

CASSADAGA WIND PROJECT

INVASIVE SPECIES CONTROL PLAN FOR CONSTRUCTION ACTIVITIES AND POST CONSTRUCTION MONITORING

INTRODUCTION

Cassadaga Wind LLC (the Applicant) is proposing to develop a wind energy generation facility (the Facility) in the Towns of Charlotte, Cherry Creek, Arkwright and Stockton in Chautauqua County, New York. The Facility is anticipated to include installation and operation of up to 58 wind turbines, together with approximately 33 miles of associated collection lines, approximately 18 miles of access roads, up to two permanent meteorological towers, one operation and maintenance (O&M) building, two temporary construction staging/laydown areas, a point of interconnection substation, a collection substation, and approximately 5.5 miles of 115 kV generator lead line. The total generating capacity of the Facility is 126 megawatts (MW) and as such the Facility is being reviewed under Article 10 of the Public Service Law.

Land use within the Facility Site is dominated by active and reverting agricultural land and forest. With the exception of the Villages of Cassadaga, Sinclairville, Cherry Creek, and Arkwright, the area surrounding the Facility is primarily undeveloped, with farms, forest, and rural residences interspersed along area roadways.

Construction of the Facility will result in soil disturbance and vegetation clearing in the vicinity of Facility components and workspaces. According to the analyses conducted in support of the Facility's Article 10 application, a total of approximately 453.4 acres of soil will be disturbed during construction, and approximately 594.6 acres of vegetation will be cleared. Within these areas of disturbance, approximately 85.4 acres will be converted to built facilities, while the rest will be disturbed on only a temporary basis and will ultimately be allowed to return to a vegetated state. The spread of invasive plant species into these temporarily disturbed areas is a risk that is introduced through the movement of topsoil, fill, gravel, and construction equipment. These activities will occur during both Facility construction and restoration.

The New York State Department of Environmental Conservation (NYSDEC) defines an invasive species as a species that is nonnative to the ecosystem under consideration, and whose introduction causes or is likely to cause economic or environmental harm or harm to human health (NYSDEC, 2016). Invasive plant species spread in a number of different ways. Dispersal mechanisms include wind, water, wildlife, vegetative reproduction, and human activity. Populations of invasive species typically establish most readily in places where the ground has been disturbed and soil

is exposed. The Facility will utilize this Invasive Species Control Plan (ISCP) to minimize the spread of invasive plant species within areas disturbed by construction and restoration.

PURPOSE AND GOAL

The purpose of the ISCP is to facilitate the identification, control, and monitoring of invasive vegetation within areas disturbed during construction. The goal of the ISCP is to prevent expansion of invasive plant species, and this plan will be considered successful when 0% net increase in the estimated coverage of invasive species compared to a baseline survey of the target area is realized. For the purposes of the ISCP, the target area shall consist of those areas where soil was disturbed during Facility construction.

LAWS AND REGULATIONS

There are numerous federal laws that contain provisions for the control of invasive species, such as the Endangered Species Act, the Federal Plant Pest Act, the Federal Noxious Weed Act, and the Nonindigenous Aquatic Nuisance Prevention Act. However, specific to the Cassadaga Wind Project, the Federal law anticipated to be most applicable to the management of invasive species is Section 404 of the Clean Water Act.

The Environmental Conservation Law and the Agriculture & Markets Law both authorize the New York State Department of Environmental Conservation (NYSDEC) and the NYS Department of Agriculture and Markets (NYSDAM) to regulate invasive species. Under the Agriculture & Markets Law, NYSDAM has the regulatory authority regarding the Inspection and Sale of Seeds (Article 9); Integrated Pest Management Program (Article 11); and Prevention and Control of Disease in Trees and Plants (Article 14). Under the Environmental Conservation Law, the NYSDEC has regulatory authority regarding Lands and Forests (Article 9) and Fish and Wildlife (Article 11). However, specific to the Cassadaga Wind Project, Article 10 of the Public Service Law, to which both the NYSDEC and the NYSDAM are Parties, is anticipated to be most applicable to the management of invasive species.

