

Noxious Weed and Invasive Species Control Plan

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Prepared For:

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Adelphia Gateway Project

ACRONYMS AND ABBREVIATIONS

Adelphia	Adelphia Gateway, LLC
DE DOA	Delaware Department of Agriculture
FERC	Federal Energy Regulatory Commission
NV5	NV5, LLC
PA DOA	Pennsylvania Department of Agriculture
Project	Adelphia Gateway Project
ROW	right-of-way
USDA	U.S. Department of Agriculture
Weed Plan	<i>Adelphia's Noxious Weed and Invasive Species Control Plan</i>

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1.0 INTRODUCTION

NV5, LLC (NV5) has prepared this *Noxious Weed and Invasive Species Control Plan* (Weed Plan) for Adelpia Gateway, LLC's (Adelpia) Adelpia Gateway Project (Project) in consultation with the Pennsylvania and Delaware Departments of Agriculture (PA DOA and DE DOA, respectively). This Plan is applicable to activities that would occur during pre- construction, construction, and operation of the Project and incorporates recommendations from the aforementioned state agencies.

The goal of noxious weed and invasive species control is to implement preventive measures to minimize the establishment and spread of non-native invasive species during ground-disturbing activities associated with construction of the Project. Invasive species are plants that are non-native to the ecosystem under consideration and whose introduction does or is likely to cause economic or environmental harm or harm to human, animal, or plant health (Federal Register 2016). The U.S. National Invasive Species Council defines 'harm' in this context as causing negative environmental, economic, or human health effects, which outweigh any beneficial effects (NISC 2006). Invasive species can also be referred to as invasive weeds. Some invasive species are classified by federal and state governments as 'noxious weeds'. The federal government defines noxious weeds as any plant that can directly or indirectly injure or cause damage to crops, livestock, poultry, or other interests of agricultural, irrigation, navigation, the natural resources of the U.S., the public health, or the environment (GPO 2019).

There are three key elements to this Weed Plan:

1. Identification of pre-existing problematic invasive species/noxious weed populations and treatment of existing infestations prior to construction;
2. Maintenance of construction equipment free of problematic plant species during the construction process; and
3. Continued treatment of new and existing right-of-way (ROW) for problematic plant species during Project operations.

The activities to be performed under this Plan will focus on plants listed on the U.S. Federal Noxious Weed List with known populations in Delaware and Pennsylvania (as indicated by the U.S. Department of Agriculture's [USDA] PLANTS database), the Delaware State Noxious Weed List, the Pennsylvania State Noxious Weed List, and any additional species identified during Adelpia's consultation with state agencies (see Section 2.0, below). For the purposes of this Weed Plan, the aforementioned noxious weeds and invasive species are also referred to as 'problematic species'.

2.0 FEDERAL AND STATE INVASIVE PLANT SPECIES AND NOXIOUS WEED REGULATIONS

2.1 FEDERAL REGULATIONS

The USDA administers the Federal Noxious Weeds Program, which is designed to prevent the introduction of invasive plant species into the country. The Federal Noxious Weed List is published as part of the Noxious Weeds Program. Federal noxious weed activities include exclusion and permitting and (in cooperation with other agencies and state agencies) integrated management of introduced

weeds, including biological control (USDA 2020). Federally listed noxious weeds with known populations in Delaware and Pennsylvania are monitored under this Plan and listed in Table 2-1.

Table 2-1. Problematic Plant Species Monitored Under Adelpia's Noxious Weed and Invasive Species Plan

