

# **INVASIVE SPECIES SURVEY BASELINE REPORT**

## **BLUESTONE WIND PROJECT**

Towns of Sanford and Windsor, Broome County, New York

Prepared For:

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## 1.0 INTRODUCTION

Bluestone Wind, LLC is proposing to construct a wind energy facility (the Facility) in the Towns of Windsor and Sanford in Broome County, New York (Figure 1). Environmental Design and Research, Landscape Architecture, Engineering & Environmental Services, D.P.C. (EDR) was retained to conduct a baseline invasive plant species survey in support of development of an Invasive Species Control Plan (ISCP) for the proposed Facility.

The Project will consist of up to 33 utility-scale wind turbines with a total generating capacity of up to 124 MW. Project components will include access roads, underground collection lines, temporary construction staging/laydown areas, permanent met towers, an operations and maintenance (O&M) building, a collection substation with a battery energy storage system, and a point of interconnect (POI) substation. The purpose of the invasive plant survey is to document, prior to the start of Facility construction, the occurrence and extent of non-native invasive plant species, as regulated by the New York State Department of Environmental Conservation (NYSDEC; Appendix A). The target area for the survey (Study Area) was defined based on the anticipated limits of disturbance for the Facility at the time that the survey was conducted.

Baseline survey results were used to develop an ISCP for the Facility, which will be updated as needed if baseline conditions of invasive species change prior to construction. The baseline surveys, in accordance with subsequent field verification surveys that will occur within six months prior to Facility construction, will serve as a baseline against which post-construction conditions will be compared. The methodology used in this baseline survey will be employed in subsequent post-construction surveys to determine how the occurrence and extent of invasive plant species within the Study Area changes following Facility construction.

## 2.0 METHODS

The invasive plant survey was conducted between June 21 and July 20, 2018 by Melanie McCormack, a senior environmental analyst at EDR. Survey methodology consisted of walking the Study Area and visually estimating cover of NYSDEC-listed prohibited invasive plant species (Figure 2). The invasive species Study Area included roadsides and all other portions of the Facility that have a history of soil disturbance, which creates ideal conditions for the transport and establishment of invasive plant species (Malin and Clevenger 2005). Disturbed forests, and forested areas immediately adjacent to areas of disturbance, were also included in the Study Area. A large portion of the Facility consists of large patches of closed-canopy interior forest that were not included in the survey, as the low-light conditions, combined with a lack of soil disturbance, prevent the establishment of new invasive species beyond the forest edge (Lauren et. al. 2018).

Invasive plant occurrences were documented using the Collector application for ArcGIS on a GPS-enabled device (smartphone or tablet) and assigned a density code for absolute cover (Table 1). Density codes were created based on established invasive plant survey protocols (e.g., Higman et al. 2012, Montana State University Extension 2006). Species data was recorded using a four-letter code corresponding to the first two letters of the scientific name of the genus and the first two letters of the scientific name of the species (e.g., since the scientific name of multiflora rose is *Rosa multiflora*, multiflora rose populations were labeled "ROMU").

**Table 1. Density Codes and Descriptions**

Density Code	Density Description/Absolute Cover
1	Sparse: 5% or less absolute cover
2	Patchy: 6-25% absolute cover
3	Dense: 26-55% absolute cover
4	Monoculture: 56-100% absolute cover

Collected data was used to produce a map series of invasive plant coverage throughout the Study Area (Figure 3). Photos were taken to document pre-construction conditions throughout the Study Area, and example photos were taken of each species detected (Appendix B). Polygon data to document the extent of species occurrence was recorded where species occurred in high densities (26-55% absolute cover) or as monocultures (>55% absolute cover), and are included in Figure 3. Polygons were also recorded for all occurrences of Japanese knotweed, a species of special concern to the State that requires careful mitigation, as discussed in the ISCP. Point locations were recorded for invasive species that were observed as individual plants or in small patches within the Study Area.

The survey methods employed in this baseline survey will allow for a post-construction evaluation of the goals established in the ISCP, as are summarized below in Section 4.0. During post-construction surveys, an appropriately qualified biologist can return to the Study Area and employ the same methodology used for this baseline survey to generate results that will allow for a comparison between pre- and post-construction conditions.

### 3.0 RESULTS

The Study Area is largely characterized by forested areas, agricultural fields, and rural residences. Invasive species identified within the Facility were primarily associated with previously disturbed areas, including roadsides, agricultural fields, bluestone quarries, logging roads, rural residences, and transmission and pipeline rights-of-ways. Invasive species were also encountered on the edges of forests and streams. The existing populations of invasive species identified within the Study Area provide the opportunity for the further spread and/or transport of invasive plant species during the construction and operation of the Facility.

As summarized in Table 2, a total of seven different invasive plant species were observed within the Study Area.

**Table 2: Invasive Species Within Study Area and Codes**

Common Name	Scientific Name	Mapping Code
Canada thistle	<i>Cirsium arvense</i>	CIAR
Autumn olive	<i>Elaeagnus umbellata</i>	RHCA
Japanese barberry	<i>Berberis thunbergii</i>	BETH
Japanese knotweed	<i>Fallopia japonica</i>	FAJA
Morrow's honeysuckle	<i>Lonicera morrowii</i>	LOMO
multiflora rose	<i>Rosa multiflora</i>	ROMU
mugwort	<i>Artemisia vulgaris</i>	ARVU

The most common invasive plant species encountered were Morrow's honeysuckle and multiflora rose, both of which thrive in sunny areas such as the banks of streams, forest edges, and open fields. These species were frequently found in low densities within stream corridors, where seeds have likely been transported downstream from disturbed areas. Isolated specimens of these species were also frequently encountered in old successional fields, where seeds and fruits have likely been transported by birds and other wildlife.

Four other species were encountered in small, isolated populations within the Study Area. Mugwort was primarily encountered in small populations on the edge of roadsides, with the exception of one large monoculture encountered on the edge of a bluestone quarry (see Appendix B for photo documentation). Autumn olive trees, interspersed with native shrubs, were encountered near residences in two locations. Japanese barberry and Canada thistle were restricted to isolated occurrences of small patches and single plants, which are depicted as points in Figure 3. The distribution and density of all invasive species identified in the Study Area is depicted in Figure 3.

Japanese knotweed is a high priority invasive species in New York State due its ability to spread rapidly both underground through rhizomes and by wind through seed dispersal, making it particularly resistant to conventional invasive species control methods. For this reason, the size and extent of all Japanese knotweed stands encountered within the Study Area were recorded and are provided in Figure 3. The majority of Japanese knotweed populations that were identified within the Study Area were restricted to small isolated stands along the edges of roads, quarries, and, in one instance, a pipeline right-of-way. Large stands were documented at the junction of a private driveway on Shaver Hill Road, across from the entrance to the Sky Lake Camp and Retreat Center on William Law Road, and at the edge of an old bluestone quarry (see Appendix B for photo documentation). The Shaver Hill population was recently mowed, a practice that can exacerbate and spread the infestation. Due to the ability of the species to spread rapidly, all documented stands of Japanese knotweed should be revisited prior to Facility construction to determine their extent immediately prior to disturbance and incorporate changes into the ISCP if needed.

Two additional plant species were documented in the Study Area that are not regulated or prohibited by NYSDEC as invasive species but are still considered invasive and present some level of concern. These species include wild parsnip (*Pastinaca sativa*) and reed canary grass (*Phalaris arundinacea*), both of which occurred in extensive monocultures within portions of the Study Area, the largest of which are included in Figure 3.

Signs of infestation by invasive insects were also noted during the surveys. Two species of invasive insect, the emerald ash borer (EAB) (*Agilus planipennis*) and the hemlock woolly adelgid (*Adelges tsugae*), have the potential to occur at the Facility. No evidence of either species (i.e., dead or dying host trees) was observed within the Study Area during invasive plant surveys.

## 4.0 CONCLUSION AND RECOMMENDATIONS

Approximately 12% of the anticipated areas of disturbance for the Facility contains existing populations of plant species listed as "regulated" by the NYSDEC. Invasive species were primarily found in previously disturbed areas such as roadsides, quarries, logging roads, and utility rights-of ways, and were absent from interior forests within the Study Area. The most common species identified were Morrow's honeysuckle, multiflora rose, and Japanese knotweed. The location and density of these species is represented in Figure 3.

To minimize the potential for existing invasive plants to spread throughout the Study Area, strict adherence to the ISCP should be employed throughout Facility construction and operation. The ISCP includes a number of measures to prevent the further transport and establishment of invasive species, including cleaning construction equipment upon arrival on site and prior to moving to another site, not storing or disposing of soil containing invasive species outside the site boundaries, and stabilizing disturbed soils with native seed mixes and weed-free mulch.

With respect to the EAB, until recently Broome County was located within the EAB restricted zone established by the NYSDEC to prevent the spread of the EAB. Although NYSDEC recently rescinded the EAB quarantine after concluding that it was no longer effective, the EAB remains subject to regulation under the State's general provision designed to prevent the spread of invasive species, set forth at 6 NYCRR Part 575.

Although no evidence of EAB was observed within the Study Area during on-site surveys, there is a possibility of EAB infestation within the Facility in addition to the known presences of EAB in Broome County. To help prevent the spread of the EAB, the Applicant will adhere to NYSDEC best management practices when managing any ash trees or materials from ash trees that are removed during Facility construction.

The ISCP for the Facility was prepared with the goal of no net increase of invasive species coverage within the area disturbed by Facility construction. However, given the extent of existing invasive species, and the fact that invasive species, by definition, rapidly outcompete native species under the right conditions, it is entirely likely that the invasive species identified in this report will continue to spread in disturbed areas within and adjacent to the Facility. However, implementation by the Applicant of the measures identified in the ISCP will effectively prevent the further spread of invasive species as a direct result of Facility construction and operation, and, in the long-term, will minimize the spread of invasive species within the Facility.

## 5.0 LITERATURE CITED

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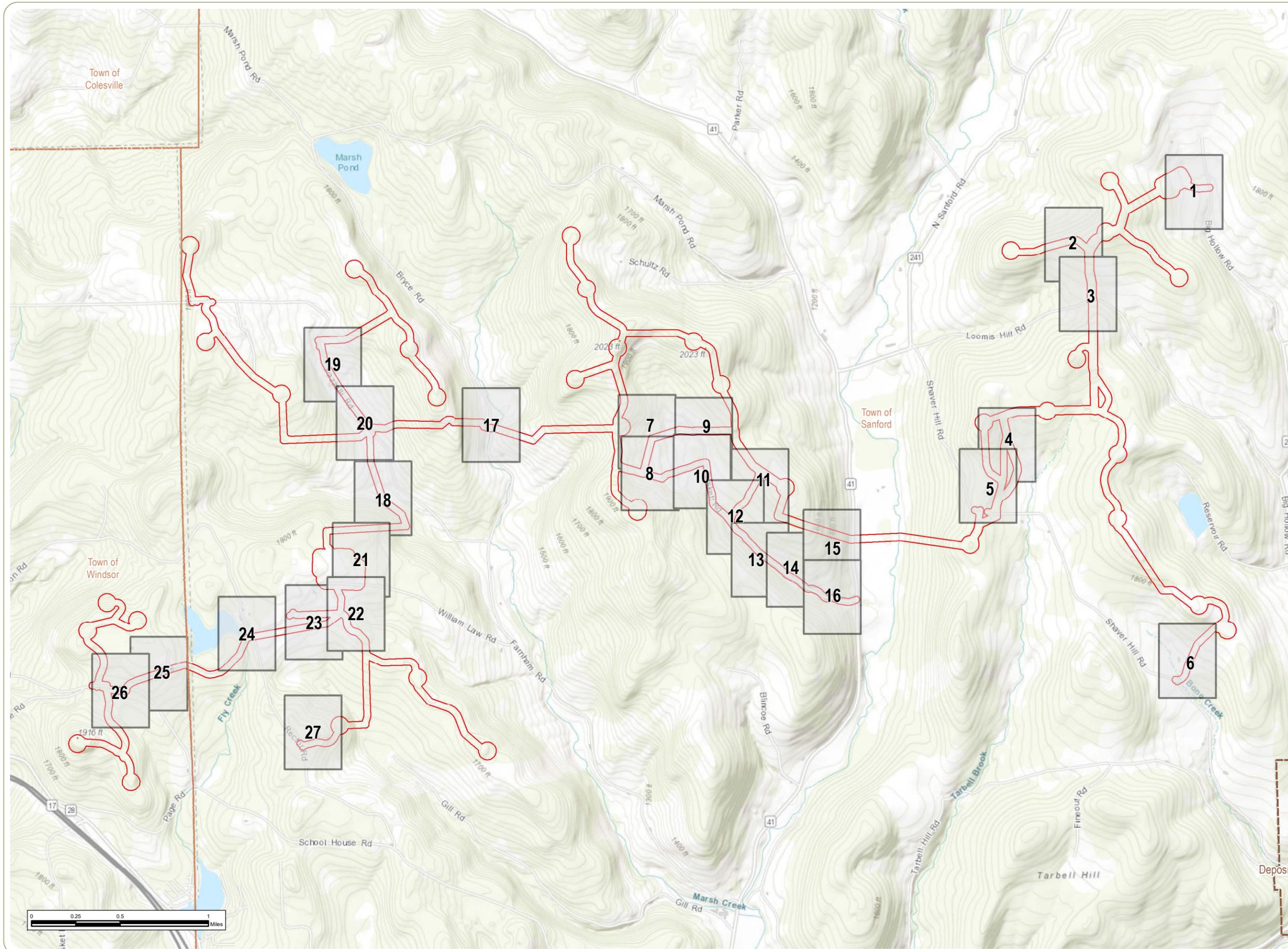
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## Figures

# Bluestone Wind Project

Town of Windsor and Sanford, Broome County, New York

## Invasive Species Survey Index



-  Sheet Index
-  Study Area
-  City/Village Boundary
-  Town Boundary



**Notes:** 1. Basemap:ESRI ArcGIS Online "World Topographic Map" map service 2. This map was generated in ArcMap on August 30, 2018. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.



