



# **WATKINS GLEN SOLAR ENERGY CENTER**

## **INVASIVE SPECIES**

### **MANAGEMENT AND CONTROL PLAN**

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**Watkins Glen Solar Energy Center  
Invasive Species Management and Control Plan  
For Construction Activities and Post-Construction Monitoring**

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## Attachments

Attachment A. New York State Prohibited and Regulated Invasive Plants, September 10, 2014

## **1.0 Introduction**

Watkins Glen Solar Energy Center, LLC (the Applicant) proposes to construct a solar energy center, the Watkins Glen Solar Energy Center (the Watkins Glen Solar Energy Center or the Project) in the Town of Dix, Schuyler County, New York (see Figure 1-1). The Project will consist of a 50-megawatt (MW) solar energy center located on land leased from a private landowner. The Project will be adjacent to the Watkins Glen International racetrack known as “The Glen.” Upon completion, The Glen will house the largest solar field to be located at a racetrack in the United States. Project components include commercial-scale solar arrays, access roads, inverters, fencing, buried electric collection lines, and electrical interconnection facilities.

The Project consists of a patchwork of agricultural land and forest ecological communities with successional old-field and wetland communities interspersed throughout. Construction activities will result in vegetation clearing and soil disturbance in the immediate vicinity of the proposed solar arrays, access roads, electrical collection lines, and associated infrastructure.

Invasive vegetative species are of special concern and their spread is likely to cause some degree of environmental, human health, or economic harm. For example, invasive species will often out-compete native species because they may lack control mechanisms that are present in their native habitats. The result can be a rapid spread of invasive species populations, which can alter ecological communities and diminish biological diversity. Normal dispersal methods for invasive plant species include wind, water, and wildlife; however, anthropogenic means of spread (e.g., construction activity) are of interest in this Invasive Species Management and Control Plan (ISMCP) for plants. Because invasive plant species will readily spread in disturbed areas, construction activities related to the Project have the potential to accelerate their distribution and are the primary focus of this ISMCP.

### **1.1 Goals and Objectives**

The intention of the ISMCP is to outline a clear plan to minimize the spread of invasive species that are present within the Project Area. To prevent their spread, it is necessary to identify the existing invasive species within the Project Area and develop a plan to monitor and control the species during construction, restoration, and operation. The goal of the ISMCP is to maintain a zero-percent increase in invasive species distribution and coverage within the Project Area.

Invasive species are regulated by the New York State Department of Environmental Conservation (NYSDEC) pursuant to Environmental Conservation Law (ECL) Sections 9-1709 and 71-0703.

Regulations under Part 575 of 6 NYCRR restrict the sale, purchase, possession, propagation, introduction, importation, and transport of invasive species. This ISMCP is being developed in accordance with this regulation to prevent the introduction of new and spread of existing invasive species within the Project Area.

## 2.0 Priority Invasive Plant Species within Region

The Project Area is located within the Finger Lakes Partnership for Regional Invasive Species Management (PRISM). There are eight PRISMs within New York State, each of which involves resource managers, non-governmental organizations, industry, resource users, citizens, and other state agencies, and stakeholders (NYSDEC, 2017a). The PRISMs were enacted under Title 17, Environmental Conservation Law (ECL) 9-1705(5)(g). The Finger Lakes PRISM separates priority species, which are highly invasive species either within the region or approaching the region, into three Working Groups (WGs): the Aquatic Working Group (AWG), the Terrestrial Working Group (TWG) and the Agricultural Working Group (AgWG) (FL-PRISM, 2017a).

Table 1 below gives the Finger Lakes PRISM Priority Species, sorted by Tiers 1 through 4. Tier 1 species are species in the early detection/prevention phase. They are generally outside the Finger Lakes PRISM. Tier 2 species are in the eradication phase with the highest level of early detection response efforts. They are low in abundance and suitable treatment methods are available to make eradication within the Finger Lakes PRISM. Tier 3 species are those in the containment phase. Management is strategic to slow the spread as the species is too widespread to eradicate in Finger Lakes PRISM, but many surrounding regions could be at risk if left unattended. Tier 4 species are those under local control. Eradication from Finger Lakes PRISM is not feasible, so focus is on containing the species to protect sensitive resources such as threatened species.

