

December 22, 2020

Ms. Erin O'Hare, Environmental Planner
Town of Wallingford
45 South Main Street
Wallingford, CT 06492

**RE: 5 and 21 Toelles Road and Wharton Brook – Pfizer, Inc.
Wallingford, Connecticut
MMI #141.11585.00064.0020**

Dear Ms. O'Hare:

Per the request of the Inland Wetlands Commission in the Town of Wallingford, Connecticut, (the "Town"), Milone & MacBroom, Inc. (MMI) has reviewed new materials submitted in association with the wetland application for Pfizer, Inc. The proposed plan is to excavate and dispose of contaminated wetland soils to a maximum depth of 2 feet within 2.23 acres of wetlands, followed by a wetland restoration (backfill and planting) that will approximate existing conditions. As part of this effort, MMI reviewed the following materials:

- Copy of 2020-11-13 IWWC Comment-Response letter from the applicant to Environmental Planner dated December 4, 2020
- Plans entitled "21 Toelles Road Wallingford CT Soil Remediation Project," prepared by Woodard & Curran, dated August 27, 2020, and a revised version entitled "5 and 21 Toelles Road Wallingford CT Soil Remediation Project," dated November 2020 and updated December 2020, with the following attached drawings in each:
 - "Sheet 3, Soil Remediation Project," drawn at a scale of 1 inch = 1,000 feet
 - "Sheet 4, Existing Conditions Plan," drawn at a scale of 1 inch = 50 feet
 - "Sheet 5, Erosion and Sedimentation Controls," drawn at a scale of 1 inch = 40 feet
 - "Sheet 6, Site Preparation and Materials Management," drawn at a scale of 1 inch = 40 feet
 - "Sheet 7, Proposed Excavation Limits of Soil," drawn at a scale of 1 inch = 40 feet
 - "Sheet 8, Site Restoration Plan," drawn at a scale of 1 inch = 40 feet
 - "Sheet 9, Wetland Restoration Plan," drawn at a scale of 1 inch = 40 feet
 - "Sheet 10, Proposed Site Sequencing Plan," drawn at a scale of 1 inch = 40 feet
 - "Sheet C-0007, Cut/Fill and Sections," drawn at a scale of 1 inch = 50 feet, with nine cross sections drawn at a horizontal scale of 1 inch = 60 feet and vertical scale drawn at a scale of 1 inch = 12 feet
- "Reference Plan Depicting Site Features and Proposed Regulated Activities," drawn at a scale of 1 inch = 100 feet

- Inland Wetlands Commission – Wallingford, Connecticut Application for Inland Wetlands and Watercourses Permit, prepared for Pfizer, Inc., prepared by Woodard & Curran, dated June 25, 2020
- Inland Wetlands Commission – Wallingford, Connecticut Application for Inland Wetlands and Watercourses Permit Contingency Plan, prepared for Pfizer, Inc., prepared by Woodard & Curran, dated August 2020, and revised November 2020
- Copy of comment letter forwarded to the applicant from the Environmental Planner, dated August 6, 2020, and response letter from the applicant dated August 27, 2020
- Copy of comment letter forwarded to the applicant from the Environmental Planner, dated August 21, 2020, and response letter from the applicant dated August 27, 2020
- Copy of Connecticut Department of Energy & Environmental Protection (CTDEEP) email correspondence with Wetlands and Remediation Departments between August 14, 2020, and August 27, 2020
- Inland Wetlands Commission – Wallingford, Connecticut Application for Inland Wetlands and Watercourses Permit Soils Report, dated August 25, 2020, with one map sheet titled "Soil Boring Locations"
- Copy of Environmental Planner's Report, dated August 28, 2020
- Copy of 'Scope of Work' for Peer Review, MMI, dated September 15, 2020
- Copy of memorandum forwarded to Janis Small, Corporation Counsel, Law Department by Erin O'Hare, Environmental Planner, Re: Review of Environmental Protection Agency (EPA) document, dated September 29, 2020
- Copy of Environmental Planner's Report, dated October 2, 2020
- Photo Documentation – Floodplain Forest Remediation and Restoration in Southeastern Massachusetts, provided by Woodard & Curran, received by Wallingford IWWC on October 2, 2020
- Copy of comment letter forwarded to the applicant from the Environmental Planner, dated October 7, 2020, and response letter from the applicant dated November 3, 2020
- Copy of minutes from Wallingford Inland Wetlands and Watercourses Commission (IWWC) Regular Meeting of October 7, 2020
- Copy of memorandum forwarded to Janis Small, Corporation Counsel, Law Department by Erin O'Hare, Environmental Planner, Re: Documents for US Army Corps and EPA, dated October 9, 2020

