Restoration Program

Marc E. Jacobs, *CSS, CWS, PWS, CPESC*
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VIA EMAIL to a.chicoree@gmail.com

January 29, 2024

Mr. Amrishi 'Ash' Chicooree
90 F.W. Hartford Drive
Portsmouth, N.H. 03801

Re: Assessor's Map 269, Lot 45
90 F.W. Hartford Drive
Portsmouth, N.H.

Subject: Wetland Buffer Restoration Program

Dear Mr. Chicooree,

The following specifications are offered as a wetland buffer restoration program and are intended to address stipulation 1.d. as well as other stipulations in the letter from the Portsmouth Conservation Commission (PCC) dated December 21, 2023, which was issued after a public meeting and their earlier site visit in August 2023 to document the removal of trees within the buffer zone at the above-referenced location without their prior review and authorization. Refer to Figure 1 for a depiction of the area.

This program addresses area T2, but does not address the common area, previously referred to in my November 22, 2023 delineation report as area T1. Area T1 straddles the property line with your neighbor at 80 F.W. Hartford Drive. Area T1 lies within the 100-foot wetland buffer and the trees in this area were also cut but it is my understanding that you and the neighbor intend to coordinate regarding the future of this area. Until that coordination happens we cannot properly address area T1 in this wetland buffer restoration program.

The quantity of trees to be planted to restore a wetland and/or its buffer would customarily be determined using the size - in square feet (SF) - of the area that was cut or graded, and the desired density (for example, 15-feet on center) of specimens, especially where the area has been grubbed and the stumps have been removed. However, there has been no survey of the T2 area by a land surveyor and no scaled drawing exists which accurately depicts the size of Area T2 in SF. Furthermore, the area has not been graded, the stumps from the trees that were cut remain and, regarding stipulation 1.e. in the PCC letter, are not proposed to be removed, therefore we have used the tally of stumps provided in Table 1 from our November 22, 2023 letter as the basis for the quantity and species of trees proposed for planting in the 0-25' portion of the T2 buffer zone area per stipulations 1.a. and 1.c. in the PCC letter. Refer to Table 1 below.

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PO Box 417
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Phone **(603) 686-5097**
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TABLE 1

TREE SPECIES	0-25 FT BUFFER	25-50 FT BUFFER
	Diameter (inches)	**Diameter (inches)**
Red maple *(Acer rubrum)*	7, 9, 9, 9, 10, 13, 19	14*, 14
White pine *(Pinus strobus)*	5*, 6*, 8*, 18, 21, 21, 23, 24	8
Eastern hemlock *(Tsuga Canadensis)*	6, 7, 7, 9, 9, 11, 16	7, 7, 14
Black birch *(Betula lenta)*	9	NA
Red oak *(Quercus rubra)*	22	18, 22
TOTAL Number of Trees (live)	**21 Total**	**7 Total**

*These stumps represent dead trees or trees that were removed long before the trees that were recently removed.

Plant Specifications

The specified plantings identified below were chosen as a result of the tally of stumps or because the species is generally represented elsewhere on site. Any substitutions of plant materials due to lack of commercial availability or delays in installation due to seasonal conditions (such as drought, frost or snow) shall be preapproved in writing by the wetland scientist and the City of Portsmouth. If the specimens are installed between October 1 and December 1 in any year, they will be mulched with an apron of wood chips, bark mulch or similar. (Installation after December 1 or before April 1 in any year is not recommended.) Any apron will be 3 inches in depth, will not bury the stem but will extend outward at least 1 foot from the stem in all directions. (The apron is recommended after planting in any season.) All woody shrub species shall be non-ornamental varieties. No stumps are proposed to be removed. With the exception of one red maple which is proposed for actual wetlands, proposed shrubs will be planted randomly but uniformly between existing stumps within the T2 area and specifically within the 0-25' buffer per stipulation 1.c in the PCC letter. Refer to Table 2 below.

Note that while we refer to trees throughout this program, all trees will be planted as shrubs and the expectation is that they will mature into trees with the passage of time. (The technical definition of trees comprises specimens that are 5 inches or more in diameter at breast height [dbh], which is measured 4.5 feet from the ground surface. Acquisition and installation of specimens of that size is not practicable).

