



Horsley Witten Group, Inc.
112 Water Street, 6th Floor
Boston, MA 02109

March 4, 2026

Re: Response to Initial Peer Review of the Stormwater & Invasive Species Management
100 Old River Road, Andover, MA 01810
MassDEP File #090-1459

Dear Horsley Witten Group,

On behalf of the Applicant, Goddard Consulting, LLC and Bohler Engineering are pleased to submit the following supplemental materials in response to the initial peer review comments prepared by Horsley Witten Group, Inc. (HW) for the project known as “The Commons at River Road” located at 100 Old River Road in Andover, Massachusetts. The Andover Conservation Commission is copied on this submission for their records. This submission includes the following materials prepared in response to the HW peer review comments:

1. *Response to Peer Review Comments*, prepared by Goddard Consulting, LLC, dated March 4, 2026;
2. *Invasive Species Management Plan*, prepared by Goddard Consulting, LLC, revised March 4, 2026;
3. *Response to Peer Review Comments*, prepared by Bohler Engineering, dated March 4, 2026;
4. *Supplemental Drainage Memorandum*, prepared by Bohler Engineering, dated March 3, 2026;
5. *Overall Site Plan (Redline)*, prepared by Bohler Engineering, revised March 3, 2026;
6. *Site Plan Review/Special Permit Set for The Commons at River Road*, prepared by Zachary L. Richards, P.E. of Bohler Engineering, revised March 3, 2026.

To summarize, Goddard Consulting has revised the Invasive Species Management Plan (ISMP) based on the comments provided by HW. A revised ISMP and a detailed response letter addressing each comment are included with this submission.

The attached materials prepared by Bohler Engineering address the stormwater-related comments provided in the HW peer review letter dated February 19, 2026 and include updated plans, drainage calculations, and supplemental documentation supporting the proposed stormwater management system. As summarized in the Supplemental Drainage Memorandum, the revised design continues to demonstrate that the project will meet or exceed the Massachusetts Stormwater Management Standards and will result in post-development peak runoff rates that are lower than existing conditions for the 2-, 10-, 25-, and 100-year storm events.

In addition to the stormwater revisions, the site layout has been modified in response to feedback received at the initial public hearing in order to fully comply with the Commission’s buffer requirements. These revisions include the following:

- a) The northwest parking area and drive aisle were reconfigured, with the driveway and parking areas swapped to ensure full compliance with the Commission’s 30-foot “no driveway” buffer and 50-foot “no parking” buffer.
- b) Electrical equipment was relocated to accommodate the revised driveway alignment.
- c) The eastern parking area near River Road was removed and shifted further from the resource area to ensure compliance with the 30-foot “no driveway” buffer and 50-foot “no parking” buffer.

We respectfully request that Horsley Witten Group review the enclosed materials and confirm whether the revisions satisfactorily address the peer review comments. Please do not hesitate to contact us should you have any questions or require additional information.

Sincerely,

Goddard Consulting, LLC

Andrew Thibault, WPIT, WSA
Lead Wetland Scientist

Cc: JMC/SVP Old River Road LLC – 100 Grandview Road, Suite 205, Braintree, MA 02184
Andover Conservation Commission – 36 Bartlet Street, Andover, MA 01810

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Re: Response to Peer Review Comments
100 Old River Rd, Andover, MA 01810
MassDEP File #090-1459

Dear Andover Conservation Commission,

Goddard Consulting, LLC (“Goddard”) is pleased to submit this peer review response letter on behalf of the Applicant, JMC/SVP Old River Road LLC, to support the Notice of Intent (NOI) filed for the property known as 100 Old River Road in Andover, Massachusetts. This letter will provide the Commission with responses to the comments issued by Horsley Witten Group, Inc. (“HW”) on February 19, 2026, following their review of project with respect to Stormwater and the Invasive Species Management Plan (ISMP). Goddard provides the following responses to comments regarding the ISMP. Responses to stormwater-related comments will be submitted separately by Bohler Engineering.

Horsley Witten Group ISMP Comments

HW 14. HW recommends that the Applicant clarify the language in the narrative to accurately represent the extent to which mitigation is proposed.

The introduction (Section 1.0) indicates that the plans purpose is to “create an intensive plan to eradicate and control invasive plant species located within the 25-foot No Disturbance Zone of the Bordering Vegetated Wetlands (BVW) on the subject site to provide an improved Buffer Zone as part of the site’s redevelopment.” This language suggests that invasive species will be managed within the entire project site. However, HW notes that the buffer zone mitigation plantings are limited to three portions of the 0-25 foot Buffer Strip, encompassing less than half of the available 0-25 foot Buffer Strip area associated with BVW within the subject parcel (approximately 46%). Figure 1 within Section 2.0 provides a map of the areas where invasive species were identified, which encompasses the entire area surrounding the proposed re-development within the parcel. No plantings are proposed for the approximately 684-foot length section indicated in Figure 1 below.

Additionally, it appears that invasive species were not assessed for the entire extent of the 0-25-foot Buffer Strip that exists on the subject parcel, which exists between the roadways (i.e., Old River Road and the ramp to Route 93 Northbound) and the BVW in the northwestern portion of the parcel (see Figure 1 below).

GC 14. Goddard agrees to clarify the language and has revised the ISMP narrative to more clearly define the scope of the proposed invasive species management and the associated mitigation planting plan.

Invasive species removal will occur throughout the existing pervious portions of the 25-foot No Disturbance Zone, excluding off-site areas and uplands west of the western wetland system. The mitigation planting plan is proposed within the ISMP zones, except in areas included in the native landscaping plan prepared by Bohler Engineering. The excluded areas were intentionally not included in the mitigation planting plan to prevent overlap and maintain consistency with the landscaping design prepared to comply with the deciduous canopy coverage requirements of the Andover Bylaws. These areas will instead be restored as outlined in the Landscape Plan with deciduous tree plantings and/or the New England Wetland Seed Mix or New England Conservation/Wildlife Mix, ensuring continued compliance with the Andover Bylaws while advancing the goals of the ISMP.

The presence of invasive species was only assessed within on-site, jurisdictional areas under the Wetlands Protection Act and the Andover Wetlands Protection Bylaw. The majority of the areas adjacent to Old River Road are located outside of jurisdiction. The areas adjacent to the Route I-93 Northbound ramp were assessed; however, the evaluation was limited to upland areas located on the Project Site. The upland buffer

zone located northwest of the northwestern wetland system was not assessed due to its lack of proximity to the proposed development.

The proposed mitigation measures exceed the minimum regulatory requirements and reflect the Applicant's commitment to enhancing on-site resource areas.

HW 15. HW recommends the Applicant depict the 0-25 foot Buffer Strip line clearly on the Buffer Zone mitigation plan to indicate the extent of mitigation proposed for this locally protected zone.

The extent of buffer zone mitigation plantings does not encompass the entire 0-25 foot Buffer Strip in two of the three areas approximated in Figure 1 above, as portions of these areas appear to be as narrow as 12 feet wide (see Figure 2).

GC 15. Goddard has revised the Buffer Zone Mitigation Planting Plan graphics to include the 25-foot No Disturbance Zone.

In Figure 2 of the HW Report, a 12-foot measurement is shown adjacent to Flag D-2, and a 19-foot measurement is shown south of Flag D-9. The 19-foot measurement does not represent the full extent of the mitigation planting area; see Figure 1 below for the correct measurement. The planting width near Flag D-2 is correctly identified as less than 25 feet due to required landscaping along the parking lot to meet the canopy coverage requirements. This does not represent a reduction in the overall extent of invasive species management within the No Disturbance Zone. The remainder of the No Disturbance Zone in this location will be restored with a native deciduous tree planting and the dispersal of native seed mix as specified in the Landscaping Plan prepared by Bohler Engineering. In addition to the area adjacent to Flag D-2, a portion of the western wetland system's No Disturbance Zone was not included in the mitigation planting plan to additionally avoid overlap with the Landscaping Plan. However, invasive vegetation will still be removed in this area and will be revegetated with native plantings and seed mix consistent with the previously submitted Landscaping Plan. Overall, the No Disturbance Zone will be significantly enhanced through removal of impervious surfaces and reestablishment of native vegetation in accordance with the ISMP prepared by Goddard and the Landscape Plan prepared by Bohler Engineering.



Figure 1. View of 25-foot width of the proposed mitigation planting area south of Flag D-9.

HW 16. HW recommends that the limit of work indicated in the proposed development plans be adjusted as necessary to accurately reflect the entire boundary within which activities are proposed, including invasive species management.

GC 16. Bohler Engineering has revised the proposed development plans to clearly demarcate all invasive species management zones in addition to the previously provided limit of disturbance (Reference Sheets C-301, C-302, & C-303 of the *Site Plan Review/Special Permit Set for Proposed The Commons at River Road*, prepared by Zachary L. Richards, P.E. of Bohler Engineering, revised 03/03/2026).

