



ATTACHMENT F
Noxious Weed/Invasive Plant Control and Mitigation Plan



Spire STL Pipeline Project

Noxious Weeds/Invasive Plant
Species Control and Mitigation Plan

FERC Docket No. CP17-40-000 and CP17-40-001

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Acronyms and Abbreviations

BMP	Best Management Practices
EI	Environmental Inspector
FERC	Federal Energy Regulatory Commission
Plan	FERC's Upland Erosion Control, Revegetation, and Maintenance Plan
Project	Spire STL Pipeline Project
Spire	Spire STL Pipeline LLC
USDA	United States Department of Agriculture



Noxious Weeds/Invasive Plant Species Control and Mitigation Plan

This Noxious Weeds/Invasive Plant Species Control and Mitigation Plan describes the general control measures to be implemented by Spire STL Pipeline LLC (“Spire”) and its contractors during construction and post-construction activities of the Spire STL Pipeline Project (“Project”). Where deemed appropriate and feasible, measures identified within this plan will be applied to work areas during construction and post-construction activities to avoid and/or minimize the spread of existing noxious weeds or invasive plant species within the Project’s permanent easement.

1.1 Noxious Weeds and Invasive Plant Species

Botanists familiar with the vegetative community types and noxious weeds potentially occurring within the Project area developed a list of noxious and invasive species for survey purposes based on the Illinois Noxious Weed Law and the Missouri Noxious Weed List (Illinois Administrative Code 2002; and Missouri Department of Agriculture 2011), In addition, species on the United States Department of Agriculture’s (“USDA”) Introduced, Invasive and Noxious Plants Federal Noxious Weed List was reviewed for additional species that have the potential to occur in the Project area. A list of potential noxious and invasive species reviewed for the Project area is provided in Attachment A (USDA 2013).

Baseline noxious weed and invasive plant species surveys (“Surveys”) were performed concurrently during the biological field surveys by qualified environmental specialists. Surveys were performed by walking the ground within the Project’s survey corridor and access roads in a systematic sequence to ensure optimal coverage and identification of invasive plant species as listed on the Noxious Weeds and Invasive Plant Species List. For each distinct occurrence of an invasive plant species observed within the Project corridor, Global Positioning System data points were collected to document the specific location of the invasive plant species occurrence. For each data point collected, the plant species name plus a general identifier for the general level of infestation was recorded. Weed infestation levels were generalized into low (single plants), moderate (small cluster of invasive species), and high categories (widespread infestation). At certain locations, multiple data points were taken if more than one noxious weed species was observed and distributed within distinct areas of close proximity. The locations and extent of noxious weeds identified during baseline surveys is provided in Attachment B.

1.2 Control and Mitigation Plan

During construction, exposed topsoil may provide for the recruitment of invasive species, and the potential exists for equipment to bring in seeds to non-infested areas. In order to counteract the potential for the introduction and/or spread of noxious weeds and invasive plant species listed in Attachment A. Spire, in conjunction with recommendations from the USDA’s Conservation Program in Scott, Greene, and Jersey Counties, Illinois, and in St. Charles and St. Louis Counties, Missouri, has developed best management practices (“BMPs”) that will be



implemented on the Project during construction (Behymer 2016, Fuller 2016, Muenks 2016, Perkins 2016, Wamsley 2016).

1. Prior to the start of Project construction activities, Spire will provide contractors and environmental inspector's ("EIs") maps that depict the location and level of infestation for plant species occurrences identified within the Noxious Weed Surveys.
2. Adhere to erosion control measures in Federal Energy Regulatory Commission's ("FERC") *Upland Erosion Control, Revegetation, and Maintenance Plan* ("Plan") and FERC's *Wetland and Waterbody Construction and Mitigation Procedures* to ensure that sediment movement into newly disturbed soils are minimized to avoid the potential of invasive plant species seed distribution.
3. Use construction techniques along the pipeline route that minimize the time that bare soil is exposed and, therefore, minimize the opportunity for exotic species to become established.
4. Ensure all vehicles, equipment, and materials are inspected and cleaned of any visible vegetation and/or soil before entering or leaving areas of known noxious weed infestations identified within the construction right-of-way.
5. All disturbed areas will be reseeded promptly after final grading, weather and soil conditions permitting, and in consideration of written recommendations from the local soil conservation authorities. Prompt reseeding will ensure that any bare soil within the Project corridor is not available for exotic or invasive species for an extended period of time providing the opportunity for the establishment of plant species listed on the Noxious Weeds and Invasive Plant Species List.
6. As described in the FERC Plan, mulch if available, consisting of a local sources or certified weed-free straw or hay or other erosion-control materials will be used during constructions activities and installation of permanent erosion control measures.
7. During active construction activities and until the Project right-of-way is successfully revegetated as outlined in FERC's Plan, Spire will require all EIs to inspect the Project right-of-way for any new growth of plant species listed on the Noxious Weeds and Invasive Plant Species List. If new areas of growth are observed, Spire will coordinate with landowners and applicable agencies to address concerns.
8. Spire will utilize herbicides and/or pesticides as necessary to provide weed control at aboveground facilities in Illinois which are located adjacent to agricultural lands in accordance with the Project-specific Agricultural Impact Mitigation Agreement for Illinois. Herbicide use will be conducted by an applicator licensed in the state of Illinois. Spire does not propose to utilize herbicides on its pipeline right-of-way. Measures will be taken (as described above) to control the spread of noxious weeds during construction. Spire will monitor the disturbed areas to address the success of revegetation in accordance with FERC's Plan. If species or colonies are found in numbers which are significantly different from the existing nearby off right-of-way locations, Spire will conduct mowing and/or hand cutting/removal of the species in these areas.