**Table 1: Finger Lakes PRISM Priority Species by Tier**

Scientific Name	Common Name	Tier
<i>Egeria densa</i>	Brazilian waterweed	1
<i>Ludwigia peploides</i>	Floating primrose-willow	1
<i>Myriophyllum aquaticum</i>	Parrot-feather	1
<i>Nymphoides peltate</i>	Yellow floating heart	1
<i>Pueraria montana</i>	Kudzu	1
<i>Stratiotes aloides</i>	Water soldier	1

<i>Ampelopsis glandulosa</i> var. <i>brevipedunculata</i>	Porcelain berry	2
<i>Cardamine impatiens</i>	Narrowleaf bittercress	2
<i>Euphorbia esula</i>	Leafy spurge	2
<i>Hydrocharis morsus-ranae</i>	European frogbit	2
<i>Celastrus orbiculatus</i>	Oriental bittersweet	3
<i>Cynanchum louiseae</i>	Black swallow-wort	3
<i>Cynanchum rossicum</i>	Pale swallow-wort	3
<i>Hydrilla verticillata</i>	Hydrilla	3
<i>Myriophyllum heterophyllum</i>	Broadleaf water-milfoil	3
<i>Ranunculus ficaria</i>	Lesser celandine	3
<i>Trapa natans</i>	Water chestnut	3
<i>Acer platanoides</i>	Norway maple	4
<i>Ailanthus altissima</i>	Tree of heaven	4
<i>Alliaria petiolate</i>	Garlic mustard	4
<i>Iris pseudacorus</i>	Yellow iris	4
<i>Lythrum salicaria</i>	Purple loosestrife	4
<i>Potamogeton crispus</i>	Curly leaved pondweed	4
<i>Pyrus calleryana</i>	Callery pear	4
<i>Rosa multiflora</i>	Multiflora rose	4
<i>Eichhornia crassipes</i>	Water hyacinth	4
<i>Pistia stratiotes</i>	Water lettuce	4

## 2.1 Invasive Plant Species Identified within Project Area

As part of the ecological resource survey, field efforts were conducted for the Watkins Glen Solar Energy Center in the summer of 2017 and spring of 2019. During the field surveys TRC biologists documented observed occurrences of invasive species within the Project Area. As part of the field efforts, TRC identified five invasive vegetative species, which are listed as prohibited on the *Prohibited and Regulated Invasive Plants* list published by the NYSDEC on September 10, 2014 (see Attachment A) or listed as a priority invasive according to the Finger Lakes PRISM. Inclusion on the prohibited list means that they cannot be possessed, sold, imported, purchased, transported, or introduced and therefore, construction activities which would knowingly cause distribution of these species is prohibited.

The following invasive plant species were identified throughout the Project Area:

- Black locust (*Robinia pseudoacacia*),
- Common buckthorn (*Rhamnus cathartica*),
- Norway maple (*Acer platanoides*),
- Purple loosestrife (*Lythrum salicaria*), and
- Tartarian honeysuckle (*Lonicera tatarica*).

All the invasive species identified within the Project Area are listed in the *Prohibited and Regulated Invasive Plants* list. Norway maple and purple loosestrife are also on the Finger Lakes PRISM Priority List as Tier 4 species. They are described in more detail below.

### **2.1.1 Norway Maple (*Acer platanoides*)**

This species is listed as a Tier 4 invasive species within the Finger Lakes PRISM. The Norway maple is a large deciduous tree originating in Europe and western Asia. It was introduced to the United States as an ornamental shade tree and produces a lot of shade, which makes it difficult for grasses and other plants to grow beneath it (NYIS, 2020a).

Norway maple are well adapted to extreme soil types and are found in many diverse habitats. They prefer sun but can also be seen in shady habitats in forests, wetlands, yards, or disturbed areas and roadsides. The best method of preventing further spread of Norway maple is to plant alternative tree species. Seedlings can be pulled from moist soil before they get too large while digging out saplings and root systems or cutting down large trees are other methods of control (NYIS 2020a).