HW 17. HW recommends that the Applicant clarify the proposed development and the Planting Plans' conformance with the local setback requirements.

As shown in Figures 1 and 2, the proposed mitigation does not extend for the entire setback zone as designated by the local bylaw and implementing regulations, which specify that parking lots for four or more vehicles be set back 50-feet from resource areas and that access roads (except those allowed as a limited project) be set back a minimum of 35-feet from resource areas. Additionally, buildings/ structures that require a building permit must be set back a minimum of 50-feet from resource areas. HW notes that the Applicant has included buffer zone lines for the 0-25 foot, 0-30 foot, 0-50 foot, and 0-100 foot buffer zones on the project plans.

GC 17. As stated previously, the proposed ISMP encompasses the entirety of the 25-foot No Disturbance Zone, with the exception of the uplands northwest of the northwestern wetland system, as well as portions of the 50-foot No Build Zone. The proposed restoration measures must occur in close proximity to the resource areas in order to strengthen buffer function and provide long-term protection and enhancement of the adjacent resource areas.

At the time of filing, the existing and the proposed parking lots and driveways did not meet the minimum setbacks specified in the Andover Wetlands Protection Regulations (Reference Figures 2 and 3). However, upon receiving feedback from the Conservation Commission and Planning Board, the project has been modified to fully comply with the local buffer setbacks. As can be seen on the revised plans, attached with this submittal, the project team has removed 7 parking spaces above the D-Series Wetland to site the parking lot outside of the 50-foot buffer, and the drive aisle outside of the 30-foot buffer. Similarly, the team has reconfigured the western drive aisle and parking lots to be fully compliant with the 30-foot and 50-foot buffers. It is the opinion of the applicant team that the drive aisle is categorized as a driveway, with a 30-foot buffer, and not an access road as outlined above.

With the reconfigurations of the parking and driveway, the proposed redevelopment represents a substantial improvement over existing site conditions, improved further from the original submittal. Currently, impervious surfaces encroach into the No Disturbance Zone, stormwater runoff discharges to adjacent wetland systems without treatment, and extensive invasive species coverage degrades the remaining vegetated buffer areas. In contrast, the proposed redevelopment project will remove impervious surfaces from the No Disturbance Zone, implement enhanced stormwater management systems to provide treatment prior to discharge, and restore degraded buffer areas through comprehensive invasive species management. Collectively, the proposed improvements will provide enhanced stormwater treatment and pollutant removal prior to discharge to adjacent wetlands, restore native buffer vegetation, and improve the long-term stability and ecological function of the resource areas.

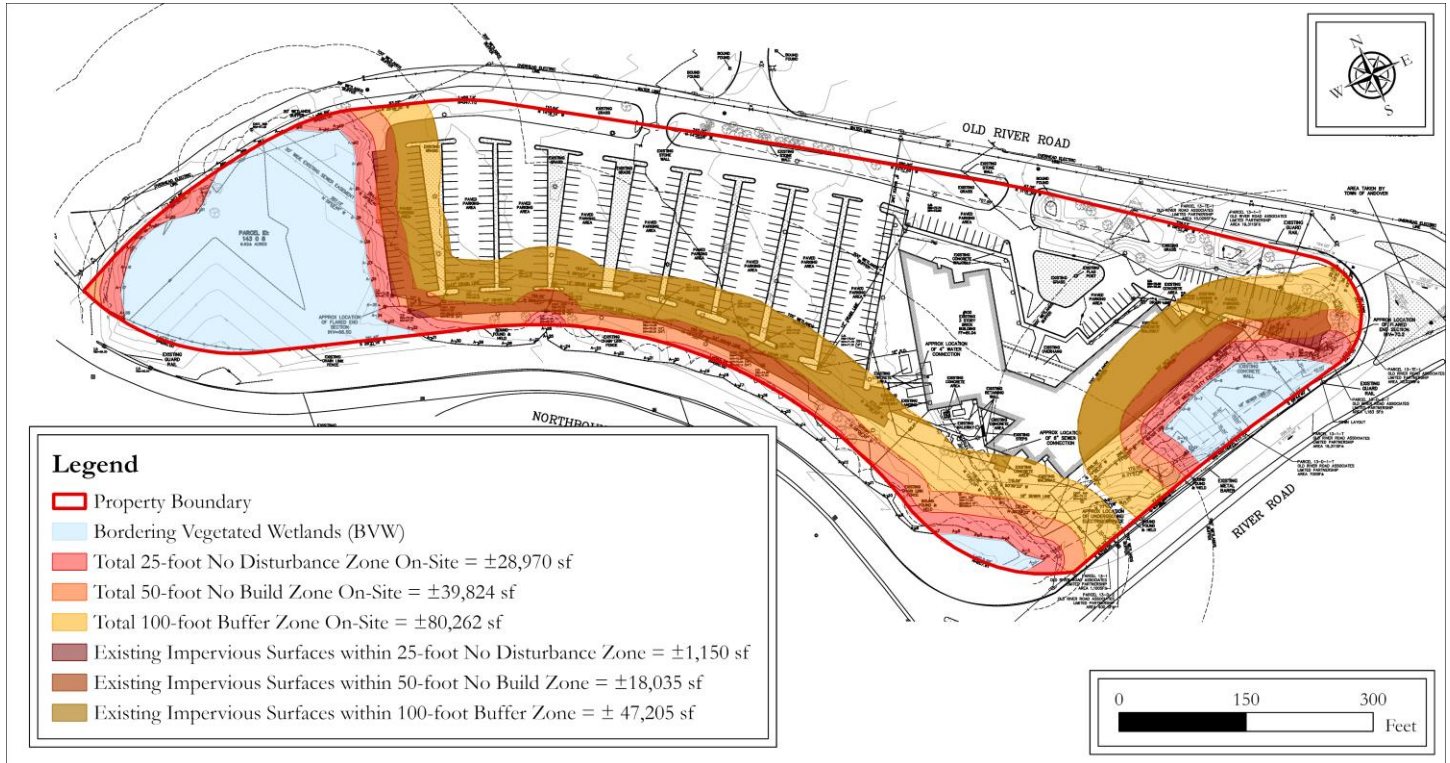


Figure 2. Overview of existing impacts to the town- and state-jurisdictional buffer zones overlaid on the Existing Conditions Plan sheet included in the previously submitted civil plan set prepared by Bohler Engineering, dated 01/09/2026.