We have not proposed any eastern hemlock (*Tsuga Canadensis*) specimens although hemlock stumps were commonly observed within Area T2. Hemlock is susceptible to hemlock woolly adelgid, a non-native invasive insect pest, which is proliferating rapidly in our region.

TABLE 2

STRATUM	SPECIES / MIX Common (*scientific*) name	SIZE / RATE	QUANTITY / LOCATION
Tree	Red Maple (*Acer rubrum*)	4-5' minimum	7 specimens randomly but uniformly placed within the 0-25' buffer in Area T2 uplands. *One specimen shall be located within the wetland.*
	White pine (*Pinus strobus*)	2-3' minimum	7 specimens randomly but uniformly placed within the 0-25' buffer in Area T2 uplands.
Shrub	High Bush Blueberry (*Vaccinium corymbosum*)	36"- 48" minimum height	7 specimens randomly but uniformly placed within the 0-25' buffer in T2 uplands.
			Total of 21 shrubs

In the absence of a bonafide land survey, it is impractical to show the exact locations of individual specimens proposed for planting per stipulation 1.b in the PCC letter. Similarly, we were unable to show the locations of individual stumps in our delineation report for analogous reasons; due to the scale of GIS mapping resources. We have however prepared a sketch which shows the approximate location of plantings proposed for installation within the 0-25' buffer. Refer to Figure 2. We are also proposing that staff from our office we will be on site to lay out the plants and guide the installation of proposed plantings.

Long-term Monitoring and Status Reports

Within 30 days of completion of the plant installation work, an initial status report, including photographs), will be prepared and submitted to the City of Portsmouth. Status reports will provide information regarding the following parameters (minimally):

- An inventory and the general status (health) of shrubs,
- observations regarding the uniformity of live vegetation throughout the 0-25' buffer of Area T2,
- any plant substitutions (initial report only),
- observations of any commonly accepted invasive vegetation species (with an emphasis on new infestations [area or species] or expansions of existing infestations), and
- recommended remedial measures or corrective actions, if any.

As necessary to confirm the successful re-establishment of restored buffer zone, additional inspections and status reports will be prepared and submitted to the City of Portsmouth by June 30th for two (2) additional growing seasons following installation of restoration plantings. In addition to those items listed above, subsequent reports will document the following ecological performance standard: a minimum of 75 percent survival/establishment of the woody tree / shrub plantings installed within restored wetland buffer. Woody stems must be uniformly distributed.

The percentage of trees and shrubs deemed to have survived will be based upon an actual woody stem count and will be compared to the total quantity of woody stems originally planted. Shrubs will be considered living (and therefore counted in the tally) if they exhibit at least 25 percent foliage during the normal growing season. The woody stem count may also include suitable woody specimens that have colonized the restored wetland buffer areas from surrounding natural areas and which were not represented in the original plant list specified in Table 1 above. Suitable woody specimens include those which are not considered invasive or exotic according to commonly accepted sources.

Where inspections and status reports demonstrate that the ecological performance standard stated above has not been achieved at the end of two (2) full growing seasons, or as soon as it may be apparent that site conditions may not result in a successful restoration of wetland buffer, the status report will identify any recommended corrective action(s), such as replanting or invasive species management, that may be necessary to bring the restored wetland buffer area into compliance with this program. The City of Portsmouth will be consulted prior to initiating any remedial actions. (After 2 years and any remedial plantings, the restored buffer area will be allowed to grow naturally (without alteration) in perpetuity. Any future proposed management activities will be pre-approved through prior consultation with the PCC or submittal of a Conditional Use Permit application.)

While it is anticipated that the wetland scientist of record or another suitably qualified individual will be conducting future inspections and preparing status reports, the property owner will ultimately be the party responsible for providing status reports as well as implementing any remedial measures or corrective actions which may be needed to bring the restored wetland buffer area into compliance with this program.