- Inland Wetlands Commission – Wallingford, Connecticut Application for Inland Wetlands and Watercourses Permit Contingency Plan Revision 1, prepared for Pfizer, Inc., prepared by Woodard & Curran, dated November 2020
- Soils Report 5 and 21 Toelles Rd – Revised Soil Borings Locations Figure, dated November 3, 2020
- Copy of image of Wharton Brook Watershed – (site location indicated)
- Copy of Federal Emergency Management Agency (FEMA) 'Flood Hazard' mapping – (site location indicated)
- Copy of FEMA 'Flood Profile – Quinnipiac River' at Toelles Road crossing (1999)
- Inland Wetlands Commission – Wallingford, Connecticut Application for Inland Wetlands and Watercourses Permit Invasive Species Management Plan, prepared for Pfizer, Inc., prepared by Woodard & Curran, dated December 2020

This comment letter has been prepared following the submission by Woodard and Curran (the Applicant) of a comment response letter to the Town on December 4, 2020. Based on our review of the Applicant's response and revised plans and permit application support materials, MMI has the following outstanding and/or new comments regarding this permit application:

REVIEW COMMENTS

Wetland Restoration

Soils

- C1. The plans and/or project reports are lacking a baseline soil chemistry analysis, including pH, total organic carbon (TOC), and macronutrients (such as available nitrogen and phosphorous) within the project's wetland soils to be excavated. These soil characteristics are extremely important to plant growth and survival. The chemical composition of the topsoil brought on site should reflect ratios of TOC, available macronutrients, and pH that is consistent with the conditions exhibited within the existing soils, which currently support a healthy native floodplain forest. The applicant should provide the targeted soil chemistry requirements for imported topsoil and subsoil for this wetland restoration project. Comments have been raised by the Town regarding the textural class of the existing soils on site versus topsoil and subsoil imports as proposed by the Applicant. We recommend that the soil texture for both topsoil and subsoil meet a fine sandy loam to loamy sand textural class. While soil texture is important, there are other parameters that are equal or more important for developing a successful restoration project, including maintaining/preserving the existing seasonal hydrologic regime and providing appropriate soils with the necessary chemistry for healthy plant growth. To that end, the proposed grading plan appears to restore the grades (i.e., elevations) to conditions that equal existing site elevations. This grading should promote the preservation of the site's existing hydrologic regime. More information is required to comment on the chemical requirements of the imported topsoil and subsoils for this project.

We understand that based on the Applicant's date of supplemental soil sampling on November 24, 2020, it is likely that they are still awaiting the results of TOC and macronutrient analyses from the laboratory. However, without reviewing these results, MMI is unable to offer recommendations regarding the macronutrients requirements for imported soils for this project. We recommend that the results of the new soil analyses be submitted to the Town for review. In addition, the laboratory results from future soil imports shall be submitted to the Town prior to placement of soils within the wetland remediation area to confirm compliance with targeted soil chemistry goals.

We acknowledge that the Applicant plans to perform a preconstruction baseline survey to include a more complete representation of existing site microtopography including the three known stream features. This sheet has not yet been provided, so we are unable to comment on completeness/accuracy of this survey and updates to existing conditions.

- C2. The applicant has provided representative photos of previous forested wetland remediation projects that preserved trees similar to the proposed restoration efforts for this project. We are encouraged by the photos that depict intact trees and dripline root system preservation during remediation practices. This approach will likely provide a level of success for preserving the larger trees within the remediation area.

Comment addressed.

Non-native Invasive Plant Species Management

- C3. The non-native plant species management plan does not provide sufficient detail to assess the potential success or effectiveness of the restoration management goals and/or plan. The plan identifies existing and potentially occurring non-native species within the wetland restoration site but does not attempt to quantify in square feet the area of the project or wetlands currently occupied by these invaders. The non-native species management plan states a goal of "less than 20% (relative to native species)" cover of non-native species after the 10-year monitoring period, but it is unclear how that percentage compares to the current percentage of invasive species on site relative to native vegetation. A map depicting the areas of invasive species and quantification of the species coverage should be provided for review.