### **2.1.2 Purple loosestrife (*Lythrum salicaria*)**

This species is listed as a Tier 4 invasive species within the Finger Lakes PRISM. Purple loosestrife is an erect, herbaceous wetland plant that grows 3 to 7 feet tall. It can be identified by its showy purple flowers that appear from July to September. It spreads quickly through both vegetative growth and seed dispersal, crowding out native wetland plants and altering biodiversity and water flow (NYIS, 2020b).

Small patches can be removed by hand. For large infestations, mechanical or chemical management is possible, though it will take multiple years to completely remove adult plants.

Additionally, four species of beetles have been released in the United States as biocontrol agents for purple loosestrife and have had some measure of success controlling purple loosestrife populations (NYIS, 2020b).

### 3.0 Invasive Insect Species in Vicinity of the Project Area

As previously mentioned, TRC biologists documented observed occurrences of invasive species within the Project Area during ecological resource survey field efforts. No invasive insect species, or signs of infestation, were observed as part of this field effort; however, one insect species, the emerald ash borer (EAB) (*Agrilus planipennis*) is listed as a Tier 4 Local Control invasive insect within the Finger Lakes-PRISM. Additional information regarding this species is presented below.

#### 3.1 Emerald Ash Borer (*Agrilus planipennis*)

The EAB (*Agrilus planipennis*) is an invasive beetle, native to Asia, which was first identified in the United States in 2002 (in Michigan). In New York, the EAB was first identified in Cattaraugus County in 2009 and has now spread to more than 30 counties, including Schuyler County (NYSDEC, 2017b). This insect infects ash (*Fraxinus* spp.) trees and causes tree canopy dieback and the yellowing and browning of leaves, leading to death of infected trees within 2 to 4 years (NYSDEC, 2017b).

The EAB's 1-year life cycle has four stages of life: egg, larva, pupa, and adult. The EAB emerges from beneath the bark tree of ash species beginnings in late-May or early-June (NYIS, n.d.), with the adult flight season complete by early August. The adult life span is approximately 3 weeks and the adults are most active during the day in sunny, warm weather. In wet or cooler weather, adult EAB shelter beneath the bark of ash trees (NYIS, n.d.).



Photo 5. Emerald ash borer adult (NYSDEC, 2017b).

New York State has implemented programs to help with early detection of EAB to prevent the spread, and all of Schuyler County is included in the May 2017 Restricted Zone for the EAB. Restricted Zones include quarantines around known EAB infestations. Within these zones, regulated articles may not be removed from the zone without a compliance agreement or permit from the New York State Department of Agriculture and Markets. These permits are applicable only during the non-flight season of the EAB, which is between September 1 and April 30 (NYSDEC, 2017b). Regulated articles include ash wood, ash logs, ash firewood (untreated), ash

nursery stock, and wood chips (only between April 15 and May 15). Additionally, in accordance with 6 NYCRR Part 575 (Prohibited and Regulated Invasive Species), the EAB itself may not be moved in any life stage, unless for management, control, identification, or disposal (NYSDEC, 2017b).

The Project will comply with the Restricted Zone requirements and will contact the NYSDEC's Firewood and Invasive Insects Hotline at (866) 640-0652 if a suspected infestation or sighting is identified as part of the Project. Additionally, the Project will not transport ash products off site.

#### **4.0 Control Measures**

To prevent introduction and spread of the listed species, management actions can be grouped into four main categories including: material inspection, targeted species treatment and removal, sanitation, and restoration. Within each category, specific actions or combinations thereof can be taken depending on characteristics of a species and its density within the target area.