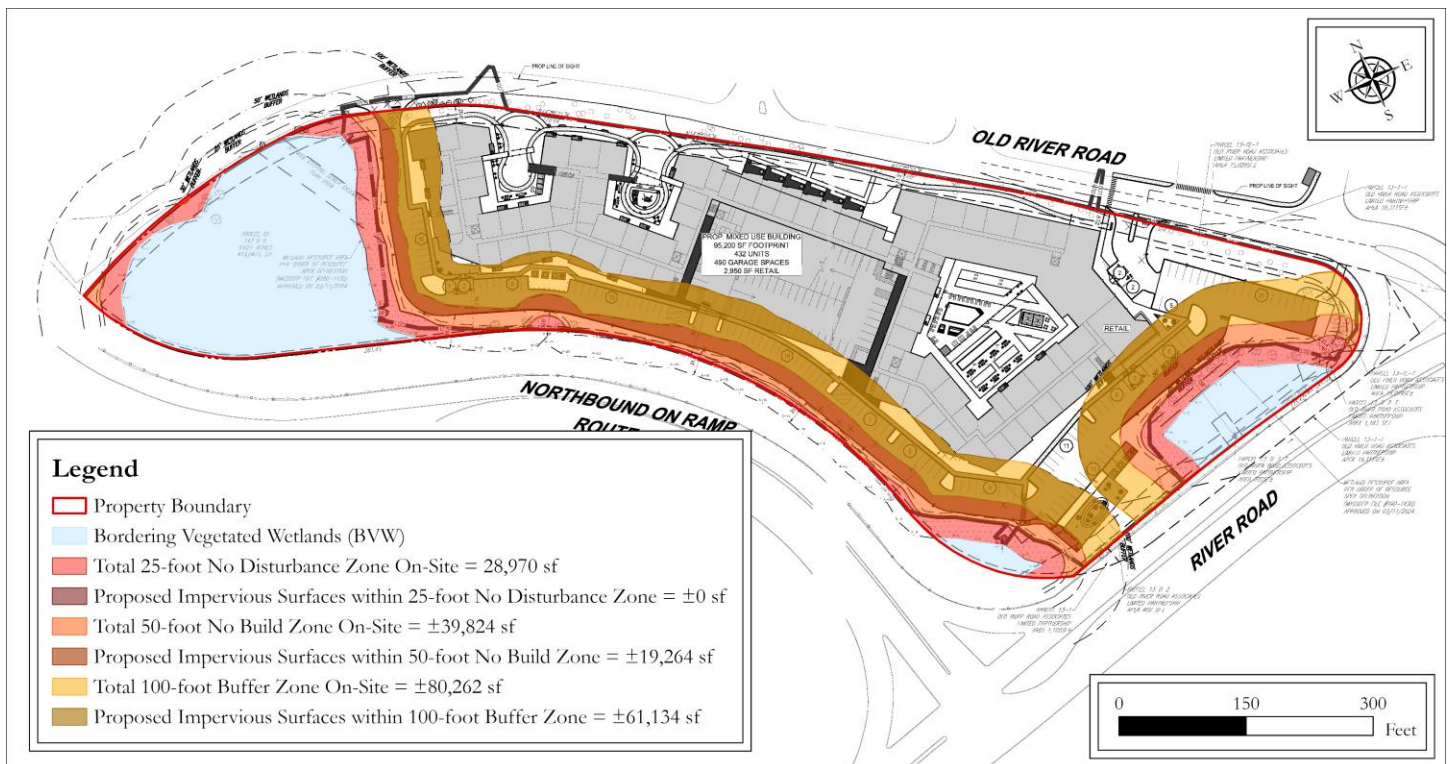


Figure 3. Overview of proposed impacts to the town- and state-jurisdictional buffer zones overlaid on the Overall Site Plan sheet included in the previously submitted civil plan set prepared by Bohler Engineering, revised 03/03/2026.

HW 18. HW recommends that the Applicant confirm that the species identified as glossy buckthorn is that identified by the Latin name “Frangula alnus”, rather than “Rhamnus frangula” as indicated in the ISMP narrative, and confirm that appropriate associated treatment methods are applied to this species.

The Applicant has indicated that invasive species identified on site include “Asiatic Bittersweet (Celastrus orbiculatus), Glossy Buckthorn (Rhamnus frangula), Common Buckthorn (Rhamnus cathartica), Tree-of-Heaven (Ailanthus altissima), and Japanese Barberry (Berberis thunbergii).” HW notes that the Latin name for the species commonly referred to as glossy buckthorn in this region is Frangula alnus.

GC 18. Goddard confirms that the species identified as “Glossy Buckthorn” corresponds to the currently accepted Latin name “Frangula alnus”. The reference to “Rhamnus frangula” in the ISMP narrative reflects a former taxonomic synonym. The ISMP will be revised to reference “Frangula alnus” for clarity and consistency.

The proposed treatment methods outlined in the ISMP are appropriate for *Frangula alnus* and are consistent with standard management practices for glossy buckthorn in this region, including mechanical removal and targeted herbicide application.

HW 19. HW recommends that the Applicant provide species specific fact sheets complete with photos that would allow for proper identification, including notes on how to differentiate between similar looking species, for inclusion in the proposed ISMP.

The Applicant has specified four management zones based on species presence and prevalence in each zone. Management goal definitions identified in Section 3.0 include two categories: “eradication” and “control”. These definitions are then applied to each species individually in Section 4.0, which specified that eradication is proposed for common buckthorn and Japanese barberry, indicating that the first was observed throughout the site and the second was present in sporadic clusters. Given the ubiquitous presence of common buckthorn as indicated by the Applicant, they may consider revising the prescribed management approach to “control”. Control is proposed for the three remaining invasive species. HW notes that both buckthorn species look very similar and recommends that the plan includes fact sheets to aid in identifying each species to ensure that the differentiated management methods are applied appropriately.

GC 19. Goddard agrees to revise the management objective for common buckthorn from eradication to control. The ISMP narrative has been revised to reflect a control objective for common buckthorn consistent with site conditions.

Although invasive species management will be overseen by a qualified wetland scientist, Goddard agrees that providing additional identification resources will improve clarity during implementation. Species-specific identification fact sheets for all invasive plant species on the site have been added as attachments to the revised ISMP. These materials include photographs and key diagnostic characteristics to assist contractors and field personnel with management methods.

HW 20. HW recommends that any spraying of herbicides be avoided within the areas proposed for management, as these are all within the 0-25 foot Buffer Strip which slopes towards the downgradient BVW’s at this site. If the Commission finds that spraying is unavoidable for select areas, HW recommends that the Applicant update the ISMP to include a description for the appropriate methodology for herbicide spraying, including limiting this treatment method to the maximum extent practicable.

As noted in Section 4.0, chemical applications are included as a management method for each species, including foliar spray (or “spraying”) for Asiatic bittersweet, glossy buckthorn, and Japanese barberry. HW notes that all areas where invasive species management is proposed are upgradient to the adjacent resource area. Section 5.0 provides descriptions of the proposed treatment methods. However, a description of foliar spray (or “spraying”) is not provided under the herbicidal treatment methods in Section 5.2; only more targeted chemical application approaches are provided, including the cut-and-dab method, basal bark application, and hack-and-squirt.

GC 20. Goddard acknowledges HW’s recommendation regarding herbicide application within the No Disturbance Zone. Foliar spray application will be avoided to the maximum extent practicable. Targeted application methods, including cut-and-dab, basal bark treatment, and hack-and-squirt, will be utilized as the primary chemical control techniques in order to minimize the potential for impacts to non-target species.

Foliar spray will be limited to dense infestations where selective, stem-by-stem treatment methods are impracticable. The ISMP narrative has been revised to include a detailed description of foliar spray methodology under Section 5.2.

HW 21. HW recommends that any herbicide formulations utilized in the proposed mitigation areas be explicitly labeled for aquatic use (e.g., “for use in aquatic sites,” “for use in and around water,” or “wetland sites”), and that this detail be added to the invasive species narrative and associated plans as appropriate.

As noted in Section 5.2, the herbicides proposed for use include “glyphosate (e.g., RoundUp Custom or equivalent) and triclopyr (e.g., Garlon 4 or equivalent)”. HW notes that the two active ingredients identified are listed by MassDEP as appropriate for use in aquatic sites. However, the formulations are relevant. Garlon 4, for example, is not recommended for use aquatic sites including wetlands; however, it is approved for use in seasonally dry wetlands or transitional zones. HW acknowledges that the buffer zone is a transitional zone. However, because the area slopes steeply toward the resource area and the timing of herbicide application has not been specified, there is an increased potential for stormwater runoff to transport herbicide into the wetland.

GC 21. Goddard has revised the narrative to specify that any herbicide formulations used within the proposed mitigation areas will be products explicitly labeled for aquatic use (e.g., approved for use in and around water or within wetland sites). This requirement has been incorporated into the narrative to ensure protection of adjacent resource areas.

HW 22. HW recommends that areas proposed for work where invasive species are present are clearly marked on the proposed development plans. The plans should also include notes for the contractor indicating that topsoil is not to be reused from these areas. Additionally, if temporary stockpiling of these materials onsite is unavoidable, plan notes should clearly state that any material excavated from these areas must be appropriately contained (i.e., stockpile areas must be lined and surrounded by erosion and sediment control barriers) to prevent the spread of invasive species until the materials can be appropriately disposed of off-site.

Section 6.0 describes the proposed management protocols which include standard good housekeeping practices appropriate for invasive species management, including that “invasive species or other material removed from the study area will be loaded into a truck and disposed of off-site or stockpiled in an area to be excavated”. HW recommends that more specific language be provided in the ISMP and that associated notes be included in the proposed site development plans for the contractor’s reference.

GC 22. Bohler Engineering has revised the site development plan set to clearly depict the ISMP management zones. The plans will also include notes specifying that topsoil from areas containing invasive species is not to be reused from these areas.

In addition, plan notes will require that, if temporary on-site stockpiling is unavoidable, excavated material from invasive management areas must be properly contained, including placement on a lined surface and surrounded by appropriate erosion and sediment control barriers, until it is disposed of off the Project Site.

The ISMP narrative has also been revised to incorporate more specific language regarding handling, containment, and disposal procedures, consistent with HW’s recommendations.

HW 23. HW recommends that the Applicant provide species-specific planting details, including supporting calculations and visual references, to demonstrate that the proposed installation spacing is appropriate for each species and that the planting areas are adequately sized to accommodate the specified spacing. Coordination with the proposed landscape plans depicted on Sheets L-101 and L-102 will be necessary to complete this evaluation and to ensure that all areas subject to invasive species management are appropriately seeded and planted with native species.

Installation of native shrubs is discussed in Section 7.0. The Applicant specifies that all shrubs proposed for installation will be spaced at 8-10 feet on center. However, the ISMP narrative and associated Planting Plan do not specify whether a seed mix will be applied within the proposed mitigation areas. HW notes that the proposed landscape plan on sheets L-101 and L-102 include plantings and seed mix application for the areas specified in the Planting Plan. However, these plans do not appear to be coordinated. Incorporating an herbaceous layer would strengthen the buffer zone’s ability to protect the interests of the Wetlands Protection Act (WPA) and the local bylaw, and

would increase the likelihood of success for the proposed invasive species management measures. Further, all areas where invasive species management is proposed should be planted and seeded to prevent the re-establishment of invasive species.

