



10/7/2025

Franklin Conservation Commission  
335 East Central Street  
Franklin, MA 02038

Re: Invasive Species Management Plan  
Lot 2 Forge Parkway, Franklin, MA 02038

Dear Franklin Conservation Commission,

## 1.0 INTRODUCTION

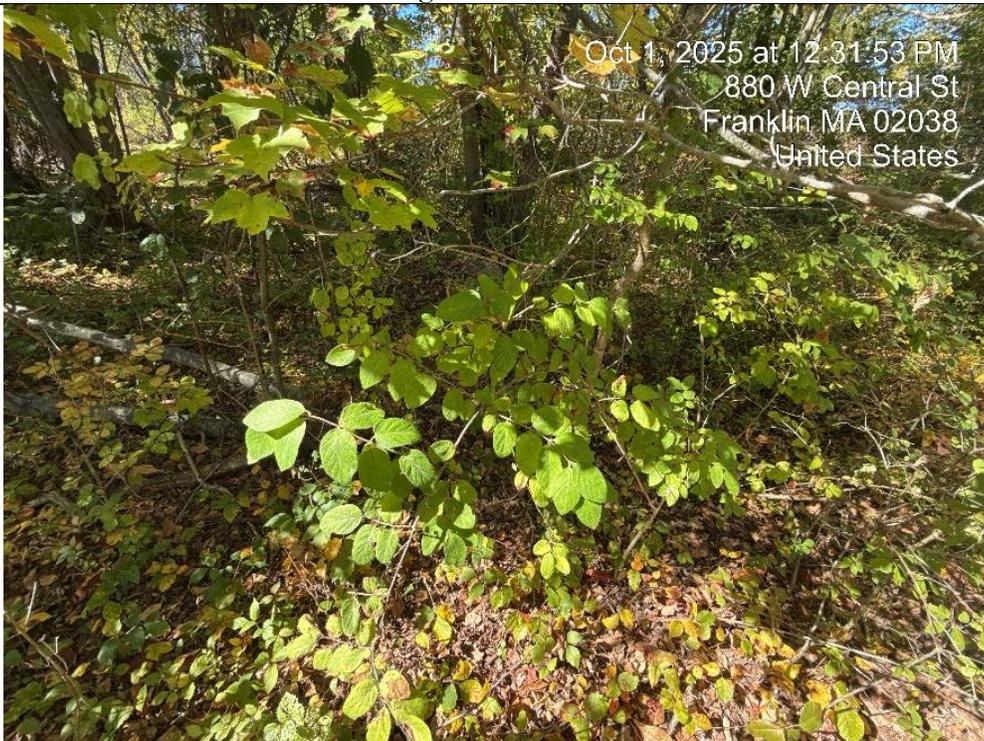
Goddard Consulting, LLC (Goddard) is pleased to submit this Invasive Species Management Plan (ISMP) on behalf of the applicant, Brad Chaffee of Camford Property Group, for the property known as Lot 2 Forge Parkway in Franklin (Parcel ID: 272-001-000-000). The purpose of this ISMP is to outline the current site conditions and provide a comprehensive plan to manage invasive species within the buffer zone cast by an onsite Bordering Vegetated Wetland (BVW). The work outlined herein will be completed in compliance with the Wetlands Protection Act (WPA) and the Town of Franklin Wetland Protection Bylaws (the Bylaw).

### 1.1 SITE ASSESSMENT

Goddard visited the site on 10/1/2025, to inventory invasive species present and to develop a strategy for management. It was discovered that Asiatic bittersweet (*Celastrus orbiculatus*), Multiflora rose (*Rosa multiflora*), Glossy buckthorn (*Frangula alnus*), Common buckthorn (*Rhamnus cathartica*), Japanese honeysuckle (*Lonicera japonica*), Japanese barberry (*Berberis thunbergii*) and Autumn olive (*Eleagnus umbellata*) were located on site. A graphic identifying locations of the invasive species instances is provided below. This graphic is intended to be illustrative for the purposes of focusing invasive species management efforts. The management area is about 12,600 square feet, spanning from the limit of work to the BVW line.



