



The State of New Hampshire  
**DEPARTMENT OF ENVIRONMENTAL SERVICES**



Robert R. Scott, Commissioner

EMAIL ONLY

April 21, 2022

Robert Graham  
Banfield Realty, LLC  
304 Maplewood Avenue  
Portsmouth, NH 03801

Subject: Portsmouth – Former Country Motor Sales, 375 Banfield Road  
DES Site #199408047, Project #40176

*Supplemental Site Investigation Report*, prepared by Wilcox & Barton, Inc. (Wilcox & Barton), dated November 22, 2021

Dear Robert Graham:

The New Hampshire Department of Environmental Services (NHDES) has reviewed the subject Supplemental Site Investigation (SSI) Report submitted on your behalf by Wilcox & Barton for the above-referenced site (Site). The SSI was completed to further investigate the nature and extent of various contaminants in soil, groundwater, surface water, and sediment at the Site. The investigation activities were conducted in general accordance with the plans for investigation outlined in the *Response to NHDES Comments* document submitted by Wilcox & Barton on September 8, 2021 and subsequent email correspondences, and to satisfy, in part, requests made by NHDES in a letter dated August 9, 2021. Based on review of the SSI Report and historical submittals, NHDES offers the following comments:

#### **Upland Soil Contamination**

NHDES understands the northeastern, upland portion of the Site is planned for redevelopment as a commercial warehouse. Based on the results of previous investigations, soil in this area of the Site is contaminated with lead and polychlorinated biphenyls (PCBs) at concentrations exceeding applicable Soil Remediation Standards (SRS). The lead and PCBs appear to be from releases associated with former Site activities, including automobile storage, crushing and salvage operations. As part of the SSI activities completed during September and October 2021, Wilcox & Barton collected shallow soil samples generally on a grid layout. Samples collected for analysis of lead were taken from 0-2 feet and 2-4 feet below ground surface (bgs). Samples collected for analysis of PCBs were taken from 3-6 inches, 6-18 inches, and 18-36 inches bgs. The results of the sampling and analysis have improved the understanding of the nature and extent of lead and PCB soil contamination. For the upland area, soils contaminated with lead and PCBs at concentrations exceeding applicable SRS appear to be mostly in the location of a former car crusher and an area to the southeast of the former car crusher. The vertical extent of lead and PCB soil contamination has not yet been fully delineated, and NHDES understands from communications with Wilcox & Barton that additional soil sampling to depths as great as 15 feet bgs will be completed to inform management of contaminated soil and construction activities during Site redevelopment.

Based on previous communications, including a conference call held April 11, 2022, NHDES understands that Wilcox & Barton intends to submit prior to initiation of Site redevelopment activities a soil management plan (SMP) and a Remedial Action Plan (RAP) for soil contaminated with lead and PCBs in

[www.des.nh.gov](http://www.des.nh.gov)

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the upland portion of the Site. The SMP shall describe the management of soil during Site redevelopment activities, to include excavations, any temporary onsite storage, reuse, and any offsite disposal of soil conducted in accordance with NH Code of Administrative Rules Chapter Env-Or 600 (*Contaminated Site Management*), Part Env-Or 611. Wilcox & Barton has indicated the RAP will include a remedy consisting of managing the contaminated soil under placement of suitable capping materials and recordation of an Activity and Use Restriction (AUR). NHDES generally concurs with this approach and notes the following: 1) Wilcox & Barton will continue to communicate with the US EPA Region 1 PCB coordinator regarding the soil analytical data for PCBs, the results of the *Human Health Risk Assessment – PCBs* that is attached to the SSI Report, and management of PCB-containing soils; 2) Soils containing PCBs at concentrations greater than 10 milligrams per kilogram (mg/kg) may warrant excavation and offsite disposal; and 3) The application for AUR shall include a requirement to prepare a separate SMP for management of any soil that may be disturbed during future Site activities.

Please submit the RAP for the upland portion of the Site, with the SMP and application for AUR included, within 120 days of receipt of this letter. Please also indicate in the RAP that, as discussed in the following sections of this letter, Site groundwater contaminated with per- and polyfluoroalkyl substances (PFAS) and metals will be managed under a Groundwater Management Permit (GMP), the application for which shall be submitted following completion of additional monitoring activities and no later than December 31, 2022.

#### **Upland Groundwater Contamination**

The results of sampling Site monitoring wells since June 2020 for analysis of PFAS shows that these contaminants are present in groundwater beneath the upland portion of the Site. Concentrations of perfluorooctane sulfonic acid (PFOS), perfluorohexane sulfonic acid (PFHxS), and perfluorooctanoic acid (PFOA) have been detected in samples collected from various wells at concentrations exceeding applicable Ambient Groundwater Quality Standards (AGQS). To date, the highest concentrations of PFAS have been detected in samples collected from wells MW-1, MW-7, MW-106R, MW-109, and MW-203. The source of PFAS in upland Site groundwater has not been specifically documented. NHDES suspects that former Site operations, such as automobile maintenance, salvage, and crushing as well as wastewater disposal to a septic system and leachfields may have resulted in releases of PFAS to soil and groundwater. Notably, samples collected from wells MW-101, MW-102, MW-103, MW-104, and MW-105 located hydraulically downgradient of the upland area have contained relatively low concentrations of PFAS, including PFOS, PFHxS and PFOA at concentrations less than applicable AGQS. However, only one or two rounds of sampling have been completed at these downgradient wells.