GC 23. The previously submitted mitigation planting plan includes shrub planting graphics sized to represent the spacing requirements of 8 to 10 feet on center to ensure proper spacing criteria was followed. Please reference Figures 4 to 6 below to confirm the proposed plantings are appropriately spaced per the MassDEP guidelines. The MassDEP spacing guidelines ensure proper spacing, density, and quantity of native plantings. As a result, species-specific planting details are not required, having already been reflected in the planting design.

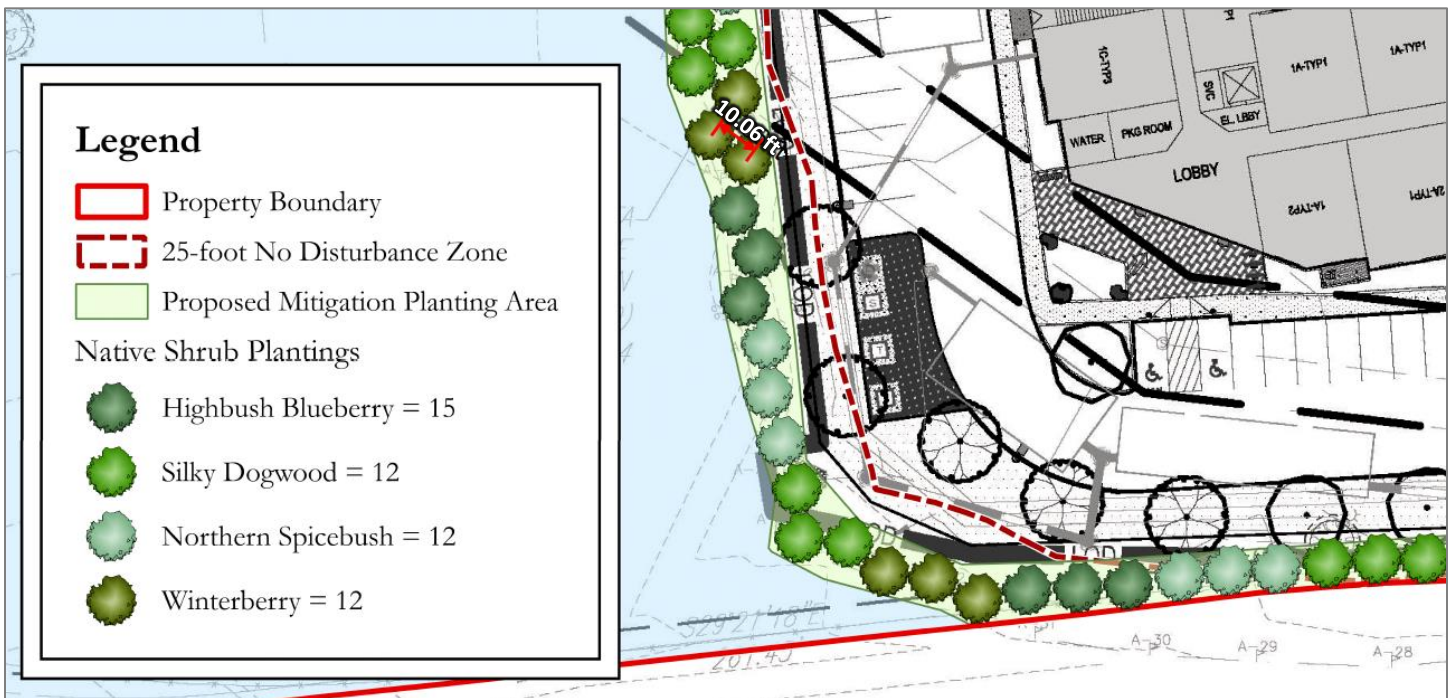


Figure 4. View of attachment Figure 1 of the revised ISMP prepared by Goddard Consulting. Note the 10-foot-on-center spacing of the proposed shrub planting based on the 1" = 50' scale.



Figure 5. View of attachment Figure 2 of the revised ISMP prepared by Goddard Consulting. Note the 10-foot-on-center spacing of the proposed shrub planting based on the 1" = 40' scale.



Figure 6. View of attachment Figure 3 of the revised ISMP prepared by Goddard Consulting. Note the 10-foot-on-center spacing of the proposed shrub planting based on the 1" = 40' scale.

The Landscape Plan shows proposed deciduous tree planting graphics approximately 18 feet in diameter. These graphics demonstrate the projected canopy size of each deciduous tree planting. The proposed shrub plantings from the mitigation planting plan almost entirely avoids overlapping with the previously submitted Landscape Plan. Any overlap shown reflects future canopy coverage; shrubs will not be planted directly under the proposed deciduous trees but may become partially shaded at maturity.

Lastly, the invasive species management zones will be seeded with a combination of the previously identified seed mixes in accordance with the Landscape Plan to promote establishment of native vegetation

and long-term stabilization of the remaining naturalized buffer zone areas. Goddard has revised the ISMP narrative to include seed mix dispersal specifications.

HW 24. If erosion control blankets are to be applied to the mitigation areas, HW recommends that the associated detail on page C-802 be updated to specify that erosion control blankets must consist of 100% biodegradable material (UV/Photodegradable or Oxo-(bio)degradable plastics are not considered biodegradable).

The proposed development plans indicate that erosion control blankets will be applied to steep slopes. However, it is unclear what these blankets will consist of and whether they will be applied within the proposed mitigation areas. Biodegradable erosion and sediment controls are preferable to minimize the potential for microplastic pollution (e.g., created by straw wattle plastic netting breaking down during prolonged construction periods or during removal), particularly for the purposes of slope stabilization, as plastic netting applications can create hazards for wildlife.

GC 24. Bohler Engineering has revised page C-802 be updated to specify that erosion control blankets must consist of 100% biodegradable material (UV/Photodegradable or Oxo-(bio)degradable plastics are not considered biodegradable).

HW 25. HW recommends that the Applicant include species specific appropriately timed management methods and specify the fruiting/ seed dispersal periods for each species to confirm that activities can be coordinated appropriately.

Section 8.0 outlines the proposed management timing, identifying a single coordinated treatment window between late summer and early fall. While this timeframe is generally effective for herbicide application, particularly for woody invasive species that are actively translocating resources to their root systems, additional treatment methods applied at other times of year may enhance overall management effectiveness.

It is also advisable to identify the fruiting period for each target species and, to the extent practicable, schedule treatments and/or removals outside of those periods to reduce the risk of seed dispersal and further spread of invasive species.

GC 25. Goddard has revised the ISMP narrative to include the typical fruiting and seed dispersal periods for each target invasive species. Additional language has been incorporated stating that, to the extent practicable, treatment activities will be scheduled to avoid peak fruiting and seed dispersal periods in order to reduce the risk of seed dispersal and further spread of invasive species.

The ISMP continues to identify mid-August through late-September as the primary coordinated treatment window. As noted by HW, this period is generally the most effective time for management of woody invasive species due to active translocation to root systems. The concentration of management activities within this timeframe also allows for coordinated implementation and monitoring, improving overall efficiency while maintaining protection of adjacent resource areas.

HW 26. HW recommends that the Applicant submit the resume and/or demonstrated qualifications of the selected wetland scientist for the Commission's review and approval.

The Applicant has specified that the ISMP will be implemented with oversight from a "qualified wetland scientist". Additionally, the Applicant specifies that the qualified wetland scientist will perform the post-construction monitoring.

GC 26. Goddard has attached the resume of Lead Wetland Scientist, Andrew Thibault of Goddard Consulting for the Commission's review and approval.

HW 27. HW recommends that the Commission require the approved qualified wetland scientist to monitor the site at least twice per year during the first two years following initiation of treatment. If invasive species are demonstrably well controlled after this initial period, the monitoring frequency may then be reevaluated and potentially reduced or ceased.

The monitoring plan is described in Section 9.0, which includes one annual visit by a qualified wetland scientist until a Certificate of Compliance is issued. Given the rapid growth and spread potential of invasive plant species, monitoring only once per year is unlikely to be sufficient to evaluate treatment effectiveness and identify re-establishment in a timely manner. If monitoring is conducted more than once

annually, the number and timing of written reports would also need to be adjusted accordingly, including reconsideration of the proposed November 15 reporting deadline.

GC 27. Goddard has revised Section 9.0 to include two annual site visits, one in the early growing season (prior to additional management), and one in the late growing season (following additional management). This last annual site visit will occur during the month of October to ensure time for the preparation and submittal of the monitoring report by the November 15 deadline.

Thank you for your continued review of this project. Goddard and the Applicant appreciate the Commission's consideration and look forward to working collaboratively toward issuance of an Order of Conditions. Please do not hesitate to contact our office with any additional questions.

