrotte@fs.fed.us)

1905 S. Main St.  
Watford City, ND 58854  
[www.fs.fed.us](http://www.fs.fed.us)

---

**From:** Ewing, David [mailto:dewing@hess.com]  
**Sent:** Tuesday, March 21, 2017 2:49 PM  
**To:** Grotte, Kim -FS <kgrotte@fs.fed.us>  
**Cc:** Doubek, Lindsey <ldoubek@Hess.com>; Epperson, Brian <bepperson@hess.com>  
**Subject:** RE: Hawkeye Pipeline. A follow up to today's phone conversation concerning tree planting on USFS lands.

Kim,

I am a little confused by your response. Are you saying: 1) Plant the 1200 green ash on USFS lands in the location I sent to you, outlined on the .pdf, I attached to my email to you dated 3/02/2017. This would be according to the plan developed by Dawn Coughlin. Then plant the remainder of the species removed from USFS land at a 2:1 ratio on the alternate site we have identified or 2) Replace all the plants identified as removed from USFS land at the 2:1 ratio back onto the USFS lands where they were removed?

Both options would include the exception of not planting anything on the lands over the Dakota Gas line right of way or the 20' to 30' wide corridor over the Hess pipeline.

I believe your email below was stating go with option 1) above but I wanted to be absolutely certain I understand.

Dave



on USFS lands.

Kim,

After our phone conversation, I contacted Dawn Coughlin to get further details on what came out of her communications with Dakota Gasification and the PSC. My discussion with her helped me to get a clearer picture of what has passed and needs to pass in this process. She told me Dakota Gasification did not want any woody species planted on their right of way.

I am not sure how familiar you are with the stipulations controlling this project so if I say things you clearly understand please forgive me. To begin with, as you mentioned in our phone conversation, the PSC is the agency that imposes the replacement of trees or brush species and not the USFS. That is true and it was ordered to be in a ratio of two plants for each plant removed. They also imposed the restriction that trees and shrubs cannot be planted over a 20 to 30 foot wide corridor centered on the pipeline's actual location for inspection purposes. However, in a phone conversation with Dawn, she said she was told by the PSC that they encouraged the replacement of the plants removed to be replanted as close as possible to the same location from which they were removed. However, they acknowledged verbally as well as it being stipulated by the formal order that the landowner/administrator of each location in question has the right to waive the replacement of the plants removed from their property. The requirement of the order is the landowner/administrator must waive the replacement of the plants on their property in writing. Although not directly stated in the order the PSC issued to Hess, it is implied that if the land owner/administrator waives the planting of the trees and shrubs on their property they must be planted on another location. That location has been identified.

What I am missing from you is the written waiver of the requirement to plant all or part of the same number of trees and shrubs removed from USFS lands back onto USFS lands at the 2:1 ratio for plants replaced to plants removed. We have the waivers from every other affected owner/administrator including the State of North Dakota and the Army Corps of Civil Engineers, which chose to waive the plantings. Your waiver is the only one we lack.

That being said in a previous conversation between you and I, you stated you were not sure that you even wanted the trees. I was told the trees were being recommended as a means of erosion control because of the steepness of the terrain. Correct me if I am wrong, but it seems to me the juvenile trees will do little to prevent surface erosion other than by the reduction of the energy of splash from rain drops by interception, which really does not occur until the trees are mature. I would think herbaceous vegetation would do far more to control surface erosion than would two year old saplings unless other measures are taken to prevent the surface erosion such as mulching, alternate herbaceous strips between tree rows, etc. at the same time the trees are planted. In other words, if you do not want the trees we would be glad to plant them at the alternate location we have identified.

One way or another, trees or no trees we are required to plant two plants of the same species for every plant removed from the USFS property back onto the same property unless you waive that requirement in writing.

**David L. Ewing, PE**

**HESS Bakken Investments II, LLC** | Civil Engineering Advisor  
3015 16<sup>th</sup> ST SW, Ste. 20, Minot, ND 58701  
701.389.0061 Cell | [Dewing@Hess.com](mailto:Dewing@Hess.com)

---

**From:** Grotte, Kim -FS [<mailto:kgrotte@fs.fed.us>]  
**Sent:** Monday, March 20, 2017 4:46 PM  
**To:** Ewing, David  
**Subject:** RE: Hawkeye Pipeline. A follow up to today's phone conversation concerning tree planting on USFS lands.

David,

Yes, I was not very excited about doing tree replacement planting at that draw bottom of the pipeline(s) right-of-way. I figured mother nature could do her thing and we would not contribute to future root encroachment plantings causing problems associated with the existing pipelines here. I have always had a fear of non-native area seedlings and new tree diseases and such coming in with these.

Dawn put a lot of time, study, and effort into this tree/shrub replanting of this area of the project as well as Marty, Mark, Larry, and folks with native grass mix reseed efforts throughout the right-of-way so we thought we would work with her and planning for some green ash tree replants here. I wanted to make sure that we had an opinion from the other pipelines operators concerns for new tree replacement here before we planned for it. Dawn did reach out and get the opinion of DGC and came up with the plan you referenced in accordance with PSC folks strong opinion to replant the green ash trees here. The actual planned replacement trees going to spots where they were removed here and staying off of the DGC pipeline right-of-way area should be fine to do this spring with PSC being persistent in wanting to get their required tree replant numbers planted, thanks.



**Kim Grotte**  
**Cost Reimbursement Pipeline Specialist**  
**Forest Service**  
**Dakota Prairie Grassland, McKenzie Ranger District**

p: 701-842-8509  
f: 701-842-8544  
[kgrotte@fs.fed.us](mailto:kgrotte@fs.fed.us)

1905 S. Main St.  
Watford City, ND 58854  
[www.fs.fed.us](http://www.fs.fed.us)

---

**From:** Ewing, David [<mailto:dewing@hess.com>]  
**Sent:** Monday, March 20, 2017 4:12 PM  
**To:** Grotte, Kim -FS <[kgrotte@fs.fed.us](mailto:kgrotte@fs.fed.us)>  
**Cc:** Doubek, Lindsey <[ldoubek@Hess.com](mailto:ldoubek@Hess.com)>; Epperson, Brian <[bepperson@hess.com](mailto:bepperson@hess.com)>  
**Subject:** RE: Hawkeye Pipeline. A follow up to today's phone conversation concerning tree planting

Hopefully this email clarifies what is required and what we need from you. Please let me know if you have questions or comments. Thank you.

Dave

**David L. Ewing, PE**

**HESS Bakken Investments II, LLC** | Civil Engineering Advisor  
3015 16<sup>th</sup> ST SW, Ste. 20, Minot, ND 58701  
701.389.0061 Cell | [Dewing@Hess.com](mailto:Dewing@Hess.com)

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