It may not be possible to eradicate invasive species in the Project area because of such issues as seed drift or colonization from off-site locations. Therefore, Spire's overall goal is to control the invasive species to the extent



that wetlands and uplands are not dominated by the invasive species to the point where the functions and values of the systems/habitats are adversely compromised. Spire has included the use of BMPs to control the transport of invasive species from areas where they may currently occur along the Project route. Measures, such as training personnel in the identification of invasive species, inspecting and cleaning equipment, and practices to encourage rapid stabilization, restoration, and revegetation of disturbed work areas, have been incorporated to minimize adverse impacts resulting from the presence of invasive species.

Spire has provided a copy of this plan as a courtesy to the USDA's Conservation Program representatives in Illinois per request.

1.3 References

- Behymer, Bradley. 2016. Phone conversation with USDA-NRCS Greene and Jersey County Field Office District Conservationist and Erin Matthews of GAI on October 3, 2016.
- Fuller, Johanna. 2016. Phone conversations with USDA-NRCS Scott County Field Office District Conservationist and Erin Matthews of GAI on September 30, 2016.
- Illinois Administrative Code. State of Illinois. 2002. *Illinois noxious weed law*. October 20, 2003.
- Missouri Department of Agriculture. 2011. Missouri Revised Statutes and Rules for Noxious Weeds. Available online at <http://agriculture.mo.gov/plants/ipm/noxiousweeds.php>. Accessed September 2016.
- Muenks, Nathan. 2016. Phone conversation with MDOC and Erin Matthews of GAI on September 30, 2016.
- Perkins, Charles. 2016. Phone conversation with MDNR Soil and Water Conservation District and Erin Matthews of GAI on September 30, 2016.
- United States Department of Agriculture. 2013b. *Introduced, Invasive and Noxious Plants - Federal and State*. Available online at <http://plants.usda.gov/java/noxiousDriver#state>. Accessed September 2016.
- Wamsley, Collin. 2016. Phone conversations with USDA-NRCS St. Louis and St Charles County Field Office District Conservationist and Erin Matthews of GAI on September 30, 2016.



ATTACHMENT A
Noxious Weeds and Invasive Plant Species List



Attachment A. Noxious Weeds and Invasive Plant Species List

Scientific Name	Common Name
Federal Species Known to Occur in Illinois or Missouri	
<i>Heracleum mantegazzianum</i>	Giant Hogweed
<i>Nassella trichotoma</i>	Serrated tussock
<i>Orobanche</i>	Broomrape
<i>Ottelia alismoides</i>	Ducklettuce
<i>Cuscuta</i>	Dodder
Illinois State List	
<i>Ambrosia artemisiifolia</i>	Common ragweed
<i>Ambrosia trifida</i>	Giant ragweed
<i>Cannabis sativa</i>	Marijuana
<i>Carduus nutans</i>	Musk Thistle
<i>Cirsium arvense</i>	Canada thistle
<i>Pueraria montana</i>	Kudzu
<i>Sonchus arvensis</i>	Perennial sowthistle
<i>Sorghum almum</i>	Columbus grass
<i>Sorghum halepense</i>	Johnsongrass
Missouri State List	
<i>Cannabis sativa</i>	Marijuana
<i>Cirsium arvense</i>	Canada thistle
<i>Carduus nutans</i>	Musk thistle
<i>Convolvulus arvensis</i>	Field bindweed
<i>Dipsacus fullonum</i>	Common teasel
<i>Dipsacus laciniatus</i>	Cut-leaved teasel
<i>Lythrum salicaria</i>	Purple loosestrife
<i>Onopordum acanthium</i>	Scotch thistle
<i>Pueraria montana</i>	Kudzu
<i>Rosa multiflora</i>	Multiflora rose
<i>Sorghum halepense</i>	Johnsongrass