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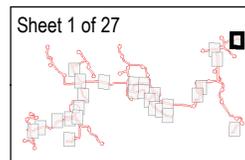
### Bluestone Wind Project

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### Invasive Species Survey

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- Collection Line
- Access Road
- Collection Substation
- POI Substation



**Invasive Plant Density**

- Patchy: 6-25%
- Monoculture: 56-100%
- Unsurveyed Area
- Study Area

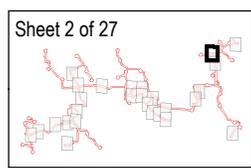


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**Invasive Species Survey**

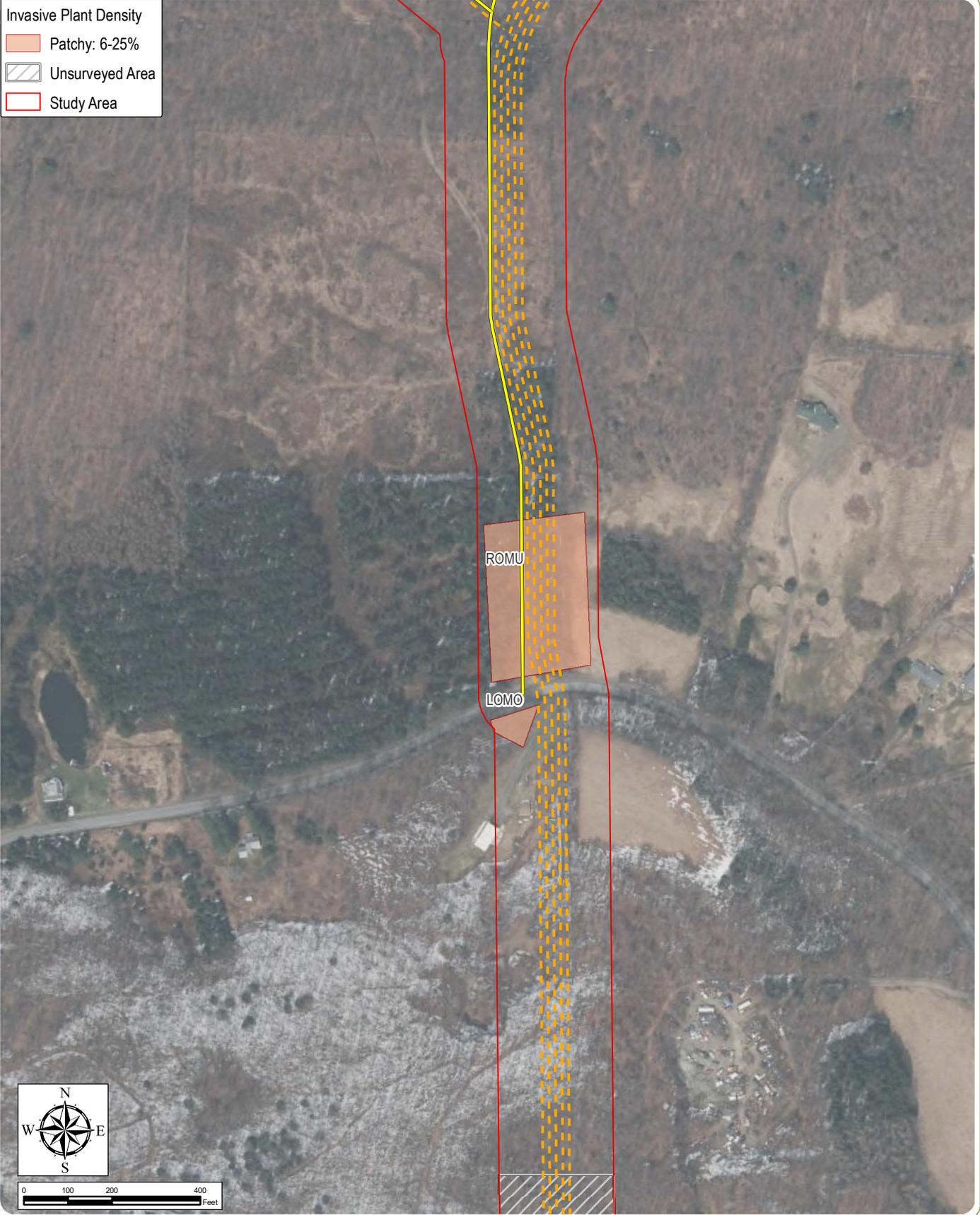
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- Wind Turbine
- Collection Line
- Access Road



**Invasive Plant Density**

- Patchy: 6-25%
- Unsurveyed Area
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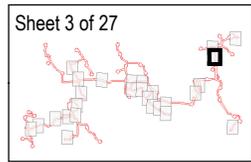
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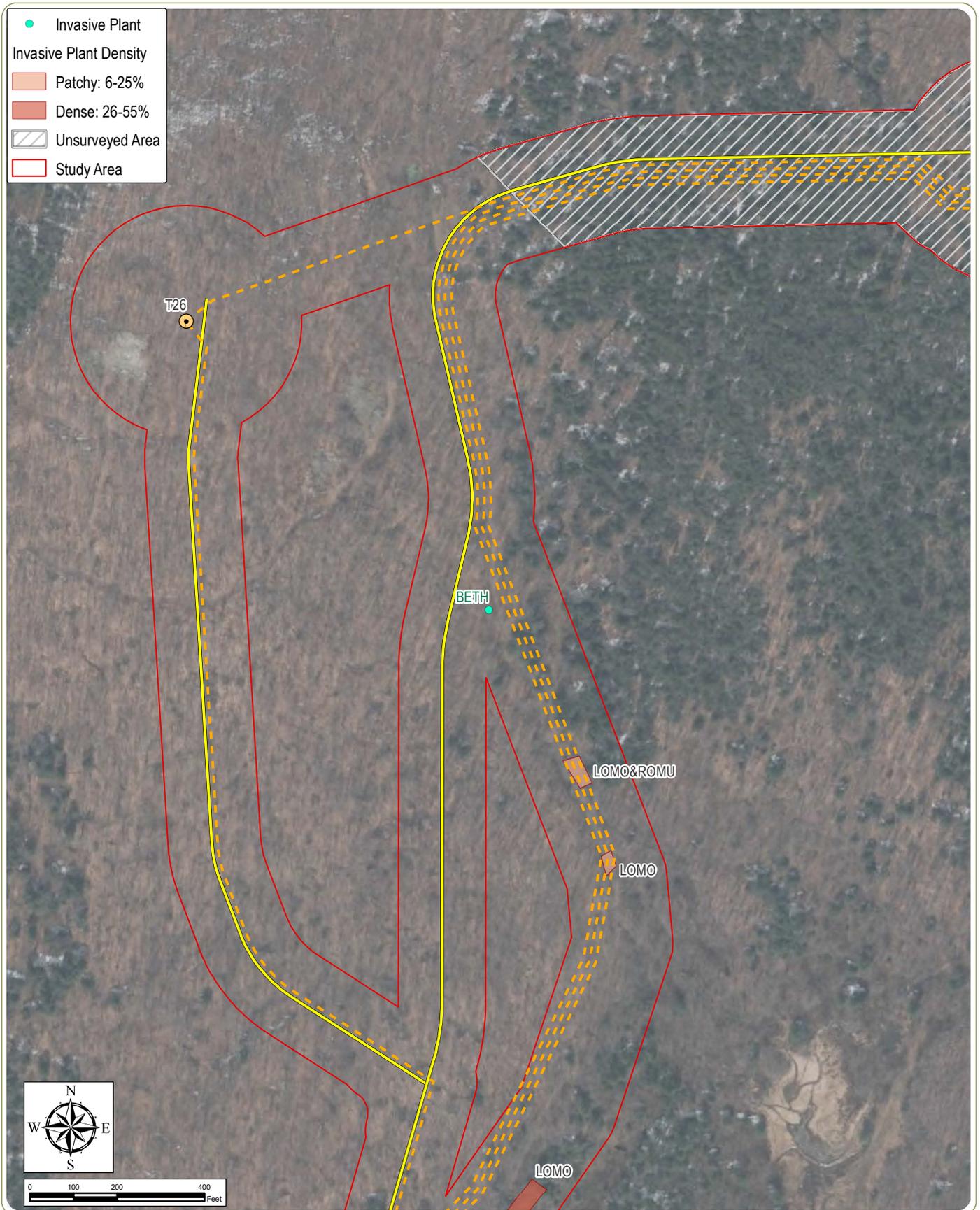
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- Collection Line
- Access Road





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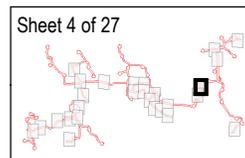
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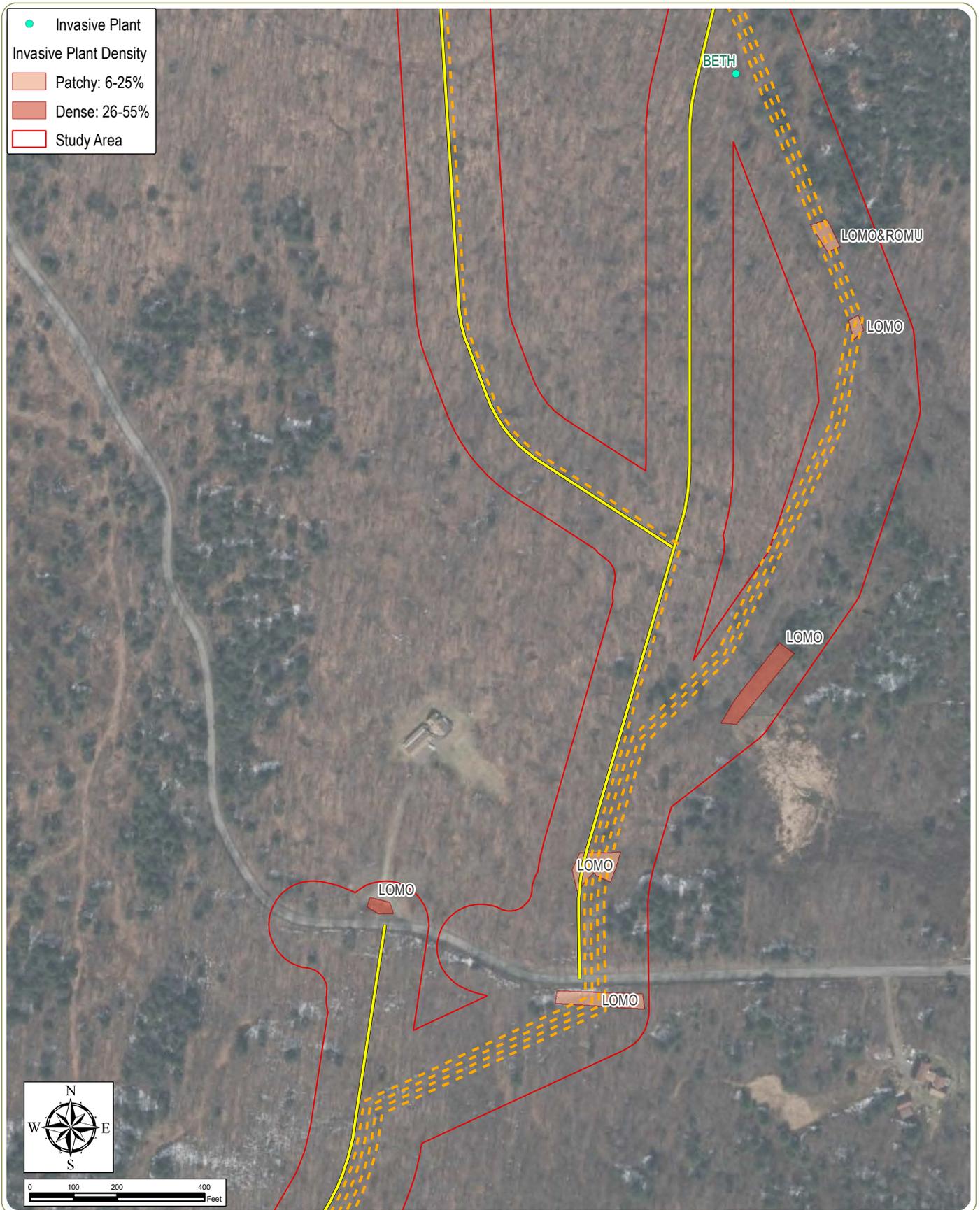
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- Wind Turbine
- Collection Line
- Access Road

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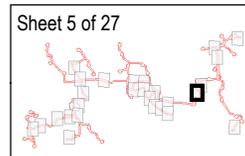
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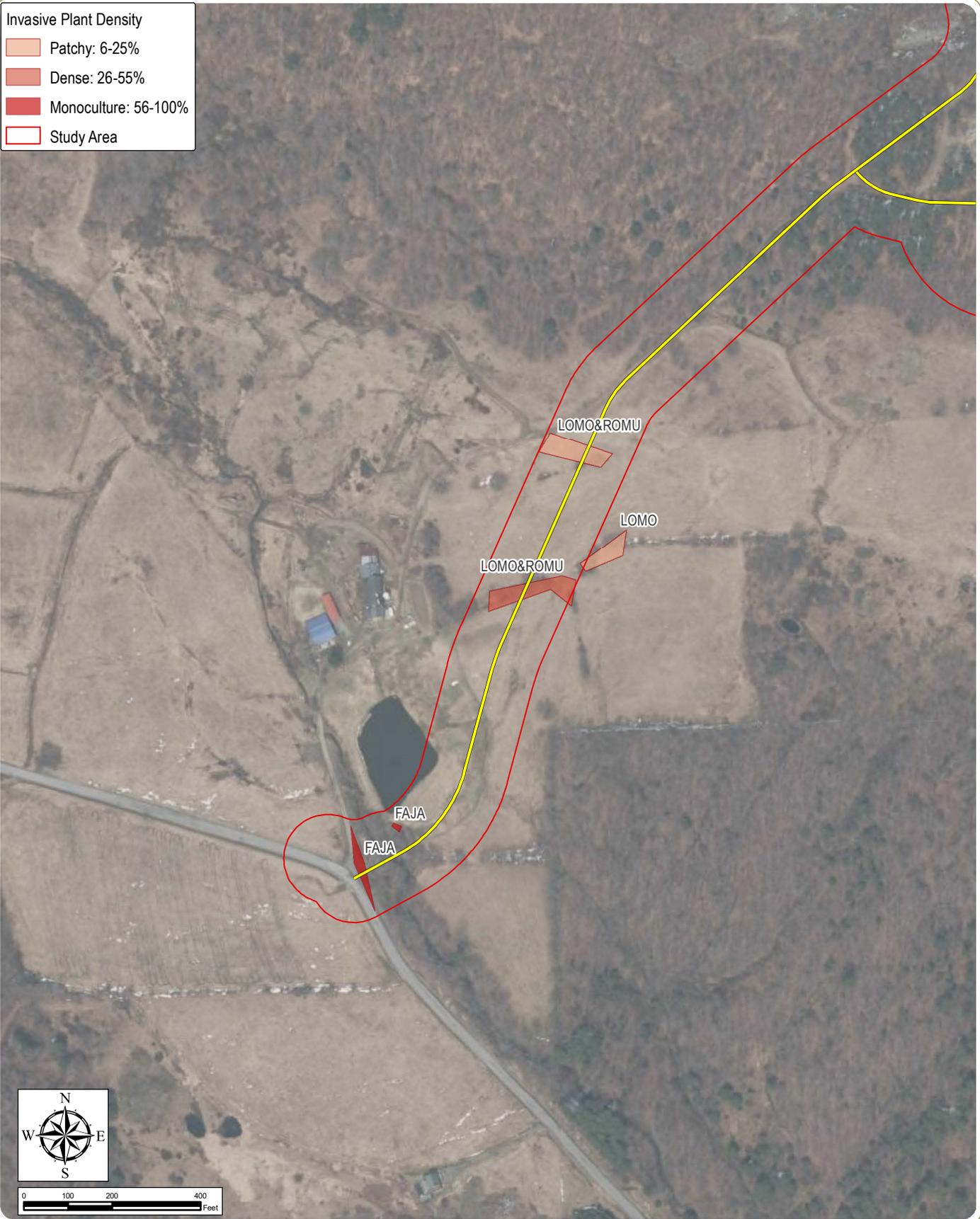
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- Collection Line
- Access Road