After our site inspection and review of the map showing areas of high-density cover of common reed and Japanese knotweed in the newly prepared Invasive Species Management Plan, MMI maintains the recommendation that the Applicant develop a plan that can ensure invasive species cover be limited to no more than 5 percent relative cover during the duration of the 10-year monitoring period. We understand that after the 10-year monitoring period expires that populations of invasive species will likely recolonize the area; however, it is our professional opinion that with persistent targeted management efforts and proper use of mechanical and chemical treatments a lower amount than 20 percent relative cover can be achieved at this site during the monitoring period.

- C4. The non-native species management plan does not sufficiently describe the methods that will be implemented to remove invasive species on site. Specifically, a preconstruction invasive species management plan should be developed prior to finalization of the complete site plan. The preconstruction invasive species treatment plan should address the major areas of invasive species on site to be managed as well as species-specific approaches to be taken during project implementation. For instance, common reed (*Phragmites australis*) spreads through underground rhizomes that may grow beyond the soil excavation depth. Does the applicant plan to remove rhizomes that occur below this depth in both the 6-inch- and 2-foot-deep excavation zones? Will invasive species management extend into the adjacent wetlands and uplands that border the restoration area? The spread of invasive species from adjacent areas may be problematic once the site is disturbed. Japanese knotweed and common reed are found in immediately abutting areas. Failure to properly address non-native invasive plant species prior to and during construction can greatly impact the success of the restoration project. The applicant should provide a more refined invasive species management plan tailored to this specific site.

In addition to the other steps outlined in the Invasive Species Management Plan, MMI recommends the Applicant establish a buffer zone around the limits of excavation in which invasive species will be managed using nonmechanical control methods only. This herbicide-only zone outside of the focal restoration area will be a lower-impact means of reducing the propagule source of invasive species from outside the remediation area. In addition to mechanical invasive plant management within the excavation area, keeping this buffer zone clear of invasives will slow their ability to recolonize the wetland remediation area and provide an advantage to newly planted native species until they are established.

Prior to construction, a map should be provided to the Town showing the proposed monitoring sites, which should be distributed across the wetland remediation area, including in those areas currently invaded by non-native plant species. A vegetation survey should be completed within each of the nine plots prior to construction and should serve as a baseline of comparison during the 10 years of postremediation monitoring.

Planting plan

- C5. The planting plan includes a diverse palette of the native species occurring on site. While many of the shade-tolerant species currently growing on site are represented in this plan, one consideration is whether there will be sufficient numbers of shade-intolerant species planted to survive the first few years postexcavation when significant open canopy will leave many of the new plants exposed. Currently, the site features open patches atop subtle hummocks and other rises where there are only a few large trees. These spots may offer further insight into suitable plants to include in an amended planting list. The applicant is to review the planting plan and provide additional shade-intolerant species for areas that will suffer canopy loss.

Comment addressed.

- C6. The applicant should provide tree protection details for those 15-inch DBH trees that will remain within the wetland remediation area. Damage to tree trunks and roots must be minimized to the maximum extent practicable.

Comment addressed, and Tree Protection Notes have been reviewed. We recommend adding this final measure to Note 2:

"Weekly site inspections during the course of excavation shall be performed to ensure damage to remaining trees is minimal and has been satisfactorily addressed in a timely manner by the contractor."

- C7. The project will preserve an undisturbed swath of riparian vegetation along Wharton Brook, which will help protect the brook during construction and serve as a buffer. It is not clear how the double row of silt fence will impact trees along this riparian zone. Did the applicant survey trees along the proposed silt fence line? If trees are present regardless of DBH they should be preserved and silt fence install modified to protect the tree and its root system.

Comment addressed.

Monitoring

- C8. The monitoring plots proposed (15-foot radius plots established at a density of approximately two plots per acre) are too small to adequately monitor a closed-canopy, topographically heterogeneous community as the one proposed to be restored. We would recommend increasing the number of monitoring plots to four plots per acre.

Comment addressed.

Plan Drawings

Site topography

- C9. The plan drawings do not cite the origins of the topographic contours presented on the plan drawings; however, it seems possible that they were derived from remote LiDAR or aerial data rather than ground survey. The applicant should perform a more detailed ground survey prior to finalization of the site plan in order to verify existing elevational gradients and capture the existing microtopography on site (including upland islands, rills, unnamed intermittent watercourse) that were observed during our site visit. This baseline information is important to assess the successful return of site conditions to their previous state. All data sources used in the mapping should be cited on the existing conditions plan.

Comment addressed, see response to C1 above.