Common Name	Scientific Name	Federal Noxious Weed	DE State Noxious Weed	PA State Noxious Weed	DE State Invasive Species
animated oat	<i>Avena sterilis</i>	✓		✓	✓
autumn olive	<i>Elaeagnus umbellata</i>				✓
Bohemian knotweed	<i>Reynoutria x bohemica</i>			✓	
Brazilian waterweed	<i>Egeria densa</i>			✓	
broomrapes	<i>Orobanche</i> spp. (except for native species)	✓		✓	
bull thistle or spear thistle	<i>Cirsium vulgare</i>			✓	
burcucumber	<i>Sicyos angulatus</i>		✓		
Canada thistle	<i>Cirsium arvense</i>		✓	✓	
dodders	<i>Cuscuta</i> spp. (except for native species)	✓		✓	
European frogbit	<i>Hydrocharis morsus-ranae</i>			✓	
European water chestnut	<i>Trapa natans</i>			✓	
false caper or Geraldton carnation	<i>Euphorbia terracina</i>	✓			
giant hogweed	<i>Herculeum</i>	✓		✓	
giant knotweed	<i>Reynoutria sachalinensis</i>			✓	
giant ragweed	<i>Ambrosia trifida</i>		✓		
goatstrue	<i>Galega officinalis</i>	✓		✓	
hydrilla	<i>Hydrilla verticillata</i>	✓		✓	
Japanese knotweed	<i>Reynoutria japonica</i>			✓	✓
Johnsongrass	<i>Sorghum halepense</i>		✓	✓	
mile-a-minute	<i>Persicaria perfoliata</i>			✓	
multiflora rose	<i>Rosa multiflora</i>			✓	✓
musk thistle or nodding thistle	<i>Carduus nutans</i>			✓	
Palmer amaranth	<i>Amaranthus palmeri</i>		✓	✓	
parrot feather	<i>Myriophyllum aquaticum</i>			✓	
poison hemlock	<i>Conium maculatum</i>			✓	
porcelain-berry or Amur pepperweed	<i>Ampelopsis brevipedunculata</i>				✓
purple loosestrife	<i>Lythrum salicaria</i>			✓	
Russian olive	<i>Elaeagnus angustifolia</i>				✓
shattercane	<i>Sorghum bicolor</i>			✓	
Texas panicum	<i>Panicum texanum</i>		✓		
tree-of-heaven	<i>Ailanthus altissima</i>			✓	

Common Name	Scientific Name	Federal Noxious Weed	DE State Noxious Weed	PA State Noxious Weed	DE State Invasive Species
tropical soda apple	<i>Solanum viarum</i>	✓			
water primrose	<i>Ludwigia grandiflora</i> ssp. <i>hexapetala</i>			✓	
water soldier	<i>Stratiotes aloides</i>			✓	
wavyleaf basketgrass	<i>Oplismenus hirtellus</i>			✓	
wild parsnip	<i>Pastinaca sativa</i> (except for non-wild cultivated varieties)			✓	

Sources: State of Delaware 2019, USDA 2019, USDA 2020, PA DOA 2020, Personal communication 2020

2.2 STATE REGULATIONS

2.2.1 Delaware

According to Delaware State law, it is illegal to “...knowingly allow designated noxious weeds to set seed on any land, or to allow any portion of a designated noxious weed plant to reach a height or vine length of 24 inches; and it shall be the duty of each landowner or person who has the present right to possess and/or use the land to mow, cultivate, treat with chemicals, or use such other practices as may be prescribed by the (DE DOA) as effective in preventing seed set on designated noxious weed infestations or in elimination of the designated noxious weed plant.” There are six species on Delaware’s Noxious Weed List (see Table 2-1).

The DE DOA also identified five invasive weeds not on the state’s noxious weed list that are currently problematic in the state and advised they should be addressed during Project activities (Personal communication 2020). These are also included in Table 2-1.

2.2.2 Pennsylvania

The PA DOA administers the state’s Noxious Weed Control Law and Noxious Weed Control List and implements federal and state eradication and control programs (PA DOA 2020). Table 2-1 lists invasive plants classified as noxious weeds by the PA DOA. The PA DOA did not identify any other invasive species of concern during its communications with Adelphia regarding this Plan.

2.3 EXISTING CONDITIONS

The Project would use and enhance Interstate Energy Company’s existing natural gas and oil pipeline system located in eastern Pennsylvania. The Project would be located in Chester, Delaware, Montgomery, Bucks, and Northampton Counties, Pennsylvania and would also include a new pipeline lateral that extends into New Castle County, Delaware. Project areas consist mostly of industrial/commercial land (including paved roadways) and existing maintained pipeline ROW with some areas consisting of upland forest, emergent and scrub-shrub wetlands, pasture and residential land (e.g., lawns and gardens). NV5 scientists did not observe any federally or state-listed noxious weeds or DE DOA-identified invasive species in or near the Project area during its Project surveys.

3.0 NOXIOUS WEED AND INVASIVE SPECIES MANAGEMENT

3.1 PRE-CONSTRUCTION AND CONSTRUCTION

Adelphia will provide information and training regarding noxious weed/invasive species management to all construction personnel as part of pre-construction environmental training. The training will teach the importance of preventing the spread of invasive species/noxious weeds into areas not already infested and controlling the proliferation of weeds already present. The training will also teach personnel which species are most problematic in the Project area and how to identify them. Should Adelphia's environmental inspectors identify any problematic species in the Project area prior to or during construction, he/she will identify and manually flag areas of concern. The flagging will alert construction personnel and prevent access into areas until weed management control measures have been properly implemented.