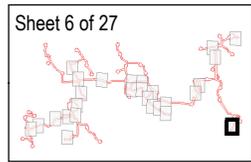
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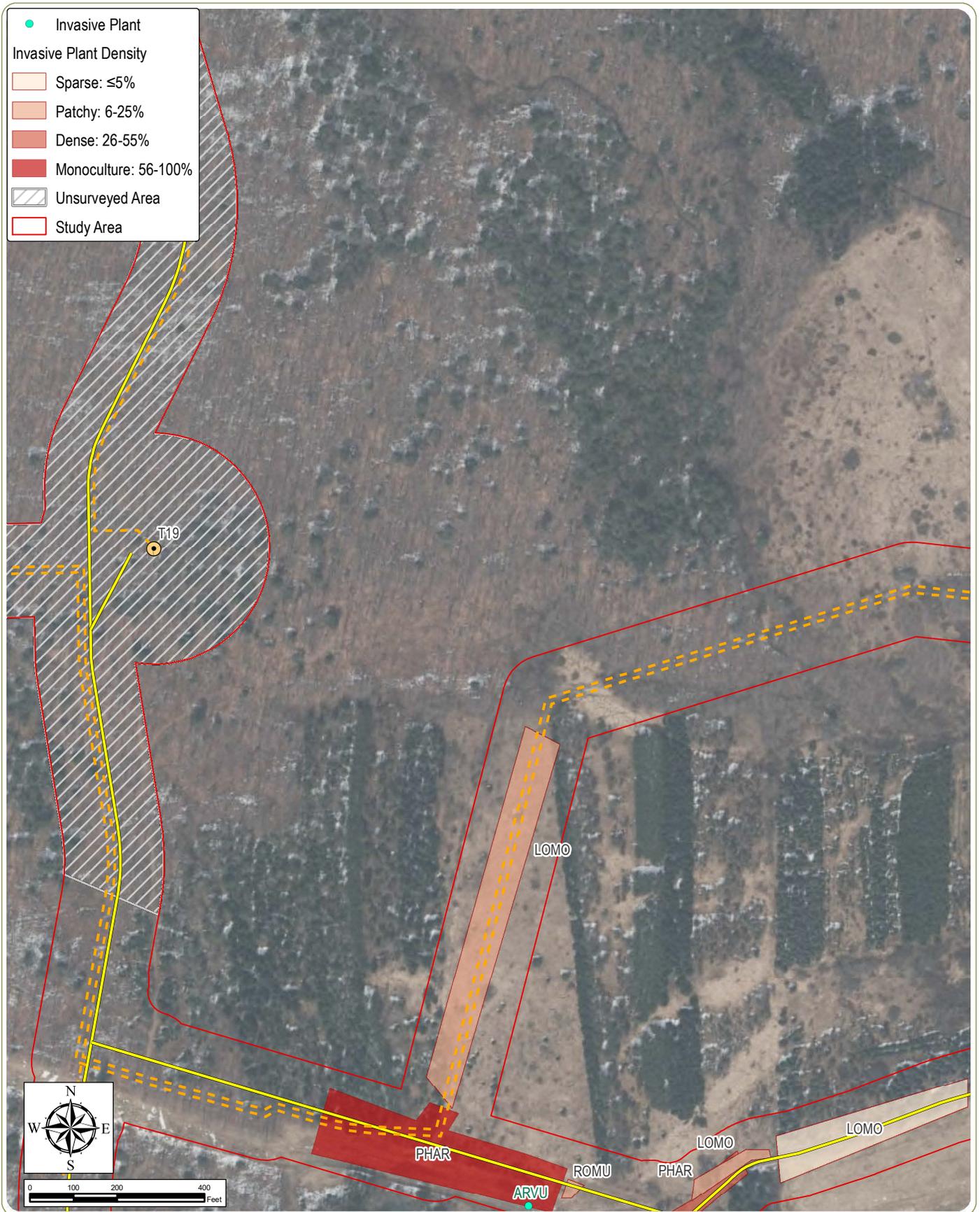
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— Access Road





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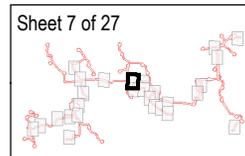
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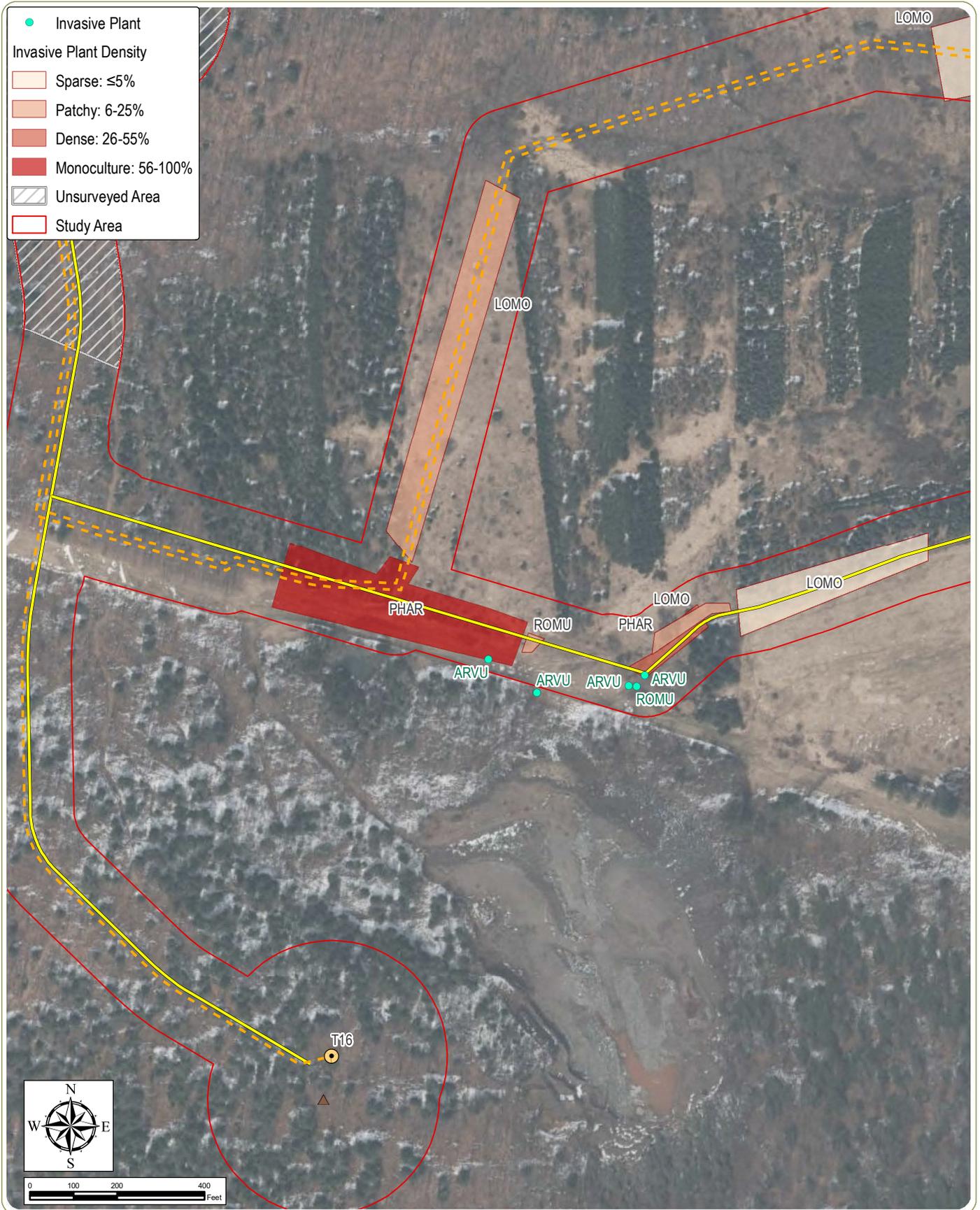
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- Wind Turbine
- Collection Line
- Access Road

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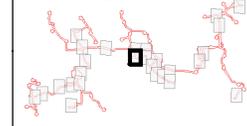
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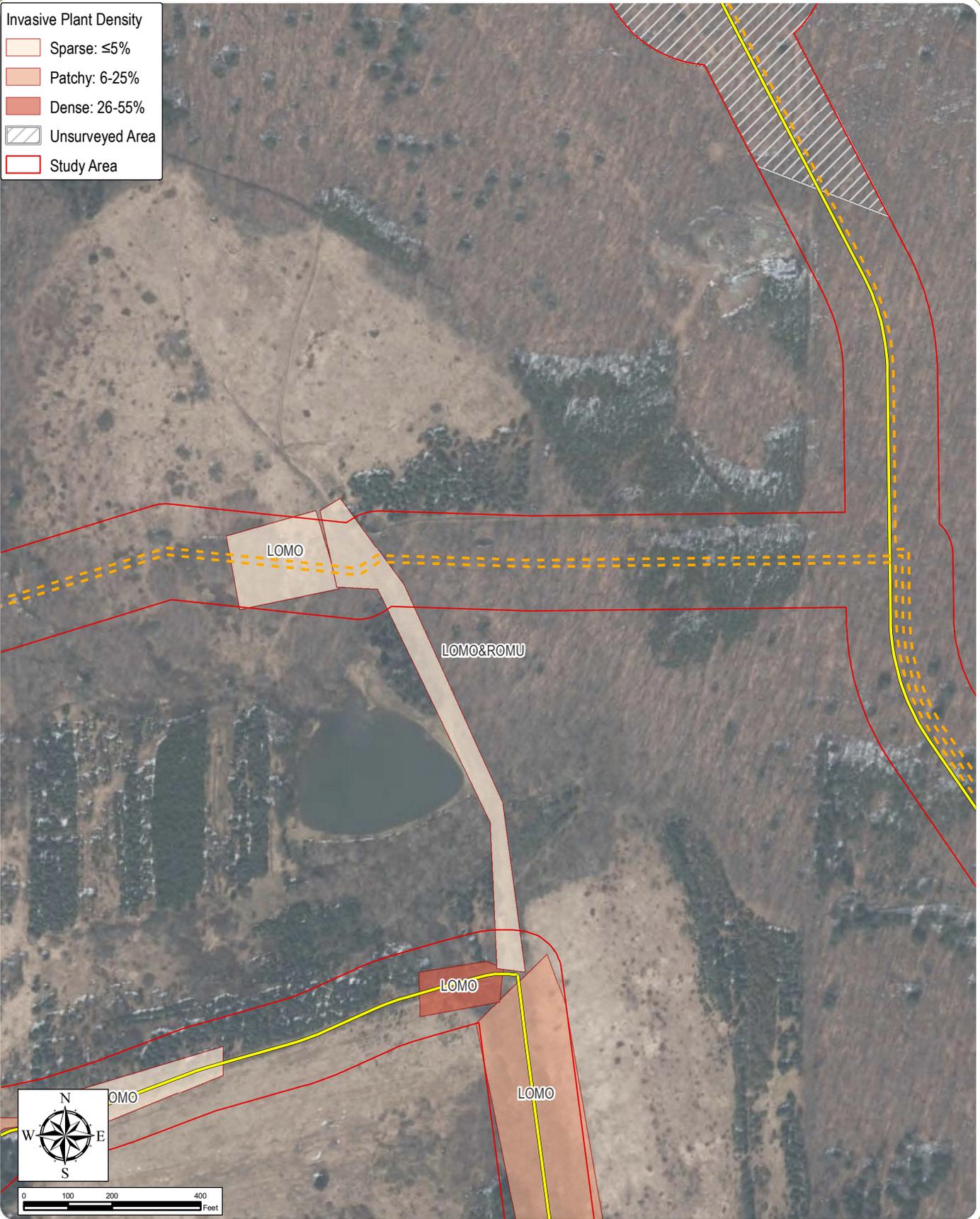
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- ▲ Met Tower
- Wind Turbine
- - - Collection Line
- Access Road

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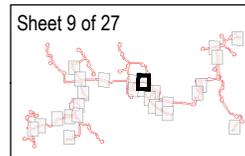
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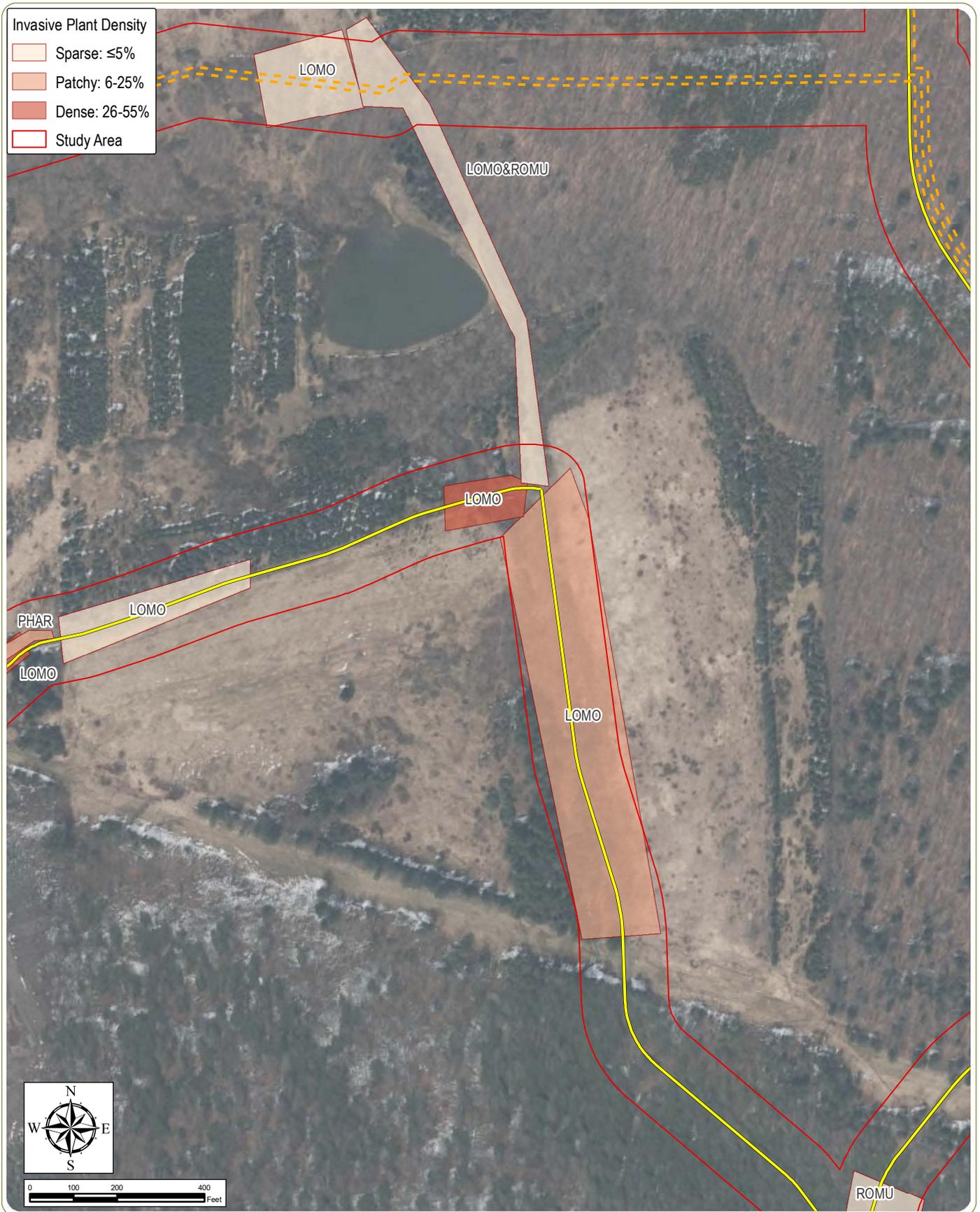
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- - - Collection Line
- Access Road