Sincerely,

Goddard Consulting, LLC



Andrew Thibault, WPIT, WSA

Lead Wetland Scientist



Invasive Species Management Plan

for

The Commons at River Road

100 Old River Road
(Map 143, Block 0, Lot 8)
Andover, MA 01810

REVISED DATE:

March 4, 2026

ADDRESSED TO:

Andover Conservation Commission
Town of Andover
36 Bartlet Street
Andover, MA 01810

PREPARED BY:

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ATTACHMENTS

ATTACHMENT 1. BUFFER ZONE MITIGATION PLANTING PLAN (WEST), PREPARED BY GODDARD CONSULTING, LLC, DATED 02/23/2026;

ATTACHMENT 2. BUFFER ZONE MITIGATION PLANTING PLAN (SOUTH), PREPARED BY GODDARD CONSULTING, LLC, DATED 02/23/2026;

ATTACHMENT 3. BUFFER ZONE MITIGATION PLANTING PLAN (SOUTHEAST), PREPARED BY GODDARD CONSULTING, LLC, DATED 02/23/2026.

ATTACHMENT 4. FACT SHEETS FOR INVASIVE PLANT SPECIES

ATTACHMENT 5. ANDREW THIBAUT'S RESUME

1.0 INTRODUCTION

Goddard Consulting, LLC is pleased to submit this Invasive Species Management Plan (ISMP) on behalf of the applicant, JMC/SVP Old River Road LLC, a joint venture between affiliates of John M. Corcoran & Company (“JMC”) and SV+Partners (“SV+P”), for the property known as 100 Old River Road (Map 143, Block 0, Lot 8) in Andover, MA. The purpose of this project mitigation is to create an intensive plan to eradicate and control invasive plant species located within the 25-foot No Disturbance Zone of the Bordering Vegetated Wetlands (BVW) on the subject site to provide an improved Buffer Zone as part of the site’s redevelopment. The work outlined herein will be completed in compliance with the Massachusetts Wetlands Protection Act (WPA) and the Andover Wetlands Protection Bylaw.

2.0 SITE ASSESSMENT

In preparation of the redevelopment proposal, Goddard Consulting visited the site on September 8, 2025, to inventory and locate invasive species present within the on-site, vegetated 25-foot No Disturbance Zone to the western wetland system (adjacent to the existing development), the southern intermittent stream, and the southeastern wetland system. The majority of the town and state jurisdictional buffer zones are degraded due to the presence of a commercial building and an associated parking lot. The remaining vegetated buffer zone exhibited substantial evidence of non-native species invasion, with variable levels of invasive cover and species richness, including Asiatic Bittersweet (*Celastrus orbiculatus*), Glossy Buckthorn (*Frangula alnus*), Common Buckthorn (*Rhamnus cathartica*), Tree-of-Heaven (*Ailanthus altissima*), and Japanese Barberry (*Berberis thunbergii*). All of these species are identified on the Massachusetts Prohibited Plant List. A graphic identifying the approximate locations of the invasive species instances is provided below.

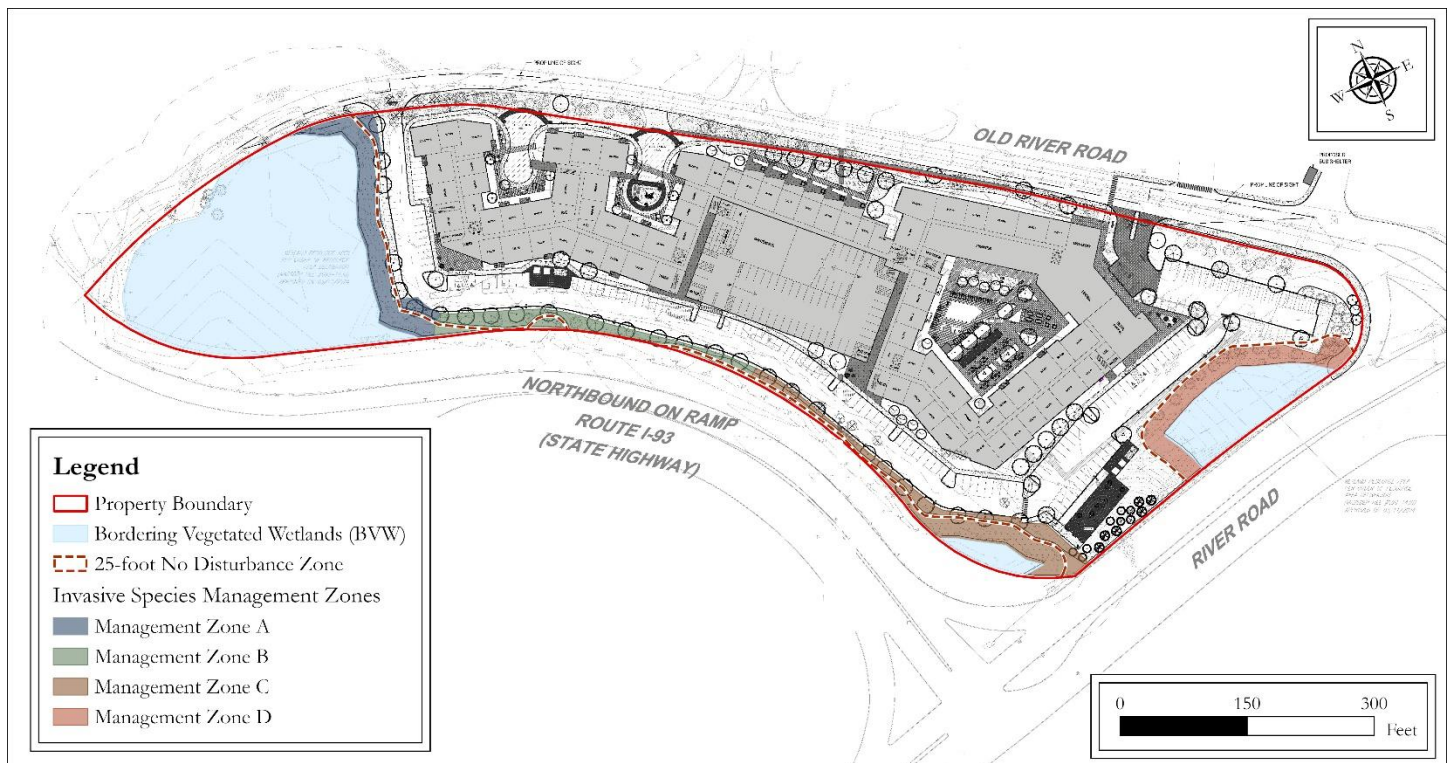


Figure 1. Graphic identifying target areas for invasive management activities overlaid on the Landscape Plan sheet included in the civil plan set prepared by Bohler Engineering, revised 03/04/2026. Please note that each management zone includes existing vegetated areas extending at least to the edge of the 25-foot No Disturbance Zone, with portions of management also extending into the 50-foot No Build Zone. All excluded areas within the No Disturbance Zone consist of existing pavement, which will be removed and restored in accordance with the Landscape Plan.

2.1 EXISTING INVASIVE SPECIES ON-SITE

Target plant species for invasive management are those species identified on the Massachusetts Prohibited Plant List. Goddard documented a total of five different invasive plant species on the site. These invasive species are listed below:

Shrubs and Trees

- a) Glossy Buckthorn (*Frangula alnus*)
- b) Common Buckthorn (*Rhamnus cathartica*)
- c) Tree-of-Heaven (*Ailanthus altissima*)
- d) Japanese Barberry (*Berberis thunbergii*)

Vines

- e) Asiatic Bittersweet (*Celastrus orbiculatus*)

2.2 MANAGEMENT ZONES

Based on both invasive cover and species presence, the site was split into 4 management zones, Management Zones A, B, C, and D. Management Zone A encompasses the upland buffer zones between the western wetland system and the newly proposed pavement edge. Management Zone B contains the upland buffer zone area adjacent to southern intermittent stream between flags A17 and A31. The treatment area extends between the wetland boundary and the proposed pavement edge. Management Zone C includes the remainder of the upland buffer zone area between the wetland boundary and the proposed pavement edge adjacent to the southern intermittent stream from flags A15 to A1. Management Zone D encompasses the 25-foot No Disturbance Zone adjacent to the southeastern wetland edge and the proposed pavement. The areal extent of these management zones can be reviewed in Figure 1 above.

Each invasive management zone was characterized by density and invasive species presence:

Invasive Management Zone A. Dense coverage of Asiatic bittersweet vines line the edge of the parking lot, climbing the native vegetation at the fringes of the undeveloped upland edge. Stands of tree-of-heaven are additionally found at the edges of the parking lot. Common buckthorn was observed sporadically closer to the wetland boundary (Reference Photos 1 – 2)

Invasive Management Zone B. At present, this area is degraded with varying coverage of invasive species. Between wetland flags A17 – A31, sporadic coverage of glossy buckthorn, Japanese barberry, and Asiatic bittersweet are found throughout the 25-foot No Disturbance Zone (Reference Photo 3).

