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City of Portsmouth Prime Wetlands Analysis Report

West Environmental Inc.

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CITY OF PORTSMOUTH
PRIME WETLAND ANALYSIS REPORT

Prepared for:
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NewHampshire EstuariesProject

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1. Introduction

West Environmental, Inc. (WEI) has prepared this report to provide documentation to support the designation of prime wetlands in the City of Portsmouth, New Hampshire. This project was based upon the 2003 City Wide Wetlands Inventory (CWWI) and additional research and evaluation of individual wetlands that met the requirements of RSA 482-A:15 and Chapter Wt 700 of the NHDES Wetlands Bureau Administrative Rules. WEI worked closely with the Portsmouth Conservation Commission and Planning Department staff to review the technical criteria for Prime Wetland Designation and the results of the CWWI.

RSA 482-A:15 defines "Prime Wetlands" as jurisdictional wetlands that "because of their size, unspoiled character, fragile condition or other relevant factors, make them of substantial significance." Env-Wt 701.04 Selection of Designated Prime Wetlands states "Selection of Prime Wetlands shall be based on the ranking of relative function values" and shall meet the following minimum criteria:

1) The wetland shall have the presence of hydric soils, hydrophytic vegetation, and wetlands hydrology; and
2) At least 50% of the prime wetland shall have very poorly drained soils and the remaining soils shall be poorly drained soils.

The proposed Prime Wetland Candidates identified in Section 3 of this report meet all qualifications for Prime Wetland status.

2. Methodology

Twenty-one wetlands were determined to have the potential to "qualify" for Prime Wetland Designation in the CWWI. WEI identified six additional wetlands that could qualify for this designation resulting in a total of 27 wetlands evaluated. A Portsmouth specific Prime Wetland Data Form was created to evaluate prime wetland status of these wetlands. This form includes the following information necessary for Prime Wetland Designation:

- Soils verification
- Changes in wetland classification since 2002
- Wetland boundary verification
- Land use changes within the wetland buffer
- Potential water quality impacts
- Invasive species
- Information on rare plants and wildlife
- Wildlife habitat
- Educational / scientific values
- Restoration potential
- Results of functional analysis
- Justification for Prime Wetland Designation

Completed data forms are in Section 7 of this report. Each of the 27 wetlands was field inspected to verify the wetland boundaries, functional analysis, values assessments, and other important considerations relating to Prime Wetland Designation. Significant inaccuracies in the wetland boundaries were identified during the field verification process. Some of these boundary corrections required changes in the results of the functional analysis and therefore the previous wetland ranking.

The six new potential prime wetlands were evaluated in comparison to the 21 original qualifying wetlands. A final ranking of the 27 wetlands found significant break between the Prime Wetland Candidates and the remaining qualifying wetlands. Two of the wetlands were combined based on identifying a connection in the field.

3. Prime Wetland Candidates

The thirteen proposed prime wetland candidates represent the largest and highest functioning wetlands within the city. These wetlands total 1,908 acres: 1,736 acres of freshwater wetlands and 172 acres of tidal marsh. Eleven of the thirteen wetlands are over 40 acres in size. The two smallest prime wetland candidates are Wetland 019, a 16 acre tributary system to Sagamore Creek salt marsh and the Little Harbor salt marsh complex. These two wetlands provide unique habitat features within the city which elevates their overall importance. In addition to their top 13 ranking, these wetlands comprise the most diverse and critical wetland wildlife habitat in Portsmouth. These systems also are adjacent to some of the only remaining undisturbed upland habitat within the city boundaries. Together, they will provide crucial links between habitats in the form of undisturbed wildlife corridors.

ID	Size (in acres)	Rank	Justification
001	110	7	▪ Adjacent to Berry's Brook wetland complex ▪ Atlantic White Cedar stands ▪ 6th largest wetland
002	400	2	▪ Berry's Brook wetland complex ▪ 2nd largest wetland ▪ Rare species habitat
003A	573	1	▪ Great Bog ▪ Largest wetland ▪ Rare species habitat
005	250	3	▪ Berry's Brook wetland complex ▪ 3rd largest wetland ▪ Rare species habitat
006	89	8	▪ 7th largest wetland ▪ Unique wet meadow complex ▪ Headwaters of Sagamore Creek
007	145	6	▪ 4th largest wetland ▪ High level of diversity ▪ Headwaters to Hogden Brook
015	40	11	▪ High value freshwater marsh habitat ▪ Abuts natural forestland ▪ High potential for wetland restoration
018 & 026	42	10	▪ Unique open water habitat ▪ Diverse wetland complex ▪ Potential rare species habitat
019	16	12	▪ Tributary to Sagamore Creek ▪ Undisturbed wetland system w/natural buffers ▪ High value freshwater marsh habitat
023	71	9	▪ 8th largest wetland ▪ Atlantic White Cedar stands ▪ Adjacent Packers Bog in Greenland
061A	120	4	▪ Largest salt marsh ▪ Rare species habitat ▪ Critical fisheries habitat
061B	8	13	▪ One of only two salt marsh complexes ▪ Rare species habitat ▪ Critical fisheries habitat
062	44	5	▪ 2nd largest salt marsh ▪ Rare species habitat ▪ Critical fisheries habitat

5. Wetlands Eliminated From Consideration

ID	Size (in acres)	Rank	Justification
003B	17	22	▪ Directly abuts highway on 3 sides ▪ Invasive species ▪ No connection to upland habitat
004	51	14	▪ Does not qualify due to lack of very poorly drained soils
013A	16	18	▪ Historical wetland impacts ▪ Incorrectly mapped and 60% of original size ▪ Disconnected and culverted
013B	5	20	▪ Historical wetland impacts ▪ Water quality degradation observed ▪ Invasive species ▪ Small size (5 acres)
014	20	16	▪ Historical wetland impacts ▪ Surrounded by development ▪ Water quality degradation observed ▪ No connection to upland habitat
016	50	15	▪ Does not qualify due to lack of very poorly drained soils
022	15	19	▪ Incorrectly mapped and 70% of original size ▪ Surrounded by development ▪ Historical wetland impacts
029	11	17	▪ Incorrectly mapped and 50% of original size ▪ Surrounded by development ▪ Historical wetland impacts
031	15	21	▪ Surrounded by development ▪ Water quality degradation observed ▪ No connection to upland habitat
038	5	24 (tied)	▪ Small size ▪ Not recommended for consideration by CWWI ▪ Lacks diversity
044	5	24 (tied)	▪ Small size ▪ Not recommended for consideration by CWWI ▪ Lacks diversity
050	6	23	▪ Very small size ▪ Surrounded by development
117	2.5	26	▪ Small size ▪ Not recommended for consideration by CWWI ▪ Lacks diversity