



Inland Wetlands and Watercourses Permit Application

Invasive Species
Management Plan
Revised

Soil Remediation Project
Wallingford, CT

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COMMITMENT & INTEGRITY DRIVE RESULTS

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Pfizer, Inc.
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1. INTRODUCTION

Shallow wetland soils located at 21 Toelles Road in Wallingford, Connecticut (the Site) will be excavated for remediation and off-site disposal within the expected limits of excavation depicted on Sheet C-003 (See Attachment A to the permit narrative). Excavation will result in temporary disturbance to wetlands within the excavation areas as well as in upland areas used for access and materials management. These wetlands currently consist primarily of forested wetlands adjacent to Wharton Brook.

Invasive plant species are present in significant quantities within and adjacent to the wetland excavation area, and in upland areas adjacent to the wetlands. These species include common reed (*Phragmites australis*), Japanese knotweed (*Fallopia japonica*), mugwort (*Artemisia vulgaris*), garlic mustard (*Alliaria petiolata*), lesser celandine (*Ficaria verna*), Japanese stiltgrass (*Microstegium vimenium*), multiflora rose (*Rosa multiflora*), tree of heaven (*Ailanthus altissima*), and Asiatic bittersweet (*Celastrus orbiculatus*), among others.

Remediation and restoration of the wetland areas will require excavation, backfilling, and replanting with native species. Management of invasive species is a critical component of long-term success of the project to ensure that a habitat consisting of predominantly native plants establishes at the Site. This plan has been prepared to describe invasive species management practices to be implemented in advance of the active construction work and during long-term Site monitoring. This plan will be reviewed with the selected remediation Contractor and updated with the items described below under Management Plan, including: the species targeted for control, control methods, herbicide type, volume, and concentration (if applicable), schedule for implementation, precautions, and other details.

2. EXISTING CONDITIONS

A map depicting the approximate locations of significant dense incursions of two of the most aggressive invasive plants – Phragmites and knotweed – is attached as Figure 1. The total area with dense cover of Phragmites is estimated at 16,000 square feet, and the total area with dense Japanese knotweed cover is estimated at 11,000 square feet. In total, dense incursions of these species alone cover approximately 28% of the total excavation area within the wetlands. Total invasive species cover is higher at the Site when the presence of the additional species listed above is considered.

3. MANAGEMENT PLAN

The specific steps that will be taken to address invasive plant species at the Site will be highly dependent on the time of year that the work is planned. It is anticipated that both chemical and mechanical means will be used to control invasive species at the Site.

3.1 Pre-Construction

The purpose of the pre-construction control measures would be to reduce populations of invasive species within the excavation/restoration area, and within partially disturbed areas around large trees that will be maintained within the remediation area. While soil excavation is expected to remove the majority of the invasive species from the Site, certain species with deeper rhizomes (such as Phragmites or Japanese knotweed), or that are present within tree driplines, may recover following excavation.

Prior to construction the following steps will be taken:

1. A vegetation survey will be completed within each of the nine proposed monitoring plots prior to construction and will serve as a baseline of comparison during the (up to) 10 years of postremediation monitoring. The monitoring plots will be distributed across the wetland remediation area, including in those areas currently invaded by non-native plant species. The survey will be completed by a qualified wetland scientist or botanist to determine approximate density and location of the prevalent invasive species. A map will be prepared and provided to the Town showing the proposed monitoring sites and the results of the survey;
2. The species cover information will be shared and discussed with a CT certified applicator;
3. An invasive plant species treatment plan will be prepared that incorporates the following:
 - Species targeted for control
 - Control method
 - Chemical application
 - Target area
 - Herbicide type
 - Herbicide concentration
 - Anticipated volume of herbicide
 - Application method (cut stump, foliar spray, injection, etc.)
 - Mechanical methods
 - Target area
 - Method (hand-pulling, mowing, etc.)
 - Schedule (timing of control, timing of repeat applications, if applicable)
 - Precautions (health & safety, precautions around water bodies)

4. Implement a pre-construction invasive plant species control program (e.g. chemical or mechanical removals targeted at specific species, as will be detailed in the invasive species treatment plan). Preconstruction control will include implementation of herbicide treatment within a 20' buffer zone around the limit of excavation, excluding the area where the Ordinary High Water Line crosses the excavation area;
5. Implement follow up control based on monitoring efforts (see below).