Hydrology

- C10. During the site visit, we reviewed conditions of an off-site brook crossing just west of the project boundary. This crossing consists of twin 60-inch CIPs conveying Wharton Brook west, away from the project site. It was noted that both pipes are significantly obstructed; the river left (facing downstream) culvert had several small dead trees laying in front of the opening while river right culvert was 80 percent clogged with organic debris. The applicant should contact the downstream property owner to coordinate the clearance of these obstructions prior to the commencement of restoration activities in order to reduce potential for backwater flooding of the active construction site upstream.

Comment addressed.

Erosion and Sediment Control Plan

- C11. From our observations during the site walk, it was noted that the proposed cofferdam site was not exceptionally wide and currently hosts riparian trees and vegetation that would in all likelihood need to be removed in order to accommodate the width of even a modestly sized cofferdam as shown in the applicant's project support materials. In our extensive experience with working within and along watercourses, the best means of controlling water is through less invasive cofferdam alternatives than presented to date. We recommend that the applicant review alternatives such as supersac sandbags or some other similarly maneuverable water control that would preserve more of the bank and riparian buffer. The reestablishment of vegetation of this stature along the channel will take a significant amount of time, especially if the removal of existing trees increases the risk of bank or floodplain erosion.

Comment addressed. In a prior comment response to the Town on November 3, 2020, the Applicant stated that "sandbags typically require a larger footprint to achieve the same flood protection height as other devices. The larger footprint could result in greater impact on the area." If this statement holds true in the case of the present work, we would expect the Applicant to demonstrate that they are choosing the flow control option available with the least ecological damage to the watercourse.

National Flood Insurance Program (NFIP) Compliance

C12. The plans appear to propose grading (cut and fill) within a FEMA-regulated floodway. While proposed contours are depicted, no volumetric analysis is provided to ensure that there will be no net fill in the floodway. While the project narrative states the intention to match existing grades, the project plans (from which the project will be constructed) contain no such information. We recommend that a minimum of four cross sections are added to the plan set to depict the intended cut and fills in various locations throughout the floodplain/floodway and that cut/fill volumes be provided.

Comment addressed. We recommend that following completion of the project an as-built survey comparing existing topography versus postconstruction topography and supporting computations be performed and submitted to the Town to demonstrate compliance with the requirement of no net fill within the floodway. This survey work shall be completed and stamped by a Licensed Surveyor and computations reviewed and stamped by a Professional Engineer.

C13. Any application that proposes grading within any FEMA regulatory floodway of any watercourse must be accompanied by a computational analysis, performed in accordance with standard engineering practice and procedures, and sufficient to certify that there will be 0.00 feet of change to the floodway water surface elevation. This analysis must be accompanied by a signed and sealed no-rise certification from a professional engineer licensed in the State of Connecticut. Please refer to the Town of Wallingford Zoning Regulations, Section 6.5.C-5 for more information.

Comment addressed.

Additional Comments Based on Revised Plans

C14. We recommend the Town require the following four performance bonds be requested of the Applicant and held by the Town as special conditions of approval to be returned to Applicant upon satisfactory compliance with proposed project guidelines:

1. Sedimentation and erosion control bond¹ (\$33,000)
2. Wetland plantings bond² (\$75,000)
3. Invasive species management bond (\$40,000)
4. Postrestoration monitoring/reporting bond³ (\$30,000)

¹ Value estimated based on Connecticut standards for comparably sized projects (approximately \$15,000 per acre)

² Value calculated based on 75% rate of standard plant material and labor costs for the proposed planting plan

³ Value estimated based on MMI experience with postrestoration monitoring for comparable sites (approximately \$6,000 per monitoring year)

- C15. Herbivory is a highly influential factor in the failure of many local restoration projects. The applicant identifies within the Wetlands Restoration Approach – Contingency Plans that significant damage from wildlife will be mitigated by installing protective barriers (cages) around plantings. It is not clear whether the cages will be installed immediately following planting or will be installed following signs of herbivory damage. During our site investigations, white-tailed deer were observed passing through the wetland remediation area. MMI would recommend that cages be installed immediately following installation of the plantings. A note and detail indicating this recommendation should be added to Sheet 9 "Wetland Restoration Plan."

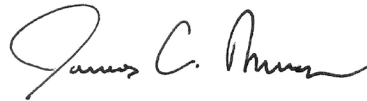
If you have any questions regarding the above, please feel free to contact either of the undersigned at (203) 271-1773.

Very truly yours,

MILONE & MACBROOM, INC.



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