The official State listing of *Prohibited and Regulated Invasive Species* was updated as of September 10, 2014 (see Attachment A). Part 575 of 6 NYCRR includes a list of “prohibited” species which are unlawful to knowingly possess with the intent to sell, import, purchase, transport or introduce, as well as a list of “regulated” species which are legal to possess, sell, purchase, propagate and transport but may not be knowingly introduced into a free-living state. According to NYSDEC, these regulations are expected to help control invasive species by reducing the introduction of new and spread of existing populations.

PROJECT-SPECIFIC INVASIVE PLANT SPECIES

A vascular plant species inventory of the preliminary Facility layout took place during the fall of 2015, which documented over 200 plant species. Of these species, 10 are listed on the *Prohibited and Regulated Invasive Species List* (see Attachment A). These species are listed below, with botanical nomenclature and common names following the New York Flora Atlas (Weldy et al., 2015):

- black locust (*Robinia pseudoacacia*)
- buckthorn (*Rhamnus cathartica*)
- Canada thistle (*Cirsium arvense*)
- common reed (*Phragmites australis*)
- garlic mustard (*Alliaria petiolata*)
- Japanese barberry (*Berberis thunbergii*)
- Japanese knotweed (*Reynoutria japonica*)
- Morrow's honeysuckle (*Lonicera morrowii*)
- multiflora rose (*Rosa multiflora*)
- purple loosestrife (*Lythrum salicaria*)

Morrow's honeysuckle, multiflora rose, and black locust are well established and widely distributed throughout the area that was investigated. The other invasive plant species observed during the inventory are less abundant, and density of these species is variable. For example, Japanese knotweed and common reed tend to grow in dense monotypic clusters, while the other species on this list tend to be more diffuse, growing in areas where at least a few other species can compete.

In order to avoid/minimize environmental impacts to the maximum extent practicable (e.g., limit the number of wetland/stream crossings), and to accommodate construction and engineering needs (e.g., avoid areas with steep slopes when possible), some Facility layout changes occurred during the winter of 2015/2016. Therefore, to accurately identify the current extent of invasive species within/adjacent to the Facility footprint a baseline survey will be conducted during the 2016 growing season. The limits of this survey will include all areas proposed to be disturbed during Facility construction. A qualified biologist will document any invasive plant species on the *Prohibited and Regulated Invasive Species* list growing within the limits of disturbance. For each population documented, the surveyor will note the location and estimate absolute cover. In those areas where populations occur in discrete patches with clear boundaries, the boundaries will be mapped with Global Positioning System (GPS) technology. For more widespread invasive species occurrences where identifying discrete population boundaries is not possible, the approximate absolute cover will be

documented with photos and field notes. Data collected during the baseline survey will inform a post construction monitoring goal of no net increase of invasive species.

PROPOSED CONTROL MEASURES

The ISCP will be appended to the construction contract, requiring the BOP Contractor to implement the control measures outlined in this section. A central theme of the ISCP will be educating construction workers about invasive species and how to prevent their spread. This education will be accomplished through the various contractor-training sessions provided by the Environmental Monitor, which will occur as part of the Facility's Environmental Compliance and Monitoring Program. The ISCP consists of the following control measures: 1) construction materials inspection; 2) target species treatment and removal; 3) construction equipment sanitation; and 4) restoration. Each of these measures is described in detail below:

1. **Construction Materials Inspection:** Construction material such as seed mixes, mulch, topsoil, fill, sand, gravel, crushed stone, and rock brought to the Facility Site from an outside source will be free of invasive plant materials. In addition, during all aspects of construction, soil and/or spoil materials will only be temporarily stockpiled (i.e., will be spread and graded to match original contours at the earliest practicable time following construction activities). Proper methods for segregating stockpiled and spoil material will be implemented, and excavated soil will be reused to the maximum extent possible on the site that it was excavated from, as a means to limit opportunities for proliferation of non-native flora and other invasive species. Appropriate sediment and erosion control measures, such as site stabilization via mulching and reseeded areas of exposed soil as soon as practicable, will be implemented, which will also limit the spread of invasive species from one area to another.
2. **Target Species Treatment and Removal:** If unavoidable areas containing target invasive species are encountered, then appropriate treatment and removal methods will be conducted. Specific disposal and treatment methods for removed plant material will be determined (through consultation with the Environmental Monitor) based on the density and quantity of invasive species encountered, and may include herbicide treatment, placement in an interim designated secure container, transport in a sealed container and proper offsite disposal in a designated secure container, or leaving infested vegetative materials (including infested fill) in the area that is already infested, provided that no filling of wetlands or adjacent areas will occur as a result. Any herbicide spot treatments would be applied by a Certified Commercial Pesticide Applicator, Commercial Pesticide Technician, or a Private Pesticide Applicator (i.e., individuals that meet the requirements set forth in 6 NYCRR Part 325, Application of Pesticides), in accordance with NYSDEC approved herbicide and treatment measures.