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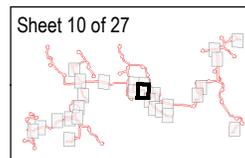
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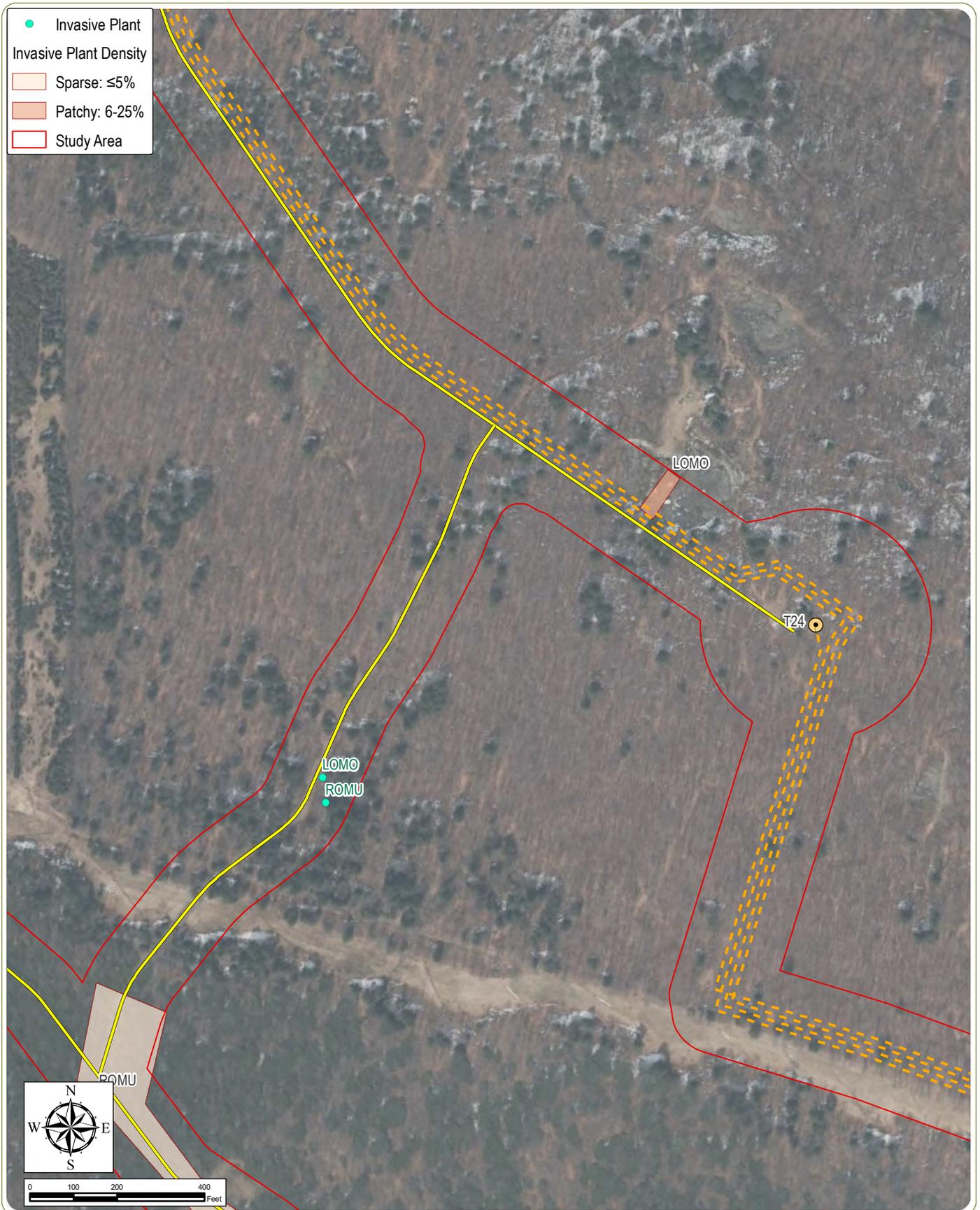
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- Collection Line
- Access Road

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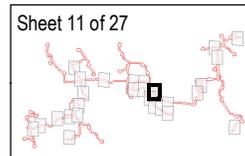
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-  Wind Turbine
-  Collection Line
-  Access Road







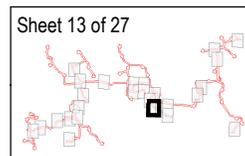
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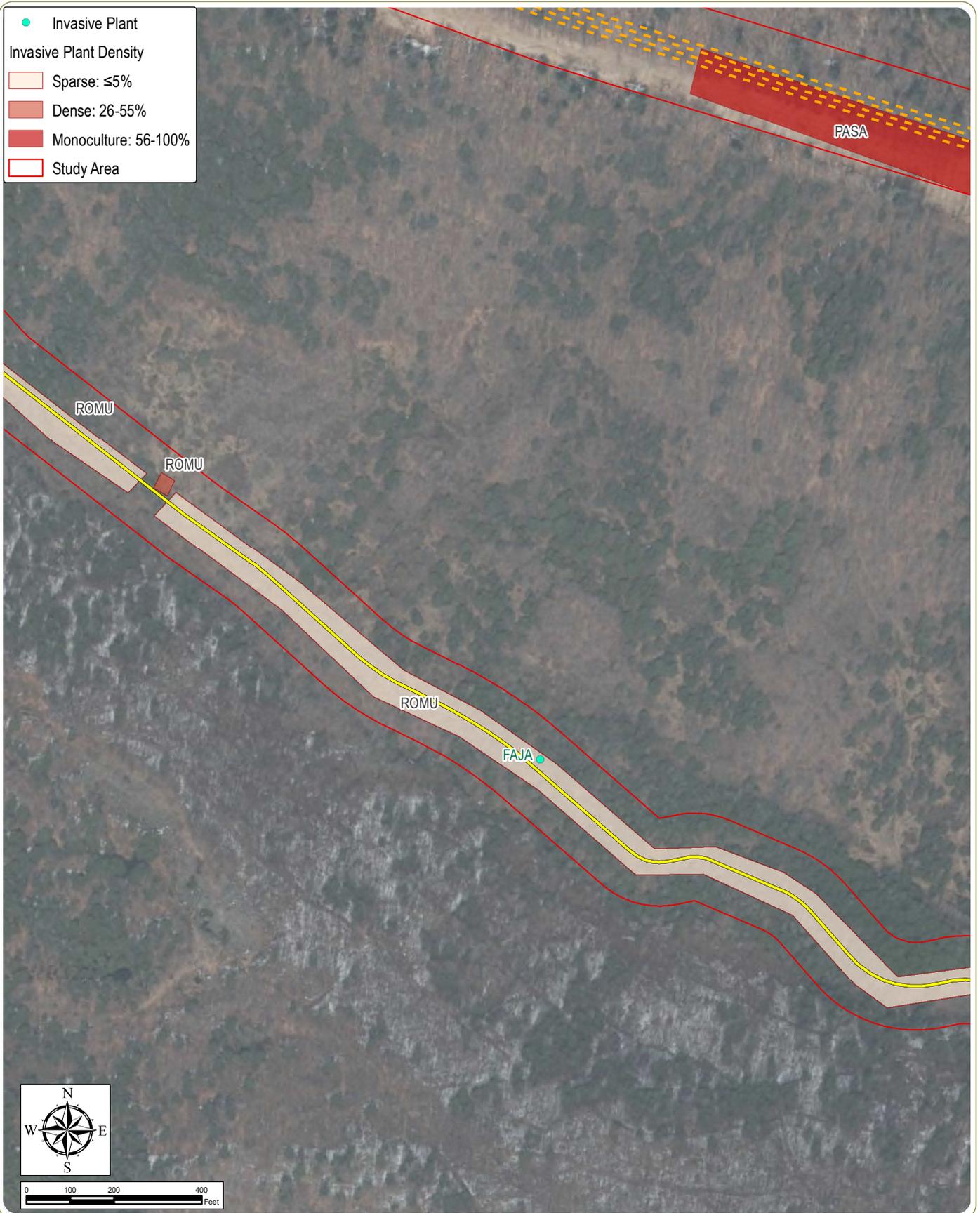
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-  Collection Line
-  Access Road





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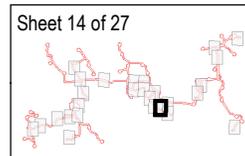
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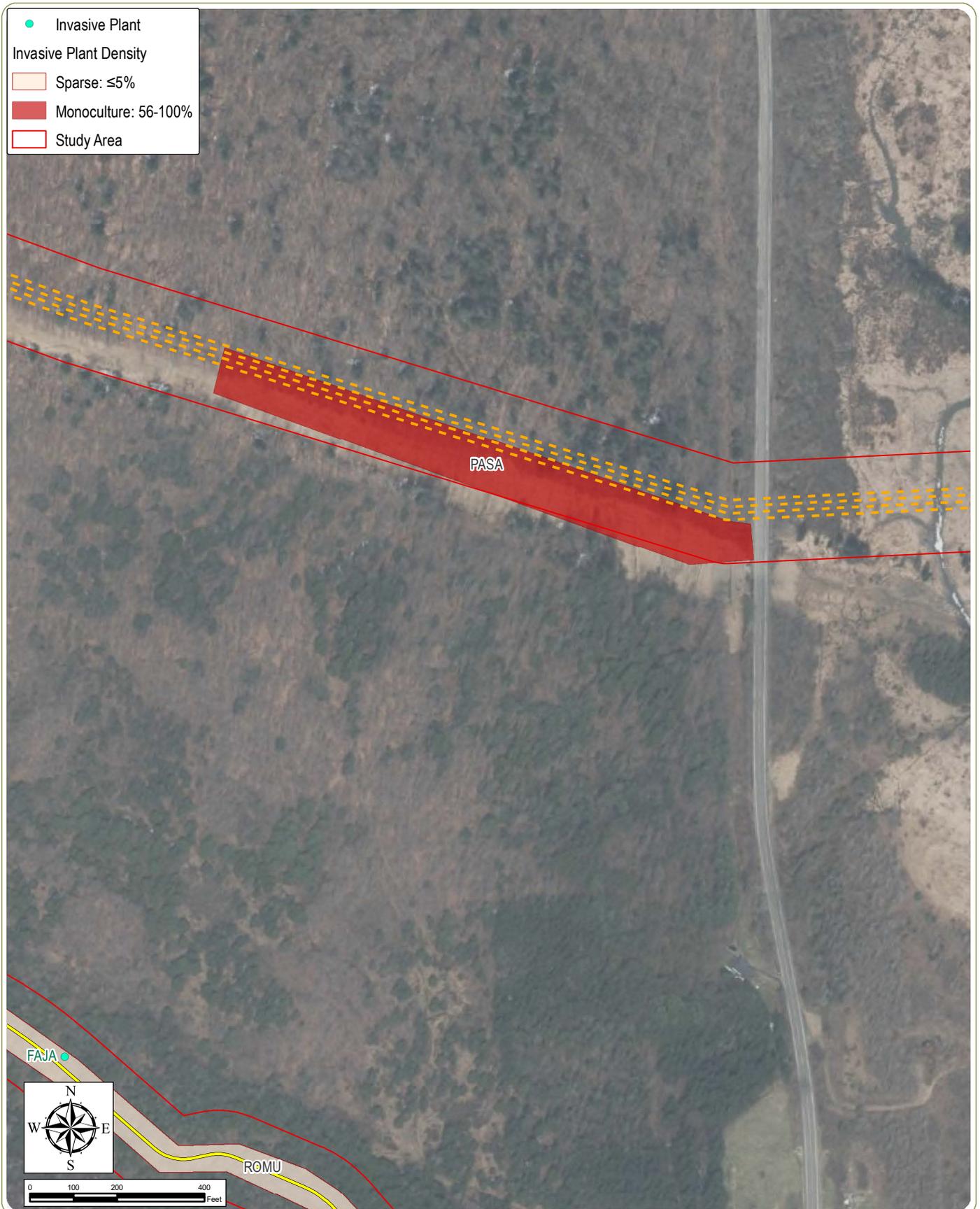
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- Collection Line
- Access Road

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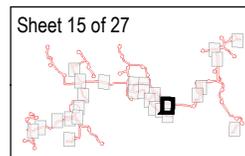
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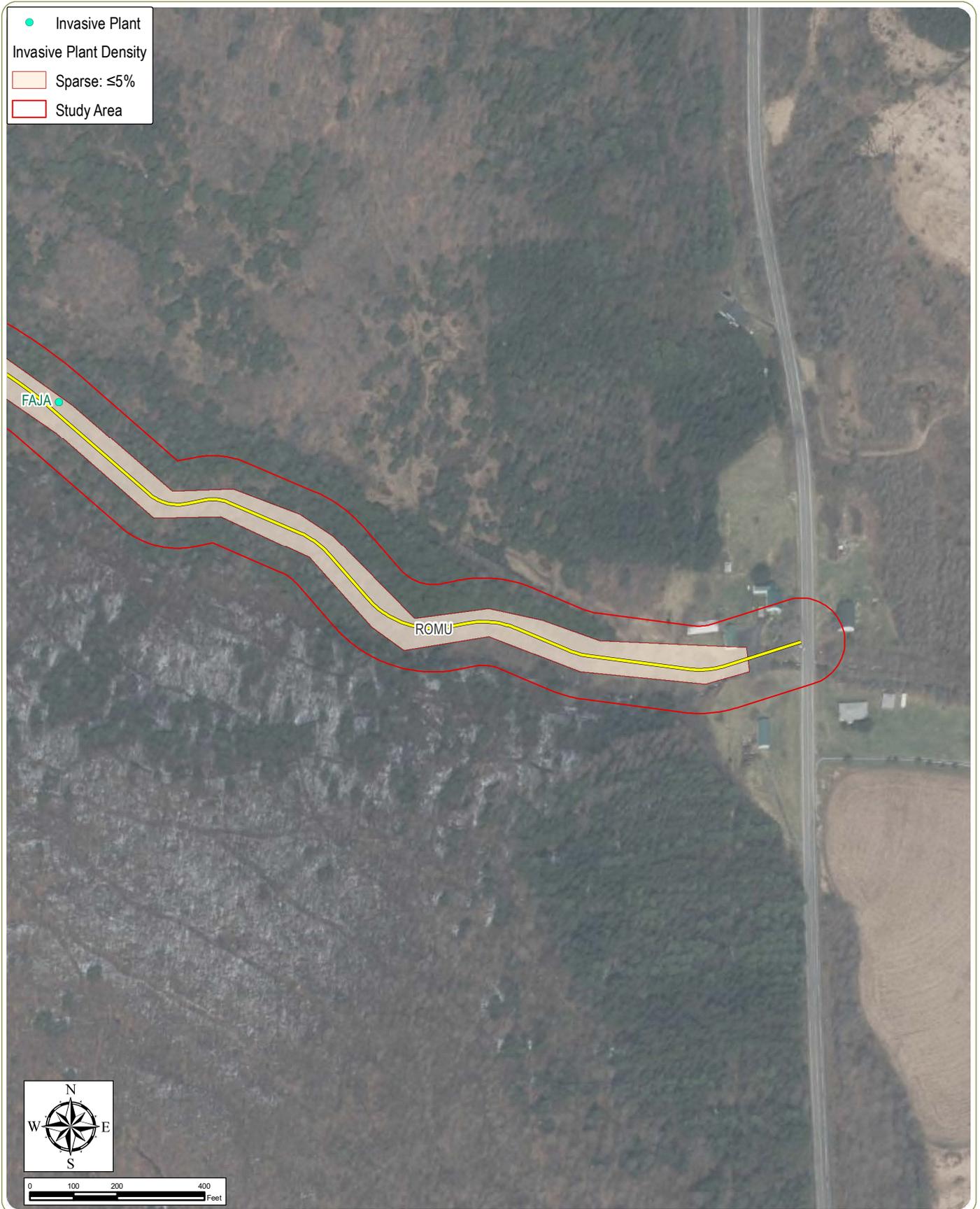
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- - - Collection Line
- Access Road