If problematic species populations are identified in the Project area (including proposed access roads and temporary workspaces) in densities significantly greater than the adjacent off-ROW community of the same species, Adelphia will treat them with appropriate measures to prevent their spread. Measures may include physical removal, spot spraying with approved herbicides, mechanical treatment or covering with growth-preventing materials (e.g., black plastic tarps).

It may not be possible to eradicate problematic species in the Project area because of such issues as seed drift or colonization from off-site locations. Therefore, Adelphia's overall goal is to control the problematic species to the extent that wetlands and uplands are not dominated by them to the point where the functions and values of the systems/habitats are adversely compromised.

Contractors will be required to ensure that vehicles arrive at the work site clean and weed free. Environmental inspectors will inspect vehicles to determine that they are free of soil and debris capable of transporting seeds or other propagules. Following work at identified weed-infested sites, the contractor will be required to use agreed upon measures to remove soil and propagules from machinery and vehicles to prevent their transport to other sections of the ROW.

If weed infestations are identified within the Project's limits of disturbance, vegetation, soils, and trench spoil material will be stockpiled in a location adjacent to the removal site and, following construction, will be returned to their original location to prevent their spread along the ROW.

In accordance a DE DOA recommendation (personal communication 2020), construction crews will not use millet seed or material containing millet seed to stabilize soil due to its likelihood to contain Palmer amaranth seeds. Cleanup and restoration of disturbed areas will take place immediately following construction completion, as described in the Federal Energy Regulatory Commission's (FERC) *Upland Erosion Control, Revegetation, and Maintenance Plan* and the FERC's *Wetland and Waterbody Construction and Mitigation Procedures*. The contractor will ensure and certify in writing that all straw bales used for sediment and erosion controls, mulch distribution, and restoration seed mixes are certified as weed-free from the supplier.

3.2 OPERATIONS AND MAINTENANCE

Adelphia will conduct follow-up inspections of all disturbed areas, as necessary, to determine the success of revegetation and address landowner concerns. In adherence to the FERC's *Upland Erosion Control, Revegetation, and Maintenance Plan*, Adelphia will, at a minimum, conduct inspections after the first and second growing seasons. During these inspections, Adelphia will monitor for and treat noxious weed infestations on the ROW in the areas where construction took place, except in areas where there are significant population of the same species of noxious weeds established in the adjacent ROW. Should noxious weeds be identified in areas disturbed by construction (in densities greater than on the adjacent ROW), Adelphia will collect monitoring data at each infestation. Monitoring data collected will include: species identification; photographs; location; extent of infestation; results of previous control measures implemented (if any); and recommendations for further control, if needed.

Adelphia will share the results of their monitoring program with the local regulatory agencies and with other adjacent pipeline operators to facilitate effective treatment of identified noxious weed populations, as applicable. Sharing of information will help ensure that all operators' control efforts are focused on problem areas. It will also help ensure that treatment efforts are balanced and coordinated so that overuse of control measures, such as herbicides, is avoided.

To prevent potential impacts associated with improper herbicide application or accidental spills, Adelphia will use locally certified applicators and develop site-specific herbicide application, handling, and cleanup guidelines. These guidelines will include:

- Implementing control measures for noxious plants before seed maturation;
- Suspending herbicide application when:
 - Wind velocities exceed 6 miles per hour for the application of liquid materials and 15 miles per hour for the application of granular materials;
 - Ice covers the target vegetation; or
 - Precipitation is occurring or imminent;
- Transporting to the construction site only the quantity of material necessary to treat the expected weed population. Herbicides will be transported in approved containers that are inspected daily for leaks;
- Mixing of chemical controls at least 200 feet from wetlands, waterbodies, or other known sensitive biological resources (e.g., localities supporting threatened or endangered species);
- Precluding use of herbicides within 100 feet of wetlands or waterbodies unless specifically authorized by an appropriate regulatory agency;
- Carrying material safety data sheets and spill kits in any vehicle transporting or applying herbicides; and
- Scheduling weed control efforts to occur before seed maturation/development.

The overall goal of Adelphia's weed control program is to treat problematic weed species to the extent that they do not present a significant hindrance to restoration efforts.

4.0 REFERENCES

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