**Photo 1.** Abundance of bittersweet choking a tree.



**Photo 2.** A patch of Honeysuckle.



**Photo 3.** A large patch of Autumn olive.

### 1.2 EXISTING INVASIVE SPECIES ON SITE

Target plant species for invasive management are those species identified on the Massachusetts Prohibited Plan List. Goddard found a total of 7 different invasive plant species on-site. These invasive species are listed below:

#### **Invasive Species:**

- Shrubs and Trees
  - Multiflora rose (*Rosa multiflora*)
  - Glossy buckthorn (*Frangula alnus*)
  - Common buckthorn (*Rhamnus cathartica*)
  - Japanese honeysuckle (*Lonicera japonica*)
  - Autumn olive (*Eleagnus umbellata*)
  - Japanese barberry (*Berberis thunbergii*)
- Vines
  - Asiatic bittersweet (*Celastrus orbiculatus*)

### 1.3 MANAGEMENT ZONES

One invasive management zone is proposed, spanning generally from the limit of work to the border of the BVW, primarily within the 25-foot “No Disturb” and the 50-foot “No Build” Zones jurisdictional under the Bylaw.

**Invasive Management Zone:** Directly northeast of the proposed building, spanning from the limit of work to the BVW border. This zone spans horizontally from the west to the east side of the locus

site. The zone runs along the BVW border in the center and is shown on the attached figure titled Invasive Species Management Area, prepared by Goddard Consulting LLC, dated 10/6/2025. Vegetation consists of the invasives identified above, along with several Red oaks (*Quercus rubra*), Black cherries (*Prunus serotina*), a patch of Northern bush honeysuckle (*Diervilla lonicera*), and several other vines including Common grape vine (*Vitis vinifera*) and Poison ivy (*Toxicodendron radicans*). The Asiatic bittersweet has strong dominance over the tree and shrub cover, with large patches climbing the Red oak and Black cherry trees.

A dominance of invasive species is present throughout most of the upland on the site. Within the limit of work, invasive coverage will be adequately addressed by site work and development. The proposed invasive management area will serve to improve the quality and functionality of the buffer zone on site.

#### 1.4 MANAGEMENT GOAL DEFINITIONS

The invasive plant species within the study area have varying densities, distributions, and effects on the natural ecosystem. As a result, we will have different management goals for each species and area. The management goals fall into two categories, defined below:

**Eradication:** The complete destruction of existing invasive plants and monitoring/management for the length of time the remaining seeds are viable. This is the ideal situation as it restores the ecosystem to its more natural state and allows native species to replenish and thrive with a low possibility that the invasive species will return in the near future. It is feasible for invasive species which only exist on-site in small patches or a few individual plants.

**Control:** The reduction of a species' density and abundance to a level that does not compromise the integrity of the ecosystem and allows native species to repopulate and thrive. For invasive plant populations which are large and pervasive, eradication may not be feasible. In this situation, the more realistic management goal is to control the invasive species, primarily to deter the spread into new areas.

#### 1.5 DESCRIPTIONS OF TREATMENT METHODS

When treating invasive vegetation, mechanical removal methods will be prioritized over herbicidal treatment whenever it can be practicable and effective, however herbicide treatment is expected to be the dominant management technique. Herbicide treatment will selectively target invasive vegetation, taking care to avoid impact to surrounding native vegetation. More detailed information on the proposed removal methods are as follows:

##### **Mechanical Treatment Methods:**

- **Hand Removal:** In situations where invasive plants are still at the seedling stage, these plants will be removed by hand. Hand removal will be prioritized over all chemical treatment methods. The entire plant, including roots, will be pulled or dug out of the ground with hand tools like shovels or weed wrenches. This method can be used for all target species in this study area if the seedling is small enough. Vegetative material that is not capable of regrowing either vegetatively or via seed may be left within the management area to decompose naturally and provide wildlife habitat value.