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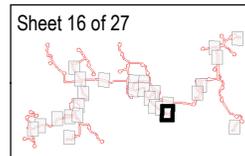
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— Access Road

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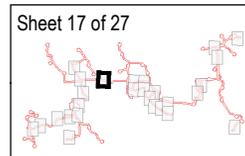
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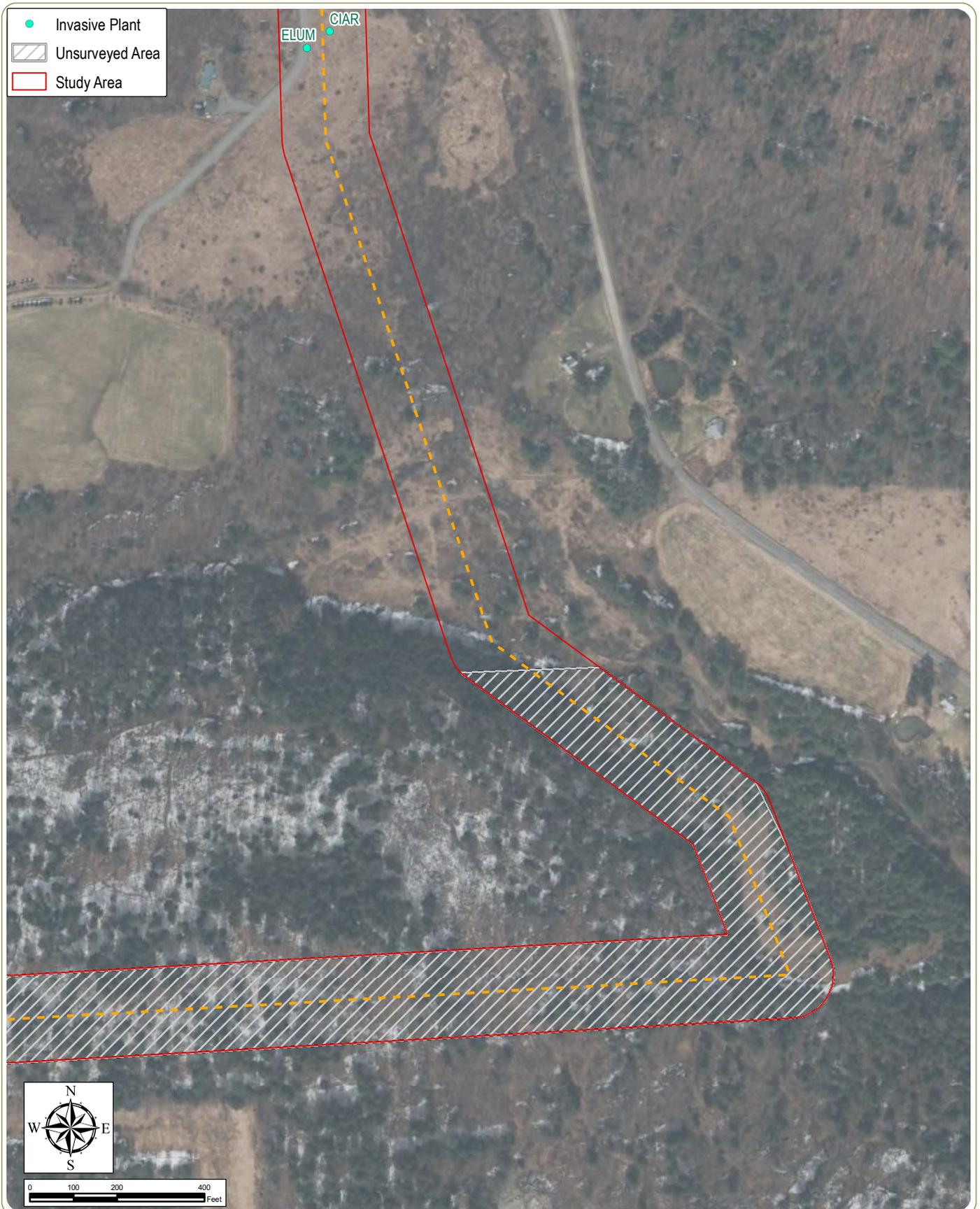
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--- Collection Line





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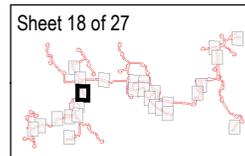
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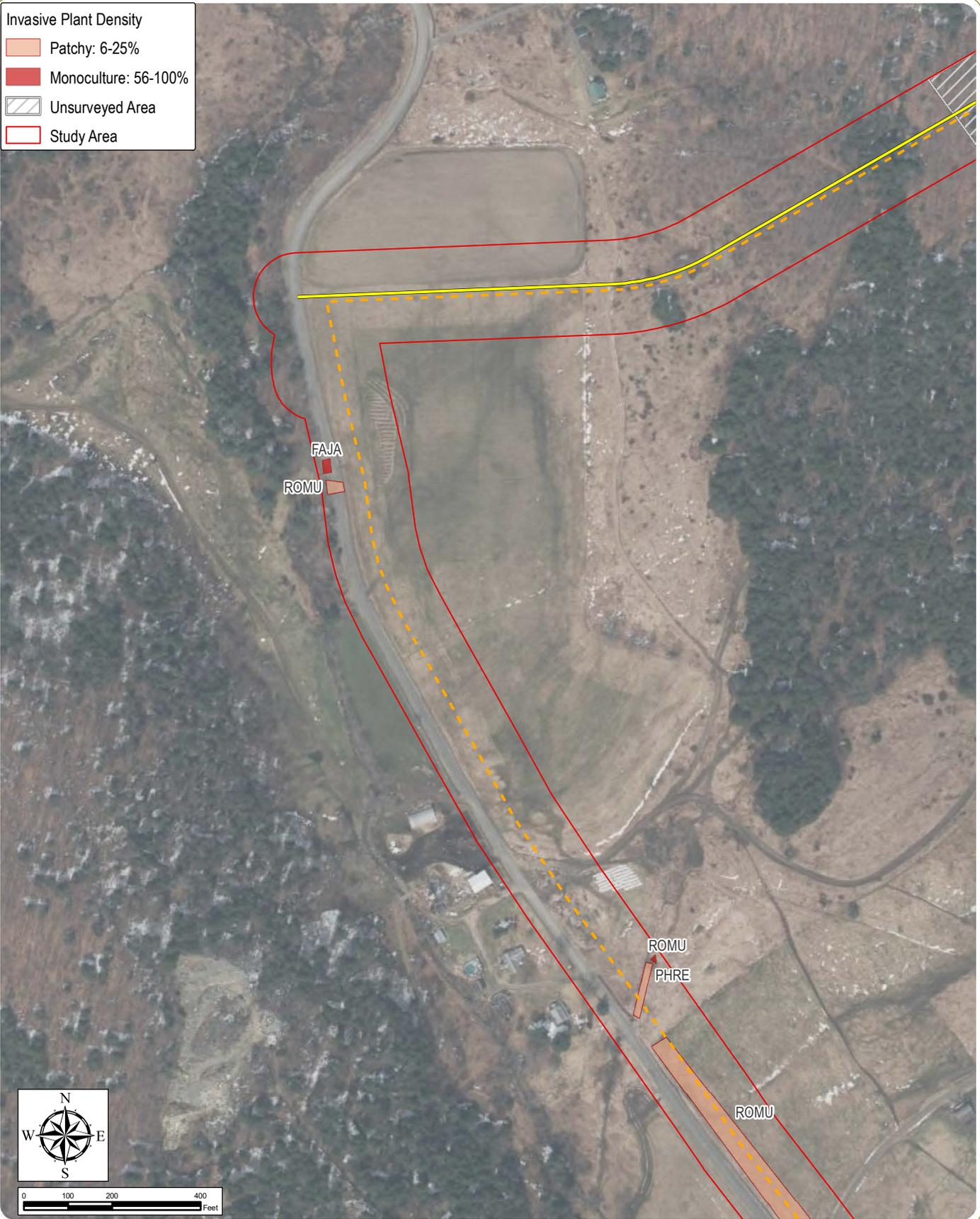
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--- Collection Line

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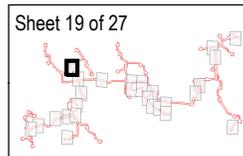
## Bluestone Wind Project

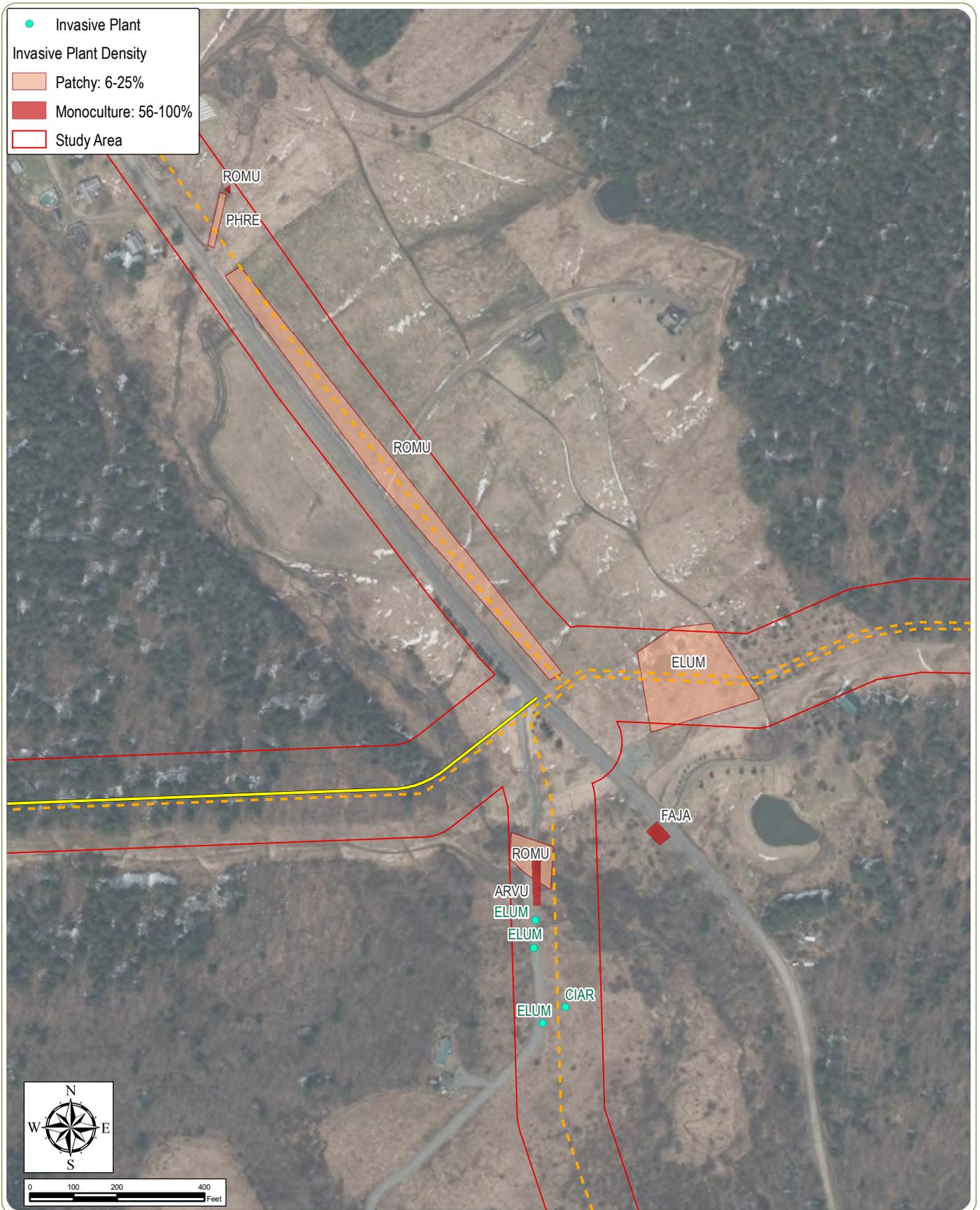
Town of Windsor and Sanford, Broome County, New York

### Invasive Species Survey

**Notes:** 1. Basemap: NYS DOP "2014" orthoimagery map service. 2. This map was generated in ArcMap on August 30, 2018. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

- Collection Line
- Access Road





### Bluestone Wind Project

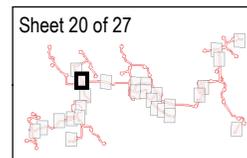
Town of Windsor and Sanford, Broome County, New York

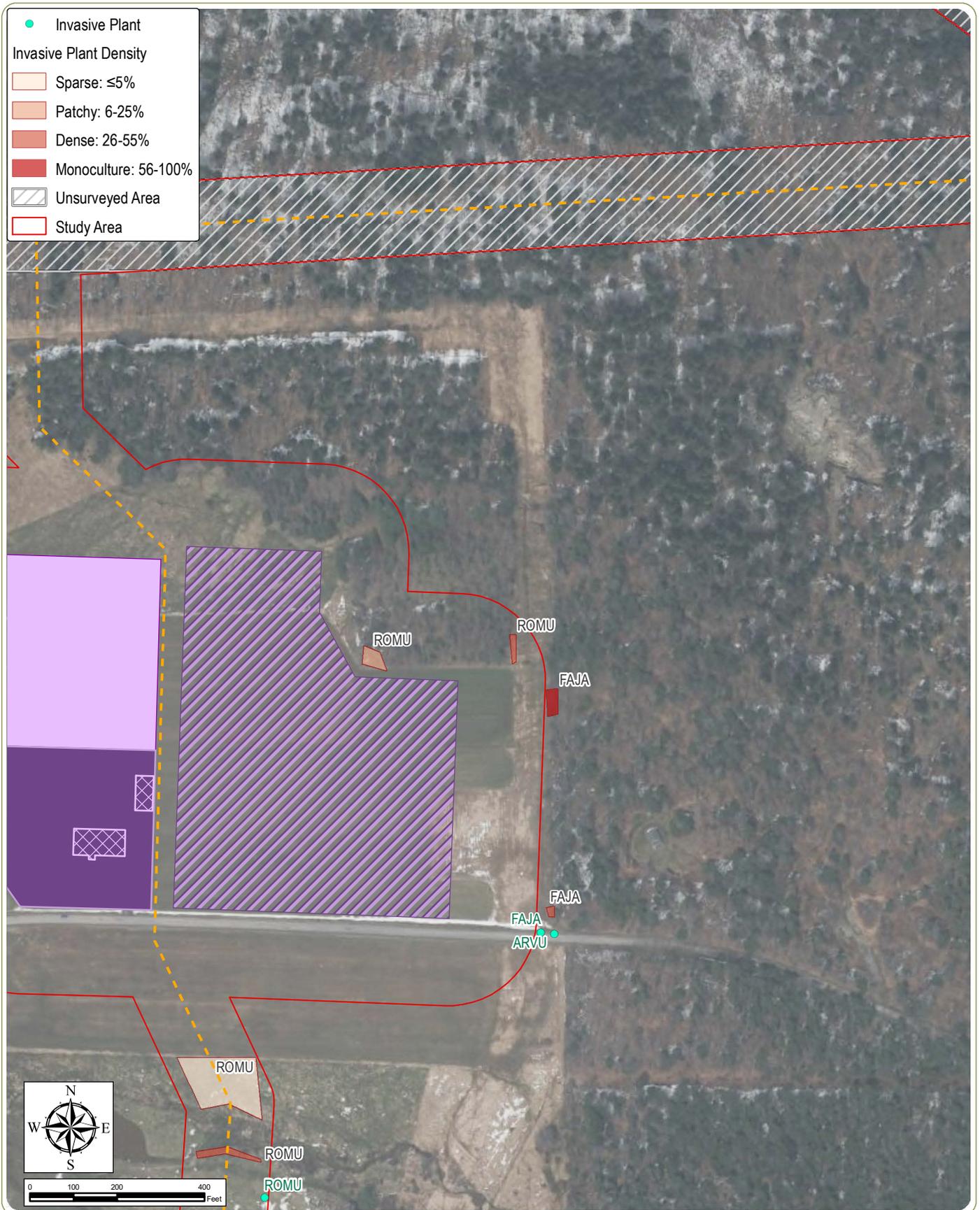
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- Collection Line
- Access Road