Invasive Management Zone C. As the system continues adjacent to the existing building, between flags A1 – A15, coverage becomes very dense, with significant coverage of Asiatic bittersweet choking the native vegetation (Reference Photo 4)

Invasive Management Zone D. The mulched slope adjacent to the existing building is degraded with a significant coverage of invasive species. Asiatic bittersweet vines are found growing throughout the mulched areas, alongside tree-of-heaven and glossy buckthorn (Reference Photos 5 – 6).

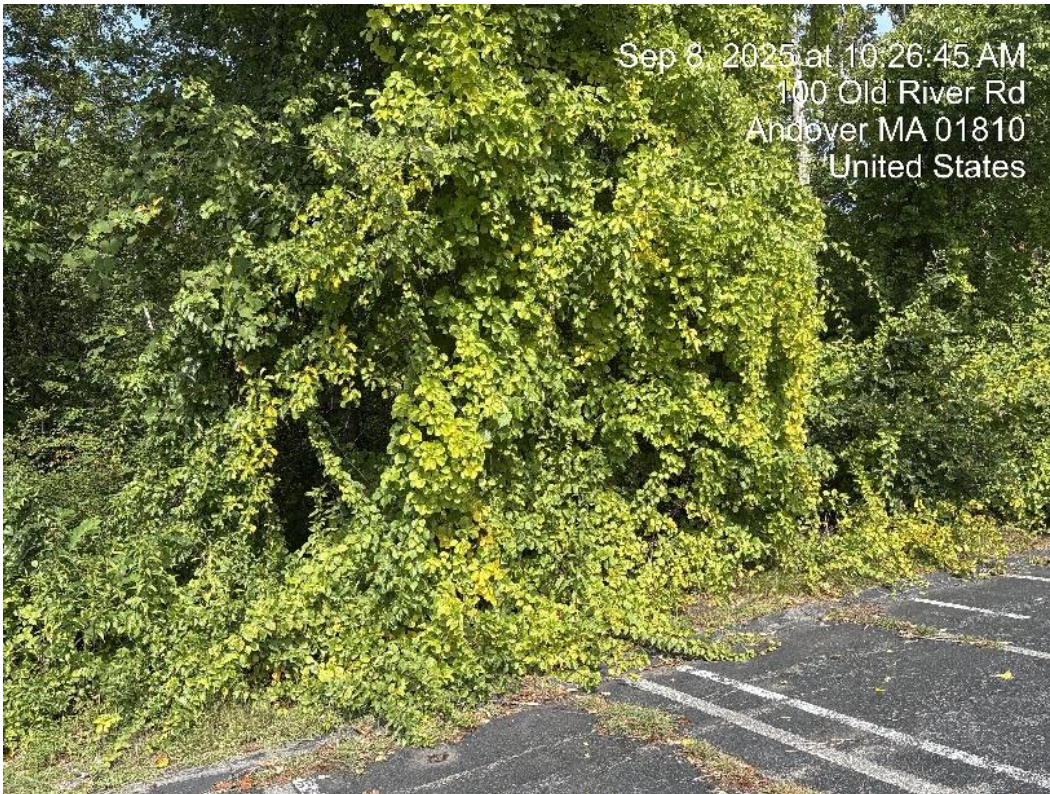


Photo 1. A view of the dense Asiatic bittersweet off of the parking lot adjacent to the western wetland system.



Photo 2. Tree-of-heaven and Asiatic bittersweet off of the parking lot adjacent to the western wetland system.



Photo 3. A view of sporadic invasives near flag A30 of the southern intermittent system.



Photo 4. View of dense Asiatic bittersweet cover along origin of A-Series adjacent to the southern intermittent stream channel.



Photo 5. View of the Asiatic bittersweet throughout mulch slope adjacent to the southeastern wetland.



Photo 6. View of tree-of-heaven downgradient of the existing commercial building adjacent to the southeastern wetland system.

3.0 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.

4.0 INVASIVE SPECIES DESCRIPTIONS

The following sections detail the life history, morphology, and management goals for each invasive plant species on the Project Site. To aid with species identification in the field, species-specific fact sheets have been provided as attachments to this management plan (Reference Attachment 4). These materials include photographs and key diagnostic characteristics to assist contractors and field personnel with management methods.

4.1 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*).

To reduce the risk of seed dispersal and further spread, management activities should avoid the primary fruiting and seed dispersal period (Late-September through February) to the maximum extent practicable. If treatment must occur during this timeframe, all fruiting material will be carefully collected, contained, and removed from the site to prevent additional dispersal.

Goal: Control. Dense invasion of Asiatic bittersweet was found throughout the edges of the development site. Plants in the upland will be removed by cutting the above ground plant material and applying herbicide to the cut stump. Applying herbicide directly to the cut stems limits exposure to non-target plants. Smaller plants can be removed by hand pulling, and dense clusters may be treated with foliar spray where other management methods are impracticable.

4.2 Glossy Buckthorn (*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. The 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.

The fruit of glossy buckthorn is present from July to October in Massachusetts. The most effective herbicide window for woody invasive species is from mid-August to late-September. The presence of fruit during the ideal management window makes complete avoidance of the fruiting period not practicable. If fruit is present at the time of treatment, fruiting stems will be carefully handled to prevent seed dispersal. Mechanical removal will include collection and containment of fruiting material, and all such material will be removed from the site or properly contained until disposal. Targeted treatment methods will be prioritized to minimize disturbance and reduce the potential for spreading viable seed.

Goal: Control. Clusters of glossy buckthorn were found throughout the majority of the vegetated buffers on the site. The most effective and controlled method of removing these plants will be cutting and removing the above ground plant material and applying herbicide to the cut stump. Applying herbicide directly to the cut stems limits exposure to non-target plants. Larger plants will only be treated with the cut and dab method to ensure minimization of non-target impacts. Smaller plants can be removed either by pulling the plants with a weed wrench, or if extensive in coverage, by spraying with herbicide.

4.3 Common Buckthorn (*Rhamnus cathartica*)

Common buckthorn is a deciduous shrub or small tree that typically grows up to 20–25 feet in height. It is characterized by opposite or sub-opposite oval leaves with finely toothed margins and prominent curved veins. Plants produce small greenish-yellow flowers in spring, followed by abundant clusters of black berries that mature in late summer and fall.

Common buckthorn is native to Europe and western Asia and was introduced to North America in the 1800s for use as hedgerows and ornamental plantings. The species has since spread extensively throughout Massachusetts and is listed as a prohibited invasive plant in Massachusetts.

Common buckthorn readily invades forest understories, forest edges, and disturbed areas, where it forms dense thickets that shade out native herbaceous plants and tree seedlings. Its early leaf-out and late leaf-drop allow it to outcompete native vegetation for light and resources, reducing plant diversity and altering soil chemistry. The fruit is readily consumed and dispersed by birds, facilitating rapid spread across the landscape.

The fruiting period for common buckthorn occurs from late August through October, with seed dispersal continuing from September through November. Complete avoidance of the fruiting period is not practicable within the proposed management window of mid-August through late-September. If fruiting individuals are removed during management, stems will be carefully handled to minimize disturbance, and fruiting material will be collected, contained, and removed from the site or properly secured until disposal to reduce the risk of seed dispersal and further spread of invasive species.

Goal: Control. Common buckthorn was observed throughout the site, occurring primarily within edge habitats adjacent to the western wetland system. Control efforts will focus on cutting and removing above-ground plant material and applying herbicide directly to the cut stumps to prevent resprouting. This targeted cut-and-dab approach minimizes exposure to non-target vegetation. Smaller individuals may be removed by hand-pulling or with a weed wrench where feasible, particularly in areas with limited native vegetation or sensitive resources.

4.4 Tree-of-Heaven (*Ailanthus altissima*)

Tree-of-heaven is a deciduous tree that can reach heights of up to 80 feet. It has light gray bark that is smooth with lenticels when young and becomes fissured with age. Its leaves are pinnately compound, typically with 11–41 leaflets, each leaflet having mostly smooth margins with one or more glandular teeth near the base. In Massachusetts, flowering generally occurs in June through July. Female trees produce large clusters of papery, winged seeds (samaras) that develop in mid-summer and mature from August through October.

Originally from Asia, the tree-of-heaven was introduced to North America as an ornamental plant and has become invasive throughout most of the United States. It forms dense stands which outcompete native trees by producing root suckers, numerous seeds, and allelopathic chemicals which harm other plants. It grows well in most environments and can regrow from small pieces of roots. Tree-of-heaven is one of the preferred hosts of the spotted lanternfly, an invasive insect from Asia which also harms grapes, hops, fruit trees, and numerous non-agricultural trees.