3. Construction Equipment Sanitation: The introduction of non-native invasive plant species will be controlled by assuring that all construction equipment is clean upon arrival on site, and that equipment utilized in areas with an abundance of invasive species will be cleaned prior to moving to another site. The intent is that equipment should arrive at the site clean and leave the site clean. Equipment/clothing cleaning stations will be established to ensure that invasive species seeds and other viable plant parts cannot escape in runoff or through other means.
4. Restoration: Areas where soil is temporarily disturbed during construction will be graded, stabilized, and restored in accordance with the Facility-specific Stormwater Pollution Prevention Plan. Following construction activities, temporarily disturbed areas will be stabilized using appropriate erosion and sediment control methods, including seeding with a native seed mix to reestablish native vegetative cover in these areas.

CONSTRUCTION AND POST CONSTRUCTION MONITORING

Monitoring of the control of invasive species for the Cassadaga Wind Project is proposed to have two phases: 1) monitoring the implementation of the ISCP during construction and 2) monitoring the success of the ISCP after construction for a two-year period. The ISCP will have a goal of no net increase in invasive plant species coverage within the area disturbed by Facility construction. However, it should be noted that invasive plants, by their nature, increase in coverage over time, even in the absence of new disturbance. Therefore, the Applicant will work with NYSDEC to establish a reasonable definition of “no net increase” given the nature of invasive species. Success in meeting the no net increase goal will be evaluated upon completion of the two-year post construction monitoring program. Each of the monitoring phases are described below:

1. Construction Monitoring: During construction, workers will be educated about the Best Management Practices for controlling the spread of invasive species as described above, and the Environmental Monitor will confirm and maintain records that all required practices are being implemented during construction activities.
2. Post-Construction Monitoring: The change in invasive species coverage from pre-construction to post-construction will be assessed by a qualified biologist conducting a visual inspection of disturbed areas during the growing season for two consecutive years following restoration. A report detailing the success of the ISCP will be prepared. In the event that the ISCP goals are not met, then a revised control plan containing additional control actions and an extended monitoring term will be developed.

TREATMENT

If new occurrences of invasive species are documented during post-construction monitoring, efforts will be made to treat them as soon as possible after their discovery to prevent further spread. Treatment could include hand removal, mowing, or application of herbicide. Invasive plant species vary in terms of the removal methods that are most effective against them. Therefore, treatment measures will be determined on a species-specific basis and will use those methods that have been shown to be most effective and consistent with the Applicant's operating practices. Any herbicide treatments would be applied by a Certified Commercial Pesticide Applicator, Commercial Pesticide Technician, or a Private Pesticide Applicator (i.e., individuals that meet the requirements set forth in 6 NYCRR Part 325, Application of Pesticides), in accordance with NYSDEC approved herbicide and treatment measures.

REFERENCES

- NYSDEC. 2016. *6 NYCRR Part 575 Prohibited and Regulated Invasive Species Express Terms*. Available at: <http://www.dec.ny.gov/regulations/93848.html>. (Accessed January 2016).
- Weldy, Troy, David Werier, and Andrew Nelson. 2015. *New York Flora Atlas*. [S. M. Landry and K. N. Campbell (original application development), USF Water Institute. University of South Florida]. New York Flora Association, Albany, New York. Available at: <http://newyork.plantatlas.usf.edu/>. (Accessed January 2016).