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## Bluestone Wind Project

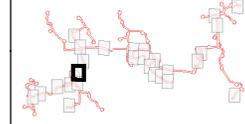
Town of Windsor and Sanford, Broome County, New York

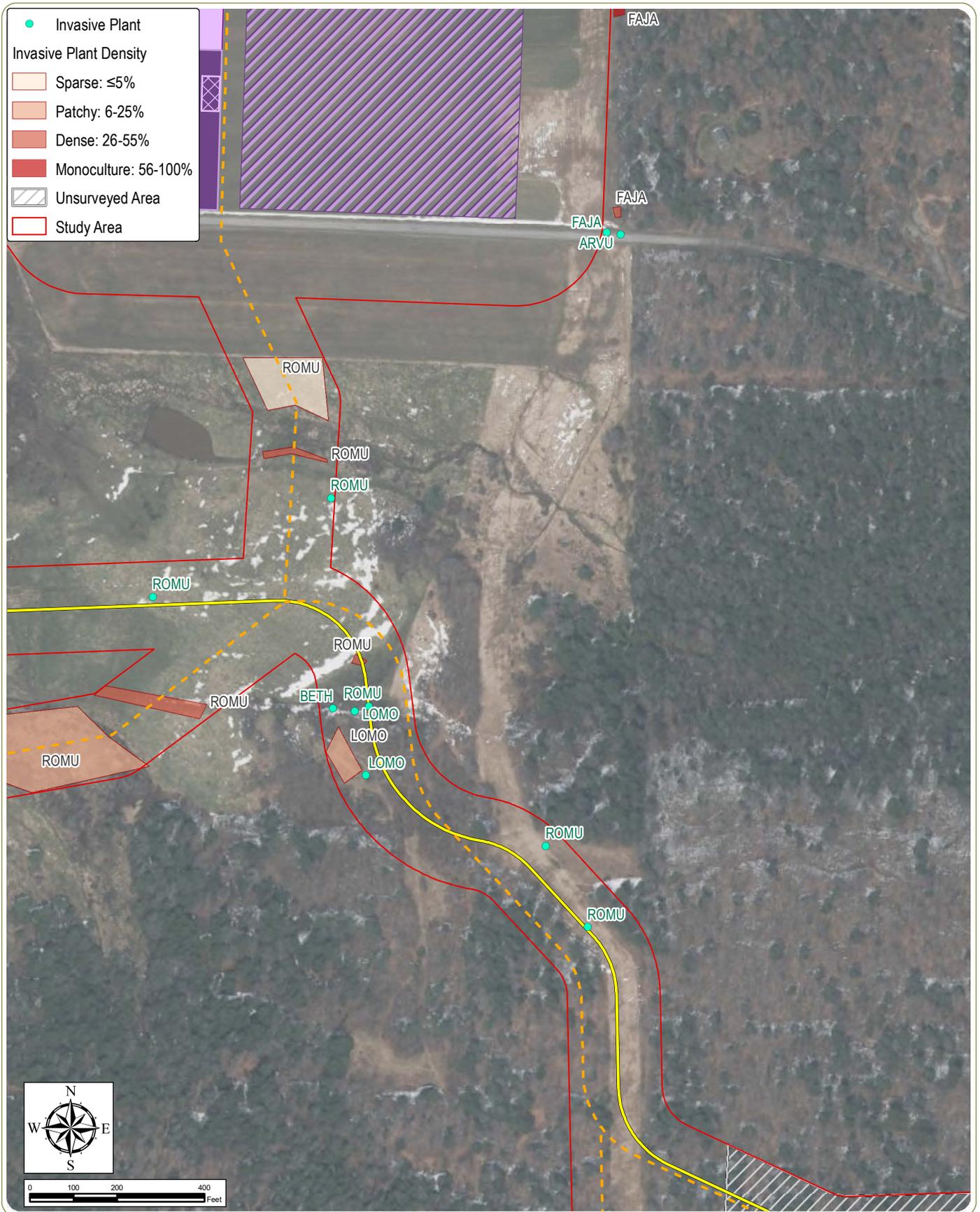
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- Collection Line
- Storage Building
- O&M Facility
- Batch Plant
- Laydown Area

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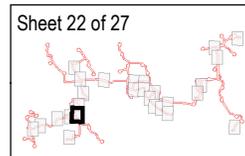
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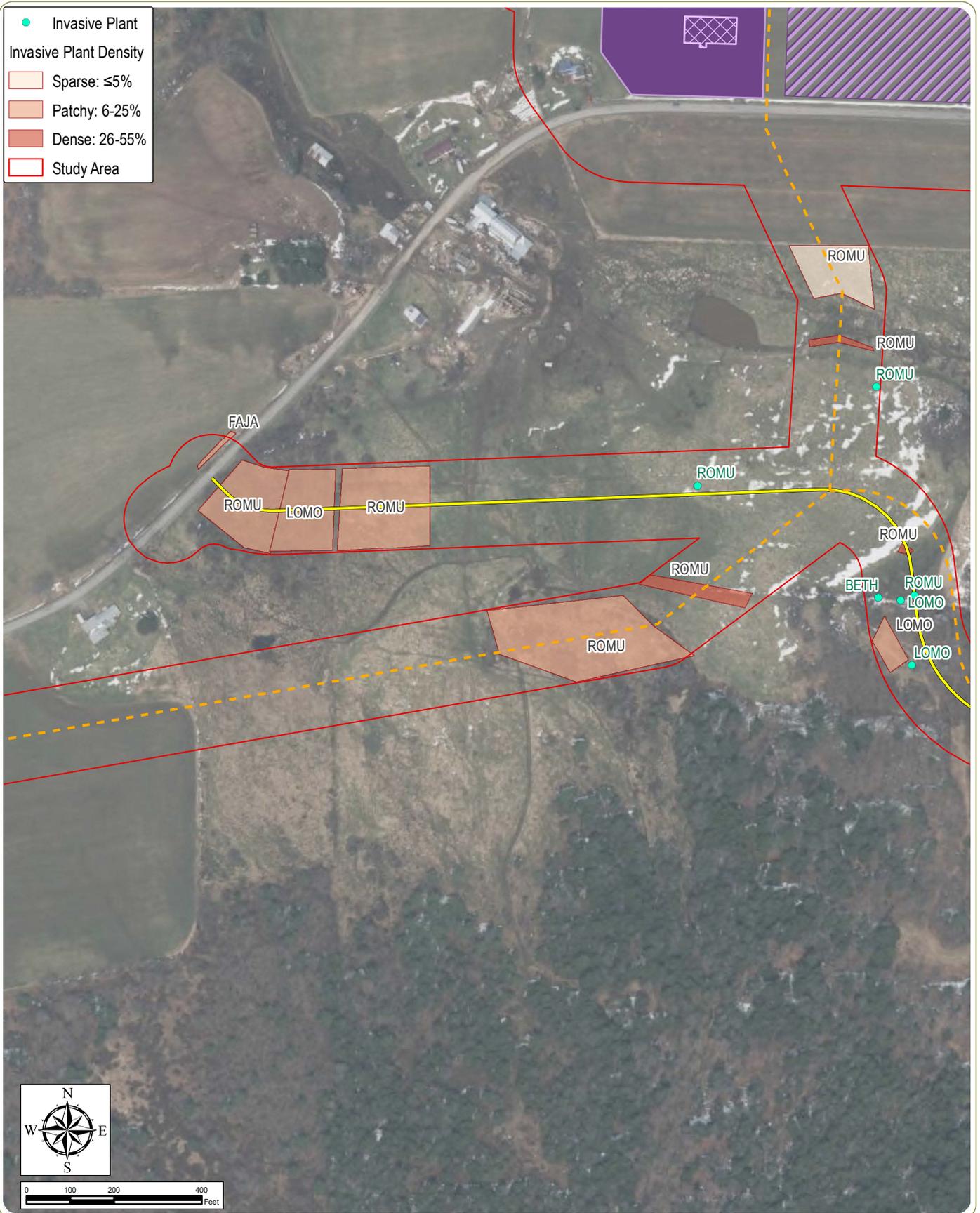
Town of Windsor and Sanford, Broome County, New York

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- - - Collection Line
- Access Road
- Storage Building
- O&M Facility
- Batch Plant
- Laydown Area





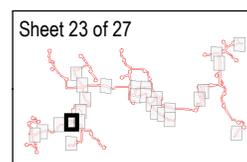
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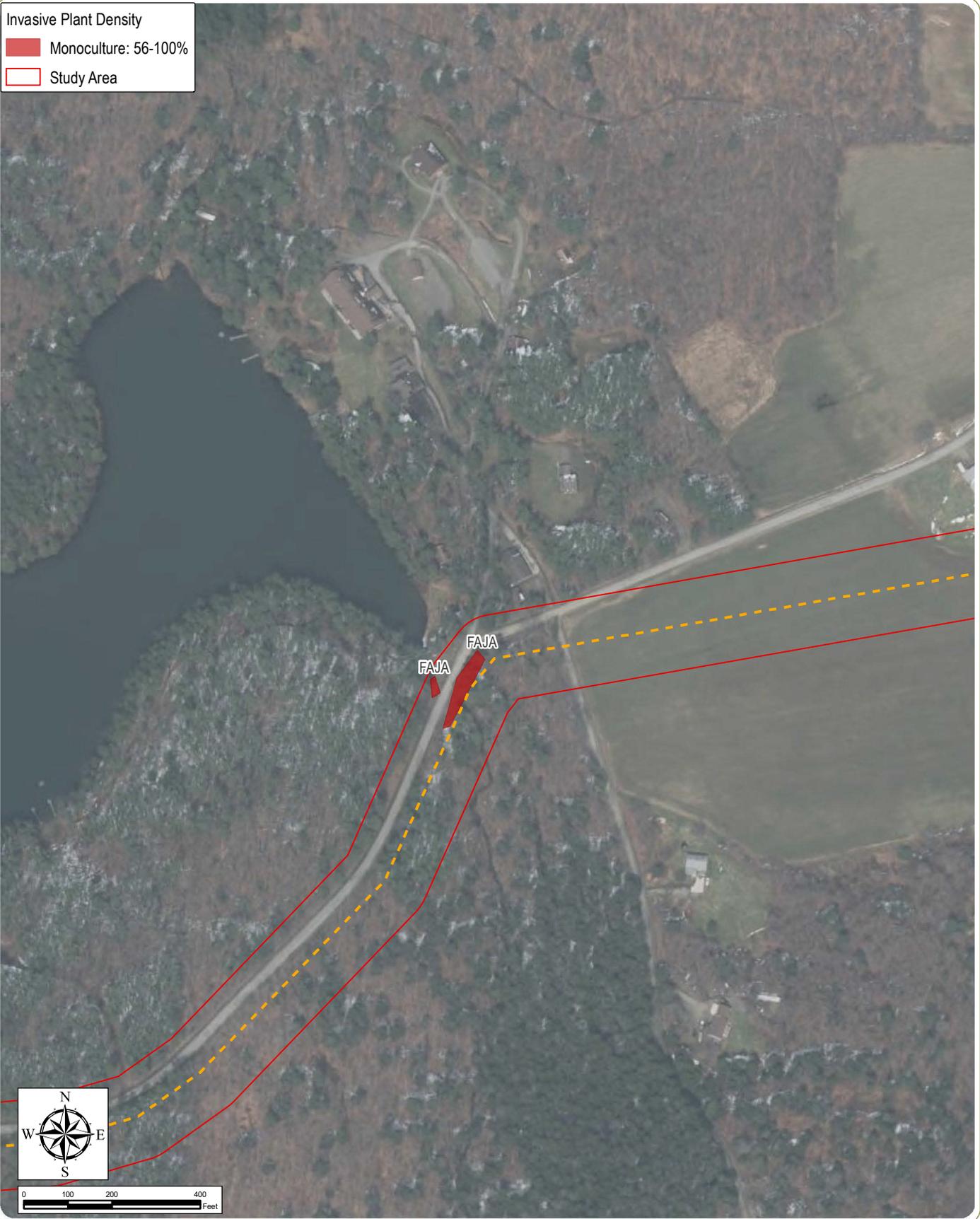
Town of Windsor and Sanford, Broome County, New York

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- - - Collection Line
- Access Road
- Storage Building
- O&M Facility
- Laydown Area





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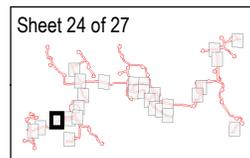
Town of Windsor and Sanford, Broome County, New York

### Invasive Species Survey

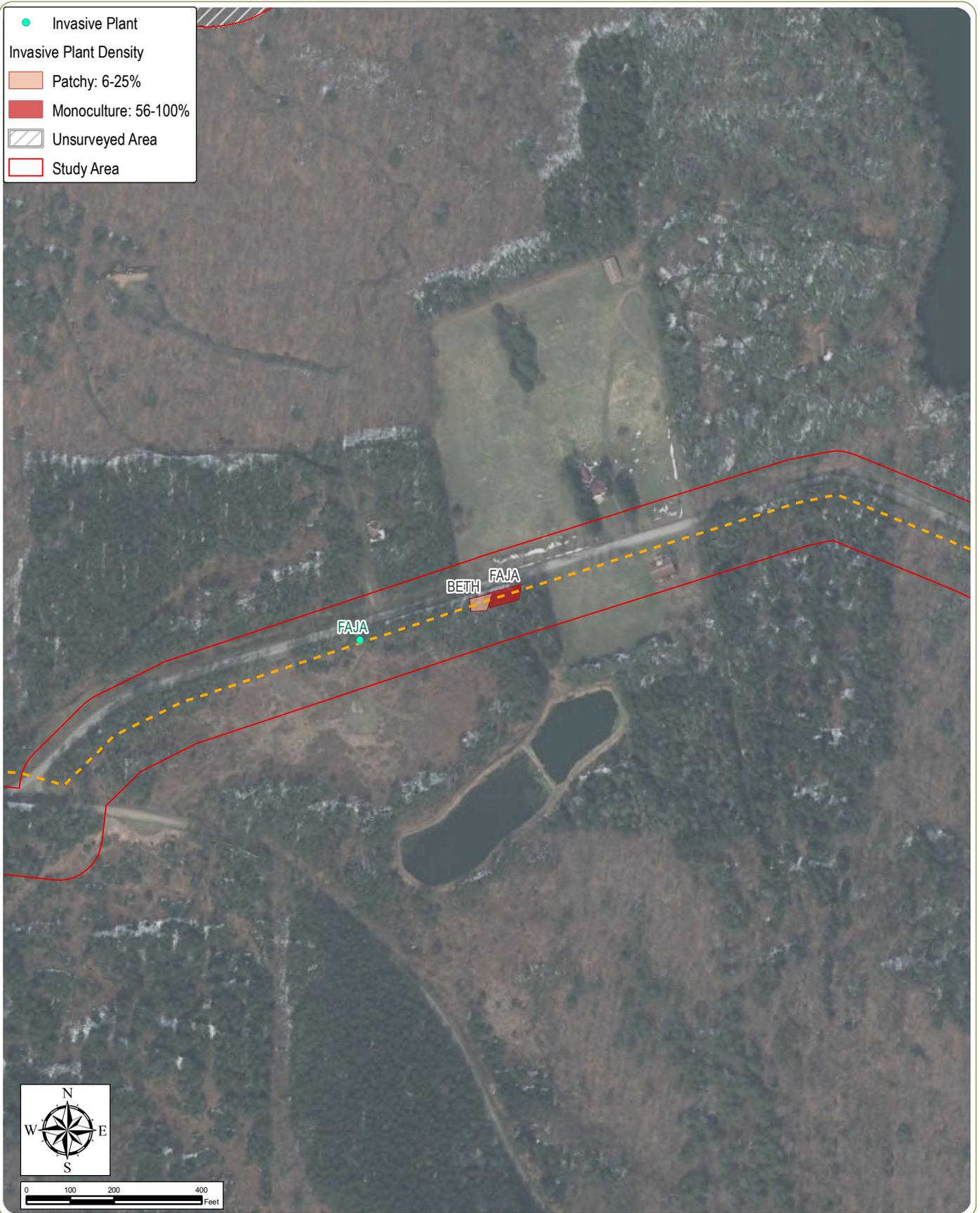
**Notes:** 1. Basemap: NYS DOP "2014" orthoimagery map service. 2. This map was generated in ArcMap on August 30, 2018. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

--- Collection Line

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### Bluestone Wind Project

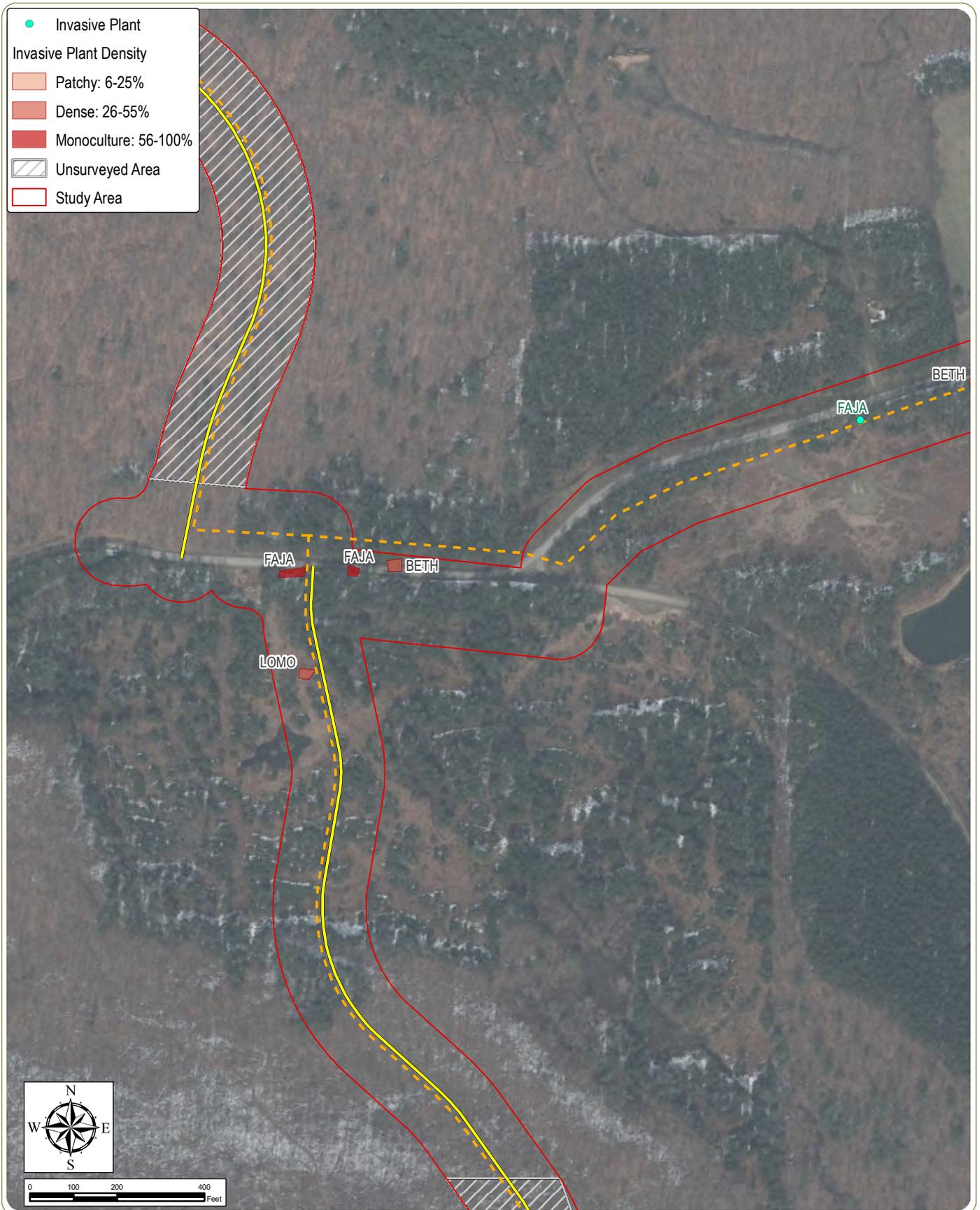
Town of Windsor and Sanford, Broome County, New York

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--- Collection Line





## Bluestone Wind Project

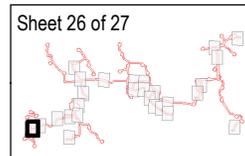
Town of Windsor and Sanford, Broome County, New York

### Invasive Species Survey

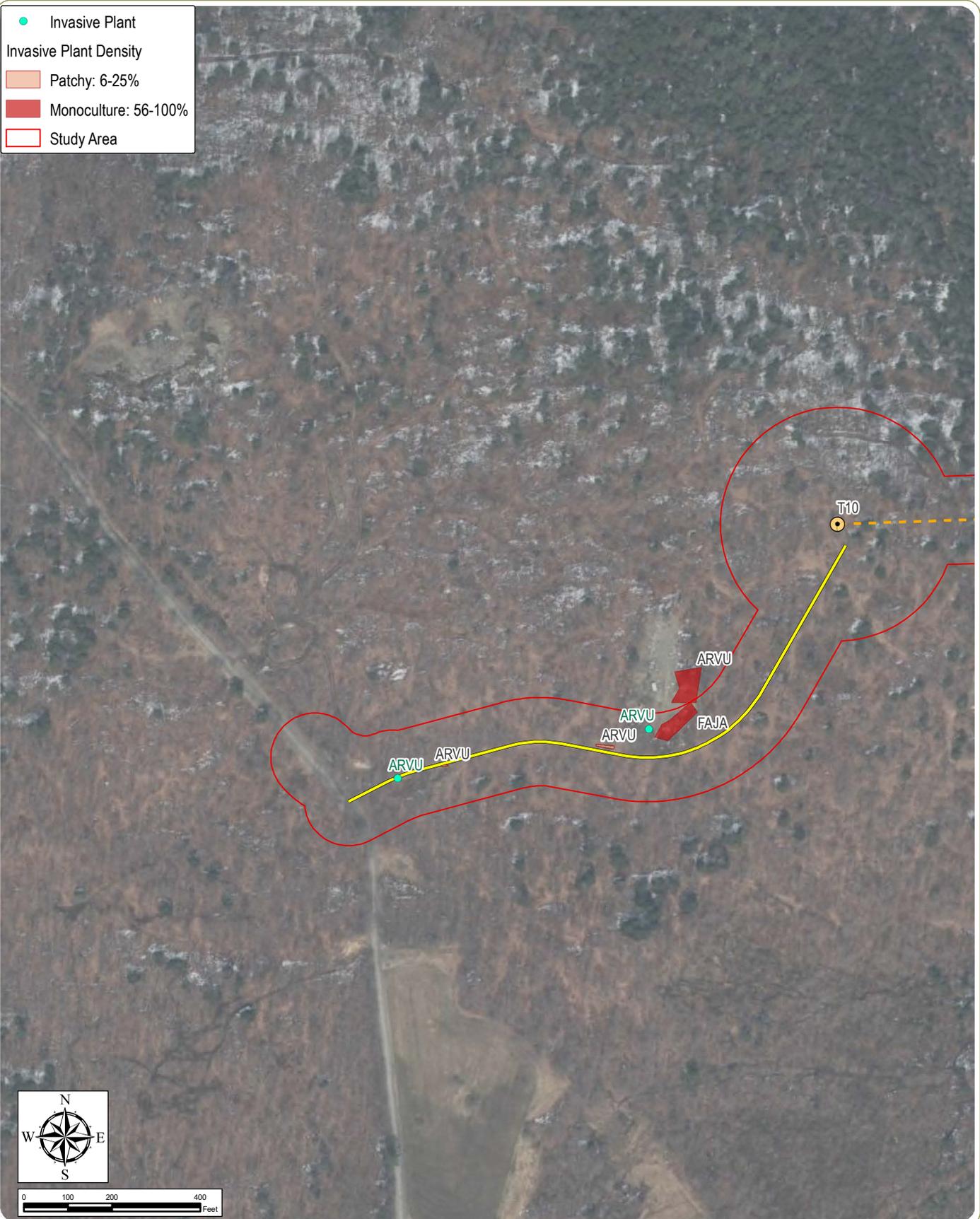
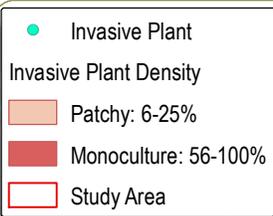
**Notes:** 1. Basemap: NYS DOP "2014" orthoimagery map service. 2. This map was generated in ArcMap on August 30, 2018. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

- - - Collection Line
- Access Road

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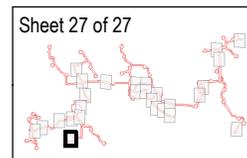
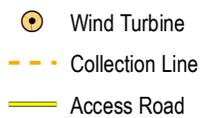


### Bluestone Wind Project

Town of Windsor and Sanford, Broome County, New York

### Invasive Species Survey

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## **Appendix A**

NYSDEC Prohibited and Regulated Invasive Species

**6 NYCRR Part 575**  
**Prohibited and Regulated Invasive Species**  
**September 10, 2014**

**ALGAE AND CYANOBACTERIA**

**Prohibited:**

*Caulerpa taxifolia*, Killer Green Algae  
*Didymosphenia geminata*, Didymo  
*Prymnesium parvum*, Golden Algae

**Regulated:**

*Cylindrospermopsis raciborskii*, Cylindro  
*Grateloupia turuturu*, Red Algae

**PLANTS**

**Prohibited:**

*Acer pseudoplatanus*, Sycamore Maple  
*Achyranthes japonica*, Japanese Chaff Flower  
*Alliaria petiolata*, Garlic Mustard  
*Ampelopsis brevipedunculata*, Porcelain Berry  
*Anthriscus sylvestris*, Wild Chervil  
*Aralia elata*, Japanese Angelica Tree  
*Artemisia vulgaris*, Mugwort  
*Arthraxon hispidus*, Small Carpet Grass  
*Berberis thunbergii*, Japanese Barberry  
*Brachypodium sylvaticum*, Slender False Brome  
*Cabomba caroliniana*, Fanwort  
*Cardamine impatiens*, Narrowleaf Bittercress  
*Celastrus orbiculatus*, Oriental Bittersweet  
*Centaurea stoebe* (*C. biebersteinii*, *C. diffusa*, *C. maculosa misapplied*, *C. xpsammogena*), Spotted Knapweed  
*Cirsium arvense* (*C. setosum*, *C. incanum*, *Serratula arvensis*), Canada Thistle  
*Cynanchum louiseae* (*C. nigrum*, *Vincetoxicum nigrum*), Black Swallow-wort  
*Cynanchum rossicum* (*C. medium*, *Vincetoxicum medium*, *V. rossicum*), Pale Swallow-wort  
*Dioscorea polystachya* (*D. batatas*), Chinese Yam  
*Dipsacus laciniatus*, Cut-leaf Teasel  
*Egeria densa*, Brazilian Waterweed  
*Elaeagnus umbellata*, Autumn Olive  
*Euphorbia cyparissias*, Cypress Spurge  
*Euphorbia esula*, Leafy Spurge  
*Ficaria verna* (*Ranunculus ficaria*), Lesser Celandine  
*Frangula alnus* (*Rhamnus frangula*), Smooth Buckthorn  
*Glyceria maxima*, Reed Manna Grass  
*Heracleum mantegazzianum*, Giant Hogweed  
*Humulus japonicus*, Japanese Hops  
*Hydrilla verticillata*, Hydrilla/ Water Thyme  
*Hydrocharis morsus-ranae*, European Frogbit  
*Imperata cylindrica* (*I. arundinacea*, *Lagurus cylindricus*), Cogon Grass  
*Iris pseudacorus*, Yellow Iris

*Lepidium latifolium*, Broad-leaved Pepper-grass  
*Lespedeza cuneata*, Chinese Lespedeza  
*Ligustrum obtusifolium*, Border Privet  
*Lonicera japonica*, Japanese Honeysuckle  
*Lonicera maackii*, Amur Honeysuckle  
*Lonicera morrowii*, Morrow's Honeysuckle  
*Lonicera tatarica*, Tartarian Honeysuckle  
*Lonicera x bella*, Fly Honeysuckle  
*Ludwigia hexapetala* (*L. grandiflora*), Uruguayan Primrose Willow  
*Ludwigia peploides*, Floating Primrose Willow  
*Lysimachia vulgaris*, Garden Loosestrife  
*Lythrum salicaria*, Purple Loosestrife  
*Microstegium vimineum*, Japanese Stilt Grass  
*Murdannia keisak*, Marsh Dewflower  
*Myriophyllum aquaticum*, Parrot-feather  
*Myriophyllum heterophyllum*, Broadleaf Water-milfoil  
*Myriophyllum heterophyllum x M. laxum*, Broadleaf Water-milfoil Hybrid  
*Myriophyllum spicatum*, Eurasian Water-milfoil  
*Nymphoides peltata*, Yellow Floating Heart  
*Oplismenus hirtellus*, Wavyleaf Basketgrass  
*Persicaria perfoliata* (*Polygonum perfoliatum*), Mile-a-minute Weed  
*Phellodendron amurense*, Amur Cork Tree  
*Phragmites australis*, Common Reed Grass  
*Phyllostachys aurea*, Golden Bamboo  
*Phyllostachys aureosulcata*, Yellow Groove Bamboo  
*Potamogeton crispus*, Curly Pondweed  
*Pueraria montana*, Kudzu  
*Reynoutria japonica* (*Fallopia japonica*, *Polygonum cuspidatum*), Japanese Knotweed  
*Reynoutria sachalinensis* (*Fallopia sachalinensis*, *Polygonum sachalinensis*), Giant Knotweed  
*Reynoutria x bohemica* (*Fallopia x bohemica*, *Polygonum x bohemica*), Bohemian Knotweed  
*Rhamnus cathartica*, Common Buckthorn  
*Rosa multiflora*, Multiflora Rose  
*Rubus phoenicolasius*, Wineberry  
*Salix atrocinerea*, Gray Florist's Willow  
*Silphium perfoliatum*, Cup-plant  
*Trapa natans*, Water Chestnut  
*Vitex rotundifolia*, Beach Vitex

**Regulated:**

*Acer platanoides*, Norway Maple  
*Clematis terniflora*, Japanese Virgin's Bower  
*Euonymus alatus*, Burning Bush  
*Euonymus fortunei*, Winter Creeper  
*Miscanthus sinensis*, Chinese Silver Grass  
*Robinia pseudoacacia*, Black Locust

**FISH**

**Prohibited:**

*Channa argus*, Northern Snakehead

*Channa marulius*, Bullseye Snakehead  
*Channa micropeltes*, Giant Snakehead  
*Clarias batrachus*, Walking Catfish  
*Gambusia affinis*, Western Mosquitofish  
*Gambusia holbrooki*, Eastern Mosquitofish  
*Hypophthalmichthys harmandi*, Largescale Silver Carp  
*Hypophthalmichthys molitrix*, Silver Carp  
*Hypophthalmichthys nobilis*, Bighead Carp  
*Misgurnus anguillicaudatus*, Oriental Weatherfish  
*Mylopharyngodon piceus*, Black Carp  
*Neogobius melanostomus*, Round Goby  
*Petromyzon marinus*, Sea Lamprey  
*Proterorhinus semilunaris* (*P. marmoratus*), Tubenose Goby  
*Tinca tinca*, Tench

**Regulated:**

*Carassius auratus*, Goldfish  
*Cyprinella lutrensis*, Red Shiner  
*Cyprinus carpio*, Common Carp/ Koi  
*Gymnocephalus cernuus*, Ruffe  
*Monopterus albus*, Asian Swamp Eel  
*Oreochromis aureus*, Blue Tilapia  
*Oreochromis niloticus*, Nile Tilapia  
*Pterois miles*, Common Lionfish  
*Pterois volitans*, Red Lionfish  
*Sander lucioperca* (*Stizostedion lucioperca*), Zander  
*Scardinius erythrophthalmus*, Rudd

**AQUATIC INVERTEBRATES**

**Prohibited:**

*Bellamyia chinensis* (*Cipangopaludina chinensis*), Chinese Mystery Snail  
*Bellamyia japonica*, Japanese Mystery Snail  
*Bithynia tentaculata*, Faucet Snail  
*Bythotrephes longimanus* (*B. cederstroemi*), Spiny Water Flea  
*Cercopagis pengoi*, Fishhook Water Flea  
*Corbicula fluminea*, Asian Clam  
*Crassostrea ariakensis*, Suminoe Oyster  
*Didemnum* spp., Carpet Tunicate  
*Dreissena polymorpha*, Zebra Mussel  
*Dreissena rostriformis bugensis*, Quagga Mussel  
*Eriocheir sinensi*, Chinese Mitten Crab  
*Hemigrapsus sanguineus*, Asian Shore Crab  
*Hemimysis anomala*, Bloody Red Shrimp  
*Orconectes rusticus*, Rusty Crayfish  
*Potamopyrgus antipodarum*, New Zealand Mud Snail  
*Rapana venosa*, Veined Rapa Whelk  
*Styela plicata*, Asian Sea Squirt

**Regulated:**

*Carcinus maenas*, European Green Crab  
*Daphnia lumholtzi*, Water Flea  
*Hemigrapsus takanoi* (*H. penicillatus*), Brush-clawed Shore Crab/ Grapsid Crab

**TERRESTRIAL INVERTEBRATES**

**Prohibited:**

*Achatina achatina*, Giant Ghana Snail  
*Achatina fulica* (*Lissachatina fulica*), Giant African Land Snail  
*Adelges tsugae*, Hemlock Woolly Adelgid  
*Agrilus planipennis*, Emerald Ash Borer  
*Amyntas* spp., Asian Earthworms  
*Anoplophora glabripennis*, Asian Longhorn Beetle  
*Apis mellifera scutellata* x *A. mellifera ligustica*/ *A. mellifera iberiensis*, Africanized Honey Bee  
*Archachatina marginata*, Giant West African Snail  
*Cryptococcus fagisuga*, Beech Scale  
*Lymantria dispar*, Asian and European Gypsy Moth  
*Monochamus alternatus*, Japanese Pine Sawyer  
*Pityophthorus juglandis*, Walnut Twig Beetle  
*Sirex noctilio*, Sirex Woodwasp

**TERRESTRIAL AND AQUATIC VERTEBRATES**

**Prohibited:**

*Cygnus olor*, Mute Swan  
*Lepus europaeus*, European Hare  
*Myocastor coypus*, Nutria  
*Nyctereutes procyonoides*, Asian Raccoon Dog  
*Sus scrofa* (excluding *Sus scrofa domestica*), Eurasian Boar

**Regulated:**

*Alopochen aegyptiacus*, Egyptian Goose  
*Cairina moschata*, Muscovy Duck  
*Myiopsitta monachus*, Monk Parakeet  
*Oryctolagus cuniculus*, European Rabbit  
*Trachemys scripta elegans*, Red-eared Slider  
*Xenopus laevis*, African Clawed Frog

**FUNGI**

**Prohibited:**

*Amylostereum areolatum*, Sirex Wasp Fungus  
*Geomyces destructans*, White-nose Syndrome  
*Geosmithia morbida*, Thousand Canker Disease  
*Phytophthora ramorum*, Sudden Oak Death

For the official regulations and species lists please see: <http://www.dec.ny.gov/regulations/265.html>.

**New York State Department of Environmental Conservation  
Part 575 Invasive Species Regulations  
Questions and Answers**

**What are invasive species?**

Invasive species means a species that is non-native to the ecosystem under consideration; and whose introduction causes or is likely to cause economic or environmental harm or harm to human health.

**Why are invasive species a problem?**

Invasive species have a detrimental effect upon the State's natural communities and systems by out-competing native species, diminishing biological diversity, altering community structure and, in some cases, changing ecosystem processes. They can even harm human health.

**How will these regulations help?**

The regulations were developed by the Department of Environmental Conservation, in cooperation with the Department of Agriculture and Markets. These regulations, once implemented, are expected to help control invasive species by reducing the introduction and spread of invasive species populations by limiting commerce in such species, thereby having a positive impact on the environment.

**How were the lists of species in the regulations developed?**

The lists of prohibited and regulated species were developed using the standardized species assessment and listing process outlined in the 2010 report "A Regulatory System for Non-native Species". Lists of candidate non-native invasive species were compiled by reviewing other state regulations, reports, lists and consulting with agency experts. A rapid assessment was conducted to determine if the species warranted listing and was already federally regulated. Ecological invasiveness assessments were conducted on each potential invasive species followed by a socio-economic assessment for those ranking High or Very High. The assessment team then placed the species in the appropriate regulatory classification of Prohibited or Regulated. The initial recommendations were submitted to the Invasive Species Advisory Committee (25 Non-Government Organizations) and Council (9 State Agencies) for review and comment. The lists were then incorporated into the regulations.

**Why isn't a particular species included on the prohibited or regulated lists?**

Due to staffing limitations and time constraints, the initial list of prohibited and regulated species is not all-encompassing. We anticipate that the regulations will be updated on a regular basis. The regulations include language for petitioning for addition or removal of species from the prohibited and regulated lists. Some species were assessed, but do not meet the criteria for prohibition or regulation.

**Aren't some of the species listed as either prohibited or regulated already established?**

Yes, however, there are areas of the State in which they have not yet established populations and these regulations are intended to slow the spread by reducing the number of individuals of a species released into a region, to which they are not native, associated with the sale and introduction of such species.

**When did the regulation become final?**

The part 575 invasive species regulations were proposed, and a 60 day to public comment held between October and December 2013. During this time, four public hearings were scheduled across the State. All comments received were reviewed and a summary of public comments and agency responses was compiled. Required changes were made to the final regulations. A summary of the final regulations was published in the State Register September 10, 2014 and the full express terms were published on the Department's website.

**Once finalized, when will the regulations become implemented?**

A summary of the final regulations was published in the State Register September 10, 2014. The part 575 regulations take effect 6 months later (March 10, 2015).

**What is the difference between prohibited and regulated invasive species?**

Prohibited invasive species cannot be knowingly possessed with the intent to sell, import, purchase, transport or introduce. In addition, no person shall sell, import, purchase, transport, introduce or propagate prohibited invasive species. Regulated invasive species, on the other hand, are species which cannot be knowingly introduced into a free-living state, or introduced by a means that one should have known would lead to such an introduction, although such species shall be legal to possess, sell, buy, propagate and transport.

**What is considered a free-living state?**

A species is considered in a free-living state if it is introduced to public lands or lands connected to public lands, natural areas, and public waters or waters connected to public waters.

**Are there any exceptions to the definition of a free-living state?**

Yes, such exceptions include artificial ponds and water gardens with no outlet to public waters, waters entirely within private land not connected to public waters, and water-use facilities with outflows not providing access to public waters.

**Do the regulations require existing populations of species on the prohibited and regulated lists be managed or destroyed by the land-owner?**

No, existing populations of non-native invasive species listed as prohibited or regulated and established prior to the implementation of the final part 575 regulations do not require management by the owner. However, once implemented, the final regulations do prohibit commerce involving those species listed as prohibited species and the release of regulated species into a free-living state.

**What species have grace periods established in the regulations?**

A one year grace period is included in the regulations for Japanese Barberry (*Berberis thunbergii*), during which existing stock of this species may be sold. In addition, a person may possess, sell, offer for sale, distribute, transport, or otherwise market or trade live Eurasian boars (*Sus scrofa*) until September 1, 2015. No person shall knowingly import, propagate or introduce Eurasian boars into a free-living state.

**Will there be a fee for permits?** No fee is anticipated for permits issued for research, education or other approved activity.

**Who will enforce the final regulations?**

The regulations will be enforced by the Department of Environmental Conservation, with assistance from the Department of Agriculture and Markets.

## **Appendix B**

Photo Log



**Photo 1**

Autumn olive  
(*Elaeagnus umbellata*)

Form- Deciduous shrub that can grow to 20 ft. in height; stems, buds and leaves have a dense covering of silvery to rusty scales.



**Photo 2**

Autumn olive  
(*Elaeagnus umbellata*)

Leaves - Alternate; deciduous; egg or lanceshaped, smooth margined, dull green above and often with brown scales beneath. Flowers and fruits - flowers occur in June and July; aromatic, pale yellow, fused at the base with 4 petals pointed at the tips; fruits are produced August through October; small, red-brown to pink and dotted with brown or silvery scales abundant.



**Photo 3**

Canada thistle  
(*Cirsium arvense*)

Form - Clump-forming perennial. Plant stays in rosette form before growing flowering stalk later in the season.

Leaves - Alternate, waxy, dark green above and light green below and have irregularly lobed margin with sharp spines.



**Photo 4**

Canada thistle  
(*Cirsium arvense*)

Flower - Pink to purple, surrounded by spineless bracts, and occur at the apex of stems and branches in clusters.

Blooms June to August  
(Photo not taken on site).



Photo 5

Japanese barberry  
(*Berberis thunbergii*)

Form - Spiny deciduous shrub typically to 3, but sometimes to 6 ft. in height; branches are deeply grooved, brown and usually have single spines. Leaves - Small  $\frac{1}{2}$ - $1\frac{1}{2}$  inches long and shaped like small spatulas or narrow ovals, with a color ranging from green to bluish-green to dark reddish purple.



Photo 6

Japanese barberry  
(*Berberis thunbergii*)

Flowers - flowering occurs in spring; abundant pale yellow flowers occur along the entire length of the stem in clusters of two to four. Fruit - bright red berries about  $\frac{1}{3}$  in. long that mature July to October and persist through the winter.



Photo 7

Multiflora rose  
(*Rosa multiflora*)

Form - Multi-stemmed shrub, sometimes climbing vine, with arching stems and recurved thorns. Leaves - divided into five to eleven sharply toothed leaflets; leaf stalks with fringed stipules (paired winglike structures).



Photo 8

Multiflora rose  
(*Rosa multiflora*)

Flowers - Clusters, fragrant, white to pinkish, 1 in. wide appear in May. Fruit - Small bright red fruits, or rose hips, develop during the summer and remain on the plant through the winter (Photo not taken on site).



Photo 9

Mugwort  
(*Artemisia vulgaris*)

Form - perennial herb that can grow from 24-63 in (60-160 cm) high. The stems are branched and purplishbrown. The ascending stems are covered with short hairs. *A. vulgaris* is rhizomatous, and often produces vegetative colonies of plants.



Photo 10

Mugwort  
(*Artemisia vulgaris*)

Leaves - Simple lobed leaves, pubescent, and dark green on the upper surface. Leaves are alternate. The leaves near the base are elliptic and oblong, lobed deeply almost to the midrib. The leaves midstem are elliptic to ovate, 1.2-4 in (3-10 cm) long by 0.6-2.4 in (1.5-6 cm) wide and lobed pinnately or bipinnately.



Photo 11

Morrow's honeysuckle  
(*Lonicera morrowii*)

Form - Perennial, upright shrub ranging from 2 to 6 feet tall. Can form dense thickets. Leaves - Opposite, 1-2 inches long, elliptic to oblong on short stalks, sparsely hairy above, permanently hairy underneath.



Photo 12

Morrow's honeysuckle  
(*Lonicera morrowii*)

Flowers - flowers are paired, borne from leaf axils, white, tubular (lower half) with 5 separate (unfused) petal lobes, spring (late April-early May). Fruit - Pair of berries red to orange, mature in July and persist through the winter, 1/4 inch across.



Photo 13

Japanese knotweed  
(*Reynoutria japonica* var.  
*japonica*)

Form- A large,  
herbaceous, woody  
appearing perennial  
reaching heights of 10  
to 15 feet. Stems are  
smooth, stout, jointed and  
hollow.



Photo 14

Japanese knotweed  
(*Reynoutria japonica* var.  
*japonica*)

Leaves- Broadly ovate  
(rounded at the base of  
leaf, tapering toward the  
end), 3-6 inches long  
by 2 to 4 inches wide,  
alternating on stem and  
pointed at the tip of leaf.



Photo 15

Japanese knotweed  
in previously cleared  
pipeline ROW



Photo 16

Japanese knotweed in  
old quarry near proposed  
Turbine 10 location