Seed maturation and wind dispersal for tree-of-heaven occurs from August through November in Massachusetts. The complete avoidance of the seeding and dispersal period is not practicable within the ideal management window of mid-August through late-September. If treatment occurs during this timeframe, seed-bearing branches will be carefully handled to minimize disturbance and cut material will be contained and removed from the site to reduce the risk of wind-mediated seed spread.

Goal: Control. Tree-of-heaven is present in two dense patches adjacent to the western and southeastern wetland systems. If these trees are not removed, they will likely interfere with the ability for native trees to regrow onsite. The best method for removing these trees will be to use basal bark application or a hack-and-squirt application. Cut and dab treatment is not recommended for tree-of-heaven, due to its ability to stump sprout and produce root suckers. Weed wrenches and hand removal can also be used on smaller plants, but care must be taken to remove the entire plant, or it can regrow from excess roots.

4.5 Japanese Barberry (*Berberis thunbergii*)

Japanese barberry is a dense, spiny, deciduous shrub that typically grows 2 to 8 feet tall. It has small, oval leaves that range in color from green to reddish-purple. In Massachusetts, flowering generally occurs in May through early June, producing pale yellow flowers that develop into bright red berries. Fruit matures from August through October, and berries typically persist on the plant from October through February, with seed dispersal occurring primarily from September through winter as birds and small mammals consume and transport the fruit.

This species was introduced from Japan in the late 1800s as an ornamental plant. Japanese barberry is now widespread throughout Massachusetts and is classified as a prohibited invasive species. It readily invades forests, forest edges, wetlands, and disturbed areas, forming dense thickets that suppress native plant regeneration and reduce habitat quality. Japanese barberry can also alter soil chemistry and has been associated with increased tick abundance in heavily infested areas.

Because fruiting and seed dispersal occurs from August through February, complete avoidance of the fruiting and dispersal period is not practicable within the ideal management window of mid-August through late-September. If treatment occurs during this timeframe, fruiting stems will be handled carefully to minimize disturbance, and berry-bearing material will be collected, contained, and removed from the site or properly secured until disposal to reduce the risk of seed dispersal and further spread of invasive species.

Goal: Eradication. Japanese barberry was identified in sporadic clusters across the buffer zone areas. Control measures will include cutting and removing above-ground stems followed by herbicide application to the cut stumps to prevent resprouting. Smaller plants may be hand-pulled or removed using a weed wrench, particularly where soil disturbance can be minimized. Foliar herbicide application may be used selectively in dense infestations where other methods are impracticable, with care taken to limit impacts to non-target vegetation.

5.0 DESCRIPTIONS OF TREATMENT METHODS

Management of invasive vegetation will prioritize mechanical control methods where practicable and effective; however, herbicide application is anticipated to be the primary and most effective treatment for long-term control of established infestations. All herbicide treatments will be selectively applied to target invasive species and implemented in a manner that avoids or minimizes impacts to surrounding native vegetation and sensitive resource areas. The following sections describe the mechanical and herbicidal treatment methods proposed for use within the study area.

5.1 Mechanical Treatment Methods

a) *Hand Removal*

Hand removal will be used to control invasive plants at the seedling or small sapling stage and will be implemented across the site during initial treatment and subsequent monitoring years. This method will be prioritized wherever feasible to limit chemical use. Plants will be pulled or dug out by hand using hand tools (e.g., shovels or weed wrenches), ensuring removal of the entire root system to prevent regrowth. Hand removal is appropriate for all target species when plants are sufficiently small. Species anticipated to be treated using this method include glossy buckthorn, common buckthorn, Japanese barberry, tree-of-heaven (small individuals), and Asiatic bittersweet.

b) *Cutting*

Cutting involves removal of above-ground plant material through hand cutting or mechanical cutting. This method alone does not typically result in mortality of woody invasive species, as many resprout from rootstock; therefore, cutting will be used primarily in conjunction with herbicide treatment. Cutting will be conducted in a species-appropriate manner and timed to avoid the spread of viable seed material. Mechanical cutting may also be used during the dormant season to facilitate targeted herbicide treatment of resprouting vegetation during the growing season. Care will be taken to ensure that viable vegetative material or seed-bearing material is not left onsite. Species anticipated to be treated using this method include glossy buckthorn, common buckthorn, Japanese barberry, tree-of-heaven, and Asiatic bittersweet.

c) *Weed Wrench Removal*

A weed wrench may be used to uproot small- to medium-sized woody invasive shrubs and saplings. This tool grips the base of the plant and uses leverage to remove the root system while minimizing soil disturbance. Weed wrench removal is most effective in low- to moderate-density infestations and in areas where soil disturbance can be minimized. Species anticipated to be treated using this method include glossy buckthorn, common buckthorn, Japanese barberry, and Asiatic bittersweet.

5.2 Herbicidal Treatment Methods

Herbicides proposed for use in this management plan include glyphosate (e.g., RoundUp Custom or equivalent) and triclopyr (e.g., Garlon 4 or equivalent), consistent with Massachusetts invasive species management guidance. Glyphosate will be used primarily for cut-stem applications, while triclopyr will be used preferentially for woody shrubs and trees. When applied by a licensed applicator in accordance with label instructions, these herbicides are effective and have limited persistence in the environment.

a) *Cut-and-Dab Treatment*

Cut-stem treatment involves cutting invasive woody plants near ground level followed by immediate application of herbicide to the exposed cut surface. This highly targeted method minimizes non-target impacts and reduces the likelihood of resprouting and repeat treatments. Cut-stem treatment will be the primary control method for woody invasive shrubs and vines throughout the site, including glossy buckthorn, common buckthorn, Japanese barberry, and Asiatic bittersweet.

b) *Basal Bark Application*

Basal bark treatment involves applying an oil-based herbicide mixture to the lower portion of a woody stem, allowing the herbicide to penetrate the bark and translocate throughout the plant. This method allows selective treatment with minimal disturbance to surrounding vegetation. Basal bark application will be used for tree-of-heaven where appropriate.

c) *Hack-and-Squirt Application*

Hack-and-squirt treatment involves making downward cuts into the woody stem and applying herbicide directly into the exposed tissue. This method allows the plant to continue translocating carbohydrates and water, facilitating herbicide movement throughout the root system. Hack-and-squirt application will be used selectively for tree-of-heaven, consistent with best management practices for this species.

d) *Foliar Spray Application*

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. This treatment method will be used as a last resort only, after all other treatments are considered and eliminated as viable options. 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 dense stands of Asiatic bittersweet, glossy buckthorn, and Japanese Barberry.

6.0 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. Any invasive species or other material removed from the study area will be loaded into a truck and disposed of off-site or stockpiled in an area to be excavated.

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. Vegetation management includes hand-cutting, hand-pulling, as well as herbicide treatments such as cut stump treatment. 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.

7.0 INSTALLATION OF NATIVE SHRUB PLANTINGS

Desirable plant species for the 25-foot No Disturbance Zone include native trees and shrubs of either facultative wetland or facultative status. Following the initial removal of invasive species, the area will be replanted with 162 native shrub plantings including Northern Spicebush (*Lindera benzoin*), Arrowwood (*Viburnum dentatum*), Winterberry (*Ilex verticillata*), Highbush Blueberry (*Vaccinium corymbosum*), and Silky Dogwood (*Cornus amomum*). The native plantings will be installed according to the attached planting plans (Reference Attachments 1 – 3). The precise siting of plants may be determined by the wetland scientist or landscaper in the field prior to installation. All plantings (Reference Table 1) shall be distributed randomly throughout the area with shrubs spaced at 8 - 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. Plants will be adequately watered immediately following planting. Leaf litter will be spread throughout the area if it is available.

In addition, the New England Wetland Seed Mix will be dispersed closer to the wetland boundary, while the New England Conservation/Wildlife Mix will be applied toward the more upland edges of the buffer zone to revegetate the herbaceous layer and stabilize the management zones, consistent with the Landscape Plan prepared by Bohler Engineering

Table 1. Native Plant Species List.			
Common Name	Scientific Name	Number	Size
Shrubs (162)*			
Highbush Blueberry (FACW)	<i>Vaccinium corymbosum</i>	45	1 or 2 gal. pots
Silky Dogwood (FACW)	<i>Cornus amomum</i>	36	1 or 2 gal. pots
Common Winterberry (FACW)	<i>Ilex verticillata</i>	42	1 or 2 gal. pots
Northern Spicebush	<i>Lindera benzoin</i>	39	1 or 2 gal. pots

*Species selection dependent on nursery availability.

8.0 MANAGEMENT TIMING

Invasive species management will be conducted during a single coordinated treatment window in late summer to early fall (approximately mid-August through late September), which represents the optimal treatment period for all target invasive species identified on the site. During this timeframe, woody invasive plants are actively translocating carbohydrates to their root systems, improving the effectiveness of targeted control methods and reducing the potential for resprouting.