1. **Material Inspection:** Material inspection includes the use of products such as seed, mulch, topsoil, fill, sand, and stone that are free of invasive species. Movement of these materials both in and out of the Project Area should be limited to minimize the possibility of spreading invasive species. Importation of these materials should be limited by reusing excavated products to the maximum extent practicable. Imported construction materials should be obtained from reputable sources and thoroughly inspected for the presence of invasive species prior to transportation or use on the site. Materials should be used immediately to limit the amount of time they are stockpiled.
2. **Targeted Species Treatment and Removal:** Targeted removal is used in instances where invasive species are encountered during construction and cannot be avoided. Removal in that instance would prevent spread of the species to other areas of the Project Area. Targeted removal includes options such as hand-pulling, burning, cutting, burying, excavating, or herbicide application that will either kill or limit the ability of a species to propagate. Herbicide application shall be carried out in accordance with Part 325 of 6 NYCRR, Application of Pesticides. Removal methods will be determined based on the species and density of the encountered invasive. Invasive species that are removed should be either left in the infested area or placed in a secure container for proper disposal off site.



3. **Sanitation:** As it relates to invasive species control, sanitation includes the cleaning of clothing and equipment prior to movement or use within the Project Area. Seeds and viable plant parts can easily be transported to different locations on clothing and equipment. When working in an area known to have invasive species present, washing stations should be established to thoroughly clean machinery and clothing. It is important to note that cleaning should be conducted both prior to equipment arriving on site and prior to it leaving, to prevent the spread of invasive species on and off the work site within the Project Area.
4. **Restoration:** Invasive species spread most readily in disturbed soil and stabilizing the site quickly will limit the amount of time that invasive species have to establish in a particular area. Therefore, once construction is complete, disturbed areas should be regraded and stabilized (with seed and mulch) as quickly as possible. Once the site is regraded, native seed mixes should be applied along with seed-free mulch to reestablish vegetative cover. Best management practices (BMPs) should also be implemented in accordance with the Stormwater Pollution Prevention Plan to prevent erosion and limit the potential for spread of invasive species bearing soil off site.

## 5.0 Monitoring

Prior to the start of construction, crews should be educated regarding the contents of the ISMCP to ensure that their activities on site comply with the BMPs outlined in it. Monitoring should be conducted throughout the duration of the Project to ensure that the ISMCP is being implemented appropriately and that its goals are being met. It is important to note that invasive species identified on site prior to construction are likely to spread even in the absence of further human intervention. Therefore, it is necessary to distinguish between natural movement of invasive species and anthropogenic movement caused by Project-related construction activities. The ISMCP goal of a zero-net increase in the number of invasive species present and their distribution in the Project Area is based on the latter.

Post-construction invasive species monitoring will be conducted for a period of no less than 5 years following completion of Project-related activities on site. More specifically, Watkins Glen Solar Energy Center, LLC proposes that the post-construction monitoring of invasive species will be conducted in year 1, year 3, and year 5 following completion of construction and restoration. This is to ensure that ISMCP goals are met, as germination and spread of invasive species can

continue long after construction activities have concluded. Movement of invasive species, as identified by visual inspection of a qualified biologist, will be treated in accordance with the control measures listed above, as deemed appropriate based on the characteristics of the invasive species. A final report will be prepared detailing the success of the ISMCP. Failure to meet the goals of the ISMCP will result in revision of the control plan and extension of the post-construction monitoring phase for a period of 2 years from implementation of the revised plan.

## 6.0 References

New York Invasive Species Information (NYIS). n.d. Emerald ash borer (*Agrilus planipennis*). Accessed March 2020. [http://nyis.info/invasive\\_species/emerald-ash-borer/](http://nyis.info/invasive_species/emerald-ash-borer/).

NYIS. 2020a. Norway Maple. Accessed April 2020. [http://nyis.info/invasive\\_species/norway-maple/](http://nyis.info/invasive_species/norway-maple/).

NYIS. 2020b. Purple Loosestrife. Accessed April 2020. [http://nyis.info/invasive\\_species/purple-loosestrife/](http://nyis.info/invasive_species/purple-loosestrife/).

New York State Department of Environmental Conservation (NYSDEC). 2017a. Partnerships for Regional Invasive Species Management (PRISM). Accessed January 2019. <http://www.dec.ny.gov/animals/47433.html>

NYSDEC. 2017b. Emerald ash borer (EAB). Accessed January 2019. <http://www.dec.ny.gov/animals/7253.html>.