ATTACHMENT B
Noxious Weed Locations



Attachment B. Noxious Weed Locations

Milepost/ County, State	Feature I.D.	Species	Cover	Within Construction Work Areas (Y/N)	Distance to Construction Work Areas (feet)
24-Inch Pipeline					
<i>Scott County, Illinois</i>					
0.9	NOX-TMA-001	Giant Ragweed (<i>Ambrosia trifida</i>)	Low	No	13
1.0	NOX-TMA-002	Giant Ragweed	Low	Yes	0
1.0	NOX-TMA-003	Giant Ragweed	Low	Yes	0
1.0	NOX-TMA-004	Giant Ragweed	Low	No	78
2.3R3	NOX-TMA-005	Ragweed spp.	Low	No	410
2.6R3	NOX-TMA-006	Giant Ragweed	Low	No	635
2.6R3	NOX-TMA-007	Giant Ragweed	Low	No	749
2.8R3	NOX-TMA-008	Common Ragweed (<i>Ambrosia artemisiifolia</i>)	Low	No	654
2.9R3	NOX-TMA-009	Johnsongrass (<i>Sorghum halepense</i>)	Low	No	452
3.1	NOX-TMA-010	Common Ragweed	Moderate	No	3
3.4	NOX-TMA-011	Giant Ragweed	Low	No	119
3.4	NOX-TMA-012	Johnsongrass	Low	No	111
<i>Greene County, Illinois</i>					
3.6	NOX-TMA-013	Common Ragweed	Moderate	No	221
3.7	NOX-TMA-014	Ragweed spp.	Moderate	No	93
3.7	NOX-TMA-015	Ragweed spp.	Moderate	No	102
3.8	NOX-TMA-016	Common Ragweed	Moderate	Yes	0
4.2	NOX-TMA-017	Common Ragweed	Low	Yes	0
4.5	NOX-TMA-019	Ragweed spp.	Moderate	No	29
5.8	NOX-TMA-020	Common Ragweed	Low	No	30
5.8	NOX-TMA-021	Ragweed spp.	Low	No	5
6.4	NOX-TMA-022	Ragweed spp.	Low	No	259
8.6	NOX-TMA-025	Giant Ragweed	Moderate	Yes	0
11.5	NOX-TMA-024	Giant Ragweed	High	No	43
12.0	NOX-TMA-023	Giant Ragweed	Low	No	26
14.1	NOX-TMA-026	Giant Ragweed	Moderate	No	5



Attachment B. Noxious Weed Locations (Continued)

Milepost/ County, State	Feature I.D.	Species	Cover	Within Construction Work Areas (Y/N)	Distance to Construction Work Areas (feet)
15.0	NOX-TMA-027	Giant Ragweed	Low	Yes	0
15.6	NOX-TMA-028	Giant Ragweed	Low	No	0
19.5	NOX-TMA-029	Giant Ragweed	Moderate	No	4
25.3R	NOX-JJP-004	Giant Ragweed	High	Yes	0
25.3R	NOX-TMA-033	Giant Ragweed	High	No	810
26.1	NOX-TMA-031	Giant Ragweed	High	No	43
26.1	NOX-TMA-032	Giant Ragweed	Moderate	No	5
27.6	NOX-TMA-030	Giant Ragweed	Moderate	Yes	0
<i>Jersey County, Illinois</i>					
35.5R	NOX-CDK-011	Johnsongrass	Low	No	793
36.5R	NOX-CDK-008	Giant Ragweed	Moderate	No	979
36.5R	NOX-CDK-010	Johnsongrass	High	No	1,078
<i>St. Charles County, Missouri</i>					
58.3 (TAR-021)	NOX-CDK-012	Johnsongrass	Low	No	11
North County Extension					
<i>St. Louis County, Missouri</i>					
2.4R3	NOX-TMA-034	Johnsongrass	Moderate	Yes	0
2.7	NOX-TMA-035	Johnsongrass	Moderate	Yes	3
3.8	NOX-TMA-036	Johnsongrass	Moderate	No	120
4.1	NOX-DFW-001	Canada Thistle (<i>Cirsium arvense</i>)	Low	No	4,312
5.9R2	NOX-JJP-003	Johnsongrass	Low	Yes	57
6.0R	NOX-JJP-002	Johnsongrass	Low	No	0
6.0R	NOX-JJP-001 (end)	Giant Ragweed	Low	No	21
6.0R	NOX-JJP-001 (start)	Giant Ragweed	Low	No	12