Chemical control measures would be implemented by a contractor that is a CT certified applicator with experience working in or near wetlands. Any invasive plants that are cut or mowed as part of Site preparation will be properly disposed of off-site. Invasive species will not be reserved for use as habitat enhancement (brush piles) during Site restoration.

During Construction

Care will be taken during active construction will be to minimize the spread of invasive plants. This will include the following:

1. Construction equipment will be decontaminated following excavation work and prior to backfilling/grading to minimize the spread of seeds and rhizomes.
2. Construction equipment will be periodically inspected during excavation work to remove visible plant material accumulated on the tires, tracks, etc. Particular attention will be paid to rhizomatic material from Phragmites or Japanese knotweed.
3. Excavated material containing rhizomes will not be placed or stockpiled on bare ground outside of areas where invasive species incursions have been observed.

Post-Construction

Monitoring will include surveillance of non-native, invasive species in restored areas. The nine monitoring plots established for measuring restoration success will also be used for quantifying the cover of invasive species but observed incursions of invasive species outside of the monitoring plots will also be noted.

As part of inspections during the monitoring period, undesirable invasive, non-native species that are identified within wetlands during inspections will be physically removed (via hand-pulling, digging or weed wrench) to prevent establishment of these species. If the number of invasive plants is too large to be managed through hand-pulling, then other options are to be considered in managing their spread, such as:

1. management of invasives in abutting wetland areas;
2. enhanced native plantings; or
3. herbicide application in conjunction with cutting/pulling.

Herbicide applications will be conducted following applicable state and local regulations.



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A

B

C

D











A

B

C

D

LEGEND

- APPROXIMATE EXTENT OF HIGH-DENSITY PHRAGMITES AUSTRALIS COVER 
- APPROXIMATE EXTENT OF HIGH-DENSITY JAPANESE KNOTWEED COVER 
- TREE TO BE RETAINED AND ITS DRIP LINE (DIAMETER AT BREAST HEIGHT AT LEAST 15") 
- EXISTING TREE WITH MINIMUM 8 INCHES DBH 
- LIMIT OF WORK 
- ORDINARY HIGH WATER LINE 
- 500 YEAR FLOOD ZONE 
- 100 YEAR FLOOD ZONE 
- FLOODWAY IN ZONE AE 
- 50' UPLAND REVIEW AREA 



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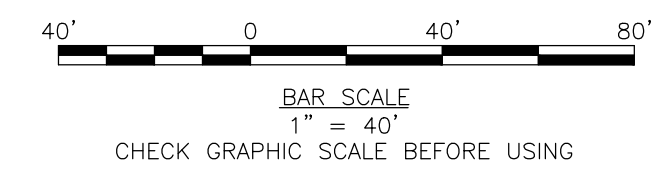
INVASIVE SPECIES COVER

5 & 21 TOELLES ROAD
WALLINGFORD CT

SOIL REMEDIATION PROJECT

| | |
|---------|----------------|
| JOB NO: | 0232596.00 |
| DATE: | NOVEMBER, 2020 |
| SCALE: | AS NOTED |
| SHEET: | 8 OF 12 |

FIGURE 1



NOT FOR CONSTRUCTION

WoodardCurran.net\shared\Projects\0232596.00_Planet 21 Toelles Rd Wallingford CT\wpDrawings\Civil\23259600-C-004.dwg, Nov 02, 2020, 7:34pm PFLLMORE