Other

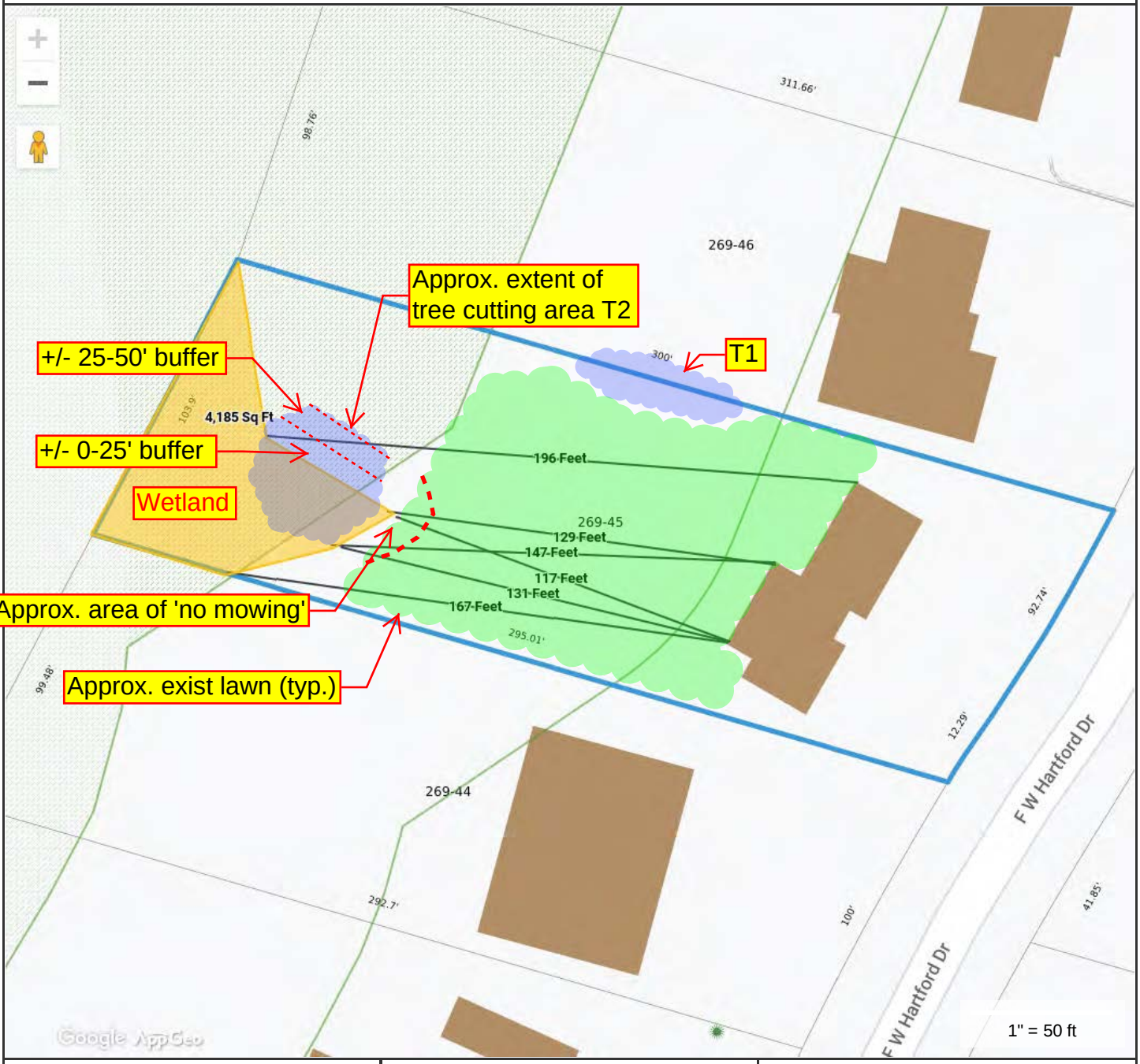
Regarding stipulation 1.f. in the December 21, 2023 PCC letter, the portion of the 25-foot buffer that is currently being mowed, I understand it is your intention to cease mowing this area in perpetuity. No shrub plantings are proposed here. We have identified the approximate area on the attached buffer restoration sketch. This area will need to be measured with a fiberglass tape and staked-out in the field. It is our recommendation that you propose a permanent means of marking the limits of this area in the field. A line of boulders may be the easiest method and would not require any short or long-term maintenance.

Please contact the undersigned with any questions.

Cordially,

Marc Jacobs, CWS, CSS, CPESC

F W Hartford Drive



Property Information

Property ID	0269-0045-0000
Location	90 FW HARTFORD DR
Owner	CHICOOREE AMRISHI A

Buffer Restoration Sketch
Marc Jacobs, CWS
January 29, 2024
Features w/o exact dimensions (from GIS) are not-to-scale and will be measured in the field during implementation of this program.

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

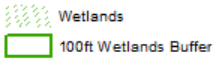
City of Portsmouth, NH makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 08/24/2023
Data updated 3/9/2022

Print map scale is approximate. Critical layout or measurement activities should not be done using this resource.

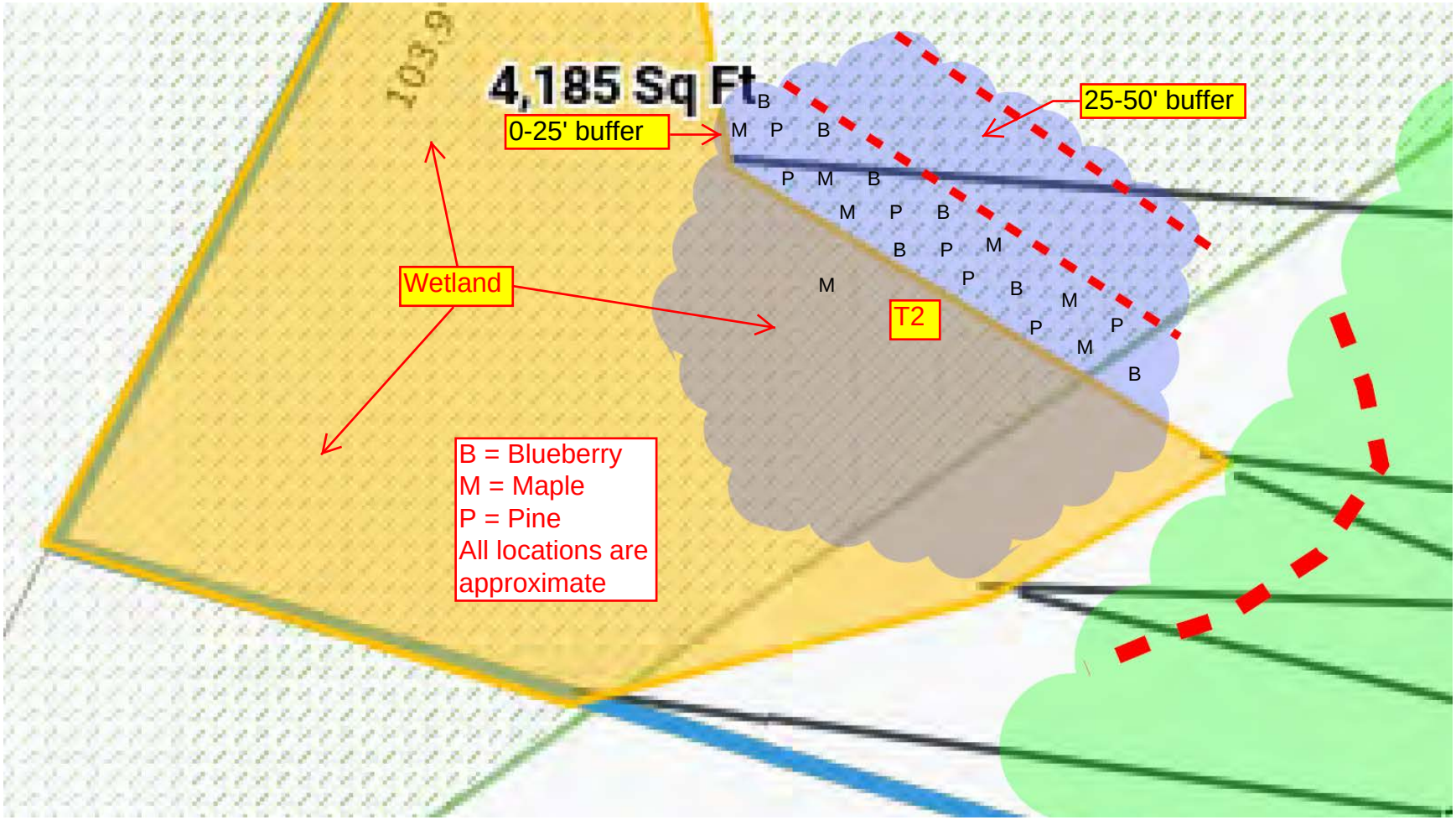
Map Theme Legends

Wetlands



City of Portsmouth

FIGURE 2



PLANTING DETAIL
90 F.W. Hartford Dr.
Portsmouth, NH
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