- **Cutting:** Cutting entails the gross removal of above ground plant material, either by mechanical cutting or mowing. This method only removes the surface vegetation and, in most circumstances, invasive plants re-grow from the rootstock or latent seeds. Treatments using only this method will usually require repeated follow-up treatments. The timing of cutting should occur and be species specific to avoid inadvertent spread of any mature seed. Mechanical cutting may be utilized as a dormant-season treatment method such that resprouting vegetation may be more easily treated with other methods during the growing season. When cutting, care must be taken that viable vegetative material, or material with viable seeds, is not left behind to regrow. Vegetative material that is not capable of regrowing either vegetatively or via seed may be left within the management area to decompose naturally and provide wildlife habitat value. Wherever possible, 6 to 12 inches (or more) of stump should be left intact to allow for the possibility of follow-up cutting treatments. This method may be used on all woody vegetation but is not recommended for bittersweet.
- **Weed Wrench:** The weed wrench is a tool which is used to uproot saplings of woody plants. The weed wrench grasps the base of the plant and uses a lever to uproot the entire plant including the roots. Using the weed wrench results in minimal disturbance to the surrounding soil and plants and is usually successful at removing the majority of the target plant's roots. Invasive plants to be targeted using this method include all medium-sized woody vegetation, primarily those individuals that are slightly too large to pull by hand. Vegetative material that is not capable of regrowing either vegetatively or via seed may be left within the management area to decompose naturally and provide wildlife habitat value.
- **Deadheading:** Deadheading is the removal of a plant's seed head before it goes to seed. This will not kill the plant but can prevent it from reproducing and spreading. It is also useful in depleting the plant's energy reserves for future herbicide applications. This method is useful primarily for herbaceous plants. Deadheading is not currently proposed as part of this plan but may be recommended for follow-up management activities.

### **Herbicidal Treatment Methods:**

The herbicides typically recommended for the target species in this management plan include glyphosate and triclopyr. Appropriate use by a licensed herbicide applicator will have limited impact on surrounding non-target vegetation.

- **Cutting and Dabbing with Herbicide:** Cutting & dabbing involves removing most of the above-ground plant material as described above, and then immediately treating the remaining cut surface with herbicide. This is the easiest and most efficient method to remove invasive trees and shrubs with woody stems. It is also a very controlled treatment method, leaving the surrounding non-target native vegetation unaffected. This method also decreases the likelihood of regrowth and the need for repeated treatments. Wherever possible, 6 inches or more of stump should be left intact to allow for the possibility of follow-up cutting treatments. This treatment method can be used on all target species, and should be the primary means of managing large bittersweet vines.
- **Basal Bark Application:** This method involves spraying the lower sections of a tree trunk with an oil-soluble herbicide mixture to penetrate the bark of a target tree or shrub. This treatment is most effective when the target tree or shrub density is moderate to low. It can be used selectively to target specific plants with little to no damage to surrounding vegetation. This treatment method can be used on trees and large shrubs.

- **Hack and Squirt Application:** This method is similar to the Cut & Dab treatment method, but instead of removing the above-ground plant material, the woody stem is partially cut or “hacked” into, and an herbicide is applied to the exposed wood. This allows the plant to continue to photosynthesize and translocate water and carbohydrates, transporting herbicide along with it. This treatment method can be used on trees and large shrubs.
- **Foliar Herbicide Application (Spray):** Foliar herbicide application is a method of control which involves a tank-mixed solution of herbicide diluted with water to a concentration specified by the herbicide’s label. A non-ionic surfactant is added to improve coverage and penetration of the herbicide. A non-toxic forestry dye is also added to allow for visibility of treated areas. This solution is sprayed from a backpack tank sprayer to thoroughly wet the majority of the target plants’ leaves. Application will be carefully targeted to invasive vegetation and will cease before herbicide drips from leaves. The herbicide is absorbed through the leaves and transported into the plant’s tissues. This treatment method will be conducted by an herbicide applicator trained to use foliar spray appropriately and will have limited impact on surrounding non-target vegetation. This treatment method will be used on smaller individuals of any of the target species, as application to tall plants is not recommended due to the risk of drift.

#### 1.6 INVASIVE SPECIES DESCRIPTIONS

**Asiatic Bittersweet (*Celastrus orbiculatus*):** Asiatic bittersweet is a deciduous, woody vine, sometimes occurring as a trailing shrub, with alternate, rounded, finely toothed leaves. It has globular, green to yellow fruits which split open at maturity to reveal fleshy red-orange arils that cover the seeds. Originally from east Asia, it was introduced into the United States in the 1860s as an ornamental plant and has been widely dispersed by the many bird species who consume its fruit. Asiatic bittersweet is a vigorous growing plant that threatens native vegetation from the ground to the canopy. Thick masses of vines sprawl over shrubs, small trees, and other plants, producing dense shade that weakens and kills them. Asiatic bittersweet also appears to be displacing the native American bittersweet (*Celastrus scandens*).