Additional sampling of groundwater for analysis of PFAS is warranted due to the continued presence of PFOS, PFHxS, and PFOA at concentrations exceeding applicable AGQS. As such, NHDES requests that two additional rounds of groundwater sampling for analysis of PFAS be completed during the year 2022, preferably during the spring and fall. Please include the following monitoring wells in the sampling program: MW-1, MW-4, MW-6, MW-7, MW-8, MW-102, MW-104, MW-105, MW-106R, MW-109, MW-203, and MW-11. Sampling of wells MW-102, MW-104, and MW-105 shall provide data to evaluate the downgradient extent of PFAS in Site groundwater. Sampling of well MW-11 shall provide data regarding upgradient, ambient groundwater quality. Sampling of the other wells is requested due to previous exceedances of applicable AGQS. Please also collect static water level measurements at all Site wells for the preparation of groundwater elevation contour figures. The results of the spring and fall 2022

groundwater monitoring activities shall be submitted by December 31, 2022 as part of the Application for GMP prepared in accordance with Env-Or 607. For the site plans required as part of the Application for GMP, please include the location of all potential sources of contaminants, such as automobile maintenance, salvage and crushing, the septic system and leachfields, and the approximate extent of waste disposal at the Site.

Please continue to analyze samples for a broad list of PFAS in accordance with NHDES' current guidelines (see Laboratory Testing Guidelines for PFAS and Waste Sites: [Microsoft Word – pfoa-testing-labs\\_rev\\_mar\\_19\\_waste\\_sites\\_only \(state.nh.us\)](#)). Please also continue to upload PFAS analytical data to the NHDES Environmental Monitoring Database.

### **Lowland Soil Contamination and Solid Waste**

Based on the results of previous investigations and review of existing Site documents, NHDES understands the lowland portion of the Site is the location of historical solid waste disposal that was previously registered with NHDES as a landfill not operated after July 9, 1981 ("Pre-1981 Landfill"; see attached registration form and associated documentation). The landfill reportedly contains construction and demolition debris resulting from urban redevelopment activities in the City of Portsmouth. During visits to the Site, Wilcox & Barton and NHDES staff also observed automobile parts and other debris in the lowland area that are likely associated with former use of the Site as an automobile salvage facility.

As part of the SSI activities, Wilcox & Barton collected shallow soil samples generally on a grid layout in the lowland portion of the Site. Samples collected for analysis of lead were taken from 0-2 feet and 2-4 feet bgs. The majority of samples contained lead at concentrations exceeding the SRS, with some detections greater than 10,000 mg/kg. Samples collected for analysis of PCBs were taken from 3-6 inches and 6-18 inches bgs. Five samples (B-11, W-13, X-10, X-14, Y-9) collected from the 3-6 inch depth interval and two samples (B-11 and X-14) collected from the 6-18 inch depth interval contained PCBs (total of all Aroclors) at concentrations greater than the SRS. Additionally, previous investigations identified asbestos in bulk waste samples and suspect asbestos-containing material in the lowland area of the Site. It appears the lead, PCBs, and asbestos in the lowland portion of the Site are associated with the Pre-1981 Landfill and perhaps disposal of waste related to former automobile salvage operations.

NHDES has concluded that additional delineation of the waste in the Pre-1981 Landfill and any waste associated with the former automobile salvage operations at the Site is warranted. Please see the below section of this letter regarding submittal of a work plan for additional investigation activities.

### **Lowland Groundwater Contamination**

The results of sampling monitoring wells MW-101, MW-102, MW-103, and MW-104 since January 2021 for analysis of total and dissolved metals shows that lead and arsenic are present in groundwater beneath the lowland portion of the Site at concentrations exceeding applicable AGQS. These wells are located within and downgradient of the Pre-1981 Landfill and areas of waste disposal related to former automobile salvage operations. While the arsenic in groundwater may be due to naturally occurring conditions, NHDES concludes the lead at concentrations exceeding the AGQS is likely associated with the presence of high concentrations of lead in the lowland soil and solid waste.

Additional sampling of lowland groundwater for analysis of total and dissolved metals is warranted due to: 1) The continued presence of lead and arsenic in the groundwater at concentrations exceeding the AGQS; 2) The lowland soil and solid waste containing lead at concentrations exceeding the SRS currently remaining in place and representing a source of metals leaching to groundwater; and 3) The potential for groundwater discharging to the abutting wetland to be a contaminant migration pathway for metals from the lowland source area to wetland surface water and sediment. As such, NHDES requests that two additional rounds of groundwater sampling at wells MW-101, MW-102, MW-103, and MW-104 be completed during the year 2022, preferably during the spring and fall. Sampling of well MW-103 may provide data regarding groundwater conditions upgradient of the Pre-1981 Landfill. Please also continue to collect field-based water quality parameters (e.g., temperature, dissolved oxygen, pH, conductivity, oxidation-reduction potential, and turbidity) during the sampling of these wells. The results of the spring and fall 2022 lowland groundwater monitoring activities shall be submitted by December 31, 2022 as part of the Application for GMP discussed above.