Several target species produce fruit and disperse seed during this period; therefore, complete avoidance of fruiting and seed dispersal timeframes is not practicable. If fruit- or seed-bearing plant material is encountered during treatment, it will be carefully handled to minimize disturbance. Any such material will be collected, properly contained, and removed from the Project Site for disposal to reduce the risk of seed dispersal and further spread.

Native plantings provided in Table 1 will be installed during the growing season following invasive species treatment, either during the spring planting season (April 16 through May 31) or the fall planting season (September 16 through October 30), as determined by site conditions and planting stock availability. Planting following invasive species removal reduces competition and supports successful establishment of native vegetation within the 25-foot No Disturbance Zone.

9.0 SUPERVISION & MONITORING

All invasive species management activities shall be conducted under the supervision of a qualified wetland scientist. The resume of the qualified wetland scientist has been attached for the Commission's review and approval (Reference Attachment 5). Monitoring shall occur following the initial implementation of management activities and shall continue annually until the issuance of a Certificate of Compliance.

Two monitoring site visits shall be conducted each year. The first visit will occur during the early growing season, prior to additional management activities, to evaluate overwinter conditions and identify areas requiring retreatment. The second visit will occur during the late growing season, following completion of additional management activities, to assess treatment effectiveness and overall site conditions. The late-season visit shall take place during the month of October to allow sufficient time for preparation and submittal of the annual monitoring report by the November 15 deadline.

An annual monitoring report shall be prepared by a qualified wetland scientist and submitted to the Andover Conservation Commission by November 15 of each monitoring year. The report shall include narratives, plans, and color photographs documenting the physical characteristics of the management areas, treatment effectiveness, and

overall site conditions. Any remaining invasive species shall be identified and mapped, with recommendations for treatment during the subsequent fall management period.

9.1 SUCCESS CRITERIA

In order to deem the ISMP as successful, at least 75% of the surface area of the ISMP Management Zones shall be reestablished with indigenous plant species within two years of the ISMP implementation. If the area does not meet the 75% indigenous re-vegetation requirement by the end of the second growing season, the applicant must submit a remediation plan to the issuing authority for approval. The remediation plan will propose additional measures to achieve restoration goals under the supervision of a qualified wetland scientist. The plan must include an evaluation addressing the following questions: 1) Why has the ISMP Zone not successfully re-vegetated with native species?, 2) How does the applicant intend to resolve the problem?

10.0 CONCLUSION

This Invasive Species Management Plan summarizes existing site conditions and establishes a framework for invasive species control to promote a primarily native plant community and improved 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 between the areas 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.

Sincerely,

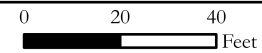
Goddard Consulting, LLC



Andrew Thibault, WPIT, WSA
Lead Wetland Scientist



Buffer Zone Mitigation Planting Plan



1" = 40'

Date: 03/04/2026

100 Old River Road
Andover, MA 01810

71.2040165°W, 42.691597°N

Map 143, Block 0, Lot 8



Legend

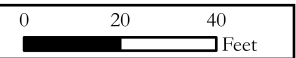
- Property Boundary
- 25-foot No Disturbance Zone
- Proposed Mitigation Planting Area

Native Shrub Plantings

- Highbush Blueberry = 18
- Silky Dogwood = 15
- Northern Spicebush = 18
- Winterberry = 15



Buffer Zone Mitigation Planting Plan



1" = 40'

Date: 02/23/2026

100 Old River Road
Andover, MA 01810

71.2028736°W, 42.6915912°N

Map 143, Block 0, Lot 8

Post-Flowering Invasive Species ID

Glossy Buckthorn, *Frangula alnus*

Key features:



Leaves

- Alternate arrangement.
- Football shape with smooth edges.
- Upper surface is glossy; underside is dull and pale.
- Veins run from the midrib to the edge of the leaf.

Bark & Stem

- Dark brown to gray bark with pale lenticels (rounded spots or horizontal lines).
- Lenticels are often most visible on younger stems.
- No thorns (unlike common buckthorn).
- Buds and ends of twigs are fuzzy.



A young glossy buckthorn stem.



Fruit

- Small (6–10 mm), round berries (drupes).
- Ripen green → red → black from late summer into fall.
- Often found along twigs or clustered toward branch tips.
- Fruits may persist late into the season and are spread by birds.

Post-Flowering Invasive Species ID

Common Buckthorn, *Rhamnus cathartica*

Key features:



Leaves

- Opposite / Sub-Opposite arrangement.
- Serrated margins.
- Veins curve toward the tip of the leaf.

Bark & Stems

- Dark gray to brown bark with light-colored lenticels (spots/lines).
- Older bark often becomes rough and flaky.
- Twigs may end in a small thorn (hence “buckthorn”).



Fruit

- Small, round (6–10 mm)
- Ripen green → black from late summer to fall; may appear faintly red during transition
- Persist into winter, eaten and spread by birds

Invasive Species ID

Asiatic Bittersweet, *Celastrus orbiculatus*

Key Features:



Leaves

- Alternate arrangement
- Rounded to oval leaves
- Small serrations along the margins
- Glossy green in summer; Yellow in fall

Stem & Vine

- Woody climbing vine that can grow tightly around trees or in tangles
- Young stems greenish; mature stems become woody & gray-brown
- Vines can form dense mats and smother vegetation



Fruit

- Round berries that turn yellow & then split open during the fall
- Inside are bright red/orange berry-like arils that persist into winter
- Berries are eaten and spread by birds



Invasive Species ID

Japanese Barberry, *Berberis thunbergii*

Key Features:



Leaves

- Small, simple oval leaves along stems
- Bright to medium green during summer
- Red to orange-red in fall

Stem & Thorns

- Woody, branching shrub
- Sharp spines/thorns along stems
- Mature stems grayish brown with rough bark; younger stems smoother



Fruit

- Small red berries (drupes) in clusters along branches
- Berries persist into late fall & winter
- Eaten and spread by birds and small mammals



Invasive Species ID

Tree-of-Heaven, *Ailanthus altissima*

Key Features:



Leaves

- Alternate, compounded leaves up to 2-3 feet long
- Each leaf has 10 - 41 leaflets along a central stem
- Leaflets are lance-shaped with irregular coarse teeth

Bark & Trunk

- Smooth, light gray on young trees
- As it ages, bark becomes rougher with vertical fissures
- Often has multiple stems coming from the base



Seed

- Clusters of winged seeds ("samaras") that are light brown to yellow in late-summer to fall
- Seeds are flat and paired with a twisted wing, aiding wind dispersal





ANDREW THIBAUT

Lead Wetland Scientist



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EDUCATION

Master of Environmental Science & Policy

Clark University - 2021

SKILLS



Team Lead



Geographic Information System

PROFESSIONAL SUMMARY

With more than 4 years of experience in ecological consulting throughout New England, Mr. Andrew Thibault has successfully managed hundreds of projects, spanning from small and straightforward to large commercial and industrial developments. His expertise lies in wetlands and permitting. Additionally, he possesses extensive experience across various project types, including:

- Single-family homeowners
- Commercial developments
- Utilities (transmission, solar)
- Infrastructure (airports, roads)
- Government and municipal projects
- Specialized ecological restoration and design

PROFILE

Natural Resource Projects

- Wetland delineations
- Wetland Functions and Values Assessments
- Vernal Pool Assessments
- Permitting Lead
- Wetland Mitigation Design
- Construction Monitoring
- Wetland Restoration and Replication Design and Oversight
- Buffer Zone Enhancement Plans
- Invasive Species Management Plans

Government and State Agencies

- Conservation Commissions
- Army Corps of Engineers
- MA Department of Environmental Protection
- NH Department of Environmental Services

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Lead Wetland Scientist



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EDUCATION

Master of Environmental Science &
Policy

Clark University - 2021

SKILLS



Team Lead



Geographic
Information System

EXPERIENCE

Airports

- Lawrence
- Fitchburg
- Wetland delineations
- Permitting
- Compliance construction oversight

Developers

- Single-family homes
- Residential subdivisions
- Commercial/ industrial developments
- Initial assessment
- Wetland delineations
- Permitting
- Construction oversight

Municipal/ State

- State and municipal development projects
- Wetland delineations
- Permitting
- Trail planning
- Land re-use planning

Transmission

- Transmission & distribution utilities
- Wetland delineation
- Permitting
- Construction compliance oversight

Transportation

- Roadway construction projects
- Large multi-family developments along MBTA rail lines
- Wetland delineations
- Permitting
- Construction compliance oversight

Solar

- Solar sites across MA and NH ranging from single-family home ground mounted and roof units to solar arrays of 25 acres.
- Wetland delineations
- Permitting
- Construction compliance oversight