**Goal:** Control. Asiatic bittersweet is found throughout the upland onsite. Due to its robust and expansive root systems, coupled with its propensity to resprout from the seedbank, total eradication is likely not feasible. However, controlling bittersweet on site will free many existing trees from its chokehold and limit its ability to strangle more desirable native vegetation that will resprout and be planted.

Initial treatment of bittersweet should consist of cut-stem herbicide treatments for large existing vines. Vines should not be pulled out of the upper portions of trees, as damage to the tree can occur. Rather, they should be left to die off and fall to the ground on their own. Small individuals can be pulled manually. Alternatively, foliar herbicide treatment can also be appropriate for treatments of small individuals, especially when resprouting.

**Multiflora Rose (*Rosa multiflora*):** Multiflora rose is a multi-stemmed shrub with arching stems, curved thorns, and leaves which are divided into five to eleven sharply toothed leaflets. It reproduces by seed and by forming new plants from the tips or arching canes that can root where they contact the ground. Seeds can remain viable in the soil for up to 20 years. It was introduced to the United States from Asia in 1866 as rootstock for ornamental roses. Dense thickets of multiflora rose exclude most native shrubs and herbs from establishing and may be detrimental to nesting of native birds. It

tolerates a wide range of soil, moisture and light conditions and can invade fields, forests, prairies, some wetlands, and many other habitats.

**Goal:** Eradication. Occurrences of multiflora rose within the management area are generally small and sporadic, and most can be sufficiently pulled by hand, or with the assistance of a shovel or weed wrench. Foliar or cut-stem herbicide treatments are also viable options.

**Glossy Buckthorn (*Rhamnus frangula*, also known as *Frangula alnus*):** Glossy buckthorn is a perennial understory shrub or a small tree that can reach heights of 20 ft. It has oval, smooth, glossy, toothless, leaves that stay green late into the fall. Its berries transition from green to red before finally ripening to a dark purple in August and September. This species was introduced to North America as an ornamental shrub and used for living fence rows and wildlife habitat. It has spread aggressively and become a threat to the degradation of native forest habitats where it out-competes native plant species.

**Goal:** Control. Glossy buckthorn constitutes a large proportion of the invasive cover present on the site. While mechanical removal is relatively easy and successful, buckthorn tends to continue to resprout from the seedbank for many years. Controlling the larger individuals will allow room for native vegetation to establish a foothold and reach a point where it can compete with small buckthorn sprouts. For initial treatments, hand-pulling of smaller individuals and cut-stem herbicide treatment of larger individuals is recommended. For follow-up treatments, hand pulling may be sufficient. Foliar herbicide application is also effective.

**Japanese Honeysuckle (*Lonicera japonica*):** Honeysuckle is a deciduous, woody-stemmed shrub that can grow up to 10 ft. tall. It can be identified by small 1-2 inch opposite gray-green leaves and paired bright red-orange berries. Honeysuckle was imported from Japan on the 1800s for use as an ornamental, for wildlife food and cover as well as for soil erosion control. It is now recognized as a highly invasive species impacting natural areas as well as managed parks, gardens, and other lands. It grows well in most soil types, and invades woodlands, fields, and disturbed areas, displacing native trees, shrubs, and herbaceous plants.

**Goal:** Eradication. Occurrences of Honeysuckle within the management area are generally small and sporadic, and most can be sufficiently pulled manually with the assistance of a shovel or weed wrench; resprouting from remaining rootstock is uncommon. Foliar or cut-stem herbicide treatments are also viable options.

**Japanese Barberry (*Berberis thunbergii*):** Japanese barberry is a spiny deciduous shrub typically from 3-6 ft. tall, with small 1/2-1 1/2 inches long leaves shaped like small spatulas or narrow ovals. Leaf color ranges from green to bluish green to dark reddish purple. In spring it produces yellow flowers along the length of the stem in clusters of two to four, and in July to October it produces bright red berries that often persist through the winter. It was introduced to the United States from Japan as an ornamental in the 1870s. Barberry displaces many native herbaceous and woody plants. In large infestations, its leaf litter can change the soil chemistry, making it more basic.

**Goal:** Eradication. Small patches were found on the western half of the management zone and most can be sufficiently pulled manually with the assistance of a shovel or weed wrench;

resprouting from remaining rootstock is uncommon. Foliar or cut-stem herbicide treatments are also viable options.

**Common Buckthorn (*Rhamnus cathartica*):** Common buckthorn is a deciduous, dioecious shrub or small tree growing up to 33 ft. tall, with grey-brown bark and often thorny branches. The leaves are elliptic to oval, 1-3 ½ inches long and ½ - 1 3/8 inches broad. They are green, turning yellow in autumn, have toothed margins, and are arranged somewhat variably in opposite to subopposite pairs or alternately. The flowers are yellowish green with four petals. It is native to Europe, northwest Africa, and western Asia, and was introduced to North America as an ornamental shrub in the early 19<sup>th</sup> century. The species is naturalized and invasive in parts of North America. Common buckthorn has an advantage over native trees and shrubs in North America because of root competition, the shade it produces, and because it leafs out before native species.

**Goal:** Control. While mechanical removal is relatively easy and successful, buckthorn tends to continue to resprout from the seedbank for many years. Controlling the larger individuals will allow room for native vegetation to establish a foothold and reach a point where it can compete with small buckthorn sprouts. For initial treatments, hand-pulling of smaller individuals and cut-stem herbicide treatment of larger individuals is recommended. For follow-up treatments, hand pulling may be sufficient. Foliar herbicide application is also effective.

**Autumn Olive (*Elaeagnus umbellata*):** Autumn olive is a deciduous shrub or a small tree, typically up to 11 ft. tall, with a dense crown. It commonly bears sharp thorns in the form of spur branches. Flowers are fragrant, occur in clusters of white to yellow, and have four lobes. The leaves are alternate with wavy margins and are covered with minute silvery scales when they emerge early in the spring but turn greener above as the scales wear off during the summer. Native to tropical and temperate regions of Asia, it has become invasive across wild and cultivated areas, primarily in the eastern United States. Autumn olive was purposefully introduced in the U.S. and United Kingdom for shelter belts, erosion control, wasteland reclamation, wildlife habitat, and for gardens as an ornamental. Due to its ability to fix atmospheric nitrogen in its roots, Autumn olive is able to grow vigorously and sometimes competitively in infertile soils. This ability to change soil chemistry can severely alter or destroy native plant communities.

**Goal:** Eradication. A single individual, roughly 6 feet tall, was found on the western side of the management area, so eradication is feasible. This individual (and any other larger individuals discovered through the management process) should be addressed with a cut-stem herbicide application.

## 2.0 PROPOSED INVASIVE SPECIES MANAGEMENT PLAN

### 2.1 MANAGEMENT PROTOCOLS

During all management efforts, general good housekeeping practices will be implemented to prevent the spread of invasive species seeds/root material to unoccupied areas. These housekeeping practices include, but are not limited to, truck washing and inspections prior to the movement of equipment to other areas. All vehicles and equipment used in the ISMP will be thoroughly cleaned and inspected before and after use. Cleaning will only take place within staging areas. Any soil and/or fill material that is transported within the site or brought into the site will be inspected prior to use.

Invasive species management will involve mechanical control methods and chemical control methods. The method chosen for a given vegetation management problem will attempt to achieve a long-term, low-maintenance invasive species management program through the encouragement of a stable native plant community using the methods outlined above. Herbicide treatments will be conducted by a licensed herbicide applicator and overseen by a qualified wetland scientist to ensure treatments are being done only on the target species.

## 2.2 MANAGEMENT TIMING

Management shall consist of twice-annual treatments, occurring in late spring to early summer, and again in late summer or early fall, for the duration of the management plan. The timing of management activities shall be as follows:

**Late Spring/Early Summer:** Herbicide and/or additional mechanical treatment as determined to be appropriate by herbicide applicator and supervising wetland scientist. Shall be conducted during spring growing season after leaf-out of target species.

**Late Summer/Early Fall:** Herbicide and/or additional mechanical treatment as determined to be appropriate by herbicide applicator and supervising wetland scientist. Shall be conducted during fall growing season before dormancy.

## 2.3 SUPERVISION & MONITORING

Invasive management activities on the site shall be supervised by a qualified wetland scientist. Monitoring will be conducted once a year until the issuance of a Certificate of Compliance (COC) closing the approved OOC. This will begin to take place following the first management activities performed under this ISMP. This will provide information on the overall effectiveness of management and assist in determining necessary treatment focuses moving forward.

Monitoring reports shall be prepared by a qualified wetland scientist once per year with the results of the inspection and submitted by November 15th. Monitoring reports shall include photographs and details about the vitality of the success of management on site and shall be submitted to the Commission each monitoring year. Monitoring reports shall describe (using narratives, plans, and color photographs) the physical characteristics of the management areas on site. Invasive species present will be noted and identified to be treated at the next treatment.

## **3.0 PROPOSED REVEGETATION**

The proposed planting area, shown on the attached figure titled Proposed Planting Area, prepared by Goddard Consulting LLC, dated 10/6/2025, measures approximately 4,500 square feet. This area will have adequate light penetration through canopy openings to support plantings and is likely to be relatively sparsely vegetated after invasive management has commenced. In order to ensure successful revegetation of this area with native species, replanting is proposed.

Precise siting of plants may be determined by the wetland scientist in the field prior to installation. All plantings shall be distributed throughout the area shown on the attached planting plan; trees spaced no closer than 10-15' on center; shrubs spaced no closer than 6-10' on center. All plantings will be

removed from burlap sacks, wire cages and plastic containers prior to planting. Each plant will have its roots loosened prior to planting to encourage root growth away from the planting bulb. After woody plantings are installed, seed will be spread evenly throughout the planting and lightly raked in to ensure sufficient seed-to-soil contact. Seed will be applied at the manufacturer's recommended application rate. Leaf litter shall be spread throughout area if available.

Common Name	Scientific Name	Number	Minimum Size
<b>Trees (n= 8)*</b>			
Red Oak (FACU)	<i>Quercus rubra</i>	4	3'
Black Cherry (FACU)	<i>Prunus serotina</i>	4	3'
<b>Shrubs (n=20)*</b>			
Witch Hazel (FACU)	<i>Hammamelis virginiana</i>	10	1-2 gal. pot
American Hazelnut (FACU)	<i>Corylus americana</i>	10	1-2 gal. pot
<b>Seed Mix- New England Wetland Plants Conservation/Wildlife Mix</b>			2.5 lbs.

\*Planting species and seed mixes may be substituted with similar native species with the same wetland indicator status if certain species are unavailable at the discretion of the supervising wetland scientist.

#### 4.0 CONCLUSION

The purpose of this ISMP is to outline the current site conditions, with a goal of establishing a primarily native plant community and improving wildlife habitat. To achieve these goals, this plan has proposed an approach consisting of mechanical removal methods to limit impact, and herbicide treatments to maximize effectiveness. It is our professional opinion that the distinction in removal methods proposed for the different species specified previously in this report will allow for the efficient removal of invasives from within the area, while affording maximum protection to wetland resource areas, wildlife, and native plants. Goddard believes that accomplishment of the goals outlined in this plan serves to protect the interests identified in both the MA Wetlands Protection Act and the Franklin Wetlands Protection Bylaw.

Sincerely,

**Goddard Consulting, LLC**



Chris Frattaroli  
Lead Wetland Scientist

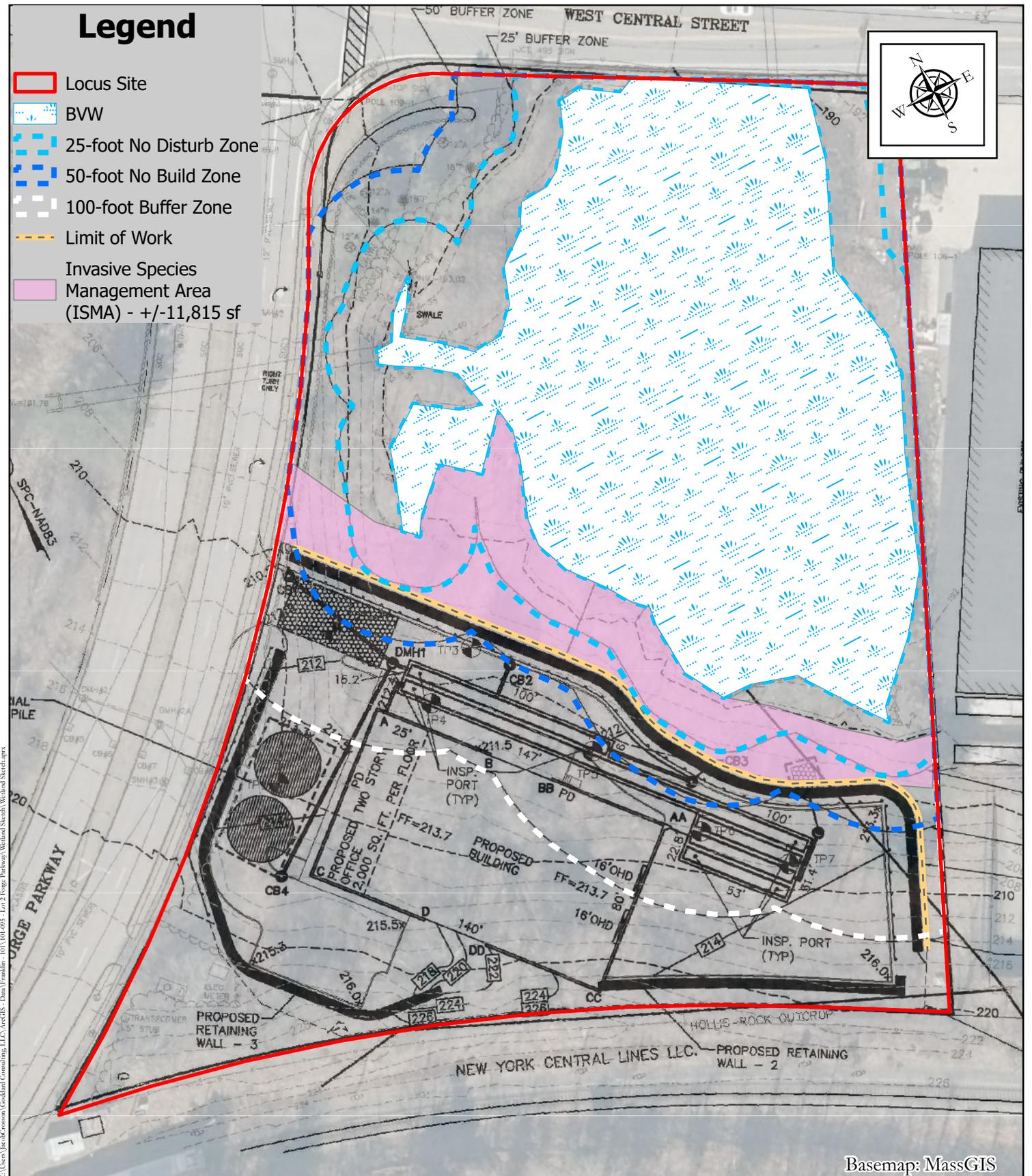
Cc:

Brad Chaffee, Camford Property Group, 138 East Central St, Unit B, Franklin, MA

Rick Goodreau, United Consultants Inc., 850 Franklin Street, Suite 11D, Wrentham, MA 02093

# Legend

- Locus Site
- BVW
- 25-foot No Disturb Zone
- 50-foot No Build Zone
- 100-foot Buffer Zone
- Limit of Work
- Invasive Species Management Area (ISMA) - +/-11,815 sf



Basemap: MassGIS



## Invasive Species Management Area



42.0918°N , -71.4346°W

Date: 10/06/2025

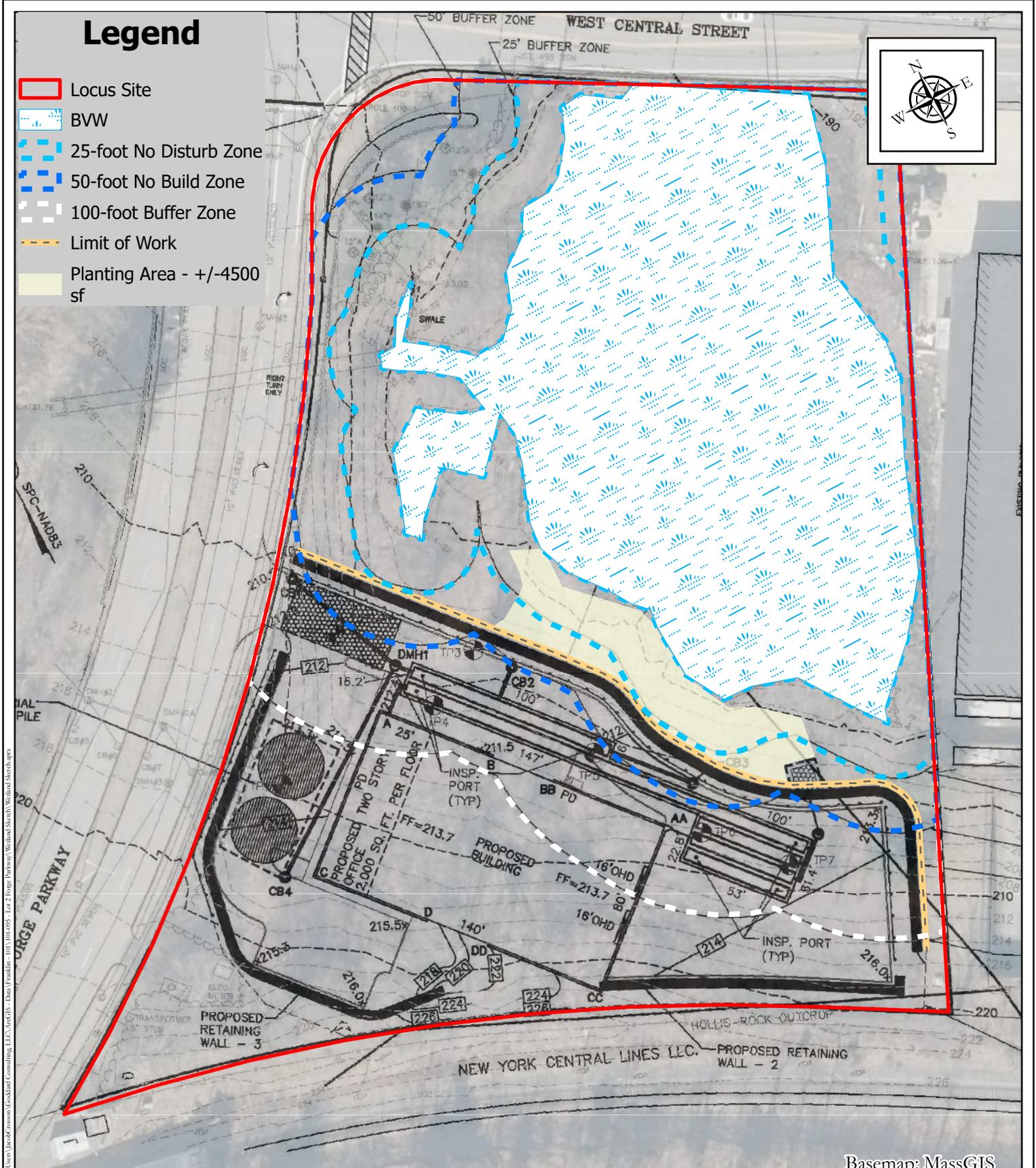
0 Forge Parkway Lot 2  
Franklin, MA

Parcel ID: 272-001-000-000

C:\Users\jacob.grosson\Goddard Consulting, LLC\ArcGIS - Dan Franklin - 10/1/2025 - Lot 2 Forge Parkway, Westford Street, Westford, MA

# Legend

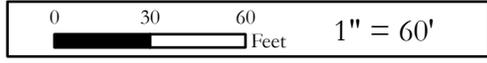
- Locus Site
- BVW
- 25-foot No Disturb Zone
- 50-foot No Build Zone
- 100-foot Buffer Zone
- Limit of Work
- Planting Area - +/-4500 sf



Basemap: MassGIS



## Proposed Planting Area



42.0918°N , -71.4346°W

Date: 10/06/2025

0 Forge Parkway Lot 2  
Franklin, MA

Parcel ID: 272-001-000-000

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