#### **Wetland Surface Water and Sediment Contamination**

NHDES understands that a wetland abuts the lowland portion of the Site to the southeast, south, and southwest. A branch of Pickering Brook runs through the wetland, flowing downstream beyond the Site boundary through a culvert located under Banfield Road and to Great Bog. Field observations indicate the upstream portion of the brook may contain surface water only seasonally. As part of SSI activities, Wilcox & Barton collected six onsite surface water samples (SW-201, SW-203, SW-208, SW-210, SW-211, and SW-212) in the wetland and generally along the course of the brook for analysis of total and dissolved metals, polycyclic aromatic hydrocarbons (PAHs), chloride, nitrate, sulfate, hardness, total and suspended solids, and field-based water quality parameters. The sampling expanded upon previous surface water assessment activities completed at the Site, and the results indicate that contamination associated with the Pre-1981 Landfill and perhaps waste related to former automobile salvage operations is impacting wetland surface water quality. The concentrations of various metals, particularly lead, were found to exceed NHDES water quality criteria for protection of aquatic life in a freshwater environment and human health based on potential water and fish ingestion.

Wilcox & Barton also collected 20 sediment samples (SD-201 through SD-221, excluding location SD-216) for analysis of total metals and PAHs. The sampling expanded upon previous sediment assessment activities completed at the Site. The analytical results were compared to Consensus-Based Threshold Effect Concentrations (TECs) and Consensus-Based Probable Effect Concentrations (PECs)<sup>1</sup>, which are referenced in NHDES' *Evaluation of Sediment Quality Guidance Document* dated April 2005. The concentrations of multiple metals, particularly lead, and PAHs exceeded applicable TECs and PECs.

Sovereign Consulting, Inc., using existing Site information and the surface water and sediment data, prepared a *Focused Human Health and Ecological Risk Assessment for Wilcox & Barton*. The risk assessment is included as an attachment to the SSI Report. Sovereign Consulting concluded that: 1)

Contamination, primarily that of lead, mercury and arsenic, in the wetland portion of the Site poses an unacceptable risk to human health for recreational trespassers that do and do not catch and consume

<sup>1</sup> MacDonald, D. D., C. G. Ingersoll, and T. A. Berger. 2000. Development and evaluation of consensus-based sediment quality guidelines for freshwater ecosystems. *Arch. Environ. Contam. And Toxicol.* 39: 20-31.

fish, and for fish consumption without trespassing; 2) Contamination, primarily that of lead, in surface water poses a potential risk to pelagic aquatic organisms; and 3) Contamination, primarily that of lead, in sediment is likely toxic to benthic organisms residing in the wetlands.

Based on the results of the lowland and wetland portions of the SSI and associated risk assessment, NHDES requests submittal of a work plan for additional investigation activities that includes: 1) Delineation of the extent of the lowland Pre-1981 Landfill waste and any waste associated with former automobile salvage operations, with the results presented on a site plan figure; 2) Delineation of the extent of contamination in Pickering Brook surface water and sediment at concentrations exceeding applicable water quality standards and TECs and PECs upstream and downstream of previously collected samples, including beyond the culvert at Banfield Road; 3) Delineation of the extent of contamination in wetland sediment at concentrations exceeding applicable TECs and PECs to the southeast, south, and southwest of previously collected samples; and 4) In accordance with recommendations made by Sovereign Consulting, completion of a survey, or inventory, of fish and other biota present in the wetland and Pickering Brook. The survey will inform the collection of samples for analysis of tissue for select contaminants, if warranted. NHDES requests submittal of the work plan within 120 days of receipt of this letter. The results of the additional investigation activities shall inform the preparation of a RAP for the lowland portion of the Site, the wetland and Pickering Brook, as appropriate. NHDES expects that completion of additional investigation activities and submittal of the RAP will occur during the years 2022 and 2023. NHDES is amenable to discussions with Wilcox & Barton regarding the work plan during its preparation, including the selection of specific contaminants for laboratory analysis.

As indicated by the timeframe of requests made in this letter, NHDES is agreeable to the remediation and redevelopment of the northeastern, upland portion of the Site while investigation and remediation planning activities continue to proceed for the lowland portion of the Site, the wetland and Pickering Brook. NHDES' rationale includes the following: 1) Soil and groundwater contamination in the lowland portion of the Site, and surface water and sediment contamination in the wetland and Pickering Brook portions of the Site, appear to be primarily associated with the Pre-1981 Landfill and perhaps the dispersive disposal of automobile parts and related wastes, whereas soil contamination in the upland portion of the Site appears to be the result of former automobile crushing and salvage operations conducted at locations separate from the lowland and wetland; 2) A remedy for the upland portion of the Site that includes managing contaminated soil under placement of suitable capping materials and an AUR will help prevent transport of contaminated surface soil via stormwater runoff to the wetland, which may have been a minor source of contamination to the wetland and Pickering Brook historically and could continue to occur without the placement of capping materials; and 3) Based on review of Alteration of Terrain Application 210601-079 and subsequent issuance of Alteration of Terrain Permit AoT-2040, NHDES understands the stormwater management features to be constructed during Site redevelopment will result in a controlled, lower rate of stormwater discharge to the wetland compared to what occurs currently, and that disturbance and mobilization downstream of contaminated wetland sediment is unlikely to occur with the expected lower rates of stormwater discharge.

NHDES notes it is imperative that best management practices for stormwater are followed during construction activities conducted as part of Site redevelopment to prevent transport of disturbed and exposed contaminated soils to the wetland and Pickering Brook.

Robert Graham  
DES #199408047  
April 21, 2022  
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Should you have any questions regarding this letter, please contact me at NHDES' Waste Management Division.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Drew", with a long horizontal flourish extending to the right.

Scott Drew, P.G.  
Hazardous Waste Remediation Bureau  
Tel: (603) 271-2890  
Email: [Scott.T.Drew@des.nh.gov](mailto:Scott.T.Drew@des.nh.gov)

Attn: Registration Form for Landfills Not Operated After July 9, 1981

ec: William R. Wilcox, Wilcox & Barton, Inc.  
Robert W. Rooks, P.E., Wilcox & Barton, Inc.  
Portsmouth Health Officer  
Michael McCluskey, P.E., HWRB

**From:** [Kimberli Kienia](mailto:Kimberli.Kienia)  
**To:** [Kimberli Kienia](mailto:Kimberli.Kienia)  
**Subject:** FW: TAC Meeting February 1 at 200 pm  
**Date:** Thursday, January 27, 2022 11:53:00 AM

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**From:** Joseph Gross [<mailto:jhg1955@hotmail.com>]  
**Sent:** Thursday, January 27, 2022 11:08 AM  
**To:** Peter M. Stith <[pmstith@cityofportsmouth.com](mailto:pmstith@cityofportsmouth.com)>  
**Cc:** Westwind Homeowners Association <[WestwindHomeownersAssociation@groups.outlook.com](mailto:WestwindHomeownersAssociation@groups.outlook.com)>  
**Subject:** TAC Meeting February 1 at 200 pm

Mr. Stith:

My name is Joseph Gross and I am the President of the homeowner's association comprised of the seven residences located at 1177 Sagamore Avenue. As such we are abutters to the proposed development located at 1169/1171 Sagamore Avenue, just north of us and just south of the residences at 1163 Sagamore Avenue. I have been in contact with Bill Bowen who gave me your name and contact information. I plan on attending the February 1<sup>st</sup> meeting and would like a chance to address the board if that is appropriate.

Our concern with the proposed development primarily centers around potential increased water runoff. We are worried that increased runoff from the new homes will negatively impact the residences that directly adjoin the new development. We are also concerned that increased runoff from 1169/1171 will cover Sagamore Avenue creating a serious hazard in winter during freezing temperatures. The area in question is unlighted and the road curves increasing the risk of an icy roadway at that point.

I am not an engineer and quite frankly find the three engineering studies confusing, certainly not written in plain English for consumption by the casual reader. As I understand it, Mr. Bowen's association hired Ambit Engineering, the developer hired Jones & Beach and the City hired Altus. I do have a lifetime of experience with hired experts. I know that one does not enjoy a long lucrative career by giving clients advice they don't want to hear. So, disregarding Ambit and Jones & Beach, would it be possible for our water concerns be put to Altus either before or at the meeting? If their opinion is that we have nothing to worry about then I would submit my concerns are moot.

We also have more general concerns about the loss of tree cover negatively impacting our view (and thereby the value) from our homes and what sort of landscaping/fencing will be used to delineate the property line between our properties and 1169/1171.

Thank you for your prompt attention to this matter,

Joseph Gross

**From:** [Kimberli Kienia](mailto:Kimberli.Kienia)  
**To:** [Kimberli Kienia](mailto:Kimberli.Kienia)  
**Subject:** FW: 1169/1171 proposed development  
**Date:** Wednesday, March 30, 2022 1:43:36 PM

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**From:** Joseph Gross [<mailto:jhg1955@hotmail.com>]  
**Sent:** Wednesday, March 30, 2022 1:29 PM  
**To:** Peter M. Stith <[pmstith@cityofportsmouth.com](mailto:pmstith@cityofportsmouth.com)>  
**Cc:** Westwind Homeowners Association <[WestwindHomeownersAssociation@groups.outlook.com](mailto:WestwindHomeownersAssociation@groups.outlook.com)>; BILL BOWEN <[bbowen7@comcast.net](mailto:bbowen7@comcast.net)>; Rocco Simone <[rockoins@comcast.net](mailto:rockoins@comcast.net)>; Mike Garrepy <[mgarrepy@gmail.com](mailto:mgarrepy@gmail.com)>  
**Subject:** 1169/1171 proposed development

Mr. Stith:

My name is Joseph Gross and I am once again writing to you in my capacity as President of the Westwind Townhomes Association which is a direct abutter to the above proposed development. I would like this letter to be considered public comment and be disseminated to all TAC members.

As I pointed out in my previous letter to you and in my testimony at the TAC meeting on February 1, 2022, our main concern is excess water flowing both onto our properties and onto Sagamore Avenue from the proposed development. On Tuesday, February 22<sup>nd</sup> I met with developer Mike Garrepy and architect Mick Khavari. They agreed with me that water flowing from their development onto our properties or onto Sagamore Avenue must be avoided. We all agreed that Altus Engineering expert opinion on these two questions would be the opinion that settles these two issues.

I understand I do not have standing to contact Altus myself directly. I ask that someone who does have such standing ask Altus for their opinion on these two questions to be given in plain English (preferably "yes" or "no") rather than engineer speak. Failing that, I would ask that a representative from Altus be available at a public meeting where he/she may be questioned on these two points.

As I testified at the February TAC meeting, there are also concerns about the complexity of the drainage system proposed for this new development. A complex system requiring considerable ongoing maintenance seems ripe for failure. What will happen worst case if the system fails? What recourse other than bringing civil suit will be available to the victims of such a failure? Myself, Mr. Garrepy and Mr. Khavari also discussed this at our meeting and in the end agreed that at this time we would disagree on this issue.

Thank you,

Joseph Gross

**RE: 0 Borthwick Ave**  
**Meeting: TAC 04-05-22**

Dear Members of the Technical Advisory Committee,

March 30, 2022

**Least impactful:**

This project seems out of place, since Portsmouth Regional Hospital((PRH) **was allowed to build on a large wetland** and is claiming now the parking is 32% lower than required. *A second or even third layer could be added to the vast expanse of parking which already exists.* The layering would be in line with the Master Plan. As a major cooperation, sitting in the middle of a wetland, one would think coming up with a better parking solution with the least impact and most convenience for staff, patients and guests would be at the top of the list.

**The numbers:**

Numbers are always interesting. The most interesting is the lot is stated as being 9.09 acres, 395,745 sf. However, all the drainage reports show 351,712 sf. What happened to the other 44,033 sf of land?

It can be appreciated that the proposal seems to respect the 100' wetland buffer on the rear of the property by *not building on it*. However, the amount of unnatural run-off will likely have a negative impact on this highly functional wetland. Section 2 (2-1 drainage analysis) shows existing curve numbers(CN) of 65 and 68 (range 30 to 100) as well as established trees and thick underbrush all parts of a balanced wetland system. **How many other new developments in that area have added or are planning on adding their run off to these valuable wetlands?**

**Rate vs function:**

Farmers best understand soils and how they work regarding water better than most. They don't look at the curve number but at the Cation Exchange Capacity (CEC). This tells them how long it will take water to run through their soil, whether it holds water and how often to water. Low CEC soil such as sandy ones need to be watered fast, twice a day, an hour at a time or less. **Soils with clay or organic content have a higher CEC and move less than an inch of water an hour.** Such land would be watered slowly, for 6 hours or more at a time, every 3 of 4 days. [https://www.canr.msu.edu/news/what\\_is\\_your\\_soil\\_cation\\_exchange\\_capacity](https://www.canr.msu.edu/news/what_is_your_soil_cation_exchange_capacity)

Looking at the "Site Specific Soil Plan" (colored graphic at end) the majority of the soil on this property is clay and marine silt (tans) It shows silt loam(green) in the middle of the proposed parking lot. The land is relatively flat with most slopes in the 0-8% range and the majority under 15%. Section 3 (3.1 drainage analysis) states the detention system will drain down at longer than 24 hours. However, looking at the majority of soil on this land (clay, marine silt) under existing conditions, drainage based on CECs could take a long time to clear a single rainfall event. **The capacity of the underground retention systems is the concern.** It does not seem to decrease existing drainage but seems to increase drainage into the wetlands at a far greater rate than currently exist. The "post" curve number average is 79.4 (range 30-100), some of post CN are in the 90s comparing the 2 year pre and post conditions (included at end). Flows greater than the 2 year storm events will bypass the treatment units. Based on normal New England weather it seems a lot of the water will go untreated into the wetland at a much higher rate than existing which was filtered through trees, brushes, grasses and slowly absorbed by clay and marine silt. *Does this meet MS4 regulations?*

Section 4 (4-3 drainage analysis) states "the post-development flows have been minimized to the greatest **extent practical**." Walking through the current PRH parking lot on any rainy day one can experience practical vs what is really necessary by wading through LARGE puddles to get to the building. The placement of sidewalks as well as raised planting islands just add to the water issues. The systems should reflect what is "really" necessary and not be allowed to pour untreated water directly into wetlands after typical NE high rain events. It seems expected 2 yr events will overflow unfiltered right off the bat.

**Safety and alternatives:**

This proposed parking lot is over 1000' to the hospital. **For a fast walker it would take about 4 minutes under good walking conditions.** The likelihood of anyone walking that distance on a cold, windy, rainy or snowy day is not very high. Patients and staff alike from Jackson Gray drive to the hospital even those who walk on their lunch break. The PRH parking lot is not very safe due to the inconvenient sidewalks; most walk between the cars, over the planting areas, in a straight line. The path of least resistance for the proposed lot would be parallel to the PRH parking lot on the far right, next to the marsh, in a straight line. **Creating a parking garage/carport at the existing PRH, as all the local hospitals have, could create staff parking and possibly paid secure shared parking.** A larger retention system which does NOT bypass filtration units during higher than normal 2 yr rainfall events **could be helpful to preserve what will be left of the existing balanced wetland system** if a separate parking lot continues to move forward.

Respectfully,  
Elizabeth Bratter  
159 McDonough St  
Property Owner

**P0616-005\_Pre**

Prepared by Tighe & Bond

HydroCAD® 10.00-20 s/n 03436 © 2017 HydroCAD Software Solutions LLC

Type III 24-hr 2-Year Rainfall=3.69"

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Page 4

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

<b>Subcatchment PRE 1.1:</b>	Runoff Area=31,588 sf 0.00% Impervious Runoff Depth>1.01" Flow Length=251' Tc=14.7 min CN=68 Runoff=0.59 cfs 2,658 cf
<b>Subcatchment PRE 2.1:</b>	Runoff Area=320,124 sf 0.00% Impervious Runoff Depth>0.85" Flow Length=750' Tc=27.0 min CN=65 Runoff=3.75 cfs 22,591 cf
<b>Link PA-1:</b>	Inflow=0.59 cfs 2,658 cf Primary=0.59 cfs 2,658 cf
<b>Link PA-2:</b>	Inflow=3.75 cfs 22,591 cf Primary=3.75 cfs 22,591 cf
<b>Link PA-3:</b>	Primary=0.00 cfs 0 cf

**Total Runoff Area = 351,712 sf Runoff Volume = 25,249 cf Average Runoff Depth = 0.86"  
100.00% Pervious = 351,712 sf 0.00% Impervious = 0 sf**

**P0616-005\_Post**

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HydroCAD® 10.00-20 s/n 03436 © 2017 HydroCAD Software Solutions LLC

Type III 24-hr 2-Year Rainfall=3.69"

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Page 4

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment POST 1.1:** Runoff Area=19,738 sf 0.00% Impervious Runoff Depth>1.19"  
Tc=6.0 min CN=71 Runoff=0.59 cfs 1,949 cf

**Subcatchment POST 2.1:** Runoff Area=160,095 sf 85.19% Impervious Runoff Depth>3.02"  
Tc=6.0 min CN=94 Runoff=12.07 cfs 40,276 cf

**Subcatchment POST 2.2:** Runoff Area=107,939 sf 0.58% Impervious Runoff Depth>0.96"  
Tc=6.0 min CN=67 Runoff=2.46 cfs 8,614 cf

**Subcatchment POST 2.3:** Runoff Area=56,484 sf 73.62% Impervious Runoff Depth>2.72"  
Tc=6.0 min CN=91 Runoff=3.95 cfs 12,800 cf

**Subcatchment POST 3.1:** Runoff Area=7,456 sf 1.21% Impervious Runoff Depth>1.37"  
Tc=6.0 min CN=74 Runoff=0.26 cfs 852 cf

**Pond POS1:** Peak Elev=34.44' Inflow=0.37 cfs 17,231 cf  
Primary=0.37 cfs 17,231 cf Secondary=0.00 cfs 0 cf Outflow=0.37 cfs 17,231 cf

**Pond UDB 1: 66" CMP** Peak Elev=36.93' Storage=27,860 cf Inflow=12.07 cfs 40,276 cf  
Outflow=0.37 cfs 17,231 cf

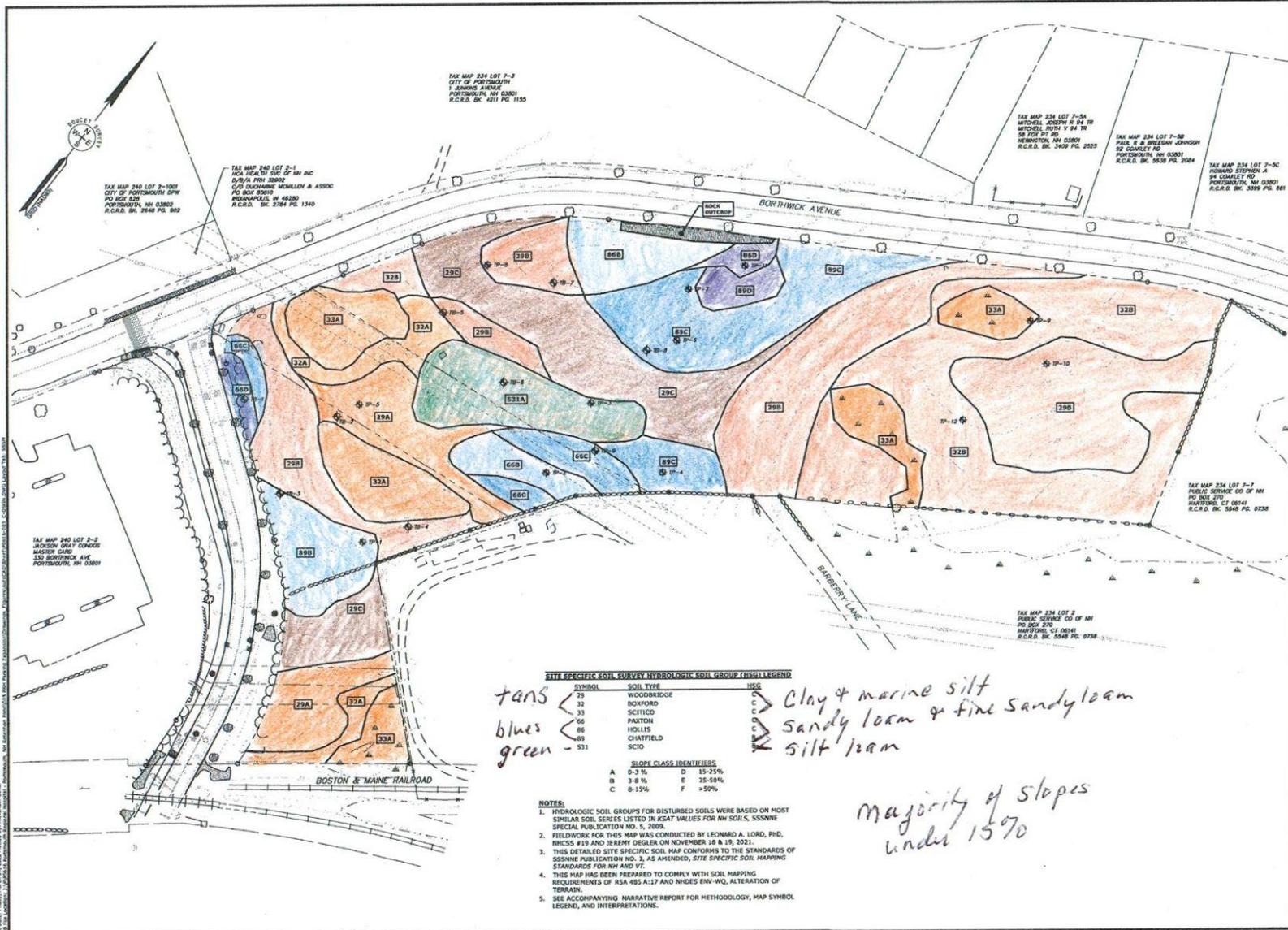
**Pond UIB 2: 36" CMP - POS2** Peak Elev=26.30' Storage=11,976 cf Inflow=3.95 cfs 12,800 cf  
Discarded=0.01 cfs 822 cf Primary=0.00 cfs 0 cf Outflow=0.01 cfs 822 cf

**Link PA-1:** Inflow=0.59 cfs 1,949 cf  
Primary=0.59 cfs 1,949 cf

**Link PA-2:** Inflow=2.74 cfs 25,845 cf  
Primary=2.74 cfs 25,845 cf

**Link PA-3:** Inflow=0.26 cfs 852 cf  
Primary=0.26 cfs 852 cf

**Total Runoff Area = 351,712 sf Runoff Volume = 64,492 cf Average Runoff Depth = 2.20"**  
**49.19% Pervious = 173,023 sf 50.81% Impervious = 178,689 sf**



**SITE SPECIFIC SOIL SURVEY HYDROLOGIC SOIL GROUP (HSG) LEGEND**

SYMBOL	SOIL TYPE	HSG
tan	73 WOODBRIDGE	B
blues	32 BOLFORD	D
green	33 SCITICO	E
	66 PAXTON	F
	66 HOLLIS	
	66 CHATFIELD	
	66 SCID	

Clay & marine silt  
Sandy loam & fine sandy loam  
silt loam

**SLOPE CLASS IDENTIFIERS**

A	0-3%	D	15-25%
B	3-8%	E	25-50%
C	8-15%	F	>50%

- NOTES:**
1. HYDROLOGIC SOIL GROUPS FOR DISTURBED SOILS WERE BASED ON MOST SIMILAR SOIL SERIES LISTED IN ASAT VALUES FOR NH SOILS, SSSNNE SPECIAL PUBLICATION NO. 9, 2009.
  2. FIELDWORK FOR THIS MAP WAS CONDUCTED BY LEONARD A. LORD, PH.D., TRINCS #19 AND JERRY OSSLER ON NOVEMBER 18 & 19, 2021.
  3. THIS DETAILED SITE SPECIFIC SOIL MAP CONFORMS TO THE STANDARDS OF SSSNNE PUBLICATION NO. 3, AS AMENDED, SITE SPECIFIC SOIL MAPPING STANDARDS FOR NH AND VT.
  4. THIS MAP HAS BEEN PREPARED TO COMPLY WITH SOIL MAPPING REQUIREMENTS OF RSA 485-A:17 AND NHDES ENV-WQ, ALTERATION OF TERRAIN.
  5. SEE ACCOMPANYING NARRATIVE REPORT FOR METHODOLOGY, MAP SYMBOL LEGEND, AND INTERPRETATIONS.

Majority of slopes under 15%



SCALE IN FEET  
1" = 100'  
GRAPHIC SCALE

**Proposed Satellite Parking Lot**

Portsmouth Regional Hospital

Portsmouth, New Hampshire

NO.	DATE	DESCRIPTION
PROJECT NO.	RS416-081	
DATE:	March 4, 2022	
FILE:	RS416-081-C-0502A.DWG	
DRAWN BY:	COLBY	
CHECKED:	LAL	
APPROVED:	LAL	

**SITE SPECIFIC SOIL PLAN**

SCALE: AS SHOWN

**RE: 2 Russell St Meeting:  
TAC June 7, 2022 Packet  
pages: 496-882**

Dear Members of TAC,

June 3, 2022

**Drainage (pg 537-604)**

**Pre 1.0 ( 2yr)**

runoff area 92,563sf

76.49% impervious runoff depth less than 2.91" flow length= 587' CN 93 runoff= 7.0 cfs 22,427 cf

**Post 1.0,1,1,1,2 (2 yr)**

Runoff area (added) 102,479sf

Averaged:

81.43% impervious runoff depth= 3.15" flow length= 314.66' CN 95.33 runoff= 2.8 cfs 9616.66cf

**Pre 2.0 (2 yr)**

Runoff area 58,401sf

90.39% impervious runoff depth less than 2.91" flow length 470' CN 93 runoff=4.41 cfs 14,150cf

**Post 2.0 (2 yr)**

Runoff area 48,485sf

90.09% impervious runoff depth=3.66 cfs flow length 370' CN 93 runoff=3.66cfs

11,747cf

And two runoff ponds.

The post runoff areas, **comparing Pre 1 and Post 1.0, 1.1 and 1.2**, will be running into retention ponds and then into the North Mill Pond seem to show *an increase in the amount of runoff and impervious surface* looking at the two year rainfall estimates. The desired effects of improved filtration, decrease in flow length and increase in cubic feet per second shown are positive. Will the retention pond be able to handle this amount of runoff at this positive flow rate in 5 years since the overflow will be at the maximum of 2 year levels? The North Mill Pond will have a significant increase of water from the many new large developments pouring water into it from their retention pond/basins. *It currently floods on the northern side during high rain events. Are these numbers being looked at collectively as these new developments are being added to the ones that have already been built on the North End and are likely contributing to some of the flooding around the North Mill Pond at high tide during high rain events?* It should be kept in mind that a lot of the water emptying into the North Mill Pond will not be filtered once the two year rain event calculations have been exceeded and 2 years have passed.

**Pedestrian and Bicycle Safety:**

Continuing the path which runs parallel to the RR Tracks onto Lot 119-4 (park) might be helpful, otherwise bikes and pedestrians are likely to cross there anyway to get to the other side. There could be a diagonal crosswalk from parallel to the RR tracks to Lot 119-4; keeping the one parallel to Russell St. The sidewalk could be continued by turning the figure 8 sidewalk of the park in the opposite direction. Having the open part of the curve start at where the first tree 1 AC KA (Maple) is listed on the Plan L- 101 (pg 517). The other proposed connections could remain just configured a little differently (*see picture at end*).

**Trash:**

Looking at Plan C-102.1 (pg 10) Building 2 seems to have 3 (T) areas, likely for trash. However, looking at buildings 1 and 3 there doesn't seem to be any.

## **Runoff and Green Buildings:**

### *Building 2 Balcony:*

Plan A-102 (pg 520) B2-L2 does NOT clarify the light green open space on the plan in the legend. This area was presented in the beginning as a living roof system. This area doesn't seem to exist on the Landscape Plan (L-101 pg 517). SGA Green Building Statement (pg 880) makes no mention of the "balcony" green space nor does the Maintenance Plan (pg 607).

**Was this area, if not a living roof system, included in the water run off calculations?** Were the materials used to cover it calculated for? This "balcony" could become a living roof system as originally suggested. It would lower water run-off, reduce energy needs for the floor below and it could be designed to provide enjoyable outdoor spaces for residents.

<https://www.thehenryford.org/visit/ford-rouge-factory-tour/highlights/living-roof/>

<https://www.thisoldhouse.com/green-home/21018522/green-roofs>

## **Traffic Report (pg 676-876)**

Counts were taken in January and February of 2022. A 1.8% (Covid) and a 1.23% (seasonal) adjustments were made, however there was no adjustment made for the supply chain hit which started in October of 2021 and was still in play in February of 2022 which reduced the number of deliveries of all kinds to businesses and homes alike. **The adjustment for seasonal seems extremely low** considering Portsmouth is shown at around 20,000 residents, however in the summer the seacoast is estimated to have over 1 million visitors.

Area plans pg 519-521 show 56,720 sf of retail (37451+10440+8829) and 84 residential units are listed on plan C-102.1 (pg 505). The reports include the hotel in some incidents and not in others. The Annual Average Daily Traffic (AADT) on page 737 seems to show about a 10% increase in traffic every year.

The revamping of the lights at Maplewood/ Deer will help but will not improve the issues at this corner by adding 177 vehicle trips (Section 6 pg 690). This corner will be a hot mess per the predictions of this report, estimated to be LOS F. *This area is of concern which is indicated under Section 5.1 to not experience improvements, even with the "build" changes, especially in projected traffic patterns.*

The proposed new circle will likely help with the Market/Russell. *However, **the corner of Deer and Market St did not seem to be included in these reports as to how the "circle" will impact this intersection.*** It remains to be seen what changes will be needed with this increase in vehicles to the corner of Deer/Russell, *perhaps something else to review before moving forward.*

Section 5 (pg 689) does indicate increased issues at the corner of Rt 1 bypass and Maplewood as well as still operating at a LOS F under build conditions, which may need to be considered at this time, especially in light of how blind that intersection is. *A traffic light at that off ramp could aid in traffic calming for the Maplewood Ave Neighborhood.*

**It may better serve the city to slightly decrease the size of the proposed sidewalks and increase the size and number of lanes on both sides of Deer St** as they approach Maplewood Ave to create less backup and better flow through the intersection for today and for the future.

Thank you for your consideration of these issues.

Sincerely,

Elizabeth Bratter  
159 McDonough St  
Portsmouth Property Owner

Possible Pedestrian/ Bicycle Crossing